



January 10, 2014

NRC:14:001

U.S. Nuclear Regulatory Commission
Document Control Desk
11555 Rockville Pike
Rockville, MD 20852

Document to Support the NRC review of EMF-2103P, Revision 3, "Realistic Large Break LOCA Methodology for Pressurized Water Reactors"

- Ref. 1: Letter, Pedro Salas (AREVA Inc.) to Document Control Desk (NRC), "Request for Review and Approval of EMF-2103P, Revision 3, 'Realistic Large Break LOCA Methodology for Pressurized Water Reactors'," NRC:13:072, September 13, 2013.
- Ref. 2: Letter, Pedro Salas (AREVA Inc.) to Document Control Desk (NRC), "Information to Support the Request for Review and Approval of EMF-2103P, Revision 2, 'Realistic Large Break LOCA Methodology for Pressurized Water Reactors'," NRC:11:067, June 30, 2011.

In Reference 1, AREVA Inc. (AREVA) requested NRC's review and approval of the topical report EMF-2103P, Revision 3, "Realistic Large Break LOCA Methodology for Pressurized Water Reactors." During the post-submittal meeting held between AREVA and the NRC on October 31, 2013, the NRC requested additional information to support the review process of EMF-2103P, Revision 3; specifically, the NRC requested a copy of EMF-2100P, Revision 16, "S-RELAP5 Models and Correlations Code Manual."

In support of this request for additional information, a copy of EMF-2100P, Revision 16, "S-RELAP5 Models and Correlations Code Manual" is enclosed with this letter, which includes a summary of changes since AREVA provided Revision 14 in Reference 2 (Attachment A).

AREVA considers the material contained in the enclosed document to be proprietary. As required by 10 CFR 2.390(b), an affidavit is enclosed to support the withholding of the information from public disclosure. Only a proprietary version of the document is provided since it is considered proprietary in its entirety.

There are no commitments contained within the enclosures to this letter.


AREVA INC.

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Tel.: 434 832 3000 - www.aveva.com

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NRR

If you have any questions related to this submittal, please contact Ms. Gayle F. Elliott, Product Licensing Manager at 434-832-3347 or by e-mail at Gayle.Elliott@areva.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'Pedro Salas', with a stylized flourish at the end.

Pedro Salas, Director
Regulatory Affairs
AREVA Inc.

cc: J. A. Golla
Project 728

Enclosures:

1. EMF-2100P, Revision 16, "S-RELAP5 Models and Correlations Code Manual," December 2011
2. Notarized Affidavit

Attachment:

1. Changes to Topical Report, EMF-2100, Revisions 15 and 16 subsequent to Revision 14

ATTACHMENT A

Changes to Topical Report, EMF-2100, Revisions 15 and 16 subsequent to Revision 14

Rev. 15 changes:

Item	Page	Description and Justification
1.	1-3	Modify item (5) to include droplet shatter cooling in conjunction with swelling and rupture.
2.	1-4	Modify item (10) to include fuel relocation with swelling and rupture.
3.	3-67 to 3-69	Added droplets shatter model discussion to 'Special Treatments' section.
4.	7-20	Added fuel relocation discussion.
5.	7-52	Corrected definitions of reacted zirconium thickness.
6.	7-96	Clarified definition of cladding deformation.

Rev. 16 changes:

Item	Page	Description and Justification
1.	2-65	Modify the criteria for water-packing scheme.
2.	3-11	Modify description of mixture level elimination.
3.	3-59	Typographical error correction.
4.	3-67 to 3-73	Inserted subsection headers for clarity.
5.	4-4	Included void criteria in Figure 4-1.
6.	4-24 to 4-30	Add Section 4.4.3 XL Correlations.
7.	4-30	Revised temperature correction factor (Equation 4.56).
8.	4-37	Revised temperature correction factor (Equation 4.77).
9.	4-38	Modify description of grid spacer enhancement.
10.	7-22 to 7-23	Revised and relocated fuel relocation section.
11.	7-95 to 7-96	Modified description of ballooning and rupture model for COPENIC fuel model.

AFFIDAVIT

COMMONWEALTH OF VIRGINIA)
) ss.
CITY OF LYNCHBURG)

1. My name is Gayle F. Elliott. I am Manager, Product Licensing, for AREVA NP Inc. (AREVA NP) and as such I am authorized to execute this Affidavit.

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

3. I am familiar with the AREVA NP information contained in EMF-2100P, Revision 16, "S-RELAP5 Models and Correlations Code Manual," dated December 2011, and referred to herein as "Document." Information contained in this Document has been classified by AREVA NP as proprietary in accordance with the policies established by AREVA NP 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 AREVA NP 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 AREVA NP to determine whether information should be classified as proprietary:

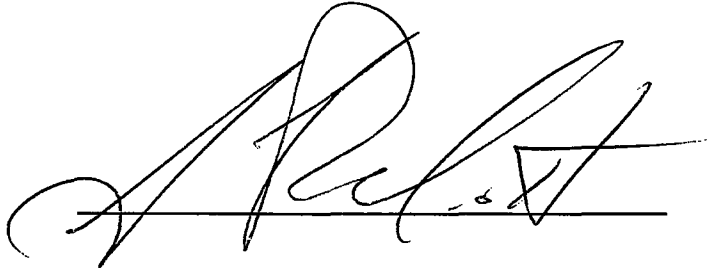
- (a) The information reveals details of AREVA NP's research and development plans and programs or their results.
- (b) Use of the information by a competitor would permit the competitor to significantly reduce its expenditures, in time or resources, to design, produce, or market a similar product or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

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

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

8. AREVA NP 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.

A large, stylized handwritten signature in black ink, written over a horizontal line.

SUBSCRIBED before me this 10th
day of January, 2014.

A handwritten signature in black ink, written over a horizontal line.

Sherry L. McFaden
NOTARY PUBLIC, COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES: 10/31/14
Reg. # 7079129

