



U.S. DEPARTMENT OF
ENERGY

Nuclear Energy

Office of Nuclear Energy Update

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Assistant Secretary for Nuclear Energy
U.S. Department of Energy

Nuclear Energy Advisory Committee
Washington, DC
June 12, 2012



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President Obama's Nuclear Energy Goals

"We can build the next-generation nuclear reactors that are smaller and safer and cleaner and cheaper."

The Ohio State University-March 22, 2012



"With rising oil prices and a warming climate, nuclear energy will only become more important. That's why, in the United States, we've restarted our nuclear industry as part of a comprehensive strategy to develop every energy source."

Nuclear Security Summit-March 26, 2012





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Secretary Chu Visits Vogtle

“The resurgence of nuclear energy starts here in Georgia.”

“Nuclear energy is a critical part of President Obama's all-of-the-above energy strategy.”

**Secretary Steven Chu
February 15, 2012**





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Recent Key Events

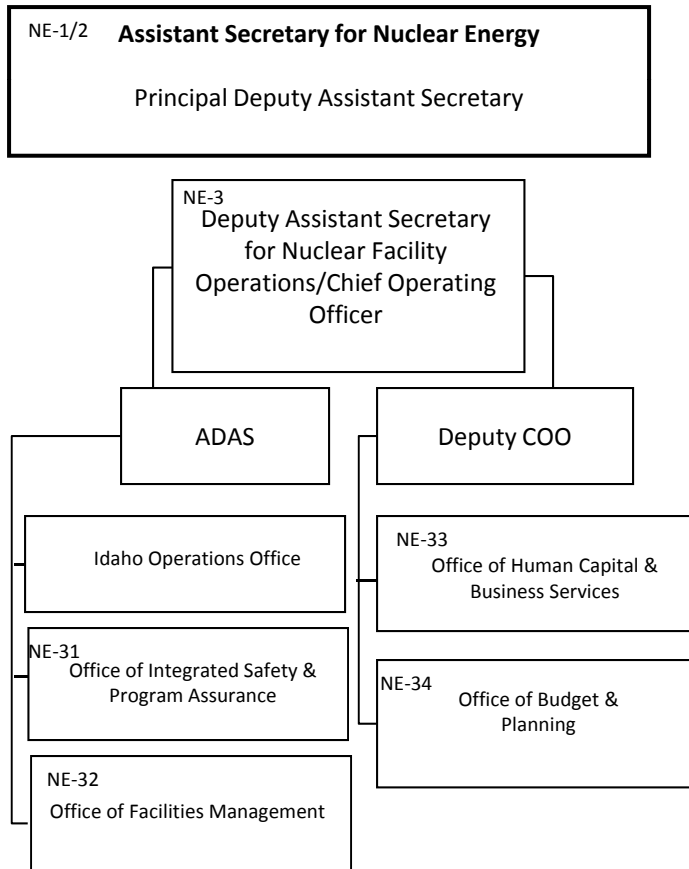
- NE Reorganization
- NEAC Membership
- Blue Ribbon Commission on America's Nuclear Future- Final Report Issued January 26, 2012
- Small Modular Reactor Program Approved
- Fuels with Enhanced Accident Tolerance
- NEUP Awards
- FY 13 Budget



