



GE Energy

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MFN 07-019

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**Subject: Response to Portion of NRC Request for Additional Information  
Letter No. 70 Related to ESBWR Design Certification Application –  
Initial Test Program – RAI Numbers 14.2-39 and 14.3-82**

Enclosure 1 contains GE's response to the subject NRC RAIs transmitted via the Reference 1 letter.

If you have any questions or require additional information regarding the information provided here, please contact me.

Sincerely,

A handwritten signature in cursive script that reads "James C. Kinsey for".

James C. Kinsey  
Project Manager, ESBWR Licensing

Reference:

1. MFN 06-382, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 70 Related to ESBWR Design Certification Application*, October 10, 2006

Enclosure:

1. MFN 07-019 – Response to Portion of NRC Request for Additional Information Letter No. 70 Related to ESBWR Design Certification Application – Initial Test Program – RAI Numbers 14.2-39 and 14.3-82

cc: AE Cabbage USNRC (with enclosures)  
GB Stramback/GE/San Jose (with enclosures)  
eDRF 0000-0062-3114

**Enclosure 1**

**MFN 07-019**

**Response to Portion of NRC Request for**

**Additional Information Letter No. 70**

**Related to ESBWR Design Certification Application**

**Initial Test Program – RAI Numbers 14.2-39 and 14.3-82**

**NRC RAI 14.2-39**

*Does DCD Tier 2, Revision 1, Section 14.2.8.1.4 control rod drive system pre-operational test include verifying "correct failure mode on loss of power?" Regulatory Guide 1.68, Revision 2 - 08/1978, Appendix A.1.b.1, control rod drive system tests, has a statement, "Demonstrate proper operation, including correct failure mode on loss of power, for the control rod drive system and proper operation of system alarms". Please clarify this. In addition, it is not clear if the CRD high-pressure makeup mode of operation will be tested. This mode of operation will be initiated by a low reactor water Level 2 signal and standby pump will be started and the injection valves will automatically open. Please clarify if this operation and both CRD pumps will be tested.*

**GE Response**

Subsection 14.2.8.1.4 includes verification of the correct failure mode for the Control Rod Drive System on loss of power. This is accomplished in the normal course of scram testing in which loss of power to the scram solenoid pilot valves in the HCU's causes scram. Please see the response to RAI 14.2-7 Supplement 1 that addresses this issue for Subsection 14.2.8.1.4. This is provided in the following letter:

MFN 06-376 Supplement 1, Letter from David Hinds to U.S. Nuclear Regulatory Commission, Response to Portion of NRC Request for Additional Information Letter No. 50 Related to ESBWR Design Certification Application – Initial Test Program – RAI Numbers 14.2-5 and 14.2-7 – Supplement 1, November 20, 2006.

The high pressure makeup mode of operation will be tested. This is indicated in the 5th bullet under General Test Methods and Acceptance Criteria in Subsection 14.2.8.1.4, i.e.,

“ Proper operation of CRD makeup to reactor pressure vessel on reactor low level signal;”

Testing of this mode includes simultaneous operation of both CRD pumps in order to deliver the required high pressure makeup flow rate to the reactor.

**DCD Impact**

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

Enclosure 1

**NRC RAI 14.3-82**

*Please revise DCD Tier 1, Figure 2.2.2-1, Control Rod Drive System, to show the HCU Charging Header pressure instrumentation.*

**GE Response:**

The charging header pressure instrumentation will be added to DCD Tier 1, Figure 2.2.2-1 and DCD Tier 2, Figure 4.6-8 as shown in the attached markup.

**DCD Impact:**

DCD Tier 1, Figure 2.2.2-1 and DCD Tier 2, Figure 4.6-8 will be revised as noted in the attached markups.

