



New Reactor Licensing

Stephanie M. Coffin, Branch Chief
Division of New Reactor Licensing
Office of New Reactors

American Nuclear Society
Virginia Section
Richmond, VA

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New Reactor Licensing – The Regulator's Perspective

- Maintain safety of licensed plants
- Predictable licensing process
- Meaningful public participation
- Enhanced safety for future plants
- Independent and credible regulator



Outline of Presentation

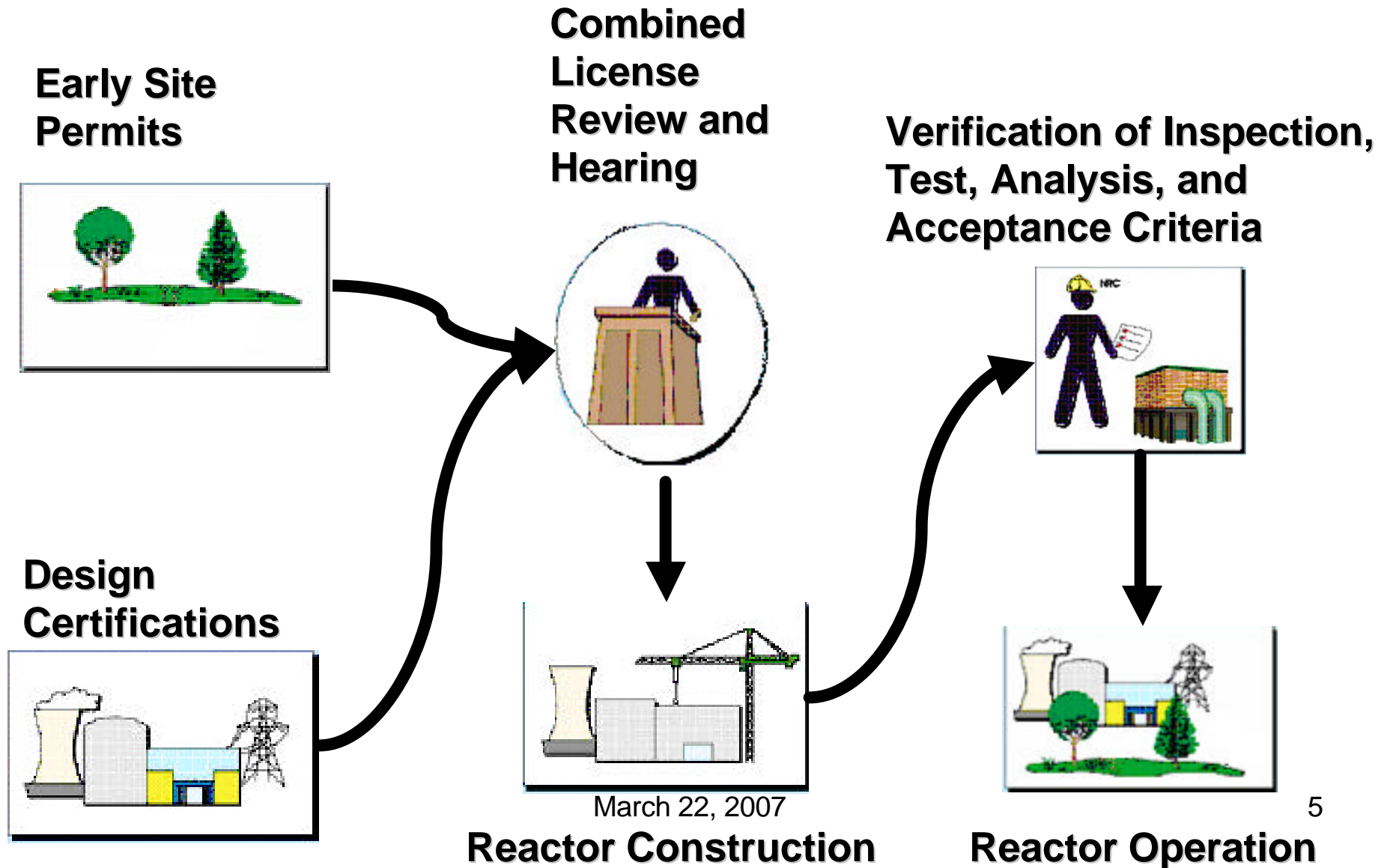
- Brief tutorial on Part 52
- Early Site Permits
- Design Certifications
- Combined License Applications
- Expected submittals
- Design Center Review Approach
- Regulatory Infrastructure
- Other Preapplication Activities
- Conclusions



