

Regulatory Affairs

3535 Colonnade Parkway Birmingham, AL 35243

205 992 5000

October 25, 2024

Docket No.: 50-364

NL-24-0396 10 CFR 50.55a

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

#### Joseph M. Farley Nuclear Plant – Unit 2 Response to Request for Additional Information Related to Relief Request to Defer Charging Pump and Mini-Flow Isolation Valve Inservice Testing

Ladies and Gentlemen:

By letter dated October 18, 2024 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML24292A210), Southern Nuclear Operating Company (SNC) submitted Request for Alternative RR-PR-04 for Inservice Testing of the 2A, 2B, and 2C Charging Pumps and Mini-Flow Isolation Valves for the Joseph M. Farley Nuclear Plant (FNP) Unit 2. The Request for Alternative proposes to defer the quarterly inservice testing of the Unit 2 Charging Pumps and Charging Pump Mini-Flow Isolation Valves until the spring 2025 refueling outage when repairs to the 2B Reactor Coolant Pump (RCP) seal will be completed.

By email dated October 22, 2024, the U.S. Nuclear Regulatory Commission (NRC) notified SNC that additional information is needed for the staff to perform their review.

The enclosure with this letter provides the SNC response to the Request for Additional Information.

This letter contains no NRC commitments. If you have any questions, please contact Ryan Joyce at 205.992.6468.

Respectfully submitted,

mil Coleman

Jamie M. Coleman Director, Regulatory Affairs Southern Nuclear Operating Company

JMC/was/cgb

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- Enclosure: Response to NRC Request for Additional Information (RAI) Regarding the 50.55a Request for Alternative RR-PR-04 for Inservice Testing of the 2A, 2B, and 2C Charging Pumps and Mini-Flow Isolation Valves
- 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 2 Response to Request for Additional Information Related to Relief Request to Defer Charging Pump and Mini-Flow Isolation Valve ISTS

#### Enclosure

Response to NRC Request for Additional Information (RAI) Regarding the 50.55a Request for Alternative RR-PR-04 for Inservice Testing of the 2A, 2B, and 2C Charging Pumps and Mini-Flow Isolation Valves

# RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION (RAI) REGARDING THE 50.55a REQUEST FOR ALTERNATIVE RR-PR-04 FOR INSERVICE TESTING OF THE 2A, 2B, AND 2C CHARGING PUMPS AND MINI-FLOW ISOLATION VALVES

## 1.0 Background

Southern Nuclear Operating Company (SNC) submitted a 50.55a request for Farley Nuclear Plant (Reference 1). The proposed request would defer the quarterly inservice testing of the Unit 2 charging pumps and charging pump mini-flow isolation valves until the spring 2025 refueling outage when repairs to the 2B reactor coolant pump (RCP) seal will be completed. The NRC identified the need for additional information in Reference 2. This enclosure provides SNC's response to Reference 2.

## 2.0 Responses to Requests for Additional Information

## <u>RAI 1</u>

Table 8, "2B Charging Pump Biennial CPT - Vibration Data," in the licensee's submittal dated October 18, 2024, indicates an increase in the outboard horizontal, vertical, and axial vibration during the most recent Comprehensive Pump Test (CPT) on October 20, 2023, for the 2B Charging Pump at Farley, Unit 2, from previous vibration test data. Please provide SNC's evaluation of the vibration test data for the 2B Charging Pump and plans to address the pump performance during the next refueling outage.

## RAI 1 Response

An increase in the recorded values for the 2B charging pump outboard vibration values was seen during the most recent Comprehensive Pump Test (CPT) on October 20, 2023, compared to previous test data. There was adequate margin noted between the recorded values and the alert range for the vibration values. Figures A, B, and C show the recorded values compared to the reference value and alert range during the CPT. Table 7 in the licensee's submittal (Reference 1) show there were no significant changes or trends noted for the quarterly Group A test before or after the October 2023 CPT.

