

*American Nuclear Society  
DC Section – Dinner*

*The Nuclear Renaissance – Where Are We  
And Where Are We Going*

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# A Reality Check

## Today

World population - 6.4 billion  
Without electricity - 1.6 billion  
Without clean water - 1.2 billion  
Without sanitation - 2.6 billion  
CO<sub>2</sub> emissions - 31 billion metric tons  
Installed generation - 4,225 gigawatts

## 2030

8.2 billion  
?  
?  
?  
43 billion metric tons\*  
6,014 gigawatts\*

\*Int'l Energy Outlook 2007, Today = 2010 numbers



# Energy Policy Low Among Public's Most Important Issues

- "Which of the following is the most important issue facing the country today?"

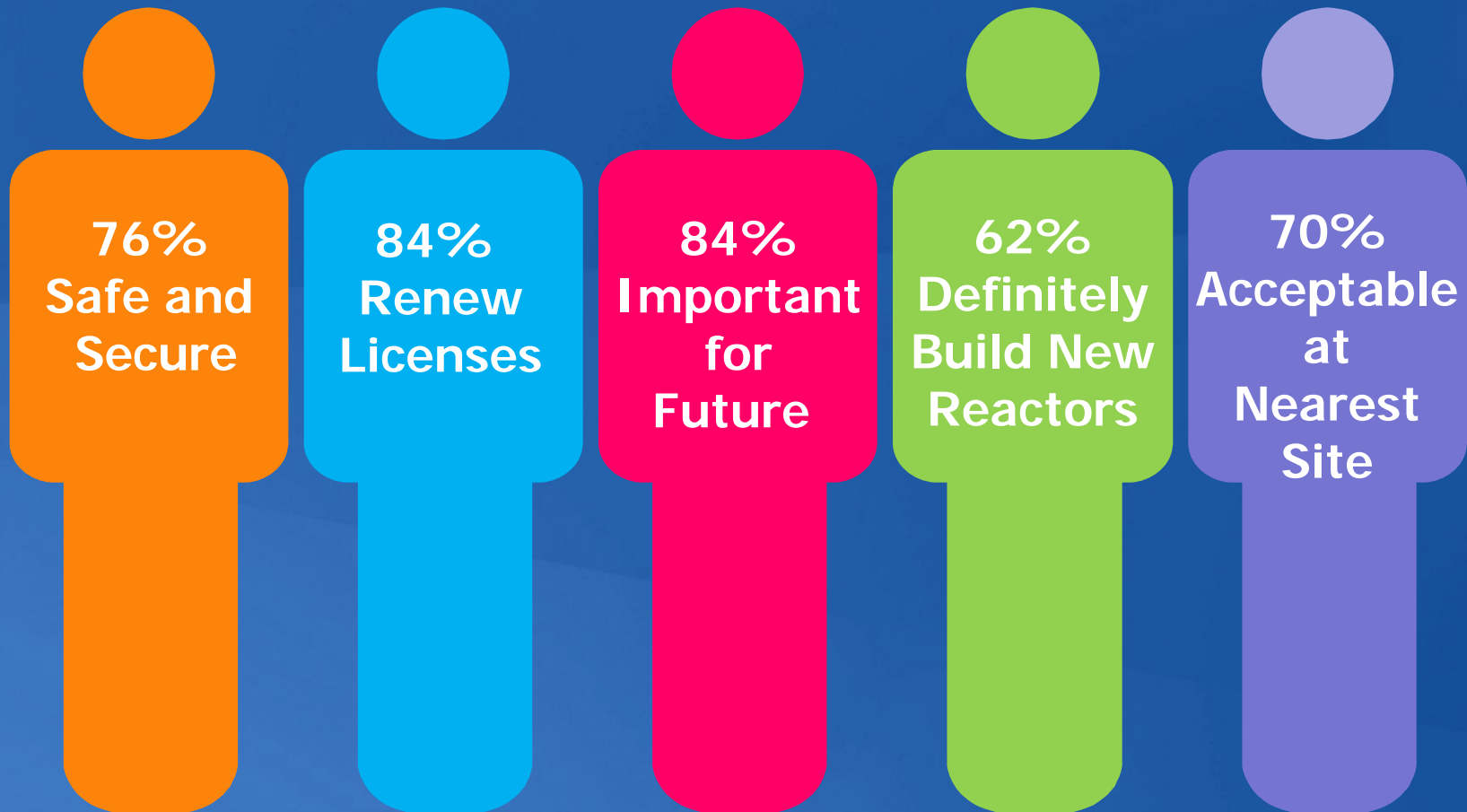
	(Percent)
The economy	51
The federal budget deficit	14
Health care	13
The wars in Iraq and Afghanistan	8
Terrorism	5
Education	4
Energy policy	4*

