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ACRS PLANT OPERATIONS AND FIRE PROTECTION SUBCOMMITTEE MEETING

July 30, 2009

8:00 A.M. – 3:00 P.M.

Region II

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SAFETY BRIEFING / REMINDERS

- Evacuation Routes
- Visitors Must Be Escorted
- Restrooms
- Lunch Options
- Teleconference Details
- Sign-In Sheet

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AGENDA

8:00 - Opening Statement - J. Sieber (ACRS)
8:05 - Introduction - L. Reyes (RII)
8:15 - RII Organization/Staffing - L. Plisco (RII)
8:45 - WBN #2 Current Status and Site Activities - R. Haag (RII)
9:45 *** BREAK ****
10:00 - RII Methods and Results in Evaluating WBN Unit 2 Condition and Performance - R. Haag (RII)
11:30 ****LUNCH******
12:30 - Other Construction Projects - M. Lesser (RII)
1:30 - Region II Operating Plant Discussion - L. Wert (RII)
2:30 - Public Comments
2:45 - Subcommittee Deliberations
3:00 - Adjourn

OPENING COMMENTS

J. Seiber, Chair

ACRS Plant Operations and Fire Protection Subcommittee

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INTRODUCTION

L. Reyes
Regional Administrator

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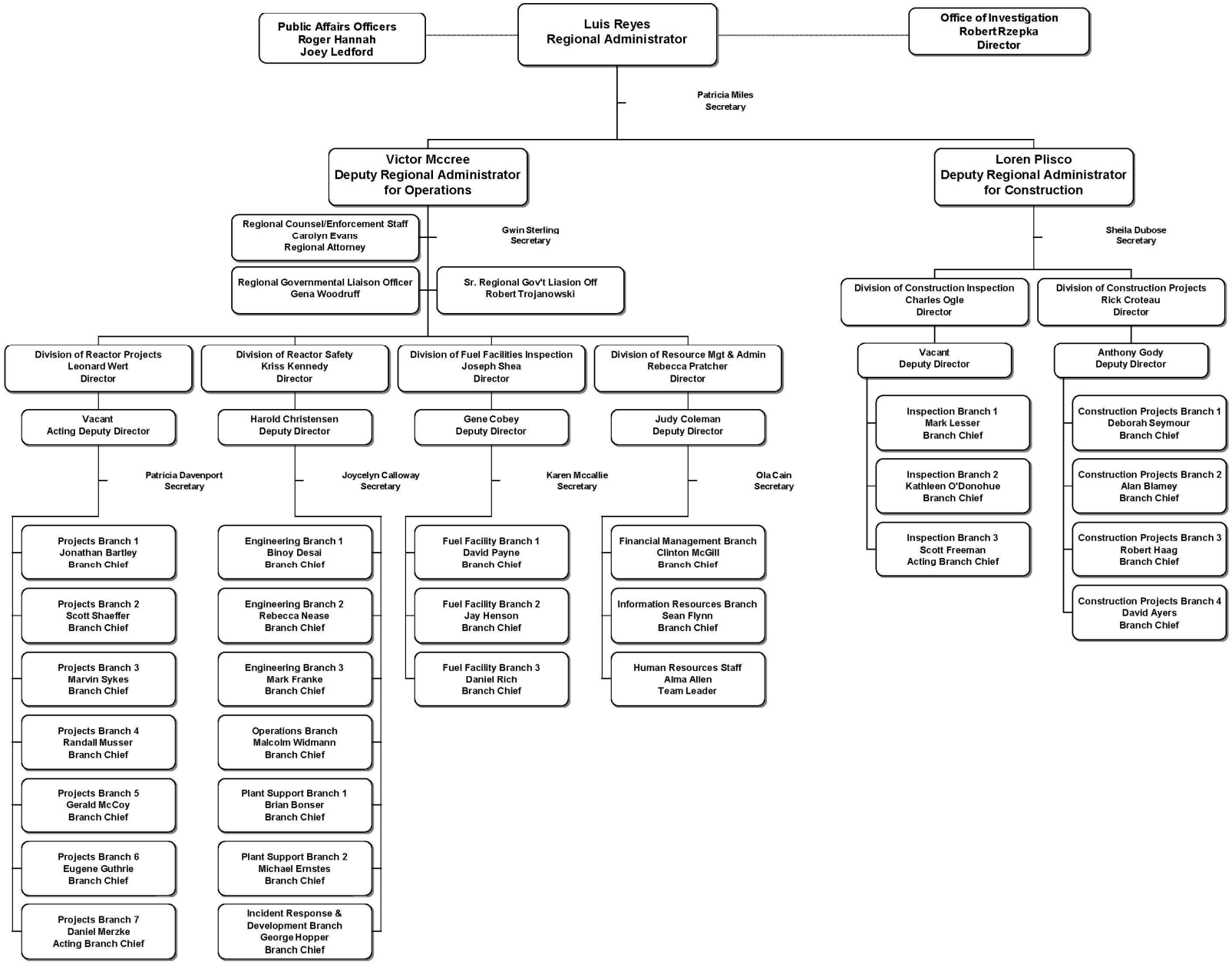
Region II Organization

