



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

January 18, 2022

Mrs. Mandy Halter
Vice President, Regulatory
Assurance
Entergy Services, LLC
M-ECH-29
1340 Echelon Parkway
Jackson, MS 39213

SUBJECT: ARKANSAS NUCLEAR ONE, UNITS 1 AND 2; GRAND GULF NUCLEAR STATION, UNIT 1; RIVER BEND STATION, UNIT 1; AND WATERFORD STEAM ELECTRIC STATION, UNIT 3 – REQUEST TO USE A PROVISION OF A LATER EDITION OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS BOILER AND PRESSURE VESSEL CODE, SECTION XI (EPID L-2021-LLR-0042)

Dear Mrs. Halter:

By letter dated June 7, 2021, Entergy Operations, Inc. (the licensee) requested U.S. Nuclear Regulatory Commission (NRC) approval to use a specific provision of a later edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (ASME Code), Section XI, at Arkansas Nuclear One, Units 1 and 2; Grand Gulf Nuclear Station, Unit 1; River Bend Station, Unit 1; and Waterford Steam Electric Station, Unit 3.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(g)(4)(iv), "Applicable ISI [Inservice Inspection Code: Use of subsequent Code editions and addenda," and the guidance provided in NRC Regulatory Issue Summary (RIS) 2004-12, "Clarification on Use of Later Editions and Addenda to the ASME OM Code [Code for Operation and Maintenance of Nuclear Power Plants] and Section XI," the licensee requested NRC approval to use Subsubarticle IWA-5120 of the 2017 Edition of the ASME Code, Section XI for periodic system pressure test exemptions.

Based on information submitted by the licensee, the NRC staff determines that the licensee proposed to use Subsubarticle IWA-5120 of the 2017 Edition of the ASME Code, Section XI for the affected components acceptable, because the licensee has satisfied the provisions in 10 CFR 50.55a(g)(4)(iv). The NRC staff further determines that the licensee's request does not take exception to the requirements of the 2017 Edition of the ASME Code, Section XI or the current Code of record. Accordingly, the NRC staff concludes that the licensee has adequately addressed all the regulatory requirements set forth in 10 CFR 50.55a(g)(4)(iv). Therefore, the NRC staff approves the use of Subsubarticle IWA-5120 of the 2017 Edition of the ASME Code, Section XI for the remainder of the 10-year ISI interval at Arkansas Nuclear One, Units 1 and 2; Grand Gulf Nuclear Station, Unit 1; River Bend Station, Unit 1; and Waterford Steam Electric Station, Unit 3, as specified in the table in the letter dated June 7, 2021.

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

Enclosed is the NRC staff's safety evaluation.

If you have any questions, please contact the Project Manager, Siva P. Lingam, at 301-415-1564 or by e-mail to Siva.Lingam@nrc.gov.

Sincerely,

Jennifer L. Dixon-Herrity, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-313, 50-368, 50-416,
50-458, and 50-382

Enclosure:
Safety Evaluation

cc: Listserv



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELIEF REQUEST TO USE A PROVISION IN A LATER EDITION OF THE AMERICAN
SOCIETY OF MECHANICAL ENGINEERS BOILER AND PRESSURE VESSEL CODE

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNITS 1 AND 2

GRAND GULF NUCLEAR STATION, UNIT 1

RIVER BEND STATION, UNIT 1

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NOS. 50-313, 50-368, 50-416, 50-458, AND 50-382

