



**HITACHI**

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Subject: **Response to Portion of NRC Request for Additional  
Information Letter No. 215 Related to ESBWR Design  
Certification Application RAI Number 14.3-379 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 215 dated June 23, 2008 (Reference 1).

Enclosure 1 contains the GEH response to RAI Number 14.3-379 S01.

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

Sincerely,

Richard E. Kingston  
Vice President, ESBWR Licensing

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NR0

Reference:

1. MFN 08-550, Letter from U.S. Nuclear Regulatory Commission to Mr. Robert E. Brown, GEH, *Request For Additional Information Letter No. 215 Related To ESBWR Design Certification Application*, dated June 23, 2008.

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 215 Related to ESBWR Design Certification Application DCD Tier 1 RAI Number 14.3-379 Supplement 1

cc: AE Cabbage      USNRC (with enclosure)  
RE Brown      GEH/Wilmington (with enclosure)  
DH Hinds      GEH/Wilmington (with enclosure)  
eDRF      0000-0089-3653 (RAI) 14.3-379 S01

**MFN 08-086 Supplement 68**

**Enclosure 1**

**Response to Portion of NRC Request for  
Additional Information Letter No. 215  
Related to ESBWR Design Certification Application**

**DCD Tier 1**

**RAI Number 14.3-379 Supplement 1**

**NRC RAI 14.3-379 S01**

*NRC Summary:  
Divisional Separation*

*NRC Full Text:*

*It is suggested that the DC, ITA, and AC for Item 6a in inspection, test, analysis, and acceptance criteria (ITAAC) Table 2.15.1-2 be revised as follows:*

*DC "The electrical safety-related components associated with actuation and status monitoring of final control elements of the Containment System equipment listed in Table 2.15.1-1 receive power from their respective, safety-related divisional power supplies."*

*ITA "Test(s) will be performed for the electrical safety-related components for the equipment of the Containment System listed in Table 2.15.1-1 by providing a test signal in only one safety-related division at a time."*

*AC "Test(s) reports(s) exist(s) and conclude(s) the electrical components in a singular division for the equipment of the Containment System listed in Table 2.15.1-1 receive(s) power from a safety-related power supply in the same division."*

**GEH RESPONSE**

Item 6a in Section 2.15.1 and ITAAC 6a in Table 2.15.1-2 will be revised to incorporate the suggested changes.

**DCD IMPACT**

Item 6a in Section 2.15.1 and ITAAC 6a in Table 2.15.1-2 will be revised to incorporate the suggested changes as shown in the attached markup.

**Attachment 1**

**RAI Number 14.3-379 S01**

**Tier 1 – DCD Markup**

- 2.c.iii. The piping identified in Table 2.15.1-1 as ASME Code Section III is, fabricated, installed, and inspected in accordance with ASME Code Section III requirements.
- (3) Pressure Boundary Welds
- a. Pressure boundary welds in components identified in Tables 2.15.1-1a and 2.15.1-1b as ASME Code Section III meet ASME Code Section III requirements.
  - b. Pressure boundary welds in piping identified in Tables 2.15.1-1a and 2.15.1-1b as ASME Code Section III meet ASME Code Section III requirements.
- (4) The components and piping identified in Tables 2.15.1-1a and 2.15.1-1b as ASME Code Section III retain their pressure boundary integrity at their design pressure.
- (5) The seismic Category I equipment identified in Tables 2.15.1-1a, 2.15.1-1b, and 2.15.1-1c can withstand design basis load without loss of structural integrity and safety function.
- (6) The equipment qualification of Containment Systems components is addressed in Section 3.8.
- a. The electrical safety-related components associated with actuation and status monitoring of final control elements of the Containment System ~~components equipment~~ listed in Tables 2.15.1-1a, 2.15.1-1b, and 2.15.1-1c ~~are receive powered~~ from their respective safety-related divisional power supplies.
  - b. Separate electrical penetrations are provided for circuits of each safety-related division and for nonsafety-related circuits.
  - c. The circuits of each electrical penetration are of the same voltage class.
- (7) The containment system provides a barrier against the release of fission products to the atmosphere.
- (8) The containment system pressure boundary retains its structural integrity when subject to design pressure.
- (9) The containment system provides the safety-related function of containment isolation for containment boundary integrity.
- (10) Containment electrical penetration assemblies, whose maximum available fault current (including failure of upstream devices) is greater than the continuous rating of the penetration, are protected against currents that are greater than the continuous ratings.
- (11) The minimum set of displays, alarms and controls, based on the emergency procedure guidelines and important operator actions, is available in the main control room
- (12) The amount of chlorine bearing cable insulation exposed to the containment atmosphere is limited.
- (13) The DW and wetwell (WW) volumes are adequately sized to accommodate the calculated maximum DW temperature and absolute pressure that are postulated to occur as a result of a design basis accident
- (14) The water volume of the WW is adequately sized to condense the steam that is forced into the WW from the DW due to a postulated pipe break.

Table 2.15.1-2

ITAAC For The Containment System

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
	ii) Inspections will be performed for the existence of a report verifying that the as-installed equipment including anchorage is bounded by the tested or analyzed conditions.  iii) Inspections of the equipment identified in Tables 2.15.1-1a, 2.15.1-1b and 2.15.1-1c will be performed to verify that the equipment is housed in seismic Category I structures.	ii) The as-built equipment including anchorage is bounded by the tested or analyzed conditions.  iii) The seismic category I equipment identified in Tables 2.15.1-1a, 2.15.1-1b, and 2.15.1-1c is housed in a seismic Category I structure.
6. The equipment qualification of Containment Systems components is addressed in DCD Tier 1 Section 3.8.	See Section 3.8.	See Section 3.8.
a. The electrical safety-related components associated with actuation and status monitoring of final control elements of the Containment System <del>components</del> <u>equipment</u> listed in Tables 2.15.1-1a, 2.15.1-1b, and 2.15.1-1c <del>are</del> <u>receive</u> powered from their respective safety-related divisional <u>power supplies</u> .	Test(s) will be performed <del>on</del> <u>for</u> the electrical safety-related <del>components</del> <u>for the equipment of the</u> Containment System listed in Tables 2.15.1-1a, 2.15.1-1b, and 2.15.1-1c by providing a test signal in only one safety-related division at a time.	Test report(s) exist and <del>document</del> <u>conclude</u> that the test signal exists only in the safety-related <del>the electrical components in a</del> <u>singular division for the equipment of the</u> Containment System listed in Tables 2.15.1-1a, 2.15.1-1b, and 2.15.1-1c <u>receive(s)</u> <del>(or at the equipment powered from from the</del> <u>at the equipment powered from from the</u> safety-related <del>division)</del> <u>division)</u> power supply in the same division <u>under test in the Containment System</u> .