Loren R. Plisco

Deputy Regional Administrator for Construction

U. S. NRC

Region II - Atlanta, GA



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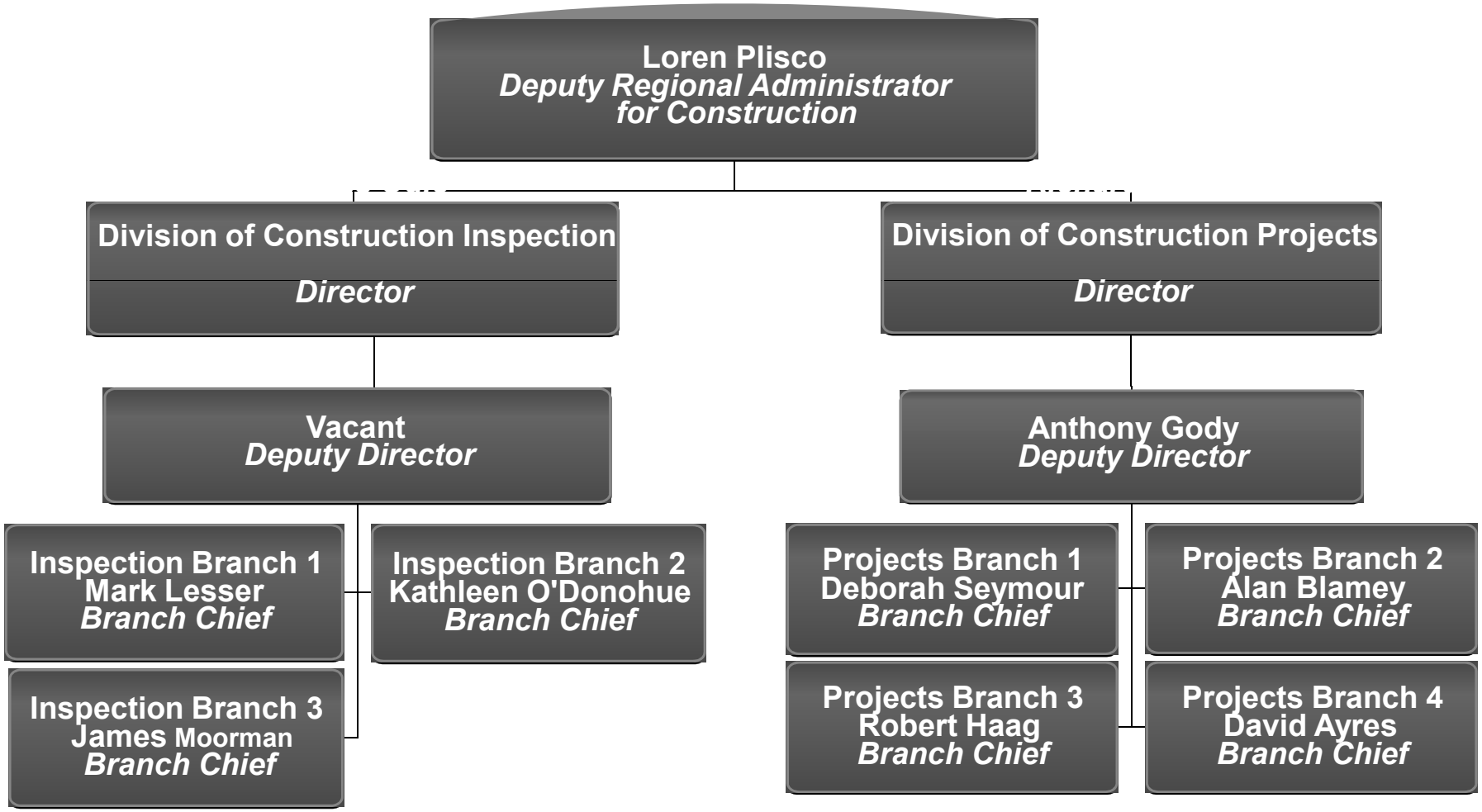
Center for Construction Inspection



