U.S. DEPARTMENT OF ENERGY | Nuclear Energy

Office of Nuclear Energy Update

Dr. Peter Lyons
Assistant Secretary for Nuclear Energy
U.S. Department of Energy

Nuclear Energy Advisory Committee
Washington, DC
December 13, 2011

U.S. DEPARTMENT OF ENERGY
Nuclear Energy

Overview of NEAC Rotation Policy

NEAC Statistics

- Prior to new members being added in 2009, the average term for the Committee was about 10 years
- Reappointed all 16 members with 5 rotating out by September 30th 2012
- Rotating Members: John Ahearne (Vice-Chair), Marv Fertel, Thomas Cochran, Allen Sessoms, and Neil Todreas
- Added Members: Matthew Bunn, Margaret Chu, Susan Eisenhower, Mujid Kazimi, Regis Matzie, Richard Meserve, and Alfred Sattelberger
  - Disciplines of new members include: Applied Physics, Fuel Element Design, Energy Efficiency, National Security, Advanced Reactor Development, and Nuclear Non-proliferation Issues.
- Total of 18 members by October 1, 2012

Policy

- Charter states, "The Committee will be comprised of approximately 20 members appointed by the Secretary of Energy."
- Charter states that members will serve on the committee for a 5 year term with one renewal. At the end of the term (a total of 10 years), members will rotate out of the committee and new members will be appointed.
- Rotation will maintain a broad range of perspectives and opinions and retain diverse backgrounds that range from national laboratory, U.S. government, and industry, and of course, strong scientific and technological credentials.

U.S. DEPARTMENT OF ENERGY
Nuclear Energy

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 the104 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

U.S. DEPARTMENT OF ENERGY
Nuclear Energy

Post - Fukushima DOE/NE Research Responses:

- **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**.

U.S. DEPARTMENT OF ENERGY
Nuclear Energy

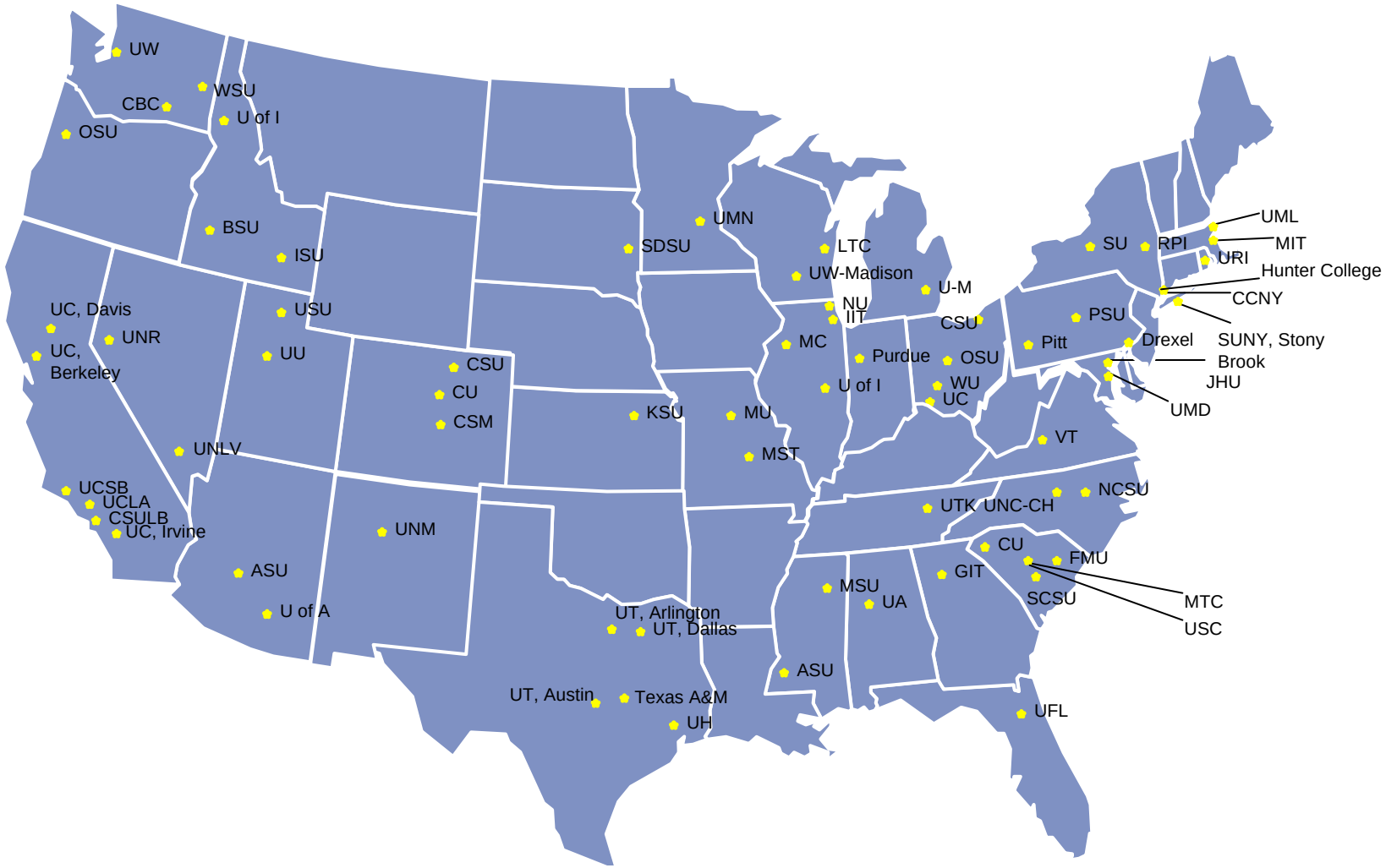
Draft Blue Ribbon Commission Report: Key Recommendations (July 29, 2011)

- 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 Effort 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

U.S. DEPARTMENT OF ENERGY
Nuclear Energy

Nuclear Energy University Programs FY 09- FY 11

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



U.S. DEPARTMENT OF ENERGY
Nuclear Energy

Recent Changes to NEUP Processes

- **R&D Solicitations**
  - Awarded first two IRPs in September 2011
  - Lowered R&D project funding baselines to align with budget target
  - Limited researcher/PI project participation
  - NEUP/Advanced Test Reactor (ATR) National Scientific User Facility (NSUF) alignment
- **International Collaborations - Increased emphasis**
- **Performance metrics to be implemented**
- **Expand communication tools**
  - Social media and web-based/videoconferencing (e.g., proposal writing training at ANS included webinar)

U.S. DEPARTMENT OF ENERGY
Nuclear Energy

AP1000 Construction Sanmen and Vogtle

Sanmen- August 2011

Vogtle- August 2011

U.S. DEPARTMENT OF ENERGY

Nuclear Energy

FY 2011-12 Budget Summary

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**

a) Reflects $10.7M transfer from NNSA Weapons Activities appropriation