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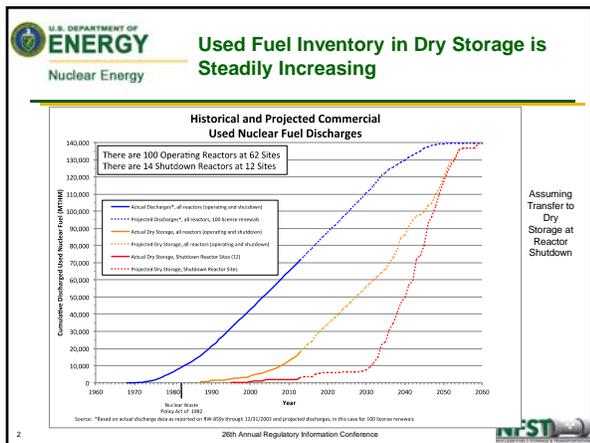
Nuclear Fuels Storage & Transportation Planning Project
 Office of Fuel Cycle Technologies
Nuclear Energy

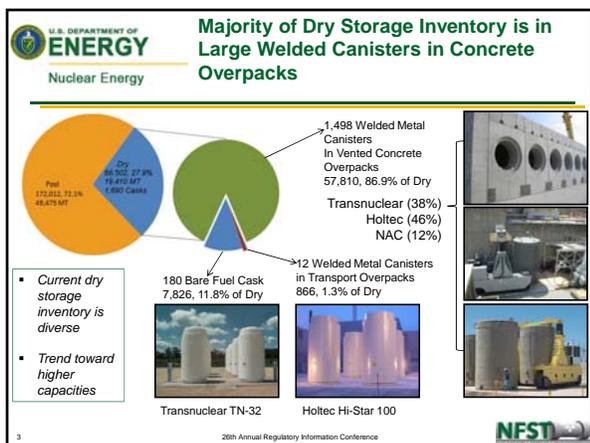
Integration of Storage into the Waste Management System

Jeff Williams
 Project Director, Nuclear Fuels Storage and Transportation
 Office of Nuclear Energy



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Standardization Offers the Potential for Significant System-Wide Benefits

- **Benefits recognized in previous periods, e.g., MPCs & TADs, and by BRC and congressional budget direction**
 - **Reduced system cost**, mainly from avoidance of extra costs and operational efficiencies
 - **Simplified operations** throughout the system
 - **Reduced uncertainties** associated with waste acceptance and system performance
 - **Minimized repackaging**
 - Opportunities include canisters, overpacks, casks, and ancillary equipment
- **However, in the absence of known disposal requirements, legitimate questions persist about what, when, and how to standardize**

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Standardization in the Waste Management System Has Significant Implications that Must be Considered

- **Solicited and received input from industry regarding feasibility of standardized canisters**
 - Proceed with development of multiple canister size options until repository characteristics are known
 - Standardized canisters should not be deployed at operating reactors
- **Initiated a quantitative assessment of integrating standardized canisters into the waste management system**
 - Evaluating potential strategies, scenarios, and uncertainties to establish the basis for future policy decision making
 - Collaborative effort with industry to ensure industry perspective, experience, and constraints are represented

Canister design sizes recommended by EnergySolutions

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Preliminary Results Indicate DPC Direct Disposal Could be Technically Feasible, but with Challenges and Constraints

- **Preliminary technical evaluation of direct disposal of dual-purpose canister (DPC) has been completed, efforts are continuing**
- **Thermal, criticality, and engineering challenges have been identified and are being studied**
- **Direct disposal could place constraints on repository siting and operations**

Evaluation of Direct Disposal of Spent Fuel in Existing Dual-Purpose Canisters, E.L. Hardin, et al., **RegWaste Solutions**

Time to Repository Panel Closure for Representative Disposal Concepts, 32-PWR canister

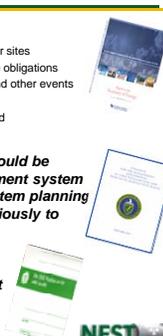
Based on: Hardin et al. 2013, Collaborative Report on Disposal Concepts, FCID-UFD-2013-000170 Rev. 0.

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BRC and Administration's Strategy Emphasized Interim Storage as Part of an Integrated WM System

- **"Consolidated Storage would...**
 - Allow for the removal of 'stranded' spent fuel from shutdown reactor sites
 - Enable the federal government to begin meeting waste acceptance obligations
 - Provide flexibility to respond to lessons learned from Fukushima and other events
 - Support the repository program
 - Provide options for increased flexibility and efficiency in storage and future waste handling functions"
- **"The Administration agrees that interim storage should be included as a critical element in the waste management system and has several benefits, including flexibility in system planning and execution and the opportunity to move expeditiously to fulfill government contractual responsibilities."**
- **"The DOE supports the development of an MRS facility as an integral part of the waste-management system" – 1989 DOE Position on Interim Storage**

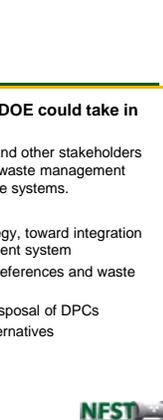


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Concluding Remarks

- **Blue Ribbon Commission: Specific steps that DOE could take in the near term include:**
 - Working with nuclear utilities, the nuclear industry, and other stakeholders to promote the better integration of storage into the waste management system, including standardization of dry cask storage systems.
- **DOE is:**
 - Conducting planning, per the Administration's Strategy, toward integration of Storage as a planned part of the waste management system
 - Evaluating options and trade-offs relative to utility preferences and waste management system integration
 - Assessing standardization and feasibility of direct disposal of DPCs
 - Assessing generic interim storage facility design alternatives



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