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MFN 07-349

Docket No. 52-010

June 19, 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. 96 Related to ESBWR Design Certification Application –
RAI Number 21.6-102**

Enclosure 1 contains GHNEA's response to the subject NRC RAIs transmitted via the Reference 1 letter.

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

Sincerely,

Kathy Sedney for

James C. Kinsey
Project Manager, ESBWR Licensing

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Reference:

1. MFN 07-231, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 96 Related to the ESBWR Design Certification Application*, April 12, 2007

Enclosures:

1. MFN 07-349 – Response to Portion of NRC Request for Additional Information Letter No. 96 – Related to ESBWR Design Certification Application –RAI Number 21.6-102

cc: AE Cabbage USNRC (with enclosures)
DH Hinds GHNEA Wilmington (with enclosures)
BE Brown GHNEA Wilmington (with enclosures)
eDRF 0000-0069-3911

Enclosure 1

MFN 07-349

**Response to Portion of NRC Request for
Additional Information Letter No. 96
Related to ESBWR Design Certification Application**

RAI Number 21.6-102

NRC RAI 21.6-102

Provide the limiting AOOs used in the revised topical on TRACG as applied to ESBWR AOOs. To support the staff's independent TRACE calculations, state the four limiting anticipated operational occurrences (AOOs) that will be used in the demonstration calculations in the revised topical report on TRACG as applied to ESBWR AOOs (NEDC-33083P Chapter 4). Provide the TRACG input decks for these cases.

GE Response

Based on the system response analysis results presented in DCD Tier 2, Revision 03, Table 15.2-5, the potentially limiting AOO events were identified in DCD Tier 2, Revision 03, Subsection 15.2.7. The file inputs for these limiting AOO events are provided below. These limiting AOOs were considered the limiting AOOs that will be used in the TRACG demonstration calculations as applied to ESBWR AOOs. Furthermore, the SBO event is included in this response because the event bounds the AOOs with respect to maintaining water level above the top of active fuel.

Limiting AOO Event Input and their corresponding Kinetics Input for DCD Tier 2, Revision 3	AOO Event
LFWHS_EOC_SRI-T2_HCUF.INP SRI_9GROUPS_GREENF_16CB-T2.TDT	Loss of feedwater heating (DCD Figure 15.2-1). Contains a single failure in SRI. Uses Basedeck5.
ITCVC_FAST_MOC.INP SCRAM_8GROUPS.TDT	Fast Closure of one Turbine Control Valve (DCD Figure 15.2-2). Uses Basedeck3.
LRHBP_EOC.INP SCRAM_PRES_8GROUPS.TDT	Generator load rejection with a single failure in the turbine bypass system (DCD Figure 15.2-5). Uses Basedeck1.
IICI_MOC_4NOZ.INP SCRAM_PRES_8GROUPS.TDT	Inadvertent isolation condenser initiation (DCD Figure 15.2-11). Uses Basedeck2.
SBO_MOC_DCD3-0A2M.INP (0 – 2000 s, 3D Kinetics) SBO_MOC_DCD3-2MA12M.INP (Restart from 0A2M, 2000 – 12000 s) SBO_MOC_DCD3-12MA20M.INP (Restart from 2MA12M, 12000 – 20000 s) SCRAM_8GROUPS.TDT	Station blackout (DCD Figure 15.5-10). The SBO case is a compilation of three transient runs. The order of the runs is describe with the file names. Uses Basedeck4.

The basedecks referred to in the table above are part of the basedecks transmitted to NRC in the response to RAI 21.6-91 (Enclosure 2 of MFN 07-256). Therefore no input decks will be provided to the NRC as part of this RAI response.

Affected Documents

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