



U.S. Department of Energy  
Office of Civilian Radioactive Waste Management



# Transportation, Aging and Disposal Canister System Status

Presented to:

**Nuclear Waste Technical Review Board**

Presented by:

**Christopher A. Kouts**

**Acting Principal Deputy Director**

**Office of Civilian Radioactive Waste Management**

**U.S. Department of Energy**

**September 19, 2007**

**Las Vegas, NV**

# TAD Background

- **DOE announced incorporation of a Transportation, Aging and Disposal (TAD) canister system approach in October, 2005**
- **TAD system benefits include:**
  - **Supporting the standardization of commercial spent nuclear fuel (CSNF) storage, transport, aging and disposal packaging, allowing integration of CSNF handling operations**
  - **Utilizing utility fuel handling experience in loading CSNF**
  - **Simplifying DOE operations and minimizing redundant handling of bare CSNF assemblies at the repository**
  - **Reducing low-level waste production and worker radiation exposure at DOE facilities**
  - **Reducing complexity and cost of DOE facilities**



# TAD Program Implementation

- **DOE issued the preliminary TAD system performance specification on November 29, 2006 and initiated a proof-of-concept design phase**
- **Qualified vendors have completed TAD proof-of-concept designs:**
  - **Energy Solutions**
  - **Holtec International**
  - **NAC International**
  - **Transnuclear (TN)**
- **DOE review of the submitted TAD proof-of-concept designs was completed in March 2007**



# TAD Program Implementation

- **With the proof-of-concept design phase completed, DOE initiated the procurement for the development of complete TAD system designs and safety analysis reports (SARs) for NRC certification under 10 CFR 71 and 10 CFR 72**
- **Solicitation was issued in July 2007**
- **Proposals to the solicitation were received in August 2007**
- **Evaluation of the proposals is currently underway**



# Final TAD Performance Specification

- **The final TAD specification, issued in June 2007, delineates the requirements that DOE will rely upon in the repository license application to demonstrate compliance of the TAD system with 10 CFR 63**
- **The specification includes other requirements that are expected to improve the efficiency of TAD system operations at the repository**
  - **Dimensional, weight, radiological and handling requirements**

