



GE Energy

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MFN 04-121

November 19, 2004

Mr. James E. Dyer, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20852-2738

**Subject: Schedule for ESBWR Pre-application Review Closure and  
Plan for Standard Design Approval & Certification Application**

This letter is written to inform you of GE Energy's plans to, in June 2005, make a standard design submittal and application for review, approval, and design certification of the General Electric Company Economic Simplified Boiling Water Reactor (ESBWR) in accordance with the provisions of 10 CFR 52. This submittal for final design approval under 10 CFR 52 Appendix O also will include a request for design certification under 10 CFR 52.45 and 52.47. After discussions with the NRC staff, it is our intention to proceed directly with preparation and submittal of the Design Control Document (DCD) for the Design Certification review rather than first submitting a safety analysis report for final design approval (FDA) only.

In 2002, the NRC began a pre-application review of the ESBWR to determine the adequacy of the GE technology programs and the TRACG code for use in streamlining the design and regulatory review of the ESBWR. The reports GE submitted in 2002, as part of this TRACG review, provided all of the test results, qualification and scaling analyses necessary to support the use of the TRACG code for all of its intended uses for the ESBWR (i.e., LOCA, Containment, Anticipated Operational Occurrences (AOOs), Stability, Startup and ATWS). Based on these submittals, the NRC already has accepted the adequacy of the test programs and the use of the TRACG code for application to ESBWR certification for LOCA and Containment calculations as described in the recent safety evaluation (Reference 1).

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In October of this year we submitted the final information necessary for the NRC to continue with its review of the TRACG code for use with AOOs. It is our intention to submit remaining additional Licensing Topical Reports (LTRs) for application of the TRACG code for stability and start up at the end of this month and for ATWS in January of 2005. This will complete the submittal of information necessary for NRC review and approval of the TRACG code for these intended applications.

We request that the NRC maintain its knowledgeable review team to facilitate an expeditious review of the TRACG LTR information to provide timely feedback on the intended applications of the TRACG code. It is necessary to have sufficient feedback confirming that the intended use of the TRACG code is acceptable, so that GE can complete our standard Design Certification application. If we receive sufficient and timely feedback from the NRC to confirm that the TRACG code will be an acceptable tool for use in licensing calculations for the remaining applications, AOOs, stability, plant startup and ATWS, it is our intention to submit our standard Design Certification application in June of 2005. In parallel, we will work to complete our design control document (DCD) while continuing to work with the NRC staff on the final phase of our pre-application review – clearly defining acceptable approaches to several aspects of the certification submittal.

Based on the evolutionary development of the ESBWR from the previously certified Advanced Boiling Water Reactor (ABWR) and the NRC-reviewed Simplified Boiling Water Reactor (SBWR), on the extensive ESBWR pre-application review, and on the large margins in the ESBWR design, it is our anticipation that the NRC will be able to accomplish this review, approval, and issuance of the ESBWR FDA in 18 months, followed by an additional 12 months for rulemaking, in order to achieve a Design Certification of the ESBWR design within 30 months. We believe that this is achievable for several reasons:

1. The completed design certifications of the ABWR and Westinghouse AP1000 have provided clear requirements and closure paths for licensing of both current BWR technology and passive safety features, respectively.
2. The extensive ESBWR pre-application review has provided a significant head start by completing review of several long-lead review time items, e.g., methods. Rather than just development of the cost and schedule for the Design Certification activity, a significant amount of technical review and understanding of the ESBWR has been gained by the NRC staff during this time. In addition, the ACRS has strongly concurred with the NRC staff's positive conclusions to date.
3. The same large safety margins in the design and cooperative approach to interactions with the NRC that facilitated the pre-application review will be applicable to the FDA and certification review.

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4. A significant number of systems in the ESBWR are identical or very similar to those used in the previously Design Certified ABWR and SBWR design and should require much reduced time for review.
5. GE and NRC can work closely together to provide the Design Certification documentation in the format and means to facilitate the NRC's review.

We urge the NRC to give this review a priority with its resources to achieve this goal of a completed ESBWR Design Certification within 30-months. The ESBWR design has the backing of key U.S. nuclear utilities representing about 80% of the U.S. BWR fleet, and these utilities have expressed the strong desire to complete this certification in time to support submittal of a COL application in 2008 and support the U.S. Department of Energy's NP2010 initiative.

GE looks forward to working with the Commission and the NRC staff to enable successful and timely completion of the ESBWR design certification review. Dr. R.E. Gamble, GE Energy's Manager of ESBWR Engineering, will lead the GE technical team. He may be reached at 1-408-925-3352 or [Robert.Gamble@GE.com](mailto:Robert.Gamble@GE.com).

Sincerely,



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Manager, Licensing

Project: 717

Reference:

1. MFN 04-119, William D. Beckner (NRC) to Louis M. Quintana, *Reissuance of Safety Evaluation Report Regarding the Application of General Electric Nuclear Energy's TRACG Code to ESBWR Loss-of-Coolant Accident (LOCA) Analyses (TAC Nos. MB6279, MB6280, MB6281, MB6282, MB6283, MB6801 and MB7255)*, dated October 28, 2004

cc: see following page

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