

Draft Branch Technical Position 7-19, Revision 8

Public Meeting
NRC Staff Presentation
February 11, 2020

Agenda

- Background on Commission's Common Cause Failure (CCF) Policy
- Key Proposed Changes:
 - Incorporates the guiding principles from SECY 18-0090
 - Categorization Scheme and Graded Approach
 - Qualitative Assessment
 - Means to Eliminate CCF from Further Consideration
 - Spurious Operation Assessment
 - Re-structuring of Branch Technical Position (BTP)

SECY 18-0090

- SRM-SECY-93-087 presents the Commission's four-point policy on how potential CCFs should be addressed in DI&C systems
- SECY-18-0090 clarifies the application of the Commission's direction in the four positions within SRM-SECY-93-087
 - Recognizes significant effort has been applied to the development of highly reliable DI&C systems but residual faults within digital systems may lead to CCFs
 - Provides five guiding principles for updating the staff's guidance for addressing CCF
 - Guiding principles were incorporated into draft BTP 7-19, Revision 8

Proposed Categorization Scheme and Graded Approach

	Safety-Related	NSR
Safety Significant— Significant contributor to plant safety	A1 Perform D3 Assessment	B1 Perform Qualitative Assessment
Not Safety Significant— Not a significant contributor to plant safety	A2 Perform Qualitative Assessment	B2

Proposed Qualitative Assessment Framework

- Based upon Supplement 1 to RIS 2002-22, now utilized as part of the graded approach to address CCF
- Evaluate potential CCFs and their effects in A2 and B1 systems (i.e. sufficiently low likelihood of failure)
- For B2 systems, basis for not performing an assessment should be documented

Proposed Guidance for Means to Eliminate CCF from Further Consideration

- Diversity – Clarifies guidance for application within the DI&C system or component
- Testing – Clarifies criteria and terminology associated with use of testing to eliminate CCF from further consideration
- Defensive Measures –
 - Use defensive measures to prevent, limit, or mitigate the effects of a potential CCF to eliminate CCF from further consideration
 - Provides criteria for use of other methodologies with the provision of a technical basis and acceptance criteria
 - Based on NRC-approved methodology

Proposed Spurious Operation Guidance Enhancement

- Provides bifurcated criteria for addressing spurious operation:
 - Operating reactors: existing safety analysis not invalidated by the proposed digital modification
 - Enhanced guidance for new and advanced reactors
- Clarifies scope and methods for performing the assessment

Proposed Re-Structuring of BTP 7-19

- Simplifies background and incorporates new guidance on CCF
- Maps criteria to four positions in the SRM-SECY-93-087
- Consolidates CCF guidance and corresponding acceptance criteria

Next Steps

- Public comment period ends March 16, 2020
- ACRS Sub-Committee scheduled for June 25, 2020
- ACRS Full Committee meeting in July 2020
- Final issuance targeted for September 2020

Questions



Acronyms

BTP	Branch Technical Position	NSR	Not safety related
CCF	Common Cause Failure	PRA	Probabilistic Risk Assessment
CFR	Code of Federal Regulations	RIS	Regulatory Issue Summary
D3	Defense-in-Depth and Diversity	RPS	Reactor Protection System
DI&C	Digital Instrumentation and Control	SAR	Safety Analysis Report
ESFAS	Engineered Safety Feature Actuation System	SRM	Staff Requirements Memorandum
MCR	Main Control Room	SSC	Structure, System and component
MP	Modernization Project		