

From: Devlin-Gill, Stephanie
Sent: Wednesday, November 10, 2021 1:32 PM
To: Sparkman, Wesley A.
Cc: Joyce, Ryan M.
Subject: Draft RAIs for Farley LAR Sump Recirculation Valve Encapsulation Vessel Removal (EPID: L-2021-LLA-0136)
Attachments: Draft RAIs - EPID L-2021-LLA-0136 - v2.docx

Wes,

Attached are the NRC staff's draft RAIs for SNC's license amendment request for the Joseph M. Farley Nuclear Plant, Units 1 and 2 (Agency-wide Documents Access and Management System Accession No. ML21210A242), which proposes to modify the Updated Final Safety Analysis Report to allow the removal of the encapsulation vessels around the first Containment Spray and Residual Heat Removal/Low Head Safety Injection recirculation suction isolation valves.

The questions are being transmitted to you to determine 1) If the question clearly conveys the NRC informational needs, 2) Whether the regulatory basis for the question is clear, and 3) If the information has already been provided in existing docketed correspondence. Additionally, review of the draft question will allow you to determine whether you are able to support a 30 day response time. Please get back to me at as soon as possible with your determinations so I can finalize issuance of the RAIs.

Thank you.

stephanie

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REQUEST FOR ADDITIONAL INFORMATION
REGARDING ELIMINATION OF THE ENCAPSULATION VESSELS AROUND THE FIRST
CONTAINMENT SPRAY AND RESIDUAL HEAT REMOVAL/LOW HEAD SAFETY
INJECTION RECIRCULATION SUCTION ISOLATION VALVES
EPID: L-2021-LLA-0136
LICENSE AMENDMENT REQUEST
JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2
SOUTHERN NUCLEAR OPERATING COMPANY
DOCKET NOS. 50-348 AND 50-364

By letter dated July 29, 2021 (Agency-wide Documents Access and Management System Accession No. ML21210A242), Southern Nuclear Operating Company (the licensee) submitted a license amendment request for the Joseph M. Farley Nuclear Plant, Units 1 and 2 (FNP). The license amendment request proposes to modify the Updated Final Safety Analysis Report (UFSAR) to allow the removal of the encapsulation vessels around the first Containment Spray and Residual Heat Removal/Low Head Safety Injection recirculation suction isolation valves.

The U.S. Nuclear Regulatory Commission (NRC) staff has determined that the following requests for additional information (RAI) are needed.

RAI 01

In Section 3 “Technical Evaluation” of the proposed amendments, the licensee states that containment sump suction piping design pressure is 80 pound per square inch gauge (psig) and the design temperature is 300 degrees Fahrenheit (°F). The licensee also stated that “the normal operating conditions for the containment sump suction piping are significantly lower as they are isolated with borated water under stagnant conditions.” In its stress analysis to ensure the piping integrity, the licensee considers the containment sump suction piping as moderate-energy piping.

The NRC staff notes that the FNP UFSAR Revision 29, Section 3K.2.1, “Analysis Criteria (General),” states:

The effects of pipe whip were considered only for those piping systems whose operating pressure and temperature exceed 275 psig and 200°F, respectively [denoted as high-energy piping]. For piping systems whose pressure exceeds 275 psig, but whose temperature does not exceed 200°F, or whose temperature exceeds 200°F, but whose pressure does not exceed 275 psig [denoted as moderate-energy piping], the effects of a critical crack only were considered.

Please clarify (1) the normal operating conditions (operating pressure and operating temperature) for the containment sump suction piping, and (2) whether the definition of the moderate-energy piping used in the proposed amendments is consistent with FNP's current design and licensing basis.

RAI 02

As noted in RAI 01 above, the licensee's proposed amendments consider the containment sump suction piping as moderate-energy piping, and, therefore, only considers the effects of leakage cracks were considered. In its stress analysis to ensure the piping integrity, the licensee showed that the maximum stress range does not exceed 0.4 (1.2 Sh + SA) for ASME Code such that leakage cracks need not be postulated for those portions of the containment sump suction piping.

Please clarify whether the criteria used for postulating leakage cracks used in the proposed amendments is consistent with FNP's current design and licensing basis. If not, please specify the version of NRC Branch Technical Position (BTP) 3-4, "Postulated Rupture Locations in Fluid System Piping Inside and Outside Containment," that was used in the stress analysis in the proposed amendments.

RAI 03

In Section 3 "Technical Evaluation" of the proposed amendments, the licensee states:

The following criteria, inputs, and assumptions were used in the stress analysis:

- The Code of Record is ASME Boiler and Pressure Vessel Code, Section III, 1971 Edition, up to and including Addenda through 1971.
- The piping analysis model utilize the ASME Boiler and Pressure Vessel Code, Section III, 1974 which has been evaluated as acceptable with no adverse impacts to the Code of Record.

Please clarify whether the use of ASME Section III, 1974 Edition for performing piping analysis is the analysis of record for FNP.