Goals for Part 52 Process

- Stable and predictable licensing process
- Resolve safety and environmental issues before authorizing construction
- Reduce financial risk to licensees
- Encourage standardization of nuclear plant designs

Early Site Permits, Design Certifications, and Combined Licenses



Early Site Permits

- Allows early resolution of siting issues and “banking” of a site for 10 – 20 years
- Review areas include:
 - Site safety
 - Emergency preparedness
 - Environmental impact
- Applications received:
 - Dominion/North Anna – September 2003
 - Exelon/Clinton – September 2003
 - Entergy/Grand Gulf – October 2003
 - Southern/Vogtle – August 2006

Early Site Permits, continued

□ Site Safety Review

- Seismology
- Geology
- Hydrology
- Meteorology
- Geography
- Demography
- Site hazards

□ Emergency Preparedness Review

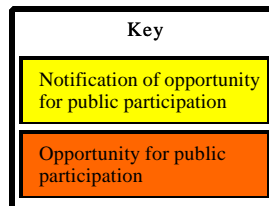
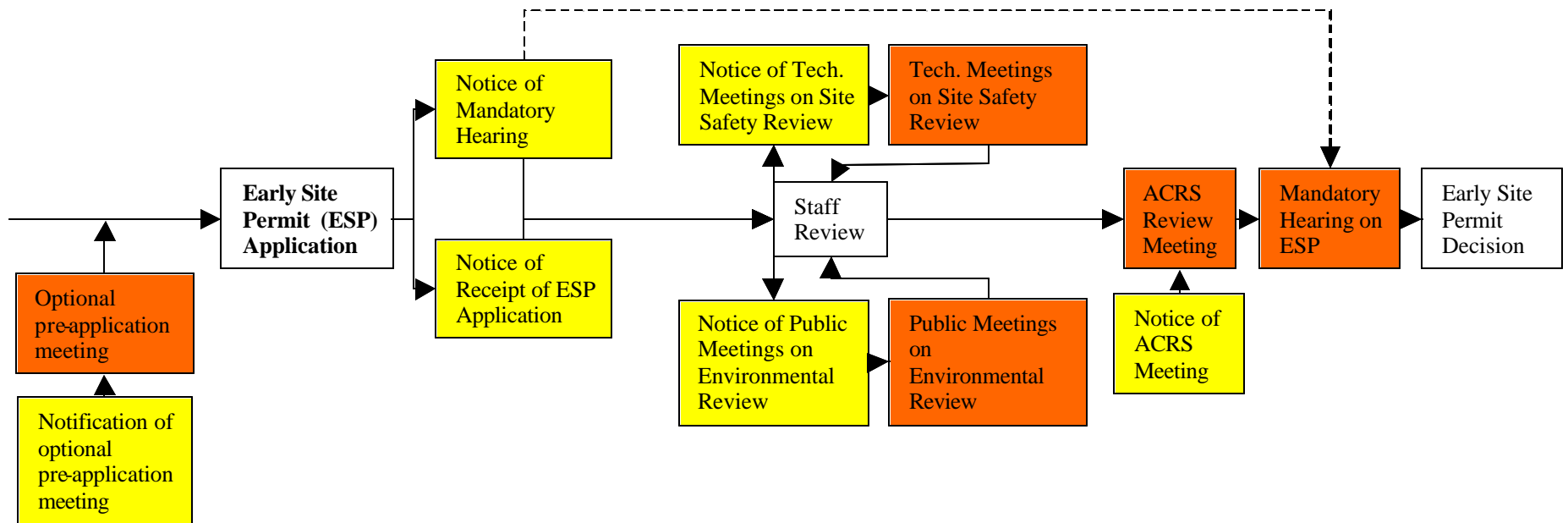
- Evaluate proposed emergency plan or emergency preparedness information
- Evaluate physical impediments, population distribution and transportation routes
- DHS/FEMA

