



GE Energy

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MFN 06-216  
Supplement 1

Docket No. 52-010

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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. 34 –Auxiliary Systems– RAI Number 9.3-21 S01 –  
Supplement 1**

Enclosure 1 contains GE's response to the subject NRC supplemental RAI transmitted via the Reference 1 letter. The original RAI response was submitted to the NRC in Reference 2.

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

Sincerely,

A handwritten signature in cursive script that reads "Kathy Sedney for".

James C. Kinsey  
Project Manager, ESBWR Licensing

DO68

Reference:

1. MFN 06-198, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 34 Related to the ESBWR Design Certification Application*, June 22, 2006.
2. MFN 06-216, Letter from David Hinds to the U.S. Nuclear Regulatory Commission, *Partial Response to NRC Request for Additional Information Letter No. 34 Related to ESBWR Design Certification Application – Auxiliary Systems - RAI Number 9.3-21, July 19, 2006.*

Enclosure:

1. MFN 06-216 Supplement 1– Response to Portion of NRC Request for Additional Information Letter No. 34 – RAI Number 9.3-21 Supplement 1

cc: AE Cabbage USNRC (with enclosure)  
BE Brown GE/Wilmington (with enclosure)  
LE Fennern GE/Wilmington (with enclosure)  
GB Stramback GE/San Jose (with enclosure)  
eDRF: 0000-0066-4529

**Enclosure 1**

**MFN 06-216**

**Supplement 1**

**Response to Portion of NRC Request for  
Additional Information Letter No. 34  
Related to ESBWR Design Certification**

**Auxiliary Systems**

**RAI Number 9.3-21 S01**

**NRC RAI 9.3-21**

*DCD Section 9.3.5.2 states: "Environmental conditions to prevent precipitation of solute do not require operation of the Reactor Building HVAC systems during the time that SLCS operation is required."*

*How are the environmental conditions maintained without the operation of the Reactor Building HVAC?*

**GE Response**

During normal plant operation, the Reactor Building HVAC maintains the SLCS equipment rooms above the precipitation temperature of the sodium pentaborate solution. The room temperature is monitored and alarmed when low. A backup electrical heater is provided in each SLCS accumulator room to ensure that the room temperature is maintained at or above the minimum required temperature in the event of the failure of the primary heating system.

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

**NRC RAI 9.3-21 S01**

*The staff requested in RAI 9.3-21 that GE clarify how environmental conditions are maintained in the SLCS rooms without operation of Reactor Building HVAC systems. GE responded that a backup electrical heater is provided in each SLCS accumulator room to maintain environmental conditions in the event of failure of the primary HVAC system. Please discuss plans to mitigate the susceptibility of the backup electrical heater to failure in common mode with the primary HVAC system.*

**GE Response**

The Standby Liquid Control (SLC) accumulator rooms are monitored and maintained within Technical Specification limits per Surveillance Requirement (SR) 3.1.7.2. In the event of Reactor Building Heating, Ventilation, and Air-Conditioning (HVAC) failure, each SLC accumulator room is maintained within Technical Specification limits by two redundant electrical heaters powered from Plant Investment Protection (PIP) A and B busses. PIP A and PIP B are not susceptible to common mode failure because the backup diesel generators provide independent sources of Alternating Current (AC) power. The design of having the electric feeds from two reliable and available Regulatory Treatment of Non-Safety Systems (RTNSS) power sources which are separate from the Reactor Building HVAC feeds provides assurance that common mode failure for heating the SLC accumulator rooms does not occur. Reference DCD

Tier 2 Rev. 4 Subsection 9.4.6 and DCD Tier 2 Rev. 3 Figure 8.1-1, Sheet 2 and 3, PIP buss and power center loads.

**DCD Impact**

DCD Tier 2 Subsection 9.4.6 will be revised as shown in the attached markup.