

Replacement Type B Cask

Pre-Application Meeting

RWE NUKEM Corporation

June 15, 2006

Meeting Objectives

- Review replacement cask design and application schedule
- Review intended SAR approach
- Obtain feedback/questions from NRC regarding approach/schedule for SAR

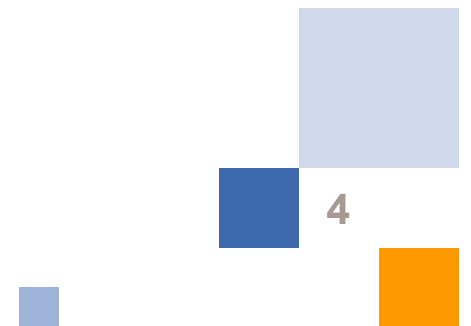
General Information

- Applicant/Owner: RWE NUKEM Corporation
- New cask (10-165B) replaces 10-142B (USA/9208/B(U))
- Cask configuration, contents, users similar
- Waste: Type B quantities of solid low level waste, principal radionuclides Cs 137 and Ni 63 (Cat II normal form)
- Capacity: 165 cf cavity; (10) 55 gallon drums; 15,000 lb. payload
- Toroidal impact limiters; 80,000 lb. gross weight; steel-lead-steel cylinder construction

Basic Description



FIGURE WITHHELD UNDER 2.390



Approach to Demonstrating Part 71 Compliance

- Analyses used to demonstrate compliance, no qualification testing proposed
- Solid Works used for modeling and drawings, ANSYS and in-house analysis tools for structural analysis
- SAR contents per RG 7.9 2005, SARP Completeness Checklist 2002
- Use updated SAR for USA/9204/B(U)-85 as example
- Incorporate precedented, standard materials, assumptions, conservatisms
- Prepare SAR under existing RWE NUKEM Corporation QA Program (CoC 71-0884)

Type and Form of Contents Material



- Nuclear material in the form of:
 - Irradiated and/or contaminated dewatered solid materials
 - Powdered or dispersible solid dewatered material
 - Processed solids – solidified or dewatered
 - Dewatered/dried water treatment media/residues
- Maximum Quantity
 - Fissile exempt (no criticality issues)
 - 500 watts decay heat
 - 3000 A₂

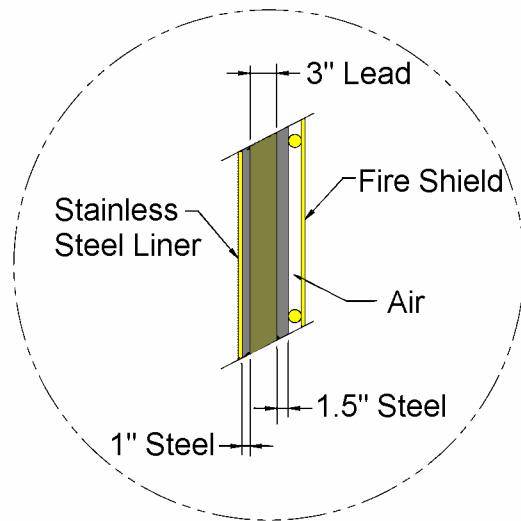
Materials of Construction

- Materials per ASME B&PVC Section II 2004
- ASTM A516 Gr. 70 – body, lids, lugs
- ASTM A517 Gr. F – tiedown lugs
- ASTM A354 Gr. BD – lid bolts
- ASTM B29 Chemical Gr. – lead
- ASTM A240 Type 304 – fire shield, lining, impact limiter shell
- General Plastics Last-A-Foam FR-3700

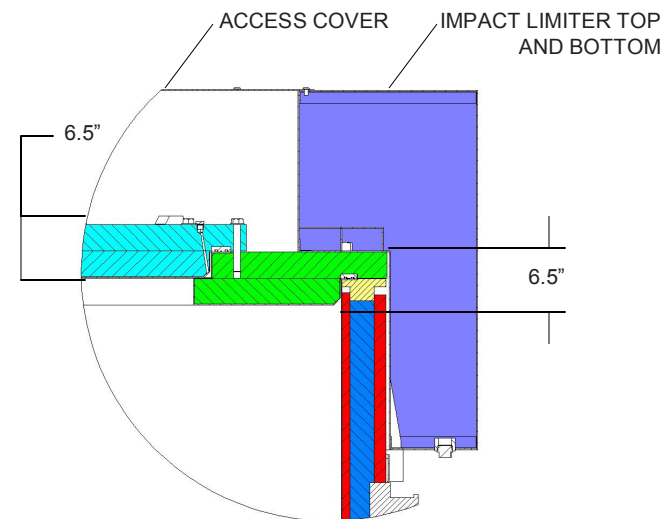
Still evaluating trunnion materials

Shielding

Sidewalls:

