

December 29, 2009

Mr. Jerald G. Head
Senior Vice President, Regulatory Affairs
GE Hitachi Nuclear Energy
3901 Castle Hayne Road MC A-18
Wilmington, NC 28401

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 404 RELATED TO
ESBWR DESIGN CERTIFICATION APPLICATION

Dear Mr. Head:

By letter dated August 24, 2005, GE Hitachi Nuclear Energy 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 301-415-6715 or Bruce.Bavol@nrc.gov or you may contact Amy Cubbage at 301-415-2875 or Amy.Cubbage@nrc.gov.

Sincerely,

/RA/

Bruce M. Bavol, 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

December 29, 2009

Mr. Jerald G. Head
Senior Vice President, Regulatory Affairs
GE Hitachi Nuclear Energy
3901 Castle Hayne Road MC A-50
Wilmington, NC 28401

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ESBWR DESIGN CERTIFICATION APPLICATION

Dear Mr. Head:

By letter dated August 24, 2005, GE Hitachi Nuclear Energy 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.

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ADAMS ACCESSION NO. ML093630098

NRO-002

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DATE	12/29/2009	12/29/2009

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SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO.404 RELATED TO
ESBWR DESIGN CERTIFICATION APPLICATION DATED DECEMBER 29,
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**Requests for Additional Information (RAIs)
ESBWR Design Control Document (DCD), Revision 6**

RAI Number	Reviewer	RAI Summary	RAI Text
RAI 6.2-140, Supplement 6 (MFN 09-023 S03, 11/16/2009)	Wagage H	Provide the basis for <i>quantitatively</i> determining the analytical pressure limit curve, which is consistent with the information provided in the DCD	In response to RAI 6.2-140, Supplement 5, dated November 16, 2009, GEH stated that “The Analytical Pressure Limit curve shown in ESBWR DCD Rev. 6 Figure 6.2-14e13 . . . is included to accommodate variations in IC/PCC pool levels, PCC vent fan discharge submergence variation, PCC vent fan performance characteristics and variations, PCC heat exchanger efficiency, and TRACG modeling.” GEH’s response does not provide the basis for <i>quantitatively</i> determining the analytical pressure limit curve. Provide either (1) results of a TRACG calculation, which is consistent with models and assumptions as described in the DCD or (2) a full and comprehensive basis for quantitatively determining the analytical pressure limit curve to compensate for the inconsistencies between the TRACG calculation and models and assumptions as described in the ESBWR DCD.
RAI 6.4-22, Supplement 1 (MFN 09-759, 12/05/2009)	ODriscoll J	Update DCD subsection 6.4.4, Inservice Testing	In letter MFN 09-759, dated December 5, 2009, GEH responded to staff RAI 6.4-22 which requested GEH clarify the DCD to state that the value of CRHA ingress/egress leakage would be provided and justified by a COL applicant. The staff has reviewed the response and the proposed DCD revisions and the following additional information is needed: In accordance with SRP 6.4 and Regulatory Guide 1.197 guidance, the acceptance criteria for CRHA unfiltered in leakage will be no greater than the amount of unfiltered leakage assumed in the Dose Consequence Analysis minus the amount of unfiltered inleakage allocated for CRHA access and egress. This allocation may be specified and justified either within the standard design or by a COL applicant.

Enclosure

			Update DCD subsection 6.4.4, Inservice Testing, to include the value assumed for access/ egress for CRHA unfiltered inleakage and provide a basis for the number assumed, or alternatively, clarify the DCD to indicate that this number must be specified by the COL applicant that references the ESBWR design.
4.4-93	Gilmer J	Update NEDC-33237P to include additional void fraction correlation information committed to in the response to RAI 4.4-2S02.	In GEH's response to RAI 4.4-2, Supplement 2 (MFN 08-115), reference was made to Section 4.4.3.4 of the Preliminary Safety Evaluation with Open Items for the Design Certification Document, where the staff-proposed a penalty on the Operating Limit Minimum Critical Power Ratio (OLMCPR) to account for uncertainty in the Findlay-Dix void-quality correlation is documented. The staff intends to make the thermal margin adder (0.01) a condition for approval of the OLMCPR methodology for ESBWR. This condition will be documented in the Safety Evaluation Report (SER) for NEDC-33237P, "GE14 for ESBWR – Critical Power Correlation, Uncertainty and OLMCPR Development." Please revise NEDC-33237P to include the requirement for the 0.01 thermal margin adder.

DC GE - ESBWR Mailing List

(Revised 12/15/2009)

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