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U.S. Nuclear Regulatory Commission
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Washington, D.C. 20555-0001

Subject: **Response to Portion of NRC Request for Additional Information
Letter No. 100 Related to ESBWR Design Certification Application
Auxiliary Systems RAI Number 9.1-39.**

The purpose of this letter is to submit the GE-Hitachi Nuclear Energy Americas (GEH) response to the U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) sent by NRC letter dated May 30, 2007 (Reference 1). GEH response to RAI Number 9.1-39 is addressed in Enclosure 1.

Should you have any questions about the information provided here, please contact me.

Sincerely,



James C. Kinsey
Vice President, ESBWR Licensing

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Reference:

1. NRC letter to Robert E. Brown, General Manager, Regulatory Affairs, *Request For Additional Information Letter No. 100 Related To Auxiliary Systems*, dated May 30, 2007 (MFN 07-327).

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 100 Related to ESBWR Design Certification Application Auxiliary Systems RAI Number 9.1-39.

cc: AE Cubbage USNRC (with enclosure)
GB Stramback GEH/San Jose (with enclosure)
RE Brown GEH/Wilmington (with enclosure)
eDRF 0000-0072-8505

Enclosure 1

MFN 07-484

Response to Portion of NRC Request for

Additional Information Letter No. 100

Related to ESBWR Design Certification Application

Auxiliary Systems

RAI Number 9.1-39

NRC RAI 9.1-39

The staff verified compliance with General Design Criteria 2, 61 and 62. DCD Tier 2, Rev. 3, Section 9.1.1 does not have a statement to indicate that the new fuel storage meets the requirements of GDC 2. Further, the DCD Tier 2 does not have a statement to indicate that the new fuel storage conforms to the industry standards of ANS 57.1 and ANS 57.3, and, therefore, meets the requirements of GDC 61 and GDC 62. Revise DCD to address compliance with the criteria of GDC 2, 61 and 62.

GEH Response

Compliance statements are being added to the DCD.

DCD Impact

DCD Tier #2, Revision 5, Section 9.1.1 will incorporate the changes as noted in the attached markup.

9.1.1 New Fuel Storage

9.1.1.1 Design Bases

Nuclear Design

The new fuel storage racks in the buffer pool are designed to assure that the fully loaded array is sub critical by at least 5% $\Delta k/k$.

Monte Carlo techniques are employed in the calculations performed to assure that k_{eff} does not exceed 0.95 under all normal and abnormal conditions.

The assumption is made that the storage array is infinite in all directions. Because no credit is taken for neutron leakage, the values reported as effective neutron multiplication factors are, in reality, infinite neutron multiplication factors.

The biases between the calculated results, experimental results, and the uncertainty in the calculation, are taken into account as part of the calculation procedure to assure that the specific k_{eff} limit is met.

Storage Design

The new fuel storage racks in the buffer pool can store up to 60% of one full core fuel load.

New fuel storage racks are designed to meet the requirements of General Design Criteria (GDC) 2. In addition, racks conform to industry standards ANS 57.1 and ANS 57.3, and, therefore, meet the requirements of GDC 61 and GDC 62