



GE Energy

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**Subject: Response to RAI Letter No. 19 Related to ESBWR Design
Certification Application – Instrumentation and Controls – RAI
Numbers 7.5-3 and 7.5-4**

Enclosure 1 contains GE responses to the subject NRC RAIs transmitted via the Reference 1 letter. This completes GE's response to RAI Letter No. 19.

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

Sincerely,

David H. Hinds
Manager, ESBWR

DD68

Reference:

1. MFN 06-114 - Letter from U.S. Nuclear Regulatory Commission to David H. Hinds, *Request for Additional Information Letter No. 19 Related to ESBWR Design Certification Application*, April 24, 2006

Enclosure:

1. MFN 06-137 – Response to RAI Letter No. 19 Related to ESBWR Design Certification Application – Instrumentation and Controls – RAI Numbers 7.5-3 and 7.5-4

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)
eDRFs 0000-0053-9768 and 0000-0053-9926

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Enclosure 1

ENCLOSURE 1

MFN 06-137

Response to RAI Letter No. 19 Related to
ESBWR Design Certification Application
Instrumentation and Controls
RAI Numbers 7.5-3 and 7.5-4

NRC RAI 7.5-3

Nuclear Regulatory Commission (NRC) has issued a draft regulatory guide DG-1128, "Criteria for Accident monitoring Instrumentation for Nuclear Power Plants," in August, 2005. This document is expected to be issued as Revision 4 of Regulatory guide 1.97, "Criteria for Accident Monitoring Instrumentation for Nuclear power Plants," in Mid-2006. This regulatory guide endorses, with certain modifications explained in the regulatory position, IEEE Std. 487-2002, "IEEE Standard Criteria for Accident Monitoring Instrumentation for Nuclear Power Generating Stations," as an acceptable method for providing instrumentation to monitor variables for accident conditions. This revised regulatory guide is intended for applicant/licensees of new nuclear power plants. The staff has reviewed the ESBWR DCD, Tier 2, Section 7.5.1, "General I&C Conformance to Regulatory Guide 1.97," and Table 7.5-1, "Design and Qualification for Instrumentation." The staff finds that many criteria in the IEEE Std. 497-2002 recommendation have not been addressed in the ESBWR DCD. Please commit to update DCD Tier 2, Section 7.5.1 and Table 7.5-1 to address all the IEEE Std. 497-2002 criteria and the relevant requirements stated in RG 1.97, Revision 4, when published.

GE Response

GE will update the DCD Tier 2, Section 7.5.1 and Table 7.5-1, to address the IEEE Std. 497-2002 criteria and the relevant requirements stated in Reg. Guide 1.97, Rev. 4, when published.

NRC RAI 7.5-4

When digital systems are used for the post accident monitoring (PAM) function, the staff will follow review process described in the standard review plan (SRP) chapter 7, Appendix 7.0-A, "Review Process for Digital Instrumentation and Control Systems." Discuss the ESBWR PAM systems software development process with respect to follow the SRP Chapter 7, BTP-14, "Guidance on Software Reviews for Digital Computer-Based Instrumentation and Control Systems." If the PAM system design is being deferred to the COL applicant, please provide the proposed design acceptance criteria (DAC) including the Inspection, Tests, Analyses, and Acceptance Criteria (ITAAC) for staff review.

GE Response

The PAM (Post Accident Monitoring) function will be part of various systems and will follow the requirements of the associated systems. Therefore the systems providing a PAM function will have the software development process as described in 7B of Tier 2 of the DCD.