



U.S. Regulatory System for New Reactor Applications

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Discussion Topics

- Codes and standards in new reactor reviews
- Current licensing reviews and process
- Standardization
- Construction inspection program



Regulations

- Energy Re-organization Act of 1974 creates NRC
- NRC establishes regulatory requirements for codes and standards
- Code of Federal Regulations (CFR)
- Title 10 CFR addresses “Energy”
- Parts 50 and 52 of Title 10 contain regulations for licensing Nuclear Power Plants
- Section 50.55a contains the regulations for codes and standards (10 CFR 50.55a)



Roles

- NRC establishes regulatory requirements and issues guidance
- Code organizations establish code requirements
- Industry develops programs and technology to meet these requirements
- All participate in an open consensus process
- Common Goals
 - Safe plant operation
 - Practical requirements
 - Cost-effective technology



Regulatory Process

- NRC requires the use of certain codes and standards
- Codes and standards are incorporated by reference into the regulations through rulemaking
- Rulemaking process follows Administrative Procedures Act, 1946
- Rulemaking documents published in the Federal Register for public participation
- Updates to 10 CFR 50.55a



Codes

- 10 CFR 50.55a “requires” the use of ASME Codes
 - ASME BPV Code, Section III for design
 - ASME BPV Code, Section XI for in-service inspection
 - ASME OM Code for in-service testing
- NRC approves, conditions, or disapproves ASME Code cases
 - Regulatory Guide 1.84 (Section III)
 - Regulatory Guide 1.147 (Section XI)
 - Regulatory Guide 1.192 (OM Code)
 - Regulatory Guide 1.193 (code cases not approved)



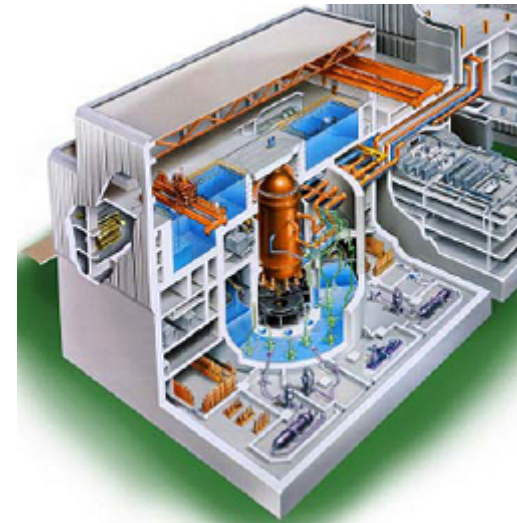
Standards

- 10 CFR 50.55a “requires” the use of IEEE Standards
 - IEEE Std. 603, Criteria for Safety Systems
 - IEEE Std. 279, Criteria for Protection System
- NRC regulations allow the use of alternative codes and standards when:
 - The alternative provides an acceptable level of quality and safety, or
 - Compliance with 10 CFR 50.55a would result in a hardship without a compensating increase in quality and safety.



