



U.S. DEPARTMENT OF
ENERGY

Nuclear Energy

U.S. Nuclear Power Policy and R&D Programs

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**Nuclear Infrastructure Council
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Fukushima Dai-ichi – U.S. Response

- President Obama asked the Nuclear Regulatory Commission *“to do a comprehensive review of the safety of our domestic nuclear plants in light of the natural disaster that unfolded in Japan”*
- Secretary Chu stated that *“the Administration is committed to learning from Japan’s experience as we work to continue to strengthen America’s nuclear industry”*
- Marvin S. Fertel, President & CEO Nuclear Energy Institute *“ The industry’s highest priority is the safe operation of the 104 reactors in 31 states and we will incorporate lessons learned from this accident at American nuclear energy facilities”*
- DOE’s Office of Nuclear Energy is reviewing its research portfolio





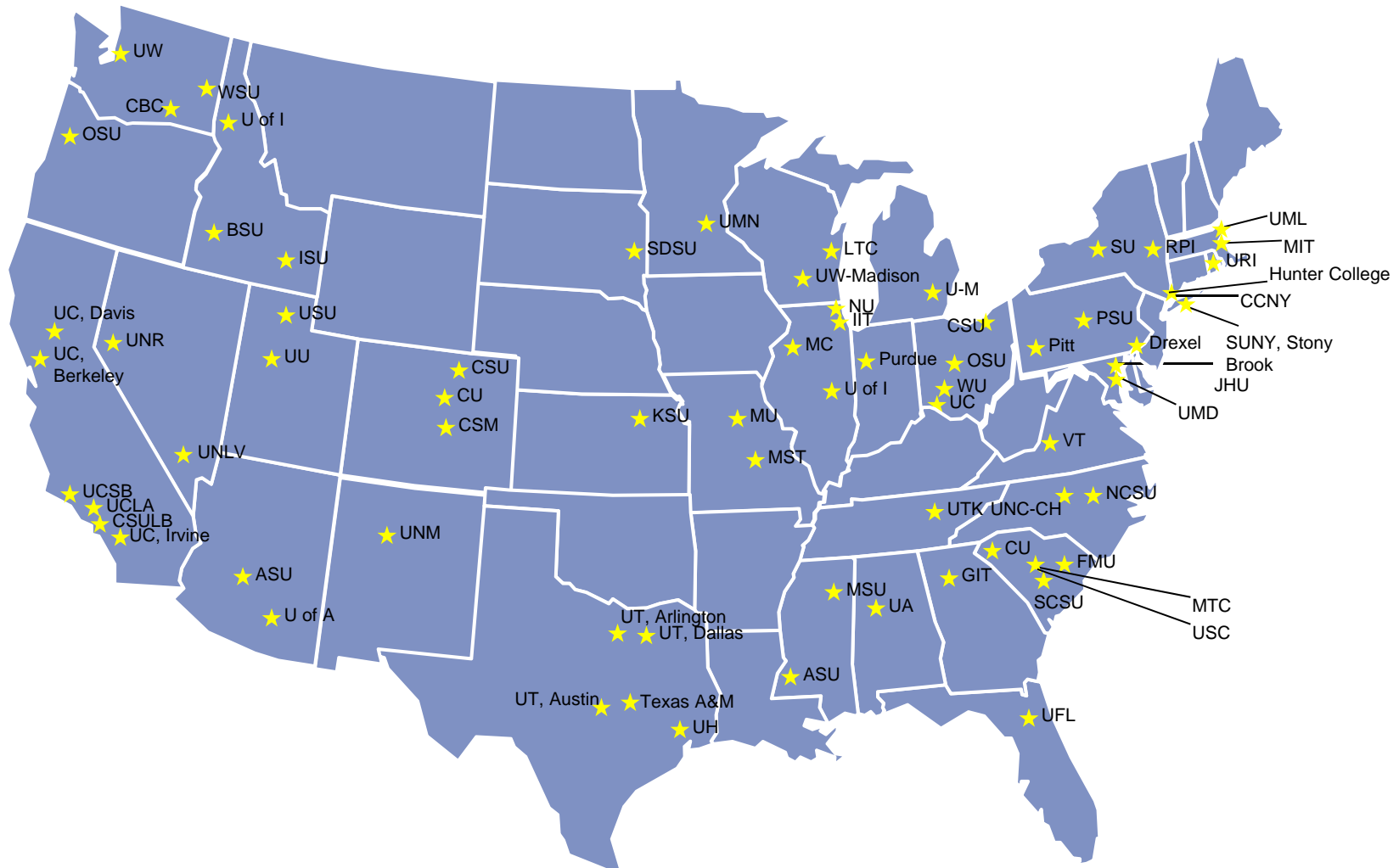
Post - Fukushima DOE/NE Research Responses:

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- **Reducing the need for Operator Actions in Accident Response enhances overall safety.**
 - Passive Systems enhance safety
 - AP1000, ESBWR, SMRs, HTGRs
 - Better understanding of dry cask storage systems.
 - **Re-engineering barriers can reduce complications.**
 - SiC cladding
 - Enhanced fuel properties
 - **Re-evaluation of potential natural phenomena.**
 - Re-evaluation of U.S. seismic criteria
 - **Targeted use of Modeling and Simulation.**
 - Improved modeling of operating reactors
 - **Enlistment of the University Community.**



Nuclear Energy University Programs FY 09- FY 11

■ Over \$170 Million in Competitive Awards to U.S. Universities (total: 72) and Students





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Growing Interest in Small Modular Reactors (SMRs)

- **Growing global interest is motivated by economic, environmental and energy security concerns**

- **Potential benefits include**
 - Enhanced safety and robustness from simplified designs
 - Reduced capital cost
 - Enhanced security from below-grade siting
 - More flexible siting and deployment options

- **Commercial deployment of U.S. SMR technology can help position America to lead the global clean energy economy**
 - Reestablish U.S. technical leadership and innovation
 - Create high quality jobs
 - Improve U.S. global competitiveness



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Draft Blue Ribbon Commission Report: Key Recommendations (July 29, 2011)

- A New Consent- Based Approach to Siting
- A New Organization to Implement the Waste Management Program
- Access to Utility Waste Disposal Fees for their Intended Purpose
- Prompt Efforts to Develop One or More Permanent Geologic Disposal Facilities
- Prompt Efforts to Develop One or More Consolidated Interim Storage Facilities
- Support for Advances in Nuclear Energy Technology and for Workforce Development
- Active U.S. Leadership in International Efforts to Address Safety, Non-Proliferation and Security Concerns



FY 2011-12 Budget Summary

Nuclear Energy

Program	FY 2011 Adjusted	FY 2012 Request	FY 2012 House	FY 2012 Senate
Research, Development, & Demonstration				
Integrated University Program	-	-	5,000	-
LWR SMR Licensing Technical Support	-	67,000	67,000	-
Reactor Concepts RD&D	164,706	125,000	136,986	31,870
Fuel Cycle Research and Development	182,428	155,010	132,000	187,917
Nuclear Energy Enabling Technologies	50,891	97,364	95,014	68,880
International Nuclear Energy Coop.	2,994	3,000	3,000	3,000
Infrastructure				
Radiological Facilities Management	51,715	64,888	49,000	69,888
Idaho Facilities Management	183,604	150,000	155,000	136,000
Idaho Sitewide S&S	88,200 ^a	98,500	93,350	93,350
Program Direction	86,279	93,133	92,000	86,279
Use of Prior Year Balances	-	-1,367	-1,367	-
Rescission of Prior Year Balance	-6,300	-	-	-
Total NE:	804,571	852,528	826,983	677,184