Copy from GE

GE Energy

James C. Kinsey
Project Manager, ESBWR Licensing

PO Box 780 M/C J-70
Wilmington, NC 28402-0780
USA

T 910 675 5057
F 910 362 5057
jim.kinsey@ge.com

MFN 07-021

Docket No. 52-010

March 27, 2007

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555-0001

Subject: **Response to Portion of NRC Request for Additional Information Letter No. 67 Related to ESBWR Design Certification Application – DCD Section 3.9 – RAI Numbers 3.9-168 and 3.9-172**

Enclosure 1 contains GE's response to the subject NRC RAIs 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

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 07-021 – Response to Portion of NRC Request for Additional Information Letter No. 67 Related to ESBWR Design Certification Application – DCD Section 3.9 – RAI Numbers 3.9-168 and 3.9-172

cc:

AE Cubbage	USNRC (with enclosures)
DH Hinds	GE (with enclosures)
RE Brown	GE (w/o enclosures)
eDRFs	0000-0062-6945, 0000-0062-7419

Enclosure 1

MFN 07-021

Response to Portion of NRC Request for

Additional Information Letter No. 67

Related to ESBWR Design Certification Application

DCD Section 3.9 – RAI Numbers 3.9-168 and 3.9-172

NRC RAI 3.9-168

Verify that all relief devices which perform a function of providing pressure relief to ensure the integrity of safety-related structures, systems, or components are designed, qualified, and capacity certified to meet all applicable requirements of ASME Section III and are included in the IST program. Specifically, in addition to any other systems which provide a safety-related function, provide this information for the following systems: the reactor coolant system, the main steam system, the facility and auxiliary pool cooling system, the shutdown cooling/standby liquid control system, the control rod drive system, the plant service water system, and the reactor building component cooling water systems.

GE Response

The relief devices, which provide a pressure relief function to ensure the integrity of all safety-related structures, systems and components, are classified in accordance with classifications of structures, systems and components in DCD Table 3.2-1. Based upon the Quality Group classification in Table 3.2-1, the ASME Section III Code Class and design and fabrication requirements are identified in Table 3.2-3. Therefore, these relief devices are designed, manufactured and qualified, including capacity certification, in accordance with all applicable requirements of the ASME Code Section III. For the specific systems identified in this RAI, the principal components, which include relief devices, are classified in accordance with DCD Table 3.2-1. Of these systems, the applicable relief devices that provide a pressure relief function to ensure the integrity of safety-related structures, systems and components are the Nuclear Boiler System Safety Relief Valves (F006 and F003), the Standby Liquid Control System Accumulator Tank Relief Valve (F030A/B) and the Containment Drywell Wetwell Vacuum Breaker Valve (F002). These relief devices are included in the IST program in accordance with DCD Table 3.9-8.

DCD Impact

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

NRC RAI 3.9-172

The squib valves have a piston which shears the disk to the open position when the valves are actuated. Below the piston is a travel space. Provide information regarding how the space below the piston is prevented from being pressure locked with liquid, either by leakage or diffusion. Are there provisions for draining or venting? Is this space monitored for presence of liquid?

GE Response

The GDCS squib shown in Figure 6.3-2 is a variation on the proven DPV prototype design. Figure 6.3-2 is only a concept of how to build the GDCS squib valve, and the specific details of a fully developed valve are not shown by this figure.

The GDCS squib valve as shown in the figure has a single machined forging that forms the entire internals of the valve prior to its activation. The "disk" or nipple shear cap is an integral portion of this single forging until the valve activation occurs. Thus, the only wetted portion of the valve and its pressure boundary are the internal surfaces of the forging, and no other parts of the valve are subject to system fluid from either the RCPB side or GDCS pool side.

Upon activation of the GDCD squib valve as shown in the figure, it is assumed that the lower pocket void becomes immediately flooded and that the design of the nipple shear cap and the pocket configuration will include flow paths to permit liquid to move around the cap so as to prevent a hydraulic locked condition. This is not a design detail that the concept figure is intended to illustrate.

DCD Impact

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