

REQUEST FOR ADDITIONAL INFORMATION 692- 5433 REVISION 2

2/10/2011

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 07.01 - Instrumentation and Controls - Introduction

Application Section: Section 07.01 - Introduction

QUESTIONS for Instrumentation, Controls and Electrical Engineering 2 (ESBWR/ABWR Projects)
(ICE2)

07.01-25

Request to address four basic design principles and one attribute in DCD

During the January 19, 2011 meeting between the NRC staff and MHI, the staff requested MHI to consolidate information in the US-APWR design control document (DCD) section 7.1 to address four digital instrumentation and control design principles. Those principles are: (1) redundancy, (2) independence, (3) the need for defined determinism in data processing and communication, and (4) implementation of a diversity and defense-in-depth (D3) philosophy, as well as one subjective attribute – simplicity.

Although these design principles have been discussed in various technical reports to satisfy the IEEE Standard 603-1991 requirements, consolidating the information in DCD Section 7.1 will improve its conciseness and clarity, as well ease its availability for staff and stakeholders to review and reference. Similar documentation has been documented in the other design centers such as ESBWR DCD Section 7.1, and South Texas Project Units 3 and 4, Appendix 7DS.

References:

GE-Hitachi Tier 2, ESBWR Design Control Document (DCD) Tier 2, Chapter 7, Instrumentation and Control Systems; 26A6642AW Revision 9; dated December 2010; ML103440232.

South Texas Project Units 3 and 4, Submittal of I&C Information; U7-C-STP-NRC-110013; dated January 19, 2011; ML110250367.