

New Nuclear Power Plants

Cedric I. Jobe

New Plant Deployment



NUCLEAR ENERGY INSTITUTE

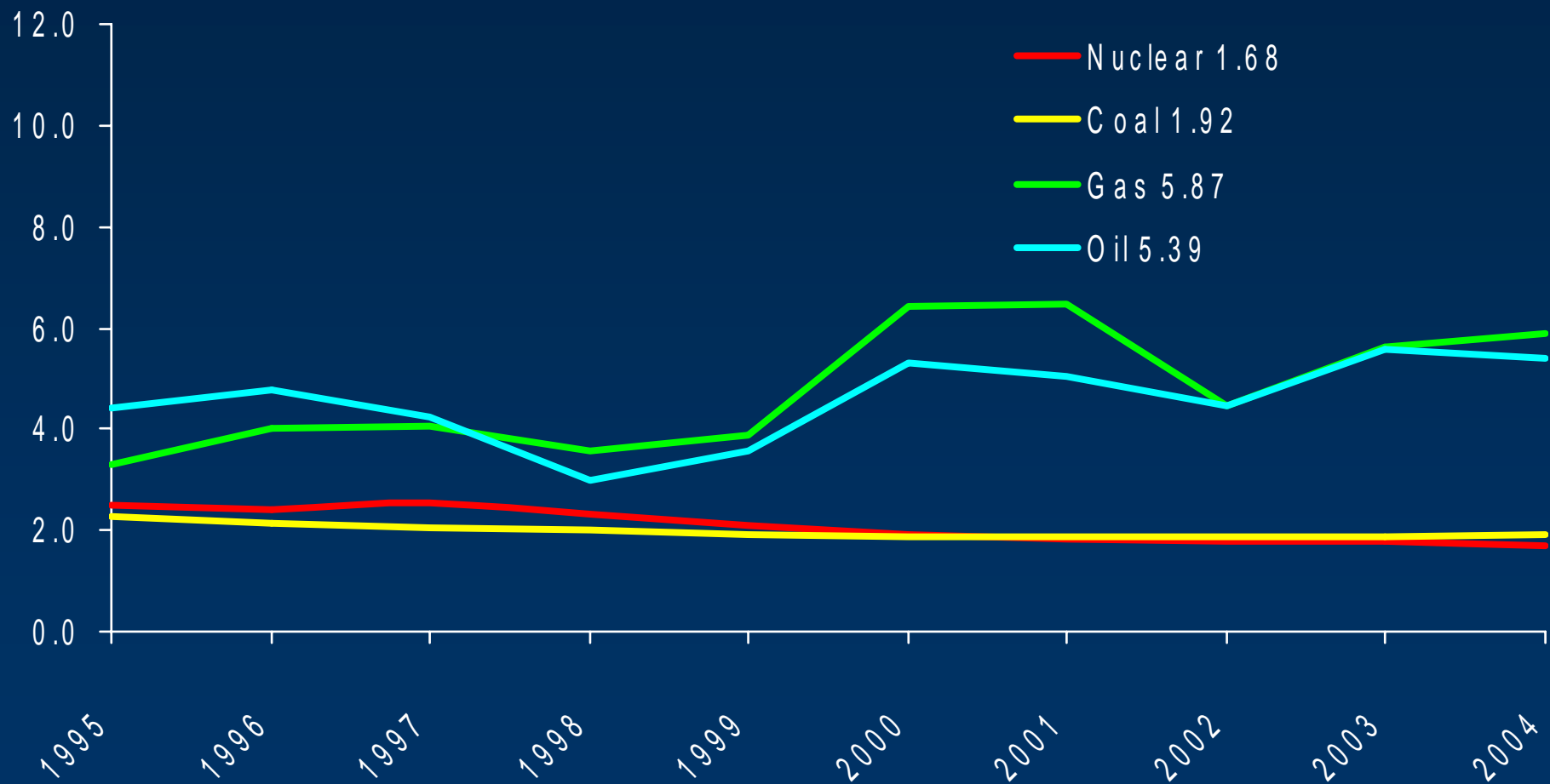
New Nuclear Plants

- The Need
- Benefits
- Activities
- Issues
- Q&A

The Need for New Nuclear Generation

- US needs 300,000 MW of new generation by 2025
 - Base-load generation needed after 2011
- Potential increase in environmental controls raise siting and cost challenges for fossil-fueled plants
 - Need for zero/low-emission base-load generation
 - Clean coal & nuclear
- Nuclear lowest cost base-load generating option
 - US industry needs a diverse, & balanced energy portfolio that provides low-cost electricity

