



HITACHI

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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. 111 Related to ESBWR Design
Certification Application RAI Number 9.2-15**

The purpose of this letter is to submit the GE Hitachi Nuclear Energy (GEH) response to the U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) sent by NRC letter dated October 15, 2007. GEH response to RAI Number 9.2-15 is addressed in Enclosure 1.

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

Sincerely,

James C. Kinsey
Vice President, ESBWR Licensing

DO68
NRC

Reference:

1. MFN 07-556, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, Senior Vice President, Regulatory Affairs, *Request For Additional Information Letter No. 111 Related To ESBWR Design Certification Application*, dated October 15, 2007

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 111 Related to ESBWR Design Certification Application - Auxiliary Systems - RAI Number 9.2-15

cc: AE Cubbage USNRC (with enclosure)
GB Stramback GEH/San Jose (with enclosure)
RE Brown GEH/Wilmington (with enclosure)
eDRF 0000-0076-7731

Enclosure 1

MFN 07-591

Response to Portion of NRC Request for

Additional Information Letter No. 111

Related to ESBWR Design Certification Application

Auxiliary Systems

RAI Number 9.2-15

NRC RAI 9.2-15

The Chilled Water System (CWS) is identified as RTNSS systems in the response to RAI 14.3.69. Electrical power is assumed to be unavailable for 72 hours and then returned to service for RTNSS systems. Restarting the CWS presents an opportunity for dynamic effects associated with water hammer. Describe how water hammer has been addressed in the design of the CWS so that the CWS can meet its post 72 hour cooling RTNSS cooling function.

GEH Response

Proper system engineering design, along with operation and maintenance procedures are used to assure sufficient measures are taken to avoid water hammer. Surge tanks are located in the upper turbine building within the CWS, which provide NPSH to the CWS pumps. Surge tanks and air separators mitigate voiding. In addition, CWS is a closed-loop that does not drain down when isolated.

These design features to mitigate potential water hammer effects are addressed in DCD Tier 2, Revision 4, Subsections 9.2.7.2 and 9.2.7.5.

DCD Impact

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