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Subject: Request for Additional Information Re: Relief Request Number RR 5-9 - RPV Closure Head, CRDM, and Instrumentation Penetration Modifications - L-2025-LLR-0074
Date: Friday, February 13, 2026 12:16:00 PM
Attachments: RAIs for Palisades RR 5-9.pdf

Mike,

By letter dated July 31, 2025 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML25212A024), as supplemented by letter dated January 16, 2025 (ML26019A041), Holtec Palisades, LLC requested alternative RR 5-9 to modify the reactor vessel closure head control rod drive mechanism and instrumentation penetrations with a half-nozzle modification using inside diameter temper bead welding under Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(1). The licensee requested the proposed alternative in accordance with 10 CFR 50.55(z)(1) based on its determination that the proposed alternative provides the acceptable level of quality and safety.

On February 6, 2026, the NRC staff sent the licensee DRAFT RAIs to ensure that the questions are understandable, the regulatory basis is clear, there is no proprietary information contained in the RAIs, and to determine if the information was previously docketed. The licensee determined that no clarification call was necessary to discuss the DRAFT RAIs. Based on a follow-up discussion with members of your staff, the NRC staff understands that the licensee intends to provide a response by February 27, 2026. The attached is the final version of the RAIs. These RAIs will be put in ADAMS as a publicly available document.

Thanks and please let me know if you have questions or need anything additional,
Marlayna

[Marlayna Vaaler Doell](#)

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REQUEST FOR ADDITIONAL INFORMATION

FOR ALTERNATIVE REQUEST RR 5-9

HOLTEC PALISADES

PALISADES NUCLEAR PLANT

DOCKET NUMBER 50-255

EPID: L-2025-LLR-0074

By letter dated July 31, 2025 (ML25212A024), as supplemented by letter dated January 16, 2026 (ML26019A041), Holtec Palisades (the licensee) requested alternative RR 5-9 to modify the reactor vessel closure head (RVCH) control rod drive mechanism (CRDM) and InCore instrumentation (ICI) penetrations with a half-nozzle modification using inside diameter temper bead (IDTB) welding under paragraph 50.55a(z)(1) of Title 10 of the *Code of Federal Regulations* (10 CFR). Pursuant to 10 CFR 50.55a(z)(1), the licensee must demonstrate that the proposed alternative provides an acceptable level of quality and safety. To complete its review, the U.S. Nuclear Regulatory Commission (NRC) staff requests the following additional information.

**RAI-1:**

Section 4.5 of the licensee's submittal states: "As part of the current modification, all remaining RVCH [vessel head penetrations] VHPs will be mitigated by the same rotary peening process. The residual plus operating surface stresses on peened CRDM and ICI nozzles repaired by the IDTB process have been evaluated and meet the requirements of EPRI Topical Report MRP-335, Rev. 3-A."

The NRC staff requests the licensee verify that, in accordance with Section 3 of MRP-335, Revision 3-A, an application-specific qualification report demonstrates that the rotary peening process meets the performance criteria in Section 4.3.8 of MRP-335, Revision 3-A for bounding conditions of the peened RVCH CRDM and ICI nozzles. Section 4.3.8 of MRP-335 includes the following sections:

- a) 4.3.8.1.1, Magnitude of Surface Stress through testing and analysis
- b) 4.3.8.1.2, Nominal Depth of Compressive Residual Stress through testing
- c) 4.3.8.2, Sustainability through analysis or testing
- d) 4.3.8.3, UT Inspectability through testing
- e) 4.3.8.4, Lack of Adverse Effects through analysis or testing
- f) 4.3.8.5, NDE Qualification through evaluation

**RAI 2:**

In Section 4.5 of Attachment 1 of the licensee's submittal states: "The residual plus operating surface stresses on peened CRDM and ICI nozzles repaired by the IDTB process have been evaluated and meet the requirements of MRP-335, Rev. 3-A,..."

In Section 3.1 of Attachments 3 and 4 the licensee states: "Rotary peening will be performed to a sufficient distance above the upper most roll expansion and the upper most weld build up extent to remediate residual stresses."

However, the only quantitative description of peening extent is provided in Section 4.1.3 of Attachments 3 and 4, in which the licensee states: "The modified Nozzle 4 [and 8] configuration extends the peening coverage at least 2-inches above the weld". This does not clearly define whether this reference is to the pressure boundary weld or to the termination of the Alloy 52M weld buildup on the Alloy 600 nozzle inner diameter.

To verify the statements in Section 4.5 of Attachment 1 and Section 3.1 of Attachments 3 and 4, and to support a finding under 10 CFR 50.55a(z)(1), the NRC staff requests clarification of the stated peening coverage of at least 2-inches above the weld in Section 4.1.3 of Attachments 3 and 4.

- a) Is the weld, discussed in Section 4.1.3 of Attachments 3 and 4, the pressure boundary weld or the end of the weld buildup?
- b) If the weld is not the weld buildup, what is the axial peening coverage above the end of the weld buildup for penetration nozzles 4 and 8. Also, clarify that all resulting residual stresses plus operating stresses on the Alloy 600 nozzle associated with the additional weld buildup have been mitigated by rotary peening in accordance with MRP-335, Revision 3-A qualification.

**RAI 3:**

In Palisades Relief Request 5-9, the licensee relies on life assessment evaluations to demonstrate the acceptability of the proposed IDTB repairs and rotary peening mitigation for the remainder of the licensed operating life. Reference 4, Framatome Evaluation 51-9384372, Revision 000, "Life Assessment Summary for Palisades CRDM, ICI, and Vent RVCH Nozzle Mitigation" (Proprietary), is cited in support of the flaw stability, fatigue, corrosion, and primary water stress corrosion cracking (PWSCC) evaluations.

Attachment 3 (CRDM Nozzle 4) and Attachment 4 (CRDM Nozzle 8) describe changes to the original repair configurations, including weld buildup on the Alloy 600 nozzle inner diameter, extended peening coverage, repeated welding operations (Nozzle 8), and an increased postulated triple point anomaly size for Nozzle 8.

Because the NRC staff's finding under 10 CFR 50.55a(z)(1) relies on confirmation that the referenced life assessment supports the final repaired configurations, the NRC staff requests the following information.

- a) Provide Framatome Evaluation 51-9384372, Revision 001 (Reference 4), for NRC staff review.

- b) Confirm whether the life assessment documented in Reference 4 explicitly accounts for the final as-left conditions described in Attachment 3 and Attachment 4, including:
- Alloy 52M weld buildup on the Alloy 600 nozzle,
  - Repeated weld removal and rewelding operations (for Nozzle 8), and
  - The increased postulated triple point anomaly size for Nozzle 8.
- c) If the life assessment does not explicitly reflect these final as-left configurations, provide the technical basis demonstrating that the referenced evaluation remains bounding for CRDM Nozzles 4 and 8.