NRC Workshop on Vendor Oversight for New Reactor Construction

Commercial Grade Dedication: Historical Perspective

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Protecting People and the Environment

Topic Areas

- Background
- Regulatory Requirements
- Development of NRC Guidance
- Moving Forward

Background

- The overall function of a dedication program is to provide an alternate means of satisfying the requirements of 10 CFR 50 Appendix B with regard to procurement and acceptance of commercial grade items (and services) for use as basic components.

Regulatory Requirements

Key Statutory requirements

- Appendix B of 10 CFR Part 50 issued by Atomic Energy Commission (AEC) in 1970
- Section 206 of the Energy Reorganization Act (ERA) of 1974
  - Failure to comply
  - Defect
  - Reporting

Regulatory Requirements

- 10 CFR Part 21, Promulgated in June 1977 to implement ERA
  - Introduced new definitions and concepts:
  - "Defect," "Basic Component," and "Substantial Safety Hazard"
  - Established that <u>all suppliers</u> of parts making up "basic component" were subject to reporting requirements of 10 CFR Part 21

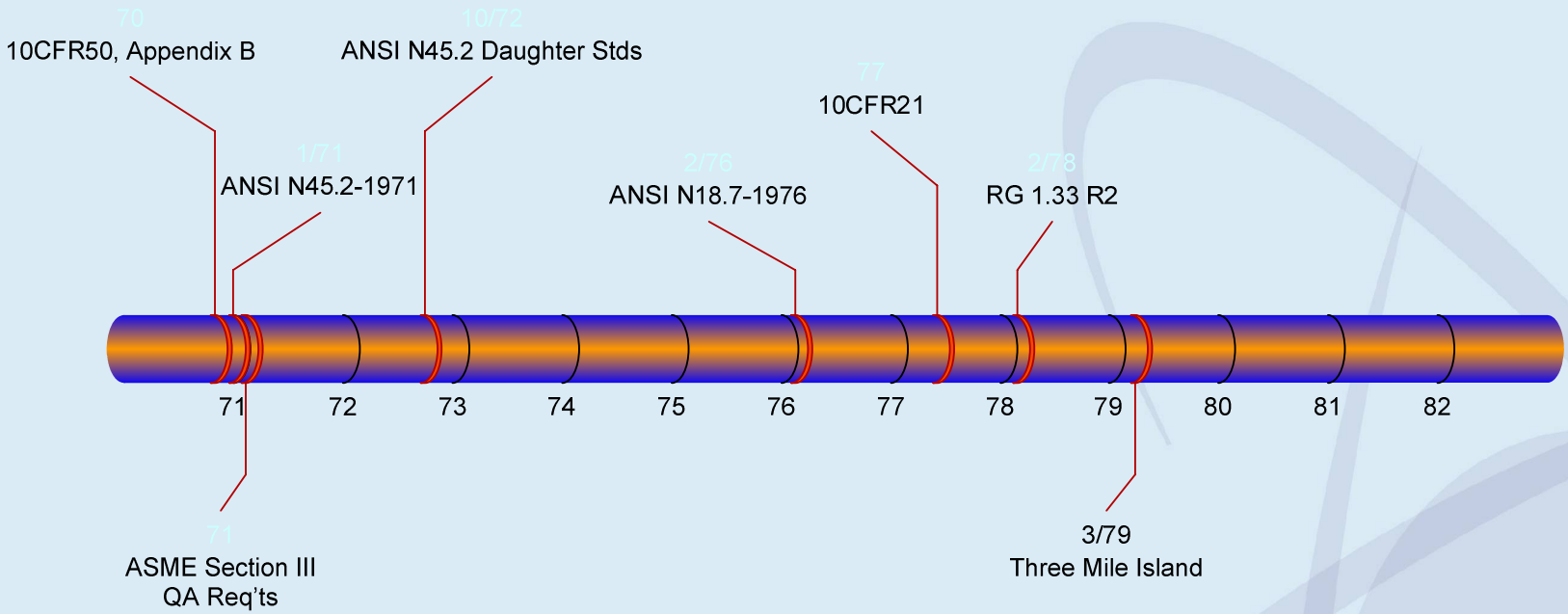
Regulatory Requirements

- Part 21 amended in October 1978
  - Commercial grade items exempt from reporting requirements of Part 21 until "dedication" is successfully completed
  - Introduced new definitions and concepts:
    (Definitions were significantly revised in September 1995)
    - "dedication" and
    - "commercial-grade item"
- 10 CFR Part 21.3 – 2008 Definitions related to dedication

Regulatory Requirements

- ANSI N 18.7-1976/Reg Guide 1.33 commercially “off-the-shelf” items may be similarly procured but care must be taken to assure at least equivalent performance
- 10 CFR Part 50 Appendix B – Applies to all safety related structures, systems, and components (Basic Components)

1970s Timeline



- Basic Regulations and requirement-based guidance
- 100+ Plants in the design / construction phases

Development of NRC Guidance

- July 1983, NRC GL 83-28 Item 2.2, Part 2
  - Equipment Classification and Vendor Interface (Safety-Related Components)
- March 1984, INPO NUTAC 84-010, Vendor Equipment Technical Information Program, “VETIP” was Industry response
- Mid 1980s - NRC Vendor-Utility Interface Inspections (for safety-related equipment) identified plant component being replaced with commercial grade items

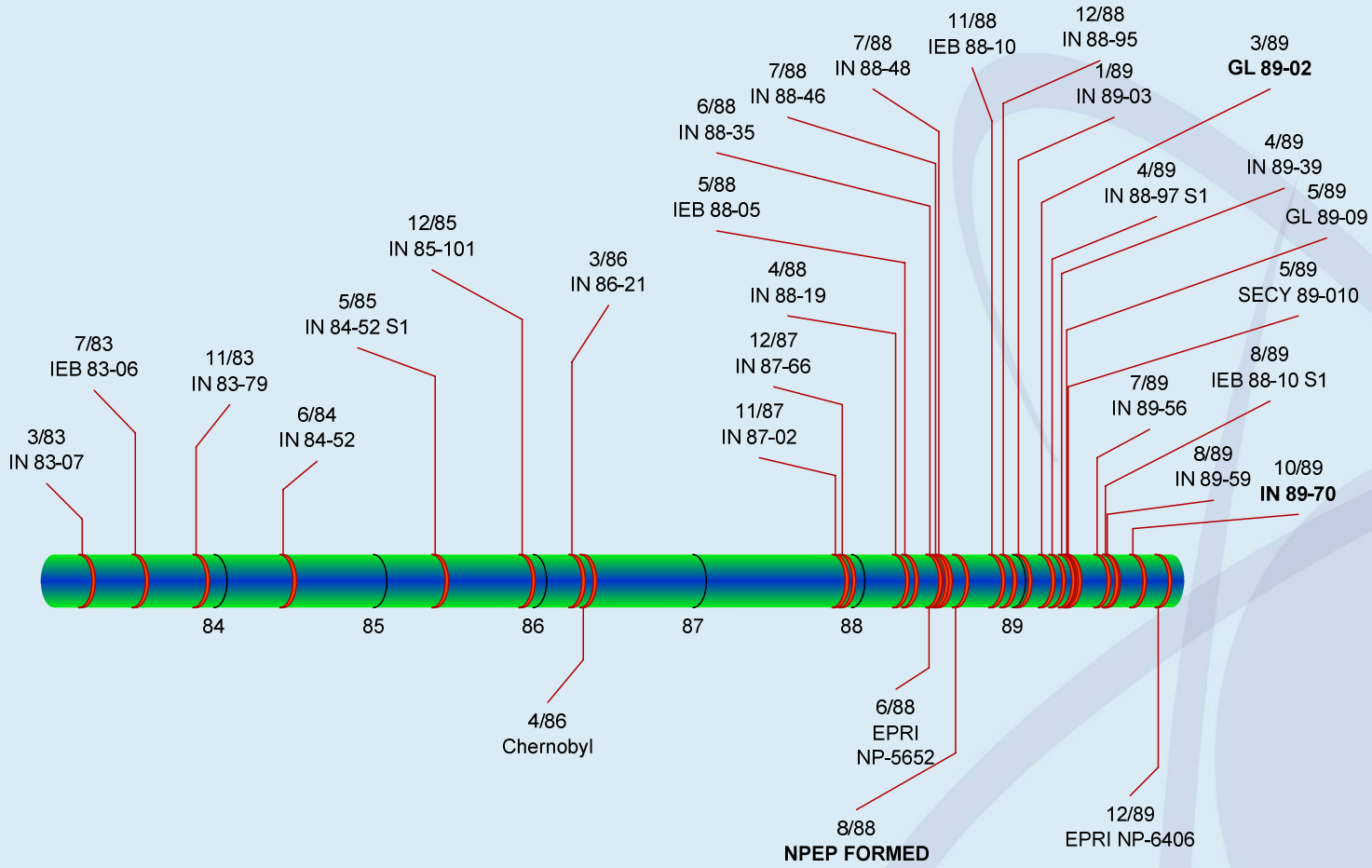
Development of NRC Guidance

- Mid 1980s - NRC initiated Licensee commercial grade dedication inspections
- Dedication Inspections in the mid-late 1980's identified common problems in CGI dedication
- June 1988 - Industry guidance EPRI NP-5652, "Guideline for the Utilization of Commercial-Grade Items in Nuclear Safety-Related Applications (NCIG-07),"

Development of NRC Guidance

- March 1989, GL 89-02, “Actions to Improve the Detection of Counterfeit and Fraudulently Marketed Products”
  - Conditionally endorsed EPRI NP-5652
  - Identified characteristics of effective procurement and dedication program
- Pause for industry improvement

