



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

June 11, 2021

Mr. Gary Peters, Director  
Licensing and Regulatory Affairs  
Framatome Inc.  
3315 Old Forest Road  
Lynchburg, VA 24501

SUBJECT: JUNE 15, 2021, REGULATORY AUDIT PLAN FOR FRAMATOME INC.  
TOPICAL REPORT, ANP-10339P, REVISION 0, "ARITA - ARTEMIS/RELAP  
INTEGRATED TRANSIENT ANALYSIS METHODOLOGY"  
(EPID L-2018-TOP-0034)

Dear Mr. Peters:

By letter dated August 28, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18242A443), Framatome, Inc. (Framatome) submitted Topical Report (TR) ANP-10339P, Revision 0, "ARITA - ARTEMIS/RELAP Integrated Transient Analysis Methodology" (ADAMS Package No. ML18242A480), to the U.S. Nuclear Regulatory Commission (NRC) for review and approval. ANP-10339P, Revision 0 (ARITA) presents a coupled code system and evaluation models for the analysis of pressurized water reactor non-loss-of-coolant accident events identified in NUREG-0800, Chapter 15, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition - Transient and Accident Analysis."

The NRC staff technical review of this TR is ongoing. The NRC staff will perform a virtual regulatory audit on June 15, 2021. The NRC staff determined that this regulatory audit is needed in order to facilitate the review. Previous audits were held on December 7-11, 2020 (ADAMS Package Accession No. ML21026A007), March 3-4 and 25-26, 2021 (ADAMS Package Accession No. ML21055A702, and April 22, 2021 (ADAMS Package Accession No. ML21110A149). Enclosed for your information is a copy of the audit plan the NRC staff will follow.

Please contact Ngola Otto at 301-415-6695 or via e-mail at [Ngola.Otto@nrc.gov](mailto:Ngola.Otto@nrc.gov) with any questions you may have regarding this letter.

Sincerely,

**/RA/**

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

Docket No. 99902041

Enclosure: Audit Plan (Non-Proprietary)

# **REGULATORY AUDIT PLAN FOR FRAMATOME TOPICAL REPORT**

## **ANP-10339P, REVISION 0,**

### **“ARITA – ARTEMIS/RELAP INTEGRATED TRANSIENT ANALYSIS METHODOLOGY”**

#### **PROJECT NO. 728**

#### **EPID L-2018-TOP-0034**

## **1.0 BACKGROUND**

By letter dated August 28, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18242A443), Framatome, Inc. (Framatome) submitted Topical Report (TR) ANP-10339P, Revision 0, “ARITA - ARTEMIS/RELAP Integrated Transient Analysis Methodology” (ADAMS Package No. ML18242A480) to the U.S. Nuclear Regulatory Commission (NRC) for review and approval for licensing applications. ANP-10339P, Revision 0 (ARITA) presents a coupled code system and evaluation models for the analysis of pressurized water reactor (PWR) non-loss-of-coolant accident (non-LOCA) events identified in Chapter 15 of NUREG-0800 (Standard Review Plan). In December 2018, the U.S. Nuclear Regulatory Commission (NRC) staff completed an acceptance review of the TR and found additional information was necessary (ADAMS Accession No. ML18345A159) before a formal review effort could begin. The necessary supplemental information was submitted by Framatome in March 2019 (ADAMS Accession No. ML19078A253). The NRC staff’s review also relies upon information submitted by Framatome in March 2020, July 2020, and November 2020 (ADAMS Accession Nos. ML20097E381, ML20237F458, and ML20335A218, respectively) in response to request for additional information (RAI) questions from the NRC staff.

The NRC staff has identified that many of Framatome’s RAI responses do not fully address the staff’s concerns. Therefore, the NRC staff conducted regulatory audits in December 2020 (ADAMS Package Accession No. ML21026A007), March 2021 (ADAMS Package Accession No. ML21055A702), and April 22, 2021 (ADAMS Package Accession No. ML21110A149) in an effort to increase efficiency in the review, facilitate discussion, and close the open items. At the close of each of these audits, both NRC staff and Framatome concluded that additional regulatory audits of this nature would further enhance the efficiency of the review. The audit plan for a follow-up audit has been developed and is enclosed. The NRC staff will conduct this virtual audit under the guidance provided in LIC-500 (Topical Report Process) and LIC-111 (Regulatory Audits).

## **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

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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 will conduct a one-day audit online. This audit is expected to include discussion between the NRC staff and Framatome staff regarding areas of technical disagreement identified, and open items from the RAI responses. Details regarding the discussions and open items are provided below.

### **4.0 INFORMATION NEEDS**

The NRC staff requests that Framatome make available appropriate engineer(s) with knowledge of ARITA and any appropriate references, to address questions by the NRC staff.

Documents referenced in the TR should also be made available.

#### **Discussion Topics**

The NRC and Framatome will conduct several audit during the months of June and July to discuss the RAI questions which need resolution. This audit will focus on the following RAI questions:

1. RAI 5 (Transient cladding strain at partial power conditions)
2. RAI 8 (Simultaneous versus univariate figures of merit)
3. RAI 10 (Statistical statement being made by the ARITA methodology)
4. RAI 11 (Sampling of parameters)
5. RAI 57 (Conservative results for the ARITA statistical approach)
6. RAI 59 (Calculational procedure and sampling process)

### **5.0 TEAM ASSIGNMENTS**

Kevin Heller, Technical Reviewer (NRR/DSS/SFNB)  
John Lehning, Technical Reviewer (NRR/DSS/SFNB)  
Joshua Kaizer, Technical Reviewer (NRR/DSS/SFNB)  
Ngola Otto, Project Manager (NRR/DORL/LLPB)  
Ken Geelhood, Pacific Northwest National Laboratory (PNNL)  
Bruce Schmitt, PNNL  
Dave Engel, PNNL  
David Richmond, PNNL

## **6.0 LOGISTICS**

Audit Date: Tuesday June 15, 2021.

The audit is scheduled to begin at 9:00 a.m. Eastern Standard Time. Time will be allocated for specific topics during the day of the audit as presented below:

Audit Agenda	
Thursday	
AM	Major Discussion Topics
PM	Major Discussion Topics / Next Steps

Framatome should provide details for using an online platform which supports video call for the performing the audit (e.g., WebEx) or confirm that it is able to use the platform that can be provided by the NRC (i.e., Microsoft® Teams).

## **7.0 DELIVERABLES**

A regulatory audit summary will be provided within 90 days of the completion of the audit.

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**EXTERNAL DISTRIBUTION:**

Alan.Meginnis@framatome.com

**ADAMS Accession No.:**

**ML21159A143 (Audit Plan)**

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