

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

  
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STAFF EXH. 1-(UTAH UD)  
(REPLACEMENT, 12/21/04)

# Transportation Cask Systems Acquisition

Presented to:  
**DOE/NRC Quarterly Management Meeting**

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November 23, 2004  
Rockville, Maryland

# Introduction

- **Office of National Transportation (ONT) has made steady progress in establishing the groundwork to acquire transportation cask systems**
- **Today, I will address:**
  - **The Office of Civilian Radioactive Waste Management's, (OCRWM's), approach to acquiring cask systems**
  - **Cask integration efforts to ensure compatibility with Yucca Mountain surface facilities and with shipping sites**
  - **Capabilities of commercially available casks to accommodate commercial and DOE spent fuel**



# Cask Integration with the Repository

- **Transportation cask acquisition is being coordinated with Yucca Mountain to ensure compatibility with surface facility requirements**
- **Final decisions on the suite of casks required for both transportation and an aging facility's requirements have not been made**
- **Continued integration planning efforts will be undertaken to reduce the number of new casks for NRC review and certification**



# Cask Capability Assessment Reports

- **ONT purchased cask capability assessments from vendors possessing NRC CoC's**
- **Vendors are now familiar with DOE's spent nuclear fuel (SNF) and high-level radioactive waste (HLW) data**
- **Meetings held in late August and early September provided an opportunity for vendors to discuss the data and their ability to meet ONT's needs**
- **Preliminary summaries of vendor data indicated that about 60 percent of the fuel available for shipment in 2010 could be accommodated by existing casks and CoC's**



# Cask System Requirements

- **ONT is focused on using existing cask designs and Certificates of Compliance (CoC) where possible for its transport casks**
- **ONT has a preference for cask systems that provide the maximum flexibility in terms of facility and fuel compatibility**



# Casks with Existing Certificates

| Cask Models Having Current Transport Certificates of Compliance |            | Storage-Only Cask Models, which May Receive Certification for Transportation |            |
|-----------------------------------------------------------------|------------|------------------------------------------------------------------------------|------------|
| MODEL                                                           | C of C No. | MODEL                                                                        | C of C No. |
| NAC-LWT                                                         | 9225       | TN-BRP                                                                       | 9202       |
| GA-4                                                            | 9226       | TN-REG                                                                       | 9206       |
| GE-2000                                                         | 9228       | TN-40                                                                        | 72-0010    |
| NAC-STC                                                         | 9235       | CASTOR V-21                                                                  | 72-1000    |
| MP-187                                                          | 9255       | Westinghouse MC-10                                                           | 72-1001    |
| HI-STAR-100                                                     | 9261       | CASTOR X-33                                                                  | 72-1018    |
| NAC-UMS                                                         | 9270       | NAC-128S/T                                                                   | 72-1020    |
| TS-125                                                          | 9276       | TN-32                                                                        | 72-1021    |
| TN-FSV                                                          | 9277       |                                                                              |            |
| TN-68                                                           | 9293       |                                                                              |            |
| MP-197                                                          | 9302       |                                                                              |            |

