



1101 Market Street, Chattanooga, Tennessee 37402

CNL-22-044

April 8, 2022

10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

Browns Ferry Nuclear Plant, Units 1, 2, and 3
Renewed Facility Operating License Nos. DPR-33, DPR-52, and DPR-68
NRC Docket Nos. 50-259, 50-260, and 50-296

Subject: **Supplement 1 to Request for License Amendment Regarding Application of Advanced Framatome Methodologies, and Adoption of TSTF-564 Revision 2 for Browns Ferry Nuclear Plant Units 1, 2, and 3, in Support of ATRIUM 11 Fuel Use at Browns Ferry (TS-535) (EPID L 2021-LLA-0132)**

- References:
1. TVA letter to NRC, CNL-21-053, "Request for License Amendment Regarding Application of Advanced Framatome Methodologies, and Adoption of TSTF-564 Revision 2 for Browns Ferry Nuclear Plant Units 1, 2, and 3, in Support of ATRIUM 11 Fuel Use at Browns Ferry (TS-535)," dated July 23, 2021 (ML21204A128 and ML21204A129)
 2. NRC letter to TVA, "Summary of March 17, 2022, Closed Meeting with Tennessee Valley Authority to Discuss Recently Identified Errors Potentially Affecting the Browns Ferry ATRIUM 11 License Amendment Request (EPID L-2021-LLA-0132)," dated March 24, 2022 (ML22083A076)

In Reference 1, Tennessee Valley Authority (TVA) submitted a request for a Technical Specification (TS) amendment for Browns Ferry Nuclear Plant (BFN), Units 1, 2, and 3. The proposed license amendments, in part, revise TS 5.6.5.b, "Core Operating Limits Report (COLR)," to allow application of Advanced Framatome Methodologies for determining core operating limits in support of loading Framatome fuel type ATRIUM™ 11.

Framatome, Inc. (Framatome) recently notified TVA of two separate condition reports that had the potential to impact analyses provided in Reference 1. Specifically, two erroneous values presented in Table 4.8 of ANP-3904P, Browns Ferry ATRIUM 11 Transient Demonstration, Revision 4, which was included as Attachment 16a of the Reference 1 request, were identified. TVA and Framatome discussed the impacts of these errors in a meeting with the Nuclear Regulatory Commission on March 17, 2022 (Reference 2). A description of these errors and the impact on the Reference 1 amendment request is provided in Enclosure 1.

Framatome considers the information provided in Enclosure 1 of this letter to be proprietary and, therefore, exempt from public disclosure pursuant to Title 10 of the *Code of Federal*

U.S. Nuclear Regulatory Commission
CNL-22-044
Page 2
April 8, 2022

Regulations (10 CFR) 2.390. An affidavit for withholding information, executed by Framatome, is provided in Enclosure 3. Enclosure 2 to this letter provides a non-proprietary version of the information provided in Enclosure 1. Therefore, on behalf of Framatome, TVA requests that Enclosure 1 be withheld from public disclosure in accordance with the Framatome affidavit and the provisions of 10 CFR 2.390. Correspondence with respect to the copyright or proprietary aspects of the items listed above or the supporting Framatome affidavits should reference the corresponding report and should be addressed to Alan Meginnis, Framatome, Manager, Product Licensing, 2101 Horn Rapids Road, Richland, WA 99354.

This letter does not change the no significant hazards considerations or the environmental considerations contained in Reference 1. Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and the non-proprietary enclosures to the Alabama Department of Public Health.

There are no new regulatory commitments associated with this submittal. Please address any questions regarding this request to Stuart L. Rymer, Senior Manager, Fleet Licensing, at slymer@tva.gov.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 8th day of April 2022.

