

REQUEST FOR ADDITIONAL INFORMATION

RELIEF REQUEST RR # 7

ALTERNATIVE EXAMINATION OF REACTOR VESSEL WELDS

FLORIDA POWER & LIGHT COMPANY

ST. LUCIE NUCLEAR PLANT, UNIT 1

DOCKET NO. 50-335

1.0 INTRODUCTION

By letter dated January 18, 2024 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML24018A064), Florida Power & Light Company (the licensee) requested relief from the examination requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, Subsection IWB-2411, "Inspection Program", for St. Lucie Nuclear Plant (St. Lucie) Unit 1. The proposed alternative would extend the inspection of welds and nozzle inner radius under Examination Categories B-A and B-D of the ASME Code, Section XI from once each 10-year inservice inspection interval to once every twenty years.

Pursuant to Title 10, Code of Federal Regulations, Part 50, (10 CFR 50.55a(z)(1)), the licensee submitted for Nuclear Regulatory Commission (NRC) review and approval Relief Request RR#7 for St. Lucie, Unit 1, with its proposed alternative to the Code requirements.

The NRC staff requests the following additional information (RAI) to complete its review of the proposed alternative.

2.0 REGULATORY EVALUATION

Pursuant to 10 CFR 50.55a(g)(4), "Inservice inspection standards requirement for operating plants," ASME Code Class 1, 2, and 3 components (including supports) must meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year ISI interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(a)(1)(ii), 18 months prior to the start of the 120-month interval, subject to the conditions listed in 10 CFR 50.55a(b)(2).

Pursuant to 10 CFR 50.55a(z), "Alternatives to codes and standards requirements," alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (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.

3.0 REQUEST FOR ADDITIONAL INFORMATION

RAI-1

Issue

The cover letter specified that the last inspection of the B-A and B-D welds was performed in March 2018. Section 3 of Relief Request RR#7 states that, "The fourth 10-year inservice inspection (ISI) interval for St. Lucie Unit 1 is scheduled to end on February 10, 2028." Section 5 of Relief Request RR#7 states, "FPL proposes not to perform the ASME Code required volumetric examination of the St. Lucie Unit 1 reactor vessel full penetration pressure-retaining Examination Category B-A and B-D welds for the fifth inservice inspection, currently scheduled for 2025. FPL will perform the fifth ASME Code required volumetric examination of the St. Lucie Unit 1 reactor vessel full penetration pressure-retaining Examination Category B-A and B-D welds in the sixth inservice inspection interval in 2037." Section 6 of the relief request states that the relief request is applicable to the fifth and sixth ISI intervals.

The NRC staff is not clear on the following items.

- (1) If the end of the fourth 10-year ISI interval is scheduled for February 10, 2028, then the end of the fifth ISI interval would be in February 2038. However, as specified in the paragraph above, it is not clear from the following, "...Examination Category B-A and B-D welds for the fifth inservice inspection, currently scheduled for 2025," which inservice inspection interval the inspection in 2025 corresponds to. It seems that the cancelled inspection proposed for 2025 should be part of the fourth ISI interval; not the fifth ISI interval.
- (2) If the licensee proposes to perform the weld inspection in 2037, the inspection would be performed during the fifth ISI interval; not during the sixth ISI interval. This is because the sixth ISI interval would start in February 2038.
- (3) As stated in Section 6 of the Relief Request, it is not clear why the relief request is applicable to the sixth ISI interval if the proposed inspection occurs in 2037, which would be during the fifth ISI interval. In addition, it is not clearly understood why Relief Request RR#7 would be applicable to the fourth and fifth ISI intervals as opposed to the fifth and sixth ISI intervals.

Request

- a. Confirm the start dates and end dates of the third, fourth, fifth and sixth 10-year ISI intervals, and which ISI interval is associated with the cancelled inspection proposed for 2025.
- b. Confirm that the inspection in March 2018 was performed as part of the third ISI interval.
- c. Explain why a proposed inspection in 2037 is considered as part of the sixth ISI interval and not the fifth ISI interval.
- d. Explain why Relief Request RR #7 is applicable to the fifth and sixth ISI intervals, and not to the fourth and fifth ISI intervals.

RAI-2

Issue

Section 6 of the relief request states that, "This request is applicable to the St. Lucie Unit 1 inservice inspection program for the fifth and sixth 10-year inspection intervals."

The NRC staff notes that, if the relief request is applicable to the fifth and sixth ISI intervals, and the last weld inspection was completed in 2018 during the fourth interval, the requested duration of the proposed alternative would result in a period without inspections of approximately 30 years. It appears that the proposed inspection in 2037 would occur in the fifth ISI interval. As

such, it is part of the 20-year extension. The technical basis for approval of the extension of the weld examination is based on a span of 20 years.

Request

Explain how the technical basis provided, in combination with any other performance monitoring activities planned, justifies deferral of the weld examinations to 2037.

RAI-3

Issue

Table 1 of the relief request shows that under the parameter, the frequency and severity of design basis transients, the plant-specific basis is bounded by the 13 heatup/cooldown transients per year that is cited in the topical report WCAP-16168-NP, Revision 3, "Risk-Informed Extension of the Reactor Vessel In-Service Inspection Interval" (ML11306A084), for the CE pilot plant. However, the relief request does not specify how the plant-specific basis is bounded.

Request

Discuss how the heatup/cooldown transients per year at St. Lucie Unit 1 are bounded by the 13 heatup/cooldown transients per year value for CE plants that is cited in the topical report WCAP-16168-NP, Revision 3.

RAI-4

Issue

The licensee's proposed alternative is based on the methodology in NRC-approved topical report WCAP-16168-NP-A, Revision 3, "Risk-Informed Extension of the Reactor Vessel Inservice Inspection Interval" (ML11306A084). By letter dated July 26, 2011, the NRC staff approved the use of the topical report based on its safety evaluation (SE). Item (6) in Section 3.4 of the NRC staff's SE states that "Licensees seeking second or additional interval extensions shall provide the information and analyses requested in Section (e) of 10 CFR 50.61a." It is not clear whether the subject relief request is the first interval extension request for St. Lucie Unit 1 associated with WCAP-16168-NP-A, Revision 3. Accordingly, it is not clear whether Item (6) in Section 3.4 of the NRC staff's SE applies to St. Lucie Unit 1.

Request

- a. Confirm whether the subject relief request is the first interval extension request for St. Lucie Unit 1 associated with WCAP-16168-NP-A, Revision 3.
- b. Confirm whether Item (6) in Section 3.4 of the NRC staff's SE, approving WCAP-16168-NP-A, Revision 3 dated July 26, 2011, applies to St. Lucie Unit 1. If so, provide the results of analyses described in Section (e) of 10 CFR 50.61a.