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Subject: **Response to Portion of NRC Request for Additional
Information Letter No. 135 Related to ESBWR Design
Certification Application – RAI Number 7.1-65**

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 January 14, 2008. The RAI response is included in Enclosure 1.

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

Sincerely,

James C. Kinsey
Vice President, ESBWR Licensing

DOB
NRO

Reference:

1. MFN 08-038, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, GE, *Request For Additional Information Letter No. 135 Related To ESBWR Design Certification Application*, dated January 14, 2008

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 135 Related to ESBWR Design Certification Application - RAI Number 7.1-65

cc:

AE Cabbage	USNRC (with enclosure)
GB Stramback	GEH/San Jose (with enclosure)
RE Brown	GEH/Wilmington (with enclosure)
eDRF Sections	
	0000- 0080-0485 (RAI 7.1-65)

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Enclosure 1

**Response to Portion of NRC Request for Additional
Information Letter No. 135 Related to ESBWR Design**

Certification Application –

RAI Number 7.1-65

NRC RAI 7.1-65

The DCD states the NMS to ATLM and MRBM is an example of a safety-related to non-safety-related communications path that does not involve gateways but does not mention isolation. What are the other safety-related to non-safety-related communications paths and how are they isolated?

GEH Response

As stated in Subsection 7.1.3.3 and the response to RAI 7.1-64 (submitted via MFN 08-116 dated February 26, 2008), all safety-related communication is electrically, physically, data, and communication isolated and separated at the source using safety-related fiber optic communication interface modules (CIMs), either transmitters or receivers. Thus, regardless of whether a datalink or a combination of datalinks and gateways is used, the required (IEEE Std. 603, Sections 5.6 and 6.3) safety-related isolation and separation are always provided by the safety-related fiber optic CIMs.

See the response to RAI 7.1-56, submitted via MFN 07-560 dated October 24, 2007, for detailed information on the boundary between the Safety-related Distributed Control and Information System (Q-DCIS) and the Nonsafety-related DCIS (N-DCIS) as well as the use of gateways. Subsection 7.1.3.3 describes the use of gateways for data translation or packaging but not for isolation and separation. When a gateway is not needed for data translation or packaging, (as in the case of NMS to ATLM and MRBM communication) there is only a datalink via fiber optic cable between the Q-DCIS CIM and the N-DCIS.

The “other safety-related to nonsafety-related communication” pathways are not listed because the only communication pathways between the Q-DCIS and the N-DCIS are those that pass through the safety-related fiber optic CIMs (which provide the required safety-related isolation), fiber optic cable, datalinks, and in some cases gateways. All data from the Q-DCIS is presented to the N-DCIS. This is indicated in the DCD Tier 2, Revision 4, Subsection 7.1.3.3 statement, “The safety-related communications interfaces indiscriminately retrieve all of the divisional information from the network and send it one way to the nonsafety-related gateway.” This statement is modified in the below markup to clarify that the divisional information is sent to the N-DCIS, not specifically to the nonsafety-related gateway because gateways are not always used. This transfer of data is always through proper isolation as described above. The N-DCIS is then capable of using the data, which is now nonsafety-related, as needed (e.g., for display, alarm, or recording).

DCD Tier 2, Subsection 7.1.3.3 will be revised to state that the safety-related fiber optic CIMs provide the safety-related isolation and that the CIMs indiscriminately retrieve all of the divisional information from the safety-related (Q-DCIS) networks and send it one way to the N-DCIS.

DCD Impact

DCD Tier 2, Subsection 7.1.3.3 will be revised in Revision 5 as shown below:

The safety-related fiber optic communications interfaces CIMs provide the safety-related isolation. The CIMs indiscriminately retrieve all of the divisional information from the safety-related (Q-DCIS) networks and send it one way to the N-DCIS (via fiber optic cable and a datalink or via a combination of fiber optic cable, datalinks and nonsafety-related gateways). Time tags are described below.