

# Overview of the Draft Report of the Blue Ribbon Commission on America's Nuclear Future

November 2011



**BLUE RIBBON COMMISSION**  
ON AMERICA'S NUCLEAR FUTURE

# Origins and Purpose

- Blue Ribbon Commission on America's Nuclear Future established by the President's Memorandum for the Secretary of Energy January 29, 2010
- Conduct a comprehensive review of policies for managing the back end of the nuclear fuel cycle and recommend a new strategy
- Deliver recommendations to the Secretary of Energy January 29, 2012



# Members

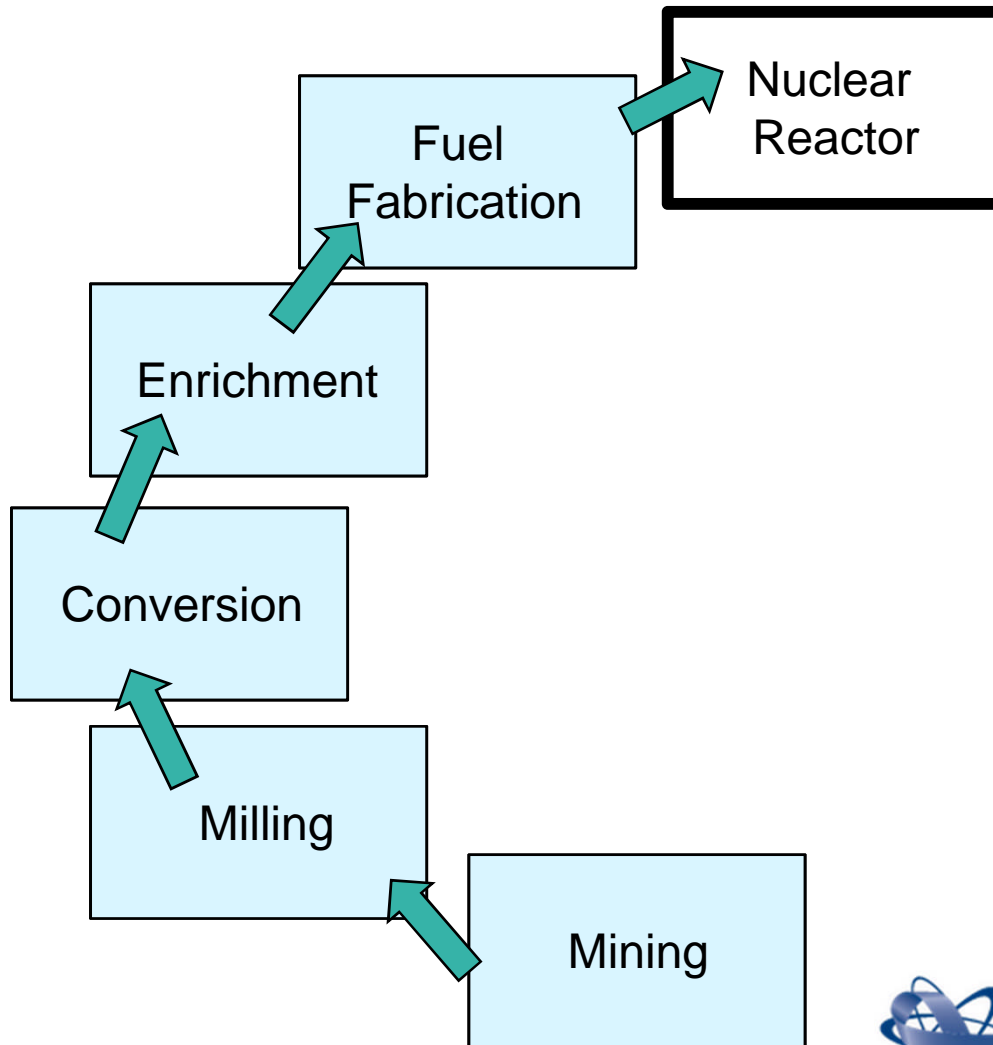
- **Lee Hamilton**, Co-Chair - Director of The Center on Congress at Indiana University, former Member of Congress (D-IN)
- **Brent Scowcroft**, Co-Chair – President, The Scowcroft Group, and former National Security Advisor to Presidents Gerald Ford and George H.W. Bush
- **Mark Ayers**, President, Building and Construction Trades Department, AFL-CIO
- **Vicky Bailey**, Former Commissioner, Federal Energy Regulatory Commission; Former Indiana PUC Commissioner; Former DOE Assistant Secretary for Policy and International Affairs
- **Albert Carnesale**, Chancellor Emeritus and Professor, UCLA
- **Pete V. Domenici**, Senior Fellow, Bipartisan Policy Center; former U.S. Senator (R-NM)
- **Susan Eisenhower**, President, Eisenhower Group, Inc.