1.0 INTRODUCTION

By letter dated June 7, 2021 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML21158A300), Entergy Operations, Inc. (Entergy, the licensee) requested U.S. Nuclear Regulatory Commission (NRC) approval to use a specific provision of a later edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code (ASME Code), Section XI, for Arkansas Nuclear One, Units 1 and 2; Grand Gulf Nuclear Station, Unit 1; River Bend Station, Unit 1; and Waterford Steam Electric Station, Unit 3.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(g)(4)(iv), "Applicable ISI [inservice inspection] Code: Use of subsequent Code editions and addenda," and the guidance provided in NRC Regulatory Issue Summary (RIS) 2004-12, "Clarification on Use of Later Editions and Addenda to the ASME OM Code [Code for Operation and Maintenance of Nuclear Power Plants] and Section XI," dated July 28, 2004 (ADAMS Accession No. ML042090436), the licensee requested NRC approval to use Subsubarticle IWA-5120, "Periodic System Pressure Test Exemptions," of the 2017 Edition of the ASME Code, Section XI for periodic system pressure test exemptions.

2.0 REGULATORY EVALUATION

Adherence to Section XI of the ASME Code is mandated by 10 CFR 50.55a(g)(4), "Inservice inspection standards requirement for operating plants," which addresses, in part, that ASME Code Class 1, 2, and 3 components must meet the requirements, except design and access provisions and preservice examination requirements, set forth in the ASME Code, Section XI.

Enclosure

The regulation in 10 CFR 50.55a(g)(4)(iv) states:

Inservice examination of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in paragraph (a) of this section [i.e., 10 CFR 50.55a(a), "Documents approved for incorporation by reference"], subject to the conditions listed in paragraph (b) of this section [i.e., 10 CFR 50.55a(b), "Use and conditions on the use of standards"], and subject to Commission approval. Portions of editions or addenda may be used, provided that all related requirements of the respective editions or addenda are met.

3.0 NRC TECHNICAL EVALUATION

3.1 Components Affected

The licensee indicated that the affected components are all ASME Code Class 1, 2, and 3 items that are subject to periodic system pressure tests in accordance with the ASME Code, Section XI.

3.2 Applicable Code Edition and Addenda

Plant	Interval	Edition	Start Date	End Date
Arkansas Nuclear One, Unit 1	Fifth	2007 Edition, through 2008 Addenda	May 31, 2017	May 30, 2027
Arkansas Nuclear One, Unit 2	Fifth	2007 Edition, through 2008 Addenda	March 26, 2020	March 25, 2030
Grand Gulf Nuclear Station, Unit 1	Fourth	2007 Edition, through 2008 Addenda	December 1, 2017	November 30, 2026
River Bend Station, Unit 1	Fourth	2007 Edition, through 2008 Addenda	December 1, 2017	November 30, 2027
Waterford Steam Electric Station, Unit 3	Fourth	2007 Edition, through 2008 Addenda	December 1, 2017	November 30, 2027

3.3 Proposed Subsequent Code Edition and Addenda (or Portion)

Pursuant to 10 CFR 50.55a(g)(4)(iv), the licensee requested permission to use Subsubarticle IWA-5120 from the 2017 Edition of the ASME Code, Section XI, in place of the requirements of Subsubarticle IWA-5110(c) in the 2007 Edition through 2008 Addenda of ASME Code, Section XI.

3.4 Related Requirements

Section 10 CFR 50.55a(g)(4)(iv) specifies the regulatory requirements. The licensee stated that 10 CFR 50.55a(b)(2), "Conditions on ASME BPV Code, Section XI," incorporates by reference to Section XI, Division 1, of the ASME Code 2017 Edition, published in the *Federal Register* on May 4, 2020 (85 FR 26540). There are no related requirements or applicable conditions associated with Subsubarticle IWA-5120.

3.5 Duration of Proposed Request

The licensee proposed that the duration of its request will continue for the remainder of each unit's current ISI interval as shown in the table above.

