



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

March 2, 2017

Mr. Joseph W. Shea  
Vice President, Nuclear Licensing  
Tennessee Valley Authority  
1101 Market Street, LP 3R-C  
Chattanooga, TN 37402-2801

SUBJECT: SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2 – RELIEF FROM THE  
REQUIREMENTS OF THE AMERICAN SOCIETY OF MECHANICAL  
ENGINEERS OM CODE CASE OMN-20 (CAC NOS. MF9305 AND MF9306)

Dear Mr. Shea:

By letter dated February 27, 2017 (Agencywide Documents Access and Management System Accession No. ML17058A453), Tennessee Valley Authority (the licensee) submitted Alternative Request RV-04 to the U.S. Nuclear Regulatory Commission (NRC). The licensee requested an alternative test plan in lieu of certain inservice testing (IST) requirements of the 2004 Edition through 2006 Addenda of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) for the IST program at the Sequoyah Nuclear Plant (SQN), Units 1 and 2, during the fourth 10-year IST program interval, which is currently scheduled to end June 30, 2026.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(2), the licensee requested to use a proposed alternative, since complying with the current ASME OM Code requirements would result in hardship or unusual difficulty, without a compensating increase in the level of quality and safety.

The NRC staff has determined that the proposed Alternative Request RV-04 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(z)(2).

Therefore, the NRC staff authorizes the proposed alternative request for the remainder of the fourth 10-year IST interval at SQN, Units 1 and 2, which is currently scheduled to end June 30, 2026.

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

J. Shea

- 2 -

If you have any questions, please contact the Project Manager, Andrew Hon, at 301-415-8480 or [Andrew.Hon@nrc.gov](mailto:Andrew.Hon@nrc.gov).

Sincerely,

A handwritten signature in black ink, reading "Benjamin G. Beasley". The signature is fluid and cursive, with the first name "Benjamin" being more prominent and the last name "Beasley" following in a similar style.

Benjamin G. Beasley, Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-327 and 50-328

Enclosure:  
Safety Evaluation

cc w/enclosure: Distribution via Listserv



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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUEST RV-04

RELATED TO THE INSERVICE TESTING PROGRAM, FOURTH 10-YEAR INTERVAL

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

1.0 INTRODUCTION

By letter dated February 27, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17058A453), Tennessee Valley Authority (the licensee) submitted Alternative Request RV-04 to the U.S. Nuclear Regulatory Commission (NRC or the Commission). The licensee requested an alternative test plan in lieu of certain inservice testing (IST) requirements of the 2004 Edition through 2006 Addenda of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) for the IST program at the Sequoyah Nuclear Plant (SQN), Units 1 and 2, during the fourth 10-year IST program interval, which is currently scheduled to end June 30, 2026.

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, since complying with the current ASME OM Code requirements would result in hardship or unusual difficulty, without a compensating increase in the level of quality and safety.

2.0 REGULATORY EVALUATION

The regulation in 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, except where alternatives have been authorized pursuant to paragraphs 10 CFR 50.55a(z)(1) or 10 CFR 50.55a(z)(2).

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)).

Based on the above, and subject to the following technical evaluation, the NRC staff finds that regulatory authority exists for the licensee to request, and the Commission to authorize, the alternative requested by the licensee.

Enclosure

### 3.0 TECHNICAL EVALUATION

#### 3.1.1 Licensee's Alternative Request

##### ASME OM Code Requirements:

This request relates to the test frequency requirements for pumps and valves applicable to ASME OM Division 1, Section IST, 2009 Edition through OMa-2011 Addenda and all earlier editions and addenda of the ASME OM Code. This request is also applicable to any adopted ASME OM Code Cases listed in Regulatory Guide 1.192, Revision 1, "Operation and Maintenance Code Case Acceptability, ASME OM Code" (ADAMS Accession No. ML13340A034), which pertain to pumps and valves.

The licensee states, in part:

##### Reason for Request

The IST Program controls specified in Section 5.5.6 of TS [Technical Specifications] provide: a) a table specifying certain IST frequencies; b) an allowance to apply SR 3.0.2 to inservice tests required by the OM Code and with frequencies of two years or less; c) an allowance to apply SR 3.0.3 to inservice tests required by the OM Code; and d) a statement that, "Nothing in the ASME OM Code shall be construed to supersede the requirements of any TS." In Regulatory Issue Summary (RIS) 2012-10, "NRC Staff Position on Applying Surveillance Requirement 3.0.2 and 3.0.3 to Administrative Controls Program Tests," and EGM [Enforcement Guidance Memorandum] 2012-001, "Dispositioning Noncompliance with Administrative Controls Technical Specifications Programmatic Requirements that Extend Test Frequencies and Allow Performance of Missed Tests," the NRC stated that items b, c, and d of the TS IST Program were inappropriately added to the TS and may not be applied (although the EGM allows licensees to continue to apply those paragraphs pending a generic resolution of the issue).

