



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

March 8, 2022

Mr. Daniel G. Stoddard
Senior Vice President and
Chief Nuclear Officer
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 29060

SUBJECT: NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2 – RE: REQUEST TO
UTILIZE CODE CASE OMN-28 (EPID L-2021-LLR-0086)

Dear Mr. Stoddard:

By letter dated November 16, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21321A224) Virginia Electric and Power Company (Dominion Energy Virginia) submitted a request in accordance with paragraph 50.55a(z)(1) of Title 10 of the *Code of Federal Regulations* (10 CFR) for a proposed alternative to certain requirements of 10 CFR 50.55a, "Codes and standards," for North Anna Power Station, Units 1 and 2 (North Anna).

The American Society of Mechanical Engineers (ASME), *Operation and Maintenance of Nuclear Power Plants*, Division 1, Section IST (OM Code), as incorporated by reference in 10 CFR 50.55a, specifies requirements for the inservice testing (IST) of nuclear power plant components. Dominion Energy Virginia requests to use the ASME OM Code Case OMN-28, "Alternative Valve Position Verification Approach to Satisfy ISTC-3700 for Valves Not Susceptible to Stem-Disk Separation," as an alternative to the IST requirements in the 2012 Edition of the ASME OM Code, as supplemented by 10 CFR 50.55a, for certain specified valves at North Anna.

The regulations in 10 CFR 50.55a(z) state, in part, that alternatives to the requirements in paragraphs (b) through (h) of 10 CFR 50.55a may be authorized by the U.S. Nuclear Regulatory Commission (NRC) if the licensee demonstrates that: (1) the proposed alternative provides 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.

The NRC staff has reviewed the subject request and concludes, as set forth in the enclosed safety evaluation, that Dominion has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z) and demonstrated the proposed alternative would provide an acceptable level of quality and safety. Therefore, in accordance with 10 CFR 50.55a(z)(1), the NRC staff authorizes the use of Code Case OMN-28 for North Anna for the remainder of the fifth 10-year IST Program Test interval for North Anna 1 and 2, that ends on December 14, 2030.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

If you have any questions, please contact the North Anna Project Manager, Ed Miller at 301-415-2481 or via e-mail at Ed.Miller@nrc.gov.

Sincerely,

Michael T. Markley, Chief
Plant Licensing Branch 2-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-338 and 50-339

Enclosure:
Safety Evaluation

cc: Listserv



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST TO USE ASME CODE CASE OMN-28

VIRGINIA ELECTRIC POWER COMPANY

NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-338 AND 50-339

1.0 INTRODUCTION

By a letter dated November 16, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21321A224), Virginia Electric and Power Company (Dominion Energy Virginia), the licensee, submitted to the U.S. Nuclear Regulatory Commission (NRC) Alternative Request V-2 regarding certain inservice testing (IST) requirements of the American Society of Mechanical Engineers (ASME) *Operation and Maintenance of Nuclear Power Plants*, Division 1, OM Code: Section IST (OM Code) for the IST Program at North Anna Power Station, Units 1 and 2 (North Anna) associated with the Fifth 10-Year IST Program Interval.

Specifically, pursuant to subparagraph (1) in paragraph (z), "Alternatives to codes and standards requirements," of Section 55a, "Codes and standards," in Part 50, "Domestic Licensing of Production and Utilization Facilities," in Title 10, "Energy," of the *Code of Federal Regulations* (10 CFR 50.55a(z)(1)), the licensee requested to implement ASME OM Code Case OMN-28, "Alternative Valve Position Verification Approach to Satisfy ISTC-3700 for Valves Not Susceptible to Stem-Disk Separation," for certain valves at North Anna on the basis that the alternative provides an acceptable level of quality and safety.

2.0 REGULATORY EVALUATION

The NRC regulations in 10 CFR 50.55a(f)(4), "Inservice testing standards requirement for operating plants," state that throughout the service life of a boiling or pressurized water-cooled nuclear power facility, pumps and valves that are within the scope of the ASME OM Code must meet the IST requirements (except design and access provisions) set forth in the ASME OM Code and addenda that become effective subsequent to editions and addenda specified in 10 CFR 50.55a(f)(2) and (3) and that are incorporated by reference in 10 CFR 50.55a(a)(1)(iv), to the extent practical within the limitations of design, geometry, and materials of construction of the components. The IST requirements for pumps and valves that are within the scope of the ASME OM Code but are not classified as ASME *Boiler and Pressure Vessel Code* (BPV Code) Class 1, Class 2, or Class 3 may be satisfied as an augmented IST program in accordance with 10 CFR 50.55a(f)(6)(ii) without requesting relief under 10 CFR 50.55a(f)(5) or alternatives under 10 CFR 50.55a(z). This use of an augmented IST program may be acceptable provided the

Enclosure

basis for deviations from the ASME OM Code, as incorporated by reference in 10 CFR 50.55a, demonstrates an acceptable level of quality and safety, or that implementing the Code provisions would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety, where documented and available for NRC review.