CNN/Opinion Research Corp. poll. June 26-28, 2009. 1,026 U.S. adults

\* Increase from 2 percent in March 2009

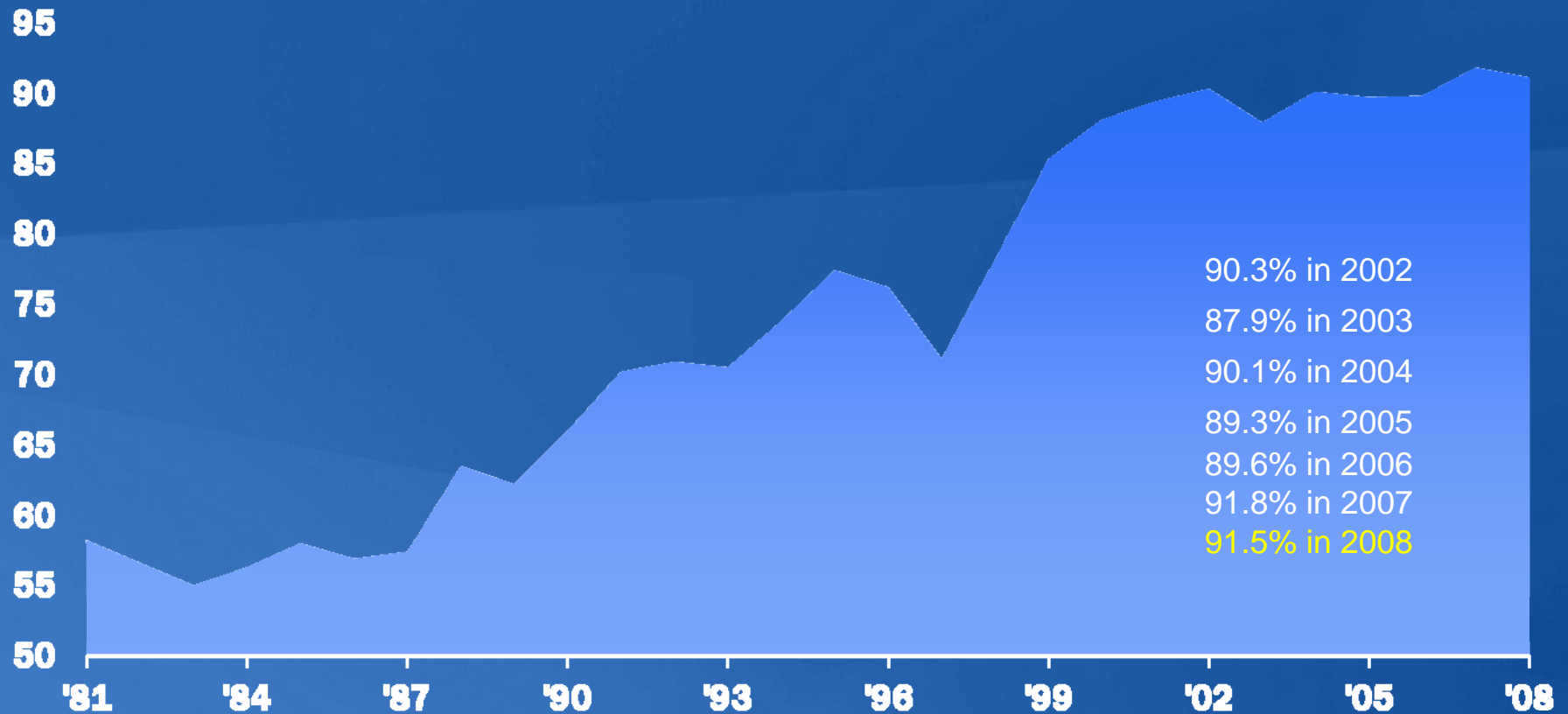


# Public Support for Nuclear Energy



# Sustained Reliability and Productivity

## U.S. Nuclear Capacity Factor, Percent

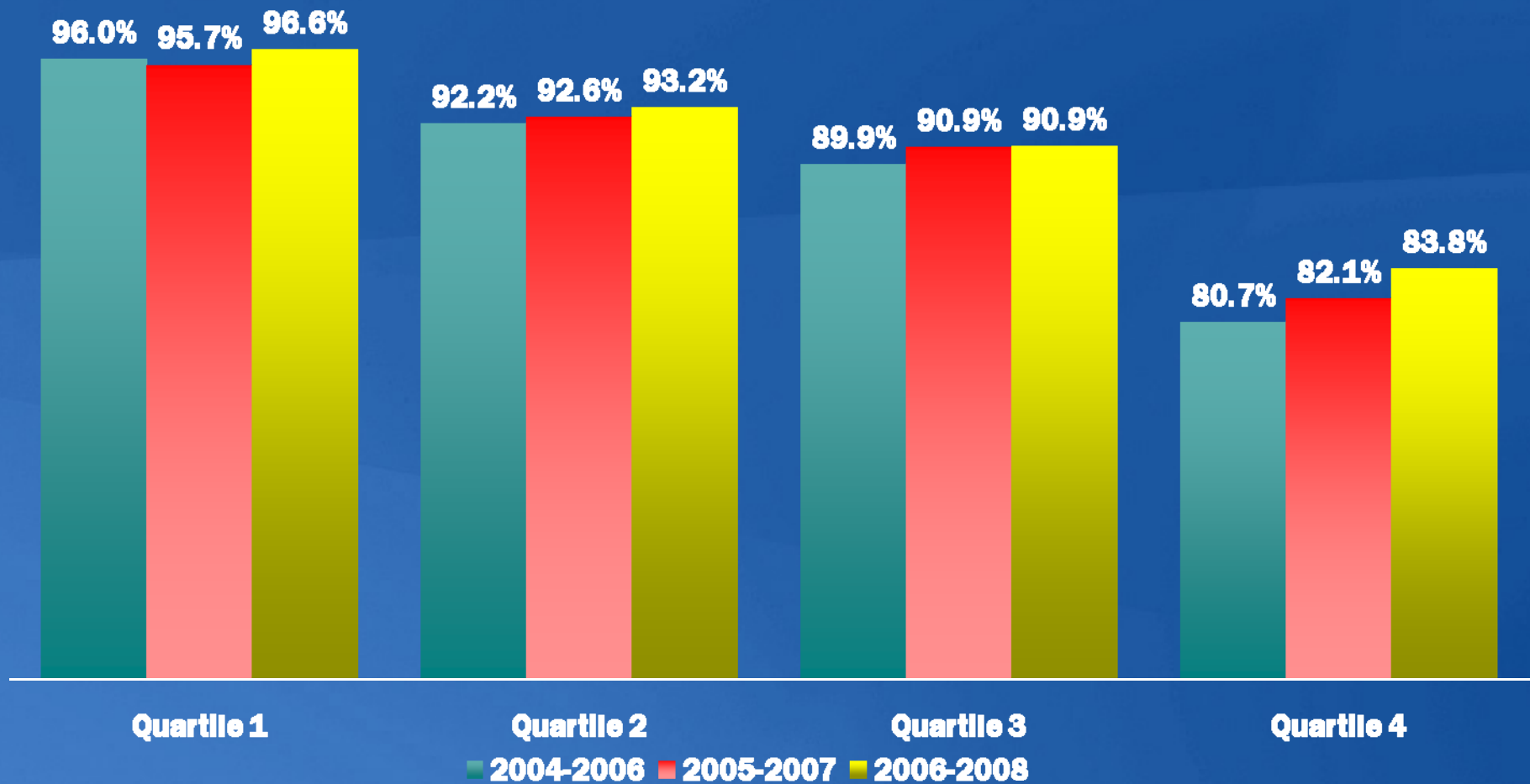


