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MFN 08-086 Supplement 47

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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 126 Related to ESBWR Design Certification Application RAI Number 14.3-224**

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 NRC letter dated December 20, 2007 (Reference 1). The GEH response to RAI Number 14.3-224 is addressed in Enclosure 1.

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

Sincerely,

James C. Kinsey

James C. Kinsey
Vice President, ESBWR Licensing

D068
NRO

Reference:

1. MFN 07-718, Letter from U.S. Nuclear Regulatory Commission to James C. Kinsey, GEH, *Request For Additional Information Letter No. 126 Related To ESBWR Design Certification Application*, dated December 20, 2007.

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 126 Related to ESBWR Design Certification Application DCD Tier 1, RAI Number 14.3-224

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 Section	0000-0085-2102 (RAI) 14.3-224

Enclosure 1

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Response to Portion of NRC Request for

Additional Information Letter 126

Related to ESBWR Design Certification Application

DCD Tier 1

RAI Number 14.3-224

NRC RAI 14.3-224

NRC Summary:

Temperature control in general area of control building for SR DCIS

NRC Full Text:

In the Design Description provided in Tier 1 Section 2.16.2.2, it is stated that mechanical cooling of the Control Building General Areas and the CRHA is not provided as a safety-related function during CRHA boundary isolation. The Control Building General Area contains safety-related equipment such as Division I, II, III, and IV DCIS equipment located in the rooms directly below the CRHA. Each division room has a heat load from 3080 watts to 5720 watts during a 72 hour isolation of the CRHA. Please provide an ITAAC that demonstrates that adequate cooling exist to prevent equipment qualification temperatures and environmental temperatures for safety-related equipment in the Control Building General Area from being exceeded. Please consider the presence of these SR DCIS heat loads as an input to the CRHA in determining the passive cooling capability of the CRHA.

GEH Response

The EQ ITAAC (DCD Tier #1, section 3.8) includes the design basis and the qualification documents for all safety-related equipment in the ESBWR including the safety-related DCIS heat loads during a 72-hour isolation of the CRHA as input to determining the capability and performance of the safety-related equipment in the CRHA and safety-related equipment in the Control Building General Area.

Response to RAI 6.4-7 (MFN 08-056 dated February 20, 2008) explained the passive cooling features of the thermal mass of concrete that makes up the ceilings and walls of the rooms in the control room habitability area (CRHA) to prevent equipment qualification temperatures from being exceeded during a 72-hour isolation of the CRHA.

Response to RAI 6.4-7-S01 (MFN 08-392, dated April 29, 2008) explained that the ancillary diesel generators provide power to the Main Control Room auxiliary air conditioning unit, and the recirculation air handling units (AHUs) and that these active RTNSS cooling systems are credited for controlling the control room habitability temperature after 72 hours from the start of the event.

Safety-related equipment in the CRHA and Control Building General Area are maintained within qualification temperature requirements by either the passive cooling features of the thermal mass of concrete, or, if necessary by localized cooling from the CRHAVS AHUs.

DCD Impact

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