



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

December 28, 2017

Mr. James J. Hutto
Regulatory Affairs Director
Southern Nuclear Operating Company, Inc.
P.O. Box 1295 / Bin – 038
Birmingham, AL 35201-1295

**SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2 – INSERVICE
INSPECTION ALTERNATIVE FNP-ISI-ALT-05-01, VERSION 1, TO USE ASME
CODE CASE N-854 (CAC NOS. MG0107 AND MG0108;
EPID L-2017-LLR-0086)**

Dear Mr. Hutto:

By letter dated August 9, 2017, Southern Nuclear Operating Company (SNC, the licensee), submitted a proposed alternative to certain American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code, Section XI, "Rules for inservice inspection of nuclear power plant components," requirements at Joseph M. Farley Nuclear Plant (FNP), Units 1 and 2.

Specifically, the licensee requested to use ASME Code Case N-854, "Alternative Pressure Testing Requirements for Class 2 and 3 Components Connected to the Class 1 Boundary Section XI, Division 1," as an alternative to the inservice inspection (ISI) requirements of the ASME BPV Code, Section XI, 2007 Edition with the 2008 Addenda, during the fifth 10-year ISI interval that commenced on December 1, 2017, and ends on November 30, 2027.

The licensee submitted the alternative pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 50.55a(z)(1), for which the licensee requested to use the proposed alternative on the basis that it provides an acceptable level of quality and safety.

The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the subject request and has determined, as set forth in the enclosed safety evaluation, that the alternative provides an acceptable level of quality and safety. The NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(1). Therefore, the NRC staff authorizes the proposed alternative until the end of the fifth 10-year ISI interval for FNP, Units 1 and 2.

All other requirements of the ASME BPV Code, Section XI, for which relief has not been specifically requested and approved remain applicable, including a third party review by the Authorized Nuclear Inservice Inspector.

If you have any questions, please contact the Project Manager, Shawn Williams, at 301-415-1009 or by email at Shawn.Williams@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael T. Markley" followed by a stylized flourish.

Michael T. Markley, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-348 and 50-364

Enclosure:
Safety Evaluation

cc w/enclosure: Listserv



UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

PROPOSED ALTERNATIVE REQUEST FNP-ISI-ALT-05-01, VERSION 1.0

USE OF ASME CODE CASE N-854

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-348 AND 50-364

1.0 INTRODUCTION

By letter dated August 9, 2017 (Agencywide Documents Access and Management System, Accession No. ML17221A330), Southern Nuclear Operating Company, Inc. (SNC, the licensee), submitted a proposed alternative to certain American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code, Section XI, "Rules for inservice inspection of nuclear power plant components," requirements at Joseph M. Farley Nuclear Plant (FNP), Units 1 and 2.

Specifically, the licensee requested to use ASME Code Case N-854, "Alternative Pressure Testing Requirements for Class 2 and 3 Components Connected to the Class 1 Boundary Section XI, Division 1," as an alternative to the inservice inspection (ISI) requirements of the ASME BPV Code, Section XI, 2007 Edition with the 2008 Addenda, during the fifth 10-year ISI interval, that commenced on December 1, 2017, and ends on November 30, 2027.

The licensee submitted the alternative pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 50.55a(z)(1), for which the licensee requested to use the proposed alternative on the basis that it provides an acceptable level of quality and safety.

2.0 REGULATORY EVALUATION

Pursuant to 10 CFR 50.55a(g)(4), throughout the service life of a pressurized water-cooled nuclear power facility, components that are classified as ASME Code Class 1, 2, and 3 must meet the requirements, except the design and access provisions and preservice examination requirements, set forth in the ASME BPV Code, Section XI, to the extent practical, within the limitations of design, geometry, and materials of construction of the components. Further, these regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval, and subsequent intervals, comply with the requirements in the latest edition and addenda of Section XI of the ASME BPV Code, incorporated by reference in paragraph (b) of 10 CFR 50.55a, on the date 12 months prior to the start of the 120 month interval, subject to the limitations and modifications listed therein.

Enclosure

Alternatives to requirements under 10 CFR 50.55a(g) may be authorized by the U.S. Nuclear Regulatory Commission (NRC) pursuant to 10 CFR 50.55a(z)(1) or 10 CFR 50.55a(z)(2). In proposing alternatives or requests for relief, the licensee must demonstrate 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 proposed alternative requested by the licensee.

3.0 TECHNICAL EVALUATION

3.1 Applicable Code Edition and Addenda

The ASME BPV Code, Section XI, 2007 Edition with the 2008 Addenda, is the applicable Code edition and addenda.

