GNF / GE-Hitachi

NRC "Public" Presentation

GNF Owned Nuclear Package

NPC

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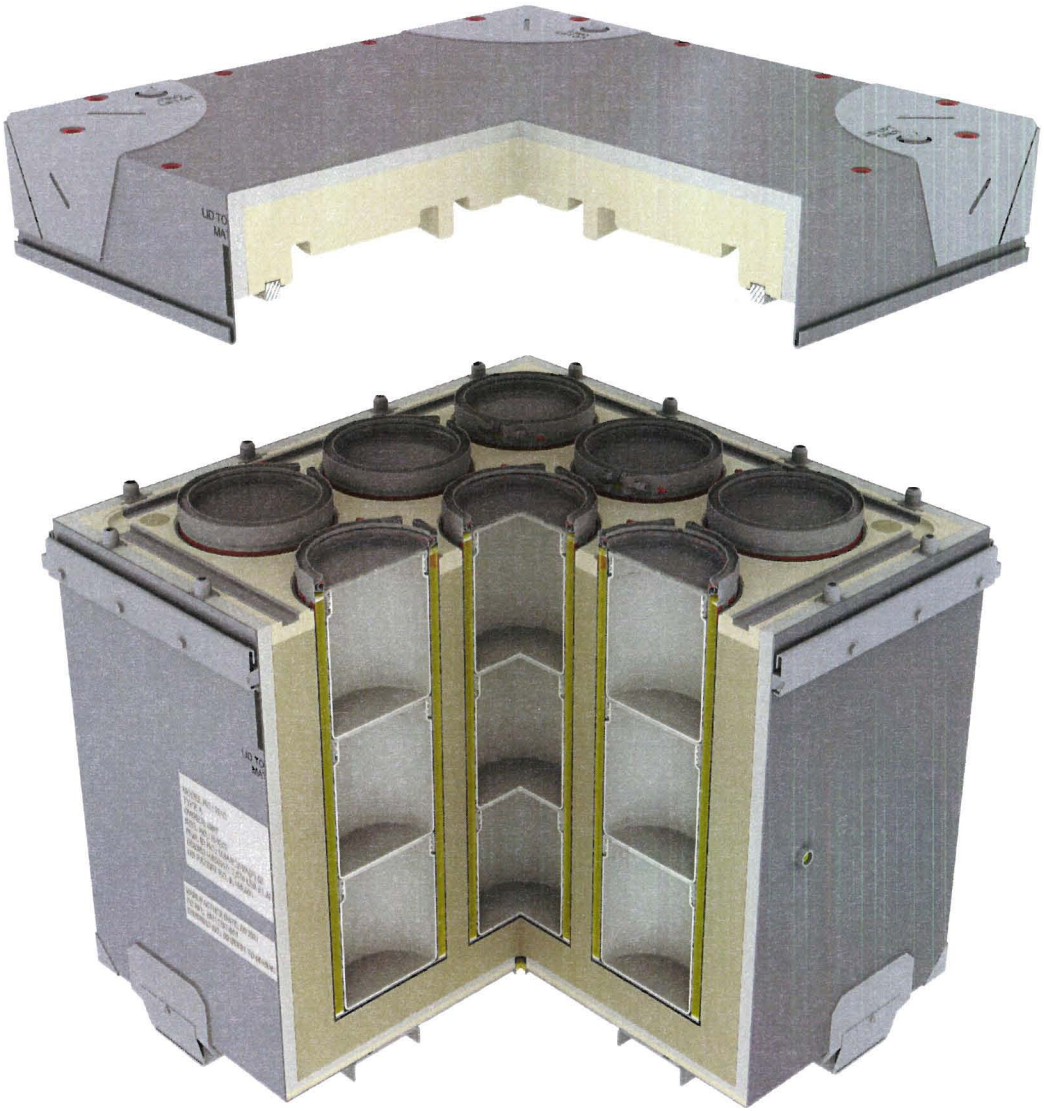
GNF-A NPC



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GNF-A NPC Package -Background

NRC CoC USA/9294/AF-85 –Rev 0 Issued 2/23/2001

Current CoC –Rev 5 Issued 11/9/2007

- Authorized Contents -Unirradiated Low E Uranium Oxide Powder/Pellets/Compounds (UO_2, U_3O_8, etc)
- Up to 60 Kg/ICCA (540 Kg net) depending on material form

