

Part 52 Construction Lessons Learned

Marc Nichol
Nuclear Energy Institute

November 15th, 2022





Vogtle Impact Overview

- Initial Plan
 - Unit 3 2016 Completion (5 years after first nuclear concrete)
 - Unit 4 2017 Completion
- Regulatory Delays
 - Aircraft Impact Redesign
 - Design Approval - 11 months delay
 - Construction License - 8 months delay
 - 215 Licensing Actions*
 - 143,000 inspection hours (Vogtle 3 and 4) – direct and indirect

*Source: SNC Presentation 9/27/2022 (ML22265A097)

Top Recommendations

- Develop expedited and more efficient process for reviewing licensing actions with minimal safety significance
- Update cROP to reflect latest risk insights and incorporate lessons learned
 - Utilize low safety significance issue resolution (LSSIR)
 - Limit significance of licensee identified findings
 - Revise SDP to ensure resources are focused on most safety significant issues
- Create a new mechanism to enable the agency to pilot new approaches or processes for the first licensee as unintended challenges are identified



Improve Regulatory Efficiency (1 of 2)

- Replace unnecessary regulatory submittals with NRC-Licensee information exchange
 - Program schedule submittals derived from SECY-05-0197 that impose license conditions
 - ITAAC completion schedule required by 52.99(a)
- Post both direct and indirect inspection hours (actuals and forecasts) on the NRC website to provide transparency on NRC resource plans
- Focus on performance-based acceptance criteria, and not the process for achieving the safety standards



Improve Regulatory Efficiency (2 of 2)

■ Optimize ITAAC number and scope

- NEI 15-02: Proposal for standardized and optimized ITAAC
- Take credit for NRC-approved licensee programs (e.g., QA, ASME, EQ, structural reconciliation, system-level testing), and NRC's inspection program.
- Utilize ITAAC to provide reasonable assurance, not as a 1:1 check of detailed design and construction features.
- ITAAC are not necessary when:
 - SSC design features and performance characteristics are not safety or risk significant
 - Component-level testing are challenged during system testing
 - They duplicate other ITAAC
 - They directly duplicate regulation with no site-specific design attributes

Low-Safety Significance-Issue Resolution (LSSIR)



- Update cROP for Construction Lessons Learned

- SDP—Truly consider the actual risk to the public in cROP, which was based on ROP where public actually incurs some risk; however, this risk is never realized by the public during cROP, as plant programs ensure non-conforming conditions are addressed prior to operation.
- Licensee identified findings—limit significance (consider minor violations) for licensee-identified findings since plant programs ensure such issues are addressed prior to operation.
- Implementing LSSIR would be extremely helpful in the construction environment, particularly when verbatim compliance issues arise within ITAAC inspections when there is no significance or impact to ITAAC intent.

Planning for SMR Implementation (1 of 2)



■ FOAK Mitigation Strategies

- Tabletop each step of first of a kind actions with Licensees
- Apply learnings from first-time licensing process in real time through ISG, RIS or other mechanisms so that the first licensee can benefit from overcoming regulatory obstacles

■ License amendment process optimization

- Focus Tier 1 and ITAAC during Design Certification on safety significant structure, systems, and components and make language succinct, to reduce the possibility of LARs during construction
- Create a process for Licensee to proceed at risk for modification of Tier 1 prior to NRC approval via 50.59-like process, since there is no radiological danger to the public prior to fuel loading
- Benefits
 - ◆ Reduce potential for delays during construction due to license amendments
 - ◆ Eliminate the need for large resources to maintain an emergency LAR/PAR process

Planning for SMR Implementation (2 of 2)



■ Changes to inspection program

- New reactors anticipate minimal onsite construction.
 - ◆ If the ratio to vendor to site construction activities swap, so should the ratio to vendor to site inspection of activities.
- Life-cycle inspection approach for new supplier
 - ◆ Prior to fabrication starting—conduct inspection of supplier’s programs
 - ◆ Shortly after fabrication commencement—inspect execution of programs
 - ◆ Inform follow-up inspections based on supplier performance
- Ensure inspection program does not repeat inspections onsite



Questions?
