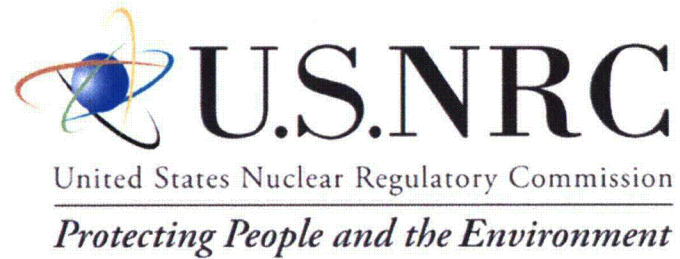




New Reactor Business Line Commission Briefing

September 10, 2014



Opening Remarks

Mark Satorius
Executive Director for Operations



Overview of the New Reactor Program

Glenn M. Tracy
Director
Office of New Reactors

Mission

Serve the public interest by enabling the safe, secure, and environmentally responsible use of nuclear power in meeting the Nation's future energy needs

Current Environment

- **5 units under construction**
- **8 active Combined License Application (COLA) reviews**
- **6 suspended COLAs; 2 withdrawn**
- **2 Design Certification (DC) reviews;
1 DC pre-application review**
- **Small Modular Reactor
pre-application activities**

Strategic View

Longer Term Projections (1/3)

- **Current DC and COLA reviews near completion**
- **Activity on a new large light water reactor DC, DC renewals, COLAs, and construction oversight at reduced levels**

Strategic View

Longer Term Projections (2/3)

- **Inspection and license amendment reviews supporting early operation of AP1000s**
- **Small Modular Reactor review activity high and potentially increasing**

Strategic View

Longer Term Projections (3/3)

- **Infrastructure development for non-light water reactor safety reviews continuing**
- **International cooperation in all new reactor areas increasing**

Key Program Challenges

- **Volatility**
- **First-time implementation of 10 CFR Part 52 construction**
- **Design changes**
- **Module construction**
- **Procurement**

Key Program Strategies

- **Agility**
- **Implementing lessons learned**
- **Effective communications**
- **Strategic planning**
- **Effective international cooperation**

New Reactor Business Line Prioritized Goals

- I. Support the construction oversight of Watts Bar 2 and four AP1000 units**

- II. Implement the agency's reactor vendor inspection program**

New Reactor Business Line Prioritized Goals

III. Develop an integrated transition plan from construction to operations

IV. Support completion of design certifications, early site permits, and license applications

New Reactor Business Line Prioritized Goals

V. Establish the infrastructure to support review of Small Modular Reactor applications

VI. Prepare for the licensing of advanced non light-water reactors



Construction Inspection

Victor McCree
Regional Administrator
NRC Region II

High Level of Inspection Activity

- **AP1000 – nuclear island, module assembly, containment vessel**
- **Watts Bar 2 – pre-operations**

**Aux. Bldg. Structural Module
(CA20 – Vogtle Unit 3)**



**Shield Building Panels
(Vogtle Unit 3)**



Key Implementation Challenges

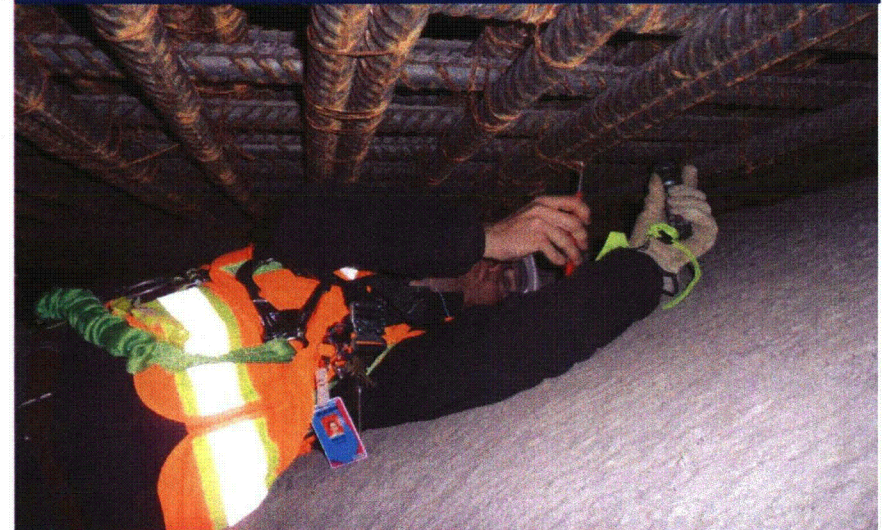
- **Construction and Vendor inspection interface**
- **Dynamic inspection environment**
- **First-of-a-kind inspections**



Key Implementation Strategies

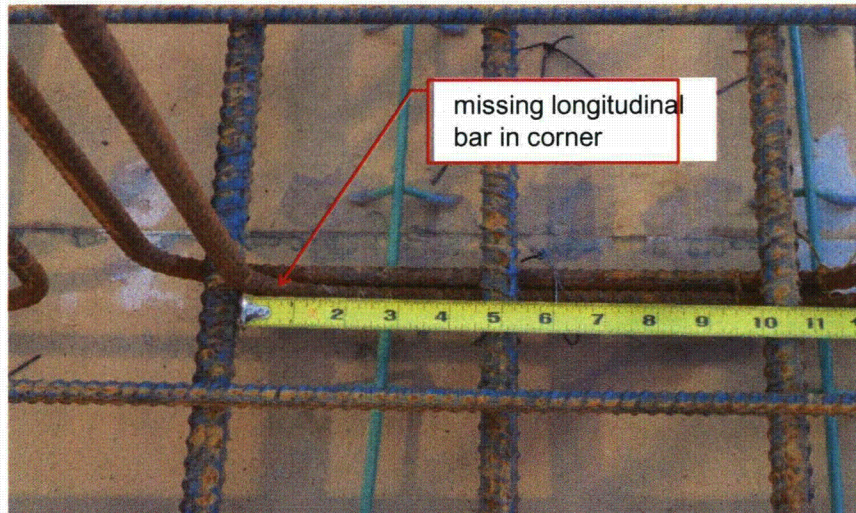
- **Strong inspection program collaboration**
- **Construction inspection flexibility and agility**
- **Advance planning and lessons learned**

