

February 2, 2023

Docket Nos.: 50-348  
50-364

NL-23-0080

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555-0001

Joseph M. Farley Nuclear Plant – Units 1 and 2  
Response to Request for Additional Information (RAI) Related to  
Proposed Inservice Inspection Alternative FNP-ISI-ALT-05-05, Version 1.0

Ladies and Gentlemen:

By letter dated September 30, 2022 (agencywide Documents Access and Management System (ADAMS) Accession No. ML22273A159), in accordance with 10 CFR 50.55a(z)(1), Southern Nuclear Operating Company (SNC) requested Nuclear Regulatory Commission (NRC) approval of proposed inservice inspection (ISI) alternative FNP-ISI-ALT-05-05, Version 1.0 for Joseph M. Farley Nuclear Plant (FNP) Units 1 and 2. This proposed alternative requested to increase the inspection interval for ASME Section XI, Table IWC-2500-1, exam Category C-B, item number C2.21 and C2.22, exams from 10 years to 20 years through the remainder of the 5<sup>th</sup> interval as well as the duration of the 6<sup>th</sup> ISI Interval.

By email dated January 3, 2023 (ML23003A809), the U.S. Nuclear Regulatory Commission (NRC) notified SNC that additional information is needed for the staff to perform their review.

The enclosure to this letter provides the SNC response to the NRC Request for Additional Information (RAI).

This letter contains no regulatory commitments. If you have any questions, please contact Amy Chamberlain at 205.992.6361.

Respectfully submitted,



Cheryl A. Gayheart  
Regulatory Affairs Director

CAG/was/cbg

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cc: Regional Administrator, Region II  
NRR Project Manager – Farley Nuclear Plant  
Senior Resident Inspector – Farley Nuclear Plant  
RTYPE: CFA04.054

**Joseph M. Farley Nuclear Plant Unit 1 and 2  
Response to Request for Additional Information (RAI) Related to  
Proposed Inservice Inspection Alternative FNP-ISI-ALT-05-05, Version 1.0**

**Enclosure**

**SNC Response to NRC Request for Additional Information**

**Enclosure to NL-23-0080**  
**SNC Response to NRC Request for Additional Information**

**REQUEST FOR ADDITIONAL INFORMATION (RAI)**

By letter dated September 30, 2022, Southern Nuclear Operating Company (SNC, the licensee) [submitted] an inservice inspection (ISI) alternative request for Joseph M. Farley Nuclear Plant (Farley), Units 1 and 2. SNC is requesting an ISI alternative to the examination requirements of American Society of Mechanical Engineers (ASME) Section XI, Table IWC-2500-1, Examination Category C-B, Item Nos. C2.21 and C2.22. The proposed alternative by SNC is to increase the inspection interval for these Item Nos. for the replacement steam generators (SGs) to 20 years (from the current ASME Code, Section XI 10-year requirement).

Specifically, pursuant to Title 10 of the *Code of Federal Regulations*, Part 50, Section 55a, Paragraph (z)(1) (10 CFR 50.55a(z)(1)), the licensee is proposing to increase the ISI interval for the subject SG welds of FNP Unit 1 and 2 from the current ASME Code, Section XI 10-year requirement to 20 years for the remainder of the fifth 10-year ISI interval and through the sixth 10-year ISI interval, which is currently scheduled to end on November 30, 2037. The licensee referred to the results of the probabilistic fracture mechanics (PFM) analyses in non-proprietary Electric Power Research Institute (EPRI) Technical Report 3002014590, "Technical Bases for Inspection Requirements for PWR Steam Generator Class 1 Feedwater and Main Steam Nozzle-to-Shell Welds and Nozzle Inside Radius Sections," 2019 (ADAMS Accession No. ML19347B107) as the primary basis for the deferral of the ISI examinations.

The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the ISI alternative request and determined that more information is needed to complete its review.

**Regulatory Analysis Basis**

The NRC has established requirements in 10 CFR Part 50 to protect the structural integrity of structures and components in nuclear power plants. Among these requirements are the ISI requirements of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a to ensure that adequate structural integrity of SG vessels (including their welds) is maintained through the service life of the vessels. Therefore, the regulatory basis for the following request for additional information (RAI) has to do with demonstrating that the proposed alternative ISI requirements would ensure adequate structural integrity of the SG welds of Farley, Units 1 and 2, and thereby would provide an acceptable level of quality and safety per 10 CFR 50.55a(z)(1) for the welds.