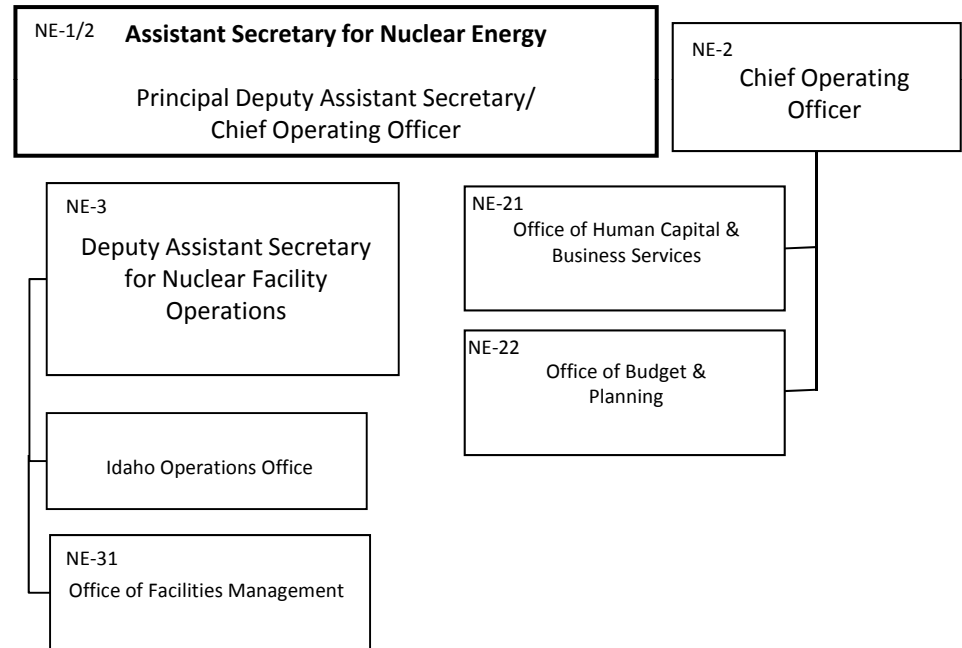
Proposed Organizational Realignment

The roles and responsibilities of the Principal Deputy Assistant Secretary and the Chief Operating Officer will be consolidated into a single position, NE-2.

Current



Proposed

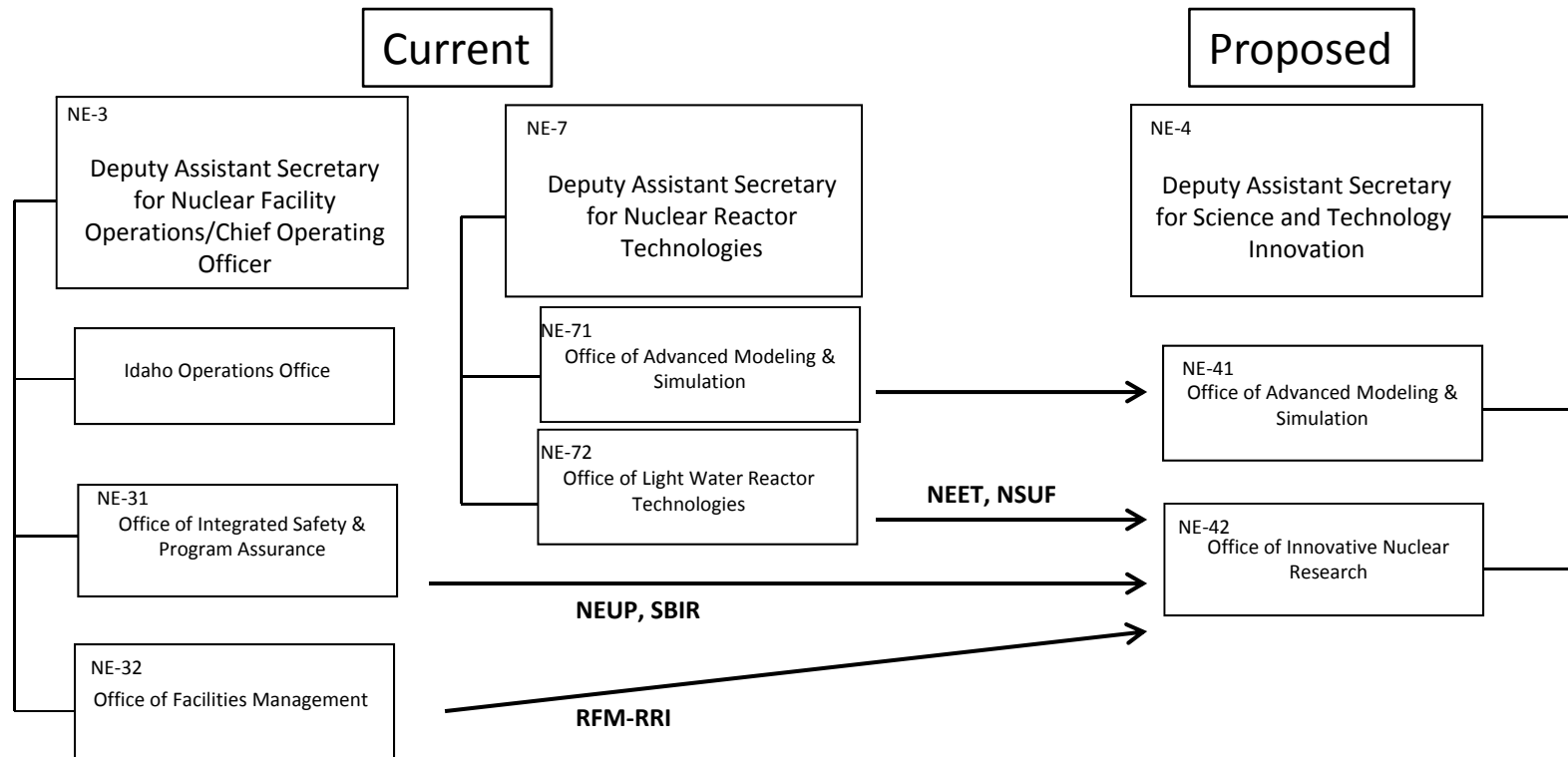




Proposed Organizational Realignment

A new Deputy Assistant Secretary for Innovative Science and Technology, NE-4, will be established

