

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

September 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.



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# Members

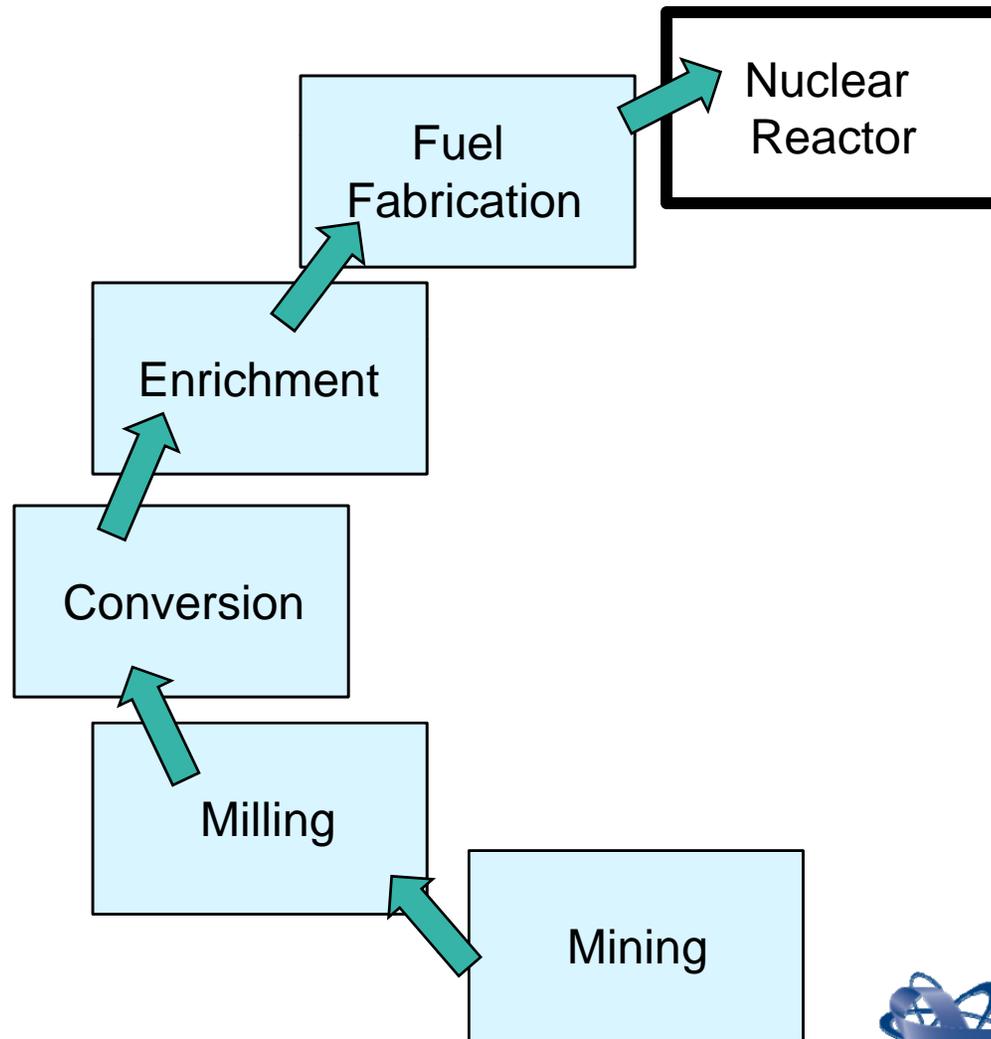
- **Chuck Hagel**, Distinguished Professor at Georgetown University, Former U.S. Senator (R-NE)
- **Jonathan Lash**, President, Hampshire College; former President, World Resources Institute
- **Allison Macfarlane**, Assoc. Professor of Environmental Science and Policy, George Mason Univ.
- **Richard 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)



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# Background – Nuclear Fuel Cycle

