

SCHEDULING NOTE

Title: **STRATEGIC PROGRAMMATIC OVERVIEW OF THE NEW REACTORS BUSINESS LINE (Public Meeting)**

Purpose: The purpose of the briefing is to provide the Commission with a discussion of strategic considerations associated with the New Reactor Business Line.

Scheduled: **October 20, 2016**
9:30 a.m.

Duration: 2 hours

Location: Commissioners' Conference Room, 1st fl OWFN

Participants:

Presentation

NRC Staff

60 mins.*

Victor McCree, Executive Director for Operations

Vonna L. Ordaz, Deputy Director, Office of New Reactors

Frank Akstulewicz, Director Division of New Reactor Licensing

John Monninger, Director, Division of Safety Systems and Risk Assessment

Laura Dudes, Deputy Regional Administrator for Construction, Region II

Michael Cheok, Director, Division of Construction Inspection & Operational Programs

Topics:

- Large Light Water and Small Modular Reactor Licensing
 - Goals, challenges, strategies, projections, and trends
- Advanced Reactor Licensing
 - Goals, challenges, and strategies
- Construction oversight
 - Goals, challenges, strategies, and transition to operations
- ITAAC
 - Uncompleted ITAAC Pilot
- Vendor inspections
 - Goals, challenges, and strategies
- International Cooperation
- Project Aim Implementation

Commission Q & A

30 mins.

Discussion – Wrap-Up

5 mins.

*For presentation only and does not include time for Commission Q & A's



New Reactors Business Line Commission Briefing

October 20, 2016

Victor McCree

Executive Director for Operations



Overview of the New Reactor Program

Vonna Ordaz
Deputy Director
Office of New Reactors

Agenda

- **Large Light Water Reactor & Small Modular Reactor Licensing**
- **Technical Review Effectiveness**
- **Construction Oversight**
- **ITAAC**
- **Vendor Inspection Program**
- **Transition to Operations**
- **Advanced Reactor Regulation**

Effectively Managing Substantial Workload

- **Emphasizing more effective, efficient, safety-focused reviews**
- **Ensuring safe construction**
- **Incorporating lessons learned and demonstrating efficiencies**
- **Focusing on quality and accountability**

Enhancing Readiness for Future Work

- **Ensuring readiness to review new technologies**
- **Implementing innovative approaches**
- **Aligning resources with workload**



Large Light Water Reactor & Small Modular Reactor Licensing

**Frank Akstulewicz, Director
Division of New Reactor Licensing
Office of New Reactors**

Effectively Delivering on the Mission (1/3)

Completed

- 32 licensing actions for Vogtle and V.C. Summer units
- Mandatory hearings for Levy and Lee COL applications
- Safety review for the Turkey Point COL application

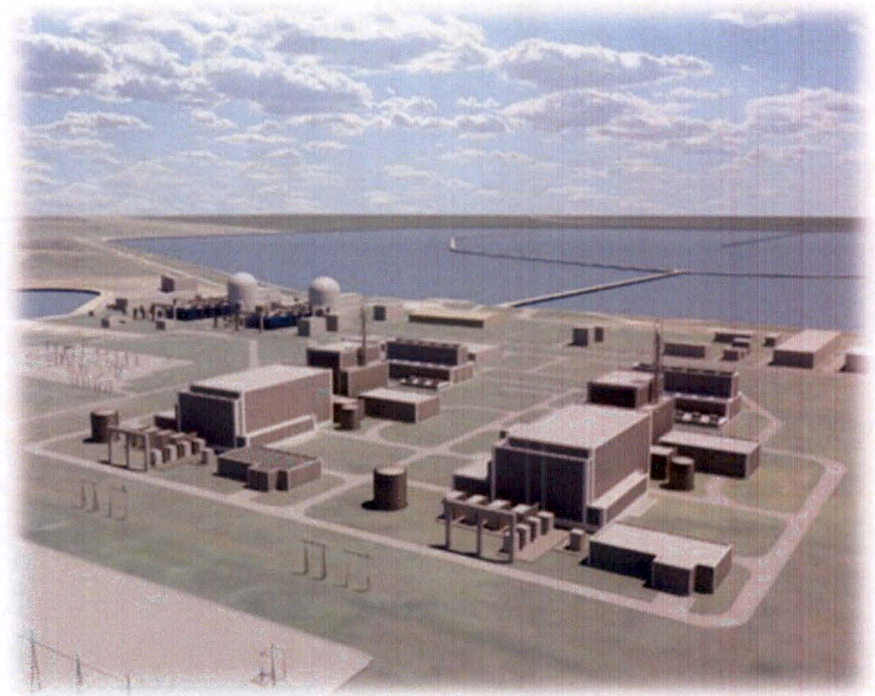


*"An elevated view of the entire Vogtle 3 and 4 construction site."
Photo courtesy of Georgia Power Company*

Effectively Delivering on the Mission (2/3)

Issued

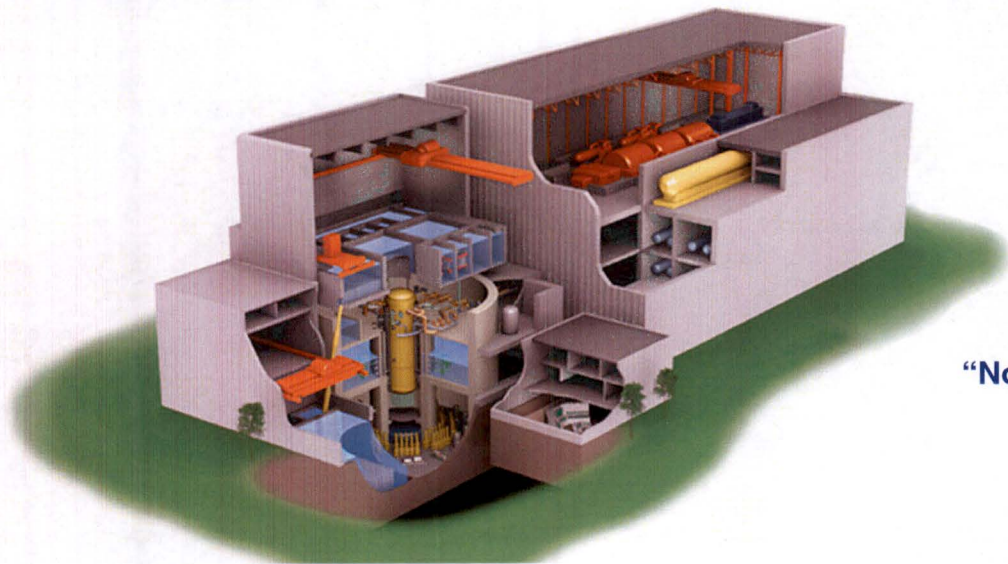
- **ESP to PSEG**
- **COLs for South Texas Project Units 3 & 4**
- **Milestone schedule letter to GEH for ABWR DC renewal application**



"South Texas Project Units 3 & 4"
Photo courtesy of nuclearstreet.com

Effectively Delivering on the Mission (3/3)

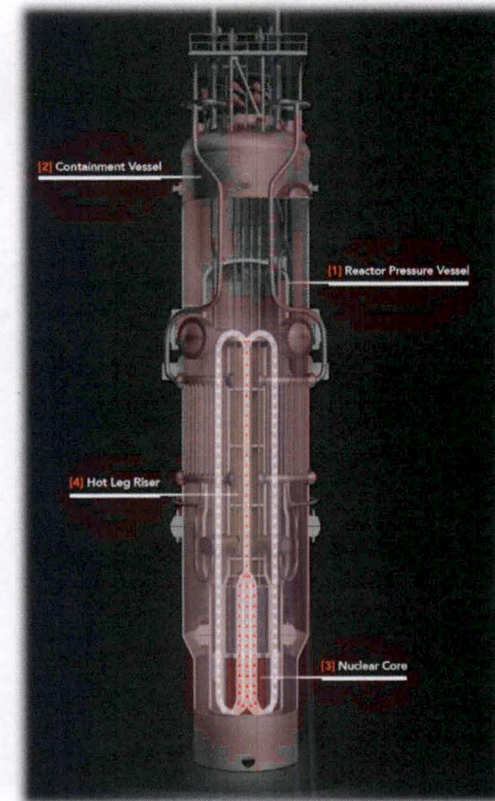
- **Completed the North Anna COL application safety review 3 months ahead of schedule**
- **Employing a staggered Phase 2 review of APR-1400 DC application to maintain 42-month review schedule**