1980s Timeline



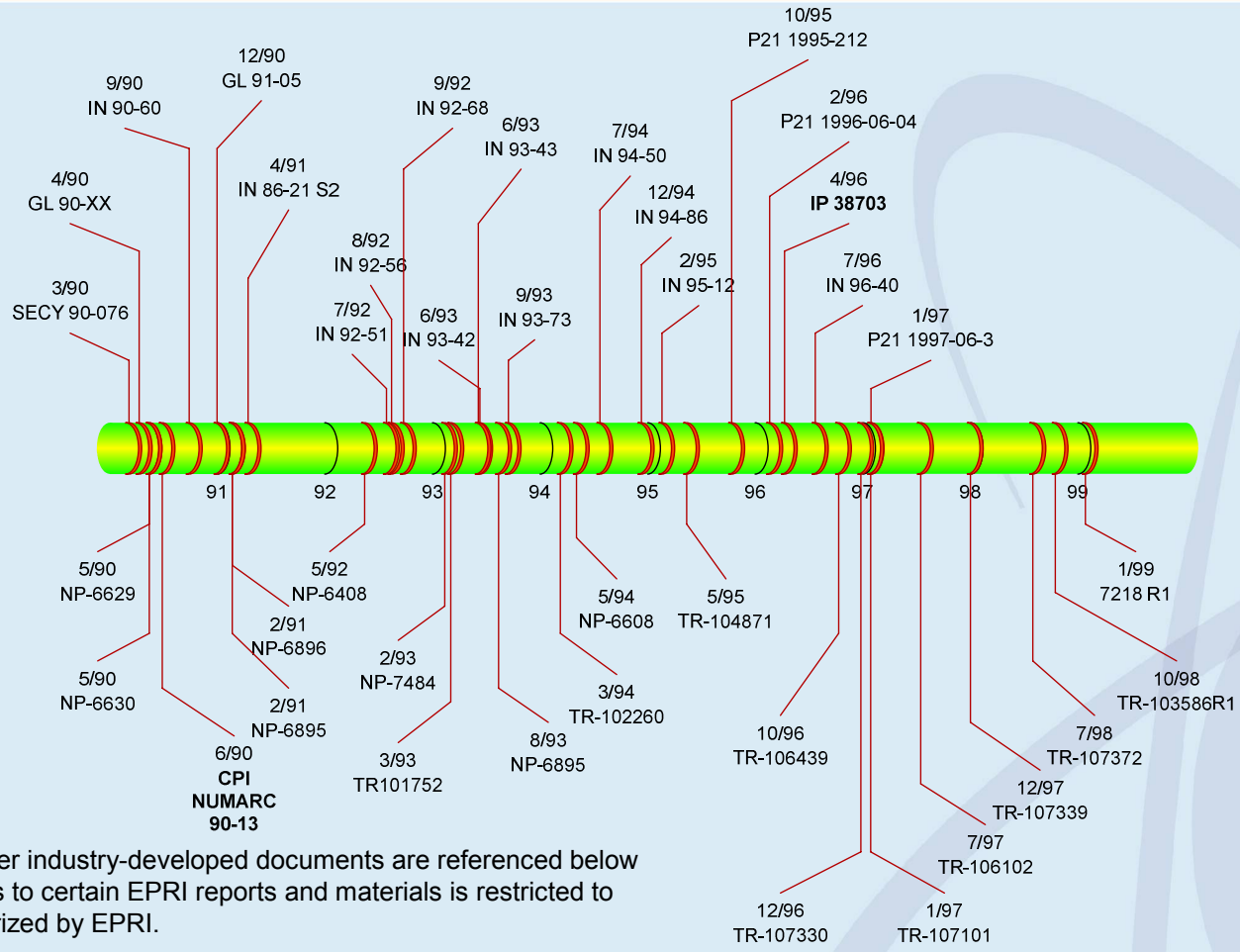
Development of NRC Guidance

- October 1990 NUMARC 90-13, Nuclear Procurement Program Improvements
  - Comprehensive Procurement Initiative
  - Assessed licensee procurement programs
- Early 1990's
  - NRC assessments of program improvements
  - NRC Pilot inspections
- April 1991, GL 91-05, "Licensee Commercial grade procurement and Dedication Programs,"
  - Announces pause in inspections
  - Provides additional clarifications on dedication

Development of NRC Guidance

- April 1993, NRC Public workshop
- November 1993, NRC issues IP 38703 "Commercial Grade Dedication"
- Appendix A to IP 38703 addressed most difficult "Dedication Issues"
  - Basis for the Selection and Verification of Critical Characteristics
  - Traceability
  - Sampling
  - Commercial Grade Surveys
  - Acceptance of Certified Material Test reports (CMTRs) and Certificates of compliance (CoCs)

1990s Timeline



Note: EPRI and other industry-developed documents are referenced below the timeline. Access to certain EPRI reports and materials is restricted to organizations authorized by EPRI.

