

January 26, 2010

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. 407 RELATED TO
ESBWR DESIGN CERTIFICATION APPLICATION

Dear Mr. Head:

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 301-415-6256 or Dennis.Galvin@nrc.gov or you may contact Amy Cubbage at 301-415-2875 or Amy.Cubbage@nrc.gov.

Sincerely,

/RA/

Dennis Galvin, 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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Distribution: See next page

ACCESSION NO.: ML100260978

NRO-002

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SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 407 RELATED TO
ESBWR DESIGN CERTIFICATION APPLICATION DATED JANUARY 26, 2010

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**Request for Additional Information (RAI)
ESBWR Design Control Document (DCD) Revision 6**

RAI Number	Reviewer	Question Summary	Full Text
9.1-128 S01	J. Tatum	Address operating experience and lessons learned associated with refueling cavity draindown concerns.	<p>The additional information that was provided in a letter dated November 16, 2009, to address operating experience insights associated with Inspection and Enforcement Bulletin 84-03, "Refueling Cavity Water Seal," was found to be very thorough and complete in most respects. However, the staff found that the proposed markup of the DCD did not provide the level of detail that is needed. In particular, the following information should be reflected in Tier 2 of the DCD:</p> <ol style="list-style-type: none"> a. The reactor cavity seal descriptive information provided in Items a, b, and the first paragraph of Item c of the response, including a figure for illustrative purposes (note that some of the descriptive information in Item b can be combined with the information in Item a to eliminate duplication). The seal descriptive information that was provided in the response should be supplemented as necessary to explain/specify: <ul style="list-style-type: none"> • if the seal is treated as a structure or mechanical component • codes or standards that apply to the seal assembly • codes/standards that apply to welds, and distinction between shop vs. field welds • why catastrophic failure of weld to refueling cavity floor will not occur b. Information concerning maintenance and inspection of the bellows provided in Item b of the response. c. Information concerning fuel pool level monitoring provided in the last paragraph of Item c of the response.

Enclosure

RAI Number	Reviewer	Question Summary	Full Text
			<p>d. The information in the proposed DCD markup on Tier 2 Page 12.4-6, edited to indicate/include:</p> <ul style="list-style-type: none"> • fuel in transit can <i>quickly</i> be placed in a safe location in the core or in the deep pit of the buffer pool <i>with at least 6 meters of water above the fuel</i> • a two-assembly-out-of-core configuration on the refuel floor is not anticipated as there is no fuel preparation machine in the buffer pool and tasks such as fuel sipping, rechanneling, and fuel inspections will take place in the spent fuel pool (from the response to item c, 4th paragraph) <p>e. Information concerning the plugs for the main steam and isolation condenser lines provided in the 5th paragraph of Item d.</p> <p>f. COL information items or other means as appropriate to ensure that COL applicants will establish and implement procedures for:</p> <ul style="list-style-type: none"> • responding to pool drain down events, • performing periodic maintenance and inspection of the cavity seal and plugs for the main steam lines and isolation condenser lines in accordance with vendor recommendations, • monitoring cavity seal leakage <p>g. DCD Tier 2 Table 1C-2 for IE Bulletin 84-03 needs to be revised to reference those sections of the DCD that reflect the above information.</p> <p>While the information referred to above can be reflected in those Tier 2 sections of the DCD deemed most appropriate by the applicant, it is the staff's preference to include this information in Tier 2 Section 9.1.4 to the extent this is practical and convenient.</p>

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(Revised 12/15/2009)

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