# Members

- **Chuck Hagel**, Distinguished Professor at Georgetown University, Former U.S. Senator (R-NE)
- **Jonathan Lash**, President, Hampshire College; former President, World Resources Institute
- **Allison Macfarlane**, Assoc. Professor of Environmental Science and Policy, George Mason Univ.
- **Richard A. Meserve**, President, Carnegie Institution for Science, and former Chairman, U.S. NRC
- **Ernie Moniz**, Professor of Physics and Cecil & Ida Green Distinguished Professor, MIT
- **Per Peterson**, Professor and Chair, Dept. of Nuclear Engineering, Univ. of California – Berkeley
- **John Rowe**, Chairman and Chief Executive Officer, Exelon Corporation
- **Phil Sharp**, President, Resources for the Future; former Member of Congress (D-IN)

# Background – Nuclear Fuel Cycle

## Front End of Cycle



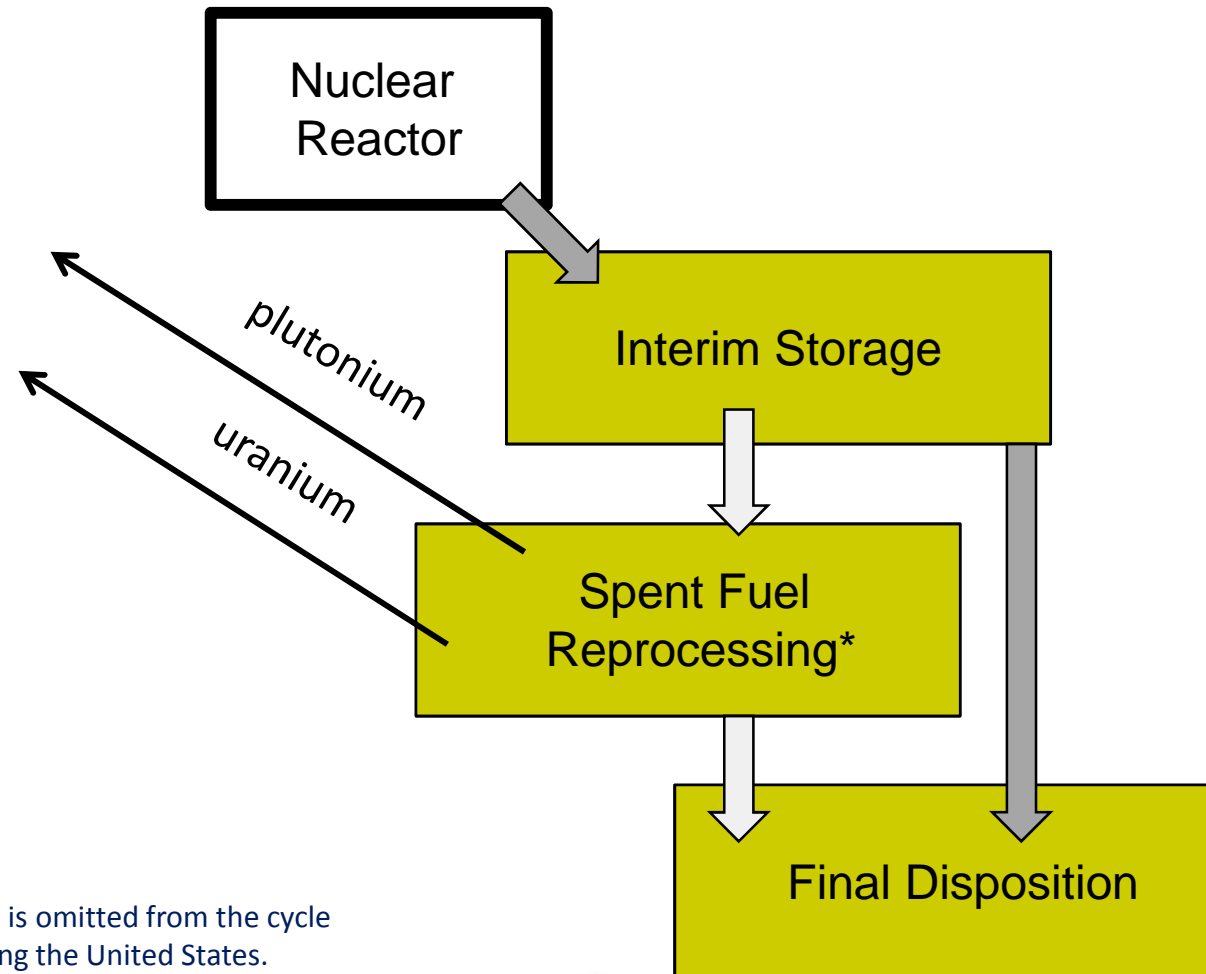
[http://www.eia.doe.gov/cneaf/nuclear/page/images/intro\\_fig1.jpg](http://www.eia.doe.gov/cneaf/nuclear/page/images/intro_fig1.jpg)