Early Site Permits, continued

□ Environmental Impacts

- Surface water quality, hydrology and use
- Aquatic ecology
- Ground water quality and use
- Threatened or endangered species
- Air quality
- Land use
- Uranium fuel cycle & waste management
- Human health
- Socioeconomics
- Postulated accidents
- Decommissioning
- Environmental justice
- Alternative sites

Early Site Permit Process



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Early Site Permits - status

- Clinton ESP – issued March 15, 2007
- Grand Gulf ESP – Commission affirmation session March 27, 2007
- North Anna ESP – ASLB hearings begin April 24th
- Vogtle ESP – review underway



Design Certifications

- Allows an applicant to obtain preapproval of a standard nuclear plant design
- Reduces licensing uncertainty by resolving design issues
- Facilitates standardization
- Higher degree of regulatory finality with design certification

Design Certifications, continued

- Essentially complete design
- Final design information
- Site design parameters
- Interface requirements
- Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)



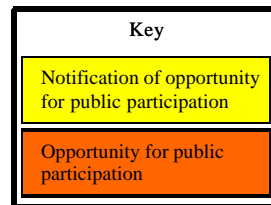
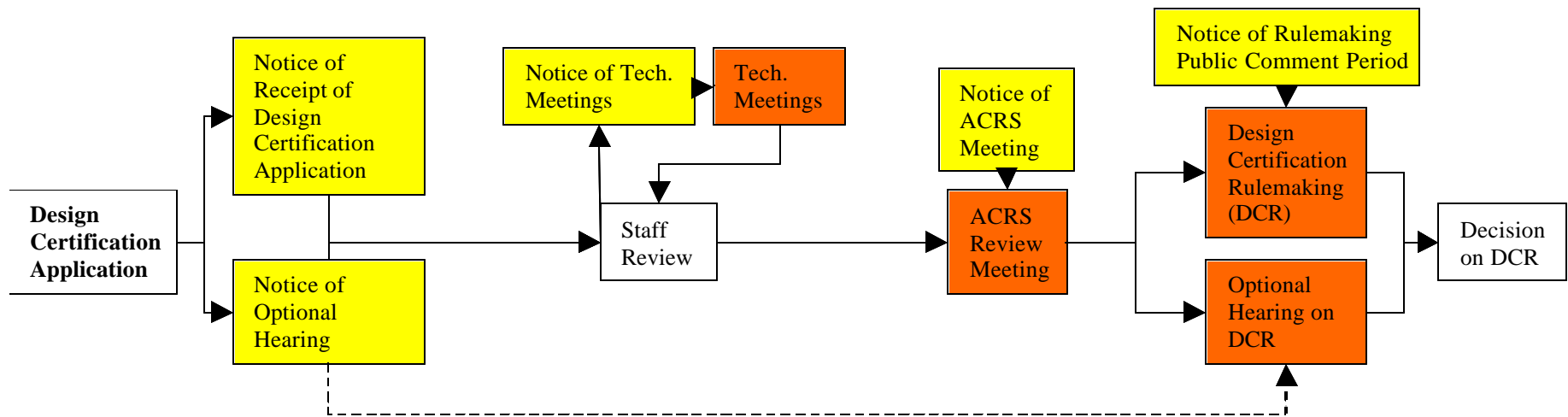
Design Certifications, continued

- Areas not reviewed
 - Site safety
 - Environmental impacts
 - Operational programs
 - Site-specific design features
 - Selected design areas

Design Certifications, continued

- NRC review and approval of a standardized design by rulemaking
 - General Electric Advance Boiling Water Reactor (1997)
 - C-E System 80+ (1997)
 - Westinghouse AP600 (1999)
 - Westinghouse AP1000 (2006)
- Certification review in progress:
 - General Electric Economic Simplified Boiling Water Reactor
- Near-term certification reviews:
 - AREVA US Evolutionary Power Reactor

Design Certification Process



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Design Certifications - status

- Westinghouse AP1000
 - Reviewing technical reports
 - Planning to submit Revision 16 in May 2007
- General Electric ESBWR
 - Application docketed – December 2005
 - RAI milestones – October 2006, December 2006, January 2007
 - Final SER/FDA – target January 2009
 - Certification – target January 2010
- Areva US EPR and Mitsubishi US-APWR
 - Pre-application topical reports under review

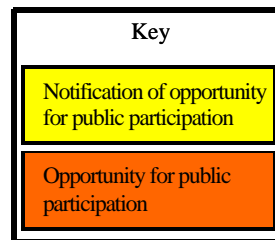
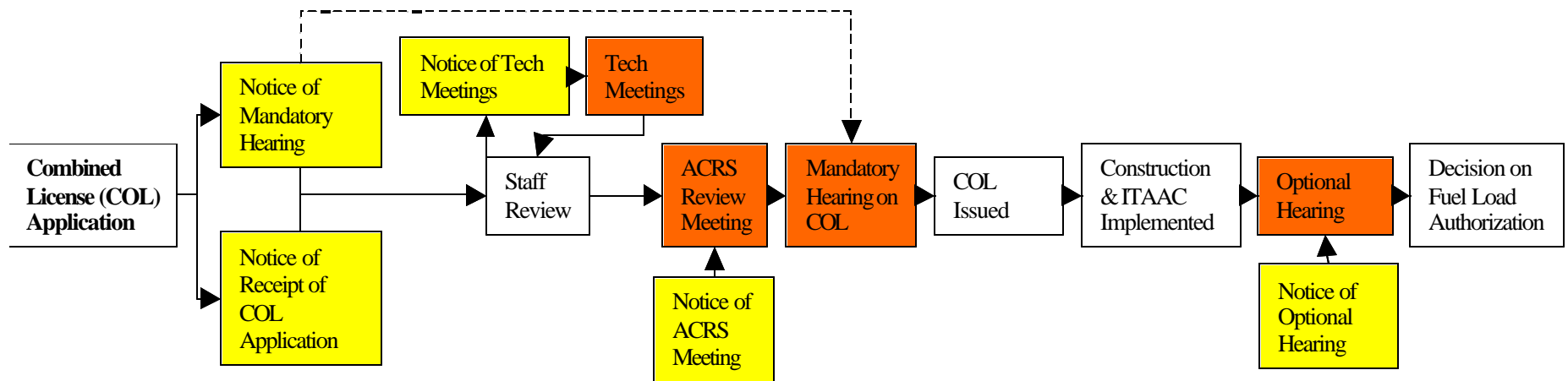
Combined License Applications

- ❑ Combined construction permit and operating license for a nuclear power plant
- ❑ May reference an early site permit, a standard design certification, both, or neither
- ❑ Objective is to resolve all safety & environmental issues before authorizing construction
- ❑ Prior to fuel load, must verify the facility has been constructed in accordance with the license
- ❑ The combined license process in Part 52 is fundamental for reducing regulatory risk for companies building nuclear power plants

Combined License Applications, continued

- Design
- Environmental Impacts
- Site Safety
- Qualifications
- Programs
- Inspections, Tests, Analyses and Acceptance Criteria (ITAAC)

