

GE-Hitachi Nuclear Energy Americas LLC

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MFN 07-424

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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. 40 Related to ESBWR Design Certification Application
ESBWR Probabilistic Risk Assessment RAI Number 19.1-14.**

The purpose of this letter is to submit the GE-Hitachi Nuclear Energy Americas LLC (GEH) response to the U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) sent by NRC letter dated July 5, 2007 (Reference 1). The GEH response to RAI Number 19.1-14 is addressed in the Enclosure.

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

Sincerely,



James C. Kinsey
Project Manager, ESBWR Licensing

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NRO

Reference:

1. MFN 06-222, Letter from U.S. Nuclear Regulatory Commission to David Hinds, Request for Additional Information Letter No. 40 Related to ESBWR Design Certification Application, July 5, 2006.

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 40 Related to ESBWR Design Certification Application ESBWR Probabilistic Risk Assessment RAI Numbers 19.1-14

cc: AE Cabbage USNRC (with enclosure)
GB Stramback GEH/San Jose (with enclosure)
RE Brown GEH/Wilmington (with enclosure)
eDRF Section 0000-0072-2641

Enclosure 1 of MFN 07-424

**Response to Portion of NRC Request for
Additional Information Letter No. 40 Related to
ESBWR Design Certification Application
ESBWR Probabilistic Risk Assessment
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NRC RAI 19.1-14

Discuss how an over-pressure failure of the containment at the suppression pool slab wetwell joint would affect the operability of the GDCS system. Justify why this potential failure mode need not be addressed in the Level 2 analysis.

GEH Response

If the containment fails at the Suppression Pool slab wetwell joint, the suppression pool would drain into the reactor building and the inventory would be lost. This failure could potentially render the GDCS equalizing lines unavailable. However, this failure mode does not need to be addressed for two reasons:

- 1) In the Level 2 analysis, the operability of the GDCS system is not considered after containment overpressure failure. As shown in the charts for the representative sequences in NEDO-33201 Section 9 Revision 2, all GDCS deluge system actuation has occurred prior to postulated containment failure. Even if the wetwell slab fails there would be no further credited mitigation actions and it would not affect the Level 2 analysis.
- 2) DCD Section 19C Table 19C-13, "Summary of ESBWR Fragility for Over-Pressurization", shows that the wetwell slab is not included in the list of postulated containment failure locations.

In summary, the wetwell slab is not a postulated failure mode for the containment overpressure scenario. Additionally, even if the wetwell slab did fail, the Level 2 analysis would be unaffected because post-containment overpressure failure mitigating actions are not credited in the model.

DCD/NEDO-33201 Impact

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

No changes will be made to NEDO-33201 in response to this RAI.