REQUEST FOR ADDITIONAL INFORMATION 401-3031 REVISION 0

6/18/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 11.04 - Solid Waste Management System
Application Section: 11.4

QUESTIONS for Health Physics Branch (CHPB)

11.04-18

In response to the Staff's question (RAI 185-2031, Question 11.04-1, items 1 and 2) the US-APWR design was changed since Revision 1 to use a non-porous material (i.e., epoxy coating) for lining cubicles in the SRST rooms of the SWMS instead of steel to meet the intent of 10 CFR 20.1406 and RG 4.21. Section 11.2 was also revised to use an epoxy coating to line cubicles of the LWMS instead of stainless steel (RAI 164-1925, Questions 11.02-1 and 11.02-2). MHI's response states,

> "The following design features will be added to the DCD in Section 12.3.1.1.1.2.E:
> **-** Tank cubicles are coated with non-porous material up to a wall height to contain the entire tank content. The cubicles are equipped with drainage system to direct any leakage and overflows to sumps with pumps to redirect flow to other tanks. The above design approach fully meets the intent of 10 CFR 20.1406 and RG 4.21. The DCD will be changed to document the additional design features."

On the use of epoxy coatings to minimize environment and groundwater contamination MHI states,

> "The cubicles are epoxy coated to ease decontamination. Further, the epoxy coating also serves to minimize the potential for contamination of groundwater in the event that a tank fails or overflows." (Revision to Section 11.4.1.2)
>
> "The cubicles are epoxy coated to minimize the potential for contamination of the groundwater system in the event that the tank fails or overflows." (Revision to Section 11.4.1.2)
>
> "Tank cubicles are epoxy coated to minimize the potential for accidental releases to the environment in accordance with BTP 11-3 (Ref. 11.4-14), 10 CFR 20.1302 (Ref. 11.4-15) and 10 CFR 20.1406 (Ref. 11.4- 16)." (Revision to Section 11.4.1.4)
>
> "The SRST rooms are epoxy coated up to the cubicle wall height equivalent to full tank volume to minimize the potential for cross contamination to the groundwater system in accordance with BTP 11-3 (Ref. 11.4-14) and 10 CFR 20.1406 (Ref. 11.4-16). The epoxy coated approach is also beneficial for ease of decontamination and decommissioning." (Revision to Section 11.4.2.5)

and to contain leaks,

> "Isolate leak and use other SRST. Repair the leak. The floor is epoxy lined to contain the leak." (Revision to DCD Table 11.4-5)

In response to the Staff's questions (RAI 185-2031, Question 11.04-1, item 3) to provide (or justify exclusion of) ITAAC to ensure complete and acceptable construction of cubicle liners in SRST rooms of the SWMS before the design change using epoxy coatings MHI states,

> "An Initial Test Program will be utilized for these coating systems using normal construction testing practices will be utilized with qualified coating inspections per the ASTM D4537-04a "Standard Guide for Establishing Procedures to Qualify and Certify Inspection Personnel for Coating Work in Nuclear Facilities". Hence, no ITAAC is necessary."

The Staff requests the Applicant to:

1. Justify the use of epoxy coatings as an acceptable liner for SRST rooms of the SWMS to minimize contamination of the environment and groundwater (i.e., justify the capability of epoxy coatings to retain liquids given that coatings are typically applied to protect the surfaces of facilities and equipment from corrosion and contamination, and because coatings are not approved for retention of liquids per BTP 11-6).

2. Describe the maintenance and inspection program that will be implemented to ensure the integrity of epoxy coatings for sealing floor and wall surfaces to minimize contamination of the facility.

3. Clarify how guidance in BTP 11-3 is applied to epoxy coating of tank cubicles and SRST rooms in the SWMS (see response statements above).

4. Identify the described ITP on coating systems, construction practices and qualified inspections for lining cubicles in the SRST rooms of the SWMS in the DCD, and provide a markup in your response.

Revise the DCD to include this information and provide a markup in your response.