



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

June 11, 2019

ANO Site Vice President
Arkansas Nuclear One
Entergy Operations, Inc.
N-TSB-58
1448 S.R. 333
Russellville, AR 72802

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 2 – REQUEST FOR ALTERNATIVE
ANO2-ISI-021 TO PERMIT CONTINUED APPLICATION OF THE 2007 EDITION
THROUGH THE 2008 ADDENDA OF THE ASME CODE
(EPID L-2018-LLR-0122)

Dear Sir or Madam:

By letter dated September 6, 2018, as supplemented by letter dated February 27, 2019, Entergy Operations, Inc. (the licensee) submitted Request for Alternative ANO2-ISI-021, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) paragraph 50.55a(z)(1). In its submittal, the licensee proposed an alternative to the requirements of 10 CFR 50.55a(g)(4)(ii) pertaining to the 10-year update of the Arkansas Nuclear One, Unit 2 (ANO-2) inservice inspection (ISI) program.

Specifically, the licensee proposes to continue the use of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, 2007 Edition through the 2008 Addenda in lieu of updating to the ASME Code, Section XI, 2013 Edition, which is the latest edition/addenda approved for use in 10 CFR 50.55a(a)(1)(ii). The proposed alternative is applicable to ANO-2's fifth 10-year ISI interval, which will begin on March 26, 2020.

The NRC staff has determined, as set forth in the enclosed safety evaluation, that the licensee's proposed alternative provides an acceptable level of quality and safety. Accordingly, the NRC staff concludes that the licensee adequately addressed all the regulatory requirements and is in compliance with the ASME Code's requirements. Therefore, pursuant to 10 CFR 50.55a(z)(1), the NRC staff authorizes the use of Request for Alternative ANO2-ISI-021 for the use of the 2007 Edition through the 2008 Addenda of the ASME Code, Section XI, for ANO-2 for the fifth 10-year inservice inspection interval at ANO-2, which will begin on or about March 26, 2020.

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 Thomas Wengert at (301) 415-4037 or by e-mail at Thomas.Wengert@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Pascarelli". The signature is fluid and cursive, with a large initial "R" and a distinct "P".

Robert J. Pascarelli, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-368

Enclosure:
Safety Evaluation

cc: Listserv



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

REQUEST FOR ALTERNATIVE ANO2-ISI-021

USE OF ASME CODE, SECTION XI, 2007 EDITION THROUGH 2008 ADDENDA

ARKANSAS NUCLEAR ONE, UNIT 2

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-368

1.0 INTRODUCTION

By letter dated September 6, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18249A293) as supplemented by letter dated February 27, 2019 (ADAMS Accession No. ML19058A252), Entergy Operations, Inc. (Entergy, the licensee), submitted Request for Alternative ANO2-ISI-021, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) paragraph 50.55a(z)(1), "Acceptable level of quality and safety." In its submittal, the licensee proposed an alternative to the requirements of 10 CFR 50.55a(g)(4)(ii), "Applicable ISI Code: Initial 120-month interval," pertaining to the 10-year update of the Arkansas Nuclear One, Unit 2 (ANO-2) inservice inspection (ISI) program.

Specifically, the licensee proposes to continue the use of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (ASME Code), Section XI, 2007 Edition through the 2008 Addenda in lieu of updating to the ASME Code Section XI 2013 Edition, which is the latest edition/addenda approved for use in 10 CFR 50.55a(a)(1)(ii). The proposed alternative is applicable to the ANO-2 fifth 10-year ISI interval, which will begin on or about March 26, 2020.

2.0 REGULATORY EVALUATION

Pursuant to 10 CFR 50.55a(g)(4)(ii), inservice examination of components, conducted during 120-month intervals, must comply with the requirements of the latest edition and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(a) 12 months before the start of the 120-month inspection interval or the optional ASME Code cases listed in U.S. Nuclear Regulatory Commission (NRC) Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1."

Pursuant to 10 CFR 50.55a(z), alternatives to the requirements of paragraphs (b) through (h) may be used, when authorized by the NRC, if the licensee demonstrates that: (1) the proposed

alternatives would provide 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.

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 NRC to authorize the alternative requested by the licensee.

3.0 TECHNICAL EVALUATION

3.1 Licensee's Request for Alternative

3.1.1 Code Requirements

In accordance with 10 CFR 50.55a(g)(4)(ii), the licensee is required to update the ANO-2 120-month ISI program to the latest edition and addenda of the ASME Code, Section XI, as approved by the NRC in 10 CFR 50.55a(a), for the fifth ISI interval. In accordance with 10 CFR 50.55a(a)(1)(ii)(C)(53), the 2013 Edition of ASME Code, Section XI, is the latest version approved in 10 CFR 50.55a(a).

3.1.2 Duration of the Request

The licensee submitted this request for the fifth 10-year ISI interval, which is scheduled to commence on or about March 26, 2020, and is scheduled to end on March 25, 2030.

3.1.3 Licensee's Proposed Alternative

Entergy proposes to use, as an alternative, the requirements in the 2007 Edition through the 2008 Addenda of the ASME Code, Section XI, subject to the limitations and modifications contained in 10 CFR 50.55a(b)(2), except Subarticle IWA-2430, which the ANO-2 licensee will update to the 2013 Edition.

3.1.4 Basis for Proposed Alternative

In its letter dated February 27, 2019, the licensee stated:

ASME [Code] Section XI activities (e.g. ISI, repair/replacement, pressure testing, and NDE [Non-Destructive Examination] at Arkansas Nuclear One, Unit 1 (ANO-1), ANO-2, Grand Gulf Nuclear Station (GGNS), River Bend Station (RBS), and Waterford 3 (W3) [Waterford Steam Electric Station, Unit 3] are standardized and are intended to be corporately administered by Entergy.

The licensee also stated that, in accordance with the requirements of 10 CFR 50.55a(g)(4)(ii), the ANO-1 ISI program was updated to the 2007 Edition through the 2008 Addenda of ASME Code, Section XI on May 31, 2017, and that the GGNS, RBS, and Waterford 3 ISI programs were also updated to the 2007 Edition through the 2008 Addenda of ASME Code, Section XI, on November 30, 2017. To maintain standardization of the Entergy south plants, the ANO-2 repair/replacement, pressure testing, and NDE programs were updated to the 2007 Edition through the 2008 Addenda of ASME Code, Section XI, on December 1, 2017, in accordance with Request for Alternative EN-ISI-16-1 for the remainder of the fourth 10-year ISI interval as

approved by the NRC staff in a letter dated July 12, 2017 (ADAMS Accession No. ML17174B144).

The ANO-2 fifth 10-year ISI interval will begin on or about March 26, 2020. The regulations in 10 CFR 50.55a(g)(4)(ii) would require the licensee to update the ANO-2 ISI program to the 2013 Edition of ASME Code, Section XI; therefore, Entergy would be required to maintain two different ISI programs for its southern fleet and two different programs at the ANO site.

In its letter dated February 27, 2019, the licensee stated, in part:

Entergy believes that continued application of the ANO-2 ISI Program which is based on the 2007 Edition through the 2008 Addenda of ASME Section XI (consistent with the other Entergy south plants) will enhance the effective management and implementation of the ASME Section XI programs at ANO-2 and the other sites. . . . this request supports Entergy's ability to maximize efficiencies and optimizes the use of internal operating experience because five units will be utilizing common procedures, processes, training and knowledge.

The licensee also noted that, while there were changes to ASME Code, Section XI between the 2007 Edition through the 2008 Addenda and the 2013 Edition, both editions continue to ensure an acceptable level of quality and safety, and the changes were not made to address a deficiency in the ASME Code that adversely impacted safety.

The licensee also stated that its proposed alternative does not apply to Subarticle IWA-2430 (i.e., the ANO-2 fifth interval ISI program will be updated to include the provisions of IWA-2430 of the 2013 Edition of ASME Code, Section XI). The 2013 Edition of Subarticle IWA-2430 permits the Owner to reduce the ISI interval and period without restrictions (no longer limited to 1 year), provided that all examinations and tests required for the interval and period have been completed.