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Major Functional Responsibilities

- Agency center of excellence for nuclear facility construction inspection activities
- Manage construction project inspection program
- Develop infrastructure for construction inspection program and staff
- Carry out construction inspections at new facilities and associated vendors
- Evaluate performance of applicants/licensees
- Provide regulatory bases for agency decisions

Watts Bar Unit 2 Staffing

- 10 FTE (direct) budgeted
- Construction Projects Branch 3 (DCP)
- Construction resident office established
- 3 resident inspectors assigned
- 5 FTE matrixed to DCI and DRS

WB2 Past Challenges

- WB2 partially constructed and inspected under IMC 2512
- IMC 2512 out of date and archived
- Processes for new reactor construction still under development and/or NA
- Insufficient time to update IMC 2512 or wait until new reactor processes ready
- Not the same as Browns Ferry Unit 1

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Implemented Solutions

- Prepared stand-alone IMC 2517
- Incorporated lessons learned
- Used IMC 2512 inspection procedures with caveats to adopt latest NRC guidance
- Reconstituted inspection program performed during construction to-date
- Developed process to evaluate acceptability of past inspection work

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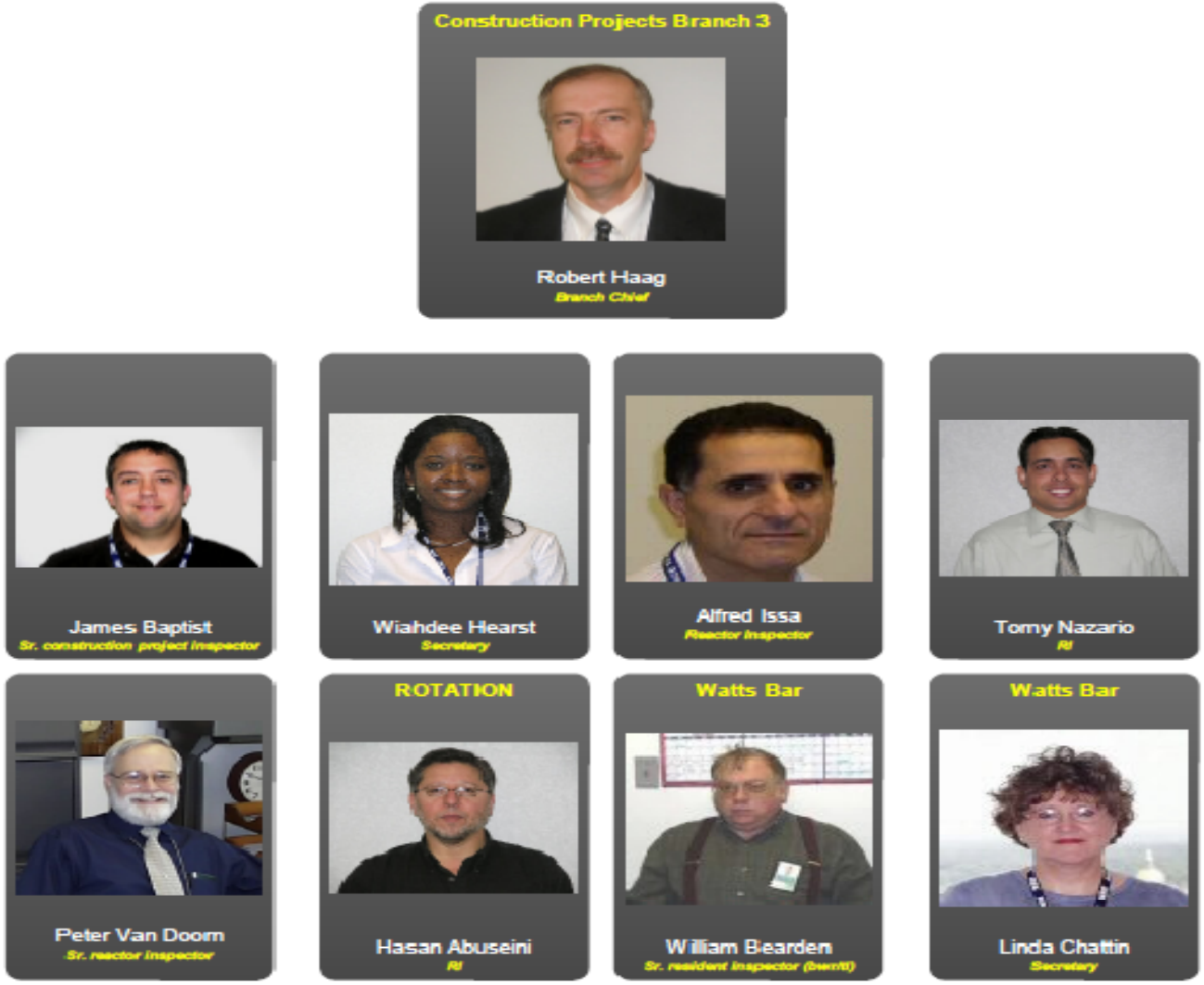
WBN Unit 2 Current Status and Site Activities

