REQUEST FOR ADDITIONAL INFORMATION 248-2178 REVISION 1

3/2/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 09.01.02 - New and Spent Fuel Storage
Application Section: 9.1.2

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

09.01.02-18

Requested Information

What special preparation is made for surfaces in the spent fuel pit to ensure that (1) corrosion products and fission products do not accumulate, (2) surfaces can be easily decontaminated, and (3) fuel assemblies will not be damaged?

Background

GDC 61 requires facility design to minimize corrosion in basic structures and buildup of crud or debris that could impede coolant flow. In order to ensure this, ANSI/ANS-57.2 recommends that the liner surface be selected to minimize accumulation of fission and corrosion products and ease surface decontamination (Sect. 6.1.2.10). It also recommends that storage rack surfaces meet smoothness limits and be free of sharp protrusions or corners that would damage fuel assemblies (Sect. 6.4.2.11). The applicant should address how these recommendations are met.

09.01.02-19

Requested Information

1. How often will the SFP water be sampled?
2. What limiting value will be allowed for SO4 in SFP water?
3. How will Si and radionuclide concentrations be monitored?

Background

GDC 61 requires facility design to minimize corrosion in basic structures and buildup of crud or debris that could impede coolant flow. In order to ensure this, ANSI/ANS-57.2 recommends control of water chemistry to limit corrosion (6.3.2.9.2) and to remove dissolved and particulate radionuclides (6.3.2.15). In addition, the EPRI guidelines represent industry best practices in meeting the requirements of GDC 61. These guidelines give sampling frequencies for Si, Cl, F, SO4, turbidity, and gamma, and also recommended limits for Cl, F, and SO4. The DCD does not give any sampling

frequencies, does not state any limits for SO4, and does not mention silica or gamma measurements at all.

09.01.02-20

Requested Information

1. Describe the materials of construction for storage racks in the new fuel storage area.

2. Describe the environment in the new fuel storage area, any corrosives that may arise, and how they would be controlled.

Background

GDC 61 requires facility design to minimize corrosion in basic structures and buildup of crud or debris that could impede coolant flow. The applicant mentions that rack materials in the new fuel storage pit are corrosion-resistant, but does not supply sufficient details about the materials or the possibilities for corrosives in the airspace.