



GE Energy

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MFN 06-230

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U.S. Nuclear Regulatory Commission
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Subject: **Response to NRC Request for Additional Information Letter No. 25
Related to ESBWR Design Certification Application – Accident
Analyses – RAI Number 15.2-3**

Enclosure 1 contains GE's response to the subject NRC RAI transmitted via the Reference 1 letter. This completes GE's response to RAI Letter No. 25.

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".

David H. Hinds
Manager, ESBWR

Handwritten initials "D068" in a stylized, blocky font.

Reference:

1. MFN 06-142, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 25 Related to ESBWR Design Certification Application*, May 9, 2006

Enclosure:

1. MFN 06-230 – Response to NRC Request for Additional Information Letter No. 25 Related to ESBWR Design Certification Application – Accident Analyses – RAI Number 15.2-3

cc: WD Beckner USNRC (w/o enclosures)
AE Cabbage USNRC (with enclosures)
LA Dudes USNRC (w/o enclosures)
GB Stramback GE/San Jose (with enclosures)
eDRF 0000-0055-3930

ENCLOSURE 1

MFN 06-230

Response to NRC Request for Additional Information

Letter No. 25 Related to ESBWR Design

Certification Application – Accident Analyses –

RAI Number 15.2-3

NRC RAI 15.2-3

- (1) DCD Tier 2, Section 15.2.2.7, Figure 15.2-9a indicates (at about 5 seconds) that the “Sim. Thermal Power” is about 50% higher than “Total Power.” Please define “Total Power” and “Sim. Thermal Power” and account for their relative magnitude at 5 seconds when the reactor is fully shut down per Figure 15.2-9e.
- (2) DCD Tier 2, Section 15.2.2.7.1 states that “[d]uring the MSIV closure, position switches on the valves provide a reactor scram if the valves....” Are the position switches safety grade to provide a credible shut down signal?

GE Response

The “Total Power” in the figures is the power produced by the core (through the fission process and decay heat) as predicted by TRACG. The “Sim. Thermal Power” is the reactor power (TRACG predicted neutron flux normalized to the same initial value as the “Total Power”) with a first order lag of 7 seconds. The purpose of the lag is to provide a signal which approximates the cladding surface heat flux using the neutron monitoring system. This lag is primarily responsible for the difference in magnitude of the two parameters at 5 seconds.

As discussed in DCD Section 7.2.1, the MSIV position switch scram is safety related.

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