

REQUEST FOR ADDITIONAL INFORMATION 588-4617 RE-ISSUE

06/17/2010

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 05.03.02 - Pressure-Temperature Limits, Upper-Shelf Energy, and Pressurized Thermal Shock

Application Section: 05.03.02/ Technical Report MUAP-09016, Rev. 1

QUESTIONS for Component Integrity, Performance, and Testing Branch 1 (AP1000/EPR Projects) (CIB1)

05.03.02-2

Provide a table of the data points (reactor coolant temperature vs. pressure) for each pressure-temperature (P-T) curve displayed in Technical Report MUAP-09016, Rev. 1.

05.03.02-3

Revise Technical Report MUAP-09016, Rev. 1 to provide the vessel thickness used to calculate the adjusted reference temperature (ART) at the 1/4t and 3/4t locations.

05.03.02-4

To address PTLR Criterion 4(GL 96-03), Clearly identify both the limiting adjusted reference temperature (ART) values and limiting materials at the 1/4t and 3/4 t locations (t= vessel thickness) used in the development of the P-T limits.

05.03.02-5

To address the Technical Specification (TS) change requirements of GL 96-03, modify TS 5.6.4.b to appropriately reference (by title and number) the US-APWR pressure and temperature limits report (PTLR).

05.03.02-6

To address PTLR Criterion 6 (GL 96-03), clearly identify the minimum boltup temperature on the P-T limit curve (MUAP-09016, Rev.1, Figure 7-1).

05.03.02-7

MUAP-09016, Rev. 1, Section 7.2 states that in accordance with 10 CFR 50.61, the pressurized thermal shock reference temperature (RT_{PTS}) values are calculated in the

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same manner as the ART values. Therefore RT_{PTS} values of the beltline material are equal to the ART values and are also shown in Table 7-1. However, the ART values used to develop the P-T limits are calculated in accordance with RG 1.99, Rev. 2, and not 10 CFR 50.61. Therefore it is inappropriate to reference 10 CFR 50.61 when discussing the methods used to determine the ART values. Revise Technical Report MUAP-09016, Revision 1, accordingly.

05.03.02-8

Technical Report MUAP-09016, Rev.1, Table 7-1, Footnote 7, states that the margin value is determined by $\sqrt{\sigma_i^2 + \sigma_\Delta^2}$. However, in accordance with Regulatory Guide 1.99, Rev.2, the margin value is determined by $2\sqrt{\sigma_i^2 + \sigma_\Delta^2}$. Clarify which equation was used to calculate the margin and revise the technical report accordingly.