

From: Steven Long , NRR
To: Patrick O'Reilly, Sunil Weerakkody RES
Date: 1/2/01 5:17PM
Subject: Combination of IP2 LOSP and SGTR Events

Pat & Sunil,

I'm asking if we all agree to the following:

Sunil is evaluating the CCDP for the August 1999 LOSP event. He is considering the potential for SGTR to complicate the sequences that would lead to core damage and make them more likely, but does not see that there is much significance to the overall CCDP. He is not trying to calculate the CLERP, but does understand that the tube degradation that existed at the time of the event would increase the fraction of CCDP that is CLERP.

Pat is calculating the CCDP for the February 2000 SGTF event. He is not now trying to include the effects of an elevated potential for a LOSP and potential SBO following reactor trip. If that were to be included, it would require some evaluation of the probability for the February event to be the first trip since the miscalibration set up the consequential LOSP upon trip. A logical way to do that would be to use $1 - \exp(-\lambda \times t)$ where λ is the trip frequency and t is the period between the calibration problem and the SGTF event. Pat also not attempting to calculate a CLERP.

Tom Shelosky, in Region I, did attempt to calculate a CCDP and CLERP for a hypothetical event in which the LOSP conditions of the August event were assumed to occur following the trip associated with the February SGTF event. He found that the effect was not great (39% increase) because the actual failures during the August LOSP event did not preclude mitigation of the February SGTF event. He did include the effects of complications such as increase human error rates due to greater complexity and operator stress levels. He did not include some of the factors that RES has considered that lower the final results, so his numerical results are more useful from a relative importance perspective.

I tried to estimate a deltaCDF for the last year of the period of operation with the degraded tube strength. I included the potential for spontaneous rupture, pressure induced rupture and thermally induced rupture on CDF and LERF. However, in doing so, I did not include the higher frequency for core damage due to SBO from the conditions that existed until they were revealed by the August trip and LOSP event. That would substantially affect my LERF calculation, but insignificantly affect my CDF results.

Once we agree on what we are doing and not doing at this point. Rich Barrett and I need to address the broader issues of 1) would including these effects more fully change our regulatory decisions for this situation at this plant, and 2) could they be important factors for other regulatory decisions at other plants?

I think it is clear that, for Indian Point 2, the resulting separate yellow and red findings for the new reactor overnight process put the plant into our most vigorous regulatory response framework, so the method didn't result in an under-response in this case.

However, for other cases where the results may be a pair of whites or a white and a yellow, when evaluated separately, there appears to be potential for red when taken together. That would change our regulatory response. So, we intend to reevaluate our procedures to make sure we don't miss such cases if they arise.

Please respond to me to let me know if I have correctly stated what we have done / are doing, so that I can proceed with these wider considerations without misstating our current condