

# Report of the Fuel Cycle Subcommittee of NEAC

Burton Richter (Chairman)

Darleane Hoffman

Raymond Juzaitis

Sekazi Mtingwa

Ron Omberg

Joy Rempe

Dominique Warin

June 15, 2011

Washington, D.C.

# Used Nuclear Fuel Program

- Yucca Mt. still confused situation
- New Site cannot be opened for at least 20-30 years
- Generic Issues for now; ex. Storage and Transport
- Role of the Nuclear Waste Technology Review Board?

# Recommendation

- Since NE will have responsibilities in the UNF disposition program, the roles and responsibilities of the NWTRB and NEAC and its subcommittees need to be clarified.

# Systems Engineering and FCRD

- Criteria for Relative Ranking
  - Nuclear Waste Management
  - Safety
  - Environmental Impacts
  - Fuel Resource Use
  - Security Risk
  - Nuclear Regulatory Familiarity
  - Proliferation Risk
  - First of a Kind Investment
  - Compatibility with Existing Infrastructure

# Recommendations for Systems Studies

- 1) NE leadership should be involved in reviewing the weighting of criteria used in the systems studies since some of these are policy dependent and the weightings can strongly affect the relative scores of various options.
- 2) NE and NNSA should try again to agree on criteria to be used in evaluating proliferation resistance of fuel cycle and reactor technologies.

# University Programs

- Big budget variations 'till recently
- Congress pressured DOE 'till 2008 when the commitment was made to 20% of R&D plus \$5million for fellowships and scholarships
- Has become a strong program and increased student enrollment (\$56 million 2010)
- OMB zeroed out the \$5million for 2012
- Large uncertainty in budget for 2012

# Recommendation on University Program

- An appropriate balance between NEUP and laboratory funding needs to be maintained, bearing in mind that sharp cutbacks in university programs can have a long-term effect on the attractiveness of the nuclear field.

# Summary of Recommendations

- Since NE will have responsibilities in the UNF disposition program, the roles and responsibilities of the NWTRB and NEAC and its subcommittees need to be clarified.
- NE leadership should be involved in reviewing the weighting of criteria used in the systems studies since some of these are policy dependent and the weightings can strongly affect the relative scores of various options.
- NE and NNSA should develop a procedure to try again to agree on criteria to be used in evaluating proliferation resistance of fuel cycle and reactor technologies.
- An appropriate balance between NEUP and laboratory funding needs to be maintained, bearing in mind that sharp cutbacks in university programs can have a long-term effect on the attractiveness of the nuclear field.



