

NRC's Perspective on Waste Management Challenges & The Nuclear Renaissance

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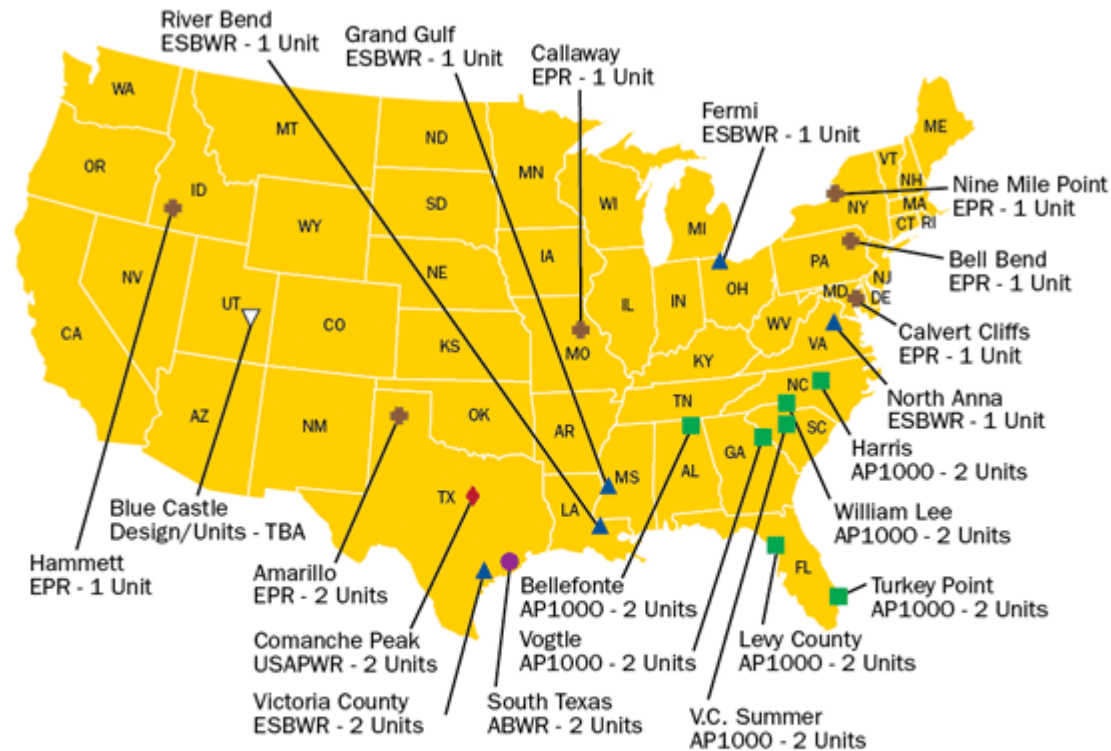
U.S. NRC

Waste Management 09
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Session 03

Preview of Topics

- Power Reactor Combined Operating Licenses
- Uranium Recovery Applications
- Enrichment Facility Applications
- Decommissioned Reactors
- Future Reactor Decommissioning
- Commercial LLW Disposal Capacity
- High-Level Waste
- Reprocessing
- WM Challenges
- Summary

Power Reactor Combined Construction and Operating Licenses



You may click on a design name to view the NRC's Web site for the specific design.