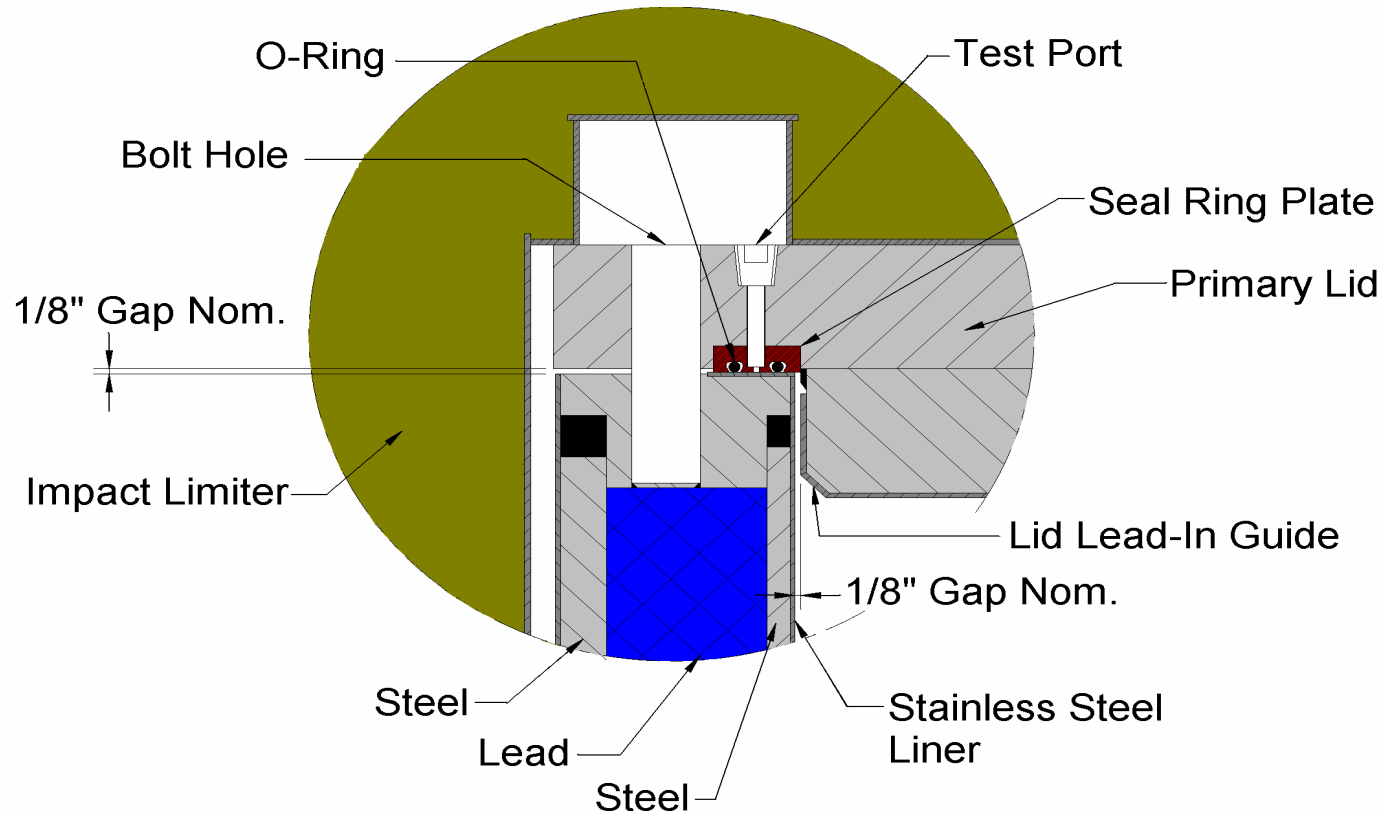


Top/Bottom:

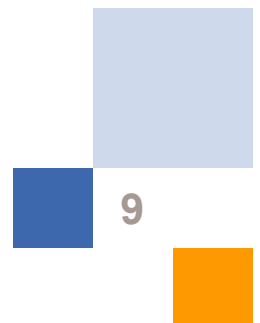


Estimated maximum gamma dose on contents: 620 R/hr

Periodic & Assembly Verification Leak Tests



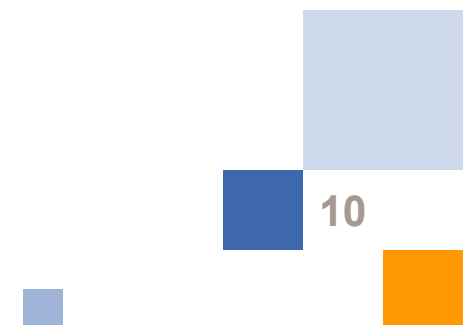
Leak test involves pressurizing annulus between o-rings, monitoring leak down rate



Acceptance Tests



- Visual examination of entire cask
- Containment boundary welds inspected per ASME B&PV Code, Sec. III, Subsection ND-5000 (Category II)
- Non-containment boundary welds inspected per ASME B&PV Code, Section III, Subsection NF-5000 (Category II)
- Load tests of trunnions and other lifting attachments
- Fabrication leak test of lid and drain ports
- Shielding integrity (gamma scan)
- Pressure test of containment boundary



Schedule Outline



Present through January 2007	Complete SAR and submit to NRC
January 2007 – October 2007	NRC Review/RNC comment resolution for SAR/NRC issues CoC
November 2007 – September 2008	RNC fabricates first units