

February 7, 2008

Mr. Robert E. Brown
Senior Vice President, Regulatory Affairs
GE-Hitachi Nuclear Energy Americas, LLC
3901 Castle Hayne Road MC A-45
Wilmington, NC 28401

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 150 RELATED TO
ESBWR DESIGN CERTIFICATION APPLICATION

Dear Mr. Brown:

By letter dated August 24, 2005, GE-Hitachi Nuclear Energy Americas, LLC (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 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 ixb3@nrc.gov or you may contact Thomas Kevern at (301) 415-0224 or tak@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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Senior Vice President, Regulatory Affairs
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Wilmington, NC 28401

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 150 RELATED TO
ESBWR DESIGN CERTIFICATION APPLICATION

Dear Mr. Brown:

By letter dated August 24, 2005, GE-Hitachi Nuclear Energy Americas, LLC (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 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.

To support the review schedule, you are requested to provide the requested additional information within 45 days of the date of this letter.

If you have any questions or comments concerning this matter, you may contact me at 301-415-3179 or ixb3@nrc.gov or you may contact Thomas Kevern at (301) 415-0224 or tak@nrc.gov.

Sincerely,
/RA/

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

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Request for Additional Information

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ACCESSION NO. ML080380148

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SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 150 RELATED TO
ESBWR DESIGN CERTIFICATION APPLICATION DATED FEBRUARY 7, 2008

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**Request for Additional Information (RAI)
ESBWR Design Control Document (DCD), Revision 4
Chapter 12 “Radiation Protection”**

RAI Number	Reviewer	Question Summary	Full Text
RAI 12.2-9 S03	Dehmel J	An evaluation of the response to NRC RAI 12.2-9 S02, contained in MFN 08-019 (Jan. 17, 2008), indicates that the staff could not independently confirm some of the revised results presented in that response.	<p>An evaluation of the response to NRC RAI 12.2-9 S02, contained in MFN 08-019, indicates that the staff could not independently confirm some of the revised results presented in that response. Specifically:</p> <ul style="list-style-type: none"> a. Offgas Ar-41 source term: the staff calculates 1960 MBq/yr, while the response indicates 1400 MBq/yr. b. Offgas Kr-85 source term: the staff calculates 5.2E+06 MBq/yr, while the response indicates 4.3E+06 MBq/yr. c. Drywell noble gases: staff results are higher by a factor of two for all nuclides as compared to the response. d. Reactor Bldg K-85m source term: no explanation is given for the increase from 69,000 to 90,000 MBq/yr, while the source terms for all other nuclides are essentially the same. <p>Accordingly, provide supporting information and technical details for the staff to understand and resolve these differences.</p>

RAI Number	Reviewer	Question Summary	Full Text
RAI 12.2-15 S02	Dehmel J	An evaluation of the response to NRC RAI 12.2-15 S01, contained in MFN 06-0305 Supp. 1 (Dec. 11, 2007), indicates that the staff could not independently confirm the estimated annual amounts of radioactivity released in liquid effluents.	<p>An evaluation of the response to NRC RAI 12.2-15 S01, contained in MFN 06-0305 Supp. 1 (Dec. 11, 2007), indicates that the staff could not independently confirm the estimated annual amounts of radioactivity released in liquid effluents. In its evaluation, the staff used the 1986 version of the BWR-GALE code (aka GALE86), given that GE had used that version of the code in its analysis in estimating yearly releases of radioactivity in liquid effluents. In comparing both sets of results, please note the following:</p> <ol style="list-style-type: none"> 1. The staff's analysis used the input described in DCD Table 12.2-19a and plant design capacity factor (0.92) listed in DCD Table 12.2-15. 2. The results from the GALE86 code analysis were adjusted (1.15) to address the difference in plant capacity factors: 0.92 as the stated design capacity factor vs the default value of 0.80 hardwired in the GALE86 code. 3. For the analysis ran with no adjustment factor for the difference in capacity factors, the staff's results matches that presented in DCD Table 12.2-19b. 4. For the analysis ran with an adjustment factor of 1.15 (0.92/0.8) for the difference in capacity factors, the staff's results do not match that presented in DCD Table 12.2-19b. 5. It is concluded that the results presented in DCD Table 12.2-19b do not account for the DCD stated plant capacity factor of 0.92. Note that the corresponding analyses used in estimating gaseous effluent source terms did make adjustments for the stated design capacity factor of 0.92. <p>Confirm whether the staff interpretation's of the analytical approach presented in GE MFN 06-305 Supp. 1 and liquid effluent source term results listed in DCD Table 12.2-19b is correct, revise the liquid effluent source terms listed in DCD Table 12.2-19b, revise the estimated liquid effluent concentrations listed in Table 12.2-19b, and revise the associated dose results shown in Table 12.2-20b.</p>

DC GE - ESBWR Mailing List

(Revised 01/29/2008)

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