3.6 NRC Staff Evaluation

The 2017 Edition of the ASME Code, Section XI, Subsubarticle IWA-5120, specifies that the following systems and components are exempt from the periodic pressure test requirement:

- (a) Piping that penetrates a containment vessel when the piping and isolation valves perform a containment function and the balance of the piping system is outside the scope of this Division (i.e., Division 1, "Rules for Inspection and Testing of Components of Light-Water Cooled Plants").
- (b) Ventilation systems, except those designed to remove explosive gases from plant structures.
- (c) Sample lines that carry compressible fluids, other than steam.
- (d) Those portions of pneumatic components and systems statically pressurized and continuously monitored or alarmed for pressure loss (ASME Code, Section XI Endnote No. 17).
- (e) Those portions of pneumatic components and systems periodically tested for leakage, or that demonstrate the necessary leak tightness, by programs required by plant Technical Specifications (ASME Code, Section XI Endnote No. 18).

ASME Code, Section XI, Endnote No. 17 states, in part, that "...Statically pressurized components that are continuously monitored or alarmed for pressure loss may, for example, include the following: (a) the pneumatic portion of safety injection tanks and associated piping, (b) the pneumatic portion of volume control tanks, (c) control air systems, and (d) air-operated valve accumulator tanks and associated piping."

ASME Code, Section XI, Endnote No. 18 states that components tested for leakage by technical specification programs may, for example, include the following: (a) diesel generator air starting systems and (b) components tested under the 10 CFR Part 50, Appendix J Program.

The NRC staff evaluated the licensee's request using the criteria specified in 10 CFR 50.55a(g)(4)(iv), which states that inservice examination of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda of the ASME Code provided certain criteria are satisfied.

The first criterion is that the edition and addenda of the ASME Code, Section XI that will be used in the proposed request is incorporated by reference in 10 CFR 50.55a(b). Currently, the latest edition and addenda incorporated by reference in 10 CFR 50.55a(b)(2) is the 2017 edition, which the licensee proposed to use for the affected components. Therefore, the NRC finds that the licensee has satisfied the first criterion.

The second criterion is that the conditions listed in 10 CFR 50.55a(b) are satisfied for the specific use of the proposed subsequent edition and addenda of the ASME Code, Section XI. The NRC staff noted that 10 CFR 50.55a(b) sets no conditions on Subsubarticle IWA-5120 of the 2017 Edition of the ASME Code, Section XI, as documented in the *Federal Register* (85 FR 26540, dated May 4, 2020). Therefore, the NRC staff finds that the licensee has satisfied the second criterion.

The third criterion is that if portions of subsequent editions or addenda of the ASME Code, Section XI, are used, all related requirements of the respective editions or addenda must be met. The NRC staff noted that the licensee requested to use only Subsubarticle IWA-5120 of the 2017 Edition of the ASME Code, Section XI. The licensee did not request to use any other portions of the 2017 Edition. The NRC staff reviewed Article IWA-5000, "System Pressure Tests," including Subsubarticle IWA-5120 of the 2017 Edition of the ASME Code, Section XI to determine whether other relevant provisions in Article IWA-5000 of the 2017 Edition would affect the proposed use of Subsubarticle IWA-5120. The NRC staff determined that (1) when the pressure testing exemption provisions of Subsubarticle IWA-5120 were adopted in the 2017 Edition, no other related changes were introduced in the 2017 Edition that the licensee would need to implement as a result of this request; and (2) Subsubarticle IWA-5120 of the 2017 Edition of the ASME Code, Section XI, does not involve other requirements. Therefore, the NRC staff finds that the licensee has satisfied the third criterion.

The NRC staff finds that the licensee has satisfied all three criteria and, therefore, the licensee's request to use Subsubarticle IWA-5120 of the 2017 Edition of the ASME Code, Section XI satisfies 10 CFR 50.55a(g)(4)(iv).