● ABWR
 ■ AP1000
 + EPR
 ▲ ESBWR
 ◆ USAPWR
 ▽ Design/Units - TBA

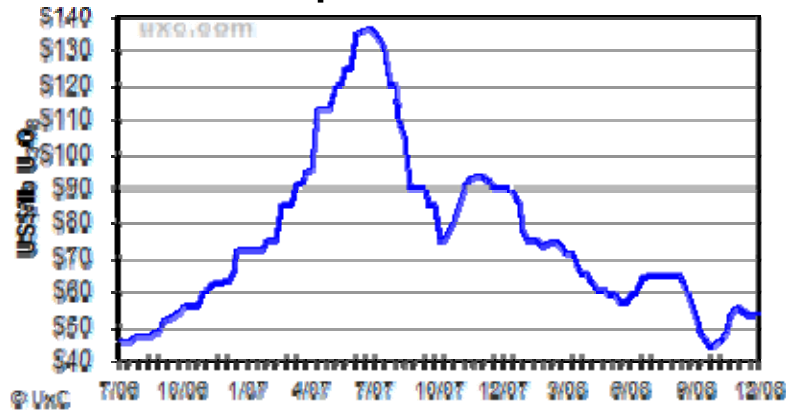


Front End of the Fuel Supply: Uranium Recovery

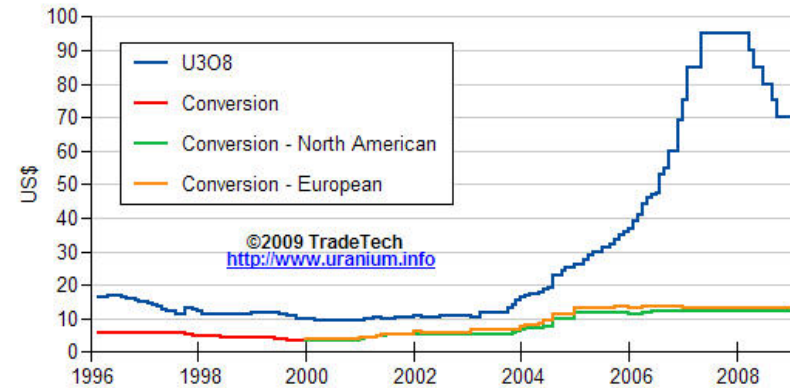
- Uranium Price Trends
- Uranium Ore Deposit Locations
- New, Restart, and Expansion Applications

