

April 29, 2008

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 192 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 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 301-415-8484 or [Tom.Tai@nrc.gov](mailto:Tom.Tai@nrc.gov) or you may contact Amy Cabbage at 301-415-2875 or [Amy.Cabbage@nrc.gov](mailto:Amy.Cabbage@nrc.gov).

Sincerely,

*/RA/*

Tom M. Tai, Senior 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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Sincerely,

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Tom M. Tai, Senior Project Manager  
ESBWR/ABWR Projects Branch 1  
Division of New Reactor Licensing  
Office of New Reactors

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Distribution: See next page

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<b>DATE</b>	04/24/08	04/29/08

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SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 192 RELATED TO  
ESBWR DESIGN CERTIFICATION APPLICATION DATED APRIL 29, 2008

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**Requests for Additional Information (RAIs)  
ESBWR Design Control Document (DCD), Revision 4**

<b>RAI Number</b>	<b>Reviewer</b>	<b>Question Summary</b>	<b>Full Text</b>
RAI 6.2-29, Supplement 3, (MFN 08-305, 4/11/2008)	Wagage H	TRACG should be validated for subcompartment analysis	<p>In RAI 6.2-29 Supplement 2, the staff stated that “GEH should either provide comparisons of applicable test data or approved code calculation results to TRACG analysis results to confirm the validity of using TRACG subcompartment pressurization evaluation.”</p> <p>In its response, dated April 11, 2008, GEH appeared to have provided neither. GEH provided no comparisons of TRACG analysis results to applicable test data. Instead GEH provided comparisons of TRACG and CONTAIN analyses results for reactor building subcompartment pressurization after a high energy line break. However, GEH provided no reference for CONTAIN being an approved code for subcompartment pressurization analysis.</p> <p>Please provide either a reference for approving CONTAIN for containment subcompartment pressurization analysis or comparisons of TRACG analysis results with analysis results obtained using a code which is approved for this purpose (e.g., a code used for analyzing containment subcompartment pressurization in operating boiling water reactors).</p>
RAI 6.2-58, Supplement 3, (MFN 08-081, 3/25/2008)	Wagage H	Add results of MSLB and FWLB with one SRV failure to the DCD	<p>GEH stated that as documented in DCD Tier 2, Rev. 4, Table 6.2-5 main steam line break accident (MSLB) is the limiting case of the four accidents analyzed assuming the same single failure of one DPV. GEH showed that for MSLB, a single failure of one DPV is more limiting than a single failure of one SRV. Please justify that the same single failure will be more limiting for the feed water line break accident (FWLB).</p> <p>Please add the results of MSLB and FWLB assuming a single failure of one SRV to DCD Tier 2, Rev. 4, Table 6.2-5.</p>

RAI 6.2-140, Supplement 2, (MFN 08-332, 4/4/2008)	Wagage H	Containment response w/o accident recovery options at 7 days and details of systems used after 3 days	<p>(A) Containment pressure and temperature response curves provided in response to RAI 6.2-140 (MFN 08-332, 4/4/2008) credit the RWCU/SDC non-regenerative heat exchanger operating in suppression pool cooling mode for 24 hours beginning at 7 days following a LOCA, followed by vessel injection via the SDC system with suction from the suppression pool. However, the GEH's response also notes that there is no requirement to start these accident recovery options at 7 days since the reactor is in a safe stable shutdown condition, and containment pressure and temperature continue to be maintained with sufficient margin to containment design limits for a sufficient time period to allow for use of other non-safety related, non-RTNSS SSCs to be placed in service to achieve cold shutdown.</p> <p>If "there is no requirement to start these accident recovery options at 7 days," please provide containment pressure and temperature responses without using such systems to confirm that containment pressure and temperature can be maintained without using them.</p> <p>(B) Please describe proposed quality classification, seismic requirements, and power supplies for the following systems credited for containment heat removal beginning at 3 days following a LOCA:</p> <p>RTNSS Systems, Structures, and Components (SSCs) that are used from 3 days to 7 days after a LOCA:</p> <ul style="list-style-type: none"> <li>• SSCs required for Isolation Condenser (IC)/Passive Containment Cooling (PCC) pool refill, including power supplies;</li> <li>• Passive Autocatalytic Recombiners; and</li> <li>• PCCS Vent Fans, including power supplies.</li> </ul> <p>Non-RTNSS SSCs that are used beyond 7 days after a LOCA:</p> <ul style="list-style-type: none"> <li>• FAPCS (suppression pool suction and containment cooling supply lines in the RB);</li> <li>• RWCU/SDC (portions thereof);</li> <li>• Reactor Component Cooling Water System (RCCWS) (portions thereof);</li> </ul>
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			<ul style="list-style-type: none"><li>• Reactor Building Contaminated Area HVAC Subsystem (CONAVS); and</li><li>• Those support systems required to operate the above systems.</li></ul> <p>Please incorporate responses to both Items (A) and (B) to the DCD if deemed necessary.</p>
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DC GE - ESBWR Mailing List

(Revised 04/22/2008)

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