U.S. DEPARTMENT OF ENERGY | Nuclear Energy

Summary of NE Reorganization and FY 2011 Budget Request

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Office of Nuclear Energy
U.S. Department of Energy

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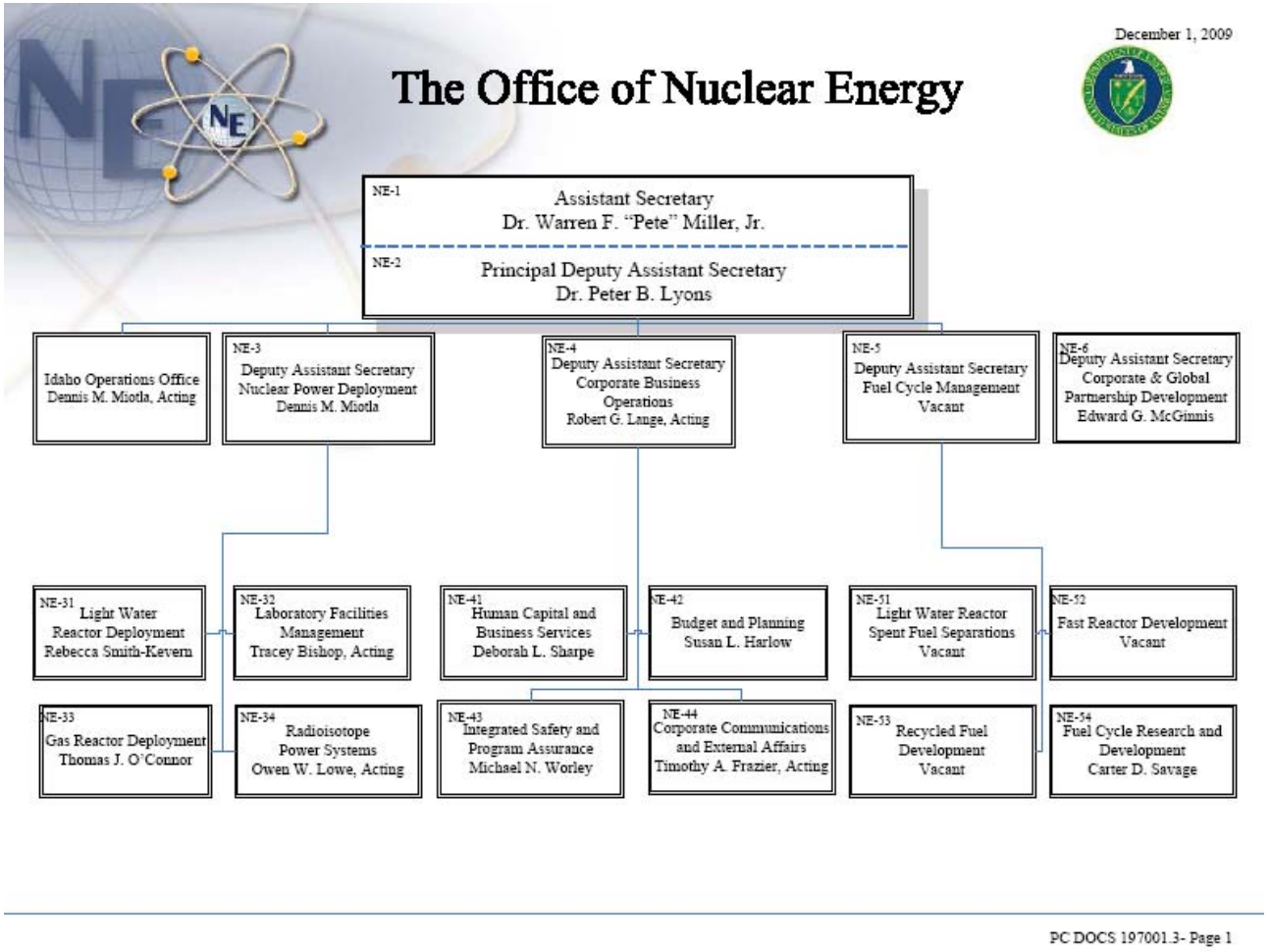
Current Official NE Organization



