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Subject: **Response to Portion of NRC Request for Additional Information Letter No. 229 RELATED TO DESIGN CONTROL DOCUMENT (DCD) REVISION 5 – Safety Analyses – RAI Number 15.0-32**

The purpose of this letter is to submit the GE Hitachi Nuclear Energy (GEH) responses to the U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) sent by NRC letter No. 229 (Reference 1). GEH response to RAI Number 15.0-32 is addressed in Enclosure 1.

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

Sincerely,

Lee F. Dougherty for

Richard E. Kingston
Vice President, ESBWR Licensing

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NRO

Reference:

1. MFN 08-611, Letter from U.S. Nuclear Regulatory Commission to Robert E. Brown, GEH, *Request For Additional Information Letter No. 229 RELATED TO DESIGN CONTROL DOCUMENT (DCD) REVISION 5*, dated July 30, 2008

Enclosure:

1. Response to Portion of NRC Request for Additional Information Letter No. 229 RELATED TO DESIGN CONTROL DOCUMENT (DCD) REVISION 5 – Safety Analyses – RAI Number 15.0-32

cc:	AE Cubbage	USNRC (with enclosure)
	RE Brown	GEH/Wilmington (with enclosure)
	DH Hinds	GEH/Wilmington (with enclosure)
	eDRFs	0000-0091-3042

Enclosure 1

MFN 08-782

Response to Portion of NRC Request for Additional Information Letter No. 229 RELATED TO DESIGN CONTROL DOCUMENT (DCD) REVISION 5

Safety Analyses

RAI Number 15.0-32

NRC RAI 15.0-32

In DCD Revision 5, Tier 2, Table 15.0-2, change "Feedwater Controller Failure-Maximum Flow Demand" to "Feedwater Controller Failure (a) Maximum Flow Demand (b) Minimum Temperature Demand" to be consistent with 15A.3.5.1 and 15A.3.5.2.

GEH Response:

The events listed in DCD Revision 5, Tier 2, Table 15.0-2 show the various postulated design basis events cross-referenced to the applicable Standard Review plan sections and the event classification for each event. DCD Appendix 15A documents the frequency classification for the Infrequent Events. DCD Chapter 15.2 and 15.3 documents the results of analyses for Anticipated Operational Occurrences and Infrequent Events, respectively.

The two events in question, Feedwater Controller Failure – Maximum Flow Demand, and Feedwater Controller Failure – Minimum Temperature Demand events are both classified as Infrequent Events. The Feedwater Controller Failure – Maximum Demand event for the ESBWR was clarified to note that this was a maximum flow demand signal, and is reflective of the description of this event. The Feedwater Controller Failure – Minimum Temperature Demand event has the same effect as the Loss of Feedwater Heating event. In this case, involving a reduction in supplied feedwater temperature to some minimum temperature as allowed by the design of the feedwater heaters such that any single failure results in a minimum feedwater temperature. The effects of this event are that the increase in inlet subcooling causes a reactivity excursion due to the cooler water entering the reactor core. The "Feedwater Controller Failure – Minimum Temperature Demand" event discussion is included with the "Loss of Feedwater Heating With Failure of SCRRI and SRI" discussion in 15.3. Therefore, there is no necessity to revise DCD, Tier 2, Table 15.0-2.

Although "FWCF – Minimum Temperature Demand" event and the "FWCF – Maximum Flow Demand" event are very different transients with different analytical results, for event frequency determination in Appendix 15A of the DCD, Revision 5, Tier 2, they are very similar. Both events are a result of a failure of the feedwater control system. Therefore, in the DCD, Appendix Subsection 15A.3.5, they are listed together, and the results confirm that the event is classified correctly as an infrequent event.

DCD Impact:

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