## Front End of Cycle



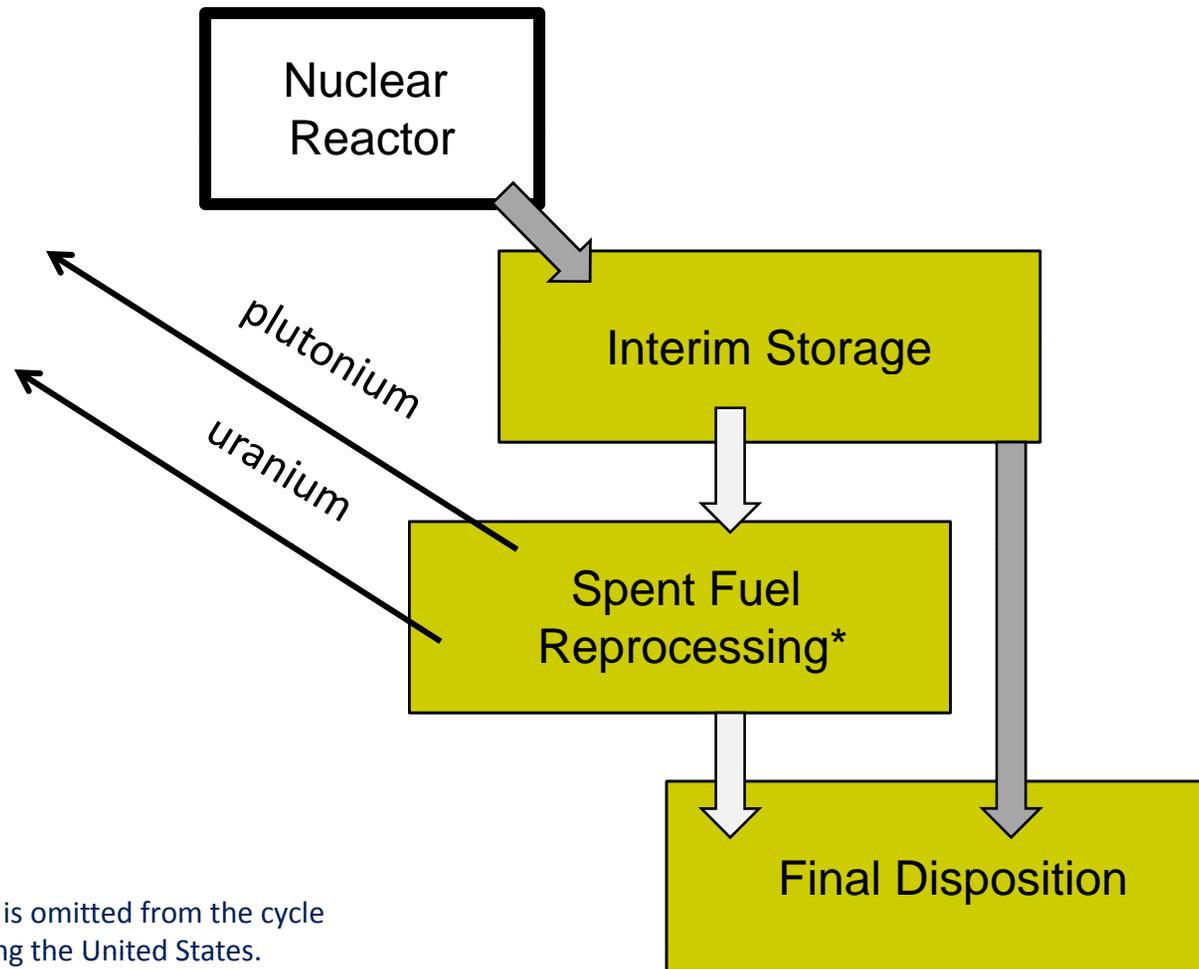
[http://www.eia.doe.gov/cneaf/nuclear/page/images/intro\\_fig1.jpg](http://www.eia.doe.gov/cneaf/nuclear/page/images/intro_fig1.jpg)