Source: Energy Information Administration

Updated: 4/09

# U.S. Nuclear Industry Capacity Factors by Quartile

3-year rolling average



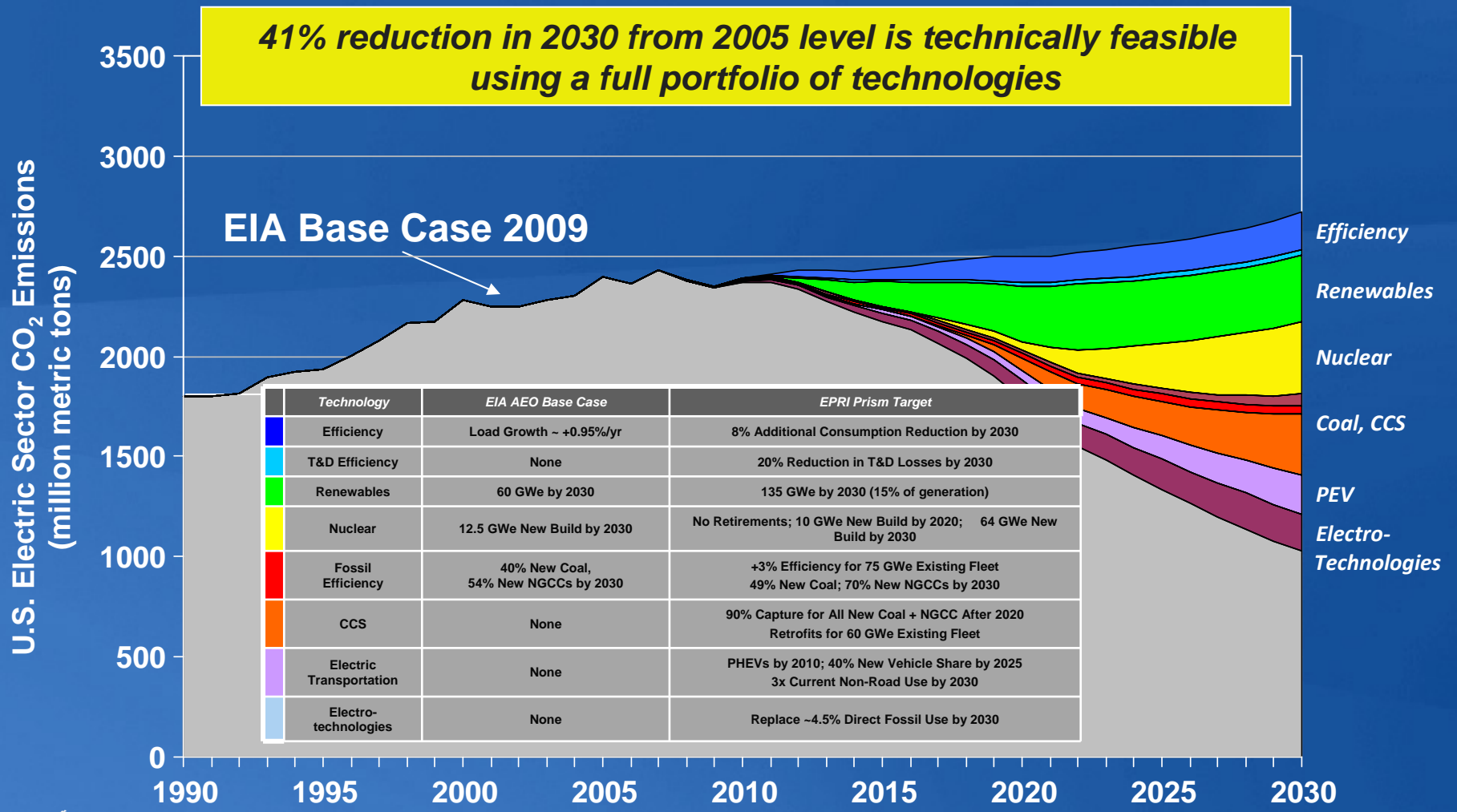
Source: Energy Information Administration

Updated: 5/09

# Existing Plants

- Achieving a more effective, disciplined and credible regulatory process
- Effectively addressing operational, regulatory and credibility/public confidence risks
- Systematically addressing change management at the NRC and in the industry
- Ensuring a competitive and reliable fuel

