



# **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- **6 suspended COLAs; 2 withdrawn**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**



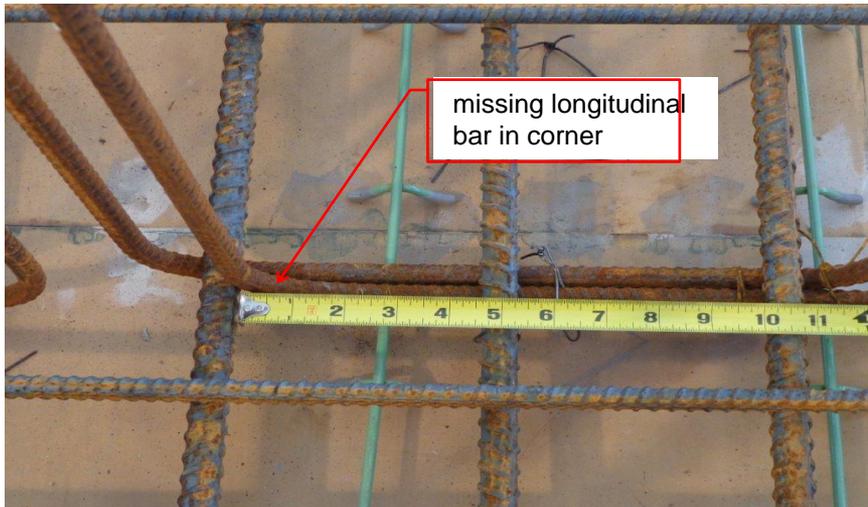
# Key Implementation Strategies

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



# Construction Inspections – Adding Value

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



**Inadequate Anchorage of Shear Stirrups**



**Accumulator Volume Calculation**



# **Construction Oversight Programs**

**Michael Cheok**

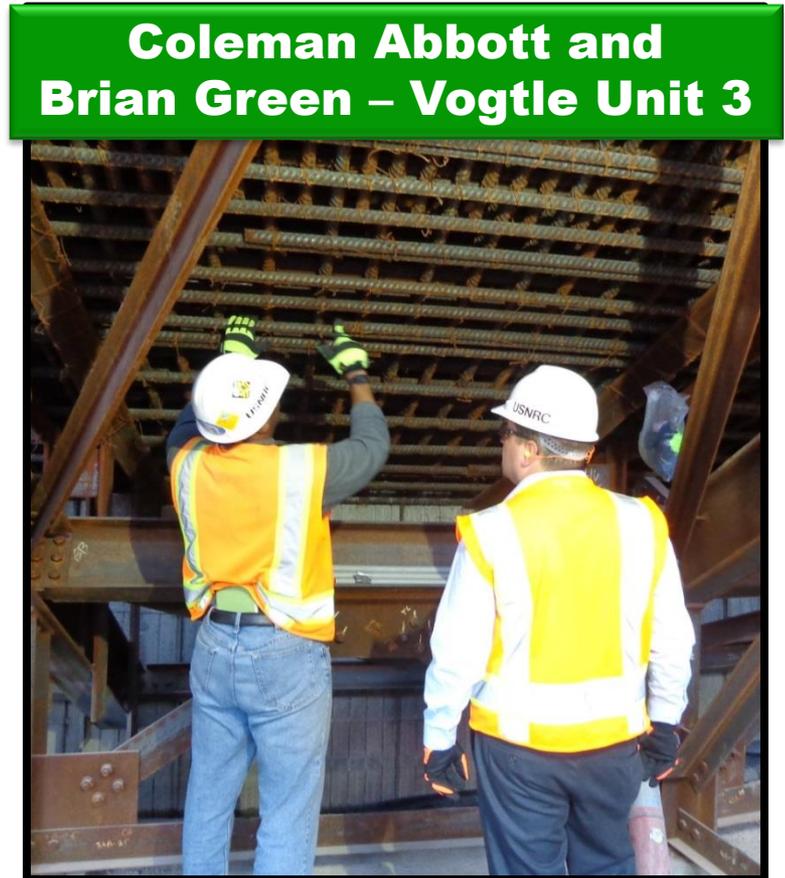
**Director**

**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**



# **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

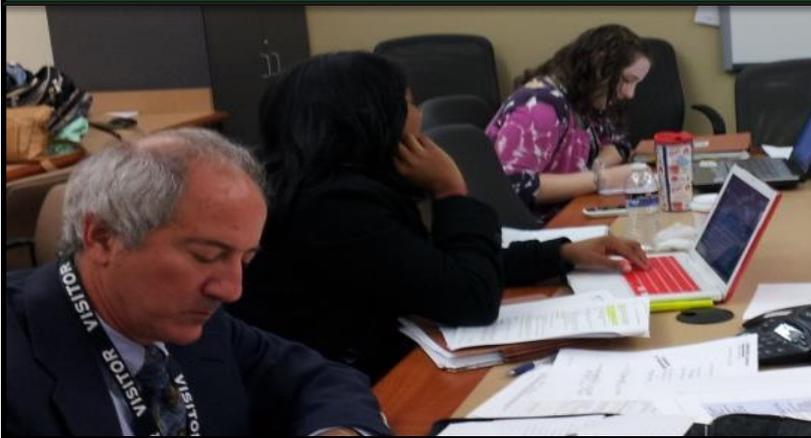
- **ITAAC Readiness**
- **Operator Licensing**
- **Initial Test Program (ITP) Procedure Development**



# 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**