



January 31, 2012  
NRC:12:002

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

### **10 CFR 50.46 Report for the U.S. EPR Design Certification**

- Ref. 1: Letter, Sandra M. Sloan (AREVA NP Inc.) to Document Control Desk (NRC), "Application for Standard Design Certification of the U.S. EPR (Project No. 733)", NRC:07:070, December 11, 2007.
- Ref. 2: Letter, Getachew Tesfaye (NRC) to Sandra M. Sloan (AREVA NP Inc.), "AREVA NP Inc. – Acceptance of the Application for Standard Design Certification of the U.S. EPR," February 25, 2008.
- Ref. 3: Letter, Sandra M. Sloan (AREVA NP Inc.) to Document Control Desk (NRC), "10 CFR 50.46 Report for the U.S. EPR Design Certification," NRC:11:119, December 16, 2011.

AREVA NP Inc. (AREVA NP) submitted its application for a Standard Design Certification of the U.S. EPR in Reference 1. The NRC accepted the application for review in Reference 2 and assigned Docket Number 52-020 to the application.

In accordance with 10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light Water Reactors," AREVA NP submitted its third annual report of the emergency core cooling system (ECCS) evaluation model changes and errors for the U.S. EPR Standard Design in Reference 3. Since a number of the individual error absolute magnitudes and the sum of the absolute magnitudes of the errors was greater than 50 degrees F in the Reference 3 report it also represented a thirty day report. A commitment was made in Reference 3 to provide a letter addressing the requirement in 10 CFR 50.46 to provide a proposed schedule for providing a reanalysis or taking other action as may be needed to show compliance with 10 CFR 50.46 requirements by January 31, 2012.

AREVA NP has taken the action of reviewing the errors and their impact on the peak cladding temperature for both small break loss of coolant accident (SBLOCA) and large break loss of coolant accident (LBLOCA) with respect to the adequacy of the demonstration of compliance to the 10 CFR 50.46 criteria. The sum of the absolute values of the errors for both SBLOCA and LBLOCA is significant (significant is defined in 10 CFR 50.46 as greater than 50 degrees F). Compliance with the criteria is assured, though, since the U.S. EPR has significant margin (greater than 500 degrees F for both SBLOCA and LBLOCA) to the PCT criterion (and thus significant margin to all of the 10 CFR 50.46 criteria). Thus, a reanalysis is not required as a result of these errors and compliance to the 10 CFR 50.46 criteria continues to be adequately demonstrated.

Based on the Reference 3 letter and the evaluation described above, the sum of the absolute values of errors or changes for both SBLOCA and LBLOCA has been reset and AREVA will begin to

accumulate sum of the absolute value of future errors or changes to determine if a 30 day report is required due to the sum exceeding 50 degrees F.

If you have any questions related to this submittal, please contact me by telephone at 434-832-2369 or by e-mail at [sandra.sloan@areva.com](mailto:sandra.sloan@areva.com).

Sincerely,



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

cc: G. Tesfaye  
Docket No. 52-020