"North Anna Power Station Unit 3"
Photo courtesy of Dominion

Employing Lessons Learned to SMR Licensing Work

- **Addressed Regulatory Gap issues**
- **Issued readiness assessment for NuScale DC application**
- **Completed acceptance review of Tennessee Valley Authority's tendered ESP application**

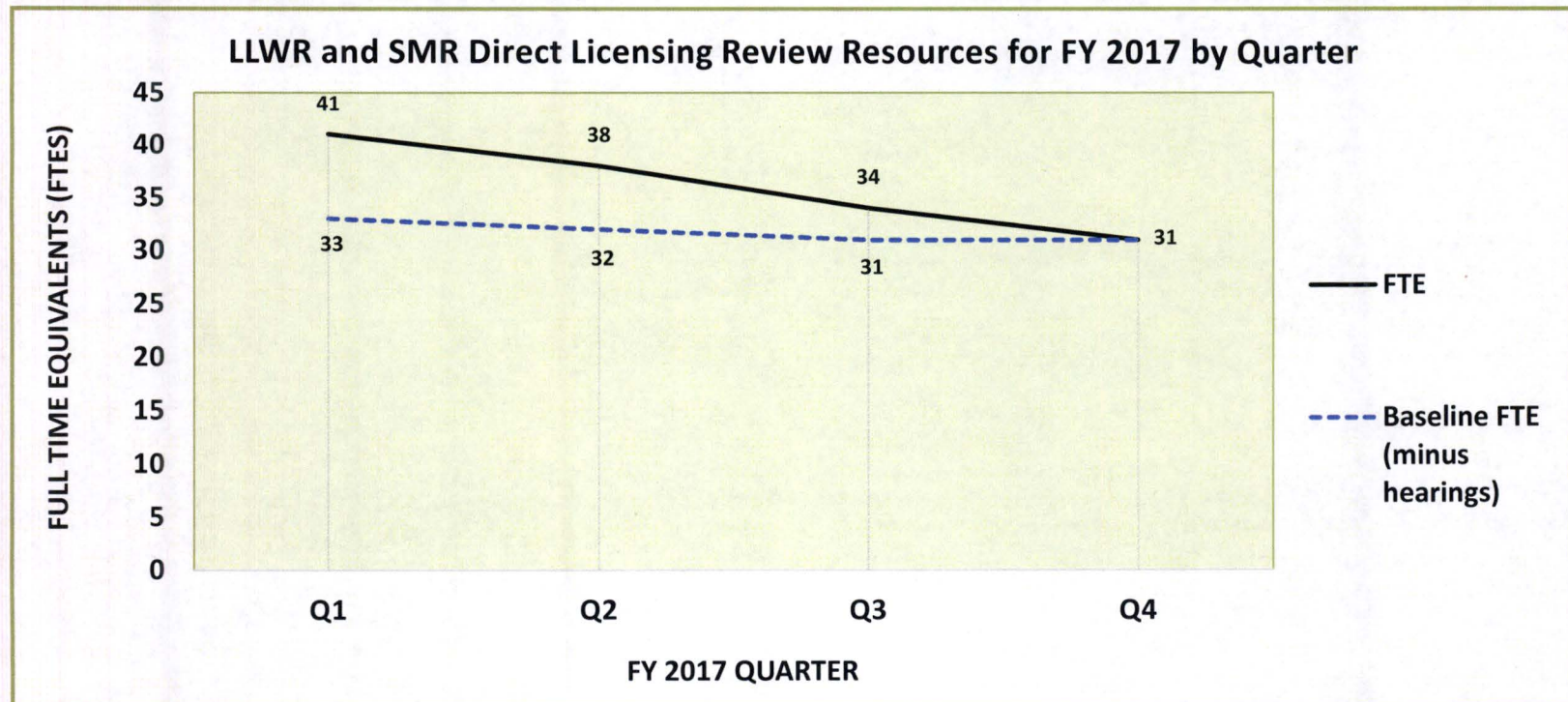


"NuScale Reactor Diagram"

Photo courtesy of NuScale Power, LLC

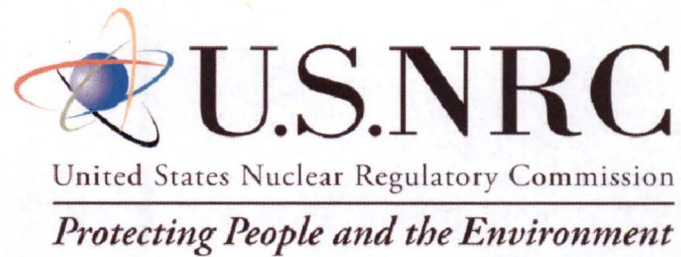
Emphasizing Agility Using Resources in FY 2017

