NAC INTERNATIONAL

Ideas for Obtaining Near-Term High Burn-up Used Fuel Data

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Eric G. Shewbridge, P.E.
Senior Project Manager

MAGNASTOR

NEI Used Fuel Management Conference

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Presentation Outline

- **NAC International Overview**
- **DOE RD&D Program-NAC Comments**
- **Technical Approaches for Near-Term HBU Data**
- **Summary of Key Ideas**
- **Questions**

NAC Corporate Overview

Proven Nuclear System & Service Solutions

Proven Commitment to DOE's Mission

45 Years in Nuclear Fuel Cycle Consulting

Numerous Cask Technologies Licensed

U.S. Commercial SF Transportation Leadership

More than 400 Storage and Transport Systems Delivered

Leaders (>75% Market Share) Decommissioning Dry Storage

Dry Storage Leadership – Selected by U.S DOE to develop the Transportation, Aging and Disposal System (TAD)

Over 40 Years of Nuclear System and Service Solutions Experience

DOE 10 Year RD&D Program

- **Objectives**
- **Four elements of data collection**
  - Separate effects testing
  - Small-scale testing
  - In-service inspections
  - Demonstration tests

DOE 10 Year RD&D Program
NAC Comments

- **Generally endorse program**
- **Full-scale demonstration project occurs before significant special effects or small-scale testing**
- **Need for near-term special effects testing**

Available Casks

- **NAC-LWT cask for transport**
- **NLI-1/2, NLI-10/24 for storage and testing**
- **NAC-STC for transport and storage with modified instrumented lid**