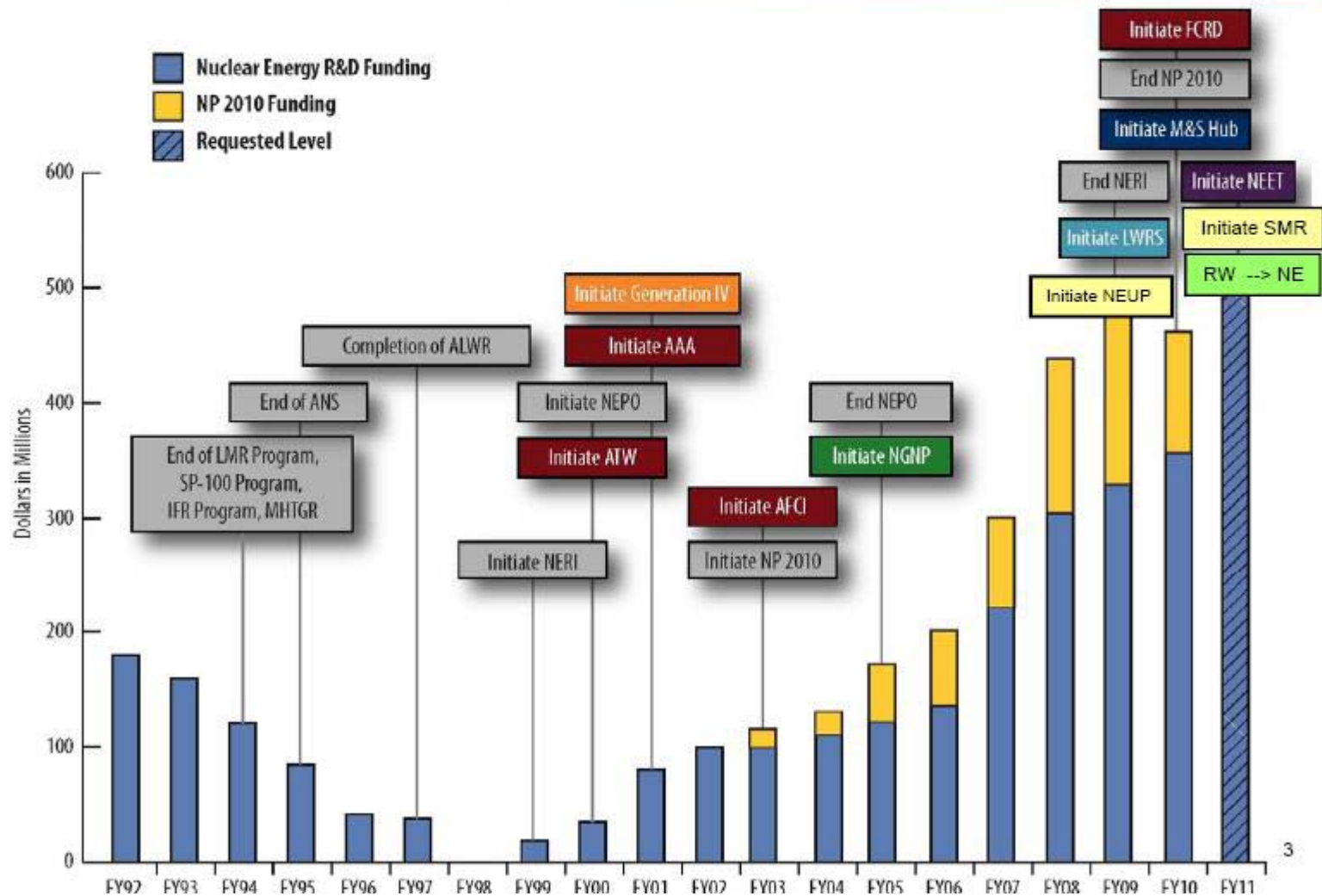
BACKUP



U.S. DEPARTMENT OF  
**ENERGY**

Nuclear Energy

# Funding for Nuclear Energy Research and Development





# ***Nuclear Energy University Program Awards 2009, 2010 – Funding Increases***

FY 2009 NE University Programs Awards		FY 2010 NE University Programs Awards	
University Research & Development (R&D) Awards (from ~20% of the NE R&D budget)	~\$44 million. 71 awards to 31 schools in 20 states.	University R&D Awards (from ~20% of the NE R&D budget)	~\$38 million. 42 awards to 23 schools in 17 states.
University Infrastructure Awards (from ~20% of the NE R&D Budget)	~\$6 million 29 schools in 23 states for scientific equipment	University Infrastructure Awards (from ~20% of the NE R&D Budget)	\$13.2 million 39 schools in 27 states for research reactor upgrades and scientific equipment
University Student Fellowship and Scholarship Awards	\$2.9 million 70 scholarships and 16 fellowships	University Student Fellowship and Scholarship Awards	\$5.0 million 85 scholarships and 32 fellowships
Total	~\$53,000,000	Total	~\$56,200,000

# Fuel Cycle Research and Development FY12 Request

## Budget Summary \$ in thousands

<b>Program Element</b>	<b>FY 2012 Request</b>
Separations and Waste Forms	36,893
Advanced Fuels	40,443
Transmutation R&D	3,109
Systems Analysis & Integration	20,466
Materials Protection, Accountancy & Control Technology	7,864
Used Nuclear Fuel Disposition	37,249
Fuel Resources	4,646
SBIR/STTR	4,340
<b>Total:</b>	<b>155,010</b>

**FY-11 CR \$191 M**