



GE Energy

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**Subject: Response to Portion of NRC Request for Additional Information  
Letters No. 81 and 85 - Containment and Emergency Core Cooling  
Systems - RAI Numbers 14.3-97 and 6.3-67**

Enclosure 1 contains GE's response to the subject NRC RAIs transmitted via the Reference 1 and 2 letters.

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

Sincerely,

A handwritten signature in cursive script that reads "Kathy Sedney for".

James C. Kinsey  
Project Manager, ESBWR Licensing

References:

1. MFN 06-462, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 81 Related to ESBWR Design Certification Application*, November 14, 2006
2. MFN 07-054, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 85 Related to ESBWR Design Certification Application*, January 19, 2007

Enclosure:

1. MFN 07-239 - Response to Portion of NRC Request for Additional Information Letters No. 81 and 85 - Related to ESBWR Design Certification Application - Containment and Emergency Core Cooling Systems - RAI Numbers 14.3-97 and 6.3-67

cc: AE Cabbage USNRC (with enclosures)  
BE Brown GE/Wilmington (with enclosures)  
GB Stramback GE/San Jose (with enclosures)  
eDRF 0000-0067-0947

**Enclosure 1**

**MFN 07-239**

**Response to Portion of NRC Request for  
Additional Information Letters No. 81 and 85  
Related to ESBWR Design Certification Application  
Containment and Emergency Core Cooling Systems  
RAI Numbers 14.3-97 and 6.3-67**

**NRC RAI 14.3-97:**

*Item 4, Table 2.15.1: As these documents pertain to "Containment System," performance of Type B and Type C tests should be part of this Table as an Inspections, Test, Analyses and Acceptance Criteria (ITAAC) item.*

**GE Response:**

DCD Tier 1, Revision 3, Table 2.15.1-1, Item 4, includes a commitment to Inspections, Test, Analyses and Acceptance Criteria (ITAAC) for performance of an integrated leak rate test (Type A) as required by 10 CFR 50, Appendix J. Type B and C local leak rate testing as required by 10 CFR 50, Appendix J, will be added to Table 2.15.1-1 in DCD Tier 1, Revision 4, as ITAAC Items 12 and 13, respectively. The Main Steam Isolation Valves (MSIVs) have their own leakage criteria and their own individual ITAAC in DCD Tier 1, Revision 3, Table 2.1.2-2, Item 9. Because of adding Item 13 to DCD Tier 1, Table 2.15.1-1, the redundant Item 8 in DCD Tier 1, Table 2.6.2-1 for the Fuel and Auxiliary Pools Cooling Cleanup System (FAPCS) will be deleted in DCD Tier 1, Revision 4.

**DCD Impact:**

DCD Tier 1, Table 2.15.1-1 and Table 2.6.2-1, will be revised in DCD Tier 1, Revision 4, as shown in the attached markup.

**Table 2.15.1-1  
ITAAC For The Containment System**

<b>Design Commitment</b>	<b>Inspections, Tests, Analyses</b>	<b>Acceptance Criteria</b>
4. The containment provides a barrier against the release of fission products.	4. <del>A containment integrated leak rate test</del> Type A containment testing will be conducted as per 10 CFR 50 Appendix J.	4. A test report concludes that <del>The</del> containment air leakage rate <del>demonstrated by the integrated leak rate test at the peak containment pressure developed during the bounding case of DBA</del> is less than or equal to 0.5% per day by weight of air in containment free volume determined at the calculated peak containment <del>design</del> pressure 310 kPa gauge (45 psig) and standard temperature of 20°C (68°F)(P <sub>a</sub> ).
12. Leakage of all containment penetrations is acceptable.	12. Type B testing will be conducted as per 10 CFR 50 Appendix J.	12. Test reports conclude that leak rates are less than the acceptance criterion established per the leak rate program.
13. Leakage of all containment penetrations is acceptable.	13. Type C testing will be conducted as per 10 CFR 50 Appendix J.	13. Test reports conclude that leak rates are less than the acceptance criterion established per the leak rate program.

**Table 2.6.2-1  
ITAAC For The Fuel and Auxiliary Pools Cooling Cleanup System**

<b>Design Commitment</b>	<b>Inspections, Tests, Analyses</b>	<b>Acceptance Criteria</b>
8. <del>Leakage of all containment isolation valves is acceptable.</del> Deleted.	8. <del>Perform valve leakrate tests in accordance with Type C valve leakrate test of 10 CFR 50 Appendix J.</del>	8. <del>Leakrate is less than the acceptance criterion established per the leak rate program (or IST).</del>

**NRC RAI 6.3-67:**

*Explain the changes in DCD, Table 6.3-2 "[gravity driven cooling system] GDSCS Design Basis Parameters," from DCD Rev. 1 to DCD Rev. 2. These were not described in the Chapter 6 "Change List" document.*

**GE Response:**

The total volume of the 3 Gravity Driven Cooling System (GDSCS) pools was added in response to RAI 6.3-17. The minimum total drainable volume and the minimum elevation of GDSCS pool surfaces above the reactor pressure vessel (RPV) nozzles were changed to reflect the current design. The value for minimum available suppression pool water inventory volume was changed to correct a typographical error.

**DCD Impact:**

No DCD changes will be made in response to this RAI.