



GE Energy

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MFN 06-494
Supplement 1

Docket No. 52-010

April 16, 2007

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. 62 Related to ESBWR Design Certification Application –
Tier 1 – Fire Protection – RAI Number 14.3-7 S01**

Enclosure 1 contains a supplemental response to the subject RAI resulting from a December 10, 2006 e-mail request from the NRC. GE's original response was transmitted via the Reference 1 letter.

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

Sincerely,

James C. Kinsey
Project Manager, ESBWR Licensing

Reference:

1. MFN 06-494, Letter from David Hinds to U.S. Nuclear Regulatory Commission, *Response to Portion of NRC Request for Additional Information Letter No. 62 Related to ESBWR Design Certification Application – Tier 1 – Fire Protection – RAI Numbers 14.3-5 through 14.3-10, 14.3-12, 14.3-13 and 14.3-16 through 14.3-21*, December 1, 2006

Enclosure:

1. MFN 06-494, Supplement 1 – Response to Portion of NRC Request for Additional Information Letter No. 62 Related to ESBWR Design Certification Application – Tier 1 – Fire Protection – RAI Number 14.3-7 S01

cc: AE Cabbage USNRC (with enclosures)
DH Hinds GE (with enclosures)
RE Brown GE (w/o enclosures)
eDRF 0000-0063-4191

Enclosure 1

MFN 06-494

Supplement 1

Response to Portion of NRC Request for

Additional Information Letter No. 62

Related to ESBWR Design Certification Application

Tier 1 – Fire Protection – RAI Number 14.3-7 S01

NRC RAI 14.3-7

Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) should include inspections to verify fire barrier integrity and conformance to design. (DCD Tier 1, Table 2.16.3-1) Section 14.3, Appendix C of the SRP, Draft 0, April 1996, provides guidance for building structure review that includes fire barriers. The ITAAC for fire barriers should include inspections to verify that all fire barriers and barrier penetration seals and other closure devices are constructed in accordance with the applicable approved designs, including verification that the design basis integrity of each barrier is provided (e.g., that all required penetration seals are in place and that the required closure of all barrier openings is complete). Update the ITAAC to include this information.

GE Response

Tier 1, Subsection 2.16.3 addresses the design and functional capabilities of the Fire Protection System (FPS), the scope of which does not include the fire barriers. The basis for fire barriers are addressed within Tier 2 Chapter 9 and its appendices, however, most of the specific design details of plant-specific fire barriers are outside the scope of the design certification Tier 1 ITAAC. However, new Subsection 2.16.3.1 is added to provide the fire barrier design commitments within the scope of the ESBWR design certification.

NRC RAI 14.3-7 S01

The proposed Tier 1, Section 2.16.3.1, Fire Barriers, describes three situations where fire barrier separation is required.

This list should also include fire barrier separation of electrical circuits (any circuit, including safety- and non-safety-related circuits) whose fire-induced failure could cause a spurious actuation that could prevent safe shutdown. That is, the area in which the fire occurs should be separated by a fire barrier from any circuits whose fire-induced failure could cause a spurious actuation that would prevent the protected train (the redundant train outside the area in which the fire occurs) from performing its required post-fire safe shutdown function.

Editorial comments on Tier 1, Section 2.16.3:

Last sentence in Design Description – a word is missing between "ESBWR design" and "those criteria." (probably "meets"?)

Interface Requirements "service water basins" should probably be "Fire Protection System."

Section 2.16.3.1, second bullet - add words "to both redundant divisions or trains" after "prevent damage."

GE Response

In Revision 3, Tier 1 Subsection 2.16.3.1 was revised to include the requested fourth Fire Barrier situation.

Regarding editorial comments on Tier 1, Subsection 2.16.3:

- The first editorial comment was incorporated in Tier 1, Rev. 3.
- Per Tier 1 Chapter 4, there is no Interface Requirement for the Fire Protection system, and therefore, the "Interface Requirements" statement was deleted in Tier 1, Rev. 3.

Regarding editorial comment on Tier 1, Subsection 2.16.3.1:

- GE agrees that clarification is warranted following the words "prevent damage"; however, because there are four safety divisions GE prefers not to use "both redundant" and reworded the second bullet as shown in Tier 1, Rev. 3.

DCD Impact

No additional DCD change is made in response to this RAI.