

# **GE Hitachi Recent Certification Experience for the Model No. 2000 Package**

Division of Spent Fuel Management Regulatory  
Conference

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**HITACHI**

# Model 2000 Package Description

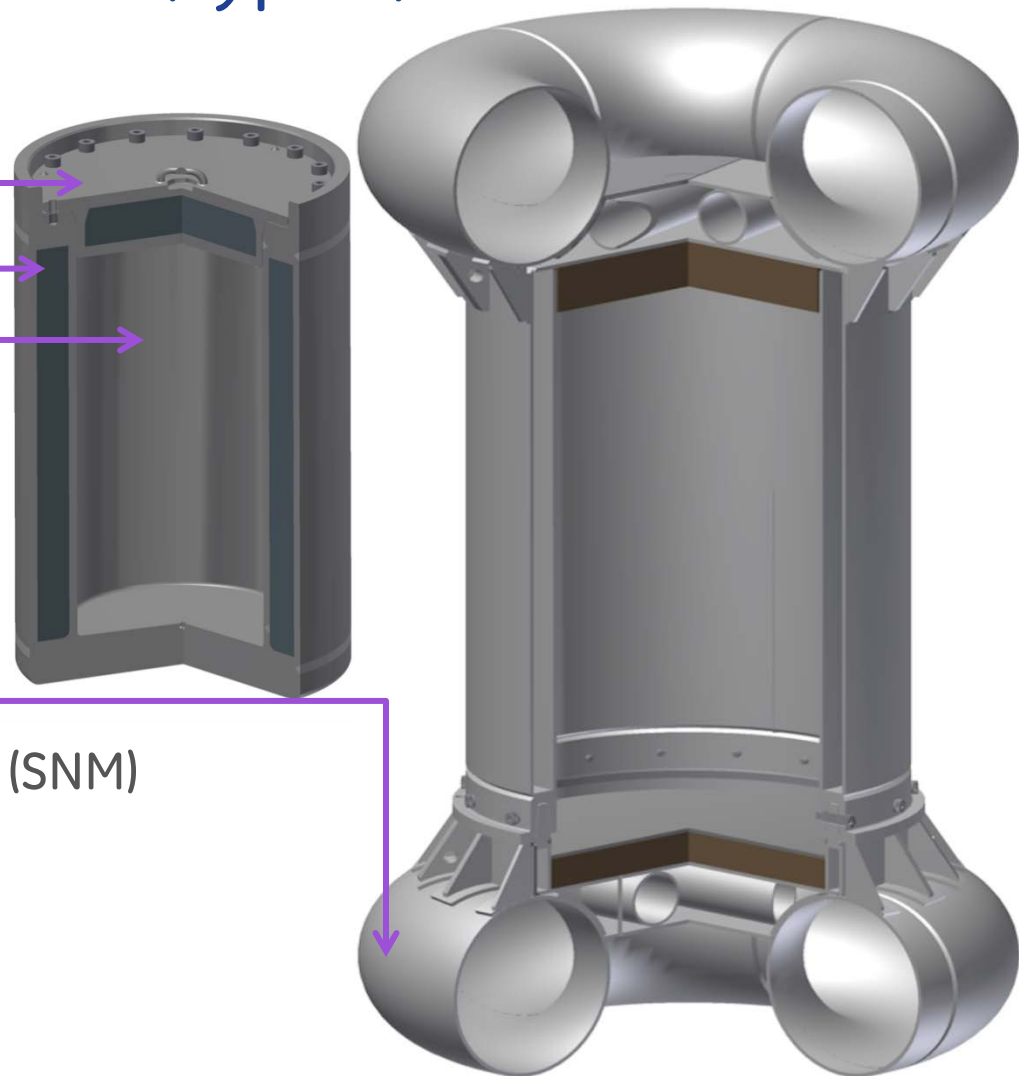
- NRC CoC USA/9228/B(U)F-96 (Type B)

- Design:

- Recessed lid
- Lead shielding
- Cavity, 26.5”D x 54”H
- Toroidal impact limiters

- Contents:

- Byproducts
- Irradiated LWR fuel rods
- Other special nuclear material (SNM)
- Research reactor fuels



# Historical Perspective

- Original NRC CoC USA/9228/B(U)F-96, Rev 0 Issued November 22, 1989
- 3 additional Safety Analysis Report (SAR) volumes
- 7 revisions for analysis changes, usually new or revised contents
- 7 revisions for drawing changes – design upgrades
- 9 revisions for procedural, regulation or administrative changes – e.g., CoC renewals
- Current NRC CoC USA/9228/B(U)F-96, Rev 26 Issued August 21, 2014. Expires May 31, 2016



# History of Safety Analysis Reports

- Original SAR (1988) covered transport of byproduct, irradiated LWR fuel and other SNM materials up to 600W
- Second SAR (1993) for HFIR fuel assemblies
- Third SAR (1994) for upgrade to 2000W (byproducts)
- Fourth SAR (1994) for MTR assemblies (INL) and TSR fuel elements (ORNL). Revision 1 (1997) covers TRIGA fuel elements



# Model 2000 Package Shipments

- GEH-managed shipments
  - ~20 Co-60 shipments from INL to VNC, 2002-2011 (1500 or 1600 Series casks used before 2002)
  - 8 SNM shipments – 3 domestic, 5 international, 1993-2003
  - 13 Class C Radwaste shipments from VNC to Barnwell, 1993-2008
  - ~10 byproduct shipments from power reactors to VNC, 1989-2013
- INL-managed shipments
  - ~20 SNM test shipments since 2004
- ORNL-managed shipments
  - 120 shipments of HFIR spent fuel, plus 9 shipments of fuel and materials from shutdown research reactors, 1996-2012



# Recent Activities

- NRC Issued Special Authorization for One Time Shipment of Co-60 - Successfully Completed in February 2014
- NRC Issued Special Authorization for One Time Shipment of an Irradiated Reactor Component - Successfully Completed in October 2014
- Upcoming Needs – GEH Byproduct Material Shipment
  - Special Authorization requested December 2014
  - First set of RAI's answered September 2015
  - Co-60 from Power Reactor Site – Early 2016



# CoC Recertification – SAR Consolidation

## Two-part strategy due to timing

- Short term: LA to cover 2016 shipments – 3000W upgrade (from 2000W)
- Long term: Consolidate SAR to include contents from LA (3000W) and other simplify contents and submit in 2016.

## Lessons Learned

- Communication, communication, and communication
  - Communicate early about licensing needs including schedule and scope
  - Pre-application meeting to facilitates discussion on technical approach and resource planning
- Understand the expectations including level of detail, conservatism, and format required to aid in timely review
- Work with the NRC project management to ensure submittal schedule will work with the NRC reviewer work load and ultimately the desired need date



QUESTIONS