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Subject: **Response to Portion of NRC Request for Additional  
Information Letter No. 124 Related to ESBWR Design  
Certification Application - Auxiliary Systems - RAI Number  
9.2-22**

**Enclosure 1 contains GEH's response to the subject RAI transmitted via  
Reference 1.**

Should you have any questions about the information provided here, please  
contact me.

Sincerely,

James C. Kinsey  
Vice President, ESBWR Licensing

D068  
HRO

Reference:

1. MFN 08-029, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, *Request for Additional Information Letter No. 124 Related to the ESBWR Design Certification Application*, January 14, 2008

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 124 Related to ESBWR Design Certification Application - Auxiliary Systems - RAI Number 9.2-22

cc: AE Cabbage USNRC (with enclosure)  
RE Brown GEH/Wilmington (with enclosure)  
DH Hinds GEH/Wilmington (with enclosure)  
GB Stramback GEH/San Jose (with enclosure)  
eDRF 0000-0083-8391

**Enclosure 1**

**MFN 08-189**

**Response to Portion of NRC Request for  
Additional Information Letter No. 124  
Related to ESBWR Design Certification Application  
Auxiliary Systems  
RAI Number 9.2-22**

**NRC RAI 9.2-22**

*Some information for TCCWS were deleted in Revision 4 of DCD, Tier 2, Section 9.2.8 from previous revisions.*

*Add the compliance of GDC 2 back to Section 9.2.8,*

*Add the compliance of GDC 44, 45, and 46 back to Section 9.2.8, or explain why the above criteria are not applicable for the TCCWS.*

*Specify the number of pumps and heat exchangers that are aligned for service during normal plant power operation.*

**GEH Response**

Some information for TCCWS was deleted in DCD Tier 2, Subsection 9.2.8, Revision 4 because TCCWS is no longer classified as RTNSS since TCCWS is not used to transfer heat from SSCs that are safety-related or RTNSS.

*Add the compliance of GDC 2 back to Section 9.2.8.*

All TCCWS piping and components are located in the Turbine Building (TB), which is a nonsafety-related structure (Ref. DCD Tier 2, Table 3.2-1). There are safety-related sensors located inside the Turbine Building structure. However, GEH response to RAI 14.3-99 S01 (MFN 07-003 S01 dated August 13, 2007) concluded that the need for physical protection or barriers from nonsafety-related systems in the TB is not required due to the fail-safe nature of the sensors and the safety-related systems they serve.

TCCWS is not used to transfer heat from structures, systems, and components that are RTNSS or safety-related (See RAI 9.2-7 S02, MFN 08-191 dated March 6, 2008). Therefore, TCCWS still satisfies the requirements of GDC 2 as it pertains to Position C.2 of Reg. Guide 1.29 but is not required.

*Add the compliance of GDC 44, 45, and 46 back to Section 9.2.8, or explain why the above criteria are not applicable for the TCCWS:*

TCCWS is not required to meet NRC regulations, safety goal guidelines, and containment performance goal objectives. Additionally, TCCWS is not used to transfer heat from structures, systems, and components that are RTNSS or safety-related as required by GDC's 44, 45, and 46. An explanation of this has been further clarified during NRC and GEH conference call, that GDC 44, 45, and 46 are not applicable to TCCWS because the system removes heat from the SSCs that are not safety-related or RTNSS (See RAI 9.2-7 S02, MFN 08-191 dated March 6, 2008).

*Specify the number of pumps and heat exchangers that are aligned for service during normal plant power operation.*

DCD Tier 2, Rev. 4 Subsection 9.2.8.2 states that system parameters are shown in Table 9.2-12 and the system configuration is shown in Figure 9.2-4. DCD Tier 2, Rev. 4 Table 9.2-12 specifies the system design detail with regards to equipment operating during normal plant operation. This is defined by providing "Pump Quantity" as "3 x

50%" and "Heat Exchanger Quantity" as "4 x 50%". Therefore, two (2) pumps and two (2) heat exchangers will be in operation during plant power operation.

**DCD Impact**

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