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Subject: **Response to Portion of NRC Request for Additional Information Letter No. 97 Related to ESBWR Design Certification Application – Electrical Power - RAI Numbers 8.3-56, 8.3-57, and 8.3-58**

Enclosure 1 contains GE's response to the subject NRC RAIs 8.3-56, 8.3-57, and 8.3-58 transmitted via the Reference 1 letter.

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

Sincerely,

Kathy Sedney for

James C. Kinsey
Project Manager, ESBWR Licensing

D068

NRO

Reference:

1. MFN 07-292, Request for Additional Information Letter No. 97 Related to ESBWR Design Certification Applications "RAIs concerning Chapter 3: 3.8-110, 3.9-176; Chapter 4: 4.3-7 through 4.3-9; Chapter 5: 5.4-59; Chapter 6: 6.2-155; Chapter 8: 8.3-56 through 8.3-58; Chapter 9; 9.1-29, 9.1-30; Chapter 14: 14.2-81 through 14.2-88; Chapter 15: 15.4-30, 15.4-31; Chapter 16: 16.2-120 through 16.2-155; Chapter 17: 17.4-17; and Chapter 19: 19.1-149 Tier 2 of the ESBWR Design Control Document", dated May 10, 2007

Enclosure:

1. MFN 07-294, Response to Portion of NRC Request for Additional Information Letter No. 97 Related to ESBWR Design Certification Application – Electrical Power - RAI Numbers 8.3-56, 8.3-57, and 8.3-58

cc: AE Cubbage USNRC (with enclosures)
RE Brown GE/Wilmington (with enclosures)
GB Stramback GE/San Jose (with enclosures)
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Enclosure 1

MFN 07-294

Response to Portion of NRC Request for Additional Information Letter No. 97 Related to ESBWR Design Certification Application – Electrical Power - RAI Numbers 8.3-56, 8.3-57, and 8.3-58

NRC RAI 8.3-56

Four divisions of safety-related UPS provide 120V AC power for the reactor protection systems (RPS). Fig. 8.1-4 in Revision 3 of DCD indicated that two RPS power feeders from division 1, two RPS power feeders from division 2, and none from divisions 3 and 4. During a public meeting on April 25 and 26, 2007, GE clarified that RPS instrumentation is powered by four divisions of power from Q-DCIS, but reactor trip solenoids are only powered by division 1 and division 2, due to the fail safe configuration (lost power to scram reactor). Fig. 8.1-4 should be revised to show those power feeders to "Scram solenoids" rather than "RPS".

GE Response

GE has attached the Chapter 7 Revision 3 Fig. 7.2-1 RPS Functional Block to more clearly depict the two power feeders from division 1 and two power feeders from division 2 are only called "RPS". The two feeders from each division feed the load driver series/parallel switches for divisions 1 and 2 RPS sections of the DCIS. There are two sets of load drivers in each division 1 and 2 for not only the scram solenoids but also the MSIV solenoids. GE prefers to retain the feeder load as "RPS" and not designate one feeder as "RPS Scram Solenoids" and the other as "MSIV Solenoids" since both of the feeders go to the respective load drivers of divisions 1 and 2 RPS Q-DCIS.

