



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 20, 2025

Jean A. Fleming
Vice President, Licensing,
Regulatory Affairs, and PSA
Holtec International, LLC
Krishna P. Singh Technology Campus
1 Holtec Boulevard
Camden, NJ 08104

SUBJECT: PALISADES NUCLEAR PLANT – AUDIT PLAN IN SUPPORT OF
REVIEW OF LICENSE AMENDMENT REQUEST REGARDING STEAM
GENERATOR REPAIR BY SLEEVING (EPID L-2025-LLA-0036)

Dear Jean Fleming:

By letter dated February 11, 2025 (Agencywide Documents Access and Management System Accession No. ML25043A348), Holtec Palisades, LLC, submitted a license amendment request (LAR) for Palisades Nuclear Plant. Specifically, the LAR would revise the Technical Specifications¹ to allow the use of Framatome Alloy 690 sleeves to repair defective steam generator (SG) tubes as an alternative to removing the tubes from service by plugging.

The NRC staff will conduct a regulatory audit to support its review of the LAR in accordance with the enclosed audit plan. A regulatory audit is a planned activity that includes the examination and evaluation of primarily non-docketed information. The audit will be conducted to increase the NRC staff's understanding of the LARs identifying information that will require docketing to support the NRC staff's regulatory findings.

The audit will be conducted using video and teleconferencing and secure, online portal, as well as an onsite portion. The audit plan and supporting materials are enclosed.

¹ The approval of this LAR is contingent upon the prior approval of the LAR to restore the Technical Specifications to allow resumption of power operations, submitted by letter dated December 14, 2023 (ML23348A148), which is currently under NRC review.

J. Fleming

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If you have any questions, please contact me by telephone at 301-415-2048 or by e-mail to Justin.Poole@nrc.gov.

Sincerely,

/RA/

Justin Poole, Senior Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-255

Enclosure:
Audit Plan

cc: Listserv



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REGULATORY AUDIT PLAN

REGARDING LICENSE AMENDMENT REQUEST

REGARDING STEAM GENERATOR REPAIR BY SLEEVING

PALISADES NUCLEAR PLANT

HOLTEC PALISADES, LLC

DOCKET NO. 50-255

1.0 BACKGROUND

By letter dated February 11, 2025 (Agencywide Documents Access and Management System Accession No. ML25043A348), Holtec Palisades, LLC, submitted a license amendment request (LAR) for Palisades Nuclear Plant. Specifically, the LAR would revise the Technical Specifications² to allow the use of Framatome Alloy 690 sleeves to repair defective steam generator (SG) tubes as an alternative to removing the tubes from service by plugging.

2.0 REGULATORY AUDIT BASES

A regulatory audit is a planned license- or regulation-related activity that includes the examination and evaluation of information that provides the technical basis for the LAR. An audit is conducted to gain understanding, to verify information, and to identify information that will require docketing to support the basis of a licensing or regulatory decision. An audit will assist the NRC staff in efficiently conducting its review and gaining insights to the licensee's processes and procedures. Information that the NRC staff relies upon to make the safety determination must be submitted on the docket. This audit will be conducted in accordance with NRR OI LIC-111, "Regulatory Audits," (ML19226A274) for the NRC staff to examine the licensee's non-docketed information with the intent to gain a better understanding of the LARs, to verify information, and to identify information that may require docketing to support the basis of the NRC staff's licensing decision.

The NRC staff will perform the audit to support its evaluation of whether the licensee's request can be approved per 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit." The audit will assist the NRC staff with understanding the licensee's proposed amendment to allow sleeving of the steam generators as an approved repair technique.

² The approval of this LAR is contingent upon the prior approval of the LAR to restore the Technical Specifications to allow resumption of power operations, submitted by letter dated December 14, 2023 (ML23348A148), which is currently under NRC review.

3.0 SCOPE

To support the estimated completion date of September 30, 2025, NRC staff will need to perform a virtual audit of technical references used in the LAR and an onsite audit of the sleeving qualification testing being performed by the sleeving installation vendor, Framatome.

The virtual component will consist of technical reference review in an electronic portal provided by the vendor, Framatome. The onsite portion of the audit will be conducted in Lynchburg, VA, for the purpose of witnessing a demonstration of eddy current qualification testing and review the results from ongoing work. The virtual audit will start after the LAR acceptance review has been completed. The onsite audit entrance will be held at a time determined by the vendor, Framatome, once qualification testing has established the bounding eddy current testing parameters, likely in late April or early May of 2025. Following the submittal of the eddy current qualification testing report, the NRC staff will determine if an additional onsite trip to Lynchburg, VA is necessary.

4.0 INFORMATION AND OTHER MATERIAL NECESSARY FOR THE REGULATORY AUDIT

The NRC staff will request information and interviews throughout the audit period. The NRC staff will use an "audit items list" to identify the information (e.g., methodology, process information, and calculations) to be audited and the subjects of requested interviews and meetings.

The NRC staff requests the licensee to have the information referenced in the attachment of this audit plan available and accessible for the NRC staff's review via a web portal within one week of the date of this audit plan. The NRC staff requests the licensee to notify the review team when an audit item is added to its portal by sending an e-mail to the NRC licensing project manager.

