

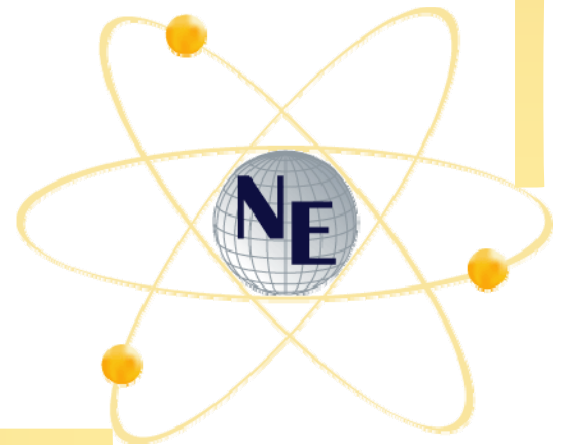
New Reactors

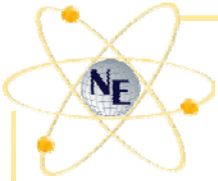
National Radiological Emergency Preparedness Conference

Kenneth Chuck Wade
Office of Light Water Reactor Deployment
Office of Nuclear Energy

Marriott Hotel
Grand Pacific Ballroom
Newport, California

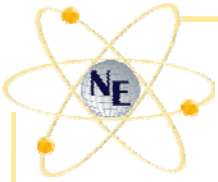
May 3, 2007



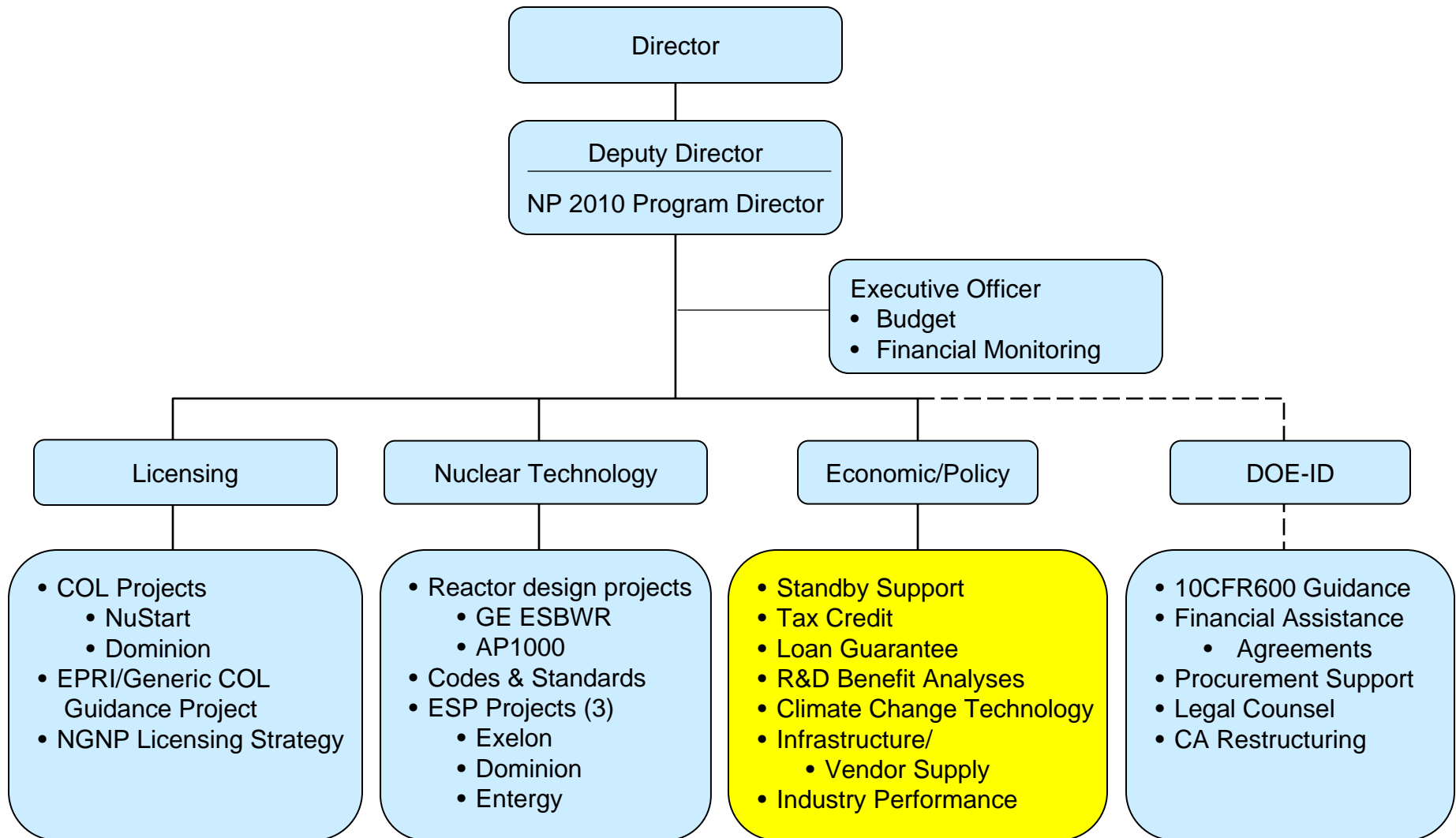


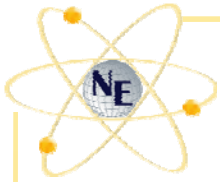
Topics of Discussion

- ◆ Brief Discussion of DOE's NP 2010 Program
- ◆ Current Status of Commercial Nuclear Power
- ◆ EAct 2005 Incentives for New Reactors