Uranium Price Trends

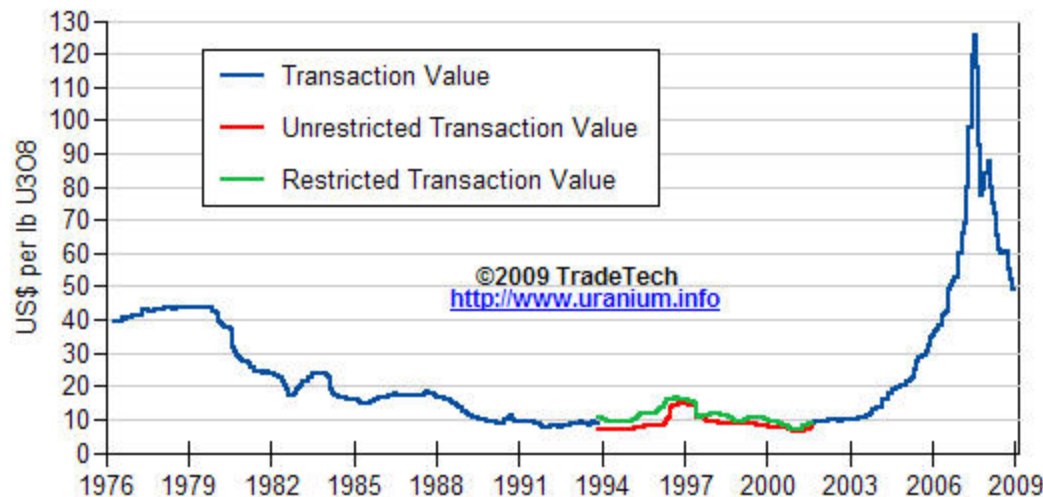
Spot Price



Long-Term Price Indicator



Transaction Price

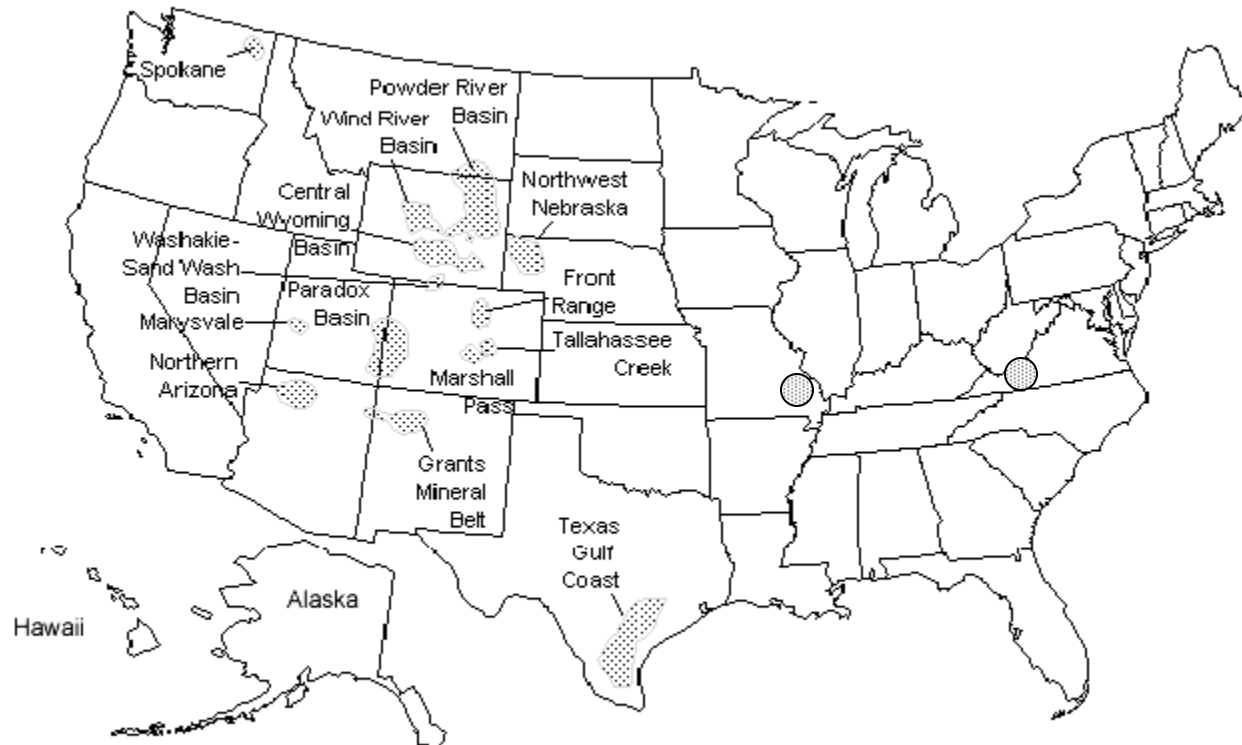


Source: TradeTech, <http://www.uranium.info>



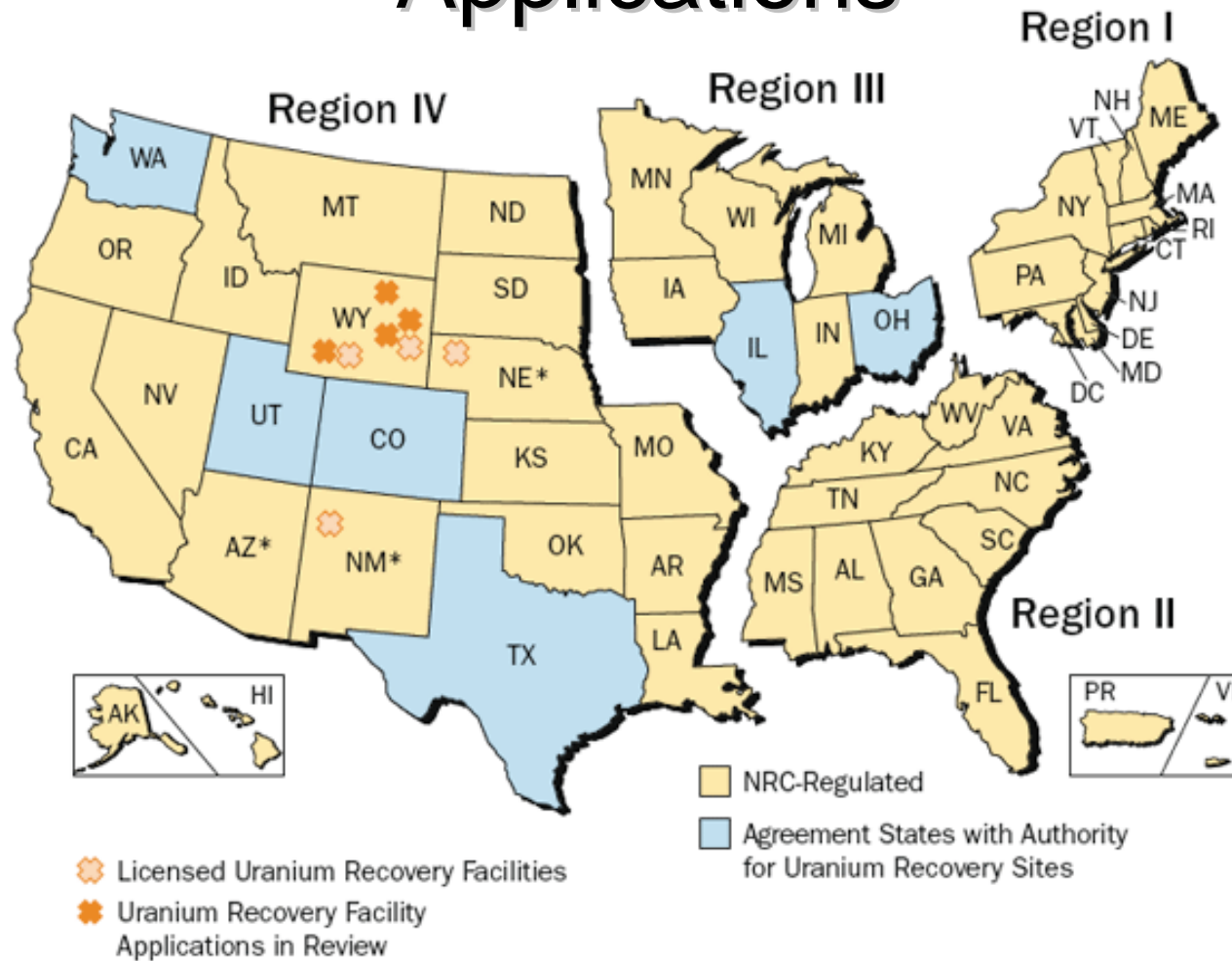
Uranium Deposits

Major U.S. Uranium Reserves