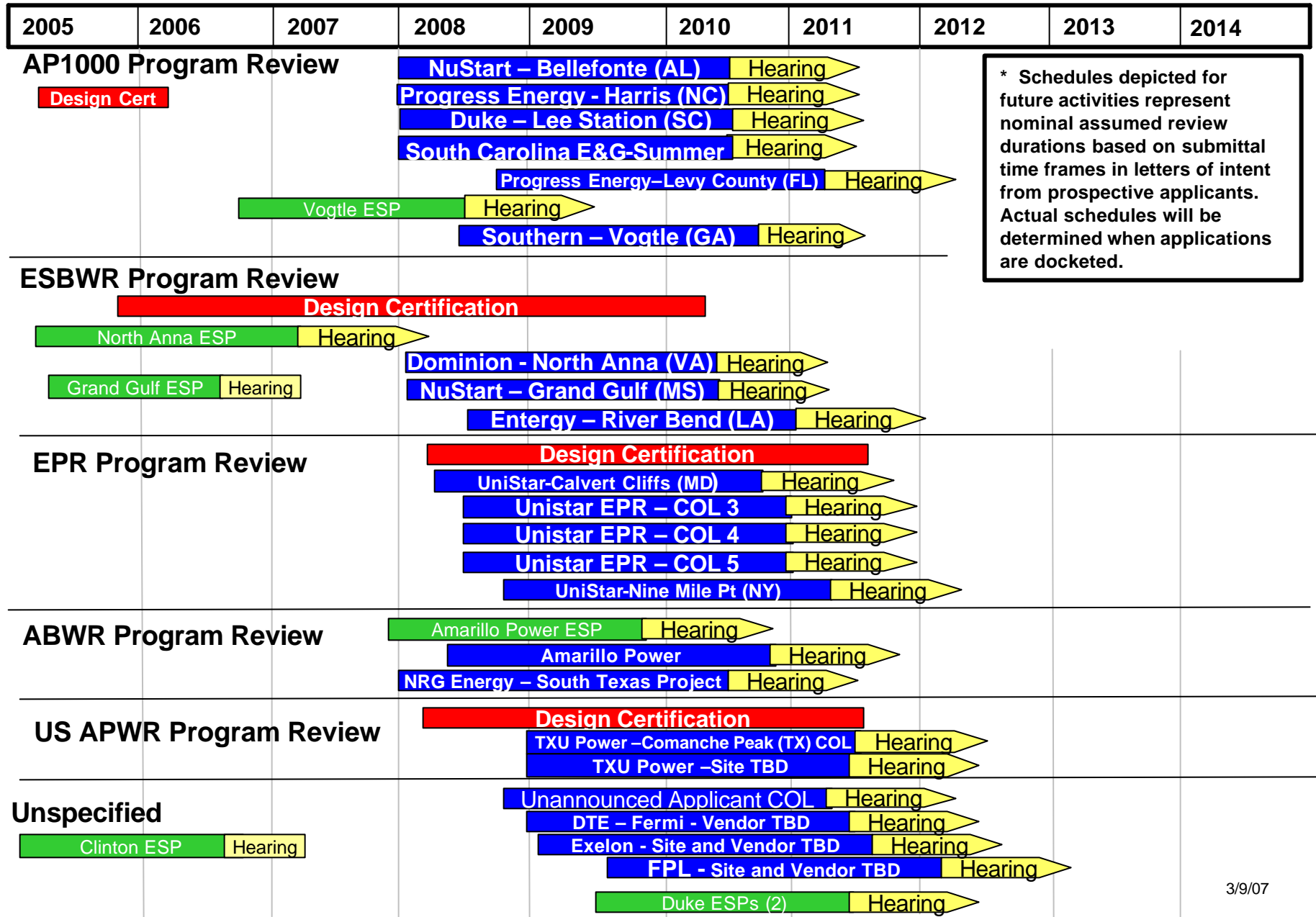
Combined License Process



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