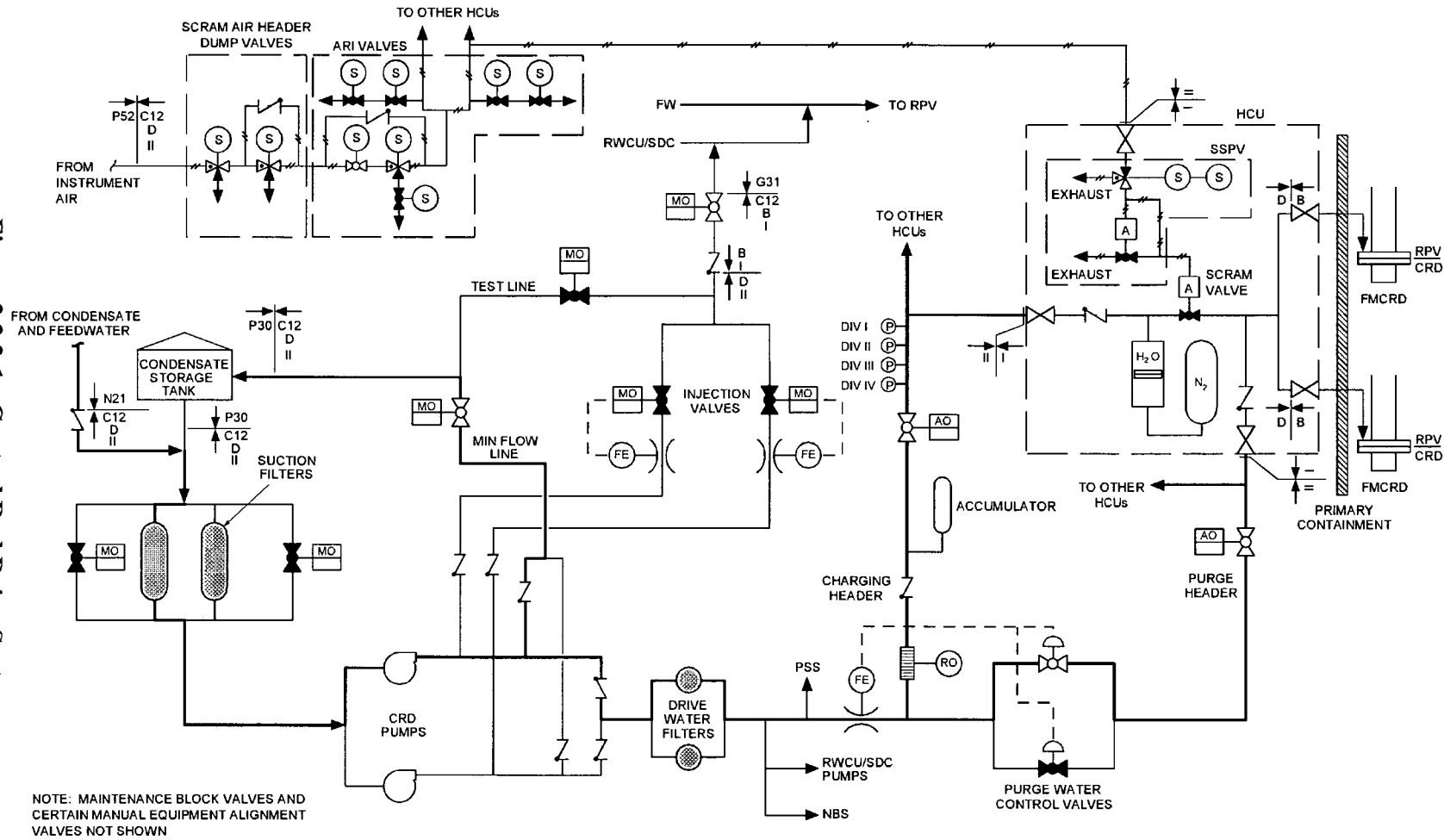


Figure 2.2-2-1. Control Rod Drive System

**Figure 4.6-8. Control Rod Drive System Simplified Process and Instrumentation Diagram**

