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MFN 07-190

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Subject: **Response to Portion of NRC Request for Additional Information Letter No. 67 Related to ESBWR Design Certification Application – Design of Structures, Components, Equipment, and Systems – RAI Number 3.9-157**

Enclosure 1 contains GE's response to the subject NRC RAI transmitted via the Reference 1 letter.

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

Sincerely,

Kathy Sedney for

James C. Kinsey
Project Manager, ESBWR Licensing

D068

Reference:

1. MFN 06-378, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 67 Related to ESBWR Design Certification Application,* October 10, 2006

Enclosure:

1. MFN 07-190 – Response to Portion of NRC Request for Additional Information Letter No. 67 Related to ESBWR Design Certification Application – Design of Structures, Components, Equipment, and Systems – RAI Number 3.9-157

cc:	AE Cubbage	USNRC (with enclosures)
	DH Hinds	GE (with enclosures)
	RE Brown	GE (w/o enclosures)
	eDRF	0000-0062-3503/1

Enclosure 1

MFN 07-190

Response to Portion of NRC Request for

Additional Information Letter No. 67

Related to ESBWR Design Certification Application

Design of Structures, Components, Equipment, and Systems

RAI Number 3.9-157

NRC RAI 3.9-157

As started in the response to RAI 3.9-2, hinge pin wear has been identified as major failure mode for the GDCS bias-open CV. Discuss the stability of the disc in its bias-open position during operation when flow oscillation may occur due to heat transfer and boiling effect of the water between the squib valve and check valve and also discuss a method of monitoring the condition of the hinge pin.

GE Response

The GDCS check valves are designed such that the check valve is fully open when zero differential pressure is applied across the check valve. The full open position is accomplished by valve design and installation. A vertical installation will allow 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.

Hinge pin wear was identified as major failure mode for swing and tilting disc check valves in the industry, and failures occurred in frequently cycled check valves located in active flow streams. Since GDCS check valves will not be in an active flow streams, they will not be subject to excessive cycling or wear. Therefore, the condition of the hinge pin does not need to be monitored.

Revision 3 of DCD Tier 2, Subsection 6.3.2.7.2 under paragraph heading "GDCS Check Valve" includes the updated description of the GDCS check valve.

DCD Impact

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