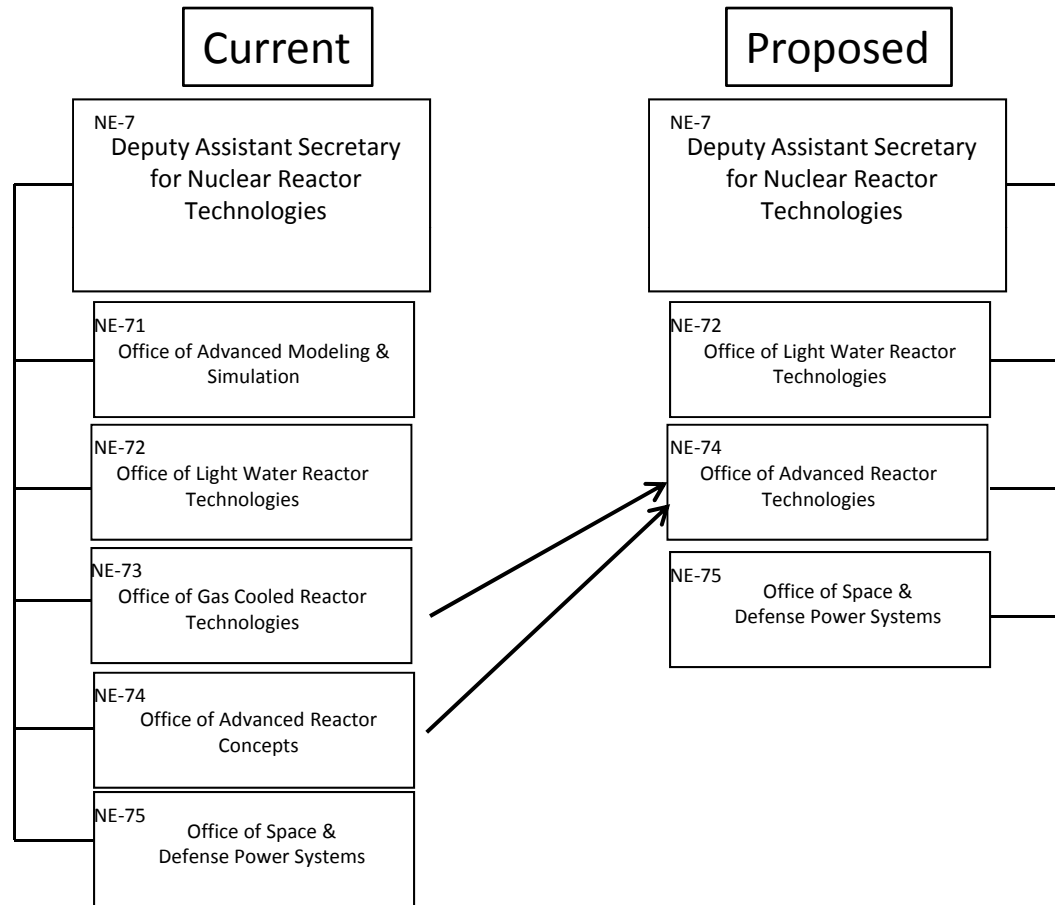
- ❑ the Office of Advanced Modeling and Simulation will be transferred (from NE-7)
- ❑ a new Office of Innovative Nuclear Research will be established and will report to the new DAS





