

**From:** [Ken Scarola](#)  
**To:** [Drake, Jason](#)  
**Cc:** [Rahn, David](#); [Holonich, Joseph](#); [Morton, Wendell](#)  
**Subject:** [External\_Sender] Recommendations and Comments on Staff Documents Issued in Conjunction with (but after) April 20, 2017 Public Meeting on CCF RIS  
**Date:** Sunday, April 23, 2017 8:53:57 PM

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Jason,

I'm sending the recommendation below for Staff consideration regarding the documents made public by the staff for use in conjunction with (but after) the NRC public meeting held April 20, 2017.

This recommendation below pertains to the RIS scope; specifically regarding systems that can directly cause an unanalyzed plant transient (i.e., the systems typically described in Section 7.7 of the FSAR) and systems that are directly credited for accident mitigation (i.e., RPS and ESF auto and manual actions), since these are the most risk significant.

Dependability attributes (qualitative) are clearly acceptable for the evaluation of 50.59 Question 2, because that question looks for a discernible change in malfunction likelihood. But Questions 5 and 6 require a "possibility" assessment, which is a much more challenging and deterministic threshold. Since industry and the staff have not yet reached agreement on preventive measures that can be credited to reach a CCF not credible conclusion, I recommend this RIS preclude crediting (1) dependability attributes (qualitative) or (2) a combination of dependability attributes (qualitative) and design attributes (deterministic), in reaching a CCF not credible conclusion for the systems above. This means that for the systems above, a CCF not credible conclusion (i.e., requiring no further CCF malfunction result analysis) can be reached using only design attributes (deterministic). If the design attributes built into a digital upgrade are not sufficient to reach a CCF not credible conclusion, then a CCF would be considered within the design basis or beyond design basis, depending on the source of the CCF (e.g. a CCF due to a single random hardware failure is within the design basis), and further CCF malfunction result analysis would be required using the corresponding design basis or beyond design basis methods and acceptance criteria (to answer 50.59 Questions 5 and 6). Dependability attributes (qualitative) or a combination of dependability attributes (qualitative) and design attributes (deterministic), could still be used in reaching a CCF not credible conclusion for other non-safety systems and safety support systems, since these have less risk significance.

Using this basis, the RIS would allow all digital I&C upgrades to proceed under 50.59 that can be objectively defended for Questions 5 and 6, without subjective engineering judgement. Where subjective engineering judgement is required for the risk significant systems above, staff approval would be required through the LAR process.

Using this basis, the RIS is consistent with the intent of 50.59 Questions 5 and 6, which addresses the 'possibility of a ...'. At this point in time, without industry and staff agreement on preventive measures, that possibility should be evaluated unless it can be clearly precluded through deterministic design attributes.

Using this basis, the RIS would also preclude the need to include a list of systems in the RIS. Any list will raise many questions, including questions from ACRS, because even highly risk significant

systems should be permitted if they clearly meet the 50.59 Questions, and these same highly risk significant systems should require an LAR if there is no clear basis for making engineering judgements (as is our situation today, without industry and staff agreement on preventive measures).

Using this basis, the RIS is also consistent with the staff and industry goal of crediting dependability attributes (qualitative) to the extent practical at this time.

Using this basis, the RIS would allow dependability attributes (qualitative) to be solely credited in reaching a CCF not credible conclusion for digital upgrades in safety support systems, such as the chillers.

Using this basis, the RIS would not allow dependability attributes (qualitative) to be solely credited in reaching a CCF not credible conclusion for digital upgrades to EDG controls, such as the motor operated potentiometer (MOP), because this is an ESF function directly credited for accident mitigation. To facilitate this digital upgrade under 50.59, the RIS should explain that two independent CCFs (i.e., a LOOP, and a beyond design basis digital CCF) do not require consideration, as explained in Section 4.2.2.2.2 of NEI 16-16. This has been the staff's position for new plant reviews since SECY 93-087 was first published.

Thank you for considering this input for the RIS on CCF. I would be happy to discuss this recommendation.

Ken

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