- ◆ Industry's Response to EAct 2005 Incentives



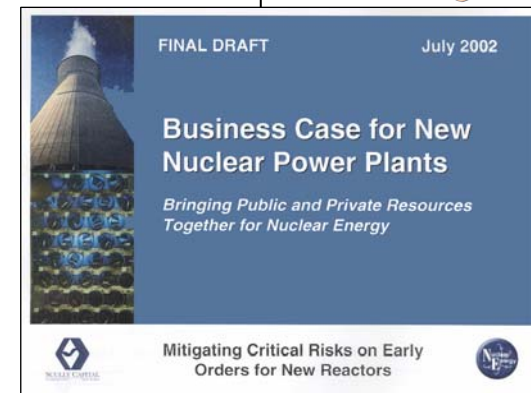
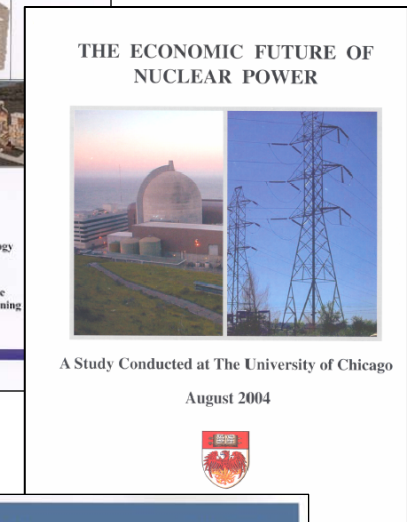
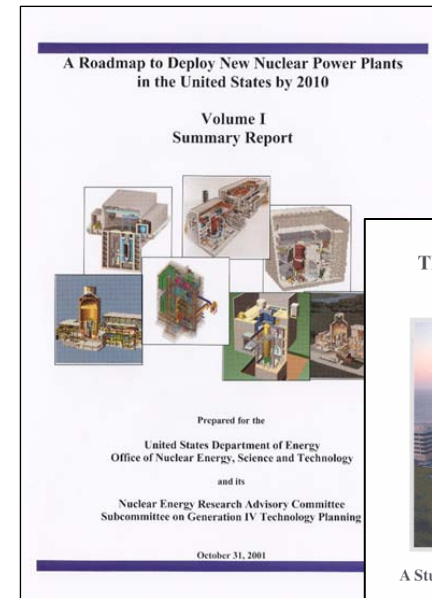
Light Water Deployment Office Organization Chart

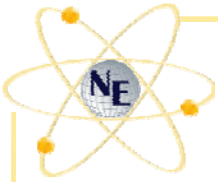




Nuclear Power 2010 ... Began as a Demonstration Project

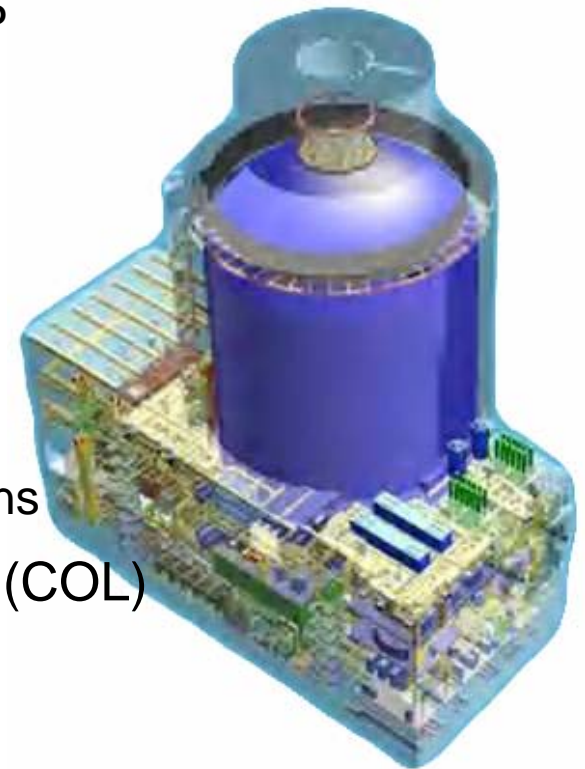
- ◆ Program initiated in February 2002
- ◆ Focused on addressing regulatory, financial, and technical challenges
- ◆ Based on Near-term Deployment Roadmap and other studies
- ◆ Government/industry cooperative effort
 - 50-50 cost-shared industry projects
 - Market-driven