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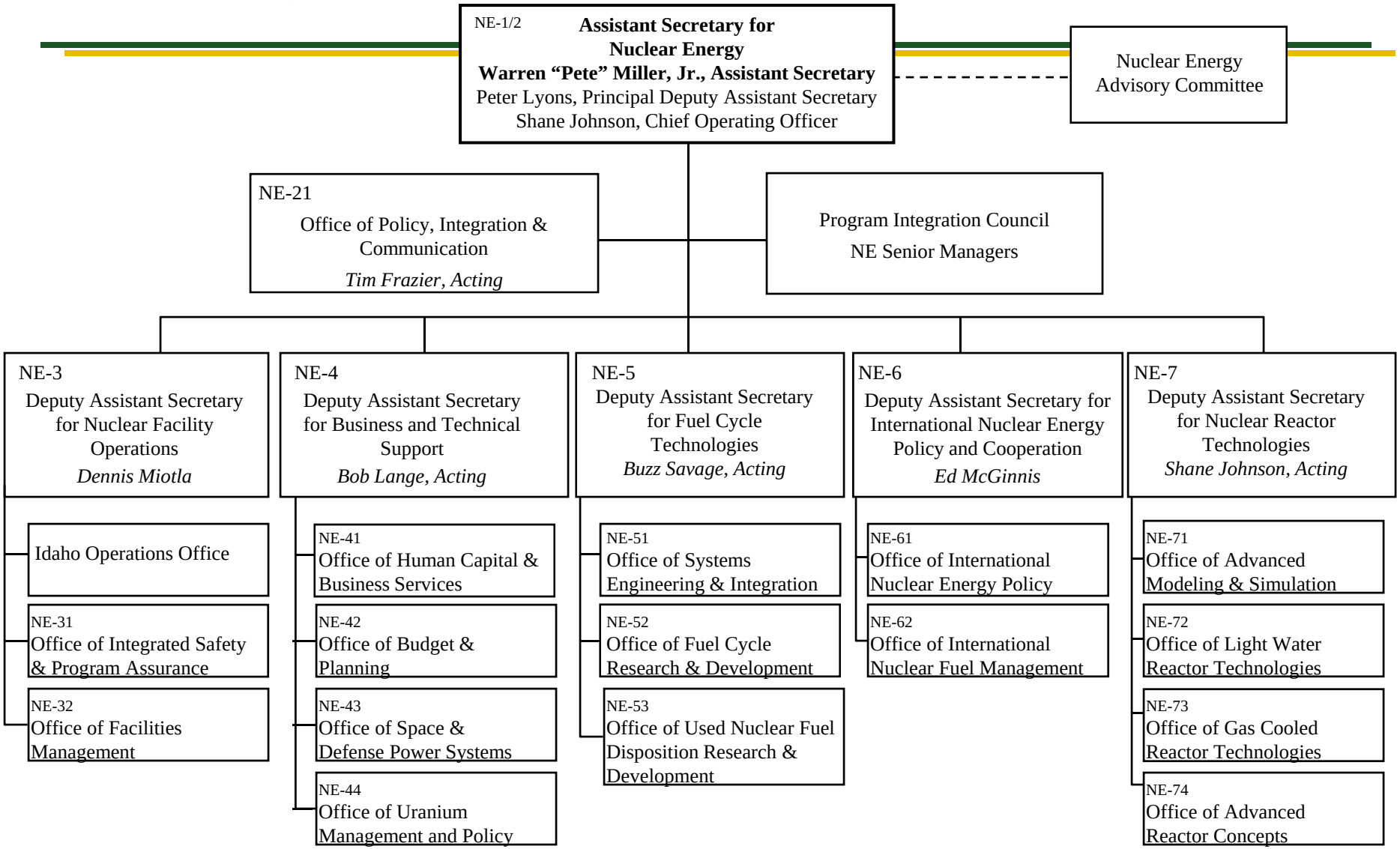
Proposed Re-organization for the Office of Nuclear Energy



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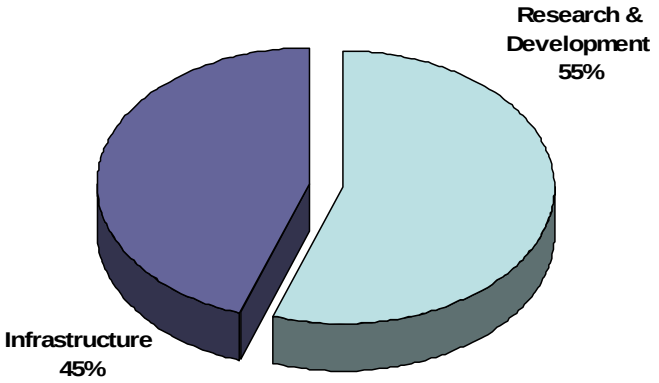
FY2011 Budget Request Breakdown

