



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

April 23, 2014

Mr. David A. Heacock
President and Chief Nuclear Officer
Virginia Electric and Power Company
Innsbrook Technical Center
5000 Dominion Blvd.
Glenn Allen, VA 23060

SUBJECT: SURRY POWER STATION, UNITS 1 AND 2 - RELIEF FROM THE
REQUIREMENTS OF THE ASME CODE (TAC NOS. MF1809 AND MF1810)

Dear Mr. Heacock:

By letter dated May 1, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13128A104), Virginia Electric and Power Company (Dominion), the licensee, submitted alternative request G-1 to the Nuclear Regulatory Commission (NRC) for review and approval. The proposed alternative G-1 is associated with inservice testing (IST) requirements of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code), for the fifth 10-year interval IST program at Surry Power Station, Units 1 and 2 (SPS1 and SPS2).

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 50.55a(a)(3)(ii), the licensee requested to use ASME OM Code Case OMN-20 alternative on the basis that the ASME OM Code requirements present an undue hardship without compensating increase in the level of quality or safety.

The NRC staff reviewed alternative request G-1 and concludes, as set forth in the enclosed safety evaluation, that Dominion adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(ii) and is in compliance with the ASME OM Code requirements. Therefore, the NRC staff authorizes alternative request G-1, use of ASME OM Code Case OMN-20, at SPS1 and SPS2 for the fifth 10-year IST intervals which are both scheduled to begin on May 10, 2014 and end on May 9, 2024 .

D. Heacock

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If you have any questions, please contact the Project Manager, Martha Barillas at 301-415-2760 or via e-mail at martha.barillas@nrc.gov.

Sincerely,



Robert Pascarelli, Chief
Plant Licensing Branch 2-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos: 50-280 and 50-281

Enclosure:
Safety Evaluation

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELIEF REQUEST NO. G-1 RELATED TO THE INSERVICE TESTING PROGRAM FOR THE
FIFTH 10-YEAR INTERVAL
VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION, UNITS 1 AND 2
DOCKET NUMBERS 50-280 AND 50-281

1.0 INTRODUCTION

By letter dated May 1, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13128A104), Virginia Electric and Power Company (Dominion), the licensee, submitted alternative request G-1 to the Nuclear Regulatory Commission (NRC) for review and approval. The proposed alternative G-1 is associated with inservice testing (IST) requirements of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code), for the fifth 10-year interval IST program at Surry Power Station, Units 1 and 2 (SPS1 and SPS2).

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 50.55a(a)(3)(ii), the licensee requested to use ASME OM Code Case OMN-20 alternative on the basis that the ASME OM Code requirements present an undue hardship without compensating increase in the level of quality or safety.

2.0 REGULATORY EVALUATION

10 CFR 50.55a(f), "Inservice Testing Requirements," requires, in part, that IST of certain ASME Code Class 1, 2, and 3 components must meet the requirements of the ASME OM Code and applicable addenda.

10 CFR 50.55a(a)(3), states, in part, that alternatives to the requirements of paragraph (f) of 10 CFR 50.55a may be authorized by the NRC if the licensee demonstrates that: (i) the proposed alternative provides 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.

The SPS1 and SPS2 fifth 10-year IST intervals are both scheduled to begin on May 10, 2014, and end on May 9, 2024. The SPS1 and SPS2 IST programs will comply with the ASME OM Code, 2004 Edition through 2006 Addenda.

Based on the above, the NRC staff finds that it has the regulatory authority to authorize the use of ASME Code Case OMN-20, as requested by Dominion.

