



March 2, 2011
NRC:11:020

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

**Response to U.S. EPR Design Certification Application RAI No. 413, Question 07.08-21
"S-RELAP5 Input Files and Steam Generator HT Spreadsheet"**

- Ref. 1: E-mail, Getachew Tesfaye (NRC) to Martin Bryan, et al (AREVA NP Inc.), "U.S. EPR Design Certification Application RAI No. 413 (4772), FSAR Ch. 7," August 9, 2010.
- Ref. 2: E-mail, Martin Bryan (AREVA NP Inc.) to Getachew Tesfaye (NRC), "Response to U.S. EPR Design Certification Application RAI No. 413 (4772), FSAR Ch. 7," September 8, 2010.
- Ref. 3: E-mail, Martin Bryan (AREVA NP Inc.) to Getachew Tesfaye (NRC), "Response to U.S. EPR Design Certification Application RAI No. 413 (4772), FSAR Ch. 7, Supplement 1" November 19, 2010.
- Ref. 4: E-mail, Martin Bryan (AREVA NP Inc.) to Getachew Tesfaye (NRC), "Response to U.S. EPR Design Certification Application RAI No. 413 (4772), FSAR Ch. 7, Supplement 2" December 13, 2010.
- Ref. 5: E-mail, Martin Bryan (AREVA NP Inc.) to Getachew Tesfaye (NRC), "Response to U.S. EPR Design Certification Application RAI No. 413 (4772), FSAR Ch. 7, Supplement 3" January 28, 2011.
- Ref. 6: E-mail, Martin Bryan (AREVA NP Inc.) to Getachew Tesfaye (NRC), "Response to U.S. EPR Design Certification Application RAI No. 413 (4772), FSAR Ch. 7, Supplement 4" February 1, 2011.
- Ref. 7: E-mail, Martin Bryan (AREVA NP Inc.) to Getachew Tesfaye (NRC), "Response to U.S. EPR Design Certification Application RAI No. 413 (4772), FSAR Ch. 7, Supplement 5" February 23, 2011.
- Ref. 8: E-mail, Martin Bryan (AREVA NP Inc.) to Getachew Tesfaye (NRC), "Response to U.S. EPR Design Certification Application RAI No. 413 (4772), FSAR Ch. 7, Supplement 6" February 24, 2011.

In Reference 1, the NRC provided a request for additional information (RAI) regarding the U.S. EPR design certification application (i.e., RAI No. 413). In References 2-8 AREVA NP Inc. (AREVA NP) provided a schedule indicating when the responses would be provided.

The Diversity and Defense-in-Depth (D3) assessment modeling information related to Question 07.08-21, is included on an enclosed CD. The responses to the RAI questions will be submitted separately.

Included on the CD are the input files S-RELAP5 and the spreadsheet supporting the response to question 07.08-21:

1. S-RELAP5 input files for simple heat exchanger:

Tave_Shell.inp	Shell side, forward flow, average temperature for heat transfer
Tave_Shell_Rev.inp	Shell side, reverse flow, average temperature for heat transfer
Tave_Tube.inp	Tube side, forward flow, average temperature for heat transfer
Tave_Tube.Rev.inp	Shell side, reverse flow, average temperature for heat transfer
Texit_Tube.inp	Tube side, forward flow, exit temperature for heat transfer
Texit_Shell.inp	Shell side, forward flow, exit temperature for heat transfer
1ph.inp	Single-phase heat transfer coefficient
2ph.inp	Two-phase heat transfer coefficient
Runall	Script used to run all S-RELAP5 input files

2. The spreadsheet file *Steam_Generator_Heat_Transfer_2.xls*: presents the theoretical solution, processes and plots the S-RELAP5 results, and computes the single and two-phase heat transfer coefficients for comparison to S-RELAP5 results.

AREVA NP considers the material contained on the disk labeled "S-RELAP5 Input Files and Steam Generator HT Spreadsheet" to be proprietary in its entirety; therefore, a non-proprietary version is not submitted. As required by 10 CFR 2.390(b), an affidavit is enclosed to support the withholding of the information from public disclosure.

Sincerely,



Sandra M. Sloan
Regulatory Affairs Manager, New Plants
AREVA NP Inc.

Enclosure

cc: G. Tesfaye
Docket No. 52-020

AFFIDAVIT

COMMONWEALTH OF VIRGINIA)
) ss.
COUNTY OF CAMPBELL)

1. My name is Sandra M. Sloan. I am Manager, Regulatory Affairs for New Plants, for AREVA NP Inc. 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, "Response to U.S EPR Design Certification Application RAI No. 413, Question 07.08-21 "S-RELAP5 Input Files and Steam Generator HT Spreadsheet," 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 the Document is considered proprietary for the reasons set forth in paragraphs 6(b) and 6(c) 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.

Sandra M. Sloan

SUBSCRIBED before me this 2nd
day of March, 2011.

Kathleen A. Bennett

Kathleen A. Bennett
NOTARY PUBLIC, COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES: 8/31/2011
Reg. #110864

