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U.S. Nuclear Regulatory Commission
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Subject: **Response to Portion of NRC Request for Additional Information Letter
No. 74- Auxiliary Systems – RAI Numbers 9.3-33 through 9.3-35**

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

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Reference:

1. MFN 06-386, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 74 Related to the ESBWR Design Certification Application*, October 11, 2006

Enclosures:

1. MFN 07-186 – Response to Portion of NRC Request for Additional Information Letter 74 – Auxiliary Systems – RAI Numbers 9.3-33 through 9.3-35

cc: AE Cabbage USNRC (w/enclosures)
GB Stramback GE/San Jose (w/enclosures)
BE Brown GE/Wilmington (w/enclosures)
eDRF 0061-8906

Enclosure 1

MFN 07-186

**Response to Portion of NRC Request for
Additional Information Letter No. 74
Related to ESBWR Design Certification Application**

Auxiliary Systems

RAI Numbers 9.3-33 through 9.3-35

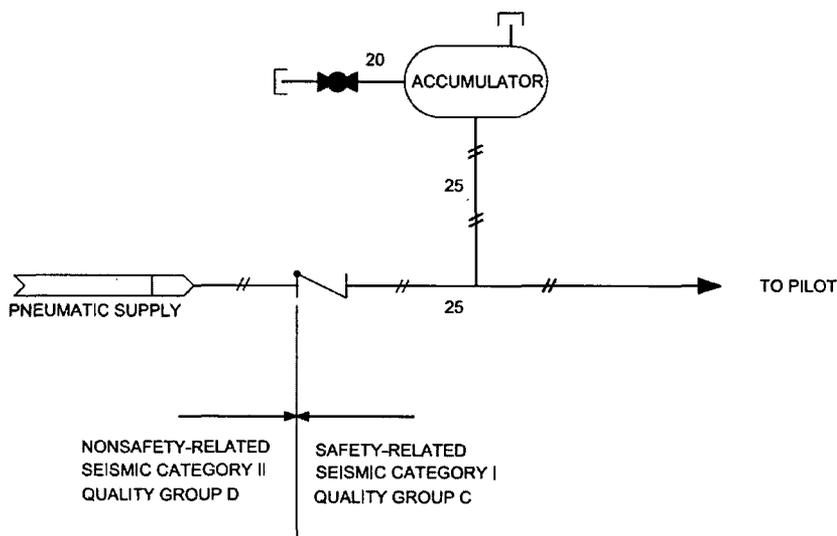
NRC RAI 9.3-33:

DCD Section 9.3 states that the accumulators and valves associated with the main steam isolation, automatic depressurization, and isolation condenser isolation valves are part of the respective systems. However, the DCD sections describing those systems do not include drawings or detailed descriptions regarding the safety-related pressurized gas supplies for operation of those valves.

Provide diagrams of safety-related pressurized gas supplies, including separation from the normal nonsafety-related supply of pressurized gas, to all safety-related valve operators, including the following valves: main steam isolation, automatic depressurization, and isolation condenser isolation valves.

GE Response:

A representative schematic of accumulators that supply air or nitrogen to safety-related valves is shown below. Safety-related and nonsafety-related separation is at the accumulator check valve.



DCD Impact:

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

NRC RAI 9.3-34:

Clarify the classification of valves, piping, and pressure vessels that provide the pneumatic pressure essential to operation of safety-related valves. DCD Section 9.3 states that the accumulators and valves associated with the main steam isolation, automatic depressurization, and isolation condenser isolation valves are part of the respective systems. However, the DCD sections describing those systems do not include drawings or detailed descriptions regarding the safety-related pressurized gas supplies for operation of those valves. Clarify the classification of valves, piping, and pressure vessels that provide the pneumatic pressure essential to operation of the following safety-related valves: main steam isolation, automatic depressurization, and isolation condenser isolation valves.

GE Response

See schematic shown in RAI 9.3-33 response.

DCD Impact

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

NRC RAI 9.3-35:

DCD Section 9.3 states that the accumulators and valves associated with the main steam isolation, automatic depressurization, and isolation condenser isolation valves are part of the respective systems. However, the DCD sections describing those systems do not include drawings or detailed descriptions regarding the safety-related pressurized gas supplies for operation of those valves.

Describe how the piping, valves and pressure vessels that provide the essential pneumatic pressure for operation of safety-related valves are protected against dynamic effects associated with design basis accidents such that, concurrent with a postulated single active failure, the necessary number of safety-related valves actuate to the correct position.

GE Response:

See the schematic in RAI 9.3-33 response. Protection against dynamic effects is provided in DCD Tier 2, Section 3.6. Single active failures are addressed through redundant modes of actuation. MSIV's will close by spring actuation and/or pneumatic actuation. SRV's are lifted open by pneumatic actuation or lifted by steam pressure at a prescribed setpoint. For ICS isolation valves, there are two pairs of valves inside containment one on the steam inlet and one on the condensate return lines; each valve within a pair has a different mode of actuation from the other valve. For instance, one valve shall be nitrogen rotary motor-operated and the other shall be nitrogen piston-operated.

DCD Impact:

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