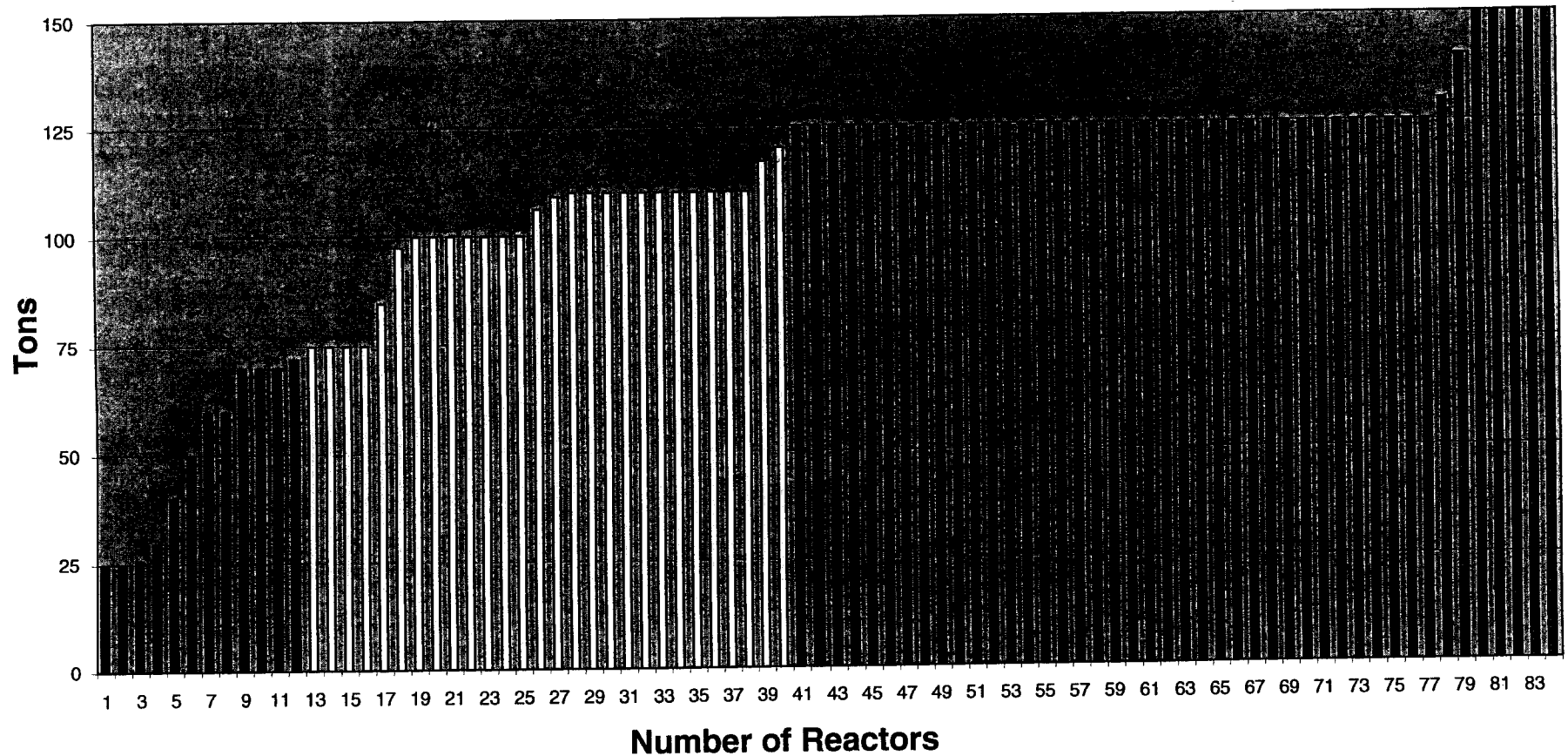
(Highlighting indicates casks evaluated by vendors in cask capability assessments.)

# Cask Integration with Utilities

- **Eighty-nine out of 119 facilities provided responses to infrastructure questions sent out in March 2004**
- **Preliminary analysis indicates that less than 57 percent of the inventory is located at facilities with site infrastructure to accommodate large rail transportation casks**
- **Less than 30 percent of the inventory is compatible with current rail cask CoC's and is located at facilities with adequate site infrastructure**
- **Additional studies of planned utility upgrades to accommodate dry storage systems will be undertaken to reevaluate their ability to handle large casks**



# Utility Reactor Crane Capacities





# Conclusions Regarding Commercial Spent Nuclear Fuel

- **Analysis of the vendor's cask capability reports has shown that a suite of existing casks from several vendors could transport upwards of 60 percent of the projected commercial inventory**
- **Preliminary analysis by the vendors indicated that CoCs could be modified to accommodate more than 90 percent of the commercial SNF inventory, based on SNF characteristics, alone**
  - **However, site infrastructure limitations reduce this number**

# DOE Spent Nuclear Fuel and High-Level Waste Conclusions

- **Casks exist today that are technically capable of transporting DOE waste material**
  - Generally, the thermal, structural, and shielding requirements for commercial SNF bound those of the DOE material
- **New internal basket designs could be developed to accommodate the DOE canisters**
  - Certificate modifications will be required for the new baskets
- **DOE fuel will only be shipped in canisters during the first five years**

# NRC Certification Needs

- **Continued integration planning efforts will be undertaken to reduce the number of new casks for NRC review and certification**
- **ONT will not begin procuring new, or revised CoC's before late in FY05. Resulting vendor applications to the NRC should not be expected before FY06**