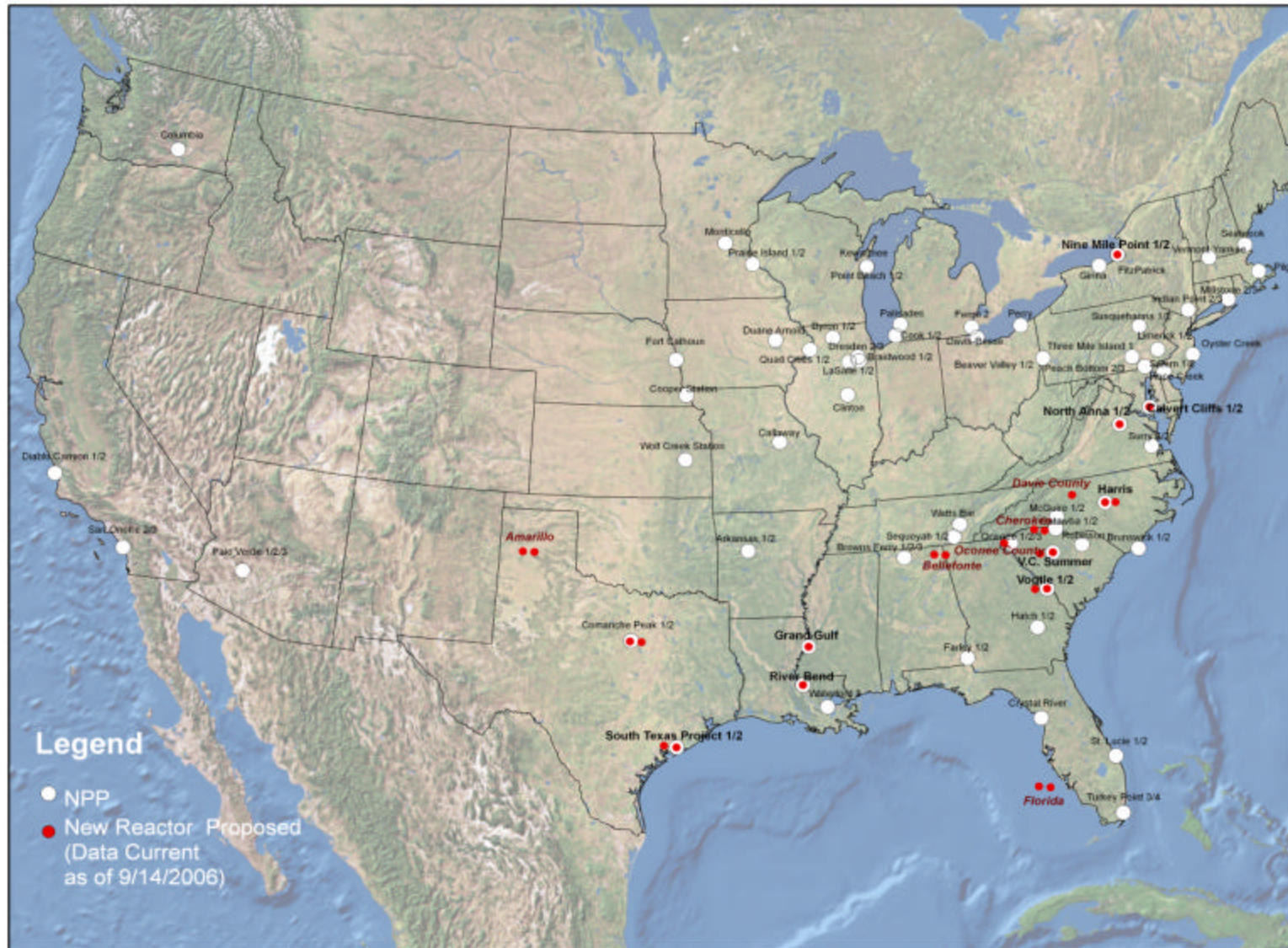
New Reactor Licensing Applications

