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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. 388 Related to ESBWR Design Certification Application – CRHA Heatup – RAI Number 9.4-56**

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) 9.4-56 sent by NRC Letter No. 388, Reference 1.

GEH response to RAI 9.4-56 is addressed in Enclosure 1.

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

Sincerely,

Richard E. Kingston

Richard E. Kingston
Vice President, ESBWR Licensing

Reference:

1. MFN 09-689, Letter from U.S. Nuclear Regulatory Commission to Jerald G. Head, *Request for Additional Information Letter No. 388 Related to ESBWR Design Certification Application*, November 2, 2009

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 388 Related to ESBWR Design Certification Application – CRHA Heatup - RAI Number 9.4-56

cc:	AE Cubbage	USNRC (with enclosure)
	JG Head	GEH/Wilmington (with enclosure)
	DH Hinds	GEH/Wilmington (with enclosure)
	TL Enfinger	GEH/Wilmington (with enclosure)
	eDRF Section	0000-0110-0579

Enclosure 1

MFN 09-736

Response to Portion of NRC Request for Additional Information Letter No. 388 Related to ESBWR Design Certification Application

CRHA Heatup

RAI Number 9.4-56

NRC RAI 9.4-56

In GEH letter MFN 09-525, dated August 4, 2009 and titled "Transmittal of ESBWR CRHA Heatup Calculation, including Applicable Input and Output Data Files," GEH included Enclosure 1 which is titled "Document No. 092-134-F-05011, Issue 1, Control Building Environmental Equipment Qualification Temperature Sensitivity Analysis." The staff has reviewed this calculation and the associated CONTAIN input and output files. The staff has identified a potential discrepancy between the input files and the approach described in the calculation.

The initial temperatures for all heat structures in CONTAIN input file for Step 3 were directly copied from Step 1's results. It does not reflect the intent of Step 2 as described in the Report (Document No. 092-134-F-M-05011, Issue 1, Control Building Environmental Equipment Qualification Temperature Sensitivity Analysis). An update of all heat structure temperatures with the Step 2 run is required if Step 2 is considered. Note that even though the temperature increase may be slight as described in Section 3.4.2, this update is still required since the margin of the main control room temperature is already small (~ 1ºF).

GEH Response

In a teleconference and web presentation conducted on November 10, 2009, GEH demonstrated how the inputs were correctly used in each of the three steps in the analysis. GEH explained that the results of Step 1 were correctly applied to Step 2 and that an update of Step 2 is not required. GEH also presented the availability and correctness of the input information.

No additional analysis will be performed in response to this RAI.

DCD Impact

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