3.0 TECHNICAL EVALUATION

3.1 Dominion's Alternative Request G-1

Dominion's alternative request applies to the test frequency specifications of the ASME OM Code. The following frequencies for tests given in the ASME OM Code do not include a tolerance band:

Code Paragraph	Description
ISTA-3120(a)	"The frequency for the inservice testing shall be in accordance with the requirements of Section IST."
ISTB-3400	Frequency of Inservice Tests
ISTC-3510	Exercising Test Frequency
ISTC-3540	Manual Valves
ISTC-3630(a)	Frequency
ISTC-3700	Position Verification Testing
ISTC-5221 (c)(3)	"At least one valve from each group shall be disassembled and examined at each refueling outage; all valves in a group shall be disassembled and examined at least once every 8 years."
Appendix I, I-1320	Test Frequencies, Class 1 Pressure Relief Valves
Appendix I, I-1330	Test Frequencies, Class 1 Nonreclosing Pressure Relief Devices
Appendix I, I-1340	Test Frequencies - Class 1 Pressure Relief Valves that are used for Thermal Relief Application
Appendix I, I-1350	Test Frequencies - Class 2 and 3 Pressure Relief Valves
Appendix I, I-1360	Test Frequencies - Class 2 and 3 Nonreclosing Pressure Relief Devices
Appendix 1, I-1370	Test Frequencies - Class 2 and 3 Primary Containment Vacuum Relief Valves
Appendix I, I-1380	Test Frequencies - Class 2 and 3 Vacuum Relief Valves Except for Primary Containment Vacuum Relief Valves
Appendix I, I-1390	Test Frequencies - Class 2 and 3 Pressure Relief Valves that are used for Thermal Relief Application
Appendix II, II-4000(a)(1)	Performance Improvement Activities Interval
Appendix II, II-4000(b)(1)(e)	Optimization of Condition Monitoring Activities Interval

Reason for Request

ASME OM Code, Section IST, establishes the inservice test frequency for all components within the scope of the ASME OM Code. The frequencies (e.g., quarterly) have always been

interpreted as “nominal” frequencies (generally as defined in Table 3.2 of NUREG-1482, Revision 2) and owners routinely applied the surveillance extension time period (i.e., grace period) contained in the plant Technical Specification (TS) Surveillance Requirements (SRs). The TSs typically allow for a less than or equal to 25 percent extension of the surveillance test interval to accommodate plant conditions that may not be suitable for conducting the surveillance. However, regulatory issues have been raised concerning the applicability of the TS grace period to ASME OM Code-required IST frequencies.

The licensee states the lack of a tolerance band on the ASME OM Code IST frequencies restricts operational flexibility. There may be a conflict where IST could be required (i.e., the frequency could expire), but where it is not possible or desired that it be performed until sometime after a plant condition or associated Limiting Condition for Operation is within its applicability.

The NRC recognized this potential issue in the TSs by allowing a frequency tolerance as described in SPS1 and SPS2 TS 4.0.2. The lack of a similar tolerance applied to the ASME OM Code testing places an unusual hardship on the plant to adequately schedule work tasks without operational flexibility.

The licensee states as with TS-required surveillance testing, some tolerance is needed to allow adjusting ASME OM Code testing intervals to suit the plant conditions and other maintenance and testing activities. This assures operational flexibility when scheduling ISTs that minimize the conflicts between the need to complete the testing and plant conditions.

Proposed Alternative

The licensee proposes to adopt ASME OM Code Case OMN-20, *Inservice Test Frequency*, which was published in conjunction with ASME OM Code, 2012 Edition. The purpose of this code case is to prescribe a methodology for determining acceptable tolerances for pump and valve test frequencies. This proposed alternative will be utilized for the SPS1 and SPS2 fifth 10-year IST intervals. This alternative will apply to the various frequency specifications of the ASME OM Code for all pumps and valves contained within the IST Program scope. The requirements of the ASME Code Case OMN-20 are described below.

ASME OM, Division: 1, Section IST and all earlier editions and addenda specify component test frequencies based either on elapsed time periods (e.g., quarterly, 2 years etc.) or the occurrence of plant conditions or events (e.g., cold shutdown, refueling outage, upon detection of a sample failure, following maintenance, etc.).

(a) Components whose test frequencies are based on elapsed time periods shall be tested at the frequencies specified in Section IST with a specified time period between tests as shown in Table 1. The specified time period between tests may be reduced or extended as follows:

- 1) For periods specified as less than 2 years, the period may be extended by up to 25 percent for any given test.
- 2) For periods specified as greater than or equal to 2 years, the period may be extended by up to 6 months for any given test.
- 3) All periods specified may be reduced at the discretion of the owner (i.e., there is no minimum period requirement).