An estimated schedule by Fiscal Year

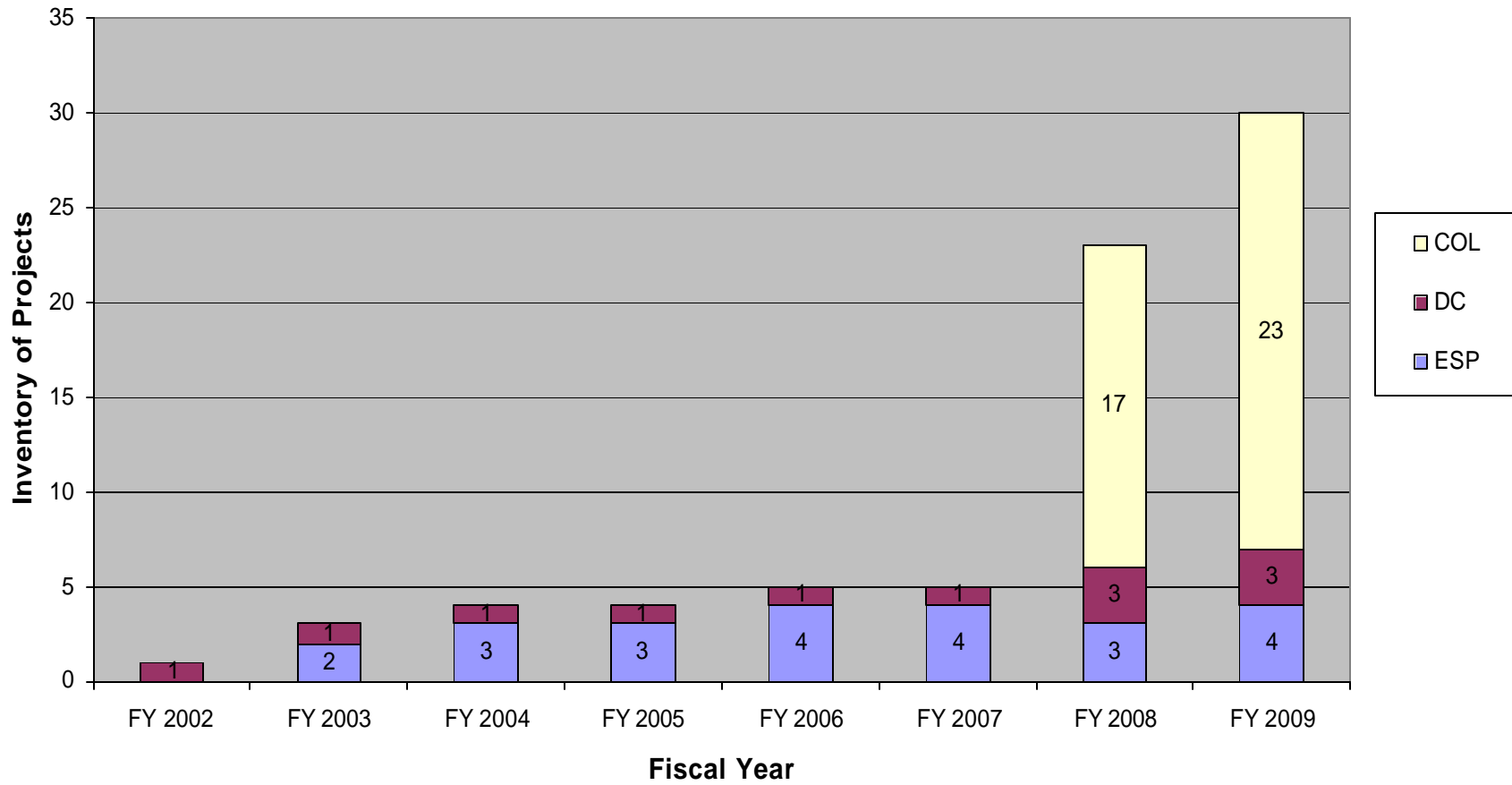


* Schedules depicted for future activities represent nominal assumed review durations based on submittal time frames in letters of intent from prospective applicants. Actual schedules will be determined when applications are docketed.