The NRC staff noted that NRC RIS 2004-12 provides additional clarification on 10 CFR 50.55a(g)(4)(iv). The guidance provided in RIS 2004-12 states, in part, that "for inservice examination and system pressure tests, [10 CFR 50.55a(g)(4)(iv)] allows the use of subsequent editions and addenda, and portions thereof, incorporated by reference in [10 CFR 50.55a(b)], subject to the limitations and modifications listed in [10 CFR 50.55a(b)], and subject to Commission approval." Once the NRC approves a licensee to use the later edition of the ASME Code, Section XI, the guidance in RIS 2004-12 clarifies that paragraph 50.55a(g)(4)(iv) requires that inservice examinations of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in 10 CFR 50.55a(b), and subject to the conditions listed in 10 CFR 50.55a(b).

The guidance provided in NRC RIS 2004-12 explains that the fact that these ASME Code editions and addenda have been incorporated by reference into the regulations does not imply that Commission approval has already been given to use the later editions in licensees' ISI programs. The NRC staff noted that licensees must request prior approval to use later ASME Code editions and addenda via a letter to the NRC.

The guidance provided in NRC RIS 2004-12 states that “if portions of a later [ASME] Code edition and addenda are used, licensees must assure that all related requirements of the respective editions and addenda are met.” As stated above, the NRC staff determined that no other related changes were introduced when the provisions of Subsubarticle IWA-5120 are adopted in the 2017 Edition of the ASME Code, Section XI, that the licensee would need to implement. The NRC staff finds that the licensee has satisfied NRC RIS 2004-12 in this regard because the licensee proposed to use Subsubarticle IWA-5120 of the 2017 Edition of the ASME Code, Section XI, to which there are no other related changes in the 2017 Edition that the licensee needs to implement.

The NRC staff noted that the guidance in NRC RIS 2004-16, “Use of Later Editions and Addenda to ASME Code Section XI for Repair/Replacement Activities,” dated October 19, 2004 (ADAMS Accession No. ML042590067), provides additional clarification regarding 10 CFR 50.55a(g)(4)(iv). Per the guidance provided in NRC RIS 2004-16, the NRC staff determined that the licensee’s request also satisfies 10 CFR 50.55a(g)(4)(iv) for the instances when pressure testing is required to be performed as part of repair/replacement activities. That is, the licensee does not need to perform the pressure testing for the affected components under Subsubarticle IWA-5120 of the 2017 Edition of the ASME Code, Section XI.

The NRC staff determines that the licensee has appropriately identified the affected components, the Code of records for each unit, the appropriated regulation, and the duration of the request. The NRC staff finds that the licensee’s request satisfies 10 CFR 50.55a(g)(4)(iv) and therefore, acceptable.

4.0 CONCLUSION

As set forth above, the NRC staff determines that the licensee proposed to use Subsubarticle IWA-5120 of the 2017 Edition of the ASME Code, Section XI, for the affected components acceptable because the licensee has satisfied the provisions in 10 CFR 50.55a(g)(4)(iv). The NRC staff further determines that the licensee’s request does not take exception to the requirements of the 2017 Edition of the ASME Code, Section XI or the current Code of record. Accordingly, the NRC staff concludes that the licensee has adequately addressed all the regulatory requirements set forth in 10 CFR 50.55a(g)(4)(iv). Therefore, the NRC staff approves the use of Subsubarticle IWA-5120 of the 2017 Edition of the ASME Code, Section XI for the remainder of the 10-year ISI interval at Arkansas Nuclear One, Units 1 and 2; Grand Gulf Nuclear Station, Unit 1; River Bend Station, Unit 1; and Waterford Steam Electric Station, Unit 3, as specified in the Table in Section 3.2 of this safety evaluation.

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

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Date: January 18, 2022

SUBJECT: ARKANSAS NUCLEAR ONE, UNITS 1 AND 2; GRAND GULF NUCLEAR STATION, UNIT 1; RIVER BEND STATION, UNIT 1; AND WATERFORD STEAM ELECTRIC STATION, UNIT 3 – REQUEST TO USE A PROVISION OF A LATER EDITION OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS BOILER AND PRESSURE VESSEL CODE, SECTION XI (EPID L-2021-LLR-0042) DATED JANUARY 18, 2022

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