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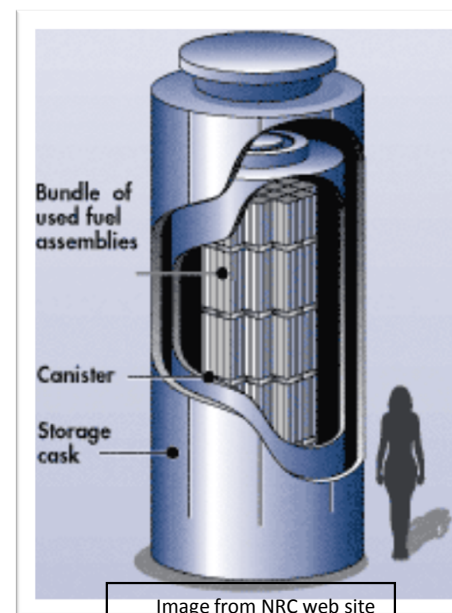
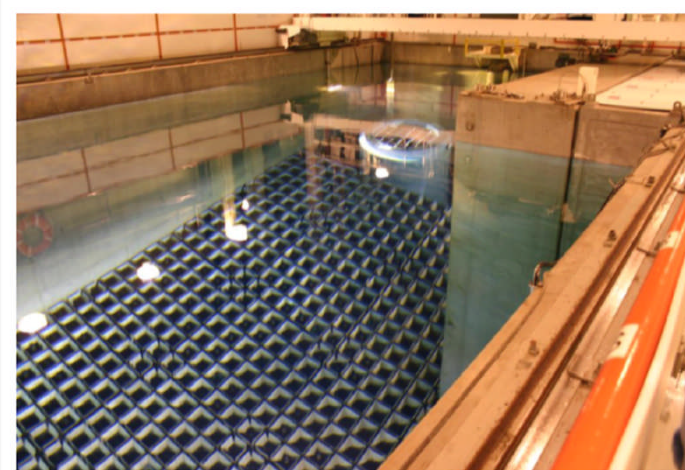
# Nuclear Fuel Cycle

