

8-120B CoC Rev. 24 Amendment Request Pre-Submittal Meeting

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*All you need in radioactive and hazardous waste
management*



Agenda

- Introductions
- Purpose of Amendment Request
- Proposed SAR Changes
 - Detailed Specifications for Containment Seals
 - Upgrade of Containment Evaluation
 - Upgrade of Leak Testing Procedures
 - General “Clean-Up”
- Certificate Renewal
- Amendment Request Schedule
- Summary and Discussion

Purpose of Amendment Request



- Make changes/upgrades to address licensing commitments, corrective actions, and operational experience
 - Paperwork and procedure changes, not design changes
 - Upgrade legacy cask containment and leakage rate testing requirements to contemporary standards
 - ANSI N14.5-2014 (IN 2016-04)
- Separate amendment planned for re-submittal of payload accessories and loading specifications

Detailed Specification of Containment Seals



- Current 8-120B SAR includes only basic requirements for containment seals
 - Elastomeric compound types: Silicone, butyl, and EPDM
 - Qualification of elastomeric compounds used for containment seals per specification ES-C-038 for:
 - Hardness
 - Low temperature compatibility
 - Permeability
 - Temperature-pressure testing
 - Fabricated seals acceptable if traceable to batch of material manufactured under same process and having same chemical composition as a qualified compound

Detailed Specification of Containment Seals (continued)



- ES committed to provide additional containment seal specification details in response to input from NRC PM
 - Eliminate silicone - not suitable for leakage tests with helium
 - Clarify vent port plug seal specification (O-ring vs. Stat-O-Seal)
 - Specified as "STAT-O-SEAL OR EQUIV." prior to -96 upgrade
 - -96 upgrade revised SAR drawing to refer to ES-C-038 for seal spec
 - SAR Dwg. BOM describes as "SEAL, 1/2" NOM. I.D."
 - SAR text still refers to Stat-O-Seals
 - Inconsistencies between SAR text and drawing will be corrected
 - Details of acceptable alternatives will be specified in SAR
 - Include seal specifications in SAR (eliminate ref. to ES-C-038)

Upgrade of Containment Evaluation



- Current 8-120B Containment Evaluation
 - Develops leakage rate limits for powdered solids and irradiated hardware under NCT and HAC based on ANSI N14.5-1997
 - Determines acceptance criteria for periodic/maintenance leakage rate test using both R-134A and helium gases
 - R-134A gas no longer used for leakage rate tests
 - Derives required hold times for pre-shipment leakage rate tests per Section B.12 of ANSI N14.5-1997
 - Test parameters include non-essential variables (e.g., test pressure, test volume, hold time) that require NRC approval to change

Upgrade of Containment Evaluation



- Containment Evaluation will be upgraded based on leak tight criteria for O-ring seals (similar to 3-60B)
 - Casks fabricated pre-1999 not tested leak tight
 - Replacement lids for all casks (-96 upgrade) and casks fabricated post-1999 have all been tested leak tight
- Chapter 8 fabrication requirements provided for pre-1999 and post-1999 casks
 - Propose to simplify/condense Chapter 8 based on post-1999 requirements and footnote as needed to note differences for pre-1999 casks
- Discussion of proposed approach

Upgrade of Leak Testing Procedures



- NRC has recently been encouraging CHs to upgrade transportation package leak testing requirements
 - NRC staff presented information at REG CON 2015 on ANSI N14.5-2014 and specific leak testing issues
 - IN 2016-04 provided information on new leak testing standard and specific leak testing considerations, but did not require specific action or written response
 - In RAI for 8-120B GDR amendment request, NRC staff asked for certain aspects of ANSI N14.5-2014 standard to be addressed
 - ES deferred changes to this amendment request to address in whole rather than piecemeal approach

Upgrade of Leak Testing Procedures (continued)



- ES recognized need to upgrade 8-120B leak testing requirements and has committed to do so as part of this broad-scale upgrade amendment
 - Upgrade will address many of the past operational issues related to pre-shipment leakage rate testing
 - Specify acceptance criteria, acceptable test techniques, applicable consensus codes and standards, and essential test variables
 - Eliminate specification of non-essential variables in SAR
 - Require leak test procedures to be approved by personnel certified in leakage rate testing by a nationally recognized society (e.g., ASNT NDT Level III) and qualified in specific testing methods used
 - Upgrade requires new programs, procedures, testing equipment, training and qualifications that will impact the cask users

Upgrade of Leak Testing Procedures (continued)



- Specific Changes for Leak Testing Upgrade:
 - Revise acceptance, periodic & maintenance leakage tests (Sections 8.2.4 & 8.3.2):
 - Eliminate use of halogen gas for leak testing
 - Update helium leak testing requirements/description
 - Align with revised Chapter 4
 - Leak tight acceptance criteria for O-ring seals
 - Revise pre-shipment leak test (Section 8.3.3.2):
 - Comply with ANSI N14.5-2014
 - Align with revised Chapter 4
 - Address current operational needs



General “Clean-Up”

- Revisions to Dwg. C-110-E-007:
 - Replace size specification for drain port plugs (Items 14 & 15) from BOM with flag note stating that drain port plugs are to be sized to fit into drain holes but not protrude into cavity or outside OD of outer shell
 - Move material specification (ASTM A36) for Item 56 in BOM from Description to Spec column.
 - Add item in BOM for bracket described in flag note 31
 - Change BOM material specifications from “Commercial” to material type from BOM description (e.g., C.S. or S.S.)
 - Change Quality Level for BOM Item 55 to QL-3 for consistency with other cavity cladding (Item 55 is secondary cladding applied over Item 8 cladding)

General “Clean-Up” (continued)



- Revisions to Dwg. C-110-E-007 (continued):
 - Revise flag note 24 to allow Name Plate to be on side of cask
 - Revise Note 8 to change “MAXIMUM PACKAGE WEIGHT” to “NOMINAL GROSS PACKAGE WEIGHT”
 - Consistent with CoC Condition 5(a)(2) that states “maximum gross weight of package is approximately 74,000 pounds”
 - Revise Note 18 to acknowledge that heads of some closure bolts include holes for security wires
- Revisions to Dwg. No. DWG-CSK-12CV01-EG-0001-01:
 - Revise flag note 3 to permit alternate lanyard attachment
 - Lanyard attachment detail is not important to safety
 - Alternate attachment details will require less maintenance

General “Clean-Up” (continued)



- SAR Text Changes:
 - Section 2.5.1.1(4), pg. 2-11: Remove duplicate equation
 - Section 4.8: Correct second-level heading numbers in section cross-references (e.g., 8.2.2.1 → 8.3.2.1)
 - Chapter 7: Change “licensee” to “consignee” for conciseness based on comment from NRC (email on 6/25/14)
 - Not all users are licensees (e.g., disposal facility)
 - Section 8.3, 3rd bullet: Correct section cross-reference
 - Section 8.2.2.5 should be 8.2.2.3
 - Include foam specifications in SAR (eliminate ref. to ES-M-175)



Certificate Renewal

- Current CoC expiration date is 8/31/17
- CoC renewal included in amendment request
 - Eliminates need for separate licensing action



Summary and Discussion

- 8-120B CoC Rev. 24 amendment request will request:
 - Detailed specifications for containment seals
 - Upgrade of Containment evaluation
 - Upgrade of leak testing procedures
 - General clean-up
 - Renewal of certificate
- Submittal in January 2017 to support issuance of CoC Rev. 24 prior to current expiration date (8/31/17)
- Discussion/Questions?