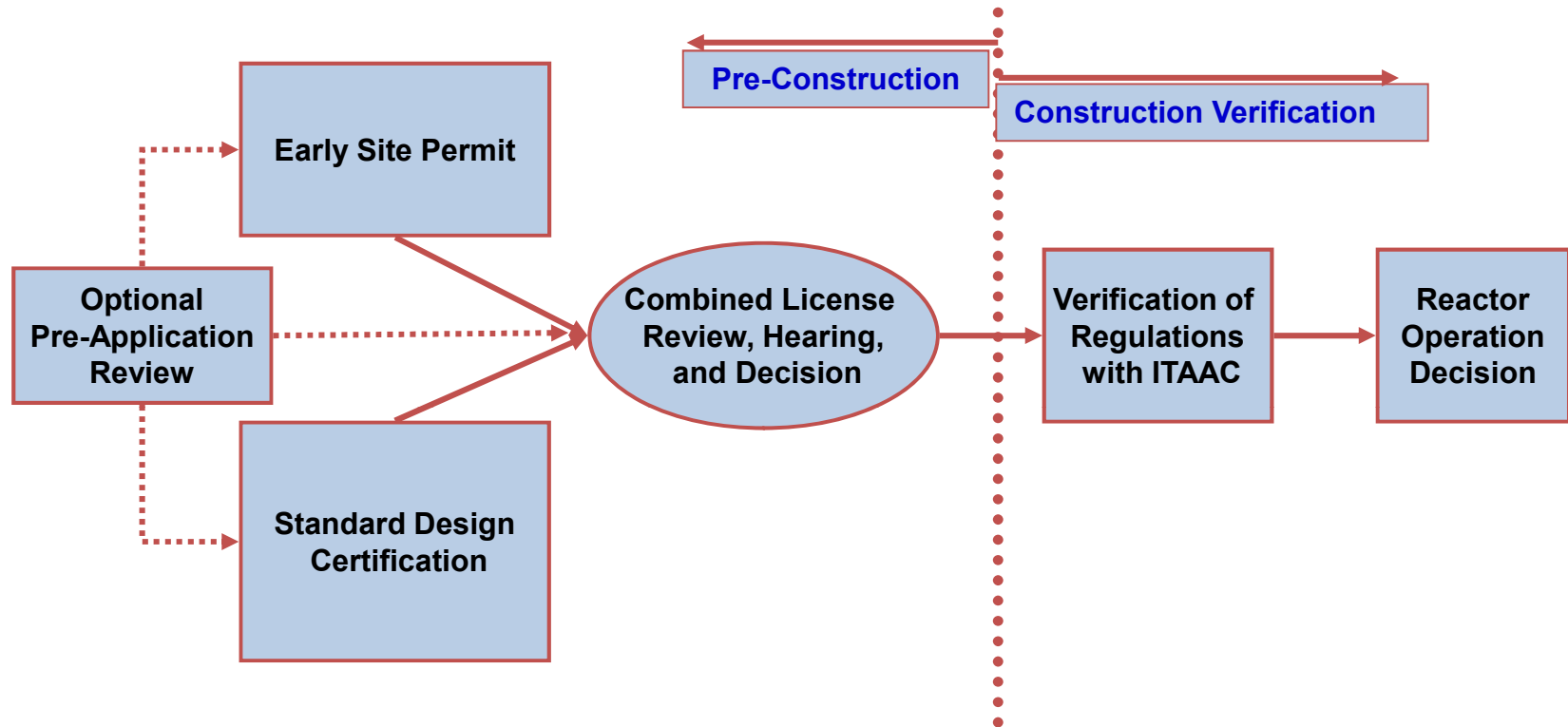
New Reactor Reviews

- Current Applications
 - 17 Combined License (COL) Applications
 - 3 Design Certification (DC) Applications
 - 2 Amended DC Applications
- Issued
 - 4 DCs
 - 4 ESPs





