



**MITSUBISHI HEAVY INDUSTRIES, LTD.**

16-5, KONAN 2-CHOME, MINATO-KU

May 20, 2011

Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Attention: Mr. Jeffrey A. Ciocco

Docket No. 52-021  
MHI Ref: UAP-HF-11145

**Subject: Design Change Proposal on the Diverse Actuation System**

The NRC provided comments on the Defense-in-Depth and Diversity (D3) Coping Analysis on the teleconference on April 28, 2011 and there was additional discussion at a meeting held May 11-12, 2011. The Staff pointed out the following designs cannot be accepted, because there is no safety benefit in maintaining system design simplicity while increasing operational complexity as part of a new reactor design.

- a. Manual actuation of safety injection (SI) pumps on Large Break Loss of Coolant Accident (LBLOCA) concurrent with software common cause failure (CCF), which requires operator action within 6 minutes from the beginning of break.
- b. Local operation for closure of main steam isolation valve on a Steam Generator Tube Rupture (SGTR) event concurrent with software CCF, which requires operator action in 20 minutes after the N-16 alarm initiation.

MHI agrees to solve the two Staff issues identified above and proposes design changes to add the following functions to the diverse actuation system (DAS).

- a. Automatic actuation of SI pumps upon low pressurizer pressure signal from the DAS
- b. Manual switches for main steam isolation on the diverse HSI panel (DHP) in the main control room.

MHI will submit the revised D3 Coping Analysis Technical Report (MUAP-07014), the mark-up version of the DCD rev.4, and related RAI responses to incorporate above design changes by the end of May, 2011.

Please contact Dr. C. Keith Paulson, Senior Technical Manager, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of this letter. His contact information is provided below.

Sincerely,

Yoshiki Ogata,  
General Manager- APWR Promoting Department  
Mitsubishi Heavy Industries, LTD.

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MRO

CC: J. A. Ciocco  
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