## Back End of Cycle



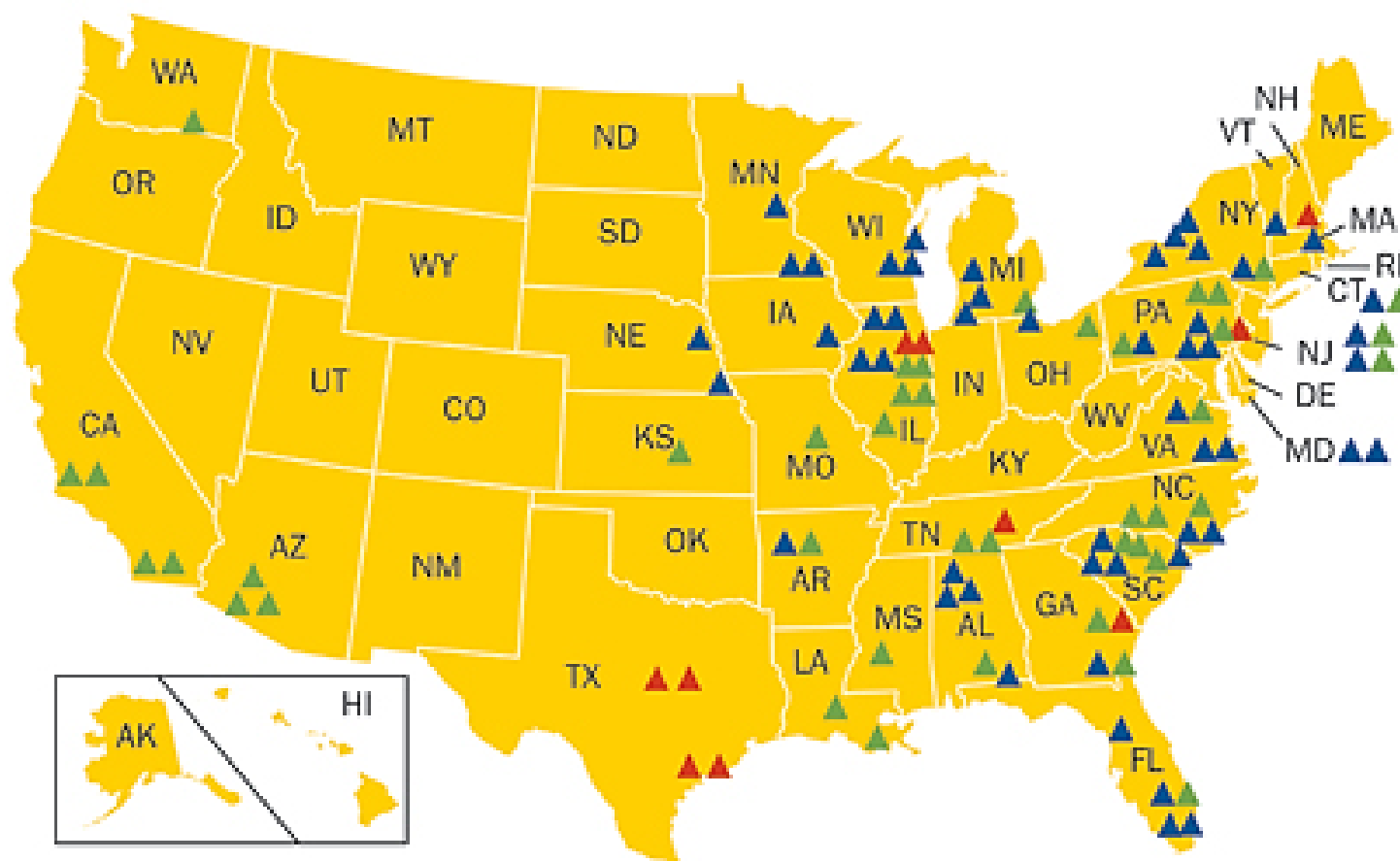
\*Spent Fuel Reprocessing is omitted from the cycle in most countries, including the United States.





