U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Health Physics ITAAC

& Construction Inspection Procedures

Construction Health Physics Branch (CHPB)

CHPB ITAAC Update

- ITAAC associated with Radiation Protection:
  - Radioactive Waste and Effluents
    - Containment Isolation
    - Control Room Ventilation
    - Effluent Monitoring
  - Radiation Monitoring
    - Effluents
    - Limiting Processes
    - Safety-Related Analyses

CHPB ITAAC Update (continued)

- Safety-Related Analyses
  - Controlling and Limiting Releases, Initiating Safety Functions
  - Safety-Related: function during and after accidents to protect reactor coolant system, prevent or mitigate consequences, etc.
- Important to Safety
  - Non Safety-Related, but may be required to demonstrate compliance with Part 20, Part 50, etc.
    - Part 20 effluent concentration limits
    - 20.1406 minimize contamination of facility and environment
    - Part 50 Appendix A General Design Criteria; App. I dose objectives

CHPB ITAAC Update (continued)

- Structures
  - Radiation Shielding
    - Biological shield
    - Safe shutdown path
  - Radwaste Building
    - Seismic, Physical location, Electrical power
- ITAAC related to other areas
  - e.g., radiation monitors initiate safety functions for other systems
  - Some system functions under purview of other NRC staff affect function of CHPB areas.

AP1000 ITAAC (evaluated by CHPB)

- Radioactive Waste Systems as-designed
  - ASME Codes for piping, components, non-destructive examinations, hydrostatic tests
  - Seismic, containment penetrations
  - Prevention of cross-contamination
  - Leak detection for containment sump
  - Discharge isolation on high radiation or operator demand

AP1000 ITAAC (eval. by CHPB - continued)

- Other System Interactions
  - Recirculation of Control Room ventilation on high radiation signal
  - Shutdown of other ventilation systems on high radiation signal
  - Primary Sample System has inputs for protective operator actions, incident response
    - Seismic qualification, containment isolation

CHPB ITAAC
(ITAAC still under development)

- ITAAC details still under review
  - Applicant-initiated changes to systems
  - Revisions to design certifications
  - Open items, requests for additional information, other staff inquiries
  - Commitments to regulatory guidance, standards
  - Provide consistency from one design to another with respect to ITAAC

Construction Inspection Procedures (CIPs)

- ITAAC CIPs associated with Radiation Monitoring
  - Procedure 65000.19 [draft]
    - "Inspection of ITAAC-Related Installation of ITAAC-Related Radiation Monitoring Components and Systems" (NRC Inspection Manual Chapter 2504)
  - Will be amended to include other ITAAC as finalized

CHPB CIPs (continued)

- Non-ITAAC (MC 2503) CIPs
  - Radioactive waste processing systems and operational programs
- Radioactive Waste Processing
  - Gaseous Waste Management (84524)
  - Solid Waste Management (84527)
    - Process Control Program
    - Radioactive Waste Storage
  - Liquid Waste Management (84528)
    - Process streams include input to Solid Waste Management System

CHPB CIPs (continued)

- Non-ITAAC CIPs, Operational Programs
  - Radiological Environmental Monitoring (80522)
  - External Exposure (83533)
  - Internal Exposure (83534)
  - Control of Radioactive Materials (83535)
  - Facilities and Equipment (83536)
  - Maintaining Exposures As Low As Reasonably Achievable – ALARA (83537)
  - Offsite Dose Calculation (83746)

CHPB Procedures (Remaining to be Developed)

- Pre-operation/startup Test Procedures
  - Generic procedures vs. each design
  - Current ITAAC CIPs either focus on specific designs, or are due for updating of guidance

CHPB Path Forward

- ITAAC
  - Addressed through certification review process
- MC 2503 existing procedures
  - In final stages of promulgation
- MC 2504 additional procedures
  - Address changes to ITAAC for MC 2504
  - Add guidance on initiatives

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Questions?