

US-APWR DCD Revision Plan

July 16, 2009

Mitsubishi Heavy Industries, Ltd.

Summary of Today's Discussion (1/2)

- ☐ US-APWR design has been impacted by numerous recent events:
 - A. RAI responses accepted by NRC and COL Items
 - B. Evolving regulatory requirements and guidance
 - 1) Security
 - 2) Aircraft Impact Assessment (AIA)
 - C. Sub-supplier products and capabilities
 - D. Potential new US-APWR customer requirements

Summary of Today's Discussion (2/2)

☐ DCD NRC Review Schedule

- Phase 2 Review Completion (except Ch. 6 and 15) in September 2009
- Chapter 6 Phase 2 Completion in February 2010
- Chapter 15 Phase 2 Completion in July 2010

☐ DCD Rev. 2 will include accepted RAI responses and Phase 2 commitments

☐ DCD Rev. 2 Planned Submittal Date: October, 2009

Items to be reflected in DCD Rev.2 (1 of 3)

1. RAI responses accepted by NRC

- MHI submitted US-APWR DCD Rev. 0 in December 2007 and Rev. 1 in August 2008 to the NRC.
- NRC Phase 1 review is scheduled to be complete in summer 2009.
- Incorporation of accepted RAI responses will be maximized.
- MHI submitted US-APWR DCD Tracking Reports Rev.0, Rev.1 and Rev.2 to the NRC.
- MHI will submit US-APWR DCD Tracking Report Rev.3 by the end of July 2009 to the NRC.

2. COL Items

- After DCD Rev.1 and the Luminant COLA submittal, MHI incorporated the NRC's questions related to COL Holder Items identified in COLA and submitted a letter for the proposed changes for COL Information Items.
- Some of the COL Information Items are being further reviewed and will be updated including incorporation of COL RAI responses.

Items to be reflected in DCD Rev.2 (2 of 3)



3. Evolving regulatory requirements and guidance

- After DCD Rev.1 submittal, MHI evaluated the physical security assessment and aircraft impact assessment in accordance with new NRC requirements and guidance.
- MHI submitted a "High Assurance Evaluation Assessment" report in September 2008 and a "Beyond DBT Aircraft Impact Assessment" report in April 2009 to the NRC.
- MHI is modifying the design associated with layout and structure to meet the NRC requirements.
- MHI will continue to follow ongoing developments in regulatory guidance and make changes as necessary in the future.

Items to be reflected in DCD Rev.2 (3 of 3)



4. Sub-supplier products and capabilities

- MHI is incorporating the US procurement information and minor design adjustments to facilitate construction of the US-APWR in US and future maintenance.

5. Potential new US-APWR customer requirements

- MHI would like the standard design of US-APWR to accommodate broader customer specifications, incorporating them into the standard design to minimize additional NRC review.

6. Evolving Activities

- Small data corrections, not affecting the safety evaluation, will be made in Rev. 2.

7. Editorial Corrections

8. Other

Items to be reflected in each Chapter (1 of 4)



	[1] RAI	[2] COL Item	[3] Regulatory Requirements & Guidance	[4] Sub-supplier Products	[5] Potential Customer Requirements	[6] Evolving Activities	[8] Other	Note
Tier1	X	-	Following item change due to layout change - Layout drawings - Wall thickness Some P&IDs due to Ch.9 and Ch.10 changes				-	Consistency correction with similar RAI
Ch.1	X	X	Layout drawings change Changes of walls, doors, etc. due to security, AIA, and sub-supplier products		Change to rectangular R/B basemat and uniform CV basemat	-	-	RAIs from other chapters
Ch.2	X	-	Following item changes due to layout change - X/Q values in key site parameters - Distances between radiation sources and receptors - Radiation source heights from ground level			-	-	-
Ch.3	X	X	Following item changes due to layout change - Structural re-analysis - Flood level due to rectangular R/B basemat and additional sump tank - Location of seismic instrumentation EL. change of RV nozzle supports due to RV nozzle set on	Shape changes of equipment hatch and personal airlock	Change to rectangular R/B basemat, uniform CV basemat, and deeper PS/B basemat	-	Deletion of uncoupled analysis due to coupled analysis included in DCD Rev.1	-