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## U.S. Commercial Nuclear Power Reactors—Years of Operation



Years of Commercial  
Operation

- △ 0-9
- ▲ 10-19
- ▲ 20-29
- ▲ 30-39

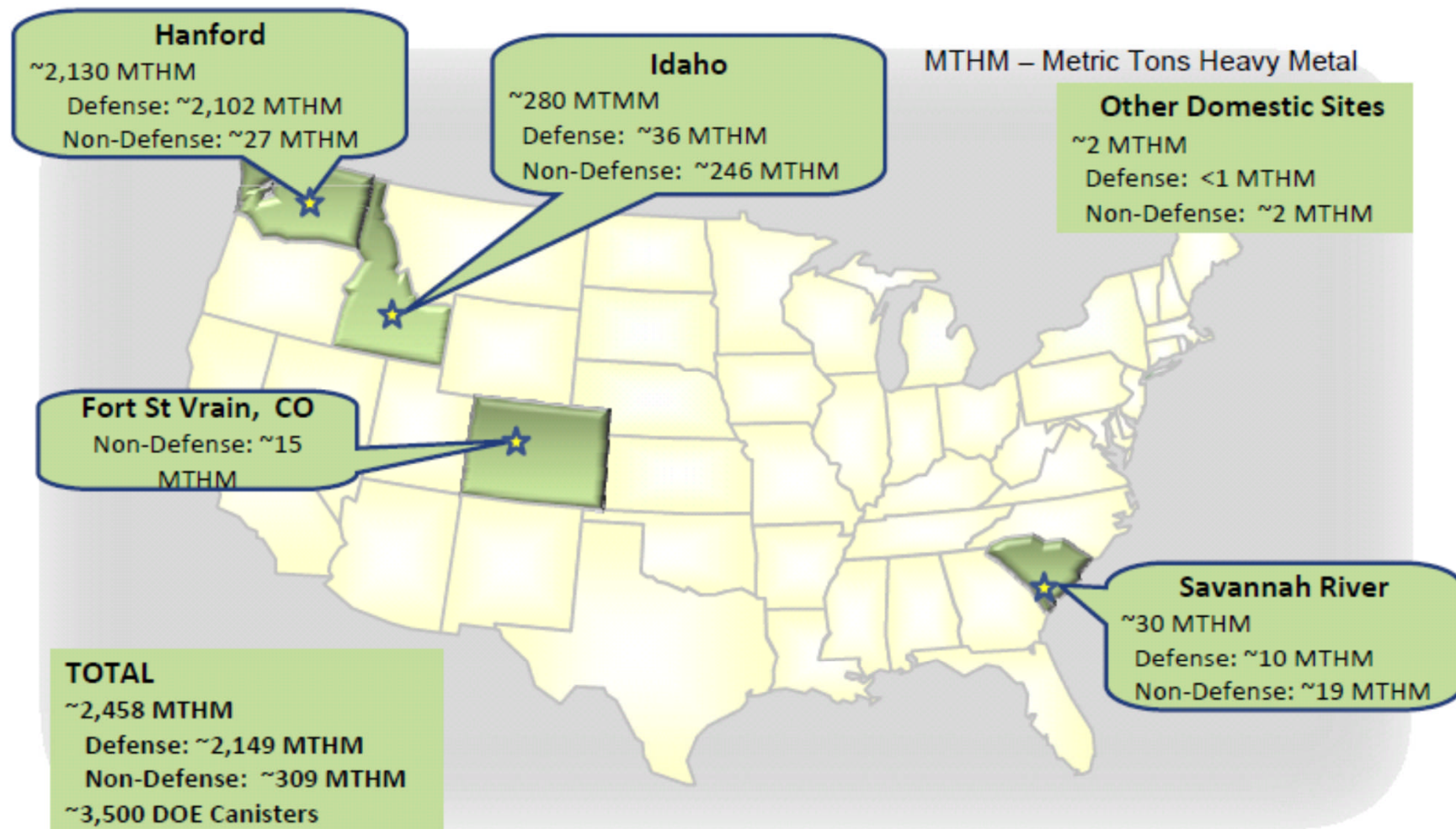
Number of  
