

Path Forward on Loss of Function for TSTF-505

NRC Public Meeting

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Non-Backstop Constraints Related to PRA Functionality in a Total Loss of Function

- Use of “alternative” (non-tech spec) SSCs
 - Licensee should identify in LAR, or follow-on LAR, with safety margin consideration, if licensee intends to use
- No sequences leading directly to core damage
 - If entering loss of function, review dominant cutsets to ensure that no design basis accidents lead directly to core damage (with CCDP=1.0)

Non-Backstop Constraints Related to Total Loss of Function

- Credit for human actions
 - Addressed in NEI 06-09
 - Human actions can be credited if modeled in PRA OR documented as not having an impact on CDF/LERF
 - Credited only if proceduralized or skill of craft
- Functions that do not affect CDF/LERF
 - Addressed in NEI 06-09
 - RICT can be calculated for dual function tech spec conditions included in the scope of the RICT program (e.g. containment spray)
- Design basis success criteria
 - Identify any differences between PRA success criteria and design basis parameters (e.g. flow, temperature, times) for relevant SSCs for similar events

Proposed Approach to Application of Backstops for Total Loss of Function

- Graded approach
 - Two-tiered approach
 - Distinguishes certain plant-specific SSCs and configurations with substantial redundancy and diversity by using configuration-specific RICT
 - Appropriately limits (i.e. backstops) duration of condition
- Process
 - Calculate configuration-specific RICT for loss of function
 - If calculated RICT is 7 days or less, apply backstop of 24 hours
 - If calculated RICT is over 7 days, apply backstop of 7 days
 - Non-backstop limitations previously discussed apply

Bases for Application of Backstops

- Technical justification for 7 day backstop
 - Large calculated RICT indicates considerable redundancy and diversity exists, and reflects configuration-specific risk
 - Reasonable (proportional) breakpoint
 - Either backstop acknowledges seriousness of a loss of function, and minimizes the time spent in such

Bases for Application of Backstops

- Technical justification for 7 day backstop
 - 7 day Completion Time currently used in TS for some low-risk loss of function conditions.
 - BWR/6 3.7.4, "Control Room Air Conditioning System,"
 - B&W 3.3.17 and Westinghouse 3.3.3, "Post Accident Monitoring,"
 - B&W and Westinghouse 3.4.15, "RCS Leakage Detection Instrumentation,"
 - Westinghouse 3.6.9, "Hydrogen Mixing System (HMS)"

Proposed Path Forward

- Internal industry guidance to licensees
 - Reflect previously described boundary conditions
 - Inform licensees to use when applying for TSTF-505 for LAR development and RAI responses
- Long term - NRC and industry to discuss where high-level aspects of loss of function RICT application should be captured