

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) and March 2021 (ADAMS Package Accession No. ML21055A702) 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 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 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.

Major Discussion Topics

The following are topics on which there appear to be fundamental differences in technical opinion between NRC staff and Framatome staff. These topics are intended to be discussed during the audit:

1. Discussion of meeting Regulatory Requirements with regard to uncertainty sampling approach (RAI 11)
2. Additional discussion of sampling approach presented in RAI 59 and as clarified in the March 2021 audit

General Discussion Topics

The following are topics for which it was concluded in the December 2020 audit that additional documentation was needed.

1. Overview presentation and discussion of Framatome's response approach to remaining outstanding RAI questions (RAI 33, 35, 39-46, 48, 49, 61, 68-70, 74, 75, 77, 78, 81, 82, 88-91)

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: Thursday April 22, 2021.

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

Audit Agenda	
	Thursday
AM	Major Discussion Topics
PM	Major Discussion Topics / Overview Presentation of Outstanding RAI Questions

Framatome should provide details for using an online platform which supports video call for the performing the audit (e.g., WebEx) or confirm that they are 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.