



GE Energy

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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. 40
Related to ESBWR Design Certification Application ESBWR Probabilistic
Risk Assessment RAI Number 19.2-31.

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

If you have any questions about the information provided here, please let me know.

Sincerely,

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

James C. Kinsey
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Reference:

1. MFN 06-222, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 40 Related to ESBWR Design Certification Application*, July 5, 2006

Enclosures:

1. Response to Portion of NRC Request for Additional Information Letter No. 40 Related to ESBWR Design Certification Application ESBWR Probabilistic Risk Assessment RAI Number 19.2-31

cc: AE Cabbage USNRC (with enclosures)
 George Stramback GE/San Jose (with enclosures)
 RE Brown GE/Wilmington (with enclosures)

EDRF Section 0060-5655

Enclosure 1

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Response to Portion of NRC Request for

Additional Information Letter No. 40

Related to ESBWR Design Certification Application

ESBWR Probabilistic Risk Assessment

RAI Number 19.2-31

NRC RAI 19.2-31

Describe the process for design, testing, and ultimately the selection of the structures, systems, and components (SSCs) for the LDW flooding (i.e. squib valves and actuation system, and thermally-actuated eutectic valves), and how this process will assure that the reliability level will be achieved and maintained.

GE Response

The LDW flooding, or deluge, system will be designed for high reliability in both failure to actuate and spurious actuation failure modes. This will be achieved through appropriate redundancy of active components, required signals for actuation, and support systems. The design will consider Probabilistic Risk Analysis (PRA) insights. Standard components are expected to be used in this application, so testing will not be a requirement. The SSCs will be selected based on design requirements. For example, squib valves that are designed to be operational in postulated severe accident conditions will be selected for LDW applications. Further, components in the LDW will be designed to function properly with at least a two-year testing interval; components outside the LDW will be selected considering the environmental conditions of their location.

When the design of the system is complete in sufficient detail for PRA modeling, a fault tree model will be included in Section 8 of NEDO-33210, revision 2. The Level 2 portion of the PRA documentation will also be updated at that time.

The reliability of the components will be maintained as part of the DRAP operational phase.

DCD Impact

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

NEDO-33201 Section 8, Revision 2 will include the fault tree as described above.