



U.S.NRC

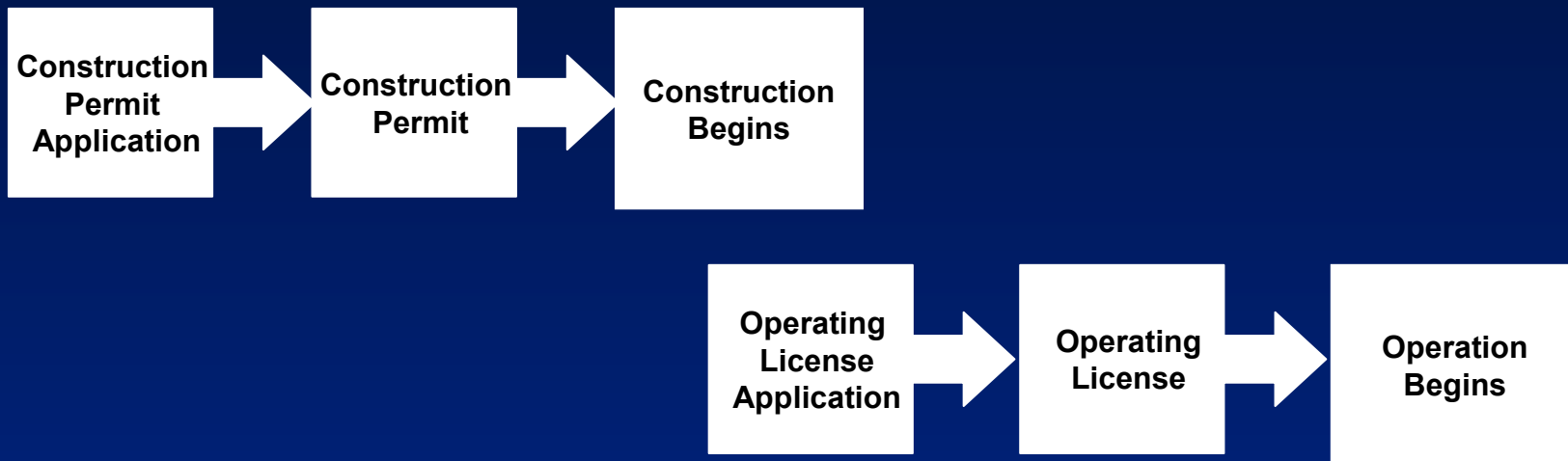
UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

New Reactor Licensing Challenges

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Part 50 Licensing Process



- Design effort proceeded throughout process
- No backfit protection with a CP
- Regulatory standards evolved as construction proceeded

