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**Subject: Response to Portion of NRC Request for Additional Information
Letter No. 231 - Related To ESBWR Design Certification
Application – RAI Number 14.3-399**

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 the Reference 1 NRC letter. GEH response to RAI Number 14.3-399 is addressed in Enclosure 1. DCD markups, associated with this response, are provided in Enclosure 2.

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

Sincerely,

Richard E. Kingston
Vice President, ESBWR Licensing

DOB
NRO

Reference:

1. MFN 08-628, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, *Request For Additional Information Letter No. 231 Related To ESBWR Design Certification Application*, dated August 5, 2008.

Enclosures:

1. MFN 08-872 – Response to Portion of NRC Request for Additional Information Letter No. 231 - Related To ESBWR Design Certification Application – RAI Number 14.3-399
2. MFN 08-872 – Response to Portion of NRC Request for Additional Information Letter No. 231 - Related To ESBWR Design Certification Application – RAI Number 14.3-399 – DCD Markup Pages

cc: AE Cabbage USNRC (with enclosures)
RE Brown GEH/Wilmington (with enclosures)
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eDRF 0000-0092-9468

Enclosure 1

MFN 08-872

Response to Portion of NRC Request for

Additional Information Letter No. 231

Related to ESBWR Design Certification Application

RAI Number 14.3-399

NRC RAI 14.3-399

In DCD, Tier 1, Table 2.1.1-3, "ITAAC for Reactor Pressure Vessel System", Item # 11, revise the Acceptance Criteria to state "A report exists and concludes that the as-built reactor system fuel bundle, control rod, instrumentation, and neutron source locations conform to the locations shown on Figure 2.1.1-2."

GEH Response

DCD Tier 1, Table 2.1.1-3 Item #11 "Acceptance Criteria" will be revised as requested.

For consistency, the text of Subsection 2.1.1 (11) and Table 2.1.1-3 Item #11 "Design Commitment" will be revised to replace the word "accommodate" with "conform to".

DCD Impact

DCD, Tier 1 Subsection 2.1.1 and Table 2.1.1-3, "ITAAC for Reactor Pressure Vessel System", Item # 11 will be revised as shown in the Enclosure 2 DCD markup.

Enclosure 2

MFN 08-872

Response to Portion of NRC Request for

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DCD Markup Pages

**Table 2.1.1-3
ITAAC For Reactor Pressure Vessel System**

| Design Commitment | Inspections, Tests, Analyses | Acceptance Criteria |
|---|---|--|
| 11. The reactor internals arrangement will accommodate conform to the fuel bundle and control rod locations shown on Figure 2.1.1-2. | An inspection of the as-built system will be performed. | Report(s) exist and conclude that the as-built reactor system fuel bundle, control rod, instrumentation, and neutron source locations conform to the locations shown on Figure 2.1.1-2. The as-built reactor system accommodates the fuel bundle and control rod locations shown on Figure 2.1.1-2. |

- a3. The RPV and its components identified in Table 2.1.1-1 (shroud, shroud support, top guide, core plate, control rod guide tubes and fuel supports) as ASME Code Section III are fabricated, installed, and inspected in accordance with ASME Code Section III requirements.
- (4) Pressure boundary welds in components identified in Table 2.1.1-1 as ASME Code Section III meet ASME Code Section III requirements.
 - (5) The components identified as ASME Code Section III retain their pressure boundary integrity at their design pressure.
 - (6) The seismic Category I equipment identified in Table 2.1.1-1 can withstand seismic design basis loads without loss of safety function.
 - (7) RPV surveillance specimens are provided from the forging material of the beltline region and the weld and heat affected zone of a weld typical of those adjacent to the beltline region. Brackets welded to the vessel cladding at the location of the calculated peak fluence are provided to hold the removable specimen holders and a neutron dosimeter in place.
 - (8) The RPV internal structures listed in Table 2.1.1-1 (chimney and partitions, chimney head and steam separators assembly, and steam dryer assembly) must meet the limited provisions of ASME Code Section III regarding certification that these components maintain structural integrity so as not to adversely affect RPV core support structure.
 - (9) The initial fuel to be loaded into the core will withstand flow-induced vibration and maintain fuel cladding integrity during operation.
 - (10) The fuel bundles and control rods intended for initial core load have been designed and constructed in accordance with the principal design requirements.
 - (11) The reactor internals arrangement will ~~accommodate~~ conform to the fuel bundle and control rod locations shown on Figure 2.1.1-2.

Inspections, Tests, Analyses and Acceptance Criteria

Table 2.1.1-3 provides a definition of the inspections, tests, and/or analyses, together with associated acceptance criteria for the Reactor Pressure Vessel System.