Proposed Organizational Realignment

Nuclear Energy

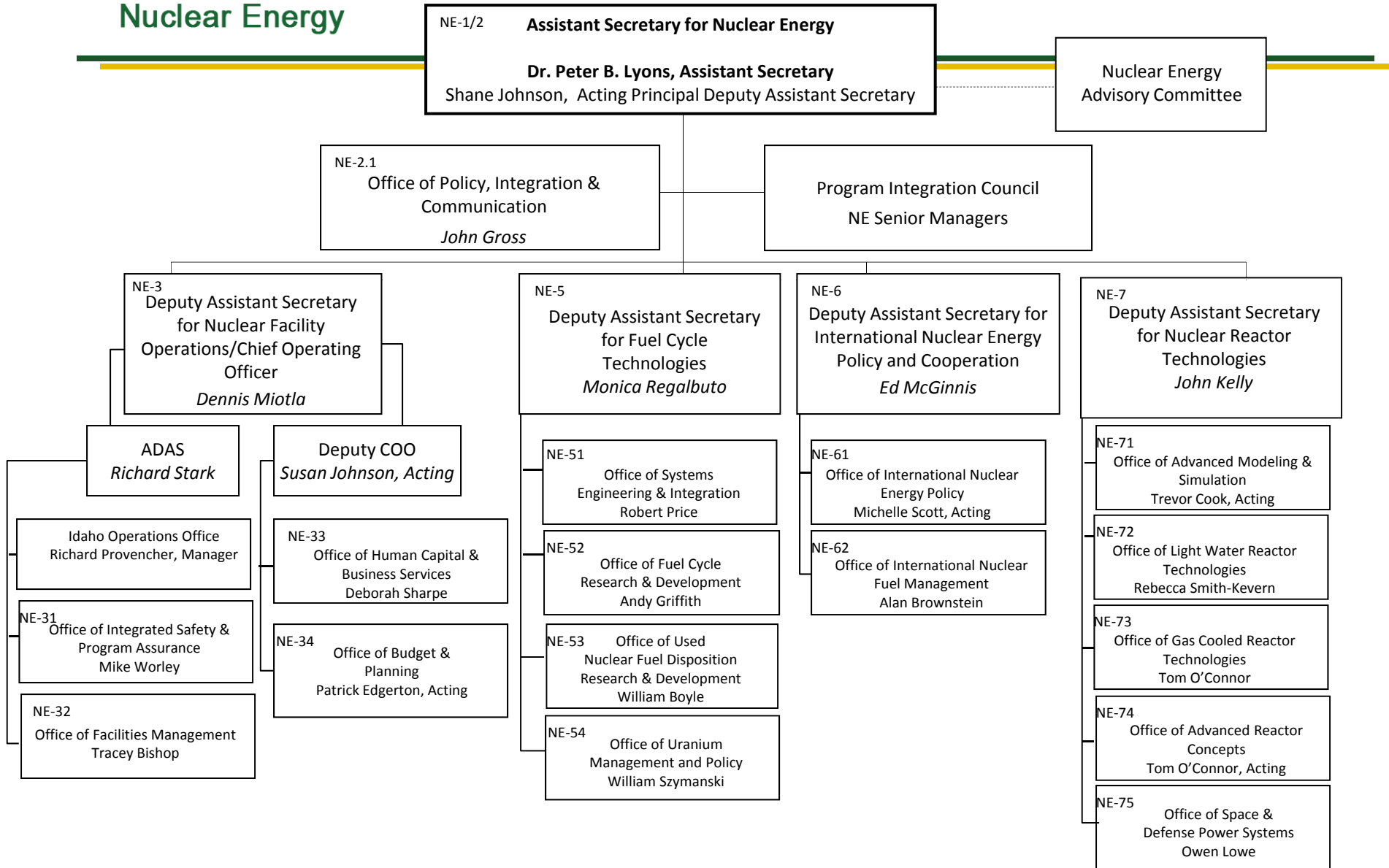




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Current Organization

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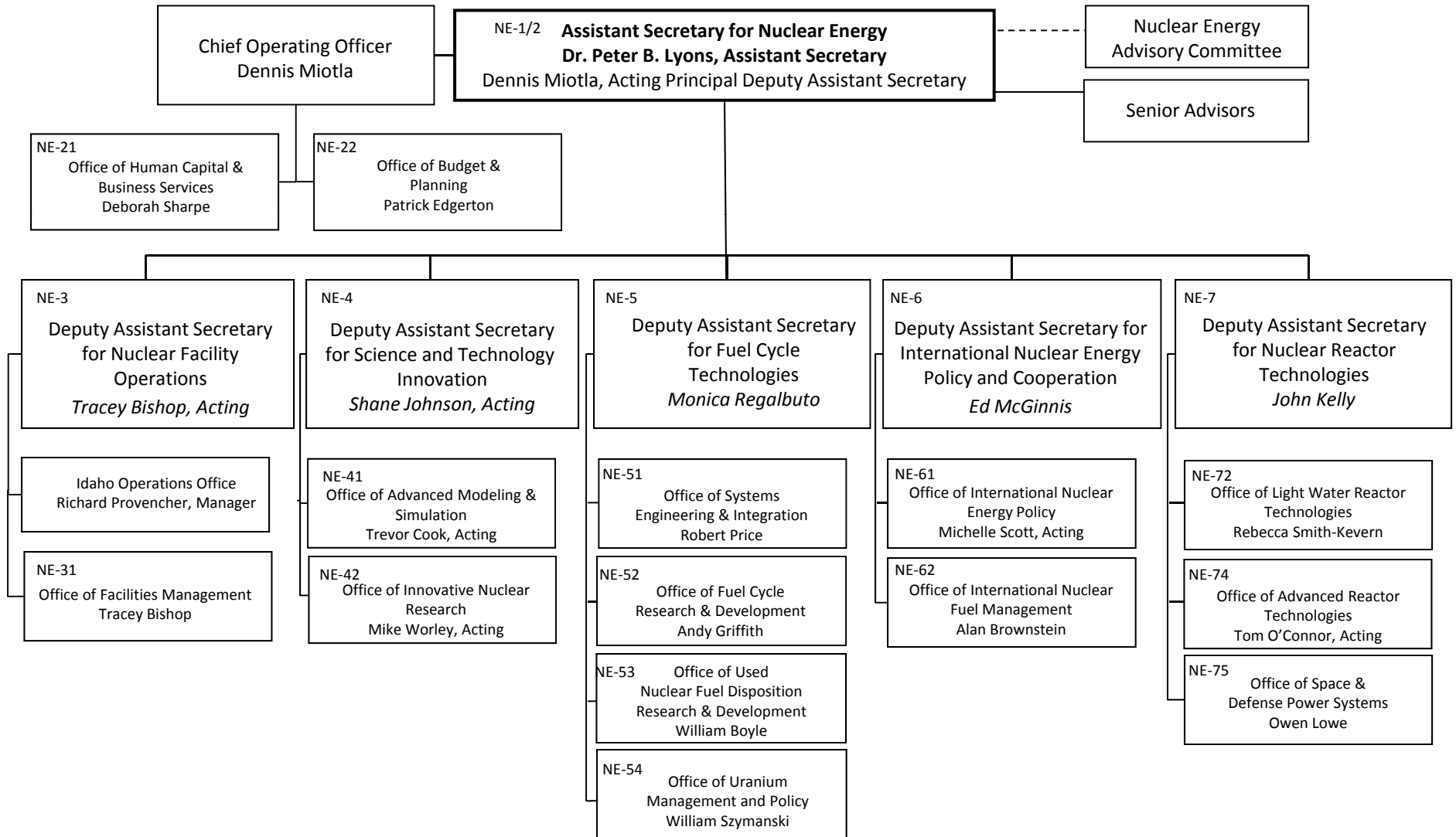




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Proposed Organization





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NEAC Membership List Going Forward

Outgoing NEAC Members

1. John Ahearne
2. Allen Sessoms
3. Marvin Fertel
4. Thomas Cochran
5. Neil Todreas

New Members

1. Richard Meserve
2. Susan Eisenhower
3. Matthew Bunn
4. Regis Matzie
5. Margaret Chu
6. Alfred Sattelberger
7. Mujid Kazimi

Outgoing Chair and Vice Chair

- William Martin
- John Ahearne

New Chair and Co-Chair

- Richard Meserve
- Susan Eisenhower

Notes:

- Outgoing members officially rotate out of NEAC on September 30, 2012
- Total number of NEAC members is 23 and it will decline to 18 on October 1, 2012

