

From: [Jordan, Natreon](#)
To: [Jordan, Natreon](#)
Subject: RE: RAIs for RR 20 - Alternate Examination of Canopy Seal Weld Control Element Drive Mechanism Number 27 Housing
Date: Tuesday, January 25, 2022 9:43:26 AM

From: Jordan, Natreon
Sent: Thursday, January 13, 2022 9:27 AM
To: Godes, Wyatt <Wyatt.Godes@fpl.com>
Cc: Falkiewicz, Timothy <Timothy.Falkiewicz@fpl.com>; Mack, Jarrett <Jarrett.Mack@fpl.com>
Subject: RAIs for RR 20 - Alternate Examination of Canopy Seal Weld Control Element Drive Mechanism Number 27 Housing

Mr Godes,

In response to the Relief Request submitted on January 9, 2022 (Agencywide Documents Access and Management System Accession No. ML22012A139), The U.S. Nuclear Regulatory Commission (NRC) staff is reviewing the application and has identified areas where additional information is needed to support its review. To complete its review, the NRC staff has prepared the requests for additional information (RAIs) in DRAFT form, as provided in the attachment. [Below]

Thanks,
-Nate

Natreon (Nate) Jordan

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Draft
Request for Additional Information
Relief Request Number 20
Alternate Examination of Canopy Seal Weld
Control Element Drive Mechanism Number 27 Housing
St Lucie Nuclear Plant, Unit 2
Florida Power and Light Company

Docket No. 50-389

By letter dated January 12, 2022, (Agencywide Documents and Access Management System (ADAMS) Accession No. ML22012A139), Florida Power and Light Company request relief from examination requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, at St Lucie Nuclear Plant, Unit 2.

In accordance with Title 10, Code of Federal Regulations, 10 CFR 50.55a, "Codes and standards," paragraph (z)(2), the licensee submitted for Nuclear Regulatory Commission (NRC) review and approval of Relief Request Number 20. The proposed relief request is related to the alternate repair of the canopy seal weld associated with the control element drive mechanism Number 27 housing.

NRC staff has determined that additional information is needed to complete the review, as indicated in the requests for additional information (RAIs) below.

RAI 1

The licensee analyzed the weld overlay and canopy seal based on the design pressure only. NRC staff is of the impression that the licensee did not include deadweight and seismic loads in its stress analysis. The NRC staff understands that the weld overlay is not a structural weld and its purpose is to prevent leakage. (1) Discuss why the deadweight and seismic loads were not included in the stress analysis. (2) Based on Figure 1-1 of the Westinghouse calculation CSTL2-CR020-TR-CF-000001-P, Revision 1, discuss whether there are other tensile forces that should be considered in the stress analysis of the weld overlay such as tensile forces that would pull apart the weld overlay from the housing during the control rod movements.

RAI 2

Figure 3 of the relief request and Figure 4-2 of the Westinghouse calculation CSTL2-CR020-TR-CF-000001-P, Revision 1 show the design of the weld overlay. Page 7 of the Westinghouse calculation CSTL2-CR020-TR-CF-000001-P, Revision 1 shows the primary stress of combined weld overlay and canopy seal weld. However, Section 6, page 10 of the Westinghouse calculation states that the wall thickness of the canopy seal weld is assumed to be completely cracked when performing the stress corrosion crack growth analysis. If the canopy seal weld is assumed to be completely cracked in Section 6, explain the technical basis of including the wall thickness of the canopy seal weld in the primary stress calculation on page 7 of the calculation.

RAI 3

Section 5, first paragraph, of the relief request states that the enhanced remote visual examination will be performed per IWA-2211-1 of the ASME Code, Section XI. Discuss the acceptance criteria that will be used to disposition any potential indications.

RAI 4

Last paragraph, page 10 of the Westinghouse calculation CSTL2-CR020-TR-CF-000001-P, Revision 1 states that a calculated factor of 0.499 is used. Discuss how 0.499 is derived.

RAI 5

Section 6 of the proposed alternative states:

As previously stated, the canopy seal weld overlay serves as a secondary leakage barrier and serves no structural function, as the full structural load is still carried by the threaded connection in accordance with the original CEDM housing design. There is no applicable ASME Code Section XI, Examination Category or Item Number associated with this configuration as canopy seal welds are not subject to Table IWB-2500-1 surface or volumetric examinations. The design life of the canopy seal weld overlay includes a postulated through wall flaw of the existing canopy seal weld and fatigue and corrosion crack growth analyses that support 60 years of service from the time of installation, well beyond the current license. Leak integrity is monitored during operation as discussed above and periodic boric acid walkdown of the reactor vessel head region during refueling outages will confirm leak integrity is maintained.

Therefore, the proposed alternative is for the remainder of the life of the plant.

Proposed alternatives for repairs performed in accordance with ASME Code Section XI are considered applicable for the current 10-year ISI interval of a plant unless expressly stated otherwise. Although it is understood that a repair is acceptable for the life of the design of the repair, the proposed alternative is granted for the current interval. The provisions of the relief request are applicable to the current interval only. The NRC staff requests that the licensee modify the application accordingly.