Robert C. Haag
Branch Chief
Division of Construction Projects

Construction Projects Branch 3 (CPB3)



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RII Inspection of Watts Bar 2

- CPB3 has overall responsibility for WBN2 construction inspection program
- CPB3 staff has construction and Watts Bar experience
- Adequate resources provided by program office
- Planning for additional resident inspector with operations experience

RII Inspection of Watts Bar 2 Cont.

- Readiness inspection at beginning of WBN2 project with followup completed one year later
- Problem Identification & Resolution (PI&R) inspections:
  - Review of correction action program part of resident inspector routine activities
  - PI&R team inspection
- Incorporate historical and current issues into planned inspection activities
- IP&S used to ensure all required inspection activities are completed

RII Inspection of Watts Bar 2 Cont.

- Assistance provided by DCI and DRS in specialized areas, i.e., fire protection, welding, preservice, etc.
- Inspection infrastructure established
  - Existing programs: Inspection Manual Chapters (IMC) 2512, 2513, and 2514
  - Supplemental guidance provided by IMC 2517
  - Additional guidance addressed when identified
- Challenges: Timely identification/ focusing of inspection opportunities

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RII Support for NRR

- CPB3 has routine interaction with NRR
  - Periodic status calls
  - Annual management 'Summit' meetings
  - Mutual participation in Public Awareness meeting
- Assist in review of licensing submittals
  - Examples: Regulatory framework for Generic communication and CAP/SP completion; Refurbishment program
- Inspections in support licensing consideration
- RII will have an active role in WBN2 Reactivation Assessment Group (WRAG)

WBN2 Current Status

- Completed historical inspection comparison to inspection requirements; reconstitution
- Inspection open items reviewed
- Similar reviews performed for generic communications, allegations, and temporary instructions
- Reviewing construction schedule to identify upcoming inspection opportunities
- CAP/SP inspections initiated with assigned NRC owners

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WBN2 Current Status Cont.

- Adequacy of QA records reviewed as part of inspections; CAP on QA records devoted to historical problems
- Layup, preservation, and PM records reviewed during readiness inspection
- Safety Culture inspected as lessons learned initiative; Temporary Instruction for historical employee concern program issues

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RII Evaluations and Assessments

- TVA walkdowns closely monitored by NRC; lessons learned from previous TVA projects
- Inspection of refurbishment program:
  - Address gaps in layup and preservation program
  - Resolve qualification of installed components
  - Assess credit taken by TVA for layup activities
- Effectiveness of QA/QC organization

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RII Evaluations and Assessments Cont.

- Evaluation of recent industry issues, i.e., gas accumulation, sump debris, ice condensers
- Inspection Results:
  - TVA's oversight of vendors and contractors
  - WBN2 engineering activities
  - Licensing Effectiveness
  - Construction Activities
- Construction controls to prevent impacting U1 operations closely monitored

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Unit 2 Annual Assessment

- First formalized construction assessment following guidance in IMC 2517
- Covered inspection results for 2008
- Internal NRC assessment followed by public meeting to discuss results
- Overall conclusion that TVA's program and procedures were adequate to support ongoing construction activities

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Operator Licensing

- Administer a "Difference Examination"
  - Operating Exam (in plant walk-thru)
  - Written Exam (if necessary)
    - Based on actual difference (physical and operationally) between Units 1 and 2
- TVA has scheduled upcoming classes to support two Unit operations

