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MFN 07-023
Supplement 1

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Subject: **Response to Portion of NRC Request for Additional Information Letter No. 69 Related to ESBWR Design Certification Application - Technical Specifications - RAI Number 16.2-88 S01**

Enclosure 1 contains the subject supplemental RAI response resulting from a May 14, 2007 e-mail from the NRC. GE's original response was provided in 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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NRO

References:

1. MFN 07-023, Letter from Jim Kinsey to U.S. Nuclear Regulatory Commission, *Response to Portion of NRC Request for Additional Information Letter No. 69 Related to ESBWR Design Certification Application – Technical Specifications – RAI Numbers 16.2-81 through 16.2-89*, January 26, 2007

Enclosures:

1. MFN 07-023, Supplement 1 - Response to Portion of NRC Request for Additional Information Letter No. 69 Related to ESBWR Design Certification Application - Technical Specifications - RAI Number 16.2-88 S01

cc:

AE Cubbage	USNRC (with enclosures)
DH Hinds	GEH (with enclosures)
RE Brown	GEH (w/o enclosures)
eDRF	68-5418

Enclosure 1

MFN 07-023, Supplement 1

Response to Portion of NRC Request for

Additional Information Letter No. 69

Related to ESBWR Design Certification Application

- Technical Specifications -

RAI Number 16.2-88 S01

NRC RAI 16.2-88

Section 8.3.1.4.1 of the DCD Tier 2, Rev. 1, under the heading "Electric penetration assembly," states that "redundant overcurrent interrupting devices are provided for all electrical circuits going through containment penetrations, if the maximum available fault current (including failure of upstream devices) is greater than the continuous rating of the penetration. This avoids penetration damage in the event of failure of any single over current device to clear a fault within the penetration or beyond it." Provide justification why these devices were not included in the TS in accordance with Criterion 3 of 10 CFR 50.36(c)(2)(ii).

GE Response

ESBWR Technical Specifications (TSs) do not include explicit requirements governing the operability of primary containment penetration overcurrent interrupting devices (penetration overcurrent protection) because these components do not satisfy the criteria in 10 CFR 50.36(c)(2)(ii) for inclusion in the TSs. This conclusion is consistent with a risk assessment documented in NEDO-31466, "Technical Specification Screening Criteria Application and Risk Assessment," which provided justification for relocating requirements for penetration overcurrent protection from the TSs to a licensee controlled program for currently licensed plants. NRC concurrence with the results of this assessment is documented in "NRC Staff Review of Nuclear Supply Systems Vendor Owners Groups Application of the Commissions Interim Policy Statement Criteria to Standard Technical Specifications," which was released in a letter from T.E. Murley (NRC) to R.F. Janecek (BWR Owners Group), dated May 9, 1988. The conclusions from these assessments are applicable to the ESBWR, as explained below.

Penetration overcurrent protection requirements do not meet 10 CFR 50.36(c)(2)(ii), Criterion 3, for inclusion in TSs because Criterion 3 applies to structures, systems, or components (SSCs) that are part of the primary success path and which function or actuate to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. As described in Design Control Document (DCD) Tier 2, Revision 2, 8.3.1.4 and 8.3.4.7, circuits feeding loads within the containment have redundant overcurrent protective devices in series to address the potential that the maximum available fault current (including failure of upstream devices) could be greater than the continuous rating of the penetration. These devices would be required to function only if an unanticipated fault occurred in a device inside containment. Therefore, penetration overcurrent protection devices are not part of the primary success path and do not function or actuate to mitigate a DBA.

The devices used for penetration overcurrent protection are relatively simple and highly reliable devices that are addressed by plant configuration management programs, scheduled preventative maintenance programs, and corrective action programs. The design requirement for redundant overcurrent protection devices and the programs that ensure the devices are properly installed and maintained provide a very high degree of assurance that these devices will function properly if required even if not subject to explicit TS requirements for operability.

DCD Impact

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

NRC RAI 16.2-88, Supplement 1

The conductor overcurrent protective devices for the electrical containment penetrations are used for both safety-related and non-safety-related power, control and instrumentation circuits. Some of these circuits may be susceptible to unanticipated fault conditions during a design-basis accident (DBA). Of particular concern would be 6900-volt and 480-volt non-safety-related power circuits with equipment that is not qualified for the post-accident containment environment. It is recognized that some of the non-safety-related circuits are de-energized during a DBA, while other circuits may be de-energized after some time delay. However, for those circuits that are energized, actuation of the overcurrent protective devices may be necessary to protect the electrical penetrations from fault current levels that could damage the penetrations and compromise the integrity of the containment fission product barrier.

Since the overcurrent protective devices are necessary to ensure the integrity of the electrical penetration during faulted conditions, the overcurrent protective devices are considered by the staff to be support systems. According to TS Section 1.1, a safety system (electrical penetration) is considered "OPERABLE" only if all required support systems (which would include overcurrent protective devices) are "OPERABLE."

Based on the above, explain why the overcurrent protective devices for the electrical containment penetrations are not included in the TS per Criterion 3 of 10 CFR 50.36(c)(2)(ii).

GEH Response

Containment penetration overcurrent protective devices are a necessary support system to LCO 3.6.1.1, "Containment," to the extent necessary to ensure the integrity of the electrical penetration during faulted conditions. As a support system to containment operability, overcurrent protective devices are considered adequately included in Technical Specifications consistent with NUREG-1434, "Standard Technical Specifications General Electric Plants, BWR/6," Revision 3.1.

DCD Impact

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