NPC Package Request

- Type B certificate application
- Design Changes
- Testing Protocol

NPC Project Schedule

Description		Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Apr-10	May-10	Jul-10	Aug-10
Establish/Verify Criticality Safety	**Complete**														
Verify existing analyses															
Verify new requirements															
Document required changes															
Revise SAR															
Establish/Verify Radiation Protection	**Complete**														
Verify existing analyses															
Verify new requirements															
Document required changes															
Revise SAR															
Establish/Verify Structural Integrity															
Verify existing analyses	**Complete**														
Verify new requirements	**Complete**														
Revise design to meet requirements	**Complete**														
Review/Approve design changes	**Complete**														
Fabricate new camlock lid design	**Complete**														
Review new camlock lid design prototype															
Review new welded can design prototype															
Container Testing															
Prepare fabrication drawings for camlock design															
Prepare fabrication drawings for new welded can design															
Fabricate new camlock lids for testing															
Fabricate new welded cans design															
Fabricate ICCA prototypes for testing	**Complete**														
Define testing requirements															
Develop test plan(s)															
Perform required drop test(s)						x									
Perform required fire test(s)						x									
Analyze/Document test results															
Complete revisions to SAR															
Revise SAR as required															
Review/Verify entire SAR															
Prepare the NPC SAR for submittal as a Type B package															
Submit NPC Type B request to the US NRC															
Receive NPC Type B Certificate from US NRC															
Receive DOT Type B Validation															

NRC SAR submittal

~July 2009

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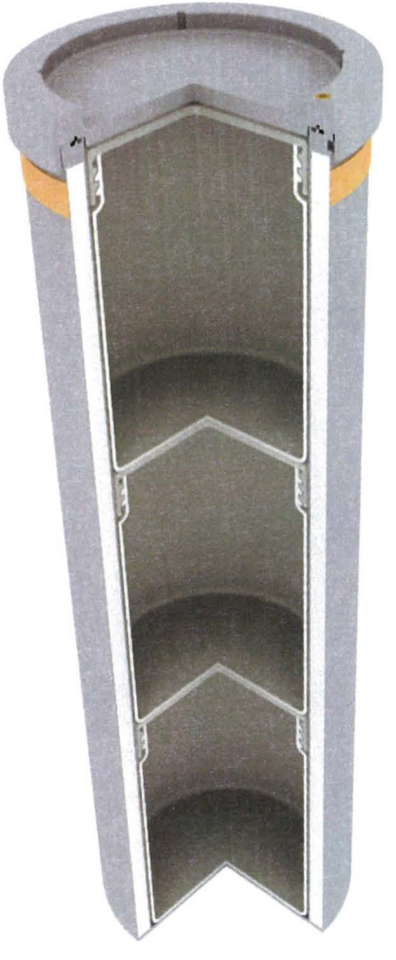
NPC Type B Inner Container Designs

"Double O-Ring Design"