Respectfully,



Digitally signed by Rearden, Pamela S
Date: 2022.04.08 10:54:57 -04'00'

James Barstow
Vice President, Nuclear Regulatory Affairs & Support Services

Enclosures:

1. FS1-0061484, Revision 1, Browns Ferry License Amendment Request for Framatome Advanced Methodologies Issue Identification and Evaluation (Proprietary)
2. FS1-0061485, Revision 1, Browns Ferry License Amendment Request for Framatome Advanced Methodologies Issue Identification and Evaluation (Non Proprietary)
3. Framatome Affidavit for Enclosure 1

cc: (Enclosures):

NRC Regional Administrator – Region II
NRC Project Manager – Browns Ferry Nuclear Plant
NRC Senior Resident Inspector - Browns Ferry Nuclear Plant
State Health Officer, Alabama Department of Public Health (w/o Enclosure 1)

Proprietary Information - Withhold Under 10 CFR § 2.390

Enclosure 1

FS1-0061484, Revision 1, Browns Ferry License Amendment Request for Framatome
Advanced Methodologies Issue Identification and Evaluation (Proprietary)

CNL-22-044

Proprietary Information - Withhold Under 10 CFR § 2.390

Enclosure 2

FS1-0061485, Revision 1, Browns Ferry License Amendment Request for Framatome
Advanced Methodologies Issue Identification and Evaluation (Non Proprietary)

IDENTIFICATION	REVISION	Framatome Fuel 
FS1-0061485	1.0	
TOTAL NUMBER OF PAGES: 6		

**Browns Ferry License Amendment Request for
Framatome Advanced Methodologies Issue
Identification and Evaluation (Non Proprietary)**

ADDITIONAL INFORMATION:

PROJECT	Browns Ferry	DISTRIBUTION TO	PURPOSE OF DISTRIBUTION
HANDLING	NONE		
CATEGORY	EIR - Engineering Information Report		
STATUS			

This document is electronically approved. Records regarding the signatures are stored in the fsanpexp Documentum docbase. Any attempt to modify this file may subject employees to civil and criminal penalties.		EDRMS object Id. : 090121678136e678 Released date (Western EU time) : 2022/03/16 22:55:08
Role	Name	Date (YYYY/MM/DD)
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Reviewer	TINKLER Daniel	2022/03/16 21:38:08
Reviewer	DAVIS Tanner	2022/03/16 17:39:00
Approver	SCHNEPP Robert	2022/03/16 22:21:23
Approver	MEGINNIS Alan	2022/03/16 22:55:08
		Organization
		Framatome Inc.

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SAFETY RELATED DOCUMENT:	Y						
CHANGE CONTROL RECORDS:	<table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">France:</td> <td style="width: 10%;">N</td> </tr> <tr> <td>USA:</td> <td>Y</td> </tr> <tr> <td>Germany:</td> <td>N</td> </tr> </table>	France:	N	USA:	Y	Germany:	N
France:	N						
USA:	Y						
Germany:	N						
This document, when revised, must be reviewed or approved by following regions:							

N° FS1-0061485	Rev. 1.0	Browns Ferry License Amendment Request for Framatome Advanced Methodologies Issue Identification and Evaluation (Non Proprietary)	framatome
Handling: NONE	Page 2/6		

REVISIONS

REVISION	DATE	EXPLANATORY NOTES
1.0	See 1 st page release date	New document This is the non proprietary version of FS1-0061484

**ATRIUM is a trademark or registered trademark
of Framatome and its affiliates, in the USA and other countries.**

N° FS1-0061485	Rev. 1.0	Browns Ferry License Amendment Request for Framatome Advanced Methodologies Issue Identification and Evaluation (Non Proprietary)	framatome
Handling: NONE	Page 3/6		

1. INTRODUCTION

Two issues have recently been identified that have minimal impact on reports which have been provided in the Brown Ferry (BFN) License Amendment Request (LAR) for Framatome Advanced Methodologies to support introduction of ATRIUM 11 fuel and modify Technical Specification COLR References (TS 5.6.5.b). These issues are associated with [

