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MFN 06-489  
Supplement 3

Docket No. 52-010

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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. 67 Related to ESBWR Design Certification Application –  
In-Service Testing of Pumps and Valves – RAI Number 3.9-158 S01**

Enclosure 1 contains GEH's response to the subject NRC RAI transmitted via e-mail on June 13, 2007. GEH's original response was provided in the Reference 1 letter.

If you have any questions or require additional information regarding the information provided here, please contact me.

Sincerely,



James C. Kinsey  
Project Manager, ESBWR Licensing

DOLB

NRO

Reference:

1. MFN 06-489, Letter from David Hinds to U.S. Nuclear Regulatory Commission, *Response to Portion of NRC Request for Additional Information Letter No. 67 Related to ESBWR Design Certification Application – DCD Section 3.9 – RAI Numbers 3.9-30, 3.9-42, 3.9-82 through 3.9-86, 3.9-88, 3.9-90, 3.9-95, 3.9-120 through 3.9-122, 3.9-152, 3.9-154 through 3.9-156, 3.9-158 through 3.9-160 and 3.9-174*, November 29, 2006

Enclosure:

1. MFN 06-489, Supplement 3 – Response to Portion of NRC Request for Additional Information Letter No. 67 Related to ESBWR Design Certification Application – In-Service Testing of Pumps and Valves – RAI Number 3.9-158 S01

cc: AE Cabbage USNRC (with enclosures)  
DH Hinds GEH (with enclosures)  
RE Brown GEH (w/o enclosures)  
eDRF 0000-0071-7621

**Enclosure 1**

**MFN 06-489**

**Supplement 3**

**Response to Portion of NRC Request for**

**Additional Information Letter No. 67**

**Related to ESBWR Design Certification Application**

**In-Service Testing of Pumps and Valves – RAI Number 3.9-158 S01**

**For historical purposes, the original text and GE response to RAI 3.9-158 is included.**

**NRC RAI 3.9-158**

*A. Describe how the test results will identify the flow required to open the valve and maintain the disc in a stable full open position.*

*B. Describe the nonintrusive techniques and acceptance criteria (if different from that used for biased-open CV) used to periodically assess degradation and the performance of CVs.*

**GE Response**

A. The GDCS check valve will be placed in a vertical orientation, thereby allowing the valve to remain fully open and provide a stable position where any flow will not be impeded and will be allowed to develop fully. Full-open indicated position confirms this.

B. General Design Criteria and NUREG guidelines as given by DCD Tier 2, Revision 2, Subsection 3.9.6 will be implemented by COL holder.

**DCD Impact**

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

**NRC RAI 3.9-158 S01**

*Comment on response to RAI 3.9-158 (MFN 06-489):*

*The applicant is requested to describe how the test results will identify the flow required to open the valve and maintain the disc in a stable full open position; and the nonintrusive techniques and acceptance criteria (if different from that used for biased-open check valves) used to periodically assess degradation and the performance of check valves.*

**GEH Response**

The check valve configuration in question was revised during RAI 3.9-158 (MFN 06-489) from its original horizontal orientation to a vertical orientation. This orientation allows for gravity to pull the disk of the valve open during a zero pressure differential (normal) across the valve. As such, it remains in a fully open and stable during normal conditions, and conditions where the GDCS pressure exceeds the squib valve/RPV pressure.

As per inservice testing (IST) techniques, DCD Tier 2, Rev. 3 states in subsection 3.9.9.3 *InService Testing Programs* that the IST program is the responsibility of the COL holder, and is not outlined in the DCD.

**DCD Impact**

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