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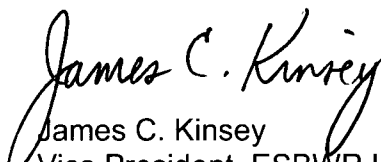
Subject: **Response to Portion of NRC Request for Additional Information Letter No. 126 Related to ESBWR Design Certification Application RAI Number 14.3-247**

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 dated December 20, 2007 (Reference 1).

Enclosure 1 contains the GEH response to RAI 14.3-247. The enclosed changes will be incorporated in the upcoming DCD Revision 5 submittal.

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

Sincerely,


James C. Kinsey
Vice President, ESBWR Licensing

DOCS
NRC

Reference:

1. MFN 07-718, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, *Request For Additional Information Letter No. 126 Related To ESBWR Design Certification Application*, December 20, 2007.

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 126 Related to ESBWR Design Certification Application – RAI Number 14.3-247.

cc: AE Cabbage USNRC (with enclosure)
GB Stramback GEH/San Jose (with enclosure)
RE Brown GEH/Wilmington (with enclosure)
DH Hinds GEH/Wilmington (with enclosure)
eDRF 0000-0081-5820 – RAI 14.3-247

MFN 08-086, Supplement 48

Enclosure 1

**Response to Portion of NRC Request for Additional
Information Letter No. 126 Related to ESBWR
Design Certification Application**

RAI Number 14.3-247

NRC RAI 14.3-247

NRC Summary:

Physical separation acceptance criteria should be identified

NRC Full Text:

Specify that the physical separation criteria should meet the criteria identified in IEEE-384 (Examples: Table 2.2.4-6, SLC; Table 2.3.2-2; PRM; Table 2.4.1-3 ICS).

GEH RESPONSE

IEEE-384 does not apply to Table 2.3.2-2, ITAAC For The Area Radiation Monitoring System. No change will be made to the table in response to this RAI.

IEEE-384 is applicable to the ITAAC Tables 2.2.4-6, 2.3.1-2 and 2.4.1-3 for the SLC, PRM and ICS systems, respectively. The acceptance criteria of these tables will be revised to indicate that the physical separation criteria will meet the criteria identified in RG 1.75, which modifies the requirements of IEEE Std. 384.

DCD IMPACT

DCD Tier 1, Tables 2.2.4-6, 2.3.1-2 and 2.4.1-3 will be revised as noted in the attached markups.

**Table 2.2.4-6
ITAAC For The Standby Liquid Control System**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
<p>15. Each of the SLC System divisions (or safety-related loads/components) identified in Tables 2.2.4-4 and 2.2.4-5 is powered from its respective safety-related division.</p>	<p>Testing will be performed on the SLC System by providing a test signal in only one safety-related division at a time.</p>	<p>Report(s) document that a test signal exists in the safety-related division (or at the equipment identified in Table 2.2.4-4 powered from the safety-related division) under test in the SLC System.</p>
<p>16. In the SLC System, independence is provided between safety-related divisions, and between safety-related divisions and nonsafety-related equipment.</p>	<p><u>a.</u></p> <p>i) Tests will be performed on the SLC System by providing a test signal in only one safety-related division at a time.</p> <p>ii) <u>b.</u> Inspection of the as-installed safety-related divisions in the SLC System will be performed.</p>	<p><u>a.</u> Report(s) document that</p> <p>i) The test signal exists only in the safety-related division under test in the System.</p> <p>ii) <u>b. Inspection report(s) of the as-installed safety-related divisions in the SLC System document(s) that:</u></p> <p>i) <u>In the SLC System, physical separation or electrical isolation exists between these safety-related divisions in accordance with RG 1.75.</u></p> <p>ii) Physical separation or electrical isolation exists between safety-related Divisions and nonsafety-related equipment <u>in accordance with RG 1.75.</u></p>

**Table 2.3.1-2
ITAAC For The Process Radiation Monitoring System**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
<p>1. The functional arrangement of the PRMS is as described in the Design Description of this Subsection 2.3.1 and Figure 2.3.1-1 in conjunction with Table 2.3.1-1.</p>	<p>Inspections shall be conducted on each as-built PRMS subsystem as shown in Figure 2.3.1-1 in conjunction with Table 2.3.1-1.</p>	<p>Inspection report(s) document that the as-built PRMS subsystems conform to the functional arrangement as described in the Design Description of this Subsection 2.3.1 and shown in Figure 2.3.1-1 in conjunction with Table 2.3.1-1.</p>
<p>2a. The safety-related PRMS subsystems as identified in Table 2.3.1-1 are powered from uninterruptible safety-related power sources.</p> <p>b. The safety-related PRMS subsystems identified in Table 2.3.1-1 have electrical divisional separation.</p>	<p>a. Inspections will be conducted to confirm that the PRMS safety-related subsystems identified in Table 2.3.1-1 are powered from uninterruptible safety-related power sources.</p> <p>b. Inspections of the as-built divisions will be conducted.</p>	<p>a. Inspection report(s) document that the safety-related PRMS subsystems identified in Table 2.3.1-1 receive electrical power from uninterruptible safety-related buses.</p> <p>b. Inspection report(s) document that the each subsystem division is physically separated from the other division <u>in accordance with RG 1.75</u>.</p>

**Table 2.4.1-3
ITAAC For The Isolation Condenser System**

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
<p>6a. Each of the IC System divisions (or safety-related loads/components) identified in Table 2.4.1-2 is powered from its respective safety-related division.</p>	<p>Testing will be performed on the IC System by providing a [simulated] test signal in only one safety-related division at a time.</p>	<p>Report(s) document that a [simulated] test signal exists in the safety-related division (or at the equipment identified in Table 2.4.1-2 powered from the safety-related division) under test in the IC System.</p>
<p>b. In the IC System, independence is provided between safety-related divisions, and between safety-related divisions and non-safety related equipment.</p>	<p>i) Tests will be performed on the IC System by providing a test signal in only one safety-related division at a time.</p> <p>ii) Inspection of the as-installed safety-related divisions in the IC System will be performed.</p>	<p>Report(s) document that:</p> <p>i) The test signal exists only in the safety-related Division under test in the System.</p> <p>ii) <u>Inspection report(s) of the as-installed safety-related divisions in the IC System document that;</u></p> <ul style="list-style-type: none"> • <u>Physical separation or electrical isolation exists between these safety-related divisions in accordance with RG 1.75.</u> • <u>Physical separation or electrical isolation exists between safety-related divisions and non-safety related equipment in accordance with RG 1.75.</u>