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MFN 09-001

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U.S. Nuclear Regulatory Commission
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Subject: **Response to Portion of NRC Request for Additional Information Letter No. 265 Related to ESBWR Design Certification Application RAI Number 14.3-438**

The purpose of this letter is to submit the GE Hitachi Nuclear Energy (GEH) Response to the U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) sent by NRC letter 265 dated October 10, 2008 (Reference 1).

Enclosure 1 contains the GEH response to RAI Number 14.3-438.

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

Sincerely,

Richard E. Kingston

Richard E. Kingston
Vice President, ESBWR Licensing

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NRO

References:

1. MFN 08-811, Letter from U.S. Nuclear Regulatory Commission to Mr. Robert E. Brown, GEH, *Request For Additional Information Letter No. 265 Related To ESBWR Design Certification Application*, dated October 10, 2008.

Enclosures:

1. Response to Portion of NRC Request for Additional Information Letter No. 265 Related to ESBWR Design Certification Application DCD Tier 1 RAI Number 14.3-438.
2. Attachment 1, DCD Tier 1 Revision 6 Markup

cc:		
	AE Cubbage	USNRC (with enclosure)
	RE Brown	GEH/Wilmington (with enclosure)
	DH Hinds	GEH/Wilmington (with enclosure)
	eDRFs	0000-0095-5837 (RAI 14.3-438)

Enclosure 1

MFN 09-001

Response to Portion of NRC Request for Additional Information Letter No. 265 Related to ESBWR Design Certification Application

DCD Tier 1

RAI Number 14.3-438

NRC RAI 14.3-438

DCD Tier 1, Table 2.15.1-2, Design Commitment #18 provides an ITAAC to perform drywell to wetwell bypass leakage testing. Confirm that this testing is performed at approximately the peak drywell to wetwell differential pressure following the high-pressure structural test of the diaphragm as stated in SRP Section 6.2.1.1.C Regulatory Position 2.a.

GEH Response

The drywell to wetwell bypass leakage test will be performed after the high-pressure structural test of the diaphragm floor as described in DCD Tier 2, Subsection 14.2.8.1.31.

Initial Test Program, Chapter 14, Subsection 14.2.8.1.32, Overall Suppression Pool Bypass Leakage Test will be updated to include the prerequisite for high-pressure structural test of the diaphragm.

DCD Impact

DCD Tier 2, Subsection 14.2.8.1.32 will be revised as noted in the attached markup.

Attachment 1

RAI Number 14.3-438

Revision 6

Tier 1 – DCD Markup

General Test Methods and Acceptance Criteria

Description of the preoperational containment integrated leakage rate tests and acceptance criteria are provided in Section 6.2.

During the Type A test, the drywell to suppression pool gas space differential pressure test will be performed as required by the Technical Specifications.

14.2.8.1.31 Containment Structural Integrity Test

Purpose

The objective of this test is to verify that the design and construction of the primary containment is capable of withstanding specified internal pressure loads as described in Section 3.8.

Prerequisites

The containment construction is complete to the extent necessary to perform this test. Construction turnover of the system is completed. The SCG has reviewed the test procedures and approved the initiation of testing. Reactor vessel, GDCS Pools, IC/PCCS Pools, reactor cavity, equipment storage pool, spent fuel pool and suppression pools are filled with water to the normal operation level. The instruments and controls within the scope of this test are calibrated. The structural integrity measurement and pressurizing equipment is available for use to support the test. Equipments incapable of withstanding the test pressure are removed from containment or otherwise protected.

General Test Methods and Acceptance Criteria

The internal pressure in the containment will be increased from atmospheric pressure to the test pressure in uniformly spaced pressure increments. The drywell and containment are depressurized in the same increments. During the test, the radial and vertical displacements of the drywell and containment structure are measured, and crack patterns and crack widths of the containment exterior surface at prescribed locations are observed. Pertinent system performance data are recorded and compared with the predicted response. During the analysis, verify that system performance test data satisfy the requirements as specified in Section 3.8.

14.2.8.1.32 Overall Suppression Pool Bypass Leakage Test

Purpose

The objective of this preoperational test is to determine the overall suppression pool bypass leakage effective area and to confirm this value is within limits of the low-pressure test acceptance criteria. The test method used will form the basis for subsequent leakage tests conducted at the same frequency as the ILRT.

Prerequisites

The SCG has reviewed the test procedures and approved the initiation of testing. Containment structural integrity test has been performed as described in Subsection 14.2.8.1.31. A pressurizing source for the drywell and temporary high precision test equipment has been installed in both drywell and wetwell gas space. This instrumentation is within the established calibration interval, has been fully checked out and is ready for the test. The suppression pool level has been established at the high end of normal range. All penetrations from the drywell to