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Security Notice

This letter forwards Security-Related information in accordance with 10 CFR 2.390. Upon removal of Enclosure 2, the balance of this letter may be considered non-Security-Related.

MFN 08-201
Supplement 1 Revision 1

Docket No. 52-010

October 23, 2008

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. 218 – Related to ESBWR Design Certification Application – Radiation Protection – RAI Number 12.6-1 S01**

The purpose of this letter is to submit the GE Hitachi Nuclear Energy (GEH) response to a portion of the U.S. Nuclear Regulatory Commission Request for Additional Information (RAI) sent by NRC Letter 218 (Reference 1). The GEH response to RAI Number 12.6 1 S01 is addressed in Enclosure 1.

Enclosure 2 contains Security-Related DCD Figures identified by the designation ">{{{Security-Related Information - Withhold Under 10 CFR 2.390}}}. " GEH hereby requests this information be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390. No public version of these security-related DCD Markups are provided in these RAI responses since they would be blank pages with only figure titles and figure numbers; however, DCD Tier 2, Revision 6 will contain public versions of these figures.

DC08
NR0

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

Sincerely,



Richard E. Kingston
Vice President, ESBWR Licensing

References:

1. MFN 08-221, Letter from the U.S. Nuclear Regulatory Commission to Robert E. Brown, *Request for Additional Information Letter No. 218, Related To ESBWR Design Certification Application*, dated July 1, 2008
2. MFN 06-342, Letter from the U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 60, Related To ESBWR Design Certification Application*, dated September 18, 2006
3. MFN 08-201, Letter from James C. Kinsey to the U.S. Nuclear Regulatory Commission, *Response to Portion of NRC Request for Additional Information Letter No. 60 Related to ESBWR Design Certification Application – Radiation Protection – RAI Number 12.6-1*, dated May 8, 2008

Enclosures:

1. Response to Portion of NRC Request for Additional Information Letter No. 218 – Related to ESBWR Design Certification Application – Radiation Protection - RAI Number 12.6-1 S01
2. Response to Portion of NRC Request for Additional Information Letter No. 218 – Related to ESBWR Design Certification Application – Radiation Protection – RAI Number 12.6-1 S01 – Security-Related Information - Withhold Under 10 CFR 2.390

cc: AE Cubbage USNRC (with enclosures)
RE Brown GEH/Wilmington (with enclosures)
DH Hinds GEH/Wilmington (with enclosures)
eDRF 0000-0091-4260 Rev. 1

Enclosure 1

**MFN 08-201
Supplement 1
Revision1**

**Response to Portion of NRC Request for
Additional Information Letter No. 218
Related to ESBWR Design Certification Application
Radiation Protection
RAI Number 12.6-1 S01**

Enclosure 1

For historical purposes, the original text of RAI 12.6-1 and the GEH response is included. This response does not include any attachments or DCD mark-ups.

NRC RAI 12.6-1

NRC Summary:

Provide layout drawings depicting the health physics facilities in the Service Building.

NRC Full Text:

DCD Tier 2, Section 12.5.2 discusses ESBWR facilities in the service building. Provide layout drawings (to the same scale as the other figures in DCD Tier 2, Section 12.3) of the Service Building, indicating the described facilities (including, but not limited to, the HP offices, control points, contamination control/monitoring stations, changing rooms (men's and women's), decontamination stations/showers, etc). Indicate the designed plant access and egress control through these facilities.

GEH Response

Layout drawings of the Service Building will be provided in the next revision of DCD Tier 2, Section 12.5. The layout drawings will indicate the health physics areas and offices, radiologically controlled access points, contamination control/monitoring stations, changing rooms (men's and women's), decontamination stations/showers, and other areas. The designed plant access and egress control through these facilities will also be indicated.

DCD Impact

DCD Tier 2, Section 12.5 will be revised as noted on the attached Service Building layout drawings.

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NRC RAI 12.6-1 S01

NRC Summary:

Clarify apparent inconsistencies in plant layout figures provided with this RAI and in response to RAI 12.4-31.