Period extension is to facilitate test scheduling and considers plant operating conditions that may not be suitable for performance of the required testing (e.g., performance of the test would cause an unacceptable increase in the plant risk profile due to transient conditions or other

ongoing surveillance, test, or maintenance activities). Period extensions are not intended to be used repeatedly merely as an operational convenience to extend test intervals beyond those specified.

Period extensions may also be applied to accelerated test frequencies (e.g., pumps in Alert Range) and other less than 2-year test frequencies not specified in Table 1.

Period extensions may not be applied to the test frequency requirements specified in Subsection ISTD, *Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-water Reactor Nuclear Power Plants*, as Subsection ISTD contains its own rules for period extensions.

(b) Components whose test frequencies are based on the occurrence of plant conditions or events may not have their period between tests extended except as allowed by ASME OM, Division 1, Section IST, 2009 Edition through OMa-2011 Addenda and all earlier editions and addenda of ASME OM Code.

Table 1 Specified Test Frequencies

Frequency	Specified Time Period Between Tests
Quarterly (or every 3 mo)	92 days
Semiannually (or every 6 mo)	184 days
Annually (or every year)	366 days
x years	x calendar years where x is a whole number of years ≥ 2

3.2 NRC Staff Evaluation

Historically, licensees have applied, and the NRC staff has accepted, the standard TS definitions for IST intervals (including allowable interval extensions) to ASME OM Code required testing. (Reference NUREG-1482 Revision 1, Section 3.1.3). Recently, the NRC staff reconsidered the allowance of using TS testing intervals and interval extensions for IST not associated with TS SRs. As noted in Regulatory Issue Summary (RIS) 2012-10, "*NRC Staff Position on Applying Surveillance Requirements 3.0.2 and 3.0.3 to Administrative Controls Program Tests*," the NRC determined that programmatic test frequencies can't be extended in accordance with the TS SR 3.0.2. This includes all IST described in the ASME OM Code not specifically required by the TS SRs.

Following this development, the NRC staff sponsored and co-authored an ASME OM Code inquiry and code case to modify the ASME OM Code to include TS-like test interval definitions and interval extension criteria. The resultant ASME Code Case OMN-20, as shown above, was approved by the ASME Operation and Maintenance Standards Committee on February 15, 2012 with the NRC representative voting in the affirmative. ASME Code Case OMN-20 was subsequently published in conjunction with the ASME OM Code, 2012 Edition. The licensee proposes to adopt ASME Code Case OMN-20.

Requiring the licensee to meet the ASME OM Code requirements, without an allowance for defined frequency and frequency extensions for IST of pumps and valves, results in a hardship without a compensating increase in the level of quality and safety. Based on the prior acceptance by the NRC staff of the similar TS test interval definitions and interval extension criteria, the NRC staff finds that implementation of the test interval definitions and interval extension criteria contained in ASME OM Code Case OMN-20 is acceptable. Allowing usage of ASME Code Case OMN-20 provides reasonable assurance of operational readiness of pumps and valves subject to the ASME OM Code IST.

4.0 CONCLUSION

As set forth above, the NRC staff determines that for alternative request G-1, the proposed alternative ASME OM Code Case OMN-20, provides reasonable assurance that the affected components are operationally ready. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(a)(3)(ii), and is in compliance with the ASME OM Code requirements. Therefore, the NRC staff authorizes alternative request G-1 at SPS1 and SPS2 for the fifth 10-year IST intervals which are both scheduled to begin on May 10, 2014 and end on May 9, 2024.

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

Principle Contributor: John Billerbeck, NRR

Date: April 23, 2014

D. Heacock

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If you have any questions, please contact the Project Manager, Martha Barillas at 301-415-2760 or via e-mail at martha.barillas@nrc.gov.

Sincerely,

/RA/

Robert Pascarelli, Chief
Plant Licensing Branch 2-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos: 50-280 and 50-281

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Safety Evaluation

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