Sources: Based on U.S. Department of Energy, Grand Junction Project Office (GJPO), National Uranium Resources Evaluation, Interim Report (June 1979) Figure 3.2; and GJPO data files.

Uranium Recovery Facilities and Applications

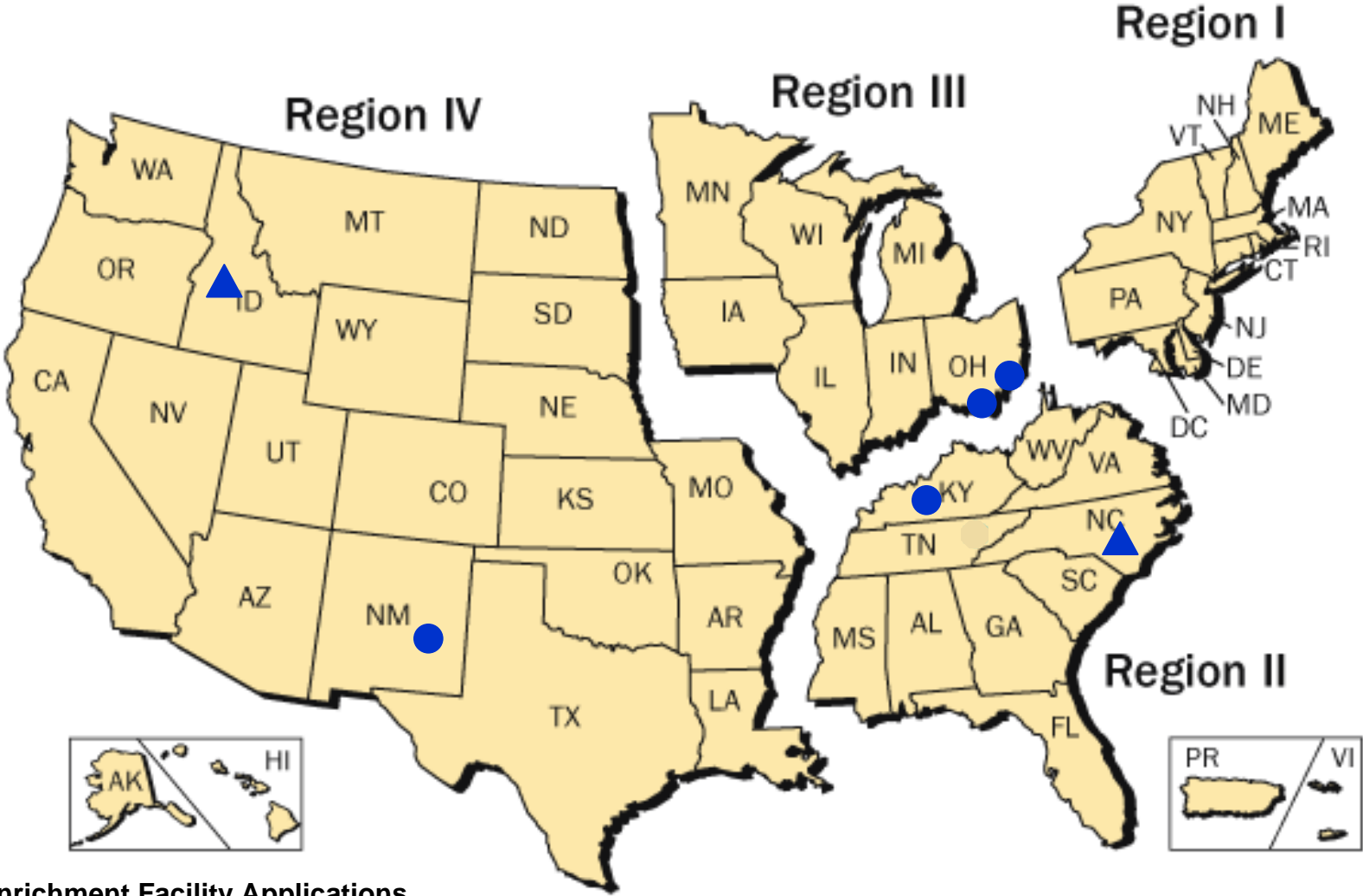


*Agreement States where the NRC has retained authority to license uranium recovery.