US Electricity Production Costs (1995-2004) in 2004 cents per kilowatt-hour



New Nuclear Plant Benefits

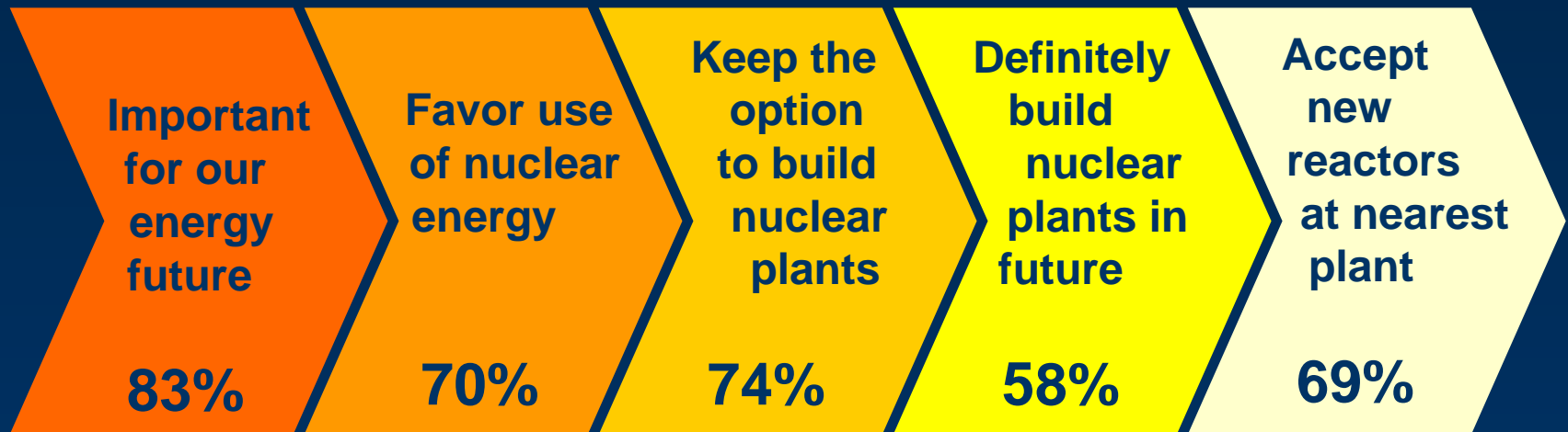
- Increases energy independence & national security
- Provides high-paying jobs
 - Each nuclear plant
 - Employs ~ 600 – 1500, with an equivalent number of indirect (not at the plant) jobs
- Improves economy
 - Each new plant adds over \$500 million/year to the economy
 - Reduces adverse economic impact of high and volatile energy prices (natural gas & electricity)
 - Restoration of US heavy industrial sector (more jobs)

New Nuclear Plant Benefits

- Improves air quality
 - Public health & environment
- Existence of a nuclear plant assists in siting additional industrial facilities
- Waste product is controlled, stored, monitored, protected and regulated
- Restoration of US global leadership in nuclear technology
- Will enable a hydrogen economy to be developed

