



GE Energy

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MFN 06-130

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**Subject: Partial Response to NRC Request for Additional Information Letter  
No. 6 Related to ESBWR Design Certification Application – Tier 1 –  
RAI Number 14.3-2**

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,

*Kathy Sedney for*

David H. Hinds  
Manager, ESBWR

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Reference:

1. MFN 06-045, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 6 Related to ESBWR Design Certification Application*, January 31, 2006

Enclosure:

1. MFN 06-130 – Partial Response to NRC Request for Additional Information Letter No. 6 for the ESBWR Design Certification Application – Tier 1 – RAI Number 14.3-2

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 0000-0053-1332

MFN 06-130  
Enclosure 1

**ENCLOSURE 1**

**MFN 06-130**

**Partial Response to NRC Request for Additional Information  
Letter No. 6 for the ESBWR Design Certification Application  
Tier 1 – RAI Number 14.3-2**

NRC RAI 14.3-2

*DCD Tier 1 Section 2.2.1, Rod Control and Information System, should address but not be limited to the following requirements.*

- *Isolation provision between safety and non-safety systems. (System interface examples, but not limited to RPS, NMS and CRDS).*
- *The three means to control movements of the control rods (manual, semi-automatic, and automatic) need to be defined in this section.*
- *The test methodology for items 3, 4, 5, 6, 7, 8, and 10 (Listed in DCD 2.2.1) proposes simulated signals for verifying the design commitments of the computer-based system, the tests should cover the life cycle of the system and include testing of the installed system during initial start-up and full power operation of the plant.*

GE Response

The level of detail requested for Tier 1 is applicable to and included in Tier 2. The information below references the location of the requested data in Tier 2.

- The circuitry for normal insertion and withdrawal of control rods in RC&IS is completely independent of the RPS circuitry controlling the reactor scram. This separation prevents failure in the RC&IS circuitry from affecting the RPS scram circuitry. (Subsection 7.7.2.2.1 of the DCD, Tier 2 Rev. 1)  
Subsection 7.7.2.2.6 "RACS Cabinets Subsystems" in Rev.1 of DCD Tier 2 states the required isolation for RPS and NMS are supplied by the RPS and the NMS related equipment. This section also states the safety-related Fine Motion Control Rod Drive (FMCRD) dual redundant separation switches isolation is provided by the non-essential DCIS equipment.
- The three means to move the control rods (manual, semi-automatic, and automatic) are defined in DCD Tier 2, Rev. 1 in Subsection 7.7.2.2.7, "Rod Control and Information System Operation Description."
- Appendix 7B in DCD Tier 2, Rev. 1, "Software Quality Program for Hardware/Software Design and Development" describe the software testing requirements over the life cycle of the system from initial development, start-up and operation of the plant.