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# Nuclear Fuel Cycle

## Back End of Cycle

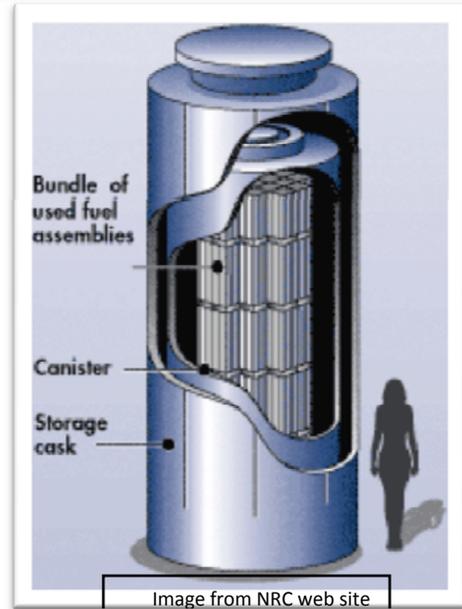
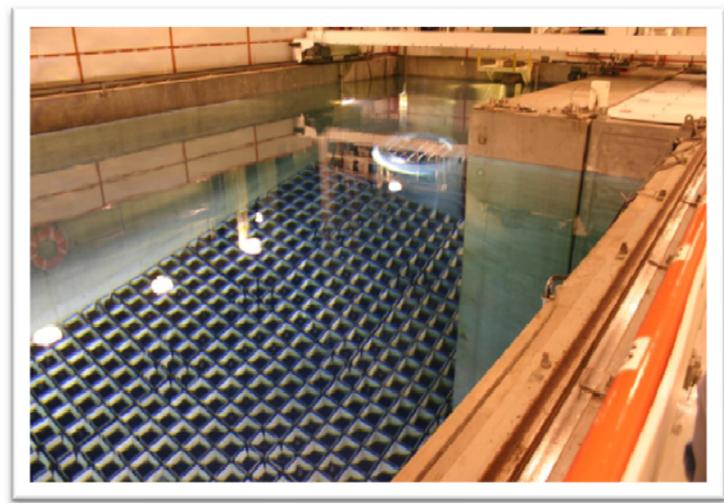
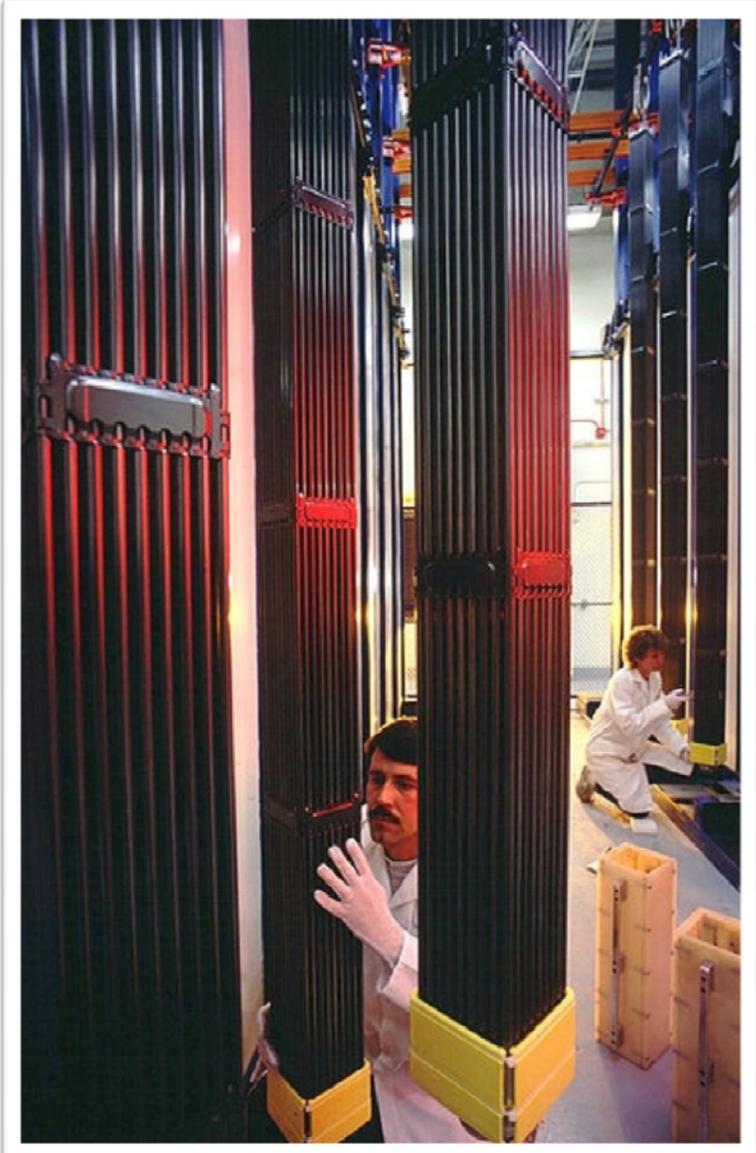


\*Spent Fuel Reprocessing is omitted from the cycle in most countries, including the United States.