New Nuclear

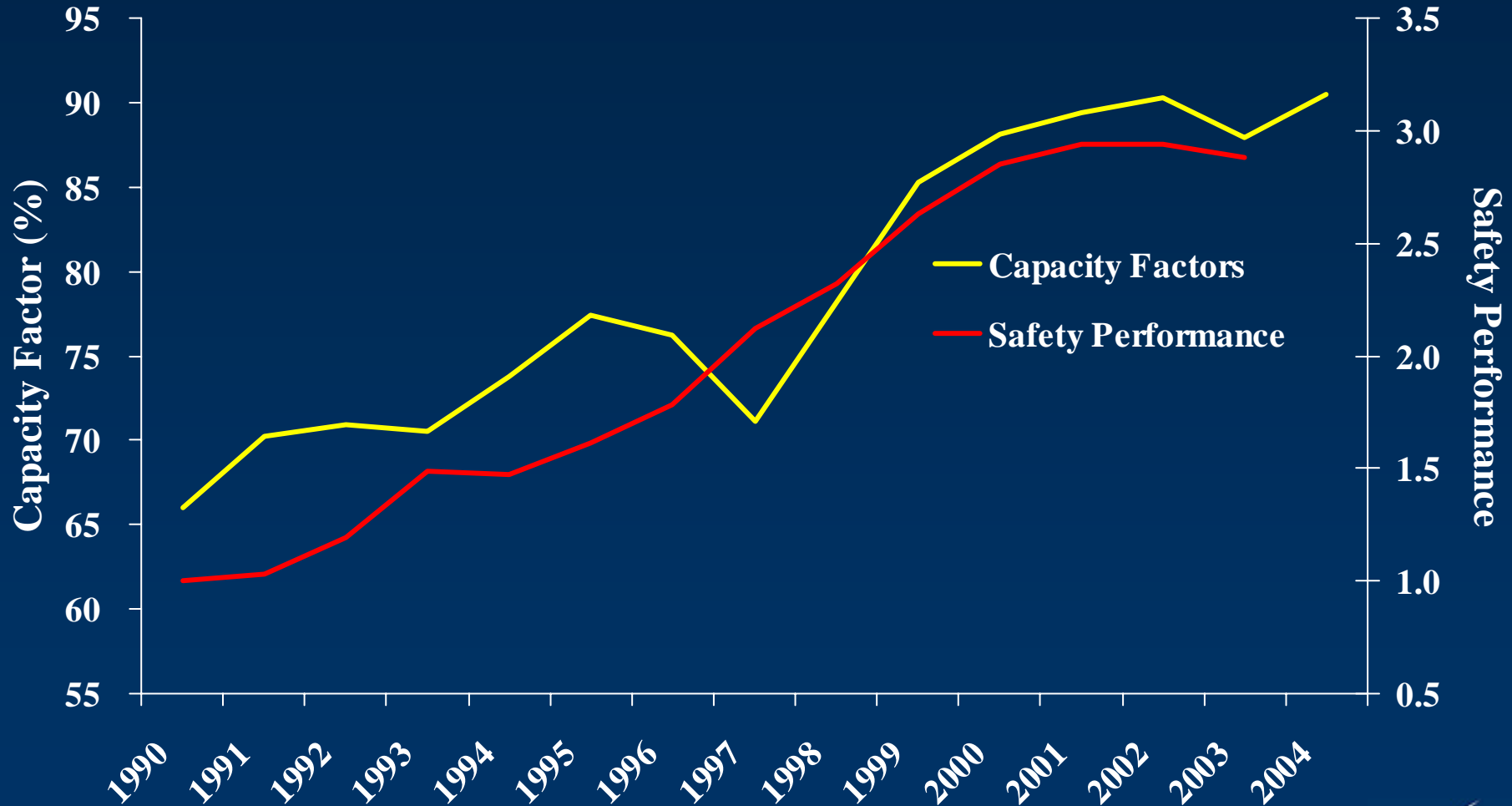
Building on Strong U.S. Public Support



New Nuclear Plants?

- None ordered for 30 years
- Reasons
 - Design/Construct-As-You-Go approach
 - Unreliable and prolonged construction
 - Unpredictable & inefficient licensing process
 - Until mid '90s an anemic operating record
- Uncertainty in financial community & company boards over new build and licensing
 - Premiums imposed on new construction financing

