September 14, 2007

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

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 108 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 301-415-2890 or axj2@nrc.gov or you may contact Tom Kevern at 301-415-0224 or tak@nrc.gov.

Sincerely,

/RA/

Andrea Johnson, 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 w/encl: See next page

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OFFICE	NGE1/PM	NGE1/PM	NGE1/BC	IHPB/BC	OGC NLO/w comments
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DATE	09/14/2007	09/11/2007	09/14/2007	09/11/2007	09/14/2007

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Letter to Robert E. Brown from Andrea M. Johnson dated September 14, 2007

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 108 RELATED TO ESBWR DESIGN CERTIFICATION APPLICATION

Distribution:
Docket No. 52-010
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Requests for Additional Information (RAIs)
ESBWR Chapter 11
Radioactive Waste Management

RAI Number	Reviewer	Question Summary	Full Text
RAI 11.2-16	JC Dehmel	Requirements relating to the conceptual design of the Mobile Liquid Waste Management System (LWMS)	According to 10 CFR §§ 52.47(a)[1], the following information is required: *(a)(24)A representative conceptual design for those portions of the plant for which the application does not seek certification, to aid the NRC in its review of the FSAR and to permit assessment of the adequacy of the interface requirements in paragraph (a)(25) of this section;* *(a)(25) The interface requirements to be met by those portions of the plant for which the application does not seek certification. These requirements must be sufficiently detailed to allow completion of the FSAR;* *(a)(26) Justification that compliance with the interface requirements of paragraph (a)(25) of this section is verifiable through inspections, tests, or analyses. The method to be used for verification of interface requirements must be included as part of the proposed ITAAC required by paragraph (b)(1) of this section;* A review of DCD Tier 2, Rev. 3, Section 11.2.2 and DCD Tier 1, Rev. 3, Section 2.10.1 indicates that mobile liquid radioactive waste processing systems are conceptual and therefore not in the scope of design certification. In the context of DCD Tier I requirements, design descriptions and interface requirements are intended to serve as binding requirements for the purpose of confirming that the plant will be built given the design features and specifications described in Tier I. Section 2.10.1 of the ESBWR DCD Tier 1, states that:

[1] Excerpted from August 28, 2007 Federal Register edition 10 CFR Part 52; identical text found in the previous version of 10 CFR 52.47(a)(vii-ix).

RAI Number	Reviewer	Question Summary	Full Text
			"*A LWMS Process Diagram depicting all four subsystems is provided in Figure 2.10.1-1. The three depicted mobile systems boxes are placeholders that indicate examples of unit operations and chemical reactors that could process radioactive waste. Actual mobile system unit operations and chemical reactors may differ based on improvements in radwaste technology.*" Accordingly, Section 11.2.2 of DCD Tier 2, Rev. 3, should be revised to state that the description of the mobile LWMS is conceptual and include a COL applicant item committing the COL applicant to provide complete descriptions and specifications of the mobile LWMS and its subsystems so as to meet the performance specifications described in DCD Tier 2, Rev. 3 Table 11.2-3, and radiological liquid effluent source terms and doses to members of the public presented in DCD Tier 2, Rev. 3, Section 12.2.2. In addition, Section 11.2.2 of the DCD Tier 2, Rev. 3, should provide specific details on system interface requirements between mobile LWMS processing equipment and permanently installed plant systems and components. The interface should address the integration of mobile equipment with sources liquid wastes and process flows, describe key components and discharge paths, ensure that mobile systems can accommodate expected process and effluent flow rates and capacities, identify process and effluent sampling points, identify system interface features designed to prevent bypasses to non-radioactive systems, and describe instrumentation used to control and monitor system performance and prevent unmonitored and uncontrolled releases of radioactivity in the environment. Moreover, the DCD Tier 2, Rev. 3, Section 11.2.4 (COL Information) should be revised to include a COL action item and ITAAC that binds the COL applicant to the installation and operation of a mobile LWMS to the performance specifications of DCD Tier 2, Rev. 3, Table 11.2-3, and radiological liquid effluent source terms and doses to members of the public presented in DCD Tier 2, Rev. 3, Section 12.2.2. Finally, DCD Tier I, Section 2.10.1 should be revised to clearly state that the mobile LWMS described in the DCD is conceptual, and the interface requirements should be discussed in Section 4 of Tier 1. Further, ITAAC should be added to Tier 1 to verify that the mobile LWMS system selected by a COL applicant for installation with the ESBWR certified design comply with the interface requirements as required by 10 CFR §§ 52.47(a)(26).

RAI Number	Reviewer	Question Summary	Full Text
			Supplying final standard design information for the mobile LWMS in the DCD rather than conceptual design information, with ITAAC provided as appropriate, would also be an acceptable approach.
RAI 11.4-18	JC Dehmel	Requirements relating to the conceptual design of the Mobile Solid Waste Management System (SWMS)	The issues identified above for LWMS RAI 11.2-16, with the exclusion of source terms and doses, should be evaluated against mobile solid waste processing systems and incorporated in Section 11.4.2 of the DCD Tier 2, Rev. 3 and DCD Tier I, Rev. 3, Section 2.10.2. As before, such mobile systems should be designated as conceptual in the context of the design certification. The exception for the source terms and doses reflects that the source terms and doses presented in Section 12.2.2 of the DCD (Tier 2, Rev. 3) include the source term associated with the operation of the SWMS since all liquid wastes generated by the SWMS are processed and discharged via the LWMS. Supplying final standard design information for the mobile LWMS in the DCD rather than conceptual design information, with ITAAC provided as appropriate, would also be an acceptable approach.

cc:

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