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Subject: Response to Portion of NRC Request for Additional Information Letter No. 285 Related to ESBWR Design Certification Application - Design Basis Accident Engineered Safety Feature Materials - RAI Number 6.1-12 S01

Enclosure 1 contains the GE Hitachi Nuclear Energy (GEH) response to the subject NRC RAI originally transmitted via the Reference 1 letter and supplemented by an NRC request for clarification in Reference 2.

If you have any questions or require additional information, please contact me.

Sincerely,

Lee F. Dougherty for

Richard E. Kingston
Vice President, ESBWR Licensing

References:

1. MFN 06-328, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 58 Related to ESBWR Design Certification Application*, September 13, 2006
2. MFN 08-963, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, *Request for Additional Information Letter No. 285 Related to ESBWR Design Certification Application*, December 10, 2008

Enclosure:

1. MFN 09-110 - Response to Portion of NRC Request for Additional Information Letter No. 285 Related to ESBWR Design Certification Application - Design Basis Accident Engineered Safety Feature Materials - RAI Number 6.1-12 S01

cc:	AE Cubbage	USNRC (with enclosure)
	DH Hinds	GEH/Wilmington (with enclosure)
	RE Brown	GEH/Wilmington (with enclosure)
	eDRF	0000-0095-4977

Enclosure 1

MFN 09-110

Response to Portion of NRC Request for Additional Information Letter No. 285 Related to ESBWR Design Certification Application

Design Basis Accident Engineered Safety Feature Materials

RAI Number 6.1-12 S01

NRC RAI 6.1-12 S01:

In GEH's response to RAI 6.1-17, dated October 9, 2008, the applicant modified Table 6.1-1 to reference DCD Section 3.8 for materials used for the containment vessel liner plate, GDCS pool liner and suppression pool liner. Section 3.8 indicates that 304 L stainless steel will be clad to ASTM A-709 HPS 70W for some applications. The staff notes that GEH's response to RAI 6.1-12, dated October 4, 2006, stated that the stainless steel liner will not be welded directly to A709 Gr. HPS 70W. Given that the information supplied by GEH regarding RAI 6.1-12 is no longer accurate, the staff requests that the applicant provide the following:

Identify what, if any, portion of the stainless steel containment vessel liner, GDCS pool liner or suppression pool liner is welded to A709 Gr. HPS 70W. Identify the welding process, filler material, welding requirements and history of joining these two materials. In addition, discuss how you will verify that the finished welds exposed to water will maintain corrosion resistance properties at least equal to those of 304L given that the welds will be diluted with A709 Gr. HPS 70W base material.

GEH Response:

SA-240 Type 304L stainless steel liner will be welded to the thickened portions of the containment vessel liner that are made of A709 Gr. HPS 70W plate material as specified in DCD Tier 2, Revision 5, Subsection 3.8.1.6.4 and Figure 3G.1-48. These thickened portions of the containment vessel liner are located where the diaphragm floor and vent wall are attached to the containment vessel liner as specified in DCD Tier 2, Revision 5, Figure 3G.1-48.

Welding between dissimilar materials follows ASME Section III requirements consistent with the GEH response to NRC RAI 6.1-11 (MFN 06-365, dated October 4, 2006). To assure adequate corrosion resistance of the finished welds, Type E309 weld metal with a maximum carbon content of 0.03% will be used for the dissimilar metal welds. The wet areas of A709 liner plates will be clad in accordance with SA-264 specified in DCD Tier 2, Revision 5, Subsection 3.8.1.6.4 and Figure 3G.1-48. The exact cladding method (roll bonding, welding, etc.) will be determined in the construction phase consistent with the GEH response to NRC RAI 6.1-11 (MFN 06-365, dated October 4, 2006).

The basis for use of A709 Gr. HPS 70W plate material for containment vessel liner as an alternate to the provisions of ASME Section III, Division 2, Subsection CC, is provided in ASME Code Case N-763 in accordance with the GEH response to NRC RAI 5.2-50 S02 (MFN 06-290, Supplement 3, dated April 24, 2008).

DCD Impact:

No DCD changes will be made in response to this RAI.