

## 5.0 ADMINISTRATIVE CONTROLS AND PROGRAMS (continued)

### 5.3 Radiation Protection Program

- 5.3.1 Each cask user shall ensure that the Part 50 radiation protection program appropriately addresses dry storage cask loading and unloading, as well as ISFSI operations, including transport of the loaded TRANSFER CASK outside of facilities governed by 10 CFR Part 50. The radiation protection program shall include appropriate controls for direct radiation and contamination, ensuring compliance with applicable regulations, and implementing actions to maintain personnel occupational exposures As Low As Reasonably Achievable (ALARA). The actions and criteria to be included in the program are provided below.
- 5.3.2 As part of its evaluation pursuant to 10 CFR 72.212(b)(5)(iii), the licensee shall perform an analysis to confirm that the dose limits of 10 CFR 72.104(a) will be satisfied under the actual site conditions and ISFSI configuration, considering the planned number of casks to be deployed and the cask contents.
- 5.3.3 Based on the analysis performed pursuant to Section 5.3.2, the licensee shall establish individual cask surface dose rate limits for the TRANSFER CASK and the VVM to be used at the site. Total (neutron plus gamma) dose rate limits shall be established at the following locations:
- a. The top of the VVM.
  - b. The side of the TRANSFER CASK
  - c. The outlet vents on the VVM
- 5.3.4 Notwithstanding the limits established in Section 5.3.3, the measured dose rates on a loaded VVM or TRANSFER CASK shall not exceed the following values:
- a. For casks loaded prior to [date of issuance of amendment 4]:  
1 mrem/hr (gamma + neutron) on the closure lid of the VVM
  - b. For casks loaded after [date of issuance of amendment 4]:  
HI-STORM UMAX Standard Lid:  
66 mrem/hr (gamma + neutron) on the closure lid of the VVM  
  
HI-STORM UMAX Version B lid: 22 mrem/hr (gamma + neutron) on the closure lid of the VVM
  - c. All casks: 3500 mrem/hr (gamma + neutron) on the side of the TRANSFER CASK

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### 5.3 Radiation Protection Program (continued)

- 5.3.5 The licensee shall measure the TRANSFER CASK and lid VVM surface neutron and gamma dose rates as described in Section 5.3.8 for comparison against the limits established in Section 5.3.3 or Section 5.3.4, whichever are lower.
- 5.3.6 If the measured surface dose rates exceed the lower of the two limits established in Section 5.3.3 or Section 5.3.4, the licensee shall:
- a. Administratively verify that the correct contents were loaded in the correct fuel storage cell locations.
  - b. Perform a written evaluation to verify whether a VVM at the ISFSI containing the as-loaded MPC will cause the dose limits of 10 CFR 72.104 to be exceeded.
  - c. Perform a written evaluation within 30 days to determine why the surface dose rate limits were exceeded.
- 5.3.7 If the evaluation performed pursuant to Section 5.3.6 shows that the dose limits of 10 CFR 72.104 will be exceeded, the MPC shall not be placed into a VVM or the MPC shall be removed from the VVM until appropriate corrective action is taken to ensure the dose limits are not exceeded.
- 5.3.8 TRANSFER CASK and VVM surface dose rates shall be measured at approximately the following locations:
- a. For casks loaded after [date of issuance of amendment 4], A minimum of four (4) dose rate measurements shall be taken on the top of the VVM. These measurements shall be taken:  
HI-STORM UMAX Standard Lid: On the side of the closure lid approximately midheight and approximately 90 degrees apart.  
HI-STORM UMAX Version B lid: On the side of the closure lid approximately midheight and adjacent to the inlet vent. One measurement per each lid side, rotationally symmetric by approximately 90 degrees.  
  
For casks loaded prior to [date of issuance of amendment 4], a minimum of four (4) dose rate measurements shall be taken on the top of the VVM. These measurements shall be taken approximately 90 degrees apart around the circumference of the lid, approximately 18 inches radially inward from the edge of the lid.

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- b. A minimum of four (4) dose rate measurements shall be taken adjacent to the outlet vent duct screen of the VVM, approximately 90 degrees apart.
- c. A minimum of four (4) dose rate measurements shall be taken on the side of the TRANSFER CASK approximately at the cask mid-height plane. The measurement locations shall be approximately 90 degrees apart around the circumference of the cask. Dose rates shall be measured between the radial ribs of the water jacket.

5.3.9 The "Radiation Protection Space" (RPS) is the prismatic subgrade buffer zone surrounding the VVMs in a loaded ISFSI. The RPS boundary is indicated in the Licensing Drawings in Section 1.5 of the system FSAR. The RPS boundary shall not be encroached upon during any site construction activity. The jurisdictional boundary of the RPS extends down from the top of the ISFSI pad to the elevation of the Bottom surface of the Support Foundation Pad. The ISFSI design shall ensure that there is no significant loss of shielding in the RPS due to a credible accident or an extreme environment event during construction activity involving excavation adjacent to the RPS boundary.

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