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

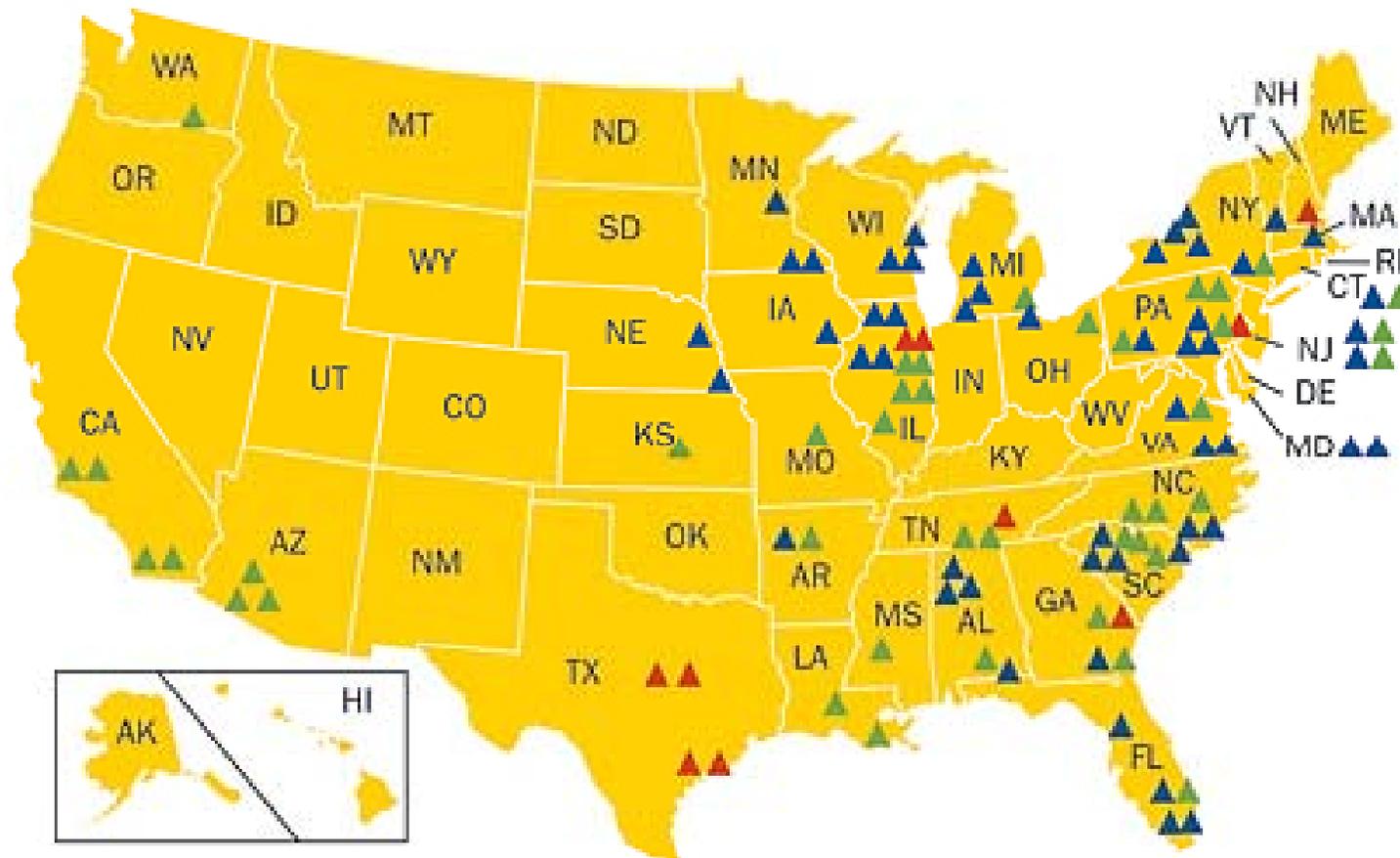


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## U.S. Commercial Nuclear Power Reactors—Years of Operation



Years of Commercial Operation

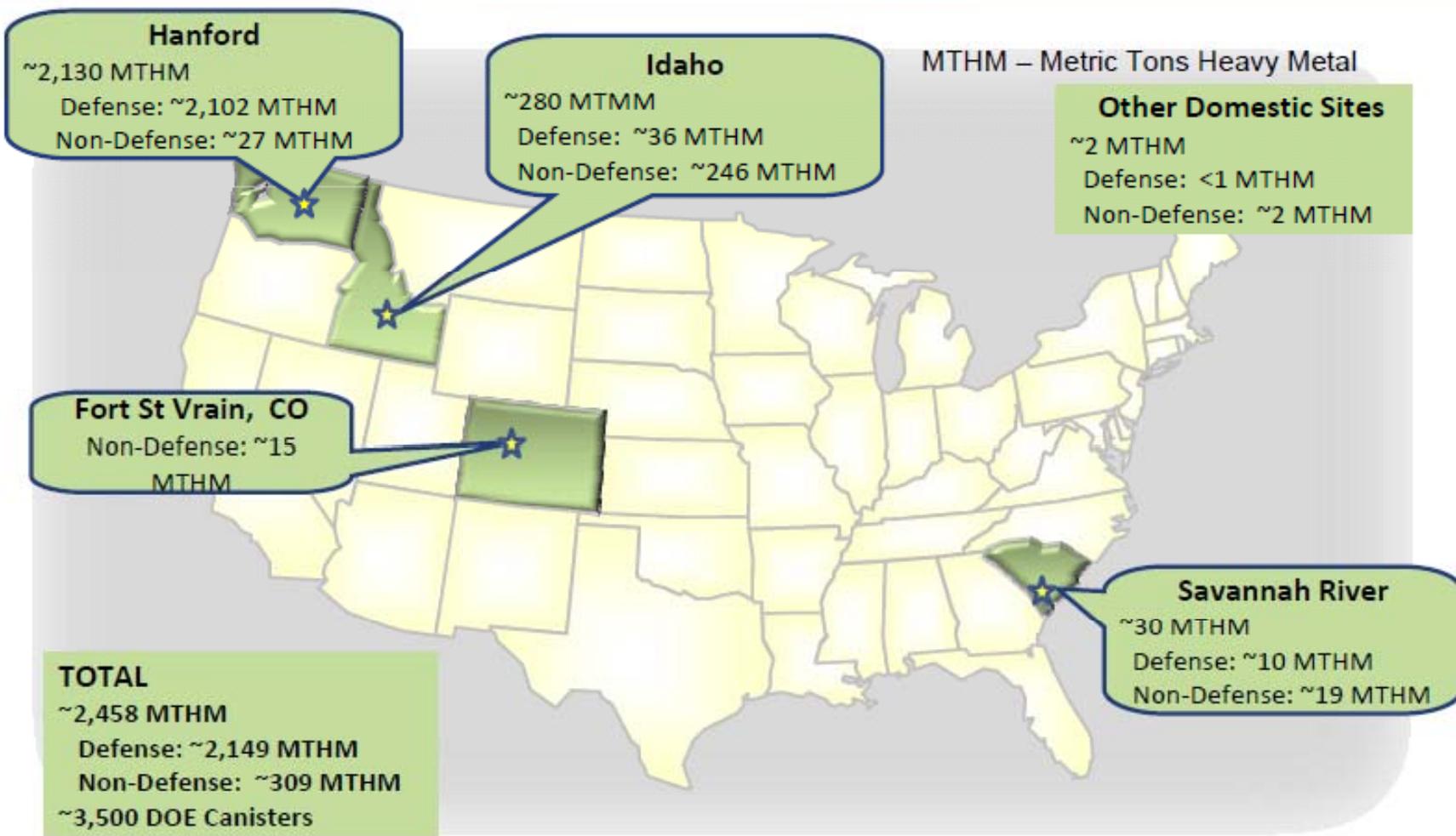
- △ 0-9
- ▲ 10-19
- ▲ 20-29
- ▲ 30-39

Number of Reactors

- 0
- 10
- 42
- 52

Source: U.S. Nuclear Regulatory Commission

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



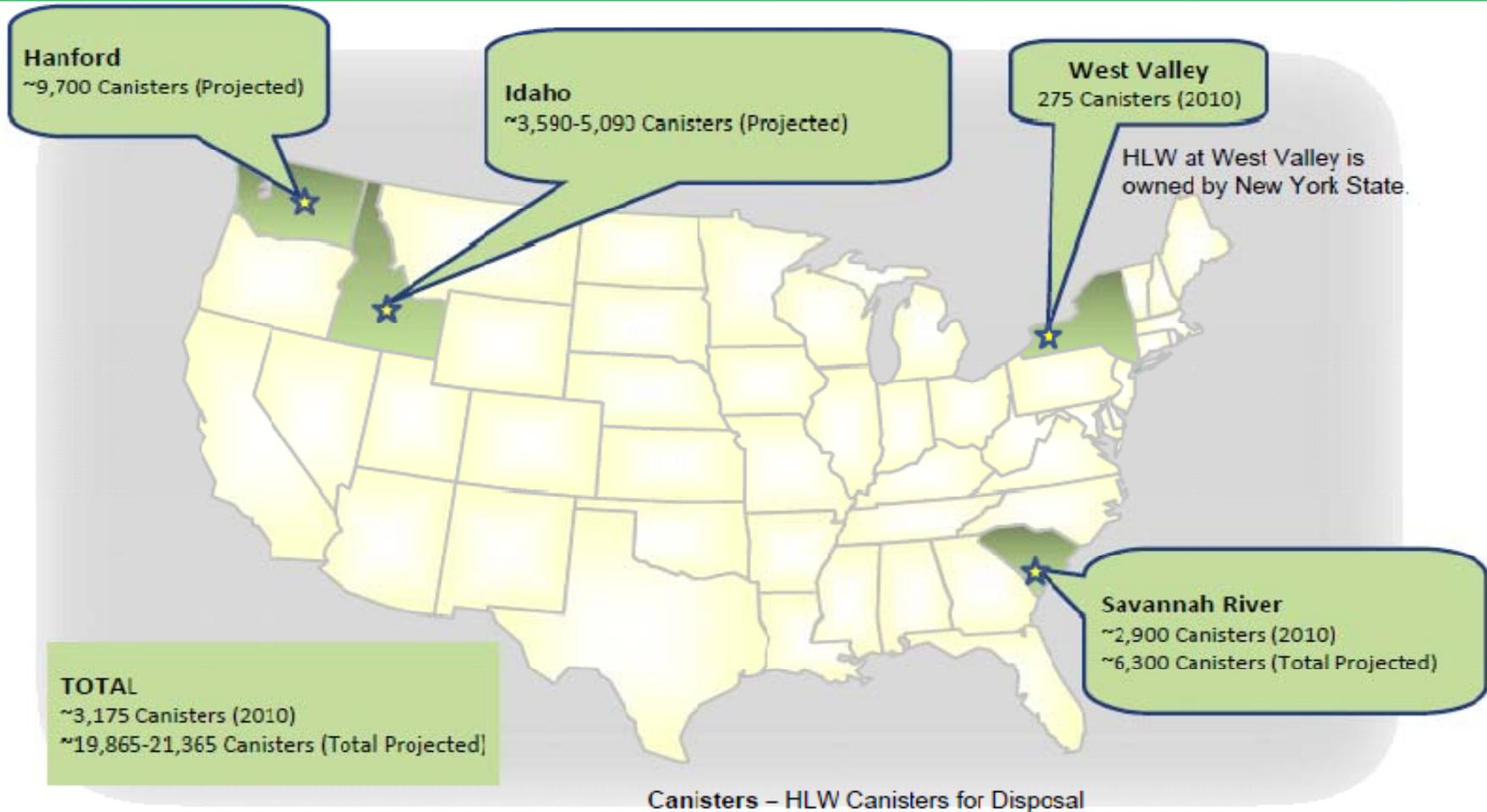
**EM Environmental Management**

safety ❖ performance ❖ cleanup ❖ closure



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

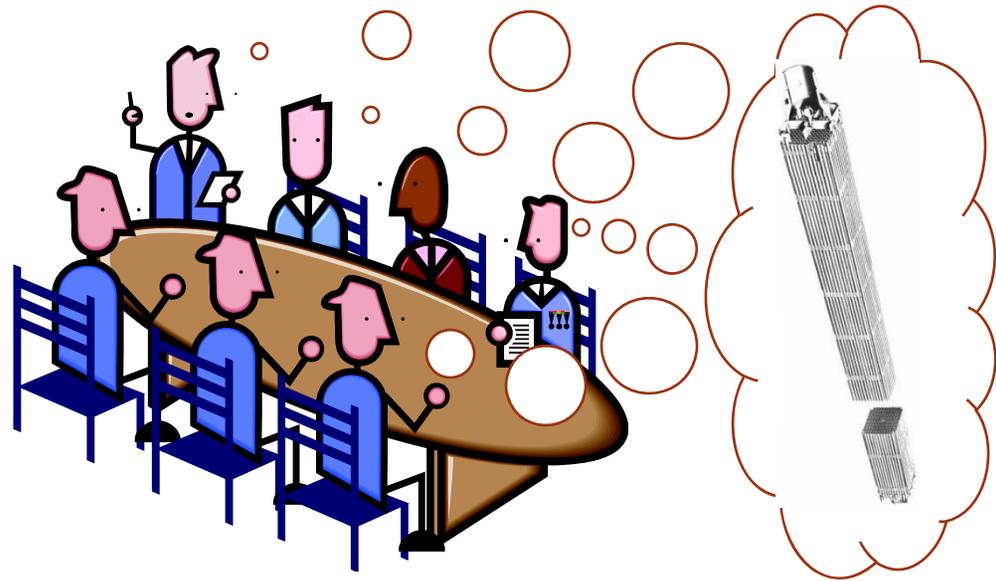
- Adaptive
- Staged
- Consent-based
- Transparent
- Standards-and science-based



# Draft Report – Overview of 7 Key Recommendations

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

- Transportation
- Storage
- Disposal



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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



## 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

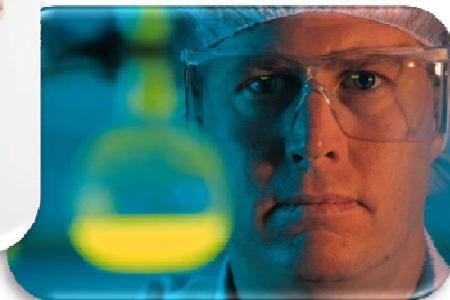
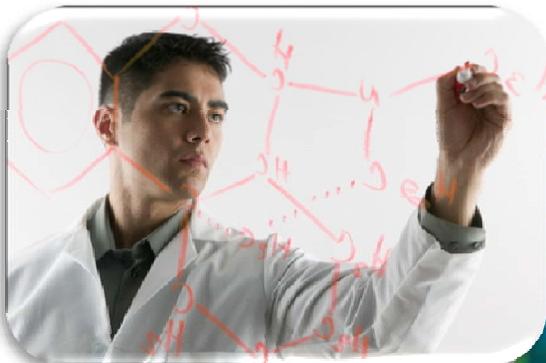
- Current NRC and EPA division of regulatory responsibilities appropriate
  - Develop new site-independent safety standards
  - Solicit input from all relevant constituencies



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# Draft Report – Additional Findings and Recommendations