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Conclusions

- WBN2 infrastructure developed to support construction inspections
- Adequate inspection resources provided
- CPB3 staff experienced and knowledgeable
- WRAG will provide oversight and ability to make course corrections
- Scheduling inspections based on TVA's construction schedule is challenging

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Other Construction Inspection Activities

Mark S. Lesser
Branch Chief
Division of Construction Inspection

Overview

- Fuel Facility Construction
- Vendor Inspections
- New Reactors
- Support to Operating Reactor Inspections

Fuel Facilities

- Shaw Areva MOX Services, Mixed Oxide Fuel Fabrication Facility, Aiken, South Carolina
  - Manual Chapter 2630, MOX Fuel Fabrication Facility Construction Inspection Program
  - Inspections started Oct 2006
  - Senior Resident Inspector onsite

- Louisiana Energy Services (LES) L.L.C., National Enrichment Facility, Eunice, New Mexico
  - Manual Chapter 2696, LES Gas Centrifuge Facility Construction and Pre-operational Readiness Inspection Program
  - Inspections started Dec 2006

Inspections

- Quality Assurance (including design control, problem identification and corrective action, etc.)
- Items Relied On For Safety (IROFS)
- Backfill
- Concrete foundations, buildings
- Structural steel
- Instrumentation
- Piping / welding
- Commercial Grade Dedication

Examples of Inspection Findings

- Controls over concrete batch plant
- Rebar bending issues
- Reinforcing steel splices
- Design change controls for steel reinforcement; structural beams
- Procedures for concrete strength tests and grounding rod tests

Inspection Findings (cont.)

- Validation of QA records
- Oversight of contractor non-compliances
- Identification and correction of adverse conditions
- Installation of reinforcement steel
- Documentation of visual weld inspections

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Support to Division of Fuel Facility Inspection

- USEC American Centrifuge Project, Piketon, Ohio
- Global Laser Enrichment, Wilmington North Carolina

Vendor Inspections

- NRO - lead for reactor vendor inspection program, CCI participates
- CCI - lead for fuel facility vendor inspection program
- Inspect adequacy of licensee / applicant oversight of vendors and/or vendors directly

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New Reactor Inspection Activities

- Support NRO for pre-COL site audits
- Geotechnical investigations
- QA program inspections
- Vendor oversight inspections
- Engineering Design Verification
- Foreign construction site visits

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New Reactors (cont.)

- ITAAC Related inspections – MC 2503
- Program Inspections – MC 2504
- Infrastructure Development
  - Inspection Procedures
  - Inspection Documentation
  - Inspection Scheduling
  - Enforcement Policy
  - Inspection Scheduling

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Support to Operating Reactors

- Maintain inspector qualifications
- Participation in ROP inspections
- Digital I&C Inspection Support
- Emergency Preparedness

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Region II Operating Plant Discussion

Leonard Wert
Director
Division of Reactor Projects

Region II Plants-ROP Performance

- 29 of 33 operating units in Licensee Response column
- 4 units in Regulatory Response column
- 3 units (1 site) with open Substantive Cross-Cutting Issue (PI&R)

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Baseline Program Effectiveness

- Inspectors continue to identify safety issues.
- Recent examples:
  - TS compliance on increased RCS leakage
  - Inadequate root cause analysis of event
  - Maintenance deficiencies
- Licensees address all findings.
- Program focuses both licensees and agency on risk significant issues.

ROP Baseline Evolution

- ROP baseline is flexible and continues to be refined:
  - Emergent safety issues (TIs, GLs)
  - Experience/incidents lead to changes
  - Formal ROP re-alignment process
  - Safety culture aspects

- Inspection Staff input: More inspection of in-process maintenance and engineering work.

RII Plants beyond "Licensee Response" column

- Currently, 4 units at 3 sites
- Associated performance issues are primarily plant specific.
- Some association with safety culture aspects
- Safety Culture aspects expected to be addressed by licensees.
- Licensee's actions, including safety culture aspects, are evaluated via supplemental IPs (95001, 95002, and 95003)

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Potential Generic Implications

- Potential generic implications are considered for all findings, regardless of action matrix column or overall plant performance.
- Region II utilizes Plant Issues Tracking Application (PITA) to promptly share information on plant issues.
- PITA facilitates OpE info exchange and communications.
- Region II also recommends/develops generic communications.