- **Challenge: Balancing resources in certain skill set areas**
- **Strategy: Effectively using rotations, details, and resource sharing with NRR**



Preparing for Licensing Work in FY 2017 and Beyond

- **Reviewing increased number of licensing actions for the AP1000 design center**
- **Completing review of current applications**
- **Preparing for new COL, ESP, and DC applications**
- **Supporting international activities**



Increasing Effectiveness and Efficiency of Technical Reviews

John Monninger, Director
Division of Safety Systems and Risk
Assessment
Office of New Reactors

Enhancing Execution of our Safety Mission

- **Continuing to assess and apply lessons learned**
- **Standardizing practices and focusing efforts**
- **Benefiting from risk-informed approaches**

Enhancing Licensing Review Tools

- **Issued job aids for audits, confirmatory analysis, and requests for additional information**
 - **Clarified the purpose of the tools**
 - **Identified best practices and what to avoid**

Implementing Risk-Informed Approaches

- **Capitalizing on the Standard Review Plan framework for SMRs**
- **Developing the NuScale safety focused review approach**
 - **Integrated consideration of safety-significance, defense-in-depth, risk insights, and safety margin**



Construction Oversight

Laura Dudes
Deputy Regional Administrator,
Construction
Region II

Effectively Meeting Challenges of the Dynamic Construction Environment (1/3)



Placement of the
In-containment refueling water
storage module, VC Summer Unit 2

Placement of the
Auxiliary Building Module,
Vogtle Unit 4



Effectively Meeting Challenges of the Dynamic Construction Environment (2/3)

