

US-APWRRRAIsPEm Resource

From: Ciocco, Jeff
Sent: Monday, May 20, 2013 7:12 AM
To: us-apwr-rai@mhi.co.jp; US-APWRRRAIsPEm Resource
Cc: Schmidt, Jeffrey; Donoghue, Joseph; Takacs, Michael; Kallan, Paul; Reyes, Ruth; Lee, Samuel
Subject: US-APWR Design Certification Application RAI 1035-7064 (5.4.7)
Attachments: US-APWR DC RAI 1035 SRSB 7064.pdf

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. However, MHI requests, and we grant, 45 days to respond to this RAI. We will the adjust the schedule accordingly.

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

Thank you,

Jeff Ciocco
US-APWR Projects
New Nuclear Reactor Licensing
301.415.6391
jeff.ciocco@nrc.gov



Hearing Identifier: Mitsubishi_USAPWR_DCD_eRAI_Public
Email Number: 101

Mail Envelope Properties (320204600EA7B9408FE833FF15E4FF7DDB0CA219BF)

Subject: US-APWR Design Certification Application RAI 1035-7064 (5.4.7)
Sent Date: 5/20/2013 7:11:45 AM
Received Date: 5/20/2013 7:11:47 AM
From: Ciocco, Jeff

Created By: Jeff.Ciocco@nrc.gov

Recipients:

"Schmidt, Jeffrey" <Jeffrey.Schmidt2@nrc.gov>
Tracking Status: None
"Donoghue, Joseph" <Joseph.Donoghue@nrc.gov>
Tracking Status: None
"Takacs, Michael" <Michael.Takacs@nrc.gov>
Tracking Status: None
"Kallan, Paul" <Paul.Kallan@nrc.gov>
Tracking Status: None
"Reyes, Ruth" <Ruth.Reyes@nrc.gov>
Tracking Status: None
"Lee, Samuel" <Samuel.Lee@nrc.gov>
Tracking Status: None
"us-apwr-rai@mhi.co.jp" <us-apwr-rai@mhi.co.jp>
Tracking Status: None
"US-APWRRAlSPEm Resource" <US-APWRRAlSPEm.Resource@nrc.gov>
Tracking Status: None

Post Office: HQCLSTR01.nrc.gov

Files	Size	Date & Time
MESSAGE	611	5/20/2013 7:11:47 AM
US-APWR DC RAI 1035 SRSB 7064.pdf	7064	58775
image001.jpg	3989	

Options

Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

REQUEST FOR ADDITIONAL INFORMATION 1035-7064

Issue Date: 5/20/2013

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

Operating Company: Mitsubishi Heavy Industries

Docket No. 52-021

Review Section: 05.04.07 - Residual Heat Removal (RHR) System
Application Section:

QUESTIONS

05.04.07-17

This RAI is a follow on to RAI 6540, Question 6.2.1-24 which questioned what fouling factor is used in determining the RHR/CS heat exchanger heat transfer rate. The heat transfer rate of 17.1×10^6 Btu/h is given in DCD Table 5.4.7-2, Equipment Design Parameters for the containment spray/residual heat exchanger. In a public meeting held on 3/18/13 the applicant stated that the minimum heat transfer rate is set by the cooldown rates given in Chapter 5.4.7 (i.e., the RHR system) and the not CS heat removal capability to limit peak containment pressure. Based on the public meeting the staff has the following questions regarding the RHR/CS heat transfer rate given in Table 5.4.7-2:

1. What decay heat curve, and associated uncertainty, is used to determine the normal operation and safe plant shutdown temperatures and times in DCD Section 5.4.7.1?
2. Using the decay heat curve from question 1, calculate the minimum heat transfer rate needed to achieve the normal operation and safe plant shutdown temperatures and times given in DCD Section 5.4.7.1. How does the calculated heat transfer rate compare to that given DCD Table 5.4.7-2 including the effects of the assumed fouling factor given in your response to RAI 6540, Question 6.2.1-24.
3. Provide a basis for the shell and tube side fouling factors used. Due to the random nature of fouling over time what other conservatisms, if any, are including in the CS/RHR heat exchanger heat removal capability?