S.N.R.C.

United States Nuclear Regulatory Commission
Protecting People and the Environment

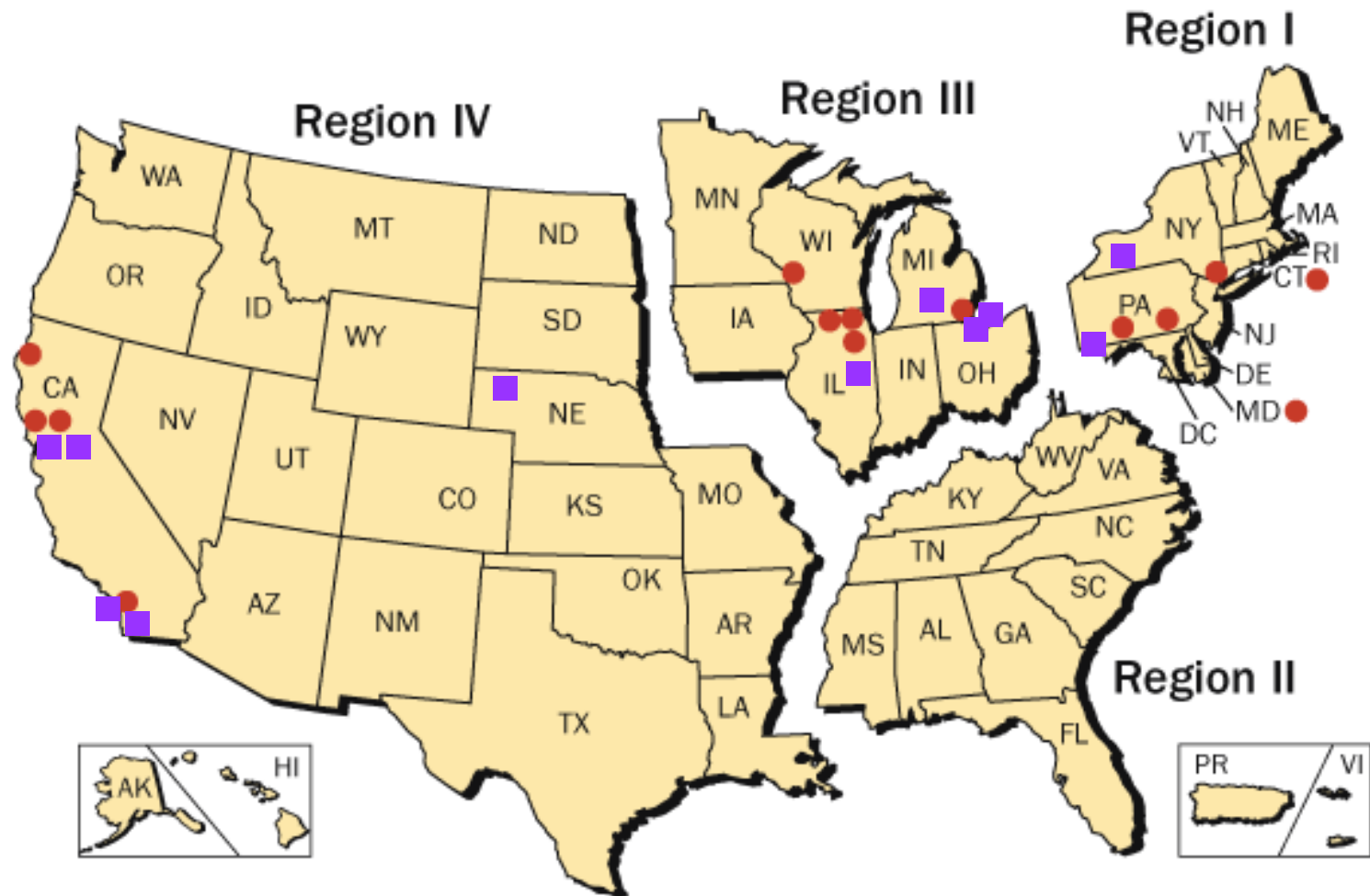
Enrichment Facilities and Applications



Depleted Uranium

- Larger quantities of DU than originally considered
- By default is Class A LLW, but has properties that distinguish it
- Commission Order CLI-05-20
- SECY-08-0147

