

July 20, 2006

Mr. Ronnie L. Gardner  
AREVA NP Inc.  
3315 Old Forest Road  
P.O. Box 10935  
Lynchburg, VA 24506-0935

SUBJECT: PROPOSED APPROACH FOR RESOLUTION OF DESIGN PROCESS AND  
VERIFICATION ISSUES

Dear Mr. Gardner,

Your letter of May 24, 2006, provided AREVA NP's proposal for resolution of design process and verification issues for the U.S. Evolutionary Power Reactor (EPR). The proposed process takes advantage of design activities for piping, instrumentation and controls (I&C), and human factors engineering (HFE) design which you expect to continue after the U.S. EPR design certification application is submitted in late 2007. Previous design certifications have included design acceptance criteria (DAC) to specify processes and criteria for development of engineering details where it was found impractical to complete this work before completion of a combined license review. You propose to minimize reliance on DAC by providing additional engineering information during the design certification review, instead of deferring this effort to the combined license application.

The NRC staff believes your proposal can promote a higher degree of standardization for the U.S. EPR for these subject areas by reducing reliance on design acceptance criteria in the design certification rulemaking. Your proposal appears to be consistent with the design-centered review approach described in Regulatory Issue Summary 2006-06, "New Reactor Standardization Needed to Support the Design-Centered Review Approach."

For piping, your letter states your intent to submit a report in September 2006 describing codes and standards, analysis methodology, modeling techniques, stress analysis criteria, and piping support criteria. It is the staff's understanding that the scope of this submittal is similar to that provided in previous design certification applications to describe piping DAC.

Your letter also describes an expected schedule for availability of detailed piping and pipe support analysis information during the course of the design certification review. You state that AREVA NP believes this information will be sufficient to demonstrate correct implementation of piping analysis methods and modeling techniques during the NRC's review of the U.S. EPR design certification application, and that if the NRC verifies that correct implementation, those areas will not be included as DAC for the U.S. EPR.

Similarly, for I&C and HFE, you propose submitting a series of reports starting in December 2006 describing various aspects of these topics. Again, it is the staff's understanding that the scope of these submittals is similar to that provided in previous design certification applications to describe DAC for I&C and HFE.

Your letter states your belief that sufficient design outputs will be available prior to completion of the NRC's design certification review to demonstrate correct implementation of the processes and criteria described in your I&C and HFE submittals. You state that AREVA NP believes this information will be sufficient to demonstrate correct implementation of I&C and HFE designs, and implementation procedures and guidelines during the NRC's review of the U.S. EPR design certification application, and that if the NRC verifies that correct implementation, those areas will not be included as DAC for the U.S. EPR. However, we note that the description of your schedule for development of this information is not as specific as that provided in your piping discussion.

The NRC's schedule for the design certification review will depend in part on the timely availability of relevant design and implementation information for piping, I&C, and HFE, so delays in completing this information may delay completion of the NRC's design certification review. In such an event, you could choose to propose a greater scope of DAC for the U.S. EPR. In that case, the NRC will verify implementation of the processes and criteria as part of the first combined license application referencing the U.S. EPR. Resolution of DAC in the combined license application increases the scope of that review, and so may affect that review until sufficient design information is available. The overall length of time to complete a design certification and this first combined license is expected to be about the same in either case. Given our position on the benefits of a high degree of standardization, we strongly encourage resolution of these issues in the design certification review, rather than in a subsequent combined license review.

The staff will review AREVA's proposed use of DAC for the U.S. EPR, if any, and will engage the Commission accordingly based on the design area in which DAC is proposed to be used and the basis for not providing detailed design information, e.g., unavailability of as-built or as-procured information. If proposed, the staff will ensure that sufficient DAC is submitted to comply with the requirements of 10CFR Part 52; most notably that the application "contain a level of design information sufficient to enable the Commission to judge the applicant's proposed means of assuring that the construction conforms to the design and to reach a final conclusion on all safety questions associated with the design before it is granted" in accordance with paragraph 52.47(a)(2).

The staff will review the submittals described in your May 24, 2006, letter as topical reports, using the guidance of the Office of Nuclear Reactor Regulation (NRR) Office Instruction LIC-500, Revision 3, "Processing Requests for Reviews of Topical Reports," to the extent practical. This instruction is directed towards topical report reviews for operating reactors, so some specific guidance may not be relevant to EPR design certification pre-application activities. A schedule for review of your submittals, including milestones for requests for additional information, and completion of the draft and final safety evaluations will be provided upon completion of the staff's acceptance review. If you make the staff aware of your need for feedback on these topics as you develop your design certification application, we will consider that need in developing our review schedules.

R. Gardner

-3-

I can be reached at 301-415-1470 or at [jfw1@nrc.gov](mailto:jfw1@nrc.gov) if you have questions regarding this letter.

Sincerely,

**/RA/**

Joseph F. Williams  
Senior Project Manager  
AP1000/EPR Projects Branch  
Division of New Reactor Licensing

Project 733

R. Gardner

-3-

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EPR

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