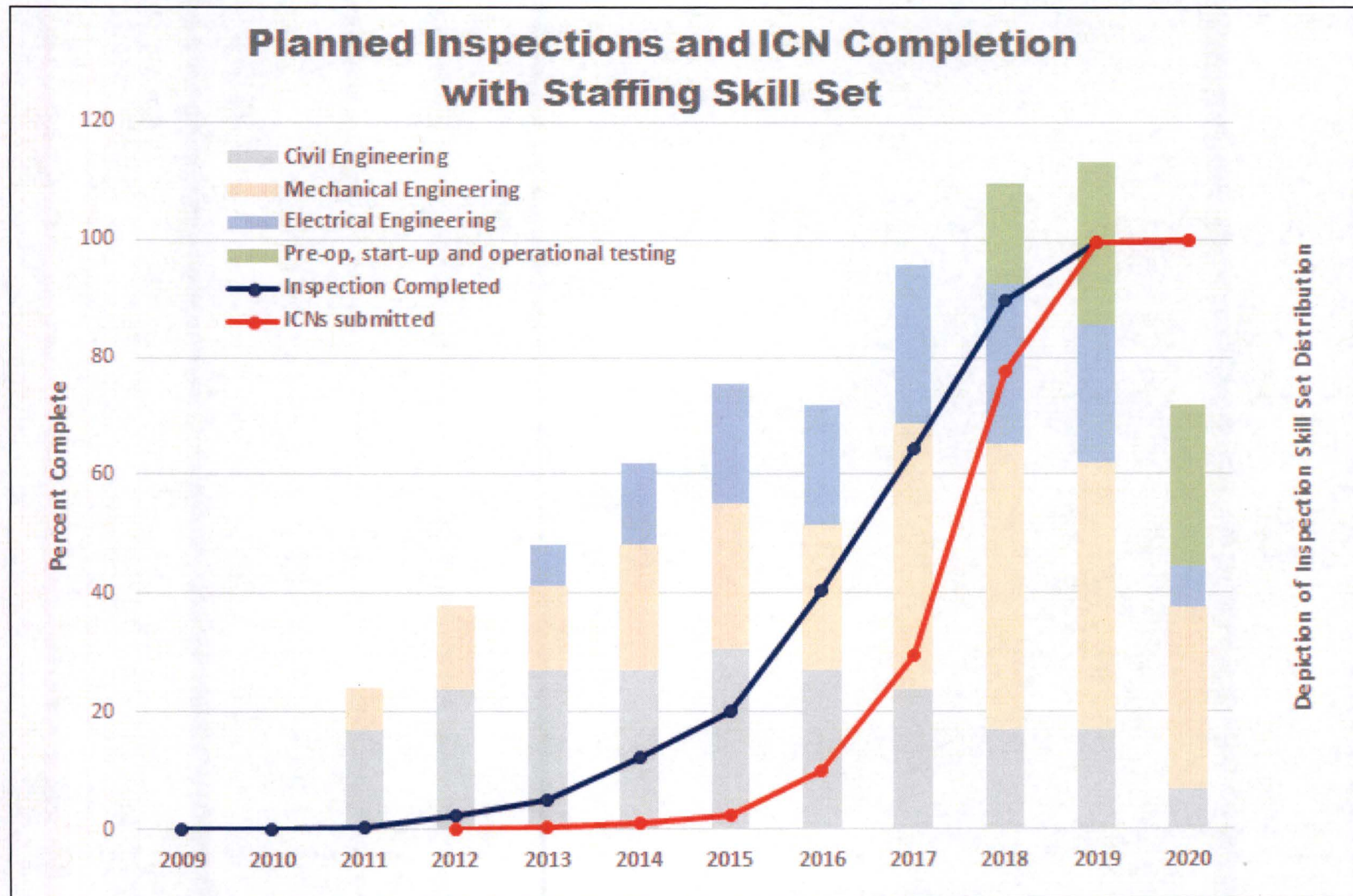


**Mechanical Module Receipt Inspection
at Vogtle AP1000 Site**



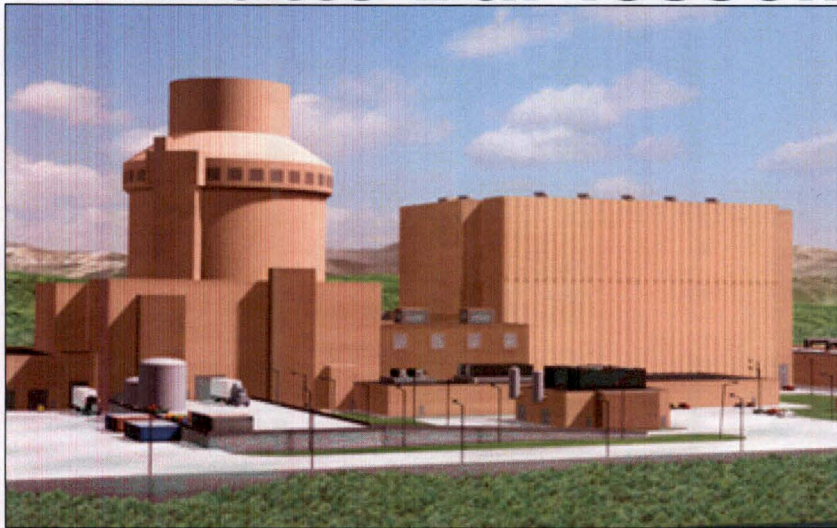
**Chemical and volume control system
pumps**

Effectively Meeting Challenges of the Dynamic Construction Environment (3/3)



Transition: Construction to Operations

- **Organizational plan for the AP1000 transition**
- **Staff readiness for AP1000 operation**
 - **AP1000 reactor operations training**
 - **Resource agility during initial operations**
 - **Watts Bar lessons learned**