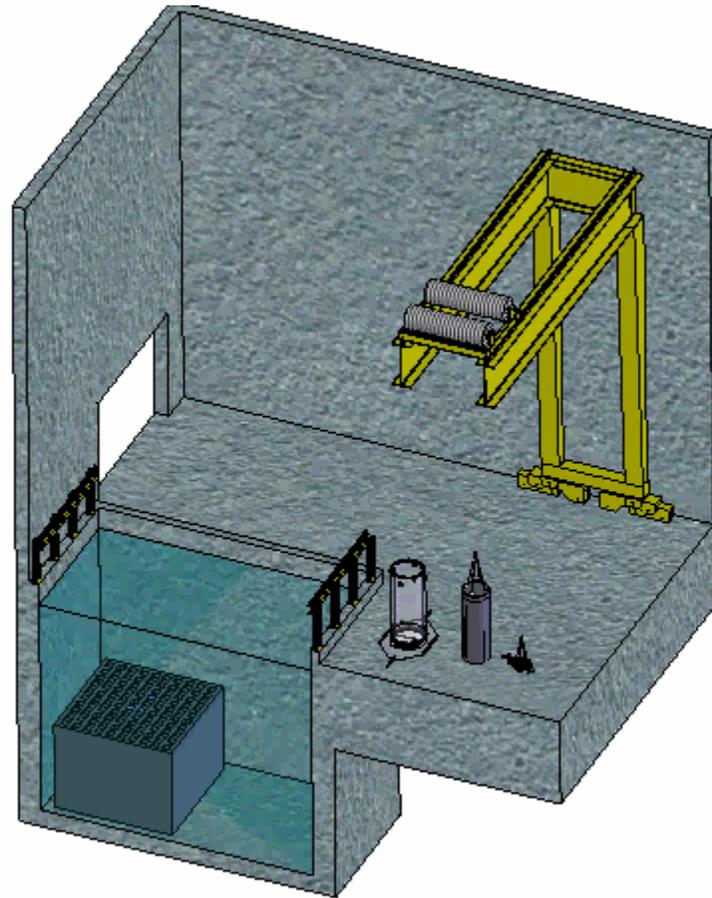


# Final TAD Performance Specification – Highlights

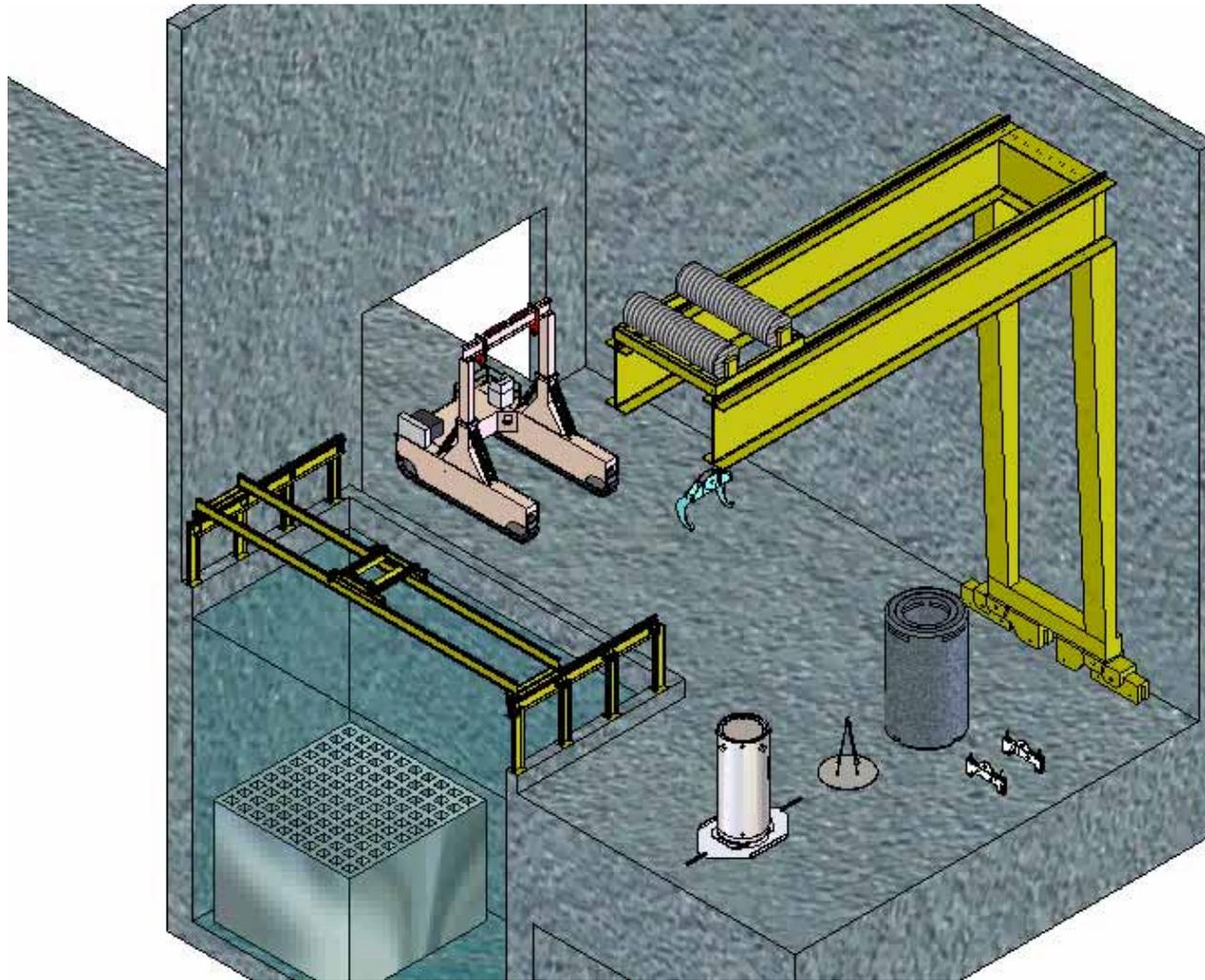
- **Capacity – 21 PWR's or 44 BWR's**
- **Canister Length (including lifting feature) – no less than 186.0 and no greater than 212.0 inches**
- **Diameter – 66.5 inches**
- **Maximum Weight – 54.25 tons**
- **Maximum average dose rate from top – 800 mr/hr**
- **Borated Stainless Steel is the required neutron absorber for disposal**
- **TAD canisters to be seal welded**
- **TAD canisters, transportation overpack lid and aging overpack lid will have a common lifting fixture**
- **Handling and aging at repository in vertical orientation**
- **Organic, pyrophoric, and RCRA materials prohibited**



