



NRC EFFORT TO RE-EVALUATE ITS POSITION ON COMMON CAUSE FAILURE

March 21, 2016

SRM-SECY-15-0160

(Background)

- Develop an Integrated Strategy to Modernize the DI&C regulatory infrastructure
- Consider the broader context of regulatory challenges and stakeholder feedback
- Draft integrated action plan under development
 - **Common Cause Failure**
 - 50.59 Guidance
 - IEEE 603 and 7-4-3.2 standards
 - Cybersecurity
 - Other Long-term Issues



Current NRC Policy on Common Cause Failure

- SRM-SECY-93-087 defines criteria for addressing common cause failure
 - BTP 7-19 provides guidance for implementation
 - NUREG/CR-6303 provides guidance for performing diversity and defense-in-depth analysis
 - NUREG-7007 provides guidance for establishing mitigating strategies that resolve D3 assessment findings
- D3 analysis can support justification of changes under 50.59

- Item II.Q provides the four-point position on the defense against CCF
 - analyses that demonstrate adequacy against postulated CCFs
 - analyze each postulated common-mode failure for each event that is evaluated in the accident analysis
 - If a postulated common-mode failure could disable a safety function, then a diverse means is required
 - Provide means for manual, system-level actuation and monitoring of critical safety functions

- Design basis events and associated safety analysis typically exclude common-mode failure of redundant equipment
- Use of best estimate methods to analyze CCF
- ISG-DI&C-02 “Diversity and Defense-in-Depth”
- BTP 7-19 Rev. 6

Current position is a consequence-based approach for addressing CCFs that does not relate to safety significance or plant risk.



Common Mode Failure Action Plan

- Current regulatory treatment and acceptance criteria are problematic for some I&C upgrades
- Re-evaluate assumptions in SECY-93-087 to consider impact of evolution in technology
- Evaluate options for updating NRC policy in light of any significant technology evolution
- Prepare technical basis paper and SECY paper
- Maintain appropriate interfaces with industry stakeholders to consider input on this item

Milestones

- Several public meetings to discuss possible approaches for addressing the modernization of this policy, such as changes in digital technology and applicable revisions to assumptions
- Public meeting to discuss draft technical basis
- Issue technical basis document (staff NUREG)
- SECY to Commission with recommendations
- More public interactions during development of new position
- Draft revision to policy/draft rule to Commission for approval