US-APWRRAIsPEm Resource

From: Ciocco, Jeff
Sent: Tuesday, June 12, 2012 2:36 PM
To: us-apwr-rai@mhi.co.jp; US-APWRRAIsPEm Resource
Cc: Welch, Christopher; Kowal, Mark; Wheeler, Larry; McKenna, Eileen; Ciocco, Jeff; Galvin, Dennis; Hamzehee, Hossein; Kallan, Paul; Monarque, Stephen; Murphy, Crystal; Otto, Ngola; Patel, Chandu; Reyes, Ruth; Roy, Tarun; Takacs, Michael; Ward, William
Subject: US-APWR Design Certification Application RAI 942-6476 (14.3.7, Tier 1, 2.7)
Attachments: US-APWR DC RAI 942 CITB 6476.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. MHI requests, and we grant, 60 days to respond to the RAI questions. The schedule will be adjusted accordingly.

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

Thank you,

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REQUEST FOR ADDITIONAL INFORMATION 942-6476 REVISION 3

6/12/2012

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 14.03.07 - Plant Systems - Inspections, Tests, Analyses, and Acceptance Criteria
Application Section: Tier 1, 2.7

QUESTIONS for ITAAC Branch (CITB)

14.03.07-60

Tier 1 Table 2.7.1.1-1, ITAAC 2 - Inspection and analysis are required in the ITA.

14.03.07-61

Tier 1 Table 2.7.1.1-1, ITAAC 6.ii - Clarify the ITAAC requirement. Is it the response of the actuator or closure of the valve within 1.0 seconds that is required? Per Tier 2 Table 10.2-4, the valve must close in 1.0 seconds.

14.03.07-62

Tier 1 Table 2.7.1.2-5, ITAAC 1.b - Clarify the ITAAC wording; specify the separation requirements being observed.

14.03.07-63

Tier 1 Table 2.7.1.2-5, ITAAC 13.a.ii - Why is analysis required? Please specify what the analysis is for.

14.03.07-64

Tier 1 Table 2.7.1.9-5, ITAAC 1.b - Clarify the ITAAC wording; specify the separation requirements being observed.

14.03.07-65

Tier 1 Table 2.7.1.10-4, ITAAC 14.ii - Fix the typo. "Changes" is located in the wrong spot.

14.03.07-66

Tier 1 Table 2.7.1.11-5, ITAAC 1.d - There is a typo involving a missing space.

14.03.07-67

Tier 1 Table 2.7.1.11-5, ITAAC 12 - Restructure the ITAAC to clearly specify the pump requirements and associated acceptance criteria. As written the DC, ITA, and AC are in conflict with one another. There should be multiple DC, ITA and AC, the first for an individual pump, the second for any combination of two pumps, and the third for analysis to design conditions provides at least 705 gpm.

14.03.07-68

Tier 1 Table 2.7.1.11-5, ITAAC 13 - Align the DC with the AC (i.e. useable volume of each EFW pit). Also, correct the typo in the AC

14.03.07-69

Tier 1 Table 2.7.3.1-5, ITAAC 1.b - Clarify the ITAAC wording. Specify the separation requirements being observed.

14.03.07-70

Tier 1 Table 2.7.3.1-5, ITAAC 7 - Clearly specify the pump requirements; is it each pump or some combination of pumps etc?

14.03.07-71

Tier 1 Table 2.7.3.3-5, ITAAC 1.b - Clarify the ITAAC wording; specify the separation requirements being observed.

14.03.07-72

Tier 1 Table 2.7.3.5-5, ITAAC 1.b - Clarify the ITAAC wording; specify the separation requirements being observed.

14.03.07-73

Tier 1 Table 2.7.3.5-5, ITAAC 7 - Clearly specify the pump requirements; is it each pump or some combination of pumps etc?

14.03.07-74

Tier 1 Table 2.7.4.1-1, ITAAC 6 - The ITAAC lacks specifics. It appears that an anlysis is required to determine the required media and volume necessary to meet the DC and then inspection and analysis is required to verify the media type and required volume are in the vessels.

14.03.07-75

Tier 1 Table 2.7.5.1-3, ITAAC 4.b.ii - Modify the AC as follows:
The as-built MCR HVAC system provides filtered air intake flow of </= 1200 cfm with two MCR emergency filtration units operating, filtered air recirculation flow of >/= 2400 cfm with one emergency filtration unit operating, and maintians positive pressure in the as-built CRE relative to all adjacent areas to the CRE boundary in the emergency pressurization mode with one emergency filtration unit operating.