Nuclear Power 2010 ... Working with Industry to Build New Nuclear Plants

- ◆ Three Early Site Permit Demonstration Projects
 - Address site suitability, environmental protection, and emergency planning issues
 - Clinton and Grand Gulf have been issued an ESP
 - North Anna in final hearing phase and expects ESP in 2007
- ◆ Two New Nuclear Plant Licensing Demonstration Projects
 - Develop COL applications and obtain Nuclear Regulatory Commission (NRC) approval
 - Complete two light water reactor advanced designs
- ◆ Combined Construction and Operating License (COL) Guidance and Generic Issues Project
- ◆ Standby Support Insurance Incentive
- ◆ Loan Guarantee & Production Tax Credit Incentive Support



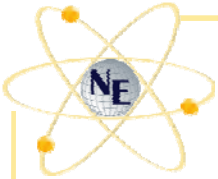


Primary Findings and Conclusions of Business Case Report

- ◆ Outlook for Operating nuclear plants has improved since 1990
 - Rise in capacity factor (65% in 1990; 90% in 2006)
 - Lower marginal cost of power produced relative to competing sources
 - Good safety record and improved public sentiment
- ◆ New Plant Hurdles as published in 2002 Business Case report
 - Capital cost for 1st plants too high >1,600/KWe for 1st plants
 - Orders for 1st plants require government assistance
 - Assistance should address specific risks rather than cost-shared grants

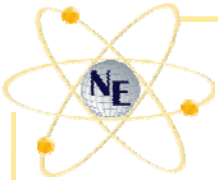
Conclusion of Analysis: Once the first several plants have been built and operated, nuclear power can be competitive in the electricity marketplace.

(www.nuclear.gov)



EPAAct 2005 Incentives

- ◆ Authorize three new incentives to stimulate construction and operation of new advanced nuclear plants
 - Section 1306, “Credit for Production from Advanced Nuclear Power Facilities” – referred to as PTC
 - Section 638, “Standby Support for Certain Nuclear Plant Delays” – referred to as delay risk insurance
 - Title XVII, “Incentives for Innovative Technologies” – referred to as loan guarantee program



Summary of Incentives

◆ Production tax credits

(www.irs.gov/irb/2006-18_irb/ar07.html)

- \$18/MWh for up to 6,000 MW
- Worth up to \$125 million in tax credits per year for 8 years per 1,000 MW of capacity

◆ Standby support

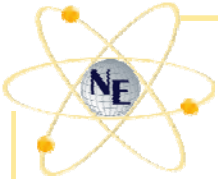
(www.nuclear.gov)

- \$2 billion of delay insurance coverage for first six plants
- Covers delays resulting from licensing or litigation

◆ Federal loan guarantees

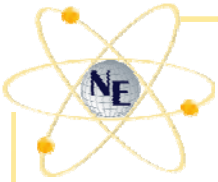
(www.lgprogram.energy.gov)

- Covers up to 80% of project cost
- Allows project financing, more highly leveraged capital structure, reduces cost of electricity from project