# 2009 Prism – Technical Potential for CO<sub>2</sub> Reductions



Source: Electric Power Research Institute 2009 Prism Update

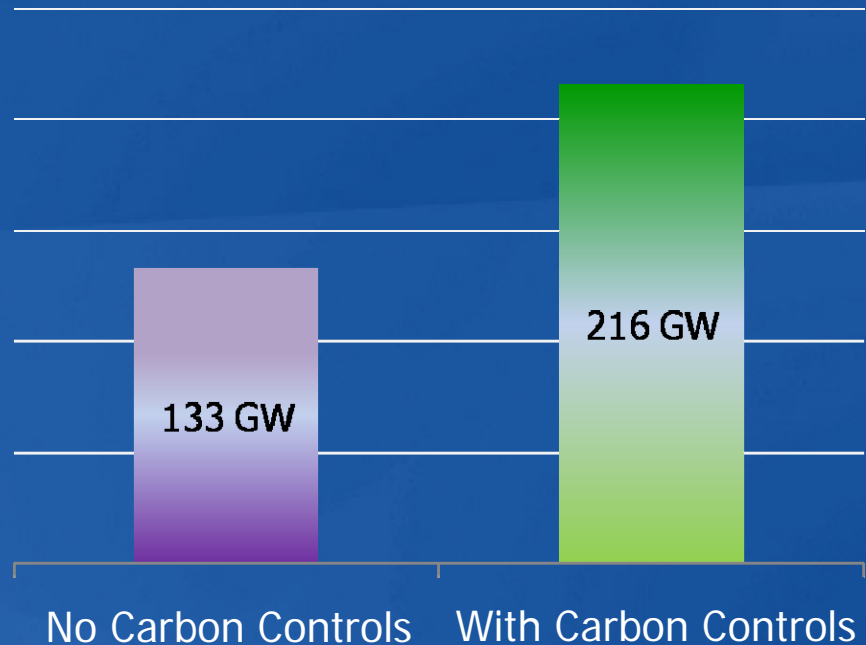


# The Business Case for Nuclear Power

- Need for new baseload capacity
- Climate change & carbon controls
- Volatility in fossil fuel prices
- Fleet performance, low & stable production costs
- Solid business case for new nuclear plants at commercial operation in 2016 and beyond

## New Generating Capacity Needed

*Assumes 0.7% Annual Growth in Peak Load*



EIA – 1.05% growth, 252 GW

*Source: The Brattle Group, "Transforming America's Power Industry: The Investment Challenge 2010-2030," November 2008*

# Electric Generating Capacity: The Last 15 Years

- Minimal investment in new coal and nuclear generating capacity
- Major build-out of capacity fueled with natural gas:
  - lowest investment risk during period of great business uncertainty

New Generating Capacity: 1994-2008, MW	
Coal	10,939
Gas	310,992
Nuclear	1,270
Oil	3,968
Renewables	27,492
Hydro	2,383
Other	318

# *COL Applications for New Commercial Reactors Under Review at NRC*

	Company/Site	Design (# Reactors)	COL Submittal	Running Total # New Reactors
1	NRG Energy – STPNOC/South Texas Project	ABWR (2)	September 2007	2
2	TVA/Bellefonte	AP1000 (2)	October 2007	4
3	Dominion/North Anna	ESBWR (1)	November 2007	5
4	Duke/William States Lee	AP1000 (2)	December 2007	7
5	Entergy/Grand Gulf	ESBWR (1)	February 2008	8
6	Progress Energy/Harris	AP1000 (2)	February 2008	10
7	Constellation-Unistar/Calvert Cliffs	EPR (1)	March 2008	11
8	Southern Company/Vogtle	AP1000 (2)	March 2008	13
9	SCANA-Santee Cooper/Summer	AP1000 (2)	March 2008	15
10	Progress Energy/Levy County	AP1000 (2)	July 2008	17
11	DTE Energy/Fermi	ESBWR (1)	September 2008	18
12	Luminant/Comanche Peak	US-APWR (2)	September 2008	20
13	Entergy/River Bend	ESBWR (1)	September 2008	21
14	Constellation-Unistar/Nine Mile Point	EPR (1)	September 2008	22
15	PPL/Bell Bend	EPR (1)	October 2008	23
16	Florida Power & Light / Turkey Point	AP1000 (2)	June 2009	25

# New Plants

- Effective implementation of the EPACT provisions
- Clear and predictable regulatory process
- Maintaining standardization
- Assuring adequate infrastructure

# Used Fuel Management Current Situation

- Administration position is that Yucca Mountain “not an option”
- Yucca Mountain licensing continuing
- New NRC waste confidence rule being finalized
- Industry decisions on waste fee and other legal alternatives
- Blue ribbon panel to define “plan B”

# The Political Environment

- Administration pursuing broad domestic and international agenda
- Congress working broad agenda – but already focusing on 2010 election
- Energy and climate legislation and policy initiatives
  - Significant electric industry issues
- Growing bipartisan support for nuclear
- Expecting increased support from the Administration