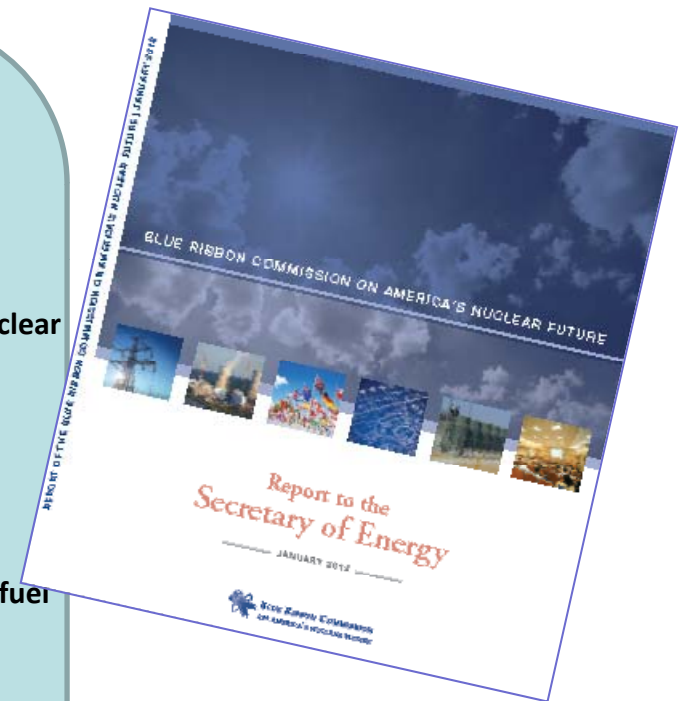


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Blue Ribbon Commission Recommendations

1. A new, consent-based approach to siting future nuclear waste management facilities.
2. A new organization dedicated solely to implementing the waste management program and empowered with the authority and resources to succeed.
3. Access to the funds nuclear utility ratepayers are providing for the purpose of nuclear waste management.
4. Prompt efforts to develop one or more geologic disposal facilities.
5. Prompt efforts to develop one or more consolidated storage facilities.
6. Prompt efforts to prepare for the eventual large-scale transport of spent nuclear fuel and high-level waste to consolidated storage and disposal facilities when such facilities become available.
7. Support for continued U.S. innovation in nuclear energy technology and for workforce development.
8. Active U.S. leadership in international efforts to address safety, waste management, non-proliferation, and security concerns.





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Secretary of Energy Dr. Steven Chu Statement on the BRC Recommendations



The Department recognizes that the BRC Report represents *“a critical step toward finding a sustainable approach to disposing used nuclear fuel and nuclear waste.”*

The Department acknowledges that *“the specifics of a new strategy for managing our nation’s used nuclear fuel will need to be addressed in partnership with Congress.”*

The Department *“will work in parallel to begin implementing the new strategy”* by taking sensible steps toward the implementation of near-term recommendations.



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Small Modular Reactors

■ Many potential benefits from SMRs:

- Enhanced safety from integral design
- Significant job creation opportunities
- Shorter construction time – less financial risk
- Lower capital cost – less financing required
- Could be air-cooled
- Security advantages from underground siting
- Could replace aging fossil plants – provide low-carbon energy to address GHG goals



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Advanced LWR Fuels with Enhanced Accident Tolerance

Vision:

LWR fleet with enhanced accident tolerance providing a substantial fraction of the national clean energy needs

Mission:

Develop advanced fuels and non-intrusive reactor system components (e.g. instruments, auxiliary power sources) with improved performance, reliability and safety characteristics during normal operations and accident conditions

10-year Goals

- Insert a LTA into a operating commercial reactor
- Demonstrate non-intrusive components that enhance safety (e.g. instrumentation with enhanced accident tolerance)

Must be acceptable to vendors/utilities

- Better safety performance (e.g. during normal, design basis accidents and beyond design basis accidents)
- Reliability and fuel configurations similar to current fleet
- Acceptable economics
- Favorable neutronics and licensing characteristics



FY 2012-2013 Budget Summary

Program	FY 2012 Adjusted	FY 2013 Request	FY 2013 House Appropriations Committee	FY 2013 Senate Appropriations Committee
Integrated University Program	5,000	0	5,000	0
SMR Licensing Technical Support	67,000	65,000	114,000	65,000
Reactor Concepts RD&D	114,871	73,674	126,660	73,674
Fuel Cycle R&D	186,260	175,438	138,716	193,138
Nuclear Energy Enabling Technologies	74,670	65,318	75,000	65,318
Radiological Facilities Management	69,510	51,000	51,000	66,000
Idaho Facilities Management				
<i>O&M</i>	154,097	144,220	154,220	144,220
<i>13-D-905, RHLLW</i>		6,280	6,280	6,280
<i>13-E-200, APIE</i>		1,500	1,500	1,500
Idaho Facilities Management	154,097	152,000	162,000	152,000
Idaho Sitewide Safeguards and Security	93,350	95,000	93,350	93,000
International Nuclear Energy Cooperation	2,983	3,000	3,000	3,000
Program Direction	91,000	90,015	90,015	92,015
Nuclear Waste Disposal			25,000	
Use of Prior Year Balances/Reprogramming				(17,700)
Total, Office of Nuclear Energy	858,741	770,445	883,741	785,445

Other Defense Activities
 Prior Year Nuclear Waste Fund
 Nuclear Waste Disposal (New)