DCD Impact

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

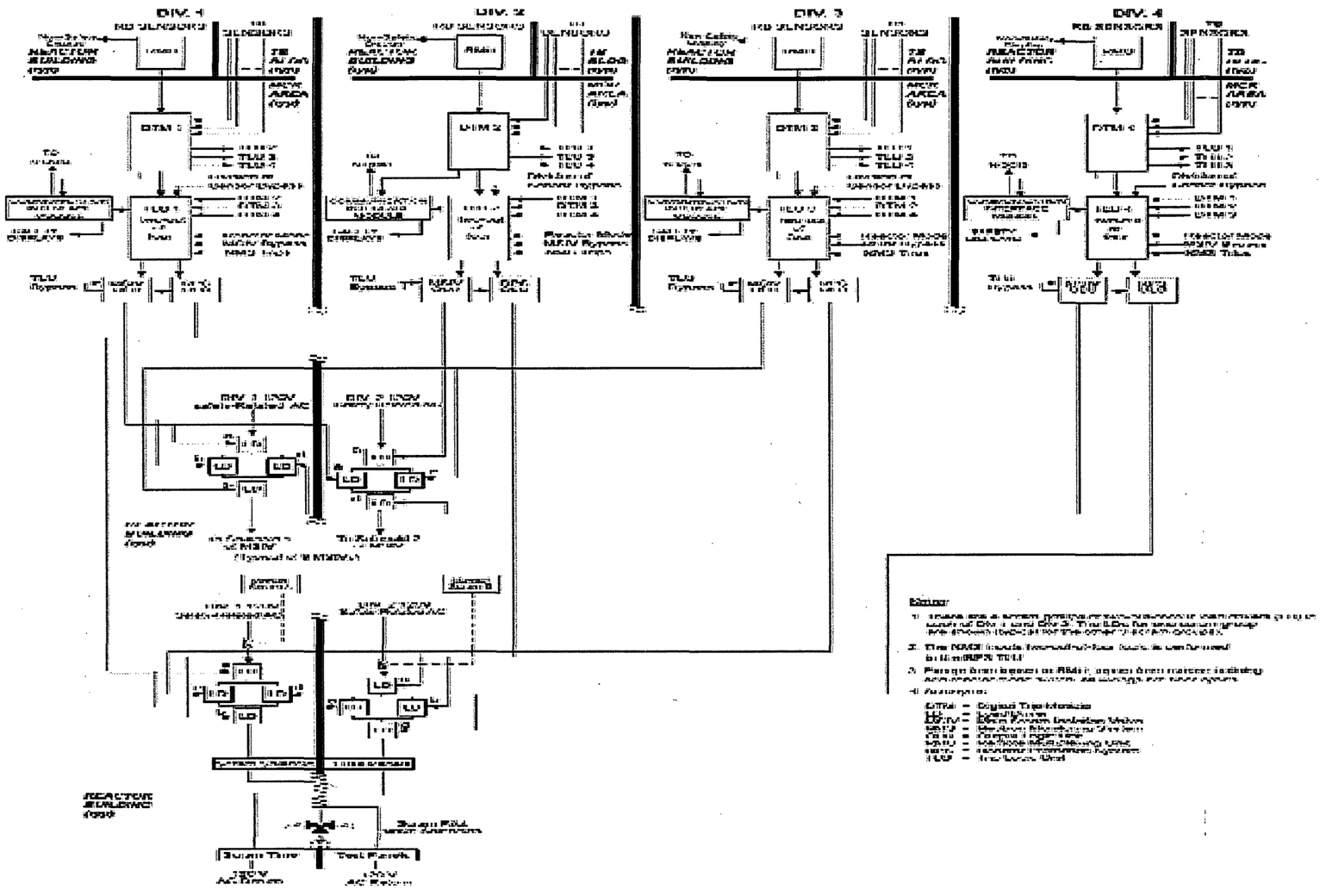

Figure 7.2-1. RPS Functional Block

NRC RAI 8.3-57

According to Nonsafety-Related UPS System in page 8.3-5 of DCD Revision 3, a third load group's nonsafety-related UPS is normally supplied from a 480V AC power center, which can receive power from either of two power load groups. Identify the two power load groups.

GE Response

GE has answered this RAI in the previously submitted GE MFN Letter # 07-165 "RAI 8.3-52 S01 And NRC Comments Response", with the page 8.3-6, first sentence. This page is part of the "NRC Comments Response" attachments to the MFN letter (DCD Rev. 4 markups, Enclosure 2). The subject sentence reads, "The normal power supply for the A and B load groups of the nonsafety-related UPS is through a nonsafety related 480 VAC power center fed from the A and B PIP buses, respectively."

DCD Impact

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

NRC RAI 8.3-58

According to DCD Tier 2, Rev. 3, Section 8.3.1.1.4, Instrumentation and Control Power Supply System, the instrumentation and control buses are each supplied independently from separate 480V AC power center. It is not clear that the vendor describes two different I&C buses. Provide accurate description for I&C power supply system.

GE Response

GE has already responded to the question in this RAI in the previously submitted GE MFN Letter # 07-165 "RAI 8.3-52 S01 And NRC Comments Response". Enclosure 2 DCD Rev. 4 page markups, Page 8.3-6, Subsection 8.3.1.1.4, second and third paragraphs were rewritten to clearly describe the DCIS Swing Bus. The subject paragraphs were marked up to read, "Regulating step-down transformers provide 208/120 VAC power to those loads not requiring uninterruptible power. The nonsafety-related AC control power buses are shown in Figure 8.1-6. The Instrumentation and Control buses are each supplied independently from the 480 VAC DCIS Swing Bus.

Instrumentation and control buses are supplied from the DCIS Swing Bus power center to supply nonsafety-related I&C loads that do not require uninterruptible power." Additionally, Figure 8.1-6 is referenced by the first sentence of Subsection 8.3.1.1.4.

Figure 8.1-6 was revised in MFN 07-165 Enclosure 2 to correctly reference to Figure 8.3-2, which shows that the Instrumentation and Control Buses are supplied from the Swing Bus.

DCD Impact

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