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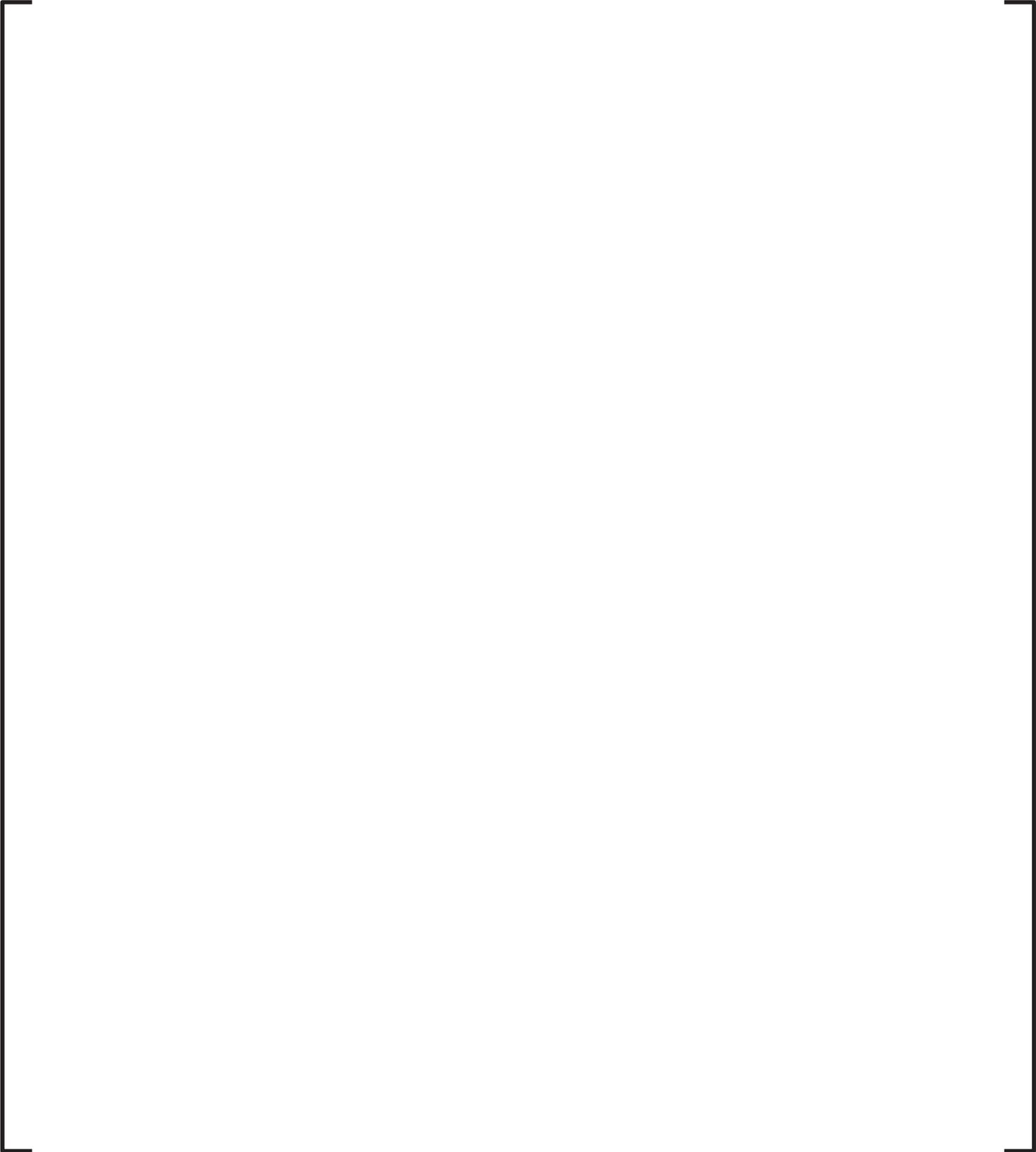
2. ISSUE DESCRIPTION AND IMPACT

N° FS1-0061485	Rev. 1.0	Browns Ferry License Amendment Request for Framatome Advanced Methodologies Issue Identification and Evaluation (Non Proprietary)	framatomé
Handling: NONE	Page 4/6		



State Point Power / Flow (% of rated)	ATRIUM 11 Δ MCPR Original Result	ATRIUM 11 Δ MCPR Corrected Result
50 / 113 Reduced Feedwater Temperature at Startup		
FWCF with startup FHOOS	[]	[]
FWCF with startup FHOOS and TBVOOS	[]	[]

N° FS1-0061485	Rev. 1.0	Browns Ferry License Amendment Request for Framatome Advanced Methodologies Issue Identification and Evaluation (Non Proprietary)	framatome
Handling: NONE	Page 5/6		



N° FS1-0061485	Rev. 1.0	Browns Ferry License Amendment Request for Framatome Advanced Methodologies Issue Identification and Evaluation (Non Proprietary)	
Handling: NONE	Page 6/6		