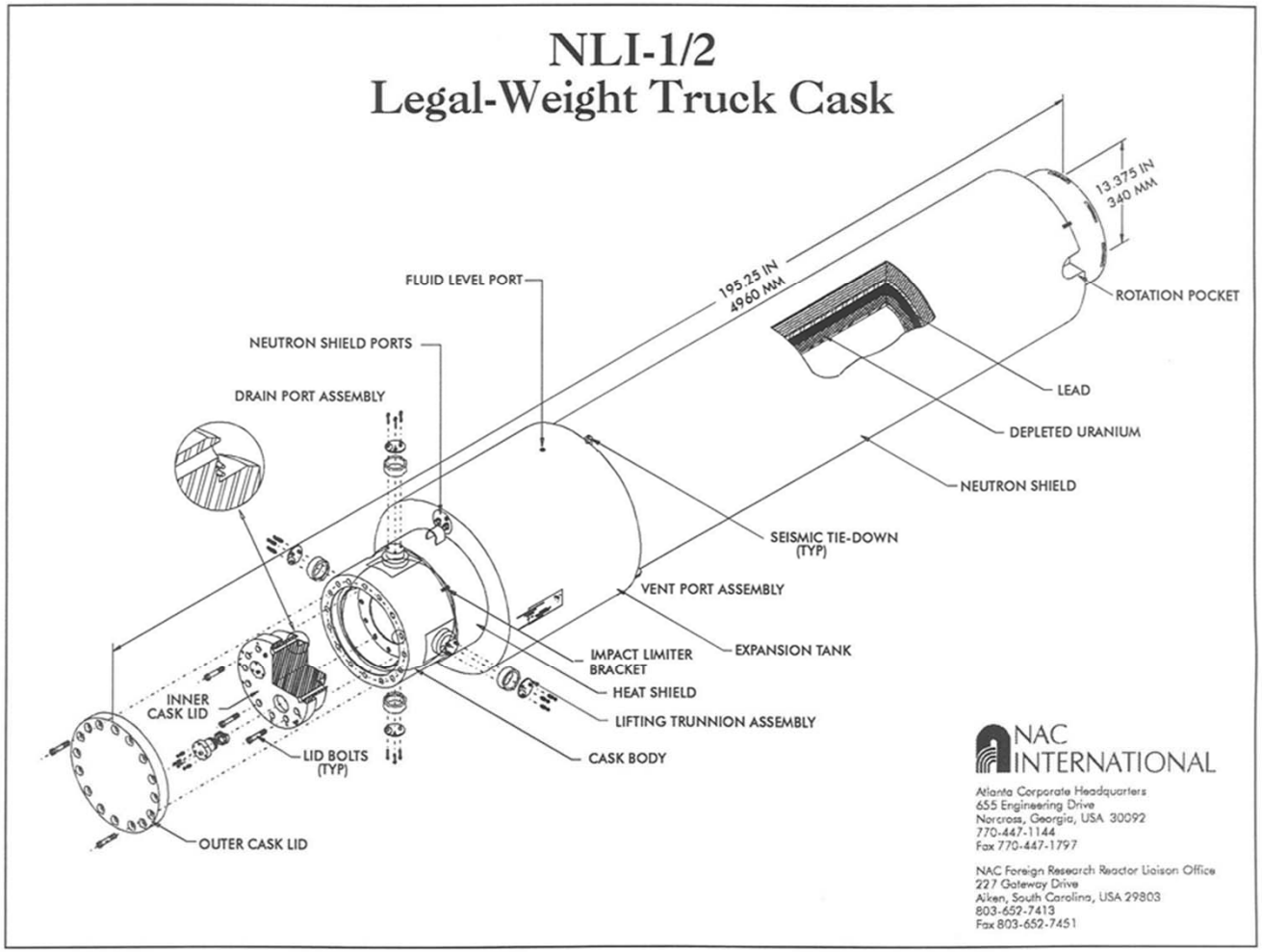
NAC-LWT Cask

- **Versatile cask for use at research and commercial reactor facilities**
- **Eight casks currently in NAC fleet**
- **Has been validated in more than 35 countries**
- **Operated at US nuclear sites and National Laboratories**
- **Meets all USNRC, DOT and IAEA (-96) requirements**
- **Transported in a standard 20’ ISO container**

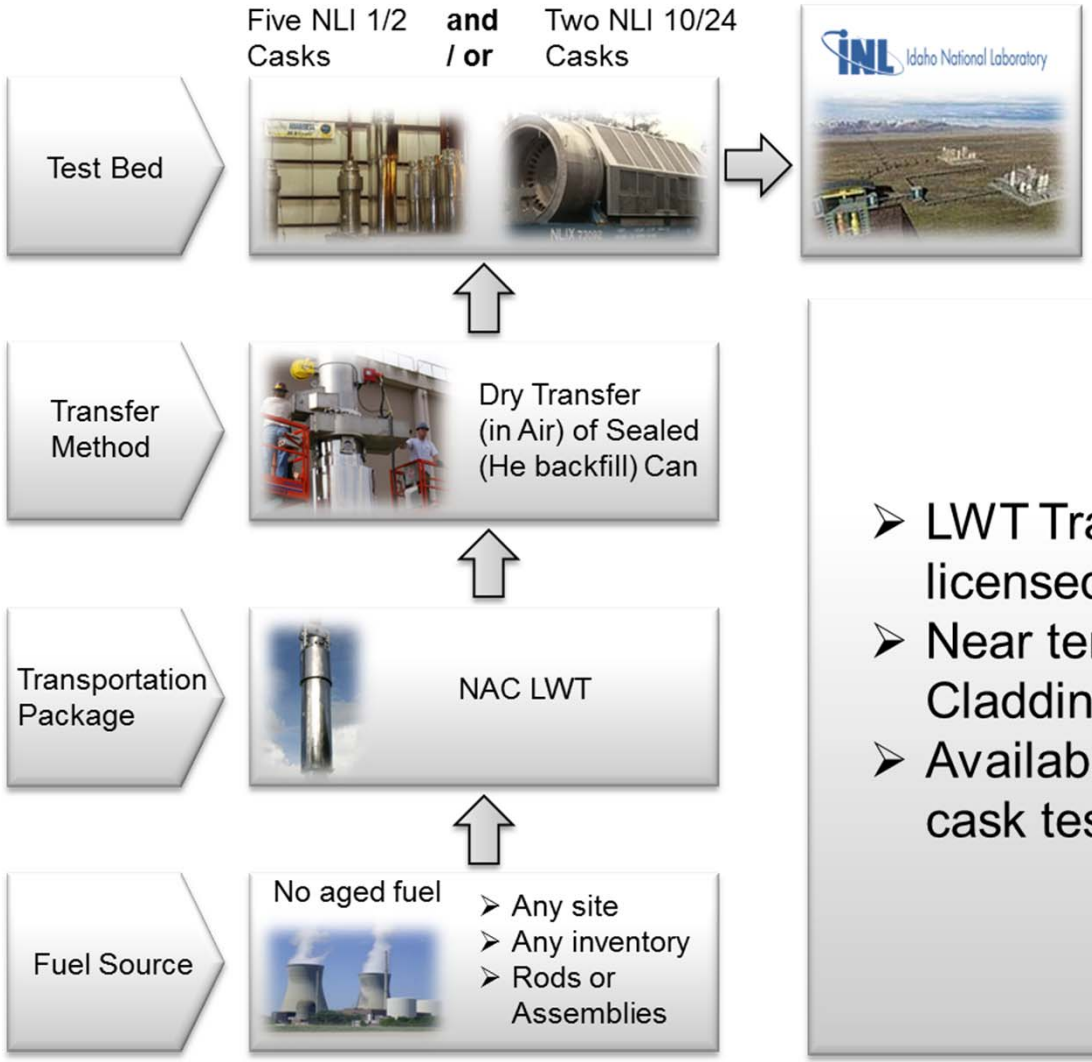
NAC-LWT Cask

- **Transport of HBU fuel *now***
- **DOE Laboratories have operating procedures and experience**
- **Candidate utilities**
- **Both BWR and PWR fuel**

