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Subject: **Response to Portion of NRC Request for Additional
Information Letter No. 199 Related to ESBWR Design
Certification Application - RAI Number 14.3-369 S01**

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 199 dated May 15, 2008 (Reference 1).

Enclosure 1 contains the GEH response to RAI Number 14.3-369 S01.

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

Sincerely,

Richard E. Kingston
Vice President, ESBWR Licensing

DOB
NRC

Reference:

1. MFN 08-482, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, GEH, *Request For Additional Information Letter No. 199 Related To ESBWR Design Certification Application*, dated May 15, 2008.

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 199 Related to ESBWR Design Certification Application DCD Tier 1 RAI Number 14.3-369 S01

cc: AE Cabbage USNRC (with enclosure)
RE Brown GEH/Wilmington (with enclosure)
DH Hinds GEH/Wilmington (with enclosure)
eDRF 0000-0089-6312

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Enclosure 1

**Response to Portion of NRC Request for
Additional Information Letter No. 199
Related to ESBWR Design Certification Application**

DCD Tier 1

RAI Number 14.3-369, Supplement 1

RAI 14.3-369-SUPPLEMENT 01

NRC Summary: FAPCS suppression pool cooling mode

NRC Full Text: For ITAAC Table 2.6.2-2, Item 7a), the ITA specifies the performance of a test for the flow path, however, the AC implies that capacity is confirmed. The staff requests that the applicant modify the ITA to include a confirmation of capacity and revise the AC to include the flow rate criteria for acceptance. GEH in their response just added the words "the flow rate capacity is greater or equal to 541.5 m³/hr" in the AC. GEH should modify the ITA to confirm the flow path and capacity, and then modify the AC accordingly but still include the flow rate.

GEH RESPONSE

DCD Tier 1, Table 2.6.2-2, ITAAC for the Fuel and Auxiliary Pools Cooling System (FAPCS), item 7a as requested, and item 7b, will be revised.

The revised ITA statement for item 7a will ensure that the ITA confirms both the flow path and the minimum flow rate of FAPCS in suppression pool cooling mode. Additionally, GEH has identified and corrected a discrepancy in the AC for suppression pool cooling flow rate values to read 545 m³/hr (2400 gal/min).

The revised ITA and AC statement for item 7b will ensure that the ITA confirms both the flow path and the minimum flow rate of FAPCS in the low-pressure coolant injection (LPCI) mode. The revised AC ensures a minimum of 340 m³/hr (1500 gal/min) at a test dP of or equivalent to low pressure injection mode flow to the RPV with a wetwell atmosphere to RPV steam dome differential pressure of at least 1.03 MPa (150 psi). For conduct of the low pressure injection mode test, an upper bound of 1.17 MPa (170 psi) equivalent differential pressure is established as a reasonable limit, and is not a performance requirement for FAPCS.

DCD IMPACT

DCD Tier 1, Table 2.6.2-2 ITAAC 7a and 7b will be revised as noted in the attached markup.

Table 2.6.2-2
ITAAC For The Fuel and Auxiliary Pools Cooling ~~Cleanup~~ System

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
	ii) Type tests, analyses, or a combination of type tests and analyses of seismic Category I equipment will be performed. iii) Inspection will be performed for the existence of a report verifying that the as-installed components including anchorage is seismically bounded by the tested or analyzed conditions	ii) A report exists and concludes that the seismic Category I equipment can withstand seismic design basis loads without loss of safety function. iii) A report exists and concludes that the as-installed components including anchorage is components including anchorage are seismically bounded by the tested or analyzed conditions.
6. — The containment isolation portions of the FAPCS are addressed in Tier 1, Subsection 2.15.1.	See Tier 1 Subsection 2.15.1.	See Tier 1 Subsection 2.15.1
7. — The FAPCS performs the following non safety-related functions: a. Suppression pool cooling mode	Perform a test to confirm the flow path and minimum flowrate between the FAPCS to and the suppression pools.	Test report(s) document that the cooling flow path is demonstrated and confirmed by operation by operation of the function. The flow rate is ≥ 545.1 m ³ /hr (1998.422 400 gal/min).
b. Low-pressure coolant injection mode.	Perform a test to confirm the flow path and minimum flowrate from the FAPCS to the RWCU/SDC system.	Test report(s) document that the injection flow path is demonstrated and confirmed by operation of the function. The flowrate is ≥ 340 m ³ /hr (1500 gal/ pm min) at conditions of or equivalent to discharge into the RPV with a wetwell atmosphere - to - RPV steam dome differential pressure (dP) of at least 1.03 MPa (150 psi). For the conduct of this test, 1.17 MPa (170 psi) upper dP value is sufficient.