- Clarify and align of safety and health agency jurisdictions
- New site-independent safety standards for protecting nuclear workers
  - Coordinated joint process solicits input from relevant constituencies
  - Uniform levels of safety and health undertaken with federal, industry, and joint labor–management leadership



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## 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

- 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 insure 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

- 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



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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



# Draft Report – Additional Findings and Recommendations

- Expediently resolve ongoing fuel litigation between the Department of Energy and the utilities

|   |                       |
|---|-----------------------|
| Standard contracts  | 76                    |
| Reactors covered by contracts   | 118                   |
| Cases filed through 2010  | 74                    |
| •Second-round   | (6)                   |
| Claims  | \$6.4 billion         |
| Voluntarily withdrawn   | 7                     |
| Settled   | 12                    |
| Separate settlement agreements  | 8                     |
| Reactors covered by settlements   | 47                    |
| Final judgments   | 28                    |
| •Unappealable   | (6)                   |
| •On appeal  | (22)                  |
| Pending before the trial court  | 27                    |
| DOJ trials through 2010   | 27                    |
| Litigation costs through 2010<br>(Experts and support; no DOJ or DOE staff) | \$168 million         |
| DOJ trials expected 2011 through 2012                                       | 12                    |
| Awards (including still on appeal)  | \$2.2 billion         |
| Damage payments through 2010  | \$956 million         |
| <b>Estimated total damages (if acceptance starts in 2020)</b>               | <b>\$16.2 billion</b> |
| <b>Estimated increase for each year slippage</b>                            | <b>\$500 million</b>  |



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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



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# 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



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# 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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