Items to be reflected in each Chapter (2 of 4)



	[1] RAI	[2] COL Item	[3] Regulatory Requirements & Guidance	[4] Sub-supplier Products	[5] Potential Customer Requirements	[6] Evolving Activities	[8] Other	Note
Ch.4	X	X	-	-	-	-	-	-
Ch.5	X	X	RV nozzle set on Following item changes due to layout change - Connection of RHR discharge lines - Add a vent valve in Pzr relief line	Add candidates materials for Pzr surge/spray line and heater sleeve	-	-	Change a emergency letdown line connection to RC loop	-
Ch.6	X	X	Following item changes due to layout change - Trains installed RHR Hx bypass line - Pipe lengths between CV and valves			LOCA M&E Input data correction	-	- Containment re- analysis [1], [6] - Sub-compartment re-analysis [1]
Ch.7	X	X	-	Train Configuration of Turbine Trip SV	-	-	-	-
Ch.8	X	X	-	- Capacity changes of motor, battery, UAT and RAT - Electrical Load List - Location change of UPS N21 and N22 - MV switchgear spec.	-	-	-	-

Items to be reflected in each Chapter (3 of 4)



	[1] RAI	[2] COL Item	[3] Regulatory Requirements & Guidance	[4] Sub-supplier Products	[5] Potential Customer Requirements	[6] Evolving Activities	[8] Other	Note
Ch.9	X	X	- Following item changes due to layout design Additional R/B sump tank and R/B non-radioactive sump tank Drain system drawing Fluid system P&IDs AAC/EPS switching board	- Fuel Rack Spec. - No. of GTG compressor	-	Following items added - SFP area AHU - Inside CV isolation valves for chilled water system	-	-
Ch.10	X	X	-	- MSIV type change - MFIV type change	-	-	-	-
Ch.11	X	X	Following item changes due to layout change - Additional R/B sump tank and R/B non-radioactive sump tank - Connection of Reactor cavity drain line and permanent cavity seal drain line			Data correction of ANSI/ANS-18.1-1999	-	-
Ch.12	X	X	Following item changes due to layout change - Radiation zone drawings - Wall thickness - Radiation dose			-	-	-
Ch.13	X	X	-	-	-	-	-	-
Ch.14	X	X	-	-	-	-	-	-

Items to be reflected in each Chapter (4 of 4)



	[1] RAI	[2] COL Item	[3] Regulatory Requirements & Guidance	[4] Sub- supplier Products	[5] Potential Customer Requirement s	[6] Evolving Activities	[8] Other	Note
Ch.15	X	-	-	(a) Fuel Grid spacer position	-	Safety re-analysis (b) Initial Fuel temp. data correction (c) Core flow geometry data correction (d) Material property data correction (e) Code error correction	-	- LBLOCA (a) (b) (d) (e) - SBLOCA (a) (b) (e) - Non-LOCA (b) (c)
			Radiation dose re-analysis due to layout change			-	-	-
Ch.16	X	-	TSTF-427, 511	-	-	-	-	-
Ch.17	X	X	-	-	-	-	-	DRAP re-evaluation due to Ch.19 PRA change
Ch.18	X	X	-	-	-	-	-	-
Ch.19	X	X	Fire and Flooding PRA re-evaluation due to layout change			-	-	PRA (Internal event) re- evaluation due to RAI

Impact of Changes



- Safety envelop was established and is not impacted by any changes due to Rev. 2
- No impact on ITAAC in Tier 1 (except those known to NRC in RAI responses as well as from DAC closure)
- No impact on Technical Specifications (except those known to NRC in RAI responses)
- No change in methodology and design criteria