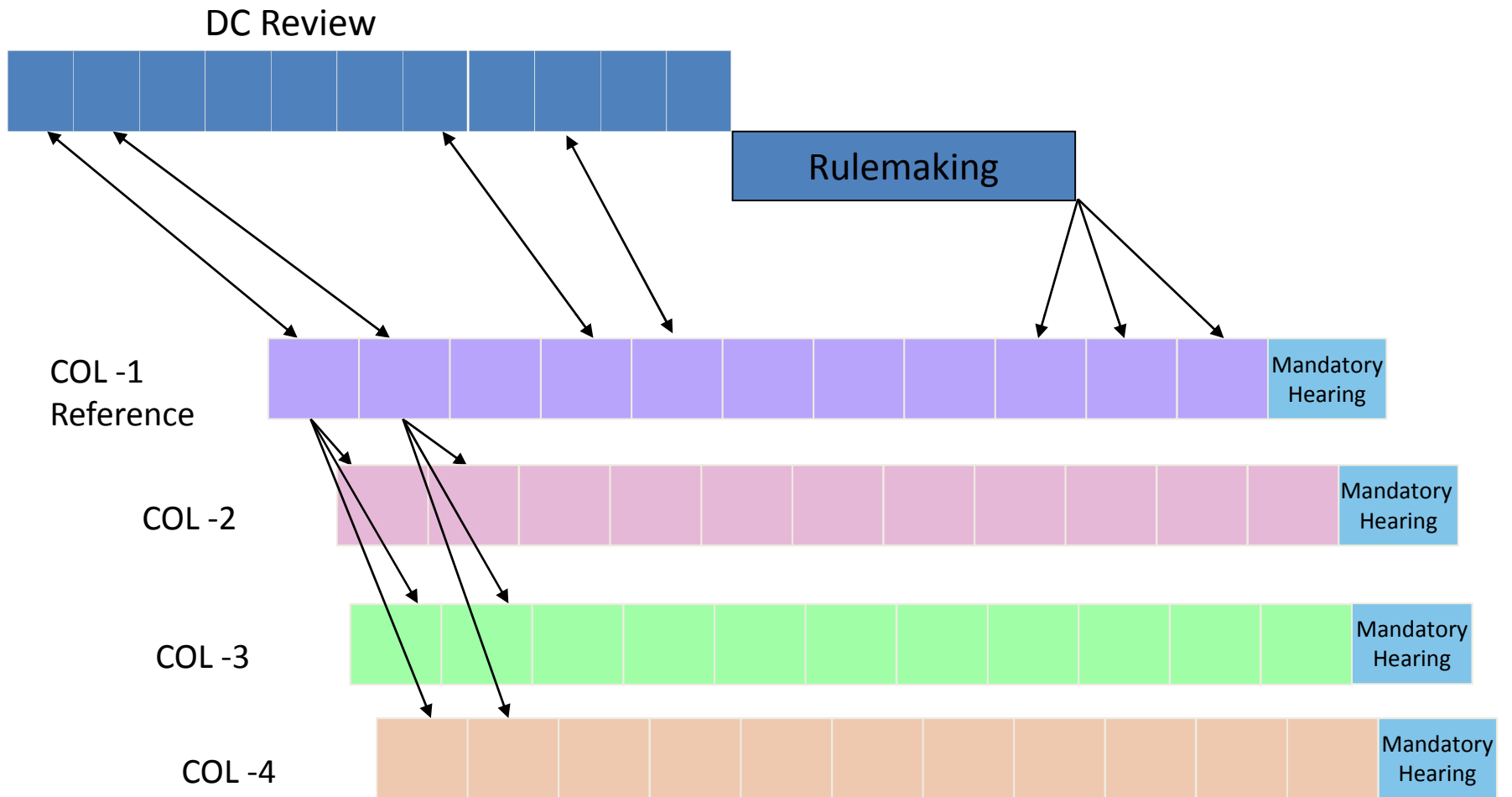
Part 52 Licensing



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



Design-Center Approach





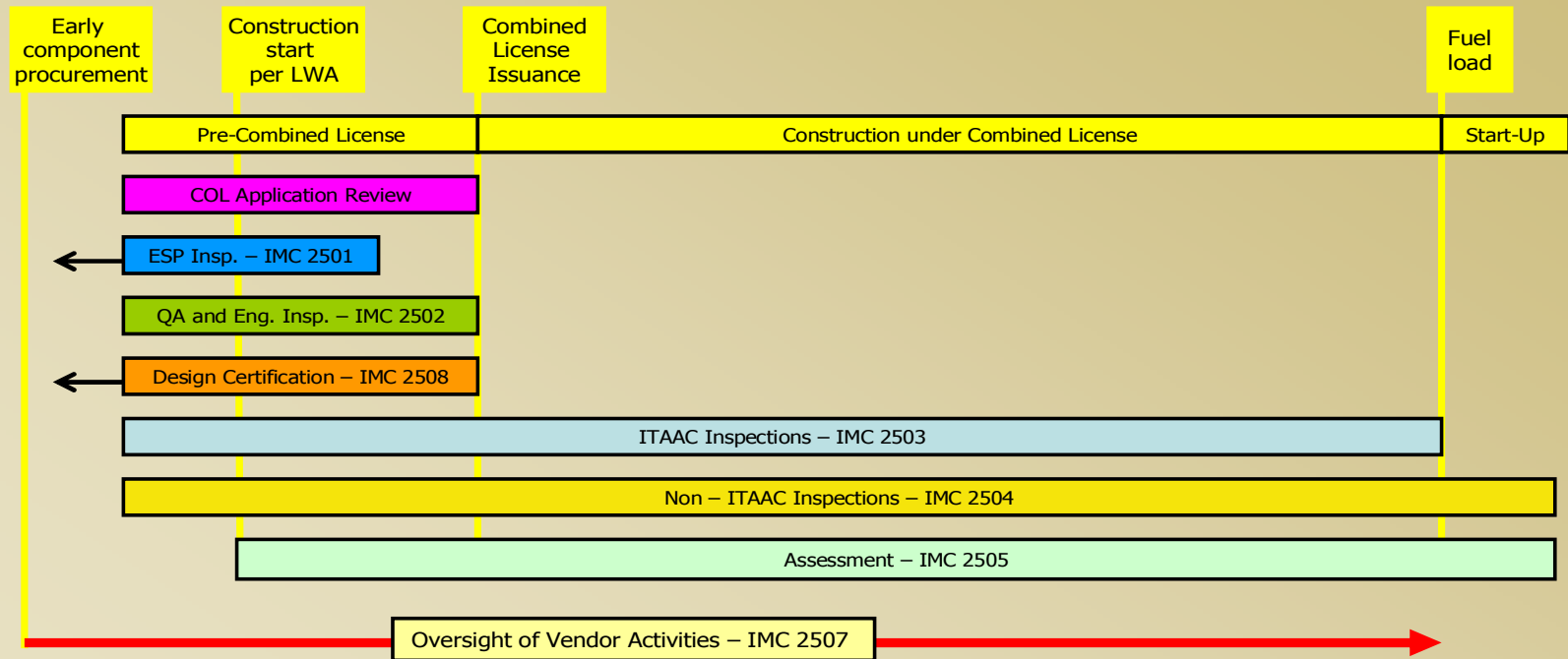
Construction Inspection Program Objectives

- Ensure that plants are constructed in accordance with approved designs and safety regulations
- Determine operational readiness
- Communicate results to all stakeholders
- Ensure effective transition to operating facility oversight program



NRC CONSTRUCTION OVERSIGHT HAS MULTIPLE COMPONENTS

Oversight will assure plants are constructed as designed.





Vendor Inspections

- NRC inspects vendor performance for compliance with regulations
- NRC oversees licensee audits of vendors
- NRC does not certify, accredit, or endorse any vendor
- Focus on ensuring the integrity of the worldwide supply chain



Summary

- NRC regulations incorporate codes and standards by reference but allow for alternatives.
- Active international cooperation in resolving key differences in engineering codes and standards, construction practices, quality assurance practices and regulatory practices.
- Standardization of applications is essential for timely licensing and construction.