Reactors

- 0
- 10
- 42
- 52

Source: U.S. Nuclear Regulatory Commission



# Current **DOE SNF** Inventory (2010)



**EM** Environmental Management

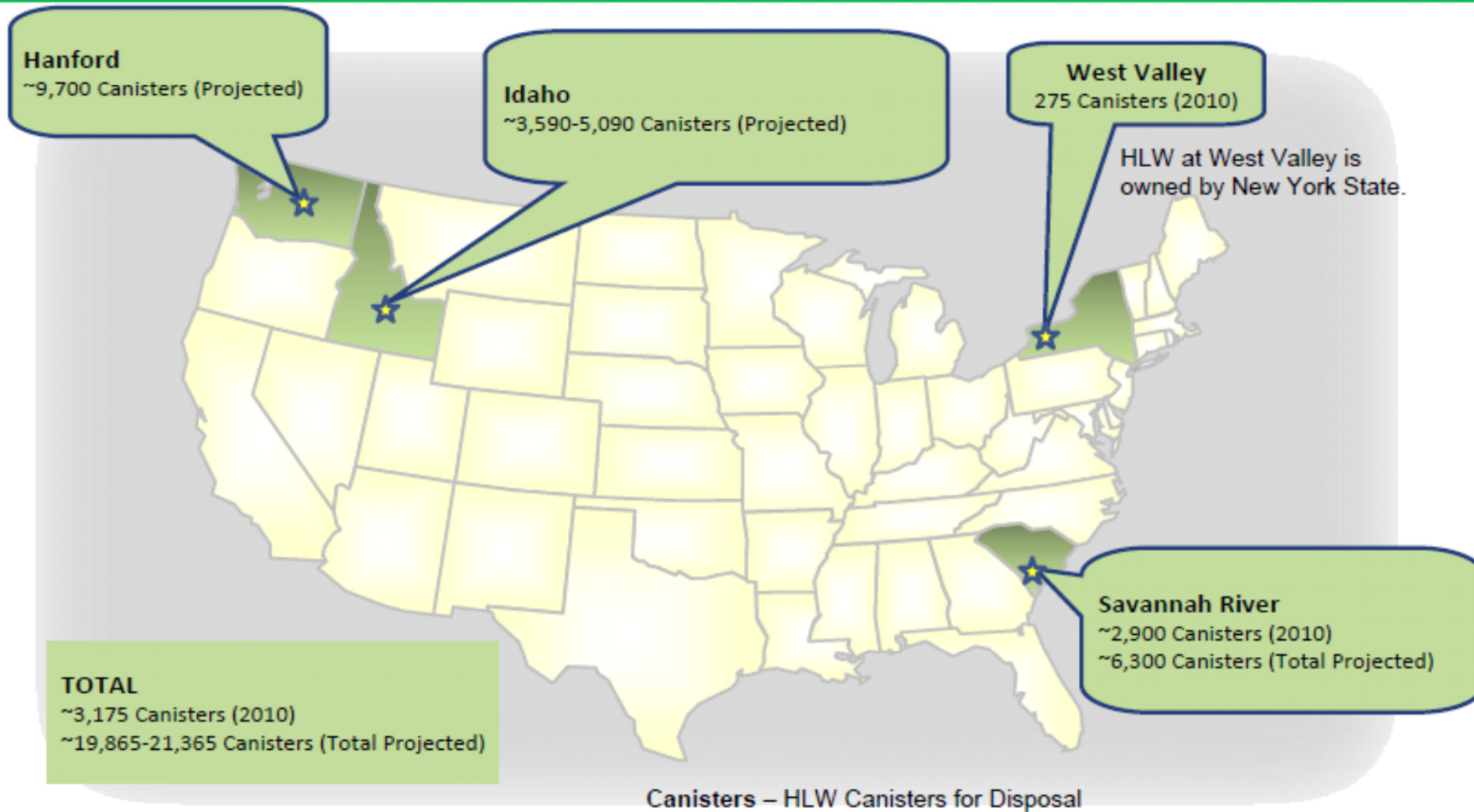
safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