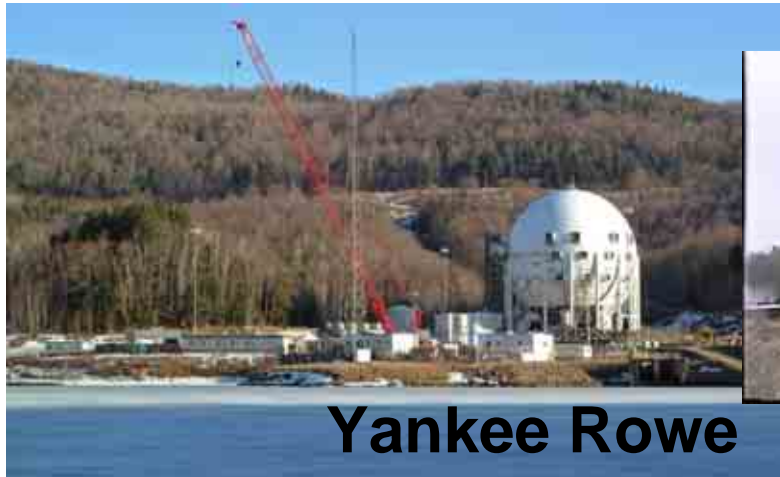
Reactors Undergoing Decommissioning



- Power Reactors
- Research and Test Reactors



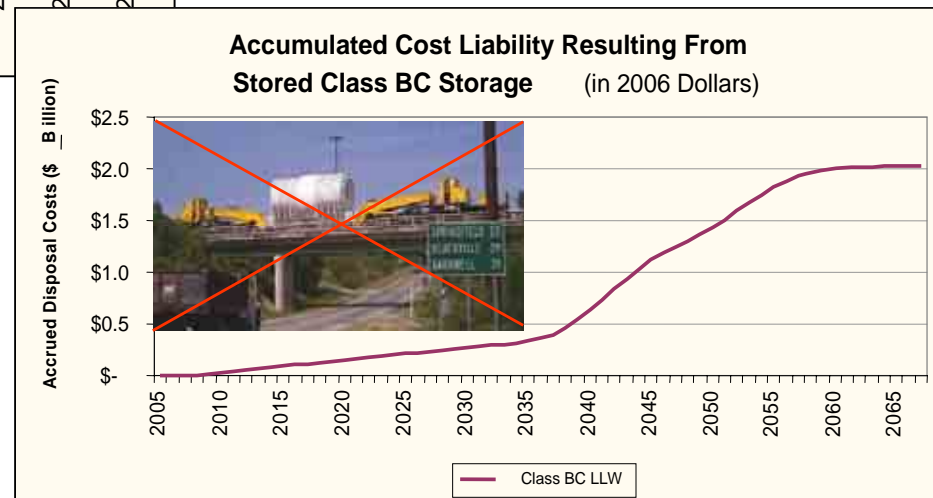
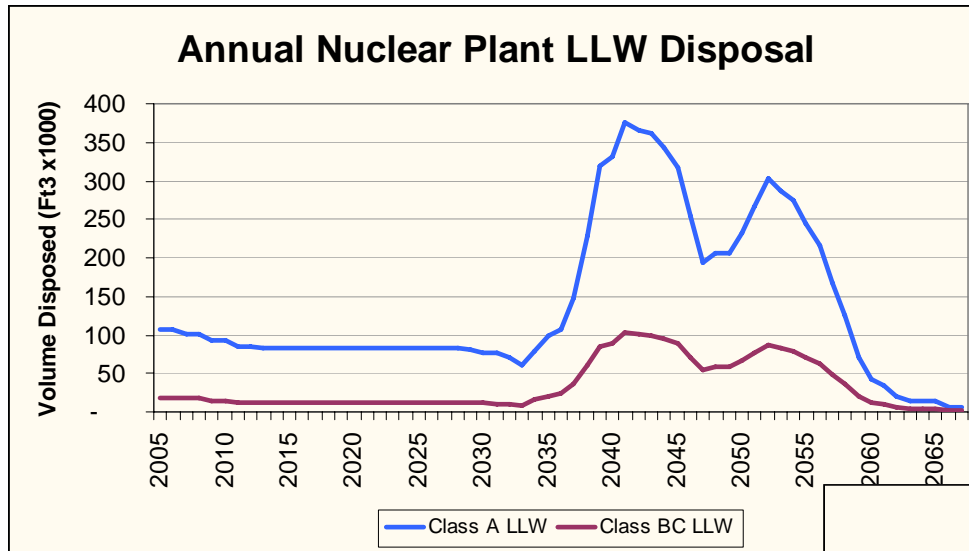
Decommissioning Waste Challenges



