

## US-APWRRAlSPeM Resource

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**From:** Ciocco, Jeff  
**Sent:** Wednesday, August 22, 2012 6:50 AM  
**To:** us-apwr-rai@mhi.co.jp; US-APWRRAlSPeM Resource  
**Cc:** Chen, Pei-Ying; Colaccino, Joseph; Galvin, Dennis; Snyder, Amy  
**Subject:** US-APWR Design Certification Application RAI 957-6388 (3.11)  
**Attachments:** US-APWR DC RAI 957 EEB 6388.pdf; image001.jpg

MHI,

The attachment contains the subject request for additional information (RAI). This RAI was sent to you in draft form. Your licensing review schedule assumes technically correct and complete responses within 30 days of receipt of RAIs.

Please submit your RAI response to the NRC Document Control Desk.

Thank you,

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image001.jpg	3989	

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# REQUEST FOR ADDITIONAL INFORMATION 957-6388

Issue Date: 8/22/2012

Application Title: US-APWR Design Certification - Docket Number 52-021

Operating Company: Mitsubishi Heavy Industries

Docket No. 52-021

Review Section: 03.11 - Environmental Qualification of Mechanical and Electrical Equipment

Application Section: 03.11

## QUESTIONS

03.11-61

For the 10 CFR 50.49, "Environmental qualification of electrical equipment important to safety for nuclear power plants," review, the US-APWR DCD addressed qualification of electrical and mechanical equipment in Section 3.11 of FSAR Chapter 3. Specifically, Section 3.11 addressed equipment that will be performing its safety functions for the anticipated environmental conditions during and following a design basis event (DBE). 10 CFR 50.49 lists those environmental conditions as pressure, temperature, humidity, aging, radiation, and chemical effects. US-APWR Section 4.2.6, "Indoor Chemical Environment-pH for Fluids," discusses MUAP-08015(R1), "US-APWR Equipment Qualification Program," and states that "The most severe chemical environment results from a single failure of the spray system." MUAP-08015 further states that no other chemical effects were identified for their equipment qualification. However, the staff has learned that nitric acid by radiolysis of nitrogen and water in the containment or in the sump can be generated in the post-DBE environment and should be considered under the chemical effects. Explain whether nitric acid generation should or should not be considered under the chemical effects of 10 CFR 50.49. If so, provide the appropriate electrical and mechanical equipment qualification evaluation.

