



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

June 21, 2021

MEMORANDUM TO: Dennis C. Morey, Chief
Licensing Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

FROM: Ngola A. Otto, Project Manager */RA/*
Licensing Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

SUBJECT: JUNE 24, 2021, AUDIT PLAN FOR FRAMATOME, INC. TOPICAL
REPORT BAW-10227P, REVISION 2, "EVALUATION OF
ADVANCED CLADDING AND STRUCTURAL MATERIAL (M5) IN
PWR [PRESSURIZED WATER REACTOR] REACTOR FUEL"
(EPID L-2019-TOP-0054)

By letter dated December 31, 2019, Framatome, Inc. (Framatome) submitted for U.S. Nuclear Regulatory Commission (NRC) staff review Topical Report (TR) BAW-10227P, Revision 2, "Evaluation of Advanced Cladding and Structural Material (M5) in PWR [Pressurized Water Reactor] Reactor Fuel" (Agencywide Documents Access and Management System Accession No. ML20003E125). The NRC staff technical review of this TR is ongoing. In order to facilitate the review, the NRC staff will perform a virtual regulatory audit on June 24, 2021. The staff's audit plan is enclosed.

Project No. 728
Docket No. 99902041

Enclosure:
As stated

CONTACT: Joshua Whitman, Technical Reviewer (NRR/DSS/SFNB)
Paul Clifford (NRR/DSS)

AUDIT PLAN FOR FRAMATOME, INC. TOPICAL REPORT BAW-10227P, REVISION 2,
“EVALUATION OF ADVANCED CLADDING AND STRUCTURAL MATERIAL (M5) IN
PWR [PRESSURIZED WATER REACTOR] REACTOR FUEL

PROJECT NO. 728

(EPID L-2019-TOP-0054)

1.0 BACKGROUND

By letter dated December 31, 2019, Framatome, Inc. (Framatome) submitted for U.S. Nuclear Regulatory Commission (NRC) staff review Topical Report (TR) BAW-10227P, Revision 2, “Evaluation of Advanced Cladding and Structural Material (M5) in PWR [Pressurized Water Reactor] Reactor Fuel” (Agencywide Documents Access and Management System Accession No. ML20003E130). This TR provides an update of the material properties for M5 cladding and structural material, and expands the range of applicability of those properties.

The NRC staff has proposed to conduct a regulatory audit at this point in the review process in an effort to increase review efficiency. This audit will help the NRC staff to better understand the treatment of rod bow presented in BAW-10227P, Rev. 2, and draft request for additional information (RAI) responses, through interaction with Framatome’s technical experts.

The proposed audit will be held in accordance with NRR procedure as described in Office Instruction LIC-111, “Regulatory Audits” (ADAMS Accession No. ML19226A274).

2.0 REGULATORY AUDIT BASES

Regulatory guidance for the review of fuel system materials and designs and adherence to Title 10 of the *Code of Federal Regulations*, Appendix A to Part 50, General Design Criteria (GDC)-10, “Reactor Design,” GDC-27, “Combined Reactivity Control Systems Capability,” and GDC-35, “Emergency Core Cooling,” is provided in NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants” (SRP), Section 4.2, “Fuel System Design.” In accordance with SRP Section 4.2, the objectives of the fuel system safety review are to provide reasonable assurance that: (1) the fuel system is not damaged as a result of normal operation and anticipated operational occurrences (AOOs), (2) fuel system damage is never so severe as to prevent control rod insertion when it is required, (3) the number of fuel rod failures is not underestimated for postulated accidents, and (4) coolability is always maintained.

3.0 REGULATORY AUDIT SCOPE

The NRC staff would like Framatome to make available appropriate staff with detailed knowledge of the proposed treatment of rod bow in RAI question 3, asked during the review of BAW-10227P, Rev. 2.

4.0 INFORMATION NEEDS

A draft response to RAI question 3 has been shared with the NRC that describes a new rod bow correlation and provides justification for its use. Framatome is requested to be ready to share the data and calculations associated with the new correlation and have staff available to answer NRC questions.

Framatome should be prepared to allow the NRC staff to access (e.g., screenshare via Microsoft Teams, BOX) any relevant supporting documentation, calculations, and references, as appropriate, that may aid discussion.

5.0 TEAM ASSIGNMENTS

Joshua Whitman, Technical Reviewer (NRR/DSS/SFNB)

Paul Clifford, Technical Reviewer (NRR/DSS)

Ngola Otto, Project Manager (NRR/DORL/LLPB)

6.0 LOGISTICS

- Audit will be held virtually via Microsoft Teams
- Audit Date: Thursday June 24, 2021
- Time: 9:00am – 12:00pm EST

7.0 DELIVERABLES

An audit report summarizing the staff's audit findings will be prepared within 90 days of the completion of the audit.

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 BAW-10227P, REVISION 2, EVALUATION OF ADVANCED CLADDING AND
 STRUCTURAL MATERIAL (M5) IN PWR [PRESSURIZED WATER REACTOR]
 REACTOR FUEL (EPID L-2019-TOP-0054) DATED: JUNE 21, 2021

DISTRIBUTION:

NON-PUBLIC (Audit Plan)
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ADAMS Accession No.: ML21172A144

***concurred via e-mail**

NRR-106

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NAME	NOtto	DHarrison	RLukes	DMorey
DATE	6/21/2021	6/21/2021	6/21/2021	6/21/2021

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