NLI-1/2 Legal Weight Truck Cask



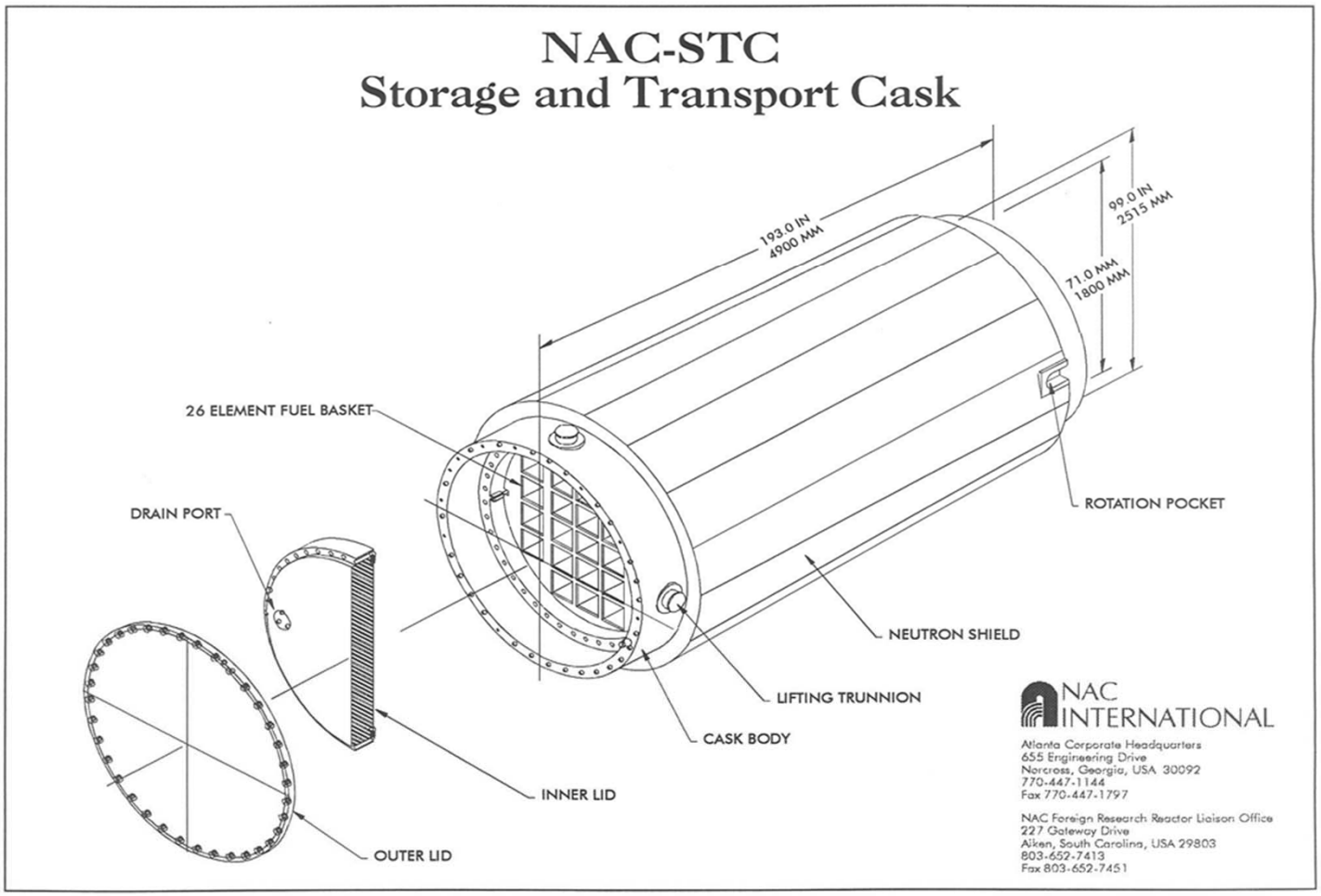
Approach Using LWT & NLI Casks



Key Points

- LWT Transport Cask already licensed to ship HBU rods
- Near term identification of HBU Cladding Properties
- Availability of low cost storage cask test beds