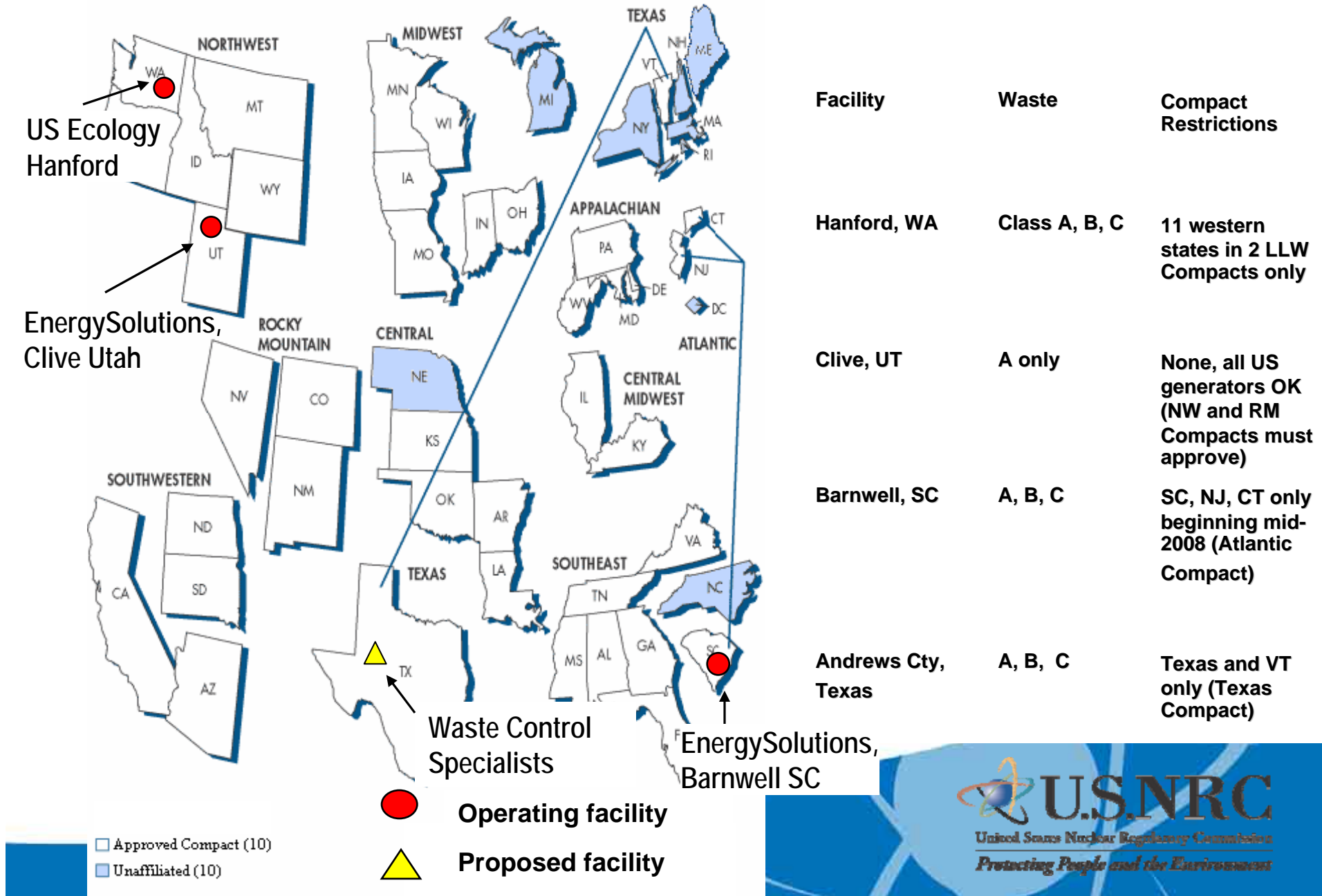
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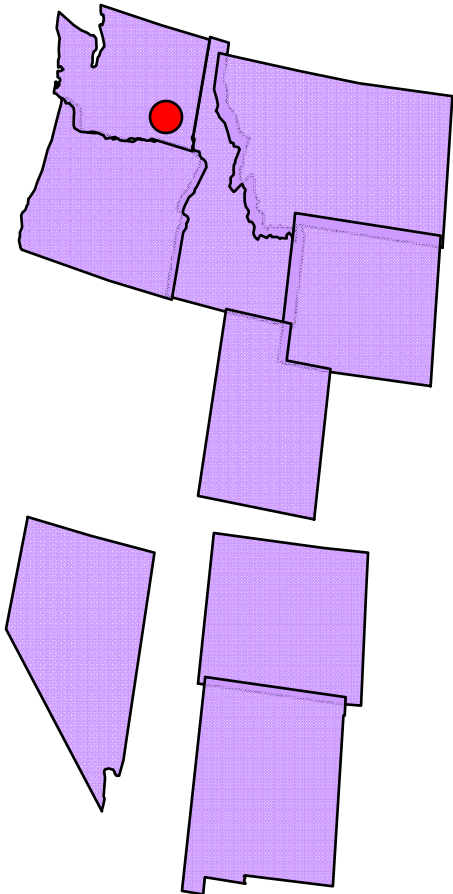
Future Reactor Decommissioning Waste Volumes and Cost of Disposal



