HI-STORM 100 Amd 13

Purpose of Change

- 10 CFR 72.212 allows general licensees to apply the changes authorized by an amended CoC to a cask loaded under the initial CoC or an earlier amended CoC, as long as the required written evaluations are performed
- The cask must fully conform with the terms, conditions, and specifications of the amended CoC
- Due to the wording in HI-STORM 100 CoC, Condition 3, some canisters loaded to older amendments cannot conform with the condition as written in the newer amendment
- Operational benefits exist for licensees to upgrade to most recent amendment
  - Single license for all casks – increased focus on safety significant issues
  - Dose savings with modified vent inspection frequency in later amendments

Condition 3

- Amd 2, 3, 4, 5, 6: “Written cask acceptance tests and maintenance program shall be prepared consistent with the technical basis described in Chapter 9 of the FSAR.”
- Amd 7: “Written cask acceptance tests and maintenance program shall be prepared consistent with the technical basis described in Chapter 9 of the FSAR. At completion of welding the MPC shell to baseplate, an MPC confinement weld helium leak test shall be performed with using a helium mass spectrometer. The confinement boundary welds leakage rate test shall be performed in accordance with ANSI N14.5 to “leak-tight” criteria. If a leakage rate exceeding the acceptance criteria is detected, then the area of leakage shall be determined and the area repaired per ASME Code Section III, Subsection NB Article NB-4450 requirements. Re-testing shall be performed until the leakage rate acceptance criterion is met.

Condition 3

- Amd 8 (and newer): Written cask acceptance tests and maintenance program shall be prepared consistent with the technical basis described in Chapter 9 of the FSAR. At completion of welding the MPC shell to baseplate, an MPC confinement weld helium leak test shall be performed with using a helium mass spectrometer. *This test shall include the base metals of the MPC shell and baseplate. A helium leak test shall also be performed on the base metal of the fabricated MPC lid. In the field, a helium leak test shall be performed on the vent and drain port confinement welds and cover plate base metal.* The confinement boundary leakage rate tests shall be performed in accordance with ANSI N14.5 to "leaktight" criteria. If a leakage rate exceeding the acceptance criteria is detected, then the area of leakage shall be determined and the area repaired per ASME Code Section III, Subsection NB requirements. Re-testing shall be performed until the leakage rate acceptance criterion is met.
- Amendments earlier than Amd 2 are not requested as part of this change

Helium Leak Test

- All canisters are currently leak tested to the most stringent requirements including base metal testing, regardless of amendment chosen by licensee
  - No change is requested for canisters going forward
  - All will continue to be leak tested to the full, current Condition 3
- For canisters that have been loaded under Amd 2-7, prior to the implementation the most stringent testing, they all met the requirements of the CoC / FSAR that applied at the time
  - Canisters currently safely loaded and stored at a number of sites
  - Includes canisters where the base metal testing was not a requirement and those fabricated when the fabrication helium leak test was not an FSAR requirement (EA-09-190)
- For a period of time, these requirements were different from the current requirements, and therefore those canisters cannot fully meet the conditions of the current amended CoC

Helium Leak Test

- Canisters fabricated when the fabrication leak test was not a requirement were identified under EA-09-190
- NRC letters indicate that the continued use of the loaded MPCs at the sites is acceptable, example letters:
  - ML101060436
  - ML101600314
  - ML102450015
- No change to the physical state of these canisters, safely stored under earlier amendments
- Similarly, canisters that were loaded prior to the base metal leak test requirement are currently safely stored
  - No physical change as part of upgrade
  - No change in the continued safe storage of the systems

Summary

- No changes requested to helium leak test for new canisters
- Existing canisters are currently safely stored in same condition
- Existing canisters met requirements of the CoC / FSAR in place at the time of loading
- Safety, dose, and operational benefits for sites able to upgrade
- Sites must still follow upgrade process with written evaluations as described in 10 CFR 72.212