The staff acknowledges and will observe appropriate handling and protection of proprietary information made available for the audit.

5.0 AUDIT TEAM

The following list identifies the NRC audit team members, and their respective focus areas:

- Justin Poole, Licensing Project Manager
- Marlayna Doell, Licensing Project Manager
- Paul Klein, Senior Materials Engineer
- Andy Johnson, Senior Materials Engineer
- Sasan Bakhtiari, Argonne National Laboratory

Additional audit team members may be added as needed.

6.0 SPECIAL REQUESTS

The following conditions associated with the online portal must be maintained throughout the duration so that the NRC staff and contractors on the audit team has access to the online portal:

- The online portal will be password-protected, and separate passwords will be assigned to the NRC staff and contractors who are on the audit team.
- The online portal will be sufficiently secure to prevent the NRC staff and contractors from printing, saving, or collecting any information from the web portal.
- Conditions of use of the online portal will be displayed on the login screen and will require acknowledgment by each user.

The licensee should provide username and password information directly to the NRC staff on the audit team, listed above. The NRC project manager will provide the licensee the names and contact information of any additional the NRC staff and contractors who are added to the audit team. All other communications should be coordinated with the NRC project manager. The NRC's licensing project manager will inform the licensee via routine communications when the NRC staff no longer needs access to the portal.

No information accessed by the audit team members will be retained by the NRC following the conclusion of the audit.

The NRC staff requests that Framatome provide subject matter expert(s), if necessary, to discuss the details of the audit material.

7.0 LOGISTICS AND DELIVERABLES

The audit team will hold audit calls and/or meetings with Holtec/Framatome as necessary to understand the audit material. The team will inform Holtec/Framatome of any emerging information needs. The NRC's licensing project manager will inform the licensee of audit meeting dates when they are established, including the date of an audit kick-off meeting.

The NRC staff will issue an audit summary report within 90 days of the audit exit interview.

ATTACHMENT: AUDIT REQUESTS

The NRC staff request that the following material and information be made available for audit:

1. [Framatome Document 08-9384357-001, "Hydraulically Expanded Sleeves for³/₄" Steam Generator Tubes at Palisades Nuclear Power Plant," January 2025.]
2. [Framatome Document 32-9387171-000, "Palisades SG Sleeve Primary Stress and Fatigue Evaluation," January 2025.]
3. [Framatome Document 43-10202P-00 (BAW-10202P, Revision 00), "Mechanical TSP Sleeve Qualification for 3/4" OD Tubes," December 1994.]
4. *W.B. Middlebrooks, D.L. Harrod and R.E. Gold, "Residual Stresses Associated with Hydraulic Expansion of Steam Generator Tubing into Tubesheets," Nuclear Engineering and Design 143, 1993.*
5. [Framatome Document 32-1233471-00, "3/4 Mechanical Sleeve Fatigue and Primary Stress Analysis," June 1994.]
6. [Framatome Document 32-1229541-00, "3/4 RSG Mechanical Sleeve Fatigue Test Load," September 1995.]
7. [Framatome Document 08-9175539-001, "Equipment Specification for Mechanical Tube Plugging of CE SG 3/4-inch OD Tube," March 2012.]
8. [Framatome Document 32-1232725-03, "3/4 Mechanical TS and TSP Sleeve Test Requirements," May 1995.]
9. [Framatome Document 32-9386119, "Mechanical Sleeve Flaw Sizing and Plugging Criteria for³/₄" Steam Generator Tubes at Palisades Nuclear Power Plant," January 2025.]
10. [Framatome Document 51-9321652-000, "Palisades Steam Generator Condition Monitoring for 1R27 and Final Operational Assessment for Cycle 28," January 2021.]
11. [Framatome Document 32-1229541-00, "3/4 RSG Mechanical Sleeve Fatigue Test Loads," September 1995.]
12. [Framatome Document 32-1232725-03, "3/4 Mechanical TS and TSP Sleeve Test Requirements," May 1995.]
13. [Framatome Document 51-1233793-00, "Qualification Test Plan for³/₄ RSG Mechanical Sleeve," February 1995.]
14. [Framatome Document 32-9386352-000, "3/4 Mechanical TSP Sleeve Leak Rate Analysis for Palisades," January 2025.]
15. [B&W Nuclear Technologies document 1241690-A, "Evaluation of Zetec Plus Point Probe for OTSG Sleeve Examination," June 1995.]
16. Documentation that discusses eddy current qualification work that will be completed, e.g., test plan, etc.

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|--------|------------------|------------------|---------------|
| OFFICE | NRR/DORL/LPL3/PM | NRR/DORL/LPL3/LA | NRR/DNRL/NCSG |
| NAME | JPoole | SRohrer | SBloom |
| DATE | 03/11/2025 | 03/11/2025 | 03/11/2025 |
| OFFICE | NRR/DORL/LPL3/BC | NRR/DORL/LPL3/PM | |
| NAME | IBerrios | JPoole | |
| DATE | 03/12/2025 | 03/20/2025 | |

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