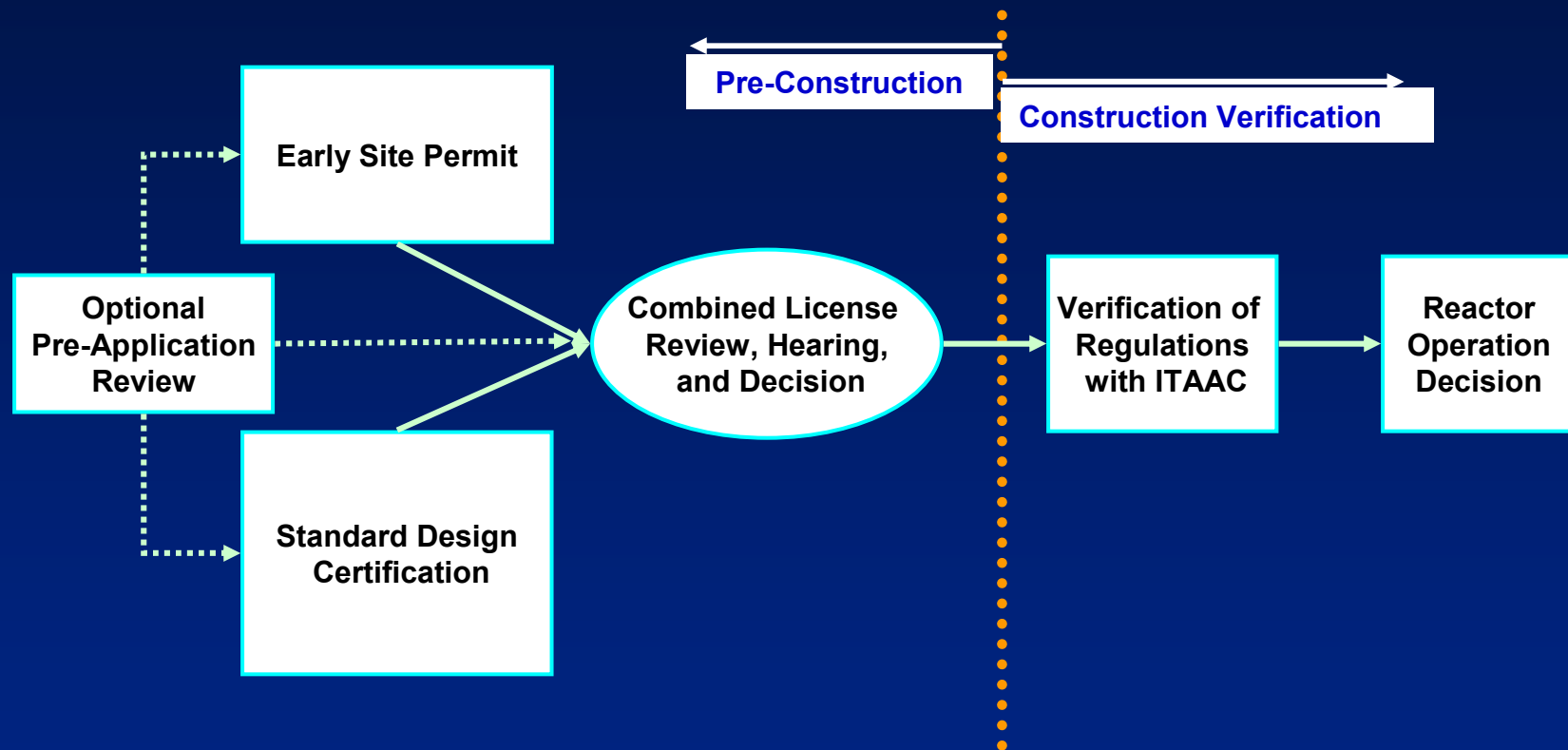
Discussion Topics

- New Construction/Regulator's Perspective
- Overview of Part 52
- Design-Centered Review Approach
- Expectations and Reality
- Trends Identified
- Challenges/Lessons Learned
- Elements for Construction Success
- In Going Forward...

