

GE-Hitachi Nuclear Energy Americas LLC

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MFN 06-461 Supplement 2

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U.S. Nuclear Regulatory Commission  
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**Subject: Response to Portion of NRC Request for Additional Information  
Letter No. 79 - Containment Systems - RAI Numbers 6.2-116 S01**

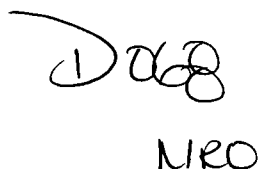
Enclosure 1 contains the GE-Hitachi Nuclear Energy Americas LLC (GEH) response to the subject NRC RAI originally transmitted via the Reference 1 letter and supplemented by an NRC request for clarification.

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

Sincerely,



James C. Kinsey  
Project Manager, ESBWR Licensing



DAB  
NRO

Reference:

1. MFN 06-393, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 79 Related to ESBWR Design Certification Application*, October 11, 2006

Enclosure:

1. MFN 06-461 Supplement 2 - Response to Portion of NRC Request for Additional Information Letter No. 79 - Related to ESBWR Design Certification Application - Containment Systems - RAI Number 6.2-116 S01

cc: AE Cabbage USNRC (with enclosures)  
GB Stramback GEH/San Jose (with enclosures)  
RE Brown GEH/Wilmington (with enclosures)  
eDRF 0000-0072-8507

**Enclosure 1**

**MFN 06-461 Supplement 2**

**Response to Portion of NRC Request for**

**Additional Information Letter No. 79**

**Related to ESBWR Design Certification Application**

**Containment Systems**

**RAI Number 6.2-116 S01**

**NRC RAI 6.2-116:**

*DCD Tier 2, Revision 1, Section 6.2.4.2.5, "Redundancy and Modes of Valve Actuations," states, in part:*

*Isolation valve arrangements satisfy all requirements specified in General Design Criteria 54, 55, 56 and 57, and Regulatory Guide 1.11.*

*The staff notes two problems with this statement:*

- 1. DCD Tier 2, Revision 1, Table 1.9-6, "Summary of Differences from SRP Section 6," in its entry for SRP 6.2.4, lists several systems for which the containment isolation provisions differ from the GDC requirements (such as having both CIVs inside containment), and there may be more (e.g., PCCS).*
- 2. It seems inappropriate to address RG 1.11, which addresses only instrument lines, and not RG 1.141, which addresses all lines.*

*Resolve these apparent discrepancies.*

**GEH Response:**

PCCS is not included in DCD Tier 2 Table 1.9-6, because it does not require containment isolation valves. The reason it does not have containment isolation valves is because it is designed as an extension to the primary containment. Please see response to RAI 6.2-125.

DCD Tier 2, section 6.2.4.2.5 will be revised by adding RG 1.141 in the sentence as follows:

*"Isolation valve arrangements satisfy all requirements specified in General Design Criteria 54, 55, 56 and 57, and Regulatory Guides 1.11 and 1.141."*

**DCD Impact:**

DCD Tier 2, Section 6.2.4.2.5 will be revised as noted in the attached markup.

**NRC RAI 6.2-116 S01:**

*RAI 6.2-116 questioned the following statement in DCD, Tier 2, Revision 1, Section 6.2.4.2.5, "Redundancy and Modes of Valve Actuations:"*

*Isolation valve arrangements satisfy all requirements specified in General Design Criteria 54, 55, 56 and 57, and Regulatory Guide 1.11.*

*In part, the staff noted that DCD, Tier 2, Revision 1, Table 1.9-6, "Summary of Differences from SRP Section 6," in its entry for SRP 6.2.4, lists several systems for which the containment isolation provisions differ from the GDC requirements (such as having both CIVs inside containment). This is inconsistent with the quoted statement.*

*The applicant did not respond to this point. Resolve this inconsistency. The staff might suggest that a simple addition of a phrase could resolve the discrepancy; for example, adding "...except as noted in Table 1.9-6" to the end of the quoted statement.*

**GEH Response:**

The suggested phrase will be incorporated into DCD, Tier 2, Subsection 6.2.4.2.5.

**DCD Impact:**

DCD, Tier 2, Subsection 6.2.4.2.5, will be revised as shown in the attached markup.

#### **6.2.4.2.5 Redundancy and Modes of Valve Actuations**

The main objective of the Containment Isolation Function is to provide environmental protection by preventing releases of radioactive materials. This is accomplished by complete isolation of system lines penetrating the containment. Redundancy is provided in all design aspects to satisfy the requirement that no single active failure of any kind should prevent containment isolation.

Mechanical components are redundant, in that isolation valve arrangements provide backup in the event of accident conditions. Isolation valve arrangements satisfy all requirements specified in General Design Criteria 54, 55, 56 and 57, and Regulatory Guides 1.11 and 1.141, except as noted in Table 1.9-6.