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MFN 08-252

Docket No. 52-010

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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. 106 - Related to ESBWR Design Certification Application – RAI Number 21.6-79 Supplement 1**

The purpose of this letter is to submit the GE Hitachi Nuclear Energy (GEH) response to the U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) sent by the Reference 1 NRC letter. GEH response to RAI Number 21.6-79 Supplement 1 is addressed in Enclosure 1.

If you have any questions or require additional information, please contact me.

Sincerely,

R. E. Brown for/

James C. Kinsey
Vice President, ESBWR Licensing

D068
NRO

Reference:

1. MFN 07-497, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, *Request for Additional Information Letter No. 106 Related to the ESBWR Design Certification Application*, dated September 6, 2007

Enclosure:

1. MFN 08-252 – Response to Portion of NRC Request for Additional Information Letter No. 106 - Related to ESBWR Design Certification Application – RAI Number 21.6-79 S01

cc:	AE Cubbage	USNRC (with enclosure)
	GB Stramback	GEH/San Jose (with enclosure)
	RE Brown	GEH/Wilmington (with enclosure)
	DH Hinds	GEH/Wilmington (with enclosure)
	eDRF	0000-0081-8900

Enclosure 1

MFN 08-252

Response to Portion of NRC Request for

Additional Information Letter No. 106

Related to ESBWR Design Certification Application

RAI Number 21.6-79 S01

NRC RAI 21.6-79 S01

The original RAI requested GEH to justify the choice of the minimum stable film boiling temperature model for ESBWR events. In GEH's response they state that this model is not important for ESBWR events because, with the exception of anticipated transients without a scram (ATWS), they do not enter film boiling. And even for ATWS, GEH states that the minimum stable film boiling temperature is only used to determine when the core will quench and does not have any effect on the value of the maximum peak cladding temperature.

Please explain why this parameter was ranked high in the TRACG application for BWR/2-6 AOOs, PIRT C13 (see Reference), and why this explanation is not applicable for ESBWR.

Reference: NEDE-32906P-A, Rev. 2, MFN 06-046, TRACG Application for Anticipated Operational Occurrences (AOO) Transient Analysis, February 28, 2006 (ADAMS Accession No. ML060530571 and ML060530575)

GEH Response

PIRT C13 in Reference [1] pertains to both dryout (determined by the GEXL correlation) and rewet or boiling transition (determined by the minimum stable film boiling temperature). PIRT C13 is ranked high in the delta-CPR/ICPR calculations for AOO events in ESBWR and BWR/2-6 plants because of the need to calculate the margin to dryout. However, there is no ESBWR or BWR/2-6 AOO event that exceeds the MCPR where minimum stable film boiling temperature may be encountered; therefore, the rewet portion of PIRT C13 is not important and has no effect on the maximum peak cladding temperature.

Reference

[1] GE Nuclear Energy, NEDE-32906P-A, Rev. 3, TRACG Application for Anticipated Operational Occurrences (AOO) Transient Analysis, September 2006.

DCD Impact

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

No changes to the subject LTR will be made in response to this RAI.