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MFN 06-484
Supplement 1

Docket No. 52-010

March 30, 2007

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

Subject: **Response to NRC Request for Additional Information Related to ESBWR Design Certification Application – DCD Section 8.4 – RAI Numbers 8.4-6 S01, 8.4-7 S01, and 8.4-10 S01**

Enclosure 1 contains supplemental responses to the subject RAIs resulting from a January 8, 2007 e-mail request from the NRC (Reference 1). GE's original response was transmitted via the Reference 2 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

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Reference:

1. Email from NRC, *Comments to RAI Responses - Chapter 8 & PRA – DCD Section 8.4 – RAI Numbers 8.4-6 S01, 8.4-7 S01, and 8.4-10 S01*, dated January, 8 2007 (ML –070780025)

2. MFN 06-484, *Response to Portion of NRC Request for Additional Information Related to ESBWR Design Certification Application Letter No. 65 – Electric Power – RAI Numbers 8.4-1 through 8.4-10*, dated 12/1/2006

Enclosure:

1. MFN 06-484 Supplement 1, Response to NRC Request for Additional Information Related to ESBWR Design Certification Application – DCD Section 8.4 – RAI Numbers 8.4-6 S01, 8.4-7 S01, and 8.4-10 S01

cc: AE Cubbage USNRC (with enclosures)
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MFN 06-484 Supplement 1

Enclosure 1

Response to NRC Request for Additional Information Related to ESBWR Design Certification Application DCD Section 8.4 RAI Numbers 8.4-6 S01, 8.4-7 S01, and 8.4-10 S01

NRC RAI 8.4-6 Supplement 1

The response states that GL 80-35, "Effect of a DC Power Supply Failure on ECCS Performance," applies to the BWR 3 and 4 designs but not the ESBWR. Please explain why a DC power supply failure will not affect ESBWR ECCS performance described in DCD Section 6.3.

GE Response

Per the teleconference conducted on Friday, March 2, 2007 the Staff better understands why GE has concluded that GL 80-35 does not apply to the ESBWR.

The N-2 design implementation and 480 VAC safety-related motor operated valve elimination ensures that ECCS valves and containment isolation valves receive their power from all four safety-related divisions, providing N-2 operability of all valves. In this arrangement, the loss of any two divisions (one removed from service and one failure) of initiating signals would still allow the safety-related function to occur.

DCD Impact:

No DCD changes will be made based on the above response.

NRC RAI 8.4-7 Supplement 1

The response makes a commitment and concludes that the ESBWR meets the requirements in question 9 of GL 91-06. However, the conclusion appears premature. Please clarify the conclusion to track the commitment and review question 9 of GL 91-06.

GE Response

Per the teleconference conducted on Friday, March 2, 2007 the Staff better understands why GE has concluded that the ESBWR meets the requirements in question 9 of GL 91-06, as stated in the original GE response.

The plant procedures required by GL 91-06 will be further addressed by the COL holder.

DCD Impact

DCD Tier 2, Table 1C-1 will be revised to include that the COL holder will develop plant procedures to ensure compliance with GL 91-06.

NRC RAI 8.4-10 Supplement 1

A. The response lacks justification for not powering the safety-related batteries from a reliable power source. Since batteries are normally floating and the battery chargers are supplying power to the safety-related instrumentation and controls during normal and abnormal operating conditions, they should be powered from a reliable offsite power source so that batteries are not challenged unnecessarily. Please provide amplifying information to address this issue. Additionally, perform a failure modes and effects analysis on the elements in the power flow path from the switchyard and describe how the single source from the transmission network would be protected such that no single failure in the switchyard will fail the circuit.

B. *The response references SECY-95-132 as a basis to justify that active systems after the first 72 hours of an event can be nonsafety-related. However, SECY-95-132 outlines a process and analyses required to reach such a conclusion. Please provide the information pertaining to the SECY-95-132 process.*

GE Response

A. As clarified in the teleconference conducted on Friday, March 2, 2007 the Staff better understands why GE has concluded that the ESBWR complies with GDC 17 with respect to two independent and separate offsite power sources and standby onsite power sources.

Safety-related batteries are provided to support passive core cooling and passive containment integrity safety-related functions. The safety-related battery chargers are able to be powered by either the Normal Preferred offsite power source (through the UATs) or the Alternate Preferred offsite power source (through the RATs). The Normal Preferred and Alternate Preferred sources are physically independent, as specified in GDC 17. The safety-related battery chargers may also be powered by the non safety-related diesel generators in the event of a LOOP. Recharging of the safety-related batteries is not required until after the first 72 hours of an event. See Part B, below.

B. Per the teleconference conducted on Friday, March 2, 2007 the Staff now better understands why GE has concluded that the justification that active systems required after the first 72 hours of an event may be non safety-related is addressed in the response to RAI 19.1.0-2.

DCD Impact:

No DCD changes will be made based on the above response.