The NRC regulations in 10 CFR 50.55a(b)(3)(xi), OM condition: Valve Position Indication, state the following:

When implementing paragraph ISTC-3700, "Position Verification Testing," in the ASME OM Code, 2012 Edition through the latest edition and addenda of the ASME OM Code incorporated by reference in paragraph (a)(1)(iv) of this section, licensees shall verify that valve operation is accurately indicated by supplementing valve position indicating lights with other indications, such as flow meters or other suitable instrumentation to provide assurance of proper obturator position for valves with remote position indication within the scope of Subsection ISTC including its mandatory appendices and their verification methods and frequencies.

In proposing alternatives, a licensee must demonstrate that the proposed alternatives provide an acceptable level of quality and safety (10 CFR 50.55a(z)(1)) or compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety (10 CFR 50.55a(z)(2)).

3.0 TECHNICAL EVALUATION

3.1 Licensee's Request

3.1.1 ASME Code Components Affected

In its application, the licensee states that the valves covered by ASME OM Code Case OMN-28 are those stem-disk separation non-susceptible valves with remote position indication within the scope of Subsection ISTC, "Inservice Testing of Valves in Light-Water Reactor Nuclear Power Plants," of the ASME OM Code (2012 Edition) including its mandatory appendices and their verification methods and frequencies, in accordance with regulatory requirements. The specific valves requiring position indication testing (PIT) in accordance with ASME OM Code, Subsection ISTC, paragraph ISTC-3700, are identified in North Anna's IST Program Plan, updated for the Fifth 10-Year interval and submitted to the NRC on January 22, 2020 (ADAMS Accession No. ML20028D492).

3.1.2 Applicable Code Edition and Addenda

The 2012 Edition of the ASME OM Code, as incorporated by reference in 10 CFR 50.55a, with conditions, is applicable to the Fifth 10-Year IST Program interval at North Anna. The Fifth 10 Year IST Program interval for North Anna began on December 15, 2020, and will end on December 14, 2030, for both North Anna units.

3.1.3 Applicable Code Requirements

Paragraph ISTC-3700, "Position Verification Testing," of the ASME OM Code (2012 Edition) states:

Valves with remote position indicators shall be observed locally at least once every 2 yr [years] to verify that valve operation is accurately indicated. Where practicable, this local observation should be supplemented by other indications such as use of flow meters or other suitable instrumentation to verify obturator position. These observations need not be concurrent. Where local observation is not possible, other indications shall be used for verification of valve operation. Position verification for active MOVs [motor-operated valves] shall be tested in accordance with Mandatory Appendix III of this Division.

As noted in Section 2.0 of this safety evaluation (SE), when implementing this paragraph, "licensees shall verify that valve operation is accurately indicated by supplementing valve position indicating lights with other indications, such as flow meters or other suitable instrumentation to provide assurance of proper obturator position for valves with remote position indication within the scope of Subsection ISTC [of the ASME OM Code] including its mandatory appendices and their verification methods and frequencies."

3.1.4 Licensee's Proposed Alternative, Reason for Request, and Basis for Use

The licensee's proposed alternative is to use ASME OM Code Case OMN-28 (issued by ASME on March 4, 2021) in lieu of the requirements in paragraph ISTC-3700 of the ASME OM Code for the specific valves in the North Anna Fifth 10-Year IST Program Plan. The licensee did not propose any deviations from the code case. The licensee asserted that implementation of Code Case OMN-28 would provide an acceptable level of quality and safety in accordance with 10 CFR 50.55a(z)(1).

In its submittal, the licensee states that the valves covered by ASME OM Code Case OMN-28 are those stem-disk separation non-susceptible valves with remote position indication within the scope of Subsection ISTC, in accordance with regulatory requirements.

To categorize a valve as not susceptible to stem-disk separation, the valve shall have a documented justification that the stem-disk connection is not susceptible to separation based on the internal design, service conditions, applications and evaluation of the stem-disk connection using plant-specific and industry operating experience, and vendor recommendations. Valves with remote position indicators that are not susceptible to stem-disk separation shall be verified to accurately represent valve operation as discussed in Section 1.4, "Position Verification Testing Requirements for Valves Not Susceptible to Stem-Disk Separation" of Code Case OMN-28.