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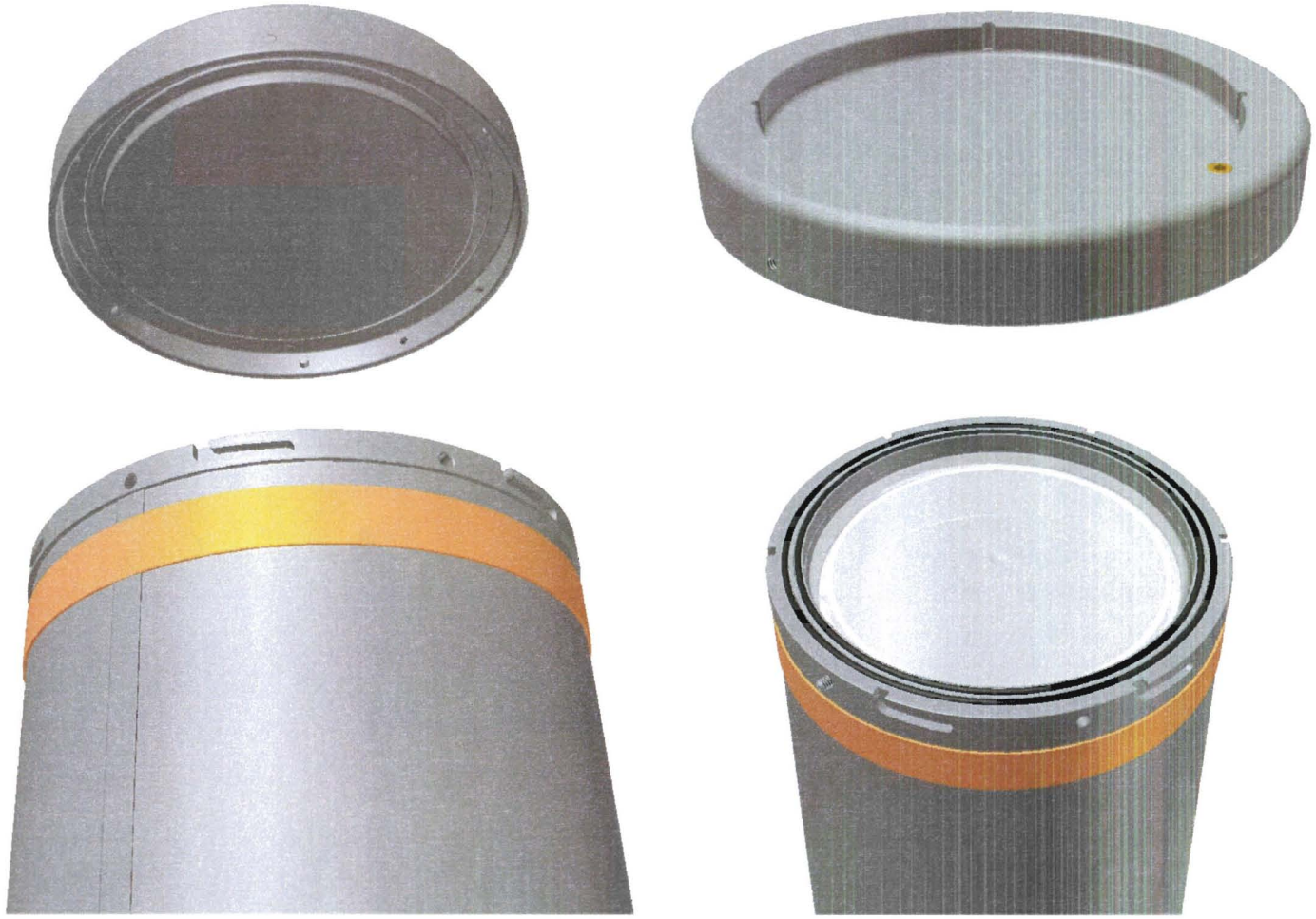
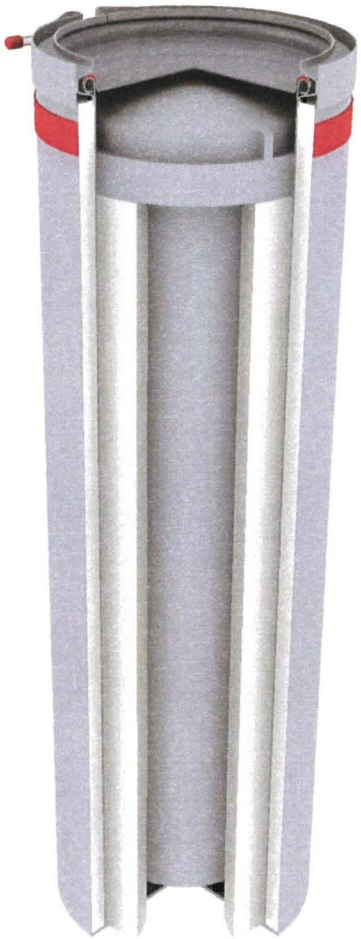
NPC Type B Inner Container Designs

"Double O-Ring Design"



NPC Type B Inner Container Designs

"Welded Can"



NPC Type B
Testing Requirements

Drop Test

-Scheduled drop at Oak Ridge on Feb 3rd (4th if inclement weather)

-Perform "Hot Free Drop" (130° F)

-(1) 4 Ft NCT Free Drop

-(2) 30 Ft HAC Free Drops (free drop for each design)

* Orientation: CG-Over-OCA Lid Corner

* Worst-case deformation for ICCA lid-seal interface

-(2) Puncture Drops on HAC Damage

NPC Type B
Testing Requirements

Thermal Test

-Scheduled test at South Carolina Fire Academy (Columbia, SC) on Feb 11th (12th if inclement weather)

Post Test(s) Leakage Rate

-The leakage rate test follows the guidelines of Appendix A.5.2, *Gas Pressure Rise*, of ANSI N14.5-1997.