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MFN 07-310 Supplement 1

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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. 105 - Impact of Containment Back
Pressure on Emergency Core Cooling System Performance -
RAI Number 6.2-144 S01**

Enclosure 1 contains the GE Hitachi Nuclear Energy (GEH) response to the subject NRC RAI originally transmitted via the Reference 1 letter and supplemented by an NRC request for clarification in Reference 2.

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

Sincerely,

James C. Kinsey
Vice President, ESBWR Licensing

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NRC

References:

1. 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
2. MFN 07-460, Letter from U.S. Nuclear Regulatory Commission to Robert Brown, *Request for Additional Information Letter No. 105 Related to ESBWR Design Certification Application*, August 16, 2007

Enclosure:

1. MFN 07-310 Supplement 1 - Response to Portion of NRC Request for Additional Information Letter No. 105 - Related to ESBWR Design Certification Application - Impact of Containment Back Pressure on Emergency Core Cooling System Performance - RAI Number 6.2-144 S01

cc: AE Cabbage USNRC (with enclosures)
GB Stramback GEH/San Jose (with enclosures)
RE Brown GEH/Wilmington (with enclosures)
eDRF 0000-0069-5943

Enclosure 1

MFN 07-310 Supplement 1

Response to Portion of NRC Request for

Additional Information Letter No. 105

Related to ESBWR Design Certification Application

**Impact of Containment Back Pressure on Emergency Core
Cooling System Performance**

RAI Number 6.2-144 S01

NRC RAI 6.2-144 S01:

GE's response to RAI 6.2-144 is satisfactory except for the final statement, "No DCD changes will be made in response to this RAI." The information provided in the response is necessary to be incorporated in the DCD for the staff to issue a reasonable assurance finding for Standard Review Plan Section 6.2.1.5.

Revise the DCD to incorporate the response to 6.2-144. Please include the figures.

GEH Response:

The response to RAI 6.2-144 has been incorporated as Appendix 6C in DCD Tier 2, Revision 4. The discussion and figures included in Appendix 6C are consistent with the original response to RAI 6.2-144, MFN 07-310.

In addition, the following new third paragraph was added in DCD Tier 2, Revision 4, Subsection 6.2.1.1.3.1, to reference the new Appendix 6C:

"The combined nodalization that integrates the responses between the containment and the reactor vessel is used for both the containment analyses (Subsection 6.2.1.1.3) and the ECCS analyses (Subsection 6.3.3). The impact of containment back pressure on the ECCS performance has been evaluated and the results show that the minimum chimney collapsed level is not sensitive for a wide range of change in the containment back pressure. Appendix 6C summarizes the details of this evaluation."

DCD Impact:

The DCD changes described in the above response to this RAI were made in DCD Tier 2, Revision 4.