

From: Steven Long *NRR*
To: Doug Coe *NRR*
Date: 2/13/01 7:31AM
Subject: Re: SDP and IP2

Doug,

After thinking on it overnight, I'm beginning to worry that your proposed methodology can miss some important portion of the risk. My concern stems from the comparison of CDF/LERF increment values, rather than specific cutsets. The issue is complicated by the use of 2 risk measures (CDF and LERF), not just one. I'm going to play around with some examples before we get together, but no promises on reaching a conclusion that soon. Please be thinking about how important it really is for us to somehow "apportion" the actual risk increment, versus determining the importance of each failure to the risk increment. Although summing importances can produce a total greater than the total risk, I don't see that as a real issue with respect to deciding how much inspection to perform, or what to inspect. We have been using importance measures to apportion licensee maintenance and ISI attention as well as our own inspection efforts for years.

Steve

>>> Doug Coe 02/12 3:53 PM >>>

Good points. But 95002 and 95003 supplemental inspections can delve into areas outside of the originating issue and all supplemental inspections should be risk-informed. I think current guidance would certainly permit either a coordinated set of supplemental inspections or a single supplemental inspection (depending on the Action Matrix column the findings place the plant into) to address the individual findings. Let's talk more tomorrow.

>>> Steven Long 02/12 3:33 PM >>>

Doug,

Good start, I agree that your proposed methodology will get the total risk increment properly quantified.

BUT, the split of that total risk increment among the multiple lpd's is artificial, so I'm questioning whether that would always result in the proper allocation of the enhanced oversight activity among the deficient areas of performance. One would be given maximized importance and the others would receive minimized importances. In cases like IP2, even the minimized importances were sufficient to get maximum attention. So, the question really pertains to the situation where the individual CDF/LERF increments were smaller. If a couple or more "whites" or "greens" can make one "yellow" or "red," then it's likely that the difference in which combination makes the yellowest yellow or the reddest red isn't as important as the fact that the license has failed to deal with multiple things that, together, had a significant effect on risk.

Maybe some guidance on apportioning the resulting inspection effort among all of the lpd's on the basis of their importance to the overall risk, considering all increments, would solve this problem (if it is a problem). Still, it might take an example to make sure that the minimally PRA-literate folks correctly understand how we intend for them to do that. The case when the overlapping lpd's span more than one year would also be a good point to clarify. I would favor considering the risk increment for the whole time period, and calculating the importances from that. Otherwise, I can see all sorts of strange results from trying to pick "the" year for the CDF increment for multiple overlapping lpd's.

Steve

J/57

>>> Doug Coe 02/12 2:46 PM >>>

To all addressees:

The latest IMC 0609 revision includes guidance for dealing with concurrent licensee performance deficiencies and requires determination of the combined significance in such cases, but doesn't provide any detail on how that should result in final significance determination colors for each of the separate findings. The following additional guidance is proposed as a means of establishing colors for each of several findings that may occur concurrently or have overlap. Comments are welcome.

Proposed additional guidance for IMC 0609 Appendix A "SDP for At-Power Conditions":

Licensee performance deficiencies that exist concurrently in time should always be carefully examined to determine if they have revealed a common cause failure potential. The justification for a common cause failure must demonstrate that when the cause is present, the multiple failures are certain to occur. If it is determined that the deficient condition was a result of a common cause failure, then a finding of a single performance deficiency should be defined as that which caused the multiple concurrent effects (e.g., loss of equipment availability or function). For this finding the SDP should determine the greatest delta CDF or delta LERF considering all combined effects.

If licensee performance deficiencies (l.p.d.) exist concurrently (i.e., overlap) and are not the result of an underlying common cause failure (as defined above), then the following guidance applies. Risk analyst support will be needed for situations such as these. In all cases, it is the intent of this guidance to determine which of the l.p.d.s has the largest delta CDF or delta LERF considering the combined effects of other concurrent l.p.d.s:

Step 1: Assess the significance of the effect of each l.p.d. independently of the others (i.e., for the entire time period it was present and without consideration of any other l.p.d.).

Step 2: Assess the significance of the effect of each l.p.d. only during the specific periods of time when its effect alone was present (i.e., the effect from no other l.p.d. was present).

Step 3: Assess the collective significance of the effects for each specific period of time when a constant number of multiple l.p.d.s were present concurrently.

Step 4: For each l.p.d. determine the sum of the delta CDFs or delta LERFs, as appropriate, for the specific l.p.d. from the information determined in Steps 2 and 3. For example, the delta CDF sum might be 1E-6/yr for a 1 month period that the l.p.d. effect existed without any other additional l.p.d. effect, plus 3E-6/yr for an adjacent 5 day period during which the l.p.d. effect existed concurrently with another l.p.d. effect, for a total of 4E-6/yr.

Step 5: From all the l.p.d.s assessed in Step 4, the l.p.d. having the greatest significance will be characterized using the color band associated with that significance. The significance of all other l.p.d.s will be characterized using the color band determined from Step 1 above and will be input into the NRC Action Matrix accordingly.

>>> Timothy Frye 02/09 8:43 AM >>>

Doug/Peter

Steve Long and myself are developing answers to some anonymous questions received regarding the agency response to the August 99 LOOP and Feb 2000 SGTF. One of the questions deals with how the ROP, and the SDP in particular, evaluated both of these issues separately, and whether the SDP shouldn't evaluate the significance of these two events happening concurrently (e.g., how the electrical distribution problems that occurred during the August 99 event might have complicated the Feb 2000 SGTF).

Can Steve Long and myself discuss this with you two on Tuesday 2/13 at 9 am in Doug's office? Let me know if this time is bad for anyone.