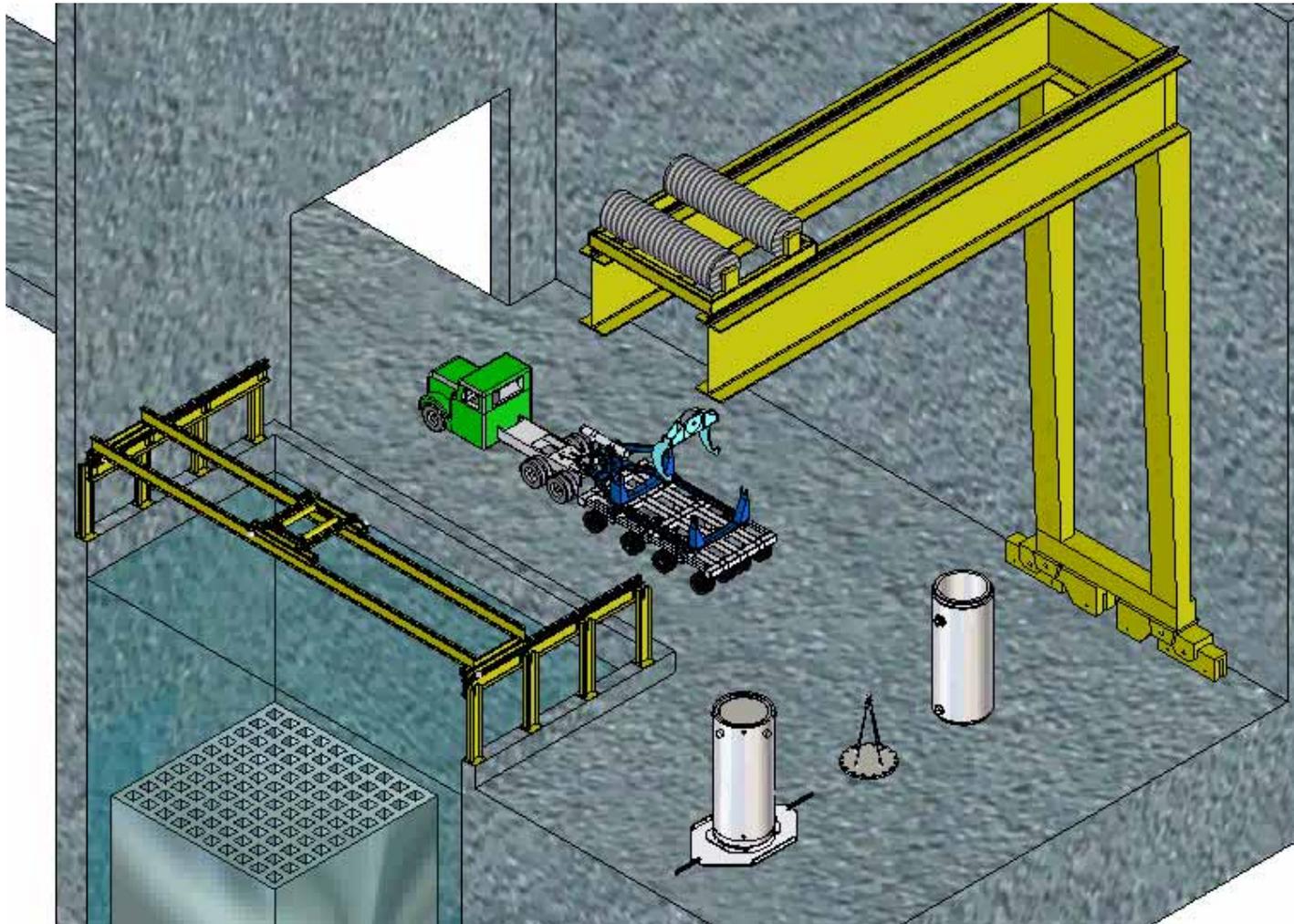
# TAD Operations – Loading Fuel in a Pool