**RAI No. 1**

**Issue**

In Section 5.0 of the enclosure to the submittal, the licensee is proposing to increase the ISI interval for the subject SG welds of Farley, Units 1 and 2, from the current ASME Code, Section XI 10-year requirement to 20 years for the remainder of the fifth 10-year ISI interval and through the sixth 10-year ISI interval, which is currently scheduled to end on November 30, 2037. The licensee stated that "all exams will be scheduled to occur in the same period as the last examination, but with a two interval inspection periodicity." The licensee provided the inspection history of the affected components in Appendix B of the enclosure to the submittal. The NRC staff reads the stated "two interval inspection

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periodicity” as being a 20-year period, but for clarity would like the estimated dates for the next examinations of the affected components.

Request

Given the licensee’s proposed alternative in Section 5.0 of the enclosure to the submittal, the inspection history of the affected components in Appendix B of the enclosure to the submittal, and the NRC staff’s understanding of “two interval inspection periodicity” as being a 20-year period, provide estimated dates (expected to be before the end of the sixth 10-year ISI interval on November 30, 2037) for the next examinations of the affected components listed in Section 1.0 of the enclosure to the submittal.

**SNC Response:**

Table 1, shown on the next page, provides inspection scheduling details for components affected by this request for alternative. Note that the first 4 columns of Table 1 below are contained in Appendix B of the original submittal, SNC letter NL-22-0756 (ML22273A159). As stated in that letter, “The proposed alternative is to increase the inspection interval for these Item Nos. for the Unit 1 [and 2] replacement SGs to 20 years (from the current ASME Code, Section XI 10-year requirement) for the remainder of the fifth 10-year inspection interval and through the sixth 10-year inspection interval, which is currently scheduled to end on 11/30/2037. All exams will be scheduled to occur in the same period as the last examination, but with a two interval inspection periodicity.” As shown in Table 1, inspections that would otherwise be required to be performed in the remainder of the fifth 10-year inspection interval and through the sixth 10-year inspection interval are proposed to be extended to a 20 year interval from the last performance.

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Table 1

	<b>Date</b>	<b>Interval / Period</b>	<b>Components ID</b>	<b>Next Examination Interval / Period</b>	<b>Next Examination Window</b>
Item No. C2.21	1R20 Spring 2006	3 <sup>rd</sup> /3 <sup>rd</sup>	ALA2-3300-8R		
	1R27 Fall 2016	4 <sup>th</sup> /3 <sup>rd</sup>	ALA2-3300-8R		
			ALA2-3300-8R	6 <sup>th</sup> /3 <sup>rd</sup>	12/1/2034 – 11/30/2037
	2R20 Spring 2010	4 <sup>th</sup> /1 <sup>st</sup>	APR2-3100-8R		
	2R27 Fall 2020	5 <sup>th</sup> /1 <sup>st</sup>	APR2-3100-8R		
			APR2-3100-8R	7 <sup>th</sup> /1 <sup>st</sup> (Note 1)	12/1/2037 – 11/30/2040
Item C2.22	1R20 Spring 2006	3 <sup>rd</sup> /3 <sup>rd</sup>	ALA2-3300-IR8R		
	1R25 Fall 2013	4 <sup>th</sup> / 2 <sup>nd</sup>	ALA2-3300-IR8R		
			ALA2-3300-IR8R	6 <sup>th</sup> /2 <sup>nd</sup>	12/1/2030 – 11/30/2034
	2R20 Spring 2010	4 <sup>th</sup> /1 <sup>st</sup>	APR2-3100-IR8R	(Note 2)	
	2R25 Fall 2017	4 <sup>th</sup> /3 <sup>rd</sup>	APR2-3200-IR8R	(Note 2)	
			APR2-3100-IR8R	6 <sup>th</sup> /3 <sup>rd</sup>	12/1/2034 – 11/30/2037

Note 1: The proposed alternative would allow the examination for APR2-3100-8R, currently scheduled for the 6<sup>th</sup> interval, not to be performed during the 6<sup>th</sup> interval. The exam for this component was completed during the 5<sup>th</sup> interval. Therefore, this alternative would allow the future examination for APR2-3100-

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8R to be delayed until the 7<sup>th</sup> interval, during the same period as previously performed in the 5<sup>th</sup> interval.

Note 2: An additional examination of the ASME Section XI item C2.22 weld was performed in the 4<sup>th</sup> Interval due to the understanding at the time of the percentage requirements. SNC proposes to use the exam set date for component APR2-3200-IR8R since this exam was the most recent Unit 2 ASME Section XI item C2.22 examination performed, but the scheduled examination will be the original component selected for examination, APR2-3100-IR8R.