In RIS 2012-10 and EGM 2012-001, the NRC stated that the current TS allowance to apply SR 3.0.2 and SR 3.0.3 to the IST Program would no longer be permitted. In response, OMN-20, which provides allowances similar to SR 3.0.2, was approved and is proposed to be used as an alternative to the test periods specified in the OM code. The proposed alternative substitutes an approved Code Case for the existing TS requirements that the NRC has determined are not legally acceptable as a TS allowance. This proposed alternative provides an equivalent level of safety as the existing TS allowance, while maintaining consistency with 10 CFR 50.55a and the ASME OM Code.

##### Proposed Alternative and Basis for Use

The proposed alternative is OMN-20, "Inservice Test Frequency," which addresses testing periods for pumps and valves specified in ASME OM Division 1, Section IST 2009 Edition through OMa-2011 Addenda, and all earlier editions and addenda of ASME OM Code.

This request is being made in accordance with 10 CFR 50.55a(z)(2), in that the existing requirements are considered a hardship without a compensating increase in quality and safety for the following reasons:

- 1) For IST testing periods up to and including two years, Code Case OMN-20 provides an allowance to extend the IST testing periods by up to 25%. The 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. The test period extension and the statements regarding the appropriate use of the period extension are equivalent to the existing TS SR 3.0.2 allowance and the statements regarding its use in the SR 3.0.2 Bases. Use of the SR 3.0.2 period extension has been a practice in the nuclear industry for many decades and elimination of this allowance would place a hardship on SQN when there is no evidence that the period extensions affect component reliability.
- 2) For IST testing periods of greater than two years, OMN-20 allows an extension of up to six months. The ASME OM Committee determined that such an extension is appropriate. The six-month extension will have a minimal impact on component reliability considering that the most probable result of performing any inservice test is satisfactory verification of the test acceptance criteria. As such, pumps and valves will continue to be adequately assessed for operational readiness when tested in accordance with the requirements specified in 10 CFR 50.55a(f) with the frequency extensions allowed by Code Case OMN-20.
- 3) As stated in EGM 2012-001, if an Inservice Test is not performed within its frequency, SR 3.0.3 will not be applied. The effect of a missed Inservice Test on the Operability of TS equipment will be assessed under the licensee's Operability Determination Program.

The proposed alternative is requested for the current 10-year IST interval or until Code Case OMN-20 is incorporated into a future revision of Regulatory Guide 1.192 or referenced by a future revision of 10 CFR 50.55a, whichever occurs first.

### 3.1.2 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 (see Section 3.1.3 of NUREG-1482, Revision 2, "Guidelines for Inservice Testing at Nuclear Power Plants: Inservice Testing of Pumps and Valves and Inservice Examination and Testing of Dynamic Restraints (Snubbers) at Nuclear Power Plants," published October 2013 (ADAMS Accession No. ML13295A020). Recently, the NRC staff reconsidered the allowance of using TS testing intervals and interval extensions for IST not associated with TS surveillance

requirements (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," dated August 23, 2012 (ADAMS Accession No. ML12079A393), the NRC determined that programmatic test frequencies cannot be extended in accordance with 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 Code Case OMN-20 was approved by the ASME Operation and Maintenance Standards Committee on February 15, 2012, with the NRC representative voting in the affirmative. Code Case OMN-20 was subsequently published in conjunction with the ASME OM Code, 2012 Edition. The licensee proposes to adopt Code Case OMN-20.

Requiring the licensee to meet the ASME OM Code requirements and applicable adopted ASME OM Code Cases, 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 staff concludes that implementation of the test interval definitions and interval extension criteria contained in ASME OM Code Case OMN-20 is acceptable. Allowing usage of 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 has determined that the proposed alternative 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(z)(2).

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

Therefore, the NRC staff authorizes the proposed alternative request for the remainder of the fourth 10-year IST interval at SQN, Units 1 and 2, which is currently scheduled to end June 30, 2026.

Principal Contributor: M. Farnan

Date: March 2, 2017

J. Shea

- 3 -

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DATED MARCH 2, 2017

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**ADAMS Accession No.: ML17059B791**

\*by e-mail dated February 28, 2017

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