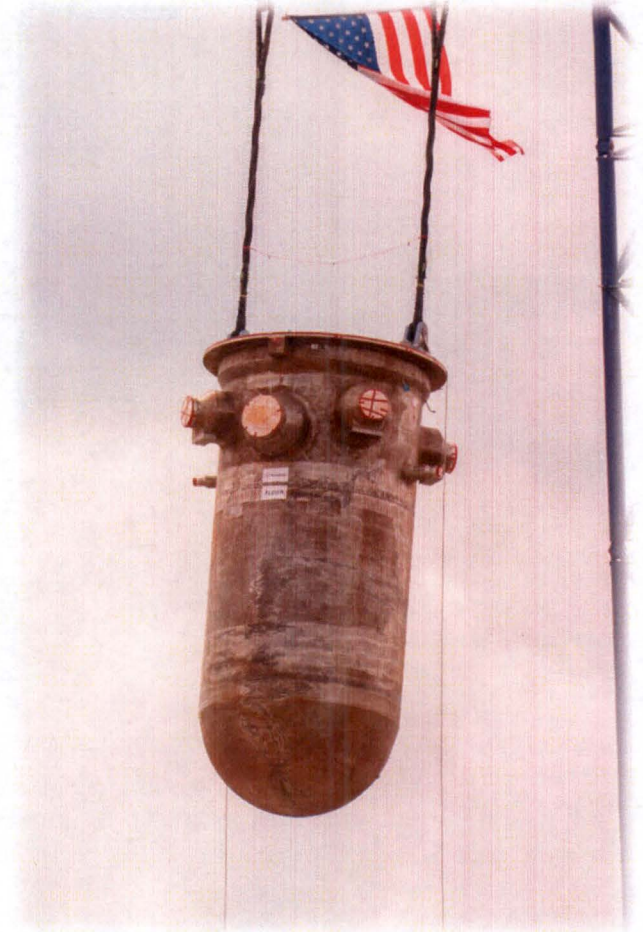


**ITAAC,
Vendor Inspection Program, &
Transition to Operations**

**Michael Cheok, Director
Division of Construction Inspection
and Operational Programs
Office of New Reactors**

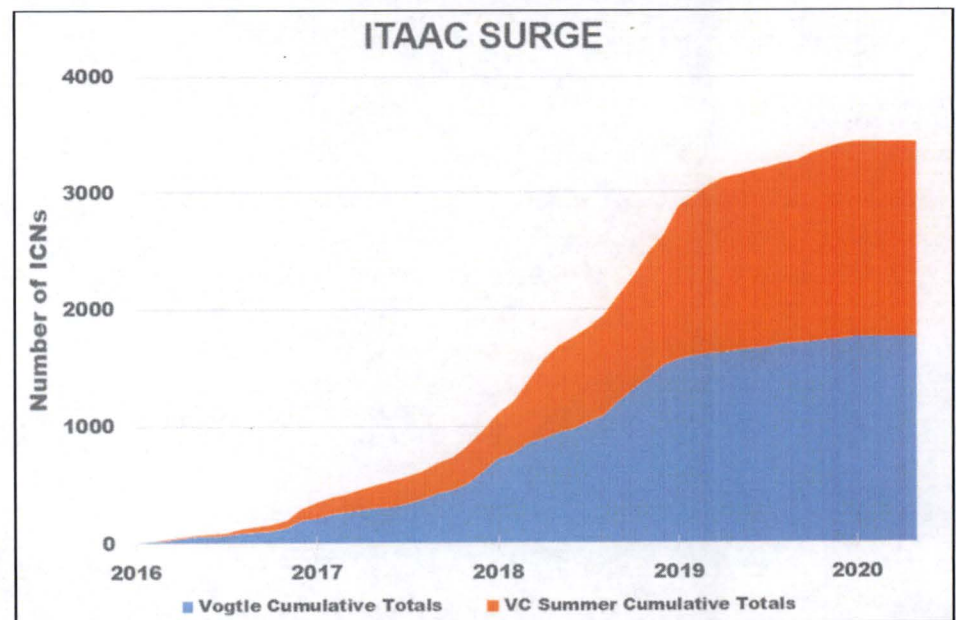
Successfully verifying ITAAC Closure Notifications (ICNs)

- **131 ICNs received,
with 111 verified**
- **ICN submittals will
increase**
- **Closure notification
submittals have been
high quality**



Ready for the ITAAC surge

- **Issued Reg Guide 1.215 to facilitate quality ICN submittals**
- **NRC training on ICN verification**
- **Use of staff experts to assist in verification of complex ITAAC**

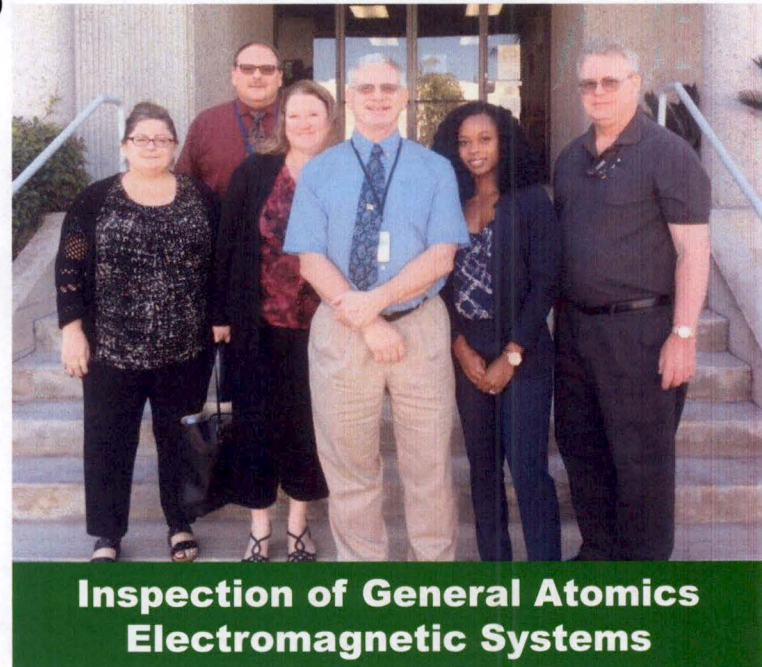


Implementing Efficient Solutions

- **Carried out a successful Uncompleted ITAAC Notification (UIN) pilot project**
- **Enhanced infrastructure to process UIN reviews**
- **Achieved greater efficiencies with periodic, multiple-ICN Federal Register Notices**

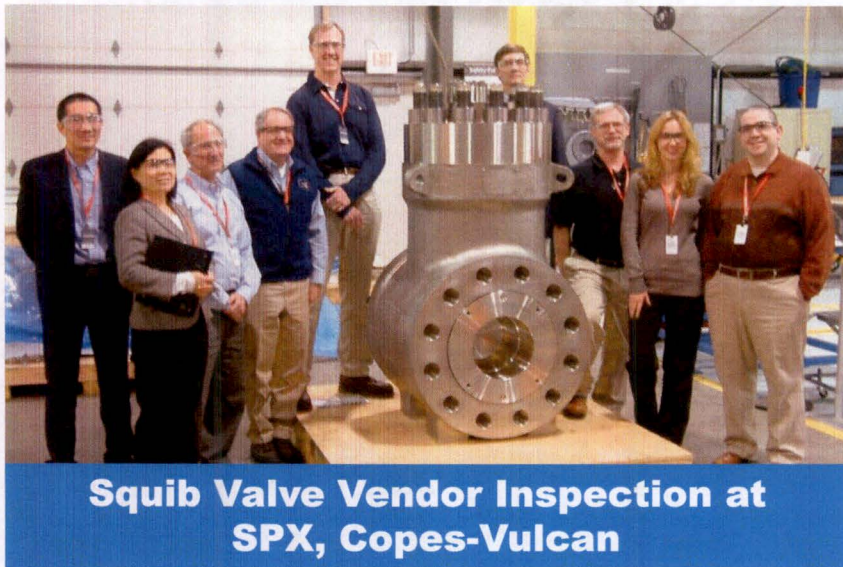
Vendor Inspection: Focusing on New Reactor Builds

- **Majority of vendor inspections completed in FY2016 focused on new reactor components**
- **Inspections targeted vendors supplying safety-significant components**



Vendor Inspections are Enhancing Safety

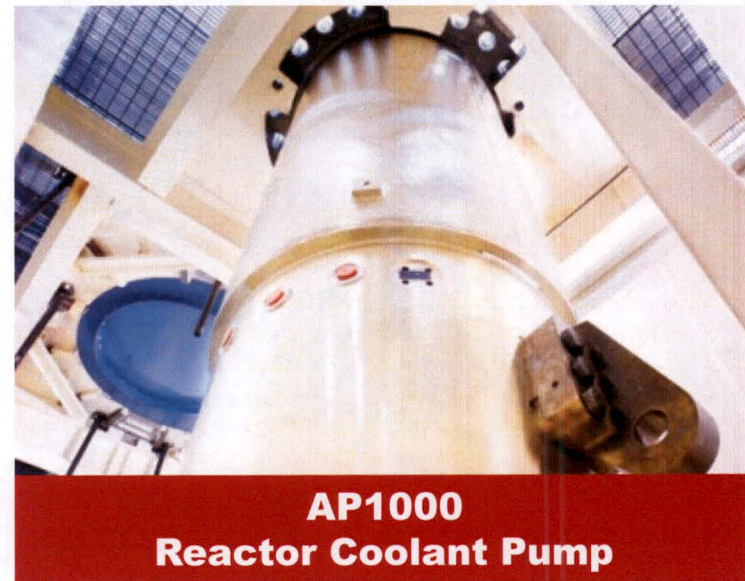
- **Maintaining technical focus on AP1000 engineering and design verification**



- **Closing out safety issues**
- **Continuing follow-up on AP1000 module fabrication**

Sustained Focus on Vendor Oversight

- **Continue our focus on commercial-grade dedication issues**
- **Continue vendor outreach**
- **Leveraging international partnerships**



Actively Preparing for Transition to Operations

- **Making progress on 21 Readiness Issues**
- **Developing implementation plan**
- **Applying enhancements to the Reactor Oversight Process for new reactors**



Advanced Reactor Regulation

**Vonna Ordaz
Deputy Director
Office of New Reactors**

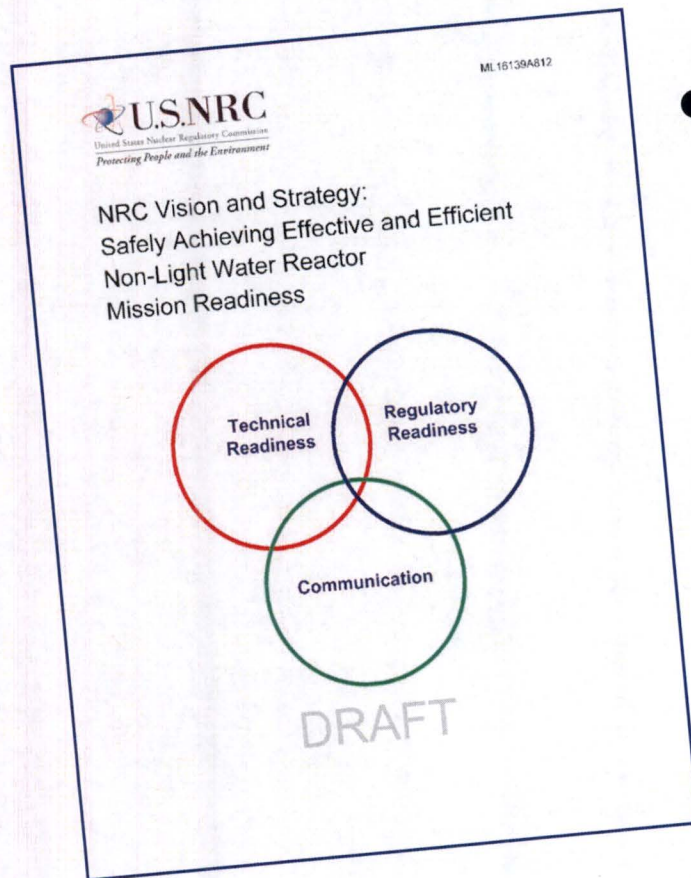
Increasing Emphasis on Advanced Reactors

- **Industry engagement with NRC has increased**
- **Congressional interest remains high**
- **Staff aggressively working toward readiness for efficient and predictable reviews**

Managing the Challenges to Advanced Reactor Readiness

- **Maturity of designs – focusing on common issues**
- **Clarity of schedule – effective communication**
- **Flexibility of regulatory review process – soliciting stakeholder feedback**

Actions Focus on Readiness for Efficient Reviews



- **NRC Vision and Strategy**
 - **Three Pronged Approach**
 - **Technical Readiness**
 - **Regulatory Readiness**
 - **Communications Optimization**

Efficient Reviews are Essential to Success

- **Developing strategies and
Implementation Action Plans**
- **Technical work on design
criteria progressing**
- **Taking first steps to develop a
licensing strategy**

Communication and Coordination are Vital

- **Excellent coordination with DOE**
- **Active communication with vendors and industry organizations**
- **International collaboration**



Summary

- **Positively impacting safe construction**
- **Implementing innovative approaches to complete current licensing reviews**
- **Enhancing readiness for new technologies**

Acronyms (1/2)

- **ABWR – Advanced Boiling Water Reactor**
- **COL – combined license**
- **DOE – Department of Energy**
- **DC – design certification**
- **ESP – early site permit**
- **GEH – General Electric Hitachi**
- **ICN- ITAAC closure notification**

Acronyms (2/2)

- **ITAAC – inspections, tests, analyses, and acceptance criteria**
- **LLWR – Large Light Water Reactor**
- **RAI – request for additional information**
- **NRR – Office of Nuclear Reactor Regulation**
- **PSEG - PSEG Power, LLC and PSEG Nuclear, LLC**
- **SMR – small modular reactor**