3.2 ISI Interval

The request is applicable during the fifth 10-year ISI interval that commenced on December 1, 2017, and ends on November 30, 2027.

3.3 Applicable Code Components

The ASME Code Class 2 and 3 components connected directly to a Class 1 system that are pressurized as part of the Class 1 system leakage test.

3.4 Applicable Code Requirements

The ASME BPV Code, Section XI, IWA-5213(a), specifies the test condition holding time after pressurization to test conditions before the visual examinations commence for system pressure tests.

3.5 Licensee's Basis For Proposing an Alternative

The licensee states that the ASME Code test condition hold time requirements during system leakage tests are based on the component classifications of ASME BPV Code, Section XI, Class 1, 2, or 3 components and whether the system is normally inservice. The licensee states that these requirements do not recognize when ASME Code Class 2 or 3 piping and components are pressurized as part of the ASME Code Class 1 system leakage test. As the ASME Code Class 1 system pressure test takes several hours of increasing temperature and pressure to reach the required pressure corresponding to 100 percent rated reactor power, as required in IWB-5221 to perform the test, these sections of ASME Code Class 2 or 3 piping or components would receive the same level of test performance as the ASME Code Class 1 piping. The licensee states that this time period either exceeds or is more restrictive than the required 10 minute or 4 hour hold time for ASME Code Class 2 or 3 components in IWA-5213(a).

Further, the licensee states that these ASME Code Class 2 and 3 piping and components connected to the ASME Code Class 1 system are not currently addressed in the design configuration of IWA-5213(a) of the ASME BPV Code, Section XI, 2007 Edition through the 2008 Addenda. As such, the ASME Code Case N-854 was developed and approved by the ASME BPV Code Committee as an alternative, which allows the licensee to credit the performance of the ASME Code Class 1 pressure test to meet the requirements of IWA-5213(a) for the ASME Code Class 2 and 3 piping and components connected directly and normally pressurized during the ASME Code Class 1 system pressure test. As this ASME Code Case has not undergone full NRC review and approval for inclusion in NRC Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1," the licensee proposed to use ASME Code Case N-854 at FNP, Units 1 and 2, in accordance with 10 CFR 50.55a(z)(1).

3.6 NRC Staff Evaluation

The licensee is requesting to use ASME Code Case N-854 at FNP, Units 1 and 2, pursuant to 10 CFR 50.55a(z)(1), because it achieves an acceptable level of quality and safety. The NRC staff notes that while ASME Code Case N-854 has not been formally approved for inclusion into NRC Regulatory Guide 1.147 for general use by all licensees, NRC staff has participated in the ASME BPV Code meetings used to develop and approve ASME Code Case N-854. The NRC staff found no technical issues to limit or restrict the use of ASME Code Case N-854. The NRC staff representative on each ASME BPV Code committee has voted to approve its final acceptance. During the time it takes to formally approve ASME Code Case N-854 into NRC Regulatory Guide 1.147, a licensee can request to use ASME Code Case N-854 as an alternative the current requirements.

The ASME Code Class 2 and 3 pressure test hold times for components are based on the consideration that the system may not be fully pressurized at all times of test operation (e.g. system pumps may not be running). Therefore, in order to maintain an effective test, hold times were incorporated to ensure sufficient time at pressure when looking for any leakage. As stated by the licensee, the ASME Code Class 1 system leakage test does not include these hold times, due to the time required to reach operational temperature and pressure for the ASME Code Class 1 system. The ASME Code Class 2 and 3 piping and components that are the subject of this proposed alternative are directly connected to the ASME Code Class 1 system and are pressurized by the same test. As the NRC has approved these pressure test conditions for the more safety significant ASME Code Class 1 systems and components to verify structural integrity and leak tightness, the NRC staff finds the use of the same requirements on ASME Code Class 2 and 3 piping and components directly connected and pressurized during the same test to also provide reasonable assurance of structural integrity and leak tightness. Therefore, the NRC staff finds the use of ASME Code Case N-854 provides an acceptable level of quality and safety.

4.0 CONCLUSION

As set forth above, the NRC staff has determined that it has the regulatory authority to authorize the proposed alternative and that the use of ASME Code Case N-854 at FNP, Units 1 and 2, provides an acceptable level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(1), and is in compliance with the ASME Code requirements. Therefore, the NRC staff authorizes FNP-ISI-ALT-05-01, Version 1.0, at FNP, Units 1 and 2, until the end of the fifth 10-year ISI interval.

All other requirements of the ASME BPV Code, Section XI, for which relief has not been specifically requested and approved remain applicable, including a third party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: Jay Collins, NRR

Date: December 28, 2017

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EPID L-2017-LLR-0086) DATED DECEMBER 28, 2017

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