

From: Ken Scarola [mailto:KenScarola@NuclearAutomation.com]
Sent: Friday, February 20, 2015 10:18 AM
To: Eagle, Eugene
Subject: RE: RIS on EDDs

Gene,

I fully agree with the industry comment about ambiguity. But your solution of taking non-safety out of the discussion is the wrong solution. Remove the ambiguity by saying:

This RIS is about the potential for CCF caused by EDD failures in safety or non-safety applications. In safety applications, EDD failures can result in multiple redundant divisions failing to actuate when needed. In non-safety and safety applications, EDD failures can lead to erroneous control actions that may cause unanalyzed plant transients. Either application of EDDs presents a safety hazard for nuclear power plants.

This is not new guidance for non-safety control systems because SRP 7.7 says:

The objectives of the review are to confirm that ...effects of operation or failure of these systems are bounded by the accident analyses in Chapter 15 of the safety analysis report (SAR).

Effects of control system failures - The review should confirm that the failure of any control system component or any auxiliary supporting system for control systems does not cause plant conditions more severe than those described in the analysis of anticipated operational occurrences in Chapter 15 of the SAR. This evaluation should address failure modes that can be associated with digital systems such as software design errors as well as random hardware failures.

Based on the review of the applicant/licensee's diversity and defense-in-depth analysis and the quality of control system functions credited in this analysis, the staff concludes that the control system complies with the criteria for defense against common-cause failure in digital instrumentation and control systems.

The staff also confirmed that failure of the control systems themselves ...does not result in plant conditions more severe than those described in the analysis of design basis accidents and anticipated operational occurrences.

The purpose of the RIS is not to solve the problem, but to bring the problem to industry's attention. We are working through the NEI 01-01 task force (and EPRI) to define criteria that would allow a "CCF unlikely" conclusion to be reached for all applications, including applications

with EDDs. In the interim, utilities should be using their best judgment, but not ignoring the problem

Ken

Ken Scarola
Nuclear Automation Engineering, LLC
3672 Pine Tree Ln.
Murrysville, PA 15668
Phone: 412-612-1192