New Construction

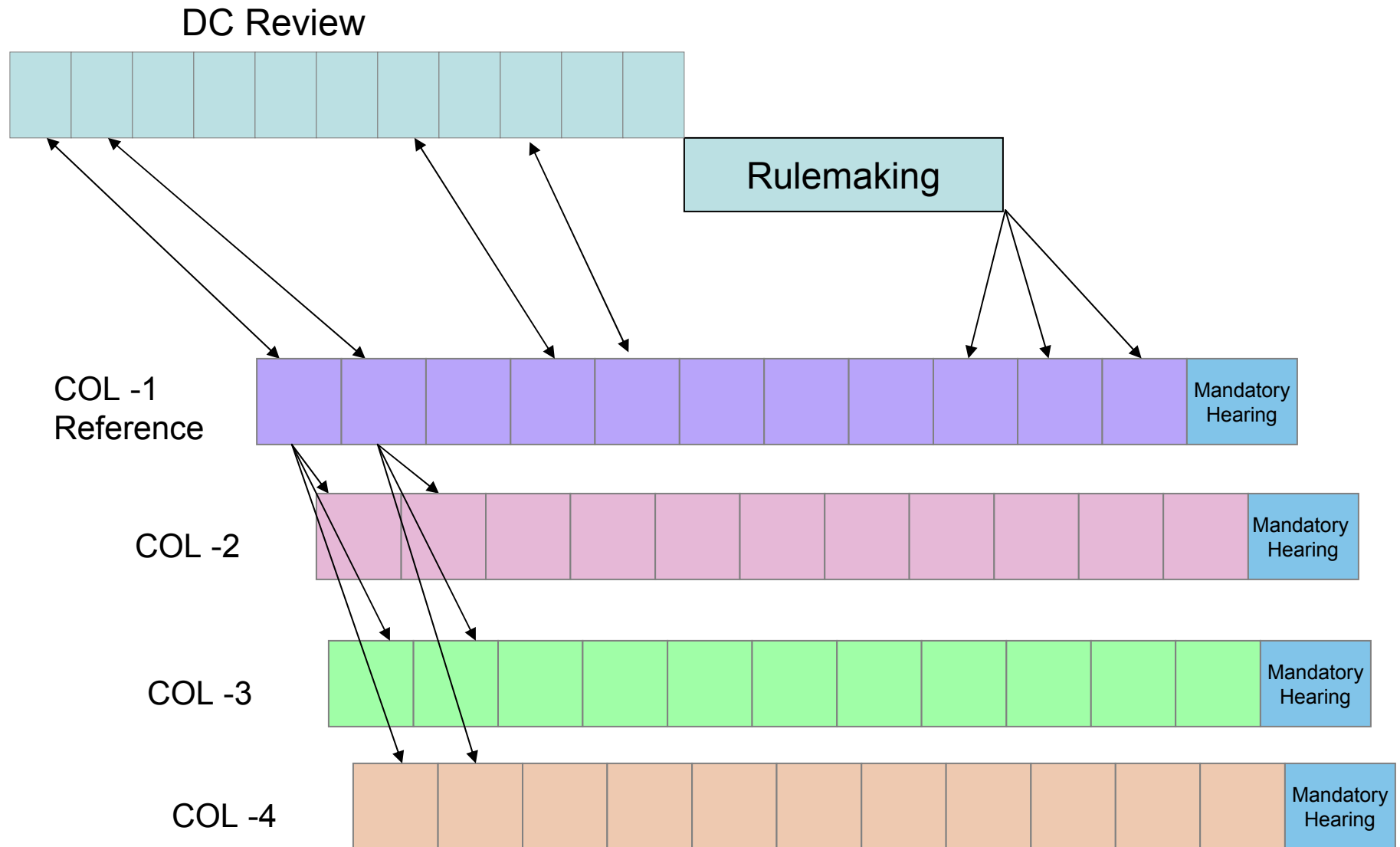
- Nuclear plants will be built more rapidly than their predecessors
- Detailed engineering essentially complete by start of construction
- Modular construction techniques will be used
- Fabrication of components may begin before COL issuance
- Components and modules will be fabricated in other countries
- Site preparation work will likely be performed

Part 52 - Fitting the Pieces Together



- Licensing decisions finalized before major construction begins
- Inspections w/ITAAC to verify construction
- Limited work may be authorized before COL issuance

One Decision – Multiple Applications



NRC Expectations vs. Reality

- High Quality Submittals
 - Expectations:
 - Address information required by regulations
 - Utilization of NRC guidance
 - Minimal number of departures
 - Utilization of design-centered review approach
 - Displays benefits from pre-application interactions
 - S-COL standard sections mirror R-COL
 - Reality:
 - Quality benefitted significantly from DCWG meetings and interactions (ESBWR and AP1000)
 - Applications improving over time

NRC Expectations vs. Reality

- Submittal of Essentially Complete Designs
 - Expectations:
 - Design certification applications are complete and high quality
 - Design is stable when submitted (minimal re-design during the review)
 - Reality:
 - Designs change during the review and cause rework and extend schedules
 - New applications under review

NRC Expectations vs. Reality

- COLs Reference Certified Designs
 - Expectations:
 - Minimize departures from DCD to extent practicable
 - Follow design-centered review approach
 - Schedule for ongoing design certification is linked to COLA schedule
 - Reality:
 - Every design center is in different stages
 - Departures
 - DC amendment
 - Mid review
 - Beginning review

NRC Expectations vs. Reality

- Schedules
 - Expectations:
 - 30 months
 - Reality:
 - 33 months?

Trends Identified

- Incomplete recirculation screen design
- Seismic issues
- Hydrology issues
- Lack of sampling for aquatic species

Challenges/Lessons Learned

- Simultaneous review of many applications
- Incomplete applications challenge staff's ability in making safety findings
- Applicants revising submission dates which challenge planning and availability of resources
- Staff and applicants have benefitted from pre-application interactions
- Staff is noticing trend in that COL applications are improving with respect to high quality submittals