3.2 NRC Staff Evaluation

The licensee's proposed alternative would allow ANO-2 to continue to utilize the 2007 Edition through the 2008 Addenda of ASME Code Section XI for its fifth 10-year interval ISI program, rather than the 2013 Edition currently incorporated by reference in 10 CFR 50.55a(a)(1)(ii). The ANO-2 fifth 10-year ISI interval will begin on or about March 26, 2020.

The changes incorporated into the 2013 Edition of ASME Code, Section XI, were evaluated by the NRC staff when the 10 CFR 50.55a(a)(1)(ii) regulations were changed to incorporate, by reference, the 2013 Edition of ASME Code, Section XI. The staff did not find it necessary to mandate that plants following earlier editions and addenda of ASME Code, Section XI, implement any of the changes incorporated into the 2013 Edition of ASME Code Section XI. However, the staff has mandated the requirements in 10 CFR 50.55a(g)(6)(ii)(D), "Augmented ISI requirements: Reactor vessel head inspections"; 10 CFR 50.55a(g)(6)(ii)(E), "Augmented ISI requirements: Reactor coolant pressure boundary visual inspections"; and 10 CFR 50.55a(g)(6)(ii)(F), "Augmented ISI requirements: Examination requirements for Class 1 piping and nozzle dissimilar-metal butt welds." In its letter dated February 27, 2019, the licensee stated, in part, that the requirements in 10 CFR 50.55a(g)(6)(ii) will continue to be met at ANO-2. Therefore, the staff concludes that an ISI program following the requirements of the 2007 Edition through the 2008 Addenda of ASME Code, Section XI, subject to the limitations

and modifications of 10 CFR 50.55a(b) and the requirements of 10 CFR 50.55a(g)(6)(ii)(D), (E), and (F), will provide an acceptable level of quality and safety.

The NRC staff also concludes that the use of the ASME Code, Section XI, 2013 Edition, Subarticle IWA-2430 is acceptable, because it still requires all the examinations and tests for the shortened interval and period to be completed.

The proposed alternative will allow the use of a common Code of record for the Entergy south plants and the ANO plant site. The common Code of record will be the 2007 Edition through the 2008 Addenda of ASME Code, Section XI, for all five Entergy south plants. There are distinct advantages in implementing the same Code requirements at multiple sites for a licensee. This would allow the licensee to leverage the knowledge from all five units to ISI activities such as selection, planning, scheduling, performance, and assessments, and thereby, providing ANO-2 with a wealth of experience to draw on. The advantages also include the reduction of administrative burden of maintaining different sets of procedures and requirements and would result in a significant decrease in the likelihood of applying the wrong requirements.

Based on the above, the NRC staff determined that the licensee's proposed alternative will ensure implementation of the ISI programs at ANO-2 in a more efficient and effective manner. Therefore, the staff concludes that the licensee's proposed alternative will provide an acceptable level of quality and safety.

4.0 CONCLUSION

As set forth above, the NRC staff determines that the licensee's proposed alternative provides an acceptable level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all the regulatory requirements and is in compliance with the ASME Code's requirements. Therefore, pursuant to 10 CFR 50.55a(z)(1), the NRC staff authorizes the use of Alternative Request ANO2-ISI-021 for the use of the 2007 Edition through the 2008 Addenda of the ASME Code, Section XI at ANO-2 for the fifth 10-year ISI interval, which is scheduled to begin on March 26, 2020.

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.

Principal Contributor: Keith Hoffman

Date: June 11, 2019

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 2 – REQUEST FOR ALTERNATIVE ANO2-ISI-021 TO PERMIT CONTINUED APPLICATION OF THE 2007 EDITION THROUGH THE 2008 ADDENDA OF THE ASME CODE (EPID L-2018-LLR-0122) DATED JUNE 11, 2019

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