### Enclosure to NL-24-0396 Response to RAI Regarding Request for Alternative RR-PR-04





# Figure B



### Enclosure to NL-24-0396 Response to RAI Regarding Request for Alternative RR-PR-04





A formal vibration evaluation was not required to be performed following the October 2023 CPT. All vibration measurements were below the ASME OM Code alert and required action range, therefore ISTB-6200, Corrective Action, was not required to be entered. A spectrum and timewave form review was completed and internal notes were added to the vibration database to watch the 1X amplitudes during the next performance of the CPT. When reviewing the spectra for the horizontal, vertical, and axial vibration points, it was noted that along with the overall vibration increasing, the 1X amplitude also increased. The 1X amplitude frequency can be influenced by the point along the pump curve in which the CPT is performed. It was noted that the vertical vibration point had a higher percentage increase as compared to the horizontal point. However, even with a higher overall percentage increase on the vertical point, its historical trend is lower as compared to the horizontal. Therefore, its overall vibration value is aligned in amplitude with the other radial (horizontal) point indicating acceptable pump performance.

The vibration spectra for each point were compared with the historical spectra. It was noted that the horizontal and axial spectra were consistent through past CPT's. Comparing the vertical point's spectrum to the historical data shows some variation within the frequency distribution. It was also noted that the vibration increased simultaneously with the decrease of the pump's performance characteristics (flow and differential pressure). With this correlation, and vibration being sensitive to changes in pump parameters, the increase and change in frequency distribution of the vertical point is likely being caused by the changes in the pump parameters. During the October 2023 CPT the flow was set at the lower end of the acceptable range and a subsequent decrease in the recorded dP was noted (reference Table 6 in the Reference 1). All the pump parameters (flow, dP, and vibration) were within the IST acceptance criteria.

SNC will monitor the CPT results during the upcoming spring 2025 refueling outage to determine if further action is warranted. If the vibration points exceed the "alert" or "required action" range, SNC will determine the cause of the deviation and correct the condition in accordance with ASME OM Code ISTB-6200, Corrective Action.

## <u>RAI 2</u>

The Farley IST Program Plan (ML19070A247) indicates that the Charging Pump Mini-Flow Isolation Valves Q2E21V0259A (MOV8109A), Q2E21V0259B (MOV8109B), and Q2E21V0259C (MOV8109C) are 2-inch globe motor-operated valves (MOVs). Tables 13, 14, and 15 in the licensee's submittal dated October 18, 2024, provide historical data from stroke-time testing of these MOVs as required by the Farley, Unit 2, IST Program Code of Record, the 2004 Edition through 2006 Addenda of the ASME OM Code as incorporated by reference in 10 CFR 50.55a. The NRC regulations in 10 CFR 50.55a(b)(3)(ii) require licensees to establish a program to ensure that MOVs continue to be capable of performing their design basis safety functions in addition to the ASME OM Code IST requirements. Please describe the successful performance of these MOVs demonstrated during recent diagnostic testing, such as obtained by the Generic Letter 96-05 testing program, to comply with 10 CFR 50.55a(b)(3)(ii).

## RAI 2 Response

Q2E21V0259A (MOV8109A), Q2E21V0259B (MOV8109B), and Q2E21V0259C (MOV8109C) are 2-inch globe MOVs. These valves reside in the Farley Nuclear Plant's GL-96-05 testing program. The last diagnostic test for these valves was performed during Unit 2 refueling outage 2R25, conducted in the Fall of 2017. These valves are considered high margin/low risk and, as such, are on a 10-year testing frequency as per GL-96-05. The 2017 testing yielded 59.8% design margin for each of Q2E21MOV8109A and Q2E21MOV8109B, and 66% design margin on Q2E21MOV8109C. In accordance with GL-96-05, MOVs are considered high margin when margin is >/= 10%. Q2E21MOV8109B and Q2E21MOV8109C are currently scheduled to be tested again in the Farley spring of 2025 refueling outage. Q2E21MOV8109A will next be tested in the Farley fall of 2026 refueling outage.

## 3.0 <u>References</u>

- SNC 50.55a Request to the NRC, "Joseph M. Farley Nuclear Plant Unit 2 Request for Alternative RR-PR-04 for Inservice Testing of the 2A, 2B, and 2C Charging Pumps and Mini-Flow Isolation Valves", dated October 18, 2024 (ADAMS Accession No. ML24292A210)
- 2. Email from NRC to SNC "Draft RAIs Farley Unit 2 Relief Request from Charging Pump and Mini-Flow Iso Valve IST Requirements", dated October 22, 2024