NRC Full Text:

- 1. On Figure 12.5-1 (submitted in response to RAI 12.6-1) the symbol for the RCA entry path (shown on the legend as a line with diamond shapes) and the symbol for the RCA exit path (shown on the legend as a line with square shapes) should be interchanged so that these symbols match the symbols for the paths shown on Figure 12.5-1.*
- 2. Figure 12.5-1 shows an access tunnel on elevation 1300 connecting to the Services Building. In the lower left portion of Figure 12.5-1 a stairway/elevator layout is shown for the minus 2000 level which shows a clean access pathway between the Service Building and the access tunnel. Describe how the use of the access tunnel on elevation -2000 differs from the use of the access tunnel on elevation 1300. Describe what buildings can be accessed by each of these access tunnels.*
- 3. There are several differences in layout and access paths as shown on the Figures 12.5-1,2 (provided in response to RAI 12.6-1) and as shown on Figures 12.3-77, 78 (provided in response to RAI 12.3-31). Provide an explanation for these differences (see similar, but more detailed question in response to GEH response to RAI 12.3-31).*

GEH Response

- 1. Agree.** The symbols for the entry path and exit path were reversed in DCD Tier 2 Rev. 5, Figure 12.5-1 and will be revised to agree with the figure legend as shown on the attached mark-up.
- 2.** The access tunnel at elevation -2000 provides a path to non-RCA (radiologically controlled area) building elevations in the power block without crossing any RCA boundaries. The non-RCA tunnel connects the Electrical Building, Control Building, Reactor Building, and Service Building as depicted in DCD Tier 2 Rev. 5, Section 1.2, Figures 1.2-3 and Figure 1.2-26. The access tunnel at elevation 1300 provides a path to RCA building elevations in the power block after crossing into the RCA boundary in the Service Building. The RCA tunnel connects the Service Building, Reactor Building, Turbine Building and Radwaste Building as depicted in DCD Tier 2 Rev. 5 Section 1.2 Figures 1.2-4 and 1.2-12. The RCA boundary will be updated

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in Figure 12.5-1 and Figure 12.5-2 to show where the RCA boundary extends to the adjacent buildings as shown on the attached mark-up.

3. In terms of layout, the Service building as shown on DCD Tier 2, Figures 12.5-1 and 12.5-2 is identical to DCD Tier 2, Figures 12.3-77 and 12.3-78. The RCA boundary depicted in these figures is also identical.

To highlight the major differences between the Service Building figures in DCD Sections 12.3 (post-accident) and 12.5 (normal operation), the following points are presented:

- (1) The access paths do differ between the two sets of figures. The reason for this difference is that the figures in DCD Tier 2, Section 12.5 show the plant access and egress through the Service Building. Pathways are not shown on Figures 12.5-1 and 12.5-2 to every room of the Service Building; the intent of the DCD Section 12.5 figures is to provide a general overview of the flow of personnel through the Service Building during normal operations. Pathways on the post-accident figures (Section 12.3) include routes to the counting room and hot chemical laboratory as documented in DCD Tier 2, Tables 12.3-11 through 12.3-13 and 12.3-16.
- (2) There are two sets of HP exit monitors at elevation 1300 in Figure 12.5-1, and flow is shown through both exit monitors. Although flow is only shown through one of the two exit monitors in Figure 12.3-77; this is not meant to indicate a specific set of monitors is used in a post-accident scenario. The intent was to show the flow does pass through these monitors.
- (3) The path to the Fuel Building is not shown on Figures 12.3-77 and 12.3-78 nor on Figures 12.5-1 and 12.5-2; however, Figures 12.5-1 and 12.5-2 will be updated to show the normal access path to the Fuel Building.

Any updates related to Figures 12.3-77 and 12.3-78 will be addressed in the response to RAI 12.34-31 S01.

DCD Impact:

DCD Tier 2 Section 12.5 will be revised as noted on the attached markups.