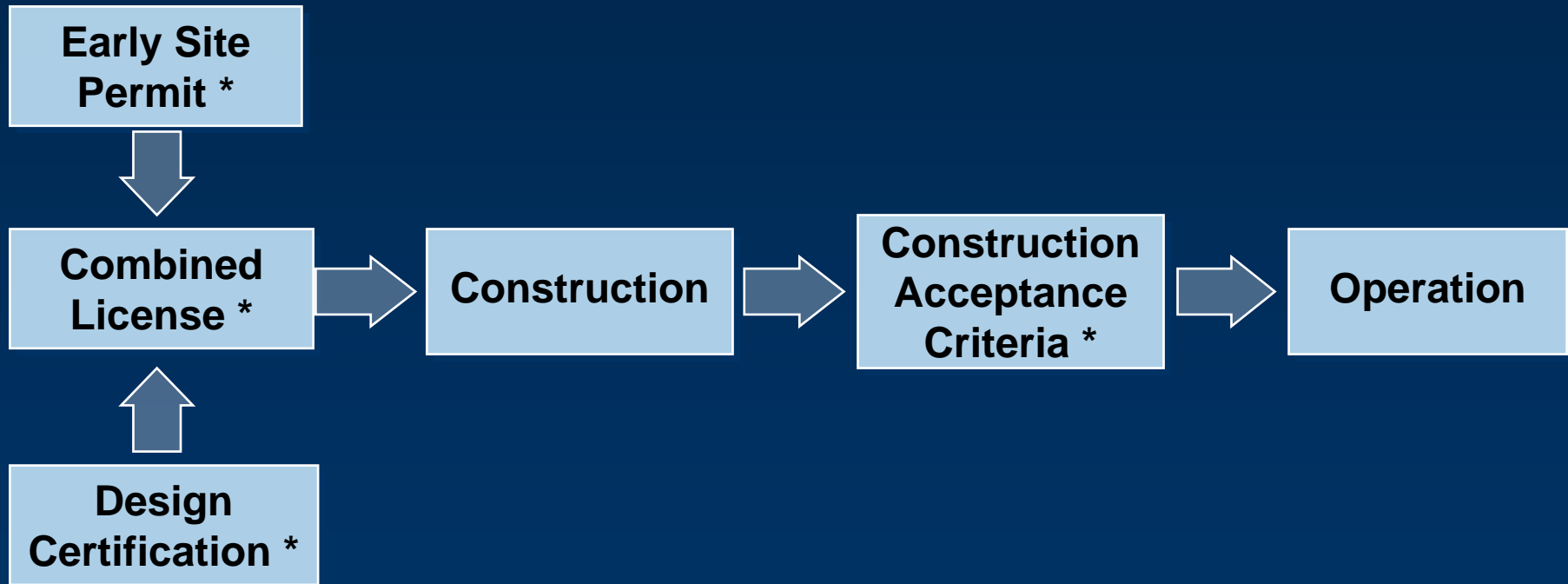
15 Years of Improving Performance (Safety & Operational)



Sources: Capacity Factor – Energy Information Administration



New NRC Licensing Process (1992 Energy Policy Act)



* Public Comment Opportunity

New Plant NRC Licensing Status

- Design certification is a proven process
 - Three advanced designs being certified
- Three Early Site Permits (ESPs) under review
 - High public participation
 - Permits to be issued in 2006 - 2007
- Two consortia developing combined license applications, prior to formal application
 - 15 companies (10 generating companies) involved
 - Three submittals by mid-2008
 - Others being developed

Industry New Nuclear Plant Objectives

- Submit three applications for combined construction permit and operating licenses by 2008
- Start construction of at least one new commercial nuclear power plant in 2010
- Start construction on at least three additional plants, including one merchant plant by 2012.
- 48-month or less construction schedule

What is needed for New Nuclear Plants?

- Maintain safety and operational performance of current plants
- Progress in addressing spent fuel disposal at Yucca Mountain
- Renewal of Price-Anderson
- Implementation of nuclear investments in Energy Bill

Energy Bill Investments

- Needed for the first few plants to assist in addressing regulatory & project uncertainties
 - Nuclear Power 2010
 - Loan Guarantees
 - Provide standby support against delays in commercial operation that are beyond owners control until new processes are proven
 - Production Tax Credits

New Nuclear Plants?

- **YES**
- Energy costs, the economy & environmental issues will drive the need for new nuclear plants, once the first plants are built