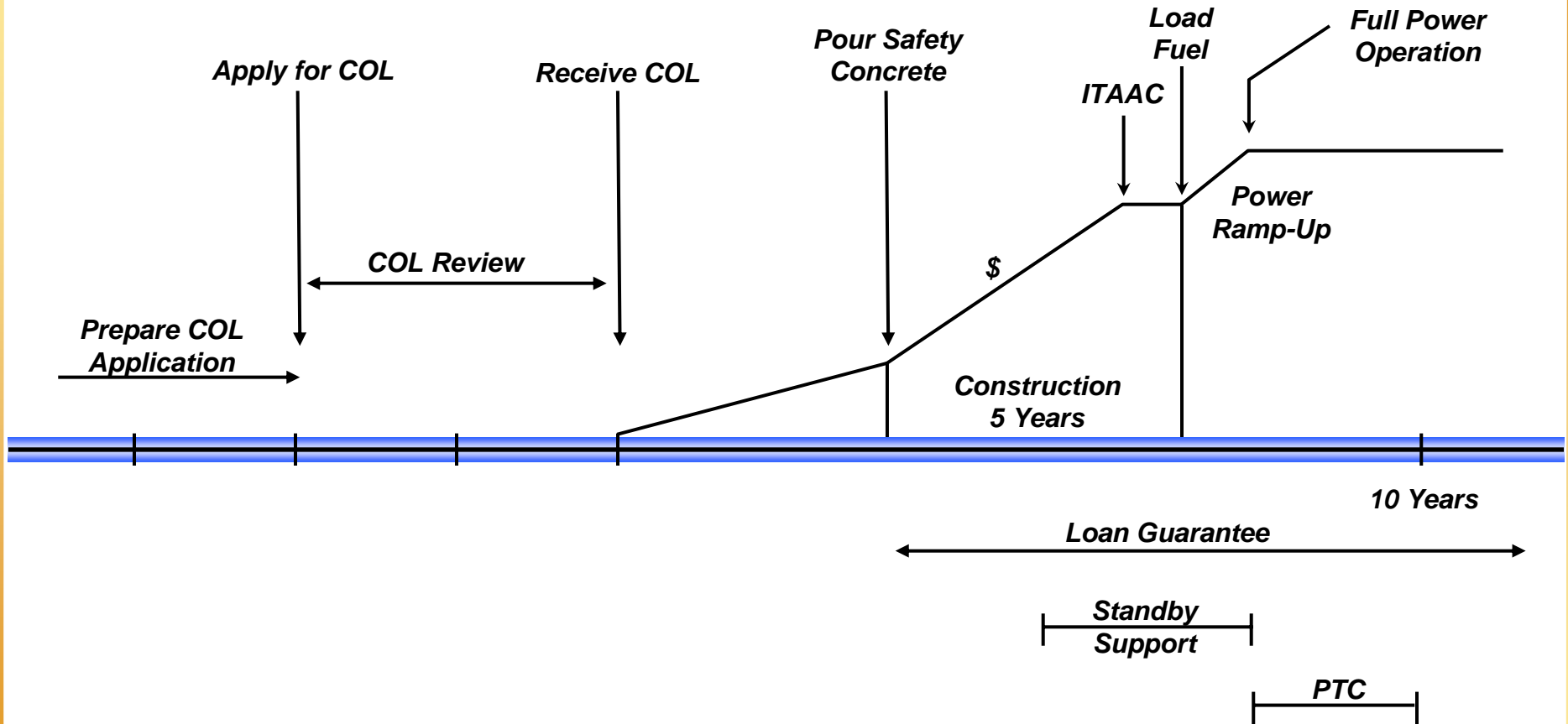


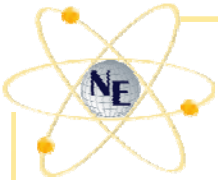
Value of Energy Loan Guarantee Program

- ◆ Ability to use "project finance" (non-recourse, higher leverage) offsets significant financing challenge: Cost of nuclear projects relative to size, market value and financing capability of companies that will build them
- ◆ Unregulated companies will not build nuclear projects except on project finance basis with debt financing secured by Federal government
- ◆ Regulated companies may be limited in ability to build multiple nuclear projects without project finance capability:
 - Earnings-per-share (EPS) dilution from new equity issuance
 - Stress on credit quality from additional debt



Overview of Federal Incentives for First Plants





New Nuclear Plants Under Consideration

Company	Design	Units	Date for Filing COL Application
Dominion – North Anna, VA	ESBWR	1	2007
NuStart Energy (TVA) – Bellefonte, AL	AP1000	2	2007
NuStart Energy (Entergy) – Grand Gulf, MS	ESBWR	1	2007
Entergy – River Bend, LA	AP1000	1	2008
Southern Co. – Vogtle, GA	AP1000	2	2008
Progress Energy – Harris, NC; Levy County, FL	AP1000	4	2007-2008
South Carolina Electric & Gas – Summer, SC	AP1000	2	2007
Duke Energy – William Lee, SC	AP1000	2	2007
UniStar Nuclear – Calvert Cliffs, MD; Nine Mile Point, NY	U.S. EPR	Up to 5	2008
Florida Power and Light – Undeclared, FL	TBD	1	2009
NRG – South Texas Project, TX	ABWR	2	2007
Amarillo Power – Amarillo vicinity, TX	EPR	2	2008
TXU – Comanche Peak, TX (other sites are undeclared)	U.S. APWR	Up to 5	2008
Exelon – Undeclared, TX	TBD	2	2008
Detroit Edison – Fermi site possible, MI	TBD	1	2008
TOTAL		Up to 33	