Regulatory Requirements

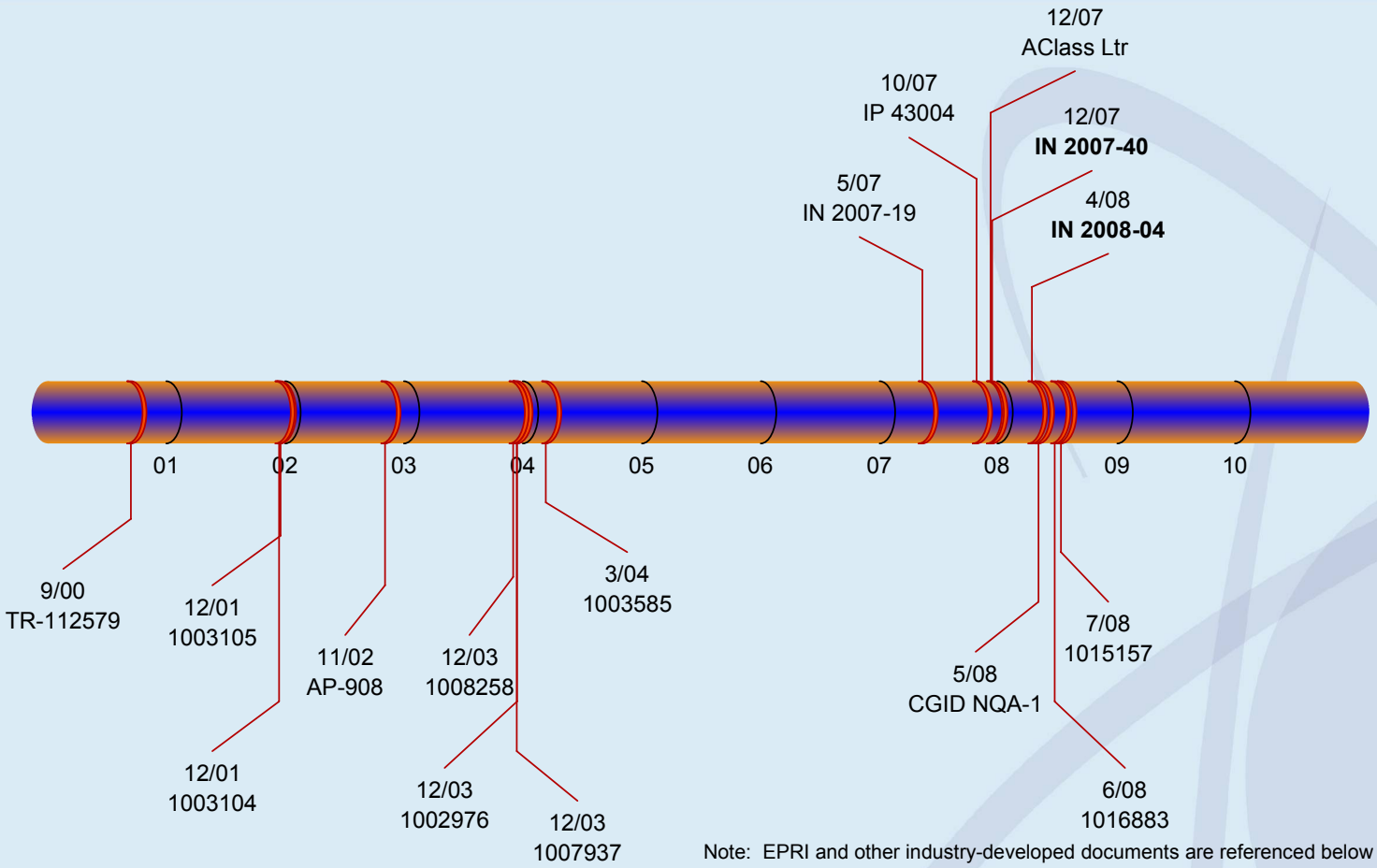
Nothing has Changed!!

- IP 38703 is still valid for Licensee dedication inspections
- October 2008, IP 43004, “Inspection of Commercial-Grade Dedication Programs”
- 10CFR Part 21.3 – Definitions

Moving Forward

- NRC Endorsement of latest edition of ASME NQA-1 Standard "Quality Assurance Program Requirements for Nuclear Facility Applications"
- Includes:
  - Subpart 2.14, "Quality Assurance Requirements for Commercial Grade Items and Services" provides enhanced guidance on commercial-grade dedication (2009 Addenda)
  - Consistent with current NRC regulatory positions and guidance

2000s Timeline



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Questions/Comments

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