3. REFERENCES

1. ANP-10300P-A Revision 1, *AURORA-B: An Evaluation Model for Boiling Water Reactors; Application to Transient and Accident Scenarios*, Framatome Inc., January 2018.
2. ANP-3907P Revision 0, *Application of BEO-III Methodology with the Confirmation Density Algorithm at Browns Ferry*, Framatome Inc., April 2021.
3. ANP-3904P Revision 4, *Browns Ferry ATRIUM 11 Transient Demonstration*, Framatome Inc., July 2021.
4. ANP-10333P-A Revision 0, *AURORA-B: An Evaluation Model for Boiling Water Reactors; Application to Control Rod Drop Accident (CRDA)*, Framatome Inc., March 2018 (as supplemented by Section 6.4 of ANP-3908P Revision 3, *Applicability of Framatome BWR Methods to Browns Ferry with ATRIUM 11 Fuel*, Framatome Inc., July 2021).
5. ANP-10332P-A Revision 0, *AURORA-B: An Evaluation Model for Boiling Water Reactors; Application to Loss of Coolant Accident Scenarios*, Framatome, March 2019.
6. ANP-3874P Revision 2, *Browns Ferry ATRIUM 11 Control Rod Drop Accident Analysis with the AURORA-B CRDA Methodology*, Framatome Inc., March 2021.
7. ANP-3905P Revision 1, *Browns Ferry Units 1, 2, and 3 LOCA Analysis for ATRIUM 11 Fuel*, Framatome Inc., July 2021.

Enclosure 3

Framatome Affidavit for Enclosure 1

A F F I D A V I T

1. My name is Alan B. Meginnis. I am Manager, Product Licensing, for Framatome Inc. and as such I am authorized to execute this Affidavit.

2. I am familiar with the criteria applied by Framatome to determine whether certain Framatome information is proprietary. I am familiar with the policies established by Framatome to ensure the proper application of these criteria.

3. I am familiar with the Framatome information contained in the report FS1-0061484, Revision 1, "Browns Ferry License Amendment Request for Framatome Advanced Methodologies Issue Identification and Evaluation," dated March 2022 and referred to herein as "Document." Information contained in this Document has been classified by Framatome as proprietary in accordance with the policies established by Framatome for the control and protection of proprietary and confidential information.

4. This Document contains information of a proprietary and confidential nature and is of the type customarily held in confidence by Framatome and not made available to the public. Based on my experience, I am aware that other companies regard information of the kind contained in this Document as proprietary and confidential.

5. This Document has been made available to the U.S. Nuclear Regulatory Commission in confidence with the request that the information contained in this Document be withheld from public disclosure. The request for withholding of proprietary information is made in accordance with 10 CFR 2.390. The information for which withholding from disclosure is requested qualifies under 10 CFR 2.390(a)(4) "Trade secrets and commercial or financial information."

6. The following criteria are customarily applied by Framatome to determine whether information should be classified as proprietary:

- (a) The information reveals details of Framatome's research and development plans and programs or their results.
- (b) Use of the information by a competitor would permit the competitor to significantly reduce its expenditures, in time or resources, to design, produce, or market a similar product or service.
- (c) The information includes test data or analytical techniques concerning a process, methodology, or component, the application of which results in a competitive advantage for Framatome.
- (d) The information reveals certain distinguishing aspects of a process, methodology, or component, the exclusive use of which provides a competitive advantage for Framatome in product optimization or marketability.
- (e) The information is vital to a competitive advantage held by Framatome, would be helpful to competitors to Framatome, and would likely cause substantial harm to the competitive position of Framatome.

The information in the Document is considered proprietary for the reasons set forth in paragraphs 6(b), 6(d) and 6(e) above.

7. In accordance with Framatome's policies governing the protection and control of information, proprietary information contained in this Document have been made available, on a limited basis, to others outside Framatome only as required and under suitable agreement providing for nondisclosure and limited use of the information.

8. Framatome policy requires that proprietary information be kept in a secured file or area and distributed on a need-to-know basis.

9. The foregoing statements are true and correct to the best of my knowledge, information, and belief.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on: March 16, 2022

MEGINNIS Alan Digitally signed by MEGINNIS Alan
Date: 2022.03.16 14:49:33 -07'00'

Alan B. Meginnis