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Subject: **Response to Portion of NRC Request for Additional Information Letter No. 70 Related to ESBWR Design Certification Application – DCD Tier 1 – RAI Number 14.3-26**

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

D068

Reference:

1. MFN 06-382, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 70 Related to ESBWR Design Certification Application,* October 10, 2006

Enclosure:

1. MFN 06-398 – Response to Portion of NRC Request for Additional Information Letter No. 70 Related to ESBWR Design Certification Application – DCD Tier 1 – RAI Number 14.3-26

cc: AE Cubbage USNRC (with enclosures)
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eDRF 0000-0059-2926

# ENCLOSURE 1

# MFN 06-398

## Response to Portion of NRC Request for

## Additional Information Letter No. 70

## Related to ESBWR Design Certification Application

## DCD Tier 1

## RAI Number 14.3-26

NRC RAI 14.3-26

*SECY 95-132, "Policy and Technical Issues Associated with RTNSS in Passive Plant Designs (SECY-94-084)," dated May 22, 1995, states in part, "[t]he design reliability assurance program (D-RAP) shall be verified using the ITAAC process." An example non-system based D-RAP ITAAC requirement can be found in the AP1000 DCD Tier 1, Revision 9, Section 3, "Non-System Based Design Description & ITAAC," and Section 3.7, "Design Reliability Assurance Program." The applicant should add a non-system based ITAAC requirement for D-RAP to DCD Tier 1, Section 3.6 and DCD Tier 2, Section 14.3.*

GE Response

New Section 3.6 will be added to Tier 1 to address D-RAP. The scope of Section 3.6 will be based on the most recent D-RAP information in Tier 2 Section 17.4, and cover the essential concerns addressed in SECY 95-132. (A preliminary copy of Tier 2 Section 17.4 was provided as part of Enclosure 2 to the Reference 1 letter.) However, GE does not agree with the total scope supplied in AP1000 Tier 1 Section 3.7. Some of the AP1000 items are considered subject to change. As much as possible, certified material should not be subject to change. Therefore, an alternate approach to supplying tables like AP1000 Tables 3.7-1 and 3.7-2 is used.

The new Tier 1 Section 3.6 has been included with this response.

1. GE letter from D. Hinds to NRC, "Response to NRC Request for Additional Information Letter No. 56 – DCD Chapter 17 – RAI Numbers 17.1-1, 17.2-1, and 17.4-1 through 17.4-12," MFN 06-368, October 6, 2006.

## 3.6 DESIGN RELIABILITY ASSURANCE PROGRAM

### Design Description

The GE ESBWR Design Reliability Assurance Program (D-RAP) is used during detailed design and specific equipment selection phases to assure that the important ESBWR reliability assumptions of the probabilistic risk assessment (PRA) will be considered throughout the plant life. The PRA is used to evaluate plant responses to abnormal event initiations and the corresponding plant mitigation functions, to ensure potential plant damage scenarios pose a very low probability and risk to the public.

The objectives of the D-RAP are to provide reasonable assurance that risk significant SSCs are designed such that:

(1) Assumptions from the risk analysis are utilized;

(2) SSCs when challenged, function in accordance with the assumed reliability;

(3) SSCs whose failure results in a reactor trip, function in accordance with the assumed reliability; and

(4) Maintenance actions to achieve the assumed reliability are identified.

The scope of the ESBWR D-RAP includes risk-significant SSCs, both safety-related and nonsafety-related, that provide defense-in-depth or result in significant improvement in the PRA evaluations. The D-RAP provides reasonable assurance that the design of risk-significant SSCs is consistent with their risk analysis assumptions.

The D-RAP identifies relevant aspects of plant operation, maintenance and performance monitoring of important plant SSCs for the COL holder consideration in assuring safety of the equipment and limiting risk to the public.

A preliminary list of risk-significant SSCs within the scope of the D-RAP will be developed by the COL applicant/holder in the plant-specific design phase. The COL holder is expected to augment the design certification information to include any site-specific changes and/or additions, to generate the complete list of the risk significant SSCs.

### Inspections, Tests, Analyses, and Acceptance Criteria

Table 3.6-1 specifies the inspections, tests, analyses, and associated acceptance criteria for the D-RAP.

**Table 3.6-1**

**ITAAC For Design Reliability Assurance Program**

| Design Commitment | Inspections, Tests, Analyses | Acceptance Criteria |
|---|---|---|
| 1. The D-RAP provides reasonable assurance that the design of risk-significant SSCs is consistent with their risk analysis assumptions. | 1. Inspection will be performed for the existence of reports and/or specifications, which establish the estimated reliability of as-built risk-significant SSCs. | 1. Reports and/or specifications exist that identify reliability assurance strategies, i.e., operational, maintenance, and/or performance monitoring activities, to provide reasonable assurance that the estimated reliability of each safety significant SSC is at least equal to the assumed reliability in the plant specific PRA. |