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RII "Greater than Green" Findings

- RII dispositions about 3-4 "greater than green" issues each year. (33 since 2000)
- No Yellow or Red findings recently does not necessarily reflect trend of enhanced safety:
  - SDP used to assess findings
  - Robust design/construction, strong regulatory requirements, and generally conservative operations limit safety impact of many findings.

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"Greater than Green" Findings (Cont'd)

- Licensees acting to reduce overall risk:
  - Implementing modifications to systems
  - Changing operations of existing systems
  - B.5.b activities and equipment
  - Continuing to identify and address issues (e.g. NFPA 805)

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"Greater than Green Findings (Cont'd)

- Actions, including modifications, are scrutinized by NRC inspection.
- Supplemental Inspections specifically address actions to correct root causes.
- Outcome is reduced risk to public and environment.

ROP Treatment of Safety Culture

- Cross-cutting aspects are considered for issues that reach level of a Finding.
- Some inspectors want ability to document and “tag” minor issues and observations.
- Many staff feel that 30 minutes for CAP review insufficient, but other IPs allow time for CAP review also.

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ROP Treatment of Safety Culture (Cont'd)

- Reg II does not limit inspectors strictly to time estimates in IPs – emphasis is on high quality of each sample.
- No NRC-performed safety culture assessments of Region II plants.
- Numerous licensee assessments of safety culture have been performed - vary in scope and content.

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Safety Culture of Region II

- OIG surveys closely reviewed, areas for enhancement selected, actions developed.
- Internal Safety Culture Task Force
- 2007 NRC Employee Survey
- Management solicits staff feedback and input in various ways, some examples:
  - Feedback forms
  - Informal calls to individuals
  - Small group meetings
  - “Ask the Regional Administrator”
  - 360 reviews of management

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Safety Culture of Region II (Cont'd)

- Responses are provided for feedback, input, or comments received.
- Management has recognized individuals for bringing up issues, asking questions.
- Staff input indicated that Region II safety culture is currently healthy.

Engineering Inspections

- Component Design Bases Inspections Issues
  - Licensee's rigor in technical evaluations
  - Licensees not taking advantage of previous CDBI inspection results
  - Generic Issues identified in Information Notice 2008-02
  - Procedure under review for revision

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Engineering Inspection Challenges

- Digital I&C and Cyber Security
  - Development of Baseline inspection procedures
  - Training of inspectors
- NFPA 805 Inspections
  - Development of inspection procedure
  - Training of inspectors

WRAP-UP

- Public Comments
- Subcommittee Deliberations
- Adjournment

Acronyms

- ACRS – Advisory Committee on Reactor Safety
- CAP – Corrective Action Program
- CCI – Center for Construction Inspection
- CDBI – Component Design Bases Inspection
- COL – Combined Operating License
- CPB3 – Construction Project Branch 3
- DCI – Division of Construction Inspection
- DCP – Division of Construction Projects
- DRS – Division of Reactor Safety
- FTE – Full Time Equivalent
- GL – Generic Letters
- I&C – Instrumentation and Control
- IMC or MC – Inspection Manual Chapter
- IP – Inspection Procedure
- IP&S – Inspection Plan and Schedule
- IROFS – Items Relied On For Safety
- ITAAC – Inspections, Tests, Analyses and Acceptance Criteria
- LES – Louisiana Energy Services
- MOX – Mixed Oxide
- NA – Not Applicable
- NFPA – National Fire Protection Association
- NRC – Nuclear Regulatory Commission
- NRO – New Reactor Office
- NRR – (Office of) Nuclear Reactor Regulation
- OIG – Office of the Inspector General
- OpE – Operating Experience
- PI&R – Problem Identification and Resolution
- PITA – Plant Issues Tracking Application
- PM – Preventive Maintenance
- QA – Quality Assurance
- QC – Quality Control
- RCS – Reactor Coolant System
- RII or Reg II – (NRC) Region II
- ROP – Reactor Oversight Process
- SDP – Significance Determination Process
- TI – Temporary Instructions
- TS – Technical Specifications
- TVA – Tennessee Valley Authority
- U1 – (WBN) Unit 1
- USEC – United States Enrichment Corporation
- WB2 – Watts Bar Unit 2
- WBN – Watts Bar Nuclear
- WRAG – WBN2 Reactivation Assessment Group