Source: UK Nuclear Decommissioning Authority website – see <http://www.nda.gov.uk/ukinventory/waste/waste-now-hlw.cfm>

# 2010 DOE HLW Inventory



**EM Environmental Management**

safety ♦ performance ♦ cleanup ♦ closure

[www.em.doe.gov](http://www.em.doe.gov)

# Activities to Date 2010

- **Full Commission meetings/Commissioner site visits:**
  - **March** – Where are we and how did we get here?
  - **May** – Getting the issues on the table; three subcommittees formed – Reactor & Fuel Cycle Technology; Transportation & Storage; Disposal
  - **July** – Hanford visit: a community's perspective
  - **September** – Crosscutting issues: governance, siting, international implications, ethical & societal foundations
  - **October** – Visits to Sweden and Finland
  - **November** – International perspectives, working with the states, expert advice



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# Activities to Date 2011

- **Full Commission meetings/Commissioner site visits:**
  - **January** – Visits to SC/GA (Savannah River) and NM (WIPP)
  - **February** - Visits to Japan, Russia and France; meeting on crosscutting issues: organizational form and scope, siting, financial considerations
  - **March** – Issued staff-developed report on “What We’ve Heard”
  - **May** – NRC/DOE reviews post-Fukushima; discussion of draft subcommittee recommendations to the full Commission
  - **June** – Visits to UK, France; draft subcommittee reports issued
  - **July** – Draft report submitted to Secretary of Energy; public comment period begins

# Draft Report – Overview of 7 Key Recommendations

## 1. A new approach to siting and development

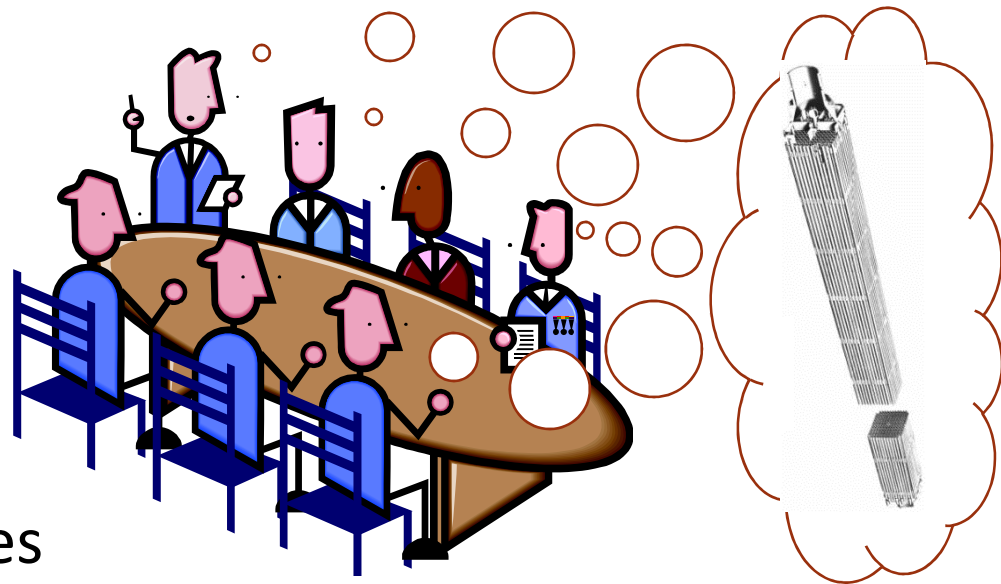
- Adaptive
- Staged
- Consent-based
- Transparent
- Standards-and science-based