14.03.07-76

Tier 1 Table 2.7.5.1-3, ITAAC 5.c - Clarify the ITAAC. Split it into 2 parts 5.c.i) MCR isolation signal and 5.c.ii) smoke detection signal. If the ITAAC is simply to verify the damper closing time, reword accordingly. If the ITAAC is to verify both damper closing times and logic function, add the missing dampers to the AC (101 A/B are required to close for MCR isolation).

14.03.07-77

Tier 1 Table 2.7.5.1-3, ITAAC 5.d - This ITAAC should consist of 2 parts. First: verify by inspection appropriately rated fire dampers are installed in the as built MCR HVAC ductwork at the fire barriers. Second: verify by type test, or test that the fire barriers close under design air flow conditions.

14.03.07-78

Tier 1 Table 2.7.5.1-3, ITAAC 5.f - The ITAAC does not adequately test the tornado dampers. Tornado dampers should be tested for both the closure function and automatic re-opening. See Information Notice (IN) 96-06. Define pre-operational conditions for the test.

14.03.07-79

Tier 1 Table 2.7.5.2-3, ITAAC 4.b thru 4.f - Clarify the ITA and AC requirements. Is this per division?

14.03.07-80

Tier 1 Table 2.7.5.2-3, ITAAC 5.c - This ITAAC should consist of 2 parts. First: verify by inspection appropriately rated fire dampers are installed in the as-built MCR HVAC ductwork at the fire barriers. Second: verify by type test, or test that the fire barriers close under design air flow conditions.

14.03.07-81

Tier 1 Table 2.7.5.2-3, ITAAC 5.e - The ITAAC does not adequately test the tornado dampers. Tornado dampers should be tested for both the closure function and automatic re-opening. See Information Notice (IN) 96-06. Define pre-operational conditions for the test.

14.03.07-82

Tier 1 Table 2.7.5.3-1, ITAAC 3 - This ITAAC should consist of 2 parts. First: verify by inspection appropriately rated fire dampers are installed in the as-built MCR HVAC ductwork at the fire barriers. Second: verify by type test, or test that the fire barriers close under design air flow.

14.03.07-83

Tier 1 Table 2.7.6.4-2, ITAAC 3.c and 6.c - Is it precluded from lifting the dummy cell or is it actually incapable of lifting it?

14.03.07-84

Tier 1 Table 2.7.6.5-1, ITAAC 2.c.i & 2.c.ii - What are the critical welds. Where are they defined (ITA 6)?

14.03.07-85

Tier 1 Table 2.7.6.5-1, ITAAC 3 - The AC should simply specify travel limits.

14.03.07-86

Tier 1 Table 2.7.6.7-5, ITAAC 6.a.i - MOV-052-A, B, C, and D are identified as not being qualified for a harsh environment yet the same values are identified in APP D3 as being in a harsh radiation environment.

14.03.07-87

Tier 1 Table 2.7.6.9-2, ITAAC 4.a - Inspection and analysis are required.

14.03.07-88

Tier 1 Table 2.7.6.9-10, ITAAC 3 - The AC is not consistent with the DC and ITA. Verifying a port exists for ERDS should be an actual test of ERDS transmission to HQs.

14.03.07-89

Acceptance criteia for Tier 1 ITAAC Table 2.7.5.1-3 Item 4c should read:
A report exists and concludes that the as-built CRE unfiltered inleakage is </= 110 cfm with the MCR HVAC system operating (i.e. single train of MCREFS) in emergency pressurization mode.

14.03.07-90

Tier 1 ITAAC Table 2.7.5.1-3 item 1.b - Specify the separation requirements (fire , missile,etc.)

14.03.07-91

Tier 1 ITAAC Table 2.7.5.2-3 Items 1.b, 1.c, 1.d, 1.e, 1.f: define the separation criteria being met (fire, pipe whip, etc.)

14.03.07-92

ITAAC Table 2.7.5.4-3 item 4.c: - This ITAAC should consist of 2 parts. First: verify by inspection appropriately rated fire dampers are installed in the as-built ABVS ductwork at the fire barriers. Second: verify by type test, or test that the fire barriers close under design air flow