

January 13, 2009

Mr. Robert E. Brown
Senior Vice President, Regulatory Affairs
GE Hitachi Nuclear Energy
3901 Castle Hayne Road MC A-50
Wilmington, NC 28401

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 295 RELATED TO
ESBWR DESIGN CERTIFICATION APPLICATION

Dear Mr. Brown:

By letter dated August 24, 2005, GE Hitachi Nuclear Energy (GEH) submitted an application for final design approval and standard design certification of the economic simplified boiling water reactor (ESBWR) standard plant design pursuant to 10 CFR Part 52. The U.S. Nuclear Regulatory Commission (NRC) staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed design.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

If you have any questions or comments concerning this matter, you may contact me at 301-415-3179 or Ilka.Berrios@nrc.gov or you may contact Amy Cubbage at 301-415-2875 or Amy.Cubbage@nrc.gov.

Sincerely,

/RA/

Ilka Berrios, Project Manager
ESBWR/ABWR Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket No. 52-010

Enclosure:
Request for Additional Information

cc: See next page

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ESBWR/ABWR Projects Branch 1
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Distribution: See next page

ADAMS ACCESSION NO. **ML**090080723

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SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 295 RELATED TO
ESBWR DESIGN CERTIFICATION APPLICATION DATED JANUARY 13, 2009

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**Requests for Additional Information (RAIs)
ESBWR Design Control Document (DCD), Revision 5**

RAI Number	Reviewer	Question Summary	Full Text
RAI 6.2-195 S01	Miller E	Segments of the response to 6.2-195 should be included in ESBWR DCD Tier 2 Chapter 6 Appendix B to provide clarity. Please see the full text for recommended inclusion to the DCD.	In RAI 6.2-195, the staff requested clarification on the differences between Figure 6.2-7 and Figures 6B-2, 6B-3 and 6B-4, respectively. A response was provided that was not planned to be incorporated into the DCD. The response to RAI 6.2-195 should be included in Appendix 6B to provide clarity and understanding of the relationship of Figures 6B-2, 6B-3, and 6B-4 to that of Figure 6.2-7, which is the TRACG nodalization used for the licensing analysis. The staff has selected the following text from the GEH response to RAI 6.2-195 for input to ESBWR DCD Tier 2 Chapter 6, Appendix B (text bracketed). GEH Response: The nodalization figures found in DCD Tier 2, Revision 5, Appendix 6B (Figures 6B-2, 6B-3, and 6B-4) are provided as tieback illustrations to the approved Licensing Topical Report (LTR) NEDC-33083P-A, March 2005 (Reference 1). [During the development and evolution of the ESBWR design, changes have been made to the original nodalization presented in that LTR. In order to accurately analyze the ESBWR for reactor pressure vessel level and containment pressure responses after a loss-of-coolant accident (LOCA), the TRACG model must be updated to reflect the most current design. Due to this fact, the nodalization diagrams produced for Reference 1 will not remain representative of the ESBWR during the certification process.]¹ DCD Tier 2, Figures 6B-3 and 6B-4 show, respectively, the first and second combined nodalization of the Emergency Core Cooling Systems (ECCS)/LOCA nodalization (Figure 6B-1) and the coarse long-term containment nodalization (Figure 6B-2). [Figures 6B-3 and 6B-4 represent a departure from the nodalization presented in Reference 1.]² DCD Tier 2, Appendix 6B presents the tieback calculations conducted to compare the combined nodalization to the original nodalizations presented in Reference 1.

Enclosure

RAI Number	Reviewer	Question Summary	Full Text
			All subsequent design changes have been incorporated into these combined nodalization schemes and the results of analyses using the updated model are presented in the DCD and supporting LTRs. Letter MFN 08-545 (Reference 2) provides a list of design changes, since the approval of TRACG for ESBWR LOCA analysis (Reference 1), that impact LOCA analysis. DCD Tier 2, Table 6.2-6a also provides a list of TRACG model changes which account for differences in the figures found in Appendix 6B and Figure 6.2-7. Table 6.2-195-1 provides a brief answer to each of the questions presented in this RAI and a cross reference to the items found in DCD Table 6.2-6a, Reference 2, or both. If the noted change in the Figure is not found in these references, an appropriate note is given.

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(Revised 01/06/2009)

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