David Failla – Summer Unit 2



Construction Inspections – Adding Value

- **Anchorage of shear stirrups**
- **Accumulator tank volume**



Inadequate Anchorage of Shear Stirrups



Accumulator Volume Calculation



Construction Oversight Programs

Michael Cheok

Director

**Division of Construction Inspection
and Operational Programs**

Office of New Reactors

Successful First Year of cROP

- **Construction
Reactor Oversight
Process 2013
Results**
- **Construction
Reactor Oversight
Process 2013
Self-Assessment**

**Coleman Abbott and
Brian Green – Vogtle Unit 3**



Part 52 Lessons Learned – Status (1/1)

- 1. Clarifying Tier 2* information**
- 2. Making clear and timely decisions in the construction environment**
- 3. Interfacing effectively with licensees to verify ITAAC closure**

Part 52 Lessons Learned – Status (2/2)

- 4. Enhancing the Vendor Inspection Program**
- 5. Formalizing guidance for changes to the licensing basis during construction**

Readiness for Oversight of Start-Up

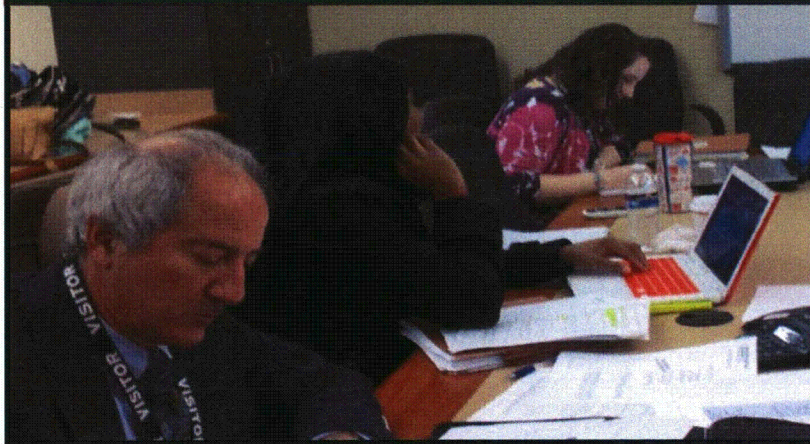
- **ITAAC Readiness**
- **Operator Licensing**
- **Initial Test Program (ITP) Procedure Development**



Vendor Inspection Center of Expertise

Risk-informed, performance-based, technically-focused samples

**Jeff Jacobson,
Chelsea Smith, and
Sarah Temple at Westinghouse**



**George Lipscomb and
Robert Mathis III at
Ultra Electronics**



Vendor Oversight Challenges and Strategies

- **AP-1000 vendor issues**
 - **Module fabrication**
 - **Squib valves**
 - **Reactor coolant pumps**
 - **Digital instrumentation and control**
- **Prevention of Counterfeit
Fraudulent and Suspect Items**

Transition of New Reactors from Construction to Operation

- **Staff's readiness report identified:**
 - **No immediate readiness issues**
 - **Long-term readiness issues in two broad areas: infrastructure and implementation**
- **Staff will actively manage readiness issues to completion**



Large Light Water Reactor Licensing

Frank Akstulewicz
Director

Division of New Reactor Licensing
Office of New Reactors

Near Term Goals – COLAs

- **Focus on completing safety reviews for COLAs in FY15**
- **Support mandatory hearings in FY 15**

Near Term Goals – DCs and Early Site Permit

- **Complete safety review for an Early Site Permit**
- **Make progress on safety reviews for EPR and US APWR DCs**
- **Initiate APR-1400 DC review, if accepted**

Challenges and Strategies (1/2)

- **Implementation of the continued storage rule**
- **Resolution of technical issues**
 - **Digital instrumentation and controls**
 - **Structural design**
 - **Site specific seismic and hydrology**

Challenges and Strategies (2/2)

- **Resources to support hearings and combined license reviews**
- **Staff transition and knowledge management**
- **Emerging issues**

Longer Term Projections and Trends

Workload volatility and uncertainty

- AP1000 license amendments**
- EPR and US APWR design reviews**
- Potential reactivation of COLAs**
- Potential for new COLAs and Early Site Permit applications**

Summary

- **The New Reactor Business Line is agile in the face of volatility.**
- **Construction and vendor oversight are adding value and having a positive impact on safe construction.**
- **Proactive planning and disciplined execution of lessons-learned and “safe closure” focus our activities.**

Acronyms

- **AP1000 – Advanced Passive 1000**
- **COLA – Combined License Application**
- **DC – Design Certification**
- **EPR – Evolutionary Power Reactor**
- **ITAAC – Inspections, Tests and Acceptance Criteria**
- **ITP – Initial Test Program**