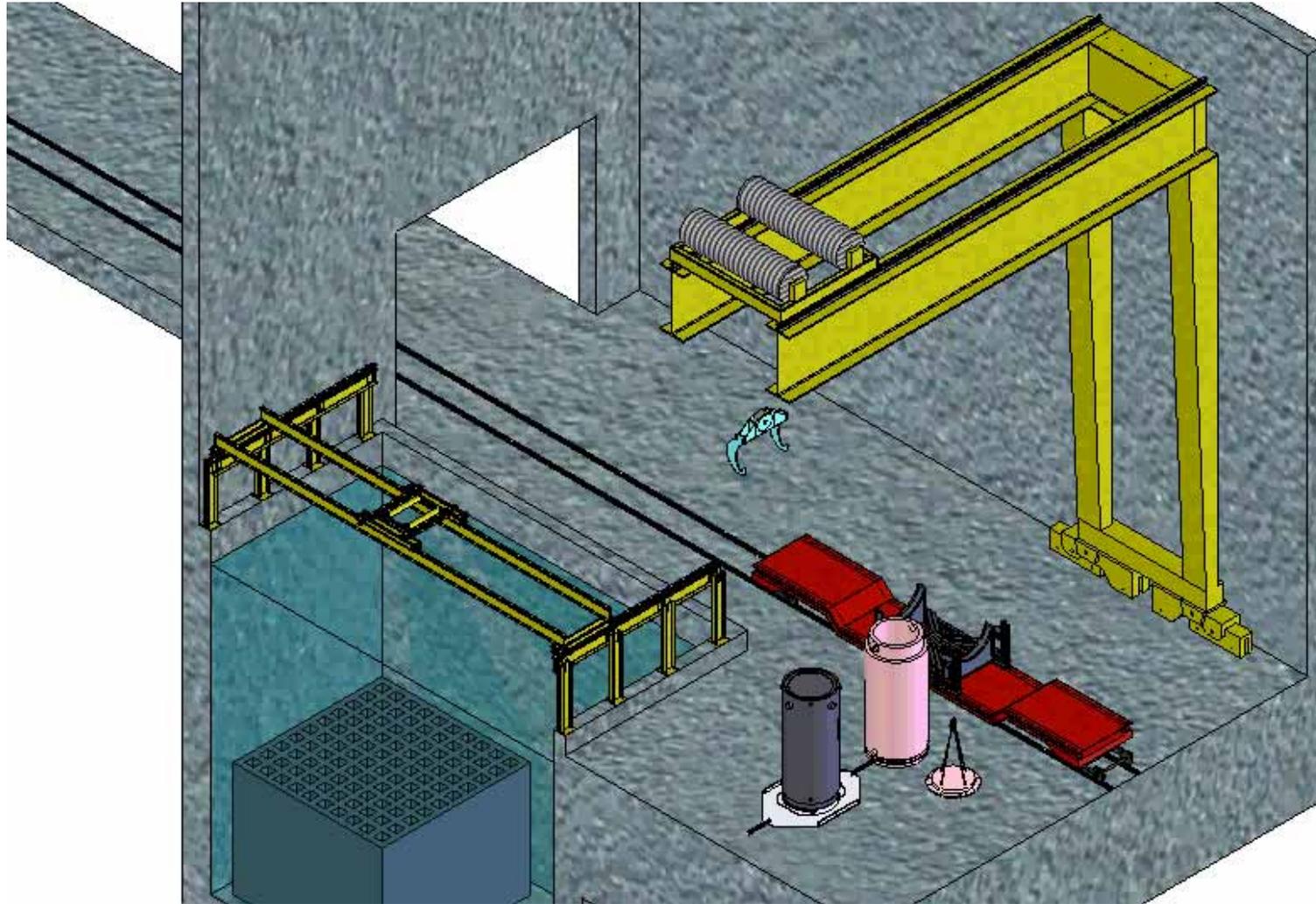
# TAD Operations – Transfer to Dry Storage in a Vertical Configuration



# TAD Operations – Transfer to Dry Storage in a Horizontal Configuration



# TAD Operations – Transfer into a Transportation Cask



# TAD Summary

- **The finalized TAD Specification can be found on the OCRWM website:**

**<http://www.ocrwm.doe.gov/receiving/wat.shtml>**

- **Procurement**
  - **Solicitation was issued and proposals were received**
  - **Proposals are currently being evaluated**