NPPs and COL Application Sites

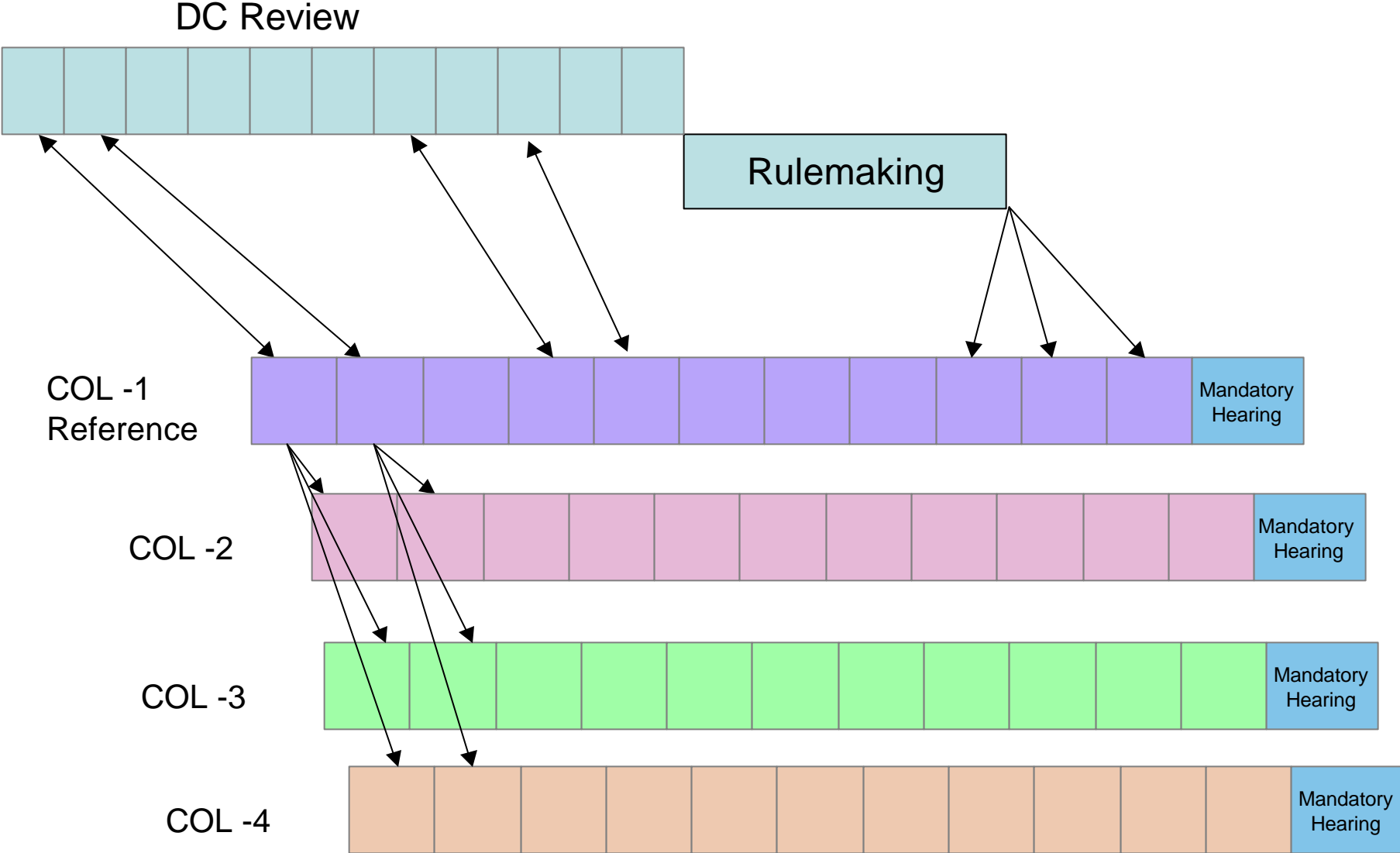


New Reactor Licensing Activities



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One Decision – Multiple Applications



Design Centered Review Approach

- Regulatory Issue Summary – RIS
2006-06
 - “New Reactor Standardization Needed to Support the Design-Centered Licensing Review Approach”
 - Issued May 31, 2006
- Industry responses:
 - Support and endorse DCRA
 - Forming design centered working groups
 - Expect a significant level of standardization
- Reorganization within NRC

Key Infrastructure Activities and Schedules

- 10 CFR Part 52 Rulemaking
 - Proposed rule to the Commission 10/31/06
- Combined License Regulatory Guide: DG-1145, “Combined License Applications for Nuclear Power Plants (LWR Edition)”
 - Formally released for public comment – September 2006
 - To be issued with final Part 52 rule
- Update of NUREG - 0800, “Standard Review Plan” and key Regulatory Guides
 - March 2007
- Construction Inspection Program
 - Inspection, Test, and Analysis Acceptance Criteria procedures – early 2008

Pre-application Activities

- Infrastructure
 - Rulemaking, DG-1145/RG 1.206, SRP
 - Licensing Program Plan
- Topical reports
 - AP1000, US EPR, US-APWR, others
- Design-centered working groups
 - Technical issues
 - Other issues
- Site visits
 - geotechnical, QA, environmental

Conclusions

- ❑ NRC is preparing for an exceptionally high level of new reactor licensing activity
- ❑ NRC will review applications in a timely manner
- ❑ NRC will accomplish our mission to ensure adequate protection of public health and safety and the environment for new reactors licensed under 10 CFR Part 52
- ❑ Applicants' standardized applications around the design-centered approach is essential