Program:	FY 2010 Approp	FY 2011 Request
Research & Development		
Nuclear Energy Enabling Technologies	**0**	**99,300[a]**
Integrated University Program	**5,000**	**0**
Re-Energyse	**0**	**5,000**
Reactor Concepts RD&D	**0**	**195,000[a]**
Generation IV Nuclear Energy Systems	**220,137**	**0**
Nuclear Power 2010	**105,000**	**0**
Fuel Cycle Research and Development	**136,000**	**201,000[a]**
International Nuclear Energy Cooperation	**0**	**3,000**
Infrastructure		
Radiological Facilities Management	**72, 000**	**66,818**
Idaho Facilities Management	**173,000**	**162,482**
Idaho Sitewide S&S	**83,358**	**88,200**
Program Direction	**73,000**	**91,452**
Congressionally Directed Projects	**2,500**	**0**
Total NE:	**869,995**	**912,252**



a) up to 20% of R&D funds are competitively awarded to universities

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Nuclear Energy Enabling Technologies

Budget Summary $ in thousands		
Program Element	**FY 2010 Approp**	**FY 2011 Request**
Crosscutting Technology Development	0	43,332
Transformative Nuclear Concepts R&D	0	28,888
Energy Innovation Hub for Modeling & Simulation	21,384[a]	24,300
SBIR/STTR	0	2,780
Total:	**21,384**	**99,300**

a) FY2010 funding was in Generation IV Nuclear Energy Systems Program

Mission

- Develop crosscutting technologies that directly support and complement NE's development efforts and encourage transformative, "out of the box" solutions.

FY2011 Planned Accomplishments

- Evaluate innovative materials for use in high radiation/high temperature areas
- Develop improved tools and methods for assessing proliferation risks
- Complete R&D roadmap and initiate competitive projects to improve reactor component manufacturing
- Develop advanced systems to control and monitor plant materials and performance
- Award investigator-initiated projects across the full range of nuclear energy generation
- Establish an oversight board and continue work towards achieving the goals of the Modeling & Simulation Hub

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Reactor Concepts Research, Development, and Demonstration

Budget Summary
$ in thousands

Program Element	FY 2010 Approp	FY 2011 Request
Small Modular Reactors (SMR)	0	38,880
Next Generation Nuclear Plant (NGNP) Demonstration Project	164,268[a]	103,032
Light Water Reactor Sustainability	9,700[a]	25,758
Advanced Reactor Concepts (formerly Gen IV R&D)	18,261[a]	21,870
SBIR/STTR	6,164[a]	5,460
Total:	**198,753[a]**	**195,000**

a) FY2010 funding was in Generation IV Nuclear Energy Systems Program

Mission

- Develop new and advanced reactor designs and technologies that advance the state of reactor technology to broaden applicability, improve competitiveness, contribute to our nation's energy portfolio, and address environmental challenges.

FY2011 Planned Accomplishments

- Implement workshop recommendations to facilitate SMR design certifications
- Begin NGNP Phase 2 design and licensing activities under a public/ private partnership
- Develop technologies that support safe and economical long-term operation of the existing nuclear fleet
- Evaluate innovative reactor systems to identify promising areas for further R&D

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Fuel Cycle Research and Development

Budget Summary
$ in thousands

Program Element	FY 2010 Approp	FY 2011 Request
Separations and Waste Forms	41,615	31,324
Advanced Fuels	29,651	40,000
Transmutation R&D	4,288	0
Modeling & Simulation	26,009	15,570
Systems Analysis & Integration	14,783	15,664
Materials Protection, Accountancy & Controls for Transmutation	6,826	7,814
Used Nuclear Fuel Disposition	9,124	45,000
Modified Open Cycle	0	40,000
SBIR/STTR	3,704	5,628
Total:	**136,000**	**201,000**

Mission

- Research and develop nuclear fuel and waste management technologies that will enable a safe, secure, and economic fuel cycle.

FY2011 Planned Accomplishments

- Examine 3 fuel cycle strategies: once-through, modified open, and full recycle.
- Continue to develop advanced concepts for electrochemical processing and alternative waste forms.
- Begin to develop innovative fuel systems that support advanced fuel cycles.
- Provide technical expertise to inform decision-making for storage, transportation, and disposal of used nuclear fuel and radioactive waste.

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International Nuclear Energy Cooperation

Budget Summary $ in thousands	FY 2010 Approp	FY 2011 Request
International Nuclear Energy Cooperation	0	3,000
Total:	**0**	**3,000**

Mission

- Support the NE program offices in implementing international cooperative R&D activities to further NE's overall mission and provide advice and support to DOE and other Federal agencies engaging in international civil nuclear activities.

FY2011 Planned Accomplishments

- Effectively support and coordinate international programmatically-driven civil nuclear energy research, development and demonstration-related requirements and activities
- Ensure that the Department effectively implements, and appropriately meets, its civil nuclear energy commitments pursuant to its bilateral civil nuclear energy agreements and research initiatives, with countries such as France, China, Japan, India, Russia, Brazil, Argentina and South Korea
- Support the USG on international civil nuclear energy matters and initiatives as a technically-based expert office within the U.S. Department of Energy.