Quality Oversight Of Pre-application Activities

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PRESENTATION OUTLINE

- Background (Historical Perspective of Licensing Process)
- Quality Assurance (QA) Program Implementation for New Reactors
  - DC \ COL Applicant Responsibilities
  - NRC QA Licensing Review
  - NRC QA Inspection Programs
- Conclusions
- Discussion/Committee Questions

DC - Design Certification, COL – Combined License

BACKGROUND

- NUREG-1055, “Improving Quality and the Assurance of Quality in the Design and Construction of Nuclear Power Plants”
  - QA problems were the result of utilities’ ineffective implementation of QA
  - NRC's past licensing and inspection practices did not adequately screen construction permit applicants
- QA lessons learned from NUREG-1055 were incorporated into Part 52 licensing process
- NRC current processes involve more QA inspections during DC process

QA PROGRAM IMPLEMENTATION FOR NEW REACTORS

DC / COL Applicant Responsibilities

- Appendix B to 10 CFR 50 **applies** to the development of safety-related information reflected in a certified design under 10 CFR Part 52
- Must describe how Appendix B requirements are met
- For DC applicants (Part 52 Subpart B)
  - 10 CFR 52.47(a)(19)
  - Quality Assurance Program Description (QAPD) should address design QA activities in support of a DC, not construction and design QA activities once construction begins
- For COL applicants (Part 52 Subpart C)
  - 10 CFR 52.79(a)(25)
  - QAPD should address all phases of a facility's life, including design, construction, and operation

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DC / COL Applicant Responsibilities

- **Appendix B to 10 CFR Part 50**

  Criterion I, Organization
  - Retain responsibility for the QA program

  Criterion III, "Design Control"
  - Establish organizational responsibilities
  - Detail design inputs & analysis
  - Translate design requirements into procedures
  - Establish design interface controls (internal\external)
  - Provide suitable record keeping.

  Criterion VII, "Control of Purchased Material, Equipment, Services"
  - Verify conformance of purchased safety-related items and services
  - Assess control of quality by contractors at intervals

  Criterion XVIII "Audits"
  - Conduct periodic audits to verify compliance with App. B. (internal/external).

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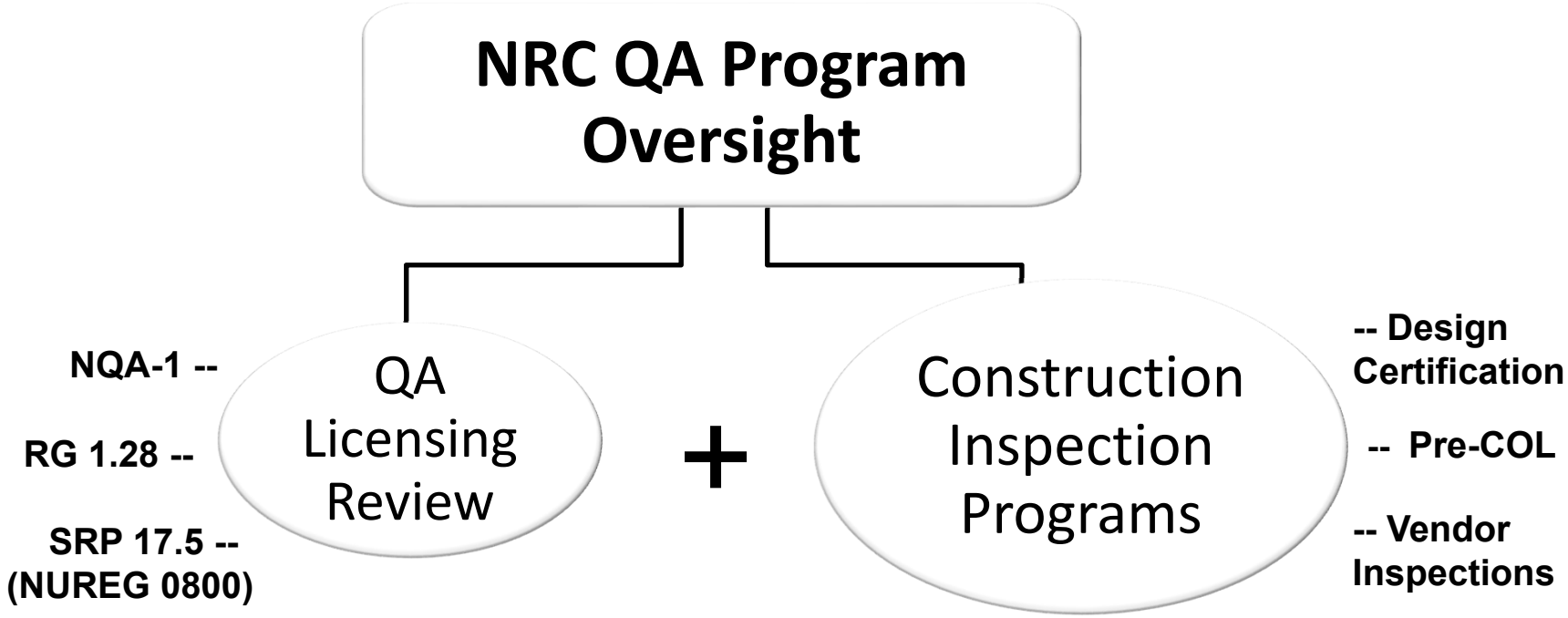

LEGAL AUTHORITY FOR CONDUCTING INSPECTIONS UNDER PART 52

- How is compliance with Appendix B verified prior to a DC applicant's submittal of a Part 52 application?
- Applicant retains responsibility for implementation of QA program
- No NRC regulatory basis to conduct pre-application QA inspections prior to docketing
- NRC construction inspection program is implemented when:
  - (1) QAPD is docketed; AND
  - (2) 10 CFR Part 21 invoked through purchase order for safety-related services or components

DC APPLICANT INSPECTIONS

NRC Construction Inspection Program

- Design Certification (IMC 2508)
  - Applies when applicant submits DC application
  - QA program review
  - Post-Docketing QA Program Inspection (IP 35017)
  - Design Qualification Testing Inspection (IP 35034)
- Pre-COL Phase (IMC 2502)
  - Applies when applicant submits COL application
  - Implemented prior to license issuance
  - Post-Docketing QA Program Inspection (IP 35017)
  - Oversight of Pre-construction activities (IP 35007)

IP = Inspection Procedure
IMC = Inspection Manual Chapter

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NRC Construction Inspection Program

- Review of Detailed Design Development
- Vendor Inspection Program (IMC 2507)
  - IP43002, Routine Inspections of Nuclear Vendors
  - IP43003, Reactive Inspections of Vendors
  - IP43004, Inspection of Commercial-Grade Dedication Programs
  - IP36100, Inspection of 10 CFR Part 21 and Programs for Reporting Defects and Noncompliance
  - IP 37805, Engineering Design Verification Inspection

The terms "vendor," and "supplier" are used interchangeably

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Conclusions

- Quality assurance is integral to nuclear power plant design and construction
- Lessons learned from NUREG 1055 are still relevant today as they relate to QA design and construction
- DC / COL applicant retains responsibility for the establishment and execution of the QA program, while NRC provides oversight of its implementation
- NRC acceptance of an applicant's QA program ensures that adequate controls are in place to meet the regulatory requirements of Appendix B
- The current QA licensing review process and inspection programs are effective and we continue to review and update staff guidance on licensing reviews and inspection

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Questions & Discussion