



Standard Review Plan 19 Revision

Mark Caruso
Sr. Reliability & Risk Engineer
Severe Accidents and PRA Branch
Office of New Reactors

Overview of SRP 19 Changes

Update

- SRP 19.0 PRA & Severe Accidents for New Reactors

Update

- SRP 19.1 Technical Adequacy of PRA Results

Update

- SRP 19.2 Review of Risk-informed Licensing Basis changes

New

- SRP 19.3 Regulatory Treatment of Non-Safety Systems

New

- SRP 19.4 Loss of Large Area Due to Explosions and Fire

New

- SRP 19.5 Aircraft Impact Assessment

SRP 19.0 Update PRA & Severe Accidents for New and Advanced Reactors

- SRP 19.0 Updated to incorporate:
 - DC/COL-ISG-03 PRA Info for DC/COL Applications
 - DC/COL-ISG-20 PRA Based Seismic Margins Analysis
 - DI&C-ISG-03 Risk-Informed Digital I&C Review
 - New Reactor Review Experience
 - ESBWR
 - AP1000
 - EPR
 - APWR

SRP 19.0 Update
PRA & Severe Accidents for New and Advanced
Reactors

- Additional review interfaces identified
 - Structural Engineering
 - Human Factors Engineering
 - External Hazards Review (Chap 2)
 - Digital I&C review
 - Regulatory Treatment of Non-safety Systems



SRP 19.0

New Guidance Based on New Reactor Review Experience

- General Review Procedures
- Review Procedures for PRA Technical Adequacy
- Review Procedures Specific to Passive Designs
- Review Procedures Specific to iPWRs



SRP 19.0

New Guidance Based on New Reactor Review Experience

- Level II PRA Results
- Results of PRA for Non-Power Modes of Operation



SRP 19.0

New Guidance Based on New Reactor Review Experience

- Treatment of Internal Fire Initiators
- Treatment of High Winds Initiators
- Review Procedures for Specific PRA Audit Topics
- Severe Accident Evaluation



SRP 19.3

Regulatory Treatment of Non-Safety Systems (RTNSS)

- Overview
 - RTNSS review guidance is based on Commission policy described in SECY papers and SRMs from mid-1990s.
 - SRP 19.3 provides generic top level guidance.
 - SRPs that address specific SSCs provide additional detailed guidance.
 - Review responsibility is spread widely over the technical staff.

SRP 19.3 - RTNSS

- Areas of Review
 - Selection of RTNSS SSCs using the five RTNSS scoping criteria
 - Functional design of RTNSS SSCs
 - Adequacy of functional design requirements
 - Compliance with functional design requirements
 - Design improvements to minimize adverse interaction between passive safety systems and non-safety active systems
 - Focused PRA sensitivity studies
 - Augmented design standards for RTNSS “B” SSCs
 - Regulatory treatment of RTNSS SSCs
 - Reliability of active non-safety SSCs for achieving Cold Shutdown

RTNSS Selection Criteria

- A. Non-safety SSC relied on to meet ATWS and SBO rules.
- B. Non-safety SSC needed for core cooling, containment heat removal or control room habitability 72 hours post accident.
- C. Non-safety SSC that provides diagnostic info 72 hours post accident.
- D. Non-safety SSC relied on to meet CDF and LERF goals.
Non-safety SSC relied on to meet containment performance goal.
- E. Non-safety SSC relied upon to prevent significant adverse interaction with passive safety system.

SRP 19.3 - RTNSS

- Acceptance Criteria
 - Complete specification of RTNSS SSCs
 - Tech Spec established for highly risk-significant RTNSS SSCs
 - Functional design requirements adequate
 - RTNSS SSCs meet their functional design requirements
 - Adverse interaction between passive safety systems and active non-safety back-up systems minimized by design
 - Description of Focused PRA studies adequate
 - Regulatory treatment of SSCs commensurate with risk-significance of SSCs
 - Non-safety system for reaching cold shutdown is highly reliable



Standard Review Plan 19.4 Loss of Large Areas of the Plant Due to Explosions and Fires

- Incorporates DC/COL-ISG-016
- Considers conformance with NEI 06-12 Rev 3 an acceptable method
- Draft SRP under review in Office of General Counsel (OGC); will be issued for public comment after approval by OGC

Standard Review Plan 19.5 Aircraft Impact Assessment

- Reflects Reg Guide 1.217 Rev 0
- Considers conformance with NEI 07-13 Rev 8 an acceptable method for aircraft impact analysis
- Provides staff guidance for determining that descriptions of key design features and their functions in the DCD are sufficient to provide reasonable assurance that acceptance criteria in 10 CFR 50.150 will be met.
- Draft SRP section will be issued for public comment this week.

SRP 19 Revision Schedule

- New and revised SRPs have been drafted and are undergoing management and legal review
- Issue for public comment – July – Aug 2012
- 60 day comment period
- ACRS/CRGR review
- Issue final - November 2012