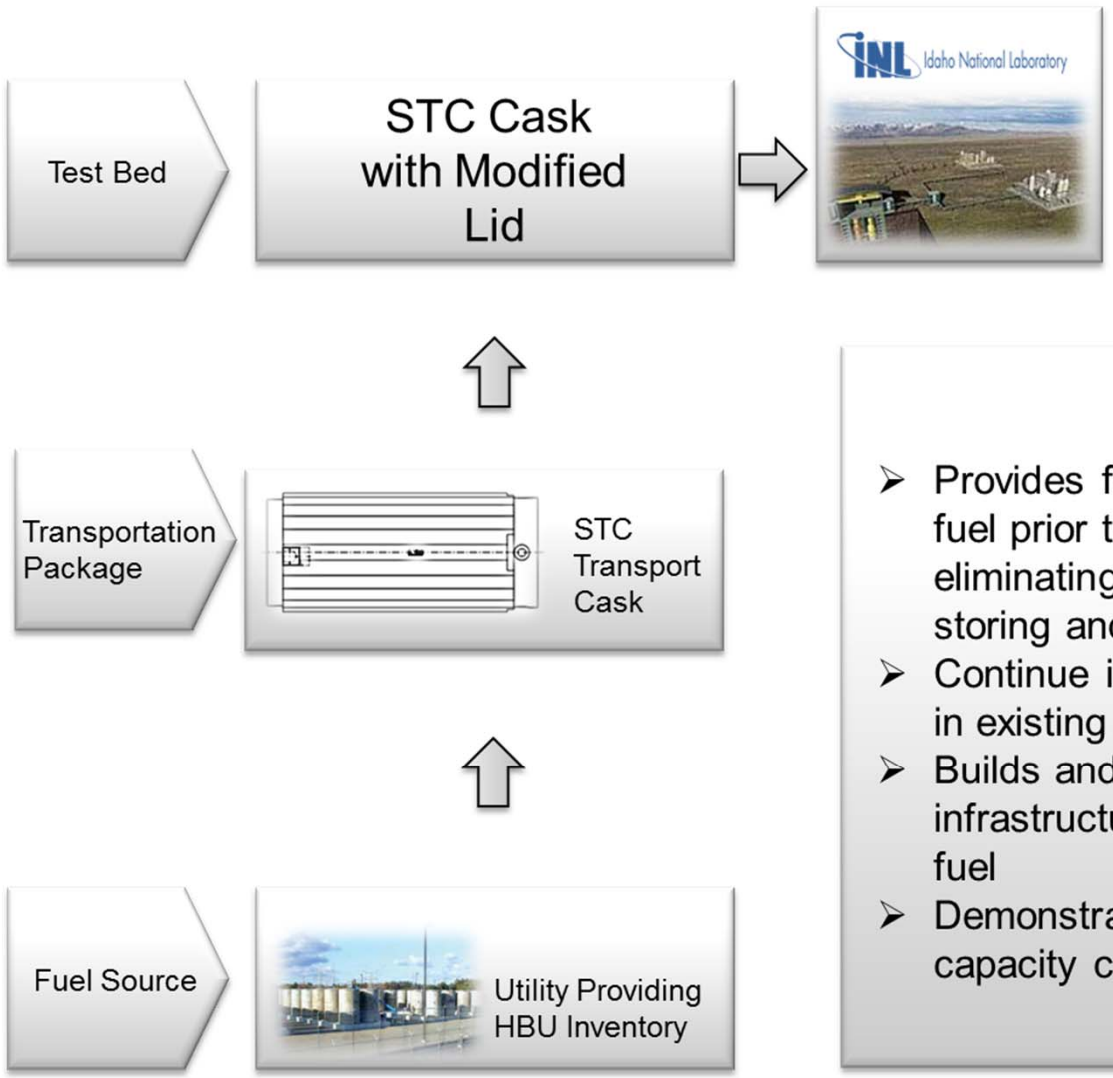
NAC-STC Storage & Transport Cask



Approach Using NAC-STC Cask

- **NAC-STC Cask/10CFR71 Amendment**
- **HBU assemblies/ 2 cladding types**
- **Immediate transport to INL (alternate approach)**
- **Modified lid**

Approach Using NAC-STC Cask



Key Points

- Provides for *immediate transport* of HBU fuel prior to dry storage again, thus eliminating brittle fracture concern from storing and then transporting
- Continue instrumented and controlled aging in existing storage cask systems
- Builds and demonstrates transport infrastructure and transport of HBU spent fuel
- Demonstrates rail transport of large capacity cask

Summary of Key Ideas

- **Near term data collection**
- **Access to increased fuel inventory (BWR, any U.S. utility)**
- **Immediate transport of HBU fuel prior to dry storage aging**

NAC INTERNATIONAL

Eric G. Shewbridge, P.E.
Senior Project Manager

Phone: 678-328-1245
Mobile: 770-401-7249
Fax: 678-328-1445

Email: eshewbridge@nacintl.com




Questions?

Visit us at www.nacintl.com

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