



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

January 13, 2023

Ms. Gayle Elliott, Director  
Licensing and Regulatory Affairs  
Framatome, Inc.  
3315 Old Forest Road  
Lynchburg, VA 24501

SUBJECT: FINAL SAFETY EVALUATION FOR FRAMATOME TOPICAL REPORT  
BAW-10227P, REVISION 2, "EVALUATION OF ADVANCED CLADDING  
AND STRUCTURAL MATERIAL (M5) IN PWR REACTOR FUEL"  
(EPID L-2019-TOP-0054)

Dear Ms. Elliott:

By letter dated December 31, 2019 (Agencywide Documents Access and Management System Package Accession No. ML20003E125), which was subsequently supplemented by letters dated December 18, 2020 (ML20366A120), July 19, 2021 (ML21203A133), November 24, 2021 (ML21336A455, and August 31, 2022 (ML22249A174), Framatome, Inc. (Framatome) submitted Topical Report (TR) BAW 10227P, Revision (Rev.) 2, "Evaluation of Advanced Cladding and Structural Material (M5) in [Pressurized Water Reactor] PWR Reactor Fuel" to the U.S. Nuclear Regulatory Commission (NRC) for staff review and approval. By e-mail letter dated February 7, 2020 (ML20049H705), the NRC staff accepted the TR for review.

By letter dated November 9, 2022 (ML22290A232), an NRC draft safety evaluation (SE) regarding approval of BAW-10227P, Rev. 2, was provided to Framatome for review and comment. By letter dated November 30, 2022 (ML22340A445), Framatome provided comments on the draft SE. The NRC staff's disposition of the Framatome comments on the draft SE are discussed in the attachment of the final SE which is enclosed with this letter.

The NRC staff has found that TR BAW-10227P, Rev. 2, is acceptable for referencing in licensing applications for nuclear power plants to the extent specified and under the limitations delineated in the TR and in the enclosed final SE. The final SE defines the basis for NRC acceptance of the TR.

**NOTICE: The enclosure to this letter contains Proprietary Information. When this letter is separated from the enclosure, this letter is decontrolled.**

G. Peters

- 2 -

NRC acceptance applies only to material provided in the subject TR. The NRC does not intend to repeat its review of the acceptable material described in the TR. When the TR appears as a reference in licensing applications, the NRC review will ensure that the material presented applies to the specific plant involved. License amendment requests that deviate from this TR will be subject to a plant specific review in accordance with applicable NRC review standards.

In accordance with the guidance provided on the NRC website, we request that Framatome publish approved proprietary and non-proprietary versions of TR BAW-10227P, Rev. 2 within three months of receipt of this letter. The approved versions shall incorporate this letter and the enclosed final SE after the title page. For non-proprietary versions, Framatome shall strike the proprietary information markings in this letter and make the appropriate redactions and adjustments to document security classifications to the enclosed SE. Also, they must contain historical review information, including the NRC request for additional information (RAI) questions and Framatome's responses. The approved versions shall include a "-A" (designating approved) following the TR identification symbol.

As an alternative to including the RAI questions and RAI responses behind the title page, if changes to the TR were provided to the NRC staff to support the resolution of RAI responses, and the NRC staff reviewed and approved those changes as described in the RAI responses, there are two ways that the accepted version can capture the RAI questions:

1. The RAI questions and RAI responses can be included as an Appendix to the accepted version.
2. The RAI questions and RAI responses can be captured in the form of a table (inserted after the final SE) which summarizes the changes as shown in the approved version of the TR. The table should reference the specific RAI questions and RAI responses which resulted in any changes as shown in the accepted version of the TR.

G. Peters

- 3 -

If future changes to the NRC's regulatory requirements affect the acceptability of this TR, Framatome will be expected to revise the TR appropriately or justify its continued applicability for subsequent referencing. Licensees referencing this TR would be expected to justify its continued applicability or evaluate their plant using the revised TR.

Sincerely,

*/RA/*

Cindy Rosales-Cooper, Acting Chief  
Licensing Projects Branch  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 99902041  
Project No. 728

Enclosure:  
Final SE (Proprietary)

**OFFICIAL USE ONLY – PROPRIETARY INFORMATION**

G. Peters

- 4 -

SUBJECT: FINAL SAFETY EVALUATION FOR FRAMATOME TOPICAL REPORT  
BAW-10227P, REVISION 2, "EVALUATION OF ADVANCED CLADDING  
AND STRUCTURAL MATERIAL (M5) IN PWR REACTOR FUEL"  
(EPID L-2019-TOP-0054) DATED JANUARY 13, 2023

**DISTRIBUTION:**

PUBLIC (Letter)  
NON-PUBLIC (Final SE)  
RidsNrrOd Resource  
RidsNrrDss Resource  
RidsNrrLADHarrison Resource  
RidsNrrDorl Resource  
RidsNrrDorlLLpb Resource  
RidsOgcMailCenter Resource  
RidsACRS\_MailCTR Resource  
SKrepel, NRR  
JLehning, NRR  
JoshWhitman, NRR  
NOtto, NRR  
CRosales-Cooper, NSIR

**ADAMS Accession Nos.:**

**ML22353A092 (Package)**

**ML22353A089 (Letter)**

**ML22353A091 (Final SE)**

**\*concurrence via e-mail**

<b>OFFICE</b>	NRR/DORL/LLPB/PM*	NRR/DORL/LLPB/LA*	NRR/DSS/SNPB/BC*	OGC – NLO
<b>NAME</b>	NOtto	DHarrison	SKrepel	MCarpentier
<b>DATE</b>	12/19/2022	12/20/2022	01/03/2023	01/11/2023
<b>OFFICE</b>	NRR/DORL/LLPB/ Acting BC*			
<b>NAME</b>	CRosales-Cooper			
<b>DATE</b>	01/13/2023			

**OFFICIAL RECORD COPY**