# Draft Report – Overview of 7 Key Recommendations

## 2. A new, single-purpose organization focused on nuclear waste in the United States

- Transportation
- Storage
- Disposal
- Congressional oversight, BOD
- \$ for defense wastes



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# Draft Report – Overview of 7 Key Recommendations

## 3. Have assured access to funding

- Near-term changes to handling of annual nuclear waste fee payments
- Longer-term access to balance of Nuclear Waste Fund



# Draft Report – Overview of 7 Key Recommendations

## 4. Develop permanent deep geological disposal site(s) for spent fuel and high-level nuclear waste

- Expeditiously
- Safely



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## Draft Report – Overview of 7 Key Recommendations

5. Develop one or more consolidated interim storage facilities as part of managing back end of nuclear fuel cycle
  - Expeditiously
  - Safely
  - “Stranded” fuel at shutdown plants - should be first-in-line

# Draft Report – Overview of 7 Key Recommendations

## 6. Create stable, long-term support for research, development, and demonstration (RD&D)

- Advanced reactor and fuel cycle technologies
- Related workforce needs and skills development



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# Draft Report – Overview of 7 Key Recommendations

## 7. Need international leadership

- Address global non-proliferation concerns
- Improve the safety and security of nuclear facilities and materials worldwide



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## Draft Report – Additional Findings and Recommendations

- Current NRC and EPA division of regulatory responsibilities appropriate
  - Develop new site-independent safety standards
  - Solicit input from all relevant constituencies

## Draft Report – Additional Findings and Recommendations

- Roles, responsibilities, and authorities of local, state, and tribal governments must be negotiated
  - All affected governments need meaningful participation
  - States and tribes should have authority over aspects of regulation
  - Local, state, tribal governments have responsibility along with federal government to work productively to advance the national interest

## Draft Report – Additional Findings and Recommendations

- New organization responsible for developing consolidated interim storage and permanent disposal facilities should apply the same principles of decision making to all aspects of the waste management program
- Siting processes for future waste management facilities include flexible and substantial incentive program

## Draft Report – Additional Findings and Recommendations

- Interim storage of spent fuel at existing reactor sites will continue
- No unmanageable safety or security risks with current storage (dry or wet)
- Active research needed to ensure safety and security



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# Draft Report – Additional Findings and Recommendations

- Assign National Academy of Sciences (NAS) to assess lessons learned from Fukushima and implications for conclusions in earlier NAS studies



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# Draft Report – Additional Findings and Recommendations

- Current system of standards and regulations governing transport of spent fuel and other nuclear materials functioning well
  - Excellent safety record
  - Start planning transport at start of project for consolidated storage capacity



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## Draft Report – Additional Findings and Recommendations

- Retain global leadership position in nuclear technology innovation with RD&D efforts
  - Safety and performance of existing light-water reactor technology
  - Storing and disposing of spent nuclear fuel and high-level waste
  - Game-changing nuclear technologies and systems

# Draft Report – Additional Findings and Recommendations

- Portion of RD&D resources for NRC
  - Accelerate a regulatory framework
  - Support anticipatory research for novel components of advanced nuclear energy systems
  - Increase confidence in new systems for commercial investment

# Schedule and Next Steps

- Outreach effort to solicit feedback on draft Commission report
  - Meetings co-hosted with regional state government groups
  - Invited talks to interested organizations
  - Comments due by 10/31/11
- Other visits and meetings as necessary
- Charter requires final report by 1/29/12

# Contact Us

- We always welcome written input – submit to [brc@nuclear.energy.gov](mailto:brc@nuclear.energy.gov)
- Follow the work of the Commission – [www.brc.gov](http://www.brc.gov)
  - Meeting information
  - Webcasts/video archives
  - Comments
  - Commissioned papers



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