Other valves in the IST Program with remote position indication not satisfying the scope and provisions of this Code Case shall meet the valve position verification requirements in ASME OM Code, Subsection ISTC, paragraph ISTC-3700, in accordance with the regulatory requirements.

3.2 NRC Staff Evaluation

The NRC staff has reviewed the provisions in ASME OM Code Case OMN-28 to demonstrate that the remote position indicators for valves that are not susceptible to stem-disk separation accurately represent valve operation, open and closed. ASME OM Code Case OMN-28 requires that this remote position verification for valves that are not susceptible to stem-disk separation shall include the following: (a) observation of evidence, such as changes in system pressure, flow rate, level, or temperature, that represent valve operation; (b) local observation of valve operation where practicable; and (c) stem-disk separation evaluation shall be documented and available for regulatory review demonstrating that the stem-disk connection is not susceptible to separation. For active valves not susceptible to stem-disk separation, ASME OM Code Case OMN-28 states that these observations shall be performed at least once every 12 years. For passive valves not susceptible to stem-disk separation, ASME OM Code Case OMN-28 states that these observations shall be performed whenever the valve is stroked from its passive position or every 12 years, whichever is greater.

In its submittal, the licensee requested to utilize the provisions of ASME OM Code Case OMN-28 for those valves that can be defined, categorized, and documented by engineering justification as stem-disk separation non-susceptible valves. Where ASME OM Code Case OMN-28 is implemented in its entirety, the NRC staff considers that the provisions in Code Case OMN-28 as an acceptable alternative to the requirements in ASME OM Code, Subsection ISTC, paragraph ISTC-3700, as incorporated by reference in 10 CFR 50.55a and supplemented by 10 CFR 50.55a(b)(3)(xi), because they provide reasonable assurance that the remote position indicators for valves that are not susceptible to stem-disk separation properly verify the position of the valve obturator. In its submittal, the licensee stated that this alternative request applies to specific valves with PIT requirements in accordance with ASME OM Code, Subsection ISTC, paragraph ISTC-3700, as identified in the North Anna IST Program Plan for the Fifth 10-Year IST Program interval and submitted to the NRC on January 22, 2020.

Based on the above, and in consideration of the alternate means of position verification, the NRC staff finds that the implementation of ASME OM Code Case OMN-28 in its entirety for valves with PIT requirements, as identified in the North Anna Fifth 10-Year IST Program Plan, provides an acceptable level of quality and safety in accordance with 10 CFR 50.55a(z)(1) in lieu of the requirements in ASME OM Code (2012 Edition), Subsection ISTC, paragraph ISTC-3700, as incorporated by reference in 10 CFR 50.55a and supplemented by 10 CFR 50.55a(b)(3)(xi), for North Anna.

4.0 CONCLUSION

As described above, the NRC staff concludes that the proposed Alternative Request V-2 to implement ASME OM Code Case OMN-28 in its entirety as specified in the licensee's submittal dated November 16, 2021, provides an acceptable level of quality and safety for the verification of valve position indication for valves that are not susceptible to stem-disk separation in lieu of the requirements in ASME OM Code (2012 Edition), Subsection ISTC, paragraph ISTC-3700, as incorporated by reference in 10 CFR 50.55a and supplemented by 10 CFR 50.55a(b)(3)(xi), for valves identified as having PIT requirements in the North Anna Fifth 10-Year IST Program Plan. Accordingly, the NRC staff concludes that the licensee has adequately addressed the regulatory requirements set forth in 10 CFR 50.55a(z)(1).

Therefore, the NRC staff authorizes the use of proposed alternative in Relief Request V-2 to implement ASME OM Code Case OMN-28 in its entirety for valves with PIT requirements as

identified in the North Anna Fifth 10-Year IST Program Plan (submitted to the NRC on January 22, 2020), as specified in the licensee's submittal dated November 16, 2021, for the verification of valve position indication for valves that are not susceptible to stem-disk separation in lieu of the requirements in ASME OM Code (2012 Edition), Subsection ISTC, paragraph ISTC-3700, as incorporated by reference in 10 CFR 50.55a and supplemented by 10 CFR 50.55a(b)(3)(xi), for the remainder of the Fifth 10-Year IST Interval that ends on November 14, 2030.

All other ASME OM Code requirements as incorporated by reference in 10 CFR 50.55a for which relief or an alternative was not specifically requested, and granted or authorized (as appropriate), in the subject request remain applicable.

Principal Contributors: Thomas G. Scarbrough, NRR
 Yuken Wong, NRR

Date: March 8, 2022

SUBJECT: NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2 – RE: REQUEST TO UTILIZE CODE CASE OMN-28 (EPID L-2021-LLR-0086) DATED MARCH 8, 2022

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***Via SE Input**

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