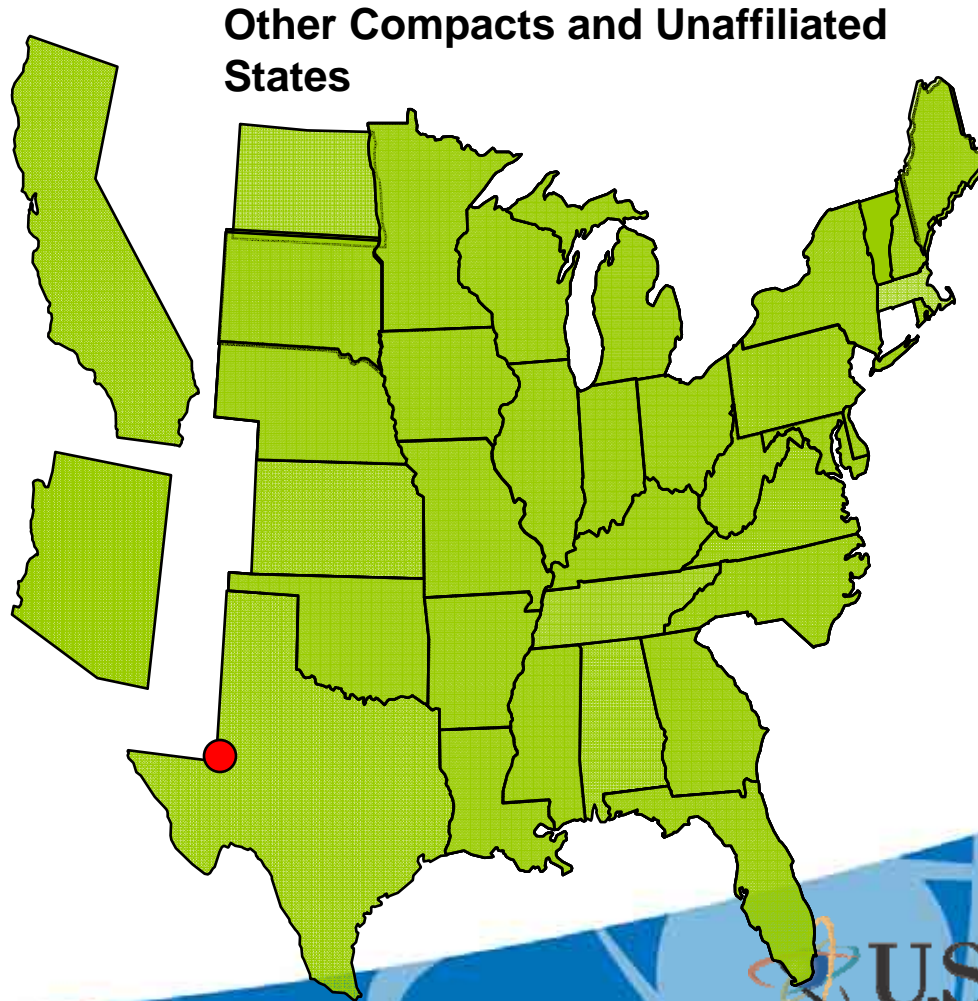
Commercial LLW Sites in U.S.



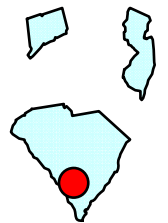
Class B/C Disposal Access in U.S.



Northwest and Rocky Mountain Compacts (AK and HI not shown)



Other Compacts and Unaffiliated States



Atlantic Compact

High-Level Waste

- YM License Application
- Funding
- NRC Waste Confidence Decision



Reprocessing

- Once-through fuel cycle is viable option, but with disadvantages
- SRM-SECY-07-0081 (gap analysis)
- SECY-08-0134 (narrowed focus)

WM Challenges

- Future waste capacity/availability
- Low-activity waste (LAW) disposal
- Extended storage for B/C waste
- Risk-informing waste classification
- Part 61 rulemakings vs. budget constraints

Summary of U.S. Renaissance

- Continued momentum for new reactor licensing
- Renewed interest in uranium recovery
- Considerable expansion of enrichment capacity
- On-going reactor decommissioning
- Attention to needed regulatory process changes