



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

January 12, 2022

Mr. James Barstow  
Vice President, Nuclear Regulatory  
Affairs and Support Services  
Tennessee Valley Authority  
1101 Market Street, LP 4A-C  
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3 – REQUEST TO USE  
LATER EDITION OF THE AMERICAN SOCIETY OF MECHANICAL  
ENGINEERS CODE FOR OPERATION AND MAINTENANCE OF NUCLEAR  
POWER PLANTS (EPID L-2022-LLR-0000)

Dear Mr. Barstow:

By letter dated January 6, 2022, the Tennessee Valley Authority (TVA) submitted a request to the U.S. Nuclear Regulatory Commission (NRC) for use of a specific provision in a later edition of the American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants, Division 1, OM Code: Section IST (OM Code) than the current ASME OM Code of record for the remainder of the Fourth Inservice Testing (IST) Program 10-year interval at the Browns Ferry Nuclear Plant (Browns Ferry), Units 1, 2, and 3.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(f)(4)(iv), TVA requested to use the definition of “refueling outage” in the 2017 Edition of the ASME OM Code, subject to the conditions specified in 10 CFR 50.55a(b), to supplement the use of the 2004 Edition through 2006 Addenda of the ASME OM Code at Browns Ferry, Units 1, 2, and 3.

The NRC staff has reviewed the subject request and concludes, as set forth in the enclosed safety evaluation, that TVA has adequately addressed all of the regulatory requirements specified in 10 CFR 50.55a(f)(4)(iv). The NRC staff further determined that the licensee’s request does not take exception to the requirements of the 2017 Edition of the ASME OM Code or the current Code of record, as part of this request. Therefore, the NRC staff approves the use of the definition of “refueling outage” in the 2017 Edition of the ASME OM Code, Subsection ISTA, section ISTA-2000, to supplement the requirements of the 2004 Edition through the 2006 Addenda of the ASME OM Code, as incorporated by reference in 10 CFR 50.55a, for the remainder of the Fourth IST Program 10-year interval at Browns Ferry, Units 1, 2, and 3.

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

J. Barstow

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If you have any questions, please contact the Project Manager Kimberly Green at (301) 415-1627 or by email at [Kimberly.Green@nrc.gov](mailto:Kimberly.Green@nrc.gov).

Sincerely,

David J. Wrona, Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-259, 50-260, and 50-296

Enclosure:  
Safety Evaluation

cc: ListServ



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
USE OF LATER EDITION OF AMERICAN SOCIETY OF MECHANICAL ENGINEERS  
CODE FOR OPERATION AND MAINTENANCE OF NUCLEAR POWER PLANTS  
TENNESSEE VALLEY AUTHORITY  
BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3  
DOCKET NOS. 50-259, 50-260, AND 50-296

1.0 INTRODUCTION

By letter dated January 6, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22006A343), the Tennessee Valley Authority (TVA, the licensee) submitted a request to the U.S. Nuclear Regulatory Commission (NRC) for use of a specific provision in a later edition of the American Society of Mechanical Engineers (ASME) Operation and Maintenance of Nuclear Power Plants, Division 1, OM Code: Section IST (OM Code) than the current ASME OM Code of record for the remainder of the Fourth Inservice Testing (IST) Program 10-year interval at the Browns Ferry Nuclear Plant (Browns Ferry), Units 1, 2, and 3.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(f)(4)(iv), the licensee requested to use the definition of “refueling outage” in the 2017 Edition of the ASME OM Code, subject to the conditions specified in 10 CFR 50.55a(b), to supplement the use of the 2004 Edition through 2006 Addenda of the ASME OM Code at Browns Ferry Units 1, 2, and 3.

2.0 REGULATORY EVALUATION

The NRC regulations in 10 CFR 50.55a(f)(4) state, in part, 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 NRC regulations in 10 CFR 50.55a(f)(4)(ii) state, in part, that inservice tests to verify operational readiness of pumps and valves, whose function is required for safety, conducted during successive 120-month intervals must comply with the requirements of the latest edition and addenda of the ASME OM Code incorporated by reference in 10 CFR 50.55a(a)(1)(iv) 18 months before the start of the 120-month interval (or the optional ASME Code Cases listed in NRC Regulatory Guide (RG) 1.147, Revision 1, “Bypassed and Inoperable Status Indication for

Nuclear Power Plant Safety Systems” (ADAMS Accession No. ML092330064) or RG 1.192, Revision 3, “Operation and Maintenance Code Case Acceptability, ASME OM Code” (ADAMS Accession No. ML19128A261) as incorporated by reference in 10 CFR 50.55a(a)(3)(ii) and (iii), respectively), subject to the conditions listed in 10 CFR 50.55a(b).

The NRC regulations in 10 CFR 50.55a(f)(4)(iv) state that inservice tests of pumps and valves may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in 10 CFR 50.55a(a)(1)(iv), subject to the conditions listed in 10 CFR 50.55a(b), and subject to NRC approval. This regulation also states that portions of editions or addenda may be used, provided that all related requirements of the respective editions or addenda are met.

The NRC staff provides guidance for the use of later Code editions in NRC Regulatory Issue Summary (RIS) 2004-12, “Clarification on Use of Later Editions and Addenda to the ASME OM Code and Section XI” (ADAMS Accession No. ML042090436). In RIS 2004-12, the staff describes the information to be submitted to support a request that inservice testing of pumps and valves meet the requirements set forth in subsequent editions and addenda of the ASME OM Code that are incorporated by reference in 10 CFR 50.55a(a), subject to NRC approval.

The 2017 Edition of the ASME OM Code has been incorporated by reference in 10 CFR 50.55a, as indicated in the *Federal Register* (85 FR 26540) dated May 4, 2020.

### 3.0 TECHNICAL EVALUATION

#### 3.1 Licensee’s Proposed Use of Later Code Edition

Pursuant to 10 CFR 50.55a(f)(4)(iv), TVA requested approval to use the definition of “refueling outage” in ASME OM Code, 2017 Edition, Subsection ISTA, “General Requirements,” section ISTA-2000, “Definitions,” to clarify that the requirements of ASME OM Code, 2004 Edition through 2006 Addenda, Subsection ISTC, “Inservice Testing of Valves in Light-Water Reactor Nuclear Power Plants,” paragraph ISTC-3521, “Category A and Category B Valves,” subparagraphs (e) and (h), as well as paragraph ISTC-3522, “Category C Check Valves,” subparagraphs (c) and (f), are only applicable to the normally scheduled once-per-cycle outage period.

TVA requested approval to use the definition of “refueling outage” in Subsection ISTA, section ISTA-2000, in the 2017 Edition of the ASME OM Code for the remainder of the Fourth IST Program 10-year interval for Browns Ferry, Units 1, 2, and 3, which is currently scheduled to end on August 30, 2022.

#### 3.2 NRC Staff Evaluation

The current ASME OM Code of record for the IST Program at Browns Ferry, Units 1, 2, and 3, is the 2004 Edition through the 2006 Addenda of the ASME OM Code, as incorporated by reference in 10 CFR 50.55a. Paragraph ISTC-3521 in subparagraphs (e) and (h) and paragraph ISTC-3522 in subparagraphs (c) and (f) in the 2004 Edition through the 2006 Addenda of the ASME OM Code refer to “refueling outage” or “refueling outages” when specifying the various requirements for exercising valves that are not practicable to exercise during plant operation. The 2004 Edition through the 2006 Addenda of the ASME OM Code does not include a definition of “refueling outage” in Subsection ISTA, section ISTA-2000, “Definitions.” Therefore, the licensee is requesting to apply the definition of “refueling outage”

provided in the 2017 Edition of the ASME OM Code to supplement its current OM Code of record (2004 Edition through 2006 Addenda of the ASME OM Code). The licensee is not requesting to apply any other provision of the 2017 Edition of the ASME OM Code as part of the IST Program at Browns Ferry, Units, 1, 2, and 3.

The 2017 Edition of the ASME OM Code, Subsection ISTA, section ISTA-2000, states that “refueling outage” applies to the normally scheduled once-per-cycle outage period in which the refueling mode, as defined by plant technical specifications, is entered. The NRC staff considers this definition of the term “refueling outage” to be consistent with the use of this term in IST programs established at nuclear power plants based on the editions and addenda of the ASME OM Code incorporated by reference in 10 CFR 50.55a.

The NRC staff has determined that there are no conditions in 10 CFR 50.55a(b) related to the definition of “refueling outage” that need to be addressed for the use of this term as part of the Browns Ferry, Units 1, 2, and 3, IST Program. The staff has also verified that the use of the definition of the term “refueling outage” provided in the 2017 Edition of the ASME OM Code to supplement paragraph ISTC-3521, subparagraphs (e) and (h), and paragraph ISTC-3522, subparagraphs (c) and (f), in the 2004 Edition through the 2006 Addenda of the ASME OM Code for the Browns Ferry, Units 1, 2, and 3, IST Program does not involve any related IST requirements.

Based on its review, the NRC staff has determined that the licensee’s request to use a portion of a later edition of the ASME OM Code as part of the IST Program at Browns Ferry, Units 1, 2, and 3, complies with the regulatory requirements in 10 CFR 50.55a(f)(4)(iv), and is consistent with the guidance in RIS 2004-12. Therefore, the staff has determined that the use of the definition of “refueling outage” provided in the 2017 Edition of the ASME OM Code to supplement the IST requirements in the 2004 Edition through the 2006 Addenda of the ASME OM Code, as incorporated by reference in 10 CFR 50.55a, is acceptable for the remainder of the Fourth IST Program 10-year interval at Browns Ferry, Units 1, 2, and 3.

#### 4.0 CONCLUSION

As set forth above, the NRC staff has determined that the licensee’s proposal to use the definition for “refueling outage” in the 2017 Edition of the ASME OM Code, Subsection ISTA, section ISTA-2000, is acceptable because the licensee has satisfied the regulatory requirements in 10 CFR 50.55a(f)(4)(iv). The NRC staff further determined that the licensee’s request does not take exception to the requirements of the 2017 Edition of the ASME OM Code or the current Code of record, as part of this request. Therefore, the NRC staff approves the use of the definition of “refueling outage” in the 2017 Edition of the ASME OM Code, Subsection ISTA, section ISTA-2000, to supplement the requirements of the 2004 Edition through the 2006 Addenda of the ASME OM Code, as incorporated by reference in 10 CFR 50.55a, for the remainder of the Fourth IST Program 10-year interval at Browns Ferry, Units 1, 2, and 3. All other ASME OM Code requirements, as incorporated by reference in 10 CFR 50.55a, for which relief or an alternative, or use of a later Code edition, was not specifically requested, and granted, authorized, or approved (as appropriate), in the subject request remain applicable.

Principal Contributor: T. Scarbrough, NRR  
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Date: January 12, 2022

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3 – REQUEST TO USE LATER EDITION OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS CODE FOR OPERATION AND MAINTENANCE OF NUCLEAR POWER PLANTS (EPID L-2022-LLR-0000) DATED JANUARY 12, 2022

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