NRC Insights for TSTF-505 Reviews

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Overview of Presentation

- Background on applications and lessons learned
- NRC objectives for reviews
- Future Work
- Summary

Status of Applications

- Vogtle was the pilot for Risk-Informed Completion Times (Initiative 4b) and is in process
- Applications currently under staff review for TSTF-505
  - Diablo Canyon, St. Lucie, and Turkey Point
  - Review of Diablo Canyon application started in late 2014 and the APLA RAIs were issued at the end of June
  - Review of St. Lucie and Turkey Point applications started in January 2015 and APLA RAIs are in process
- Palo Verde expected to submit in near future
- Expect a large number of applications over the next few years

Lessons Learned from Vogtle

- SNC had a detailed and very high quality application
  - Table of RICT estimates was useful both as an importance measure and in terms of proving insights into modeling
  - Detailed success criteria
  - Detailed discussion on the use of surrogates
  - Detailed discussion on CRMP changes and use of EOOS
  - Explained use of bounding analysis (e.g., seismic risk)
- Informative audit
- In response to RAIs:
  - Identified Loss of Function LCOs and added note for emergent conditions
  - Removed some LCOs that would be considered outside the scope of TSTF-505

Vogtle Audit

- Demonstrated use EOOS and the Vogtle CRMP
- Provided examples of documentation for different systems with success criteria/assumptions for PRA functionality assessments
- Addressed capability to account for weather-related concerns

Topics at Public Meetings

- Minimum performance level of equipment must still be met when crediting PRA functionality (although it may not be explicitly modeled)
- Pre-calculation of RICTs may be necessary for certain LCO Required Actions where the RICT cannot be calculated before the front-stop CT is exceeded
- Common Cause Failure concerns

Diablo Canyon APLA RAIs

- Application was also very detailed and made it clear the current plant configuration would be represented when calculating a RICT
- Concerns with total baseline risk and RCP seal credit
  - Unusual circumstances
  - NRC has some flexibility with threshold
  - Once licensee has a program with self-approval it becomes a hard line
- Implementation items
- Discussion of assumptions and TSTF-505 specific considerations

St. Lucie and Turkey Point Applications

- Additional changes to better align with TSTF-505
- NFPA 805 plants
- Clearly identified scope in the application
- Reduced scope from TSTF-505 for certain SSCs

NRC Objective for TSTF-505 Reviews

To provide a clear, reasonable, and consistent approach for TSTF-505 reviews such that reviews will be completed in less than 1-year, with the minimum number of RAIs necessary to determine a safety conclusion.

NRC Review Process

- STSB and APLA are primary reviewers
- Plant-specific changes are reviewed by STSB and technical branches, as necessary
- If the change is considered in-scope for the RICT program, APLA reviews the change to see if any additional information is needed in terms of PRA modeling and/or PRA technical adequacy

PRA Technical Adequacy

- TSTF-505 is similar to other broad-scope applications with a target of Capability Category II
- Industry and NRC is working to develop new guidance for peer reviews Facts and Observations (F&Os) closure
  - Current expectation is to provide all relevant F&Os that have not been closed by a subsequent peer review
- PRA scope and technical adequacy should be commensurate with the application and the PRAs should be peer reviewed per RG 1.200

F&O Dispositions for TSTF-505

- Focus is the impact on the RICT program
  - Impact on baseline risk profile is not the primary concern
  - Overly conservative baseline may lead to a nonconservative delta risk calculation and RICT
  - It is understood that there is judgment involved in determining what a significant impact would be for a RICT
- Program affords RMAs as an alternative to addressing key assumptions and uncertainties with sensitivities

Issues for TSTF and RICT Task Force

- Considering additional program requirements
  - Addressing a situation where two trains are required to work together to achieve PRA functionality such that neither train can be restored to operable status without a total loss of function for a limited period of time
- Additional RICT implementation guidance
  - PRA functionality and Loss of Function

Summary

- NRC sees clear benefits to this program
- The minimum performance level of the equipment must continue to be met but this program affords additional flexibility
- Licensees need to consider: delta risk, external events risk contribution, PRA success criteria, assumptions and uncertainty in terms of a new program and on a SSC-specific basis
- Learning curve for this program for both the NRC and industry

Path Forward

- NRC and industry stakeholders will continue to work together to address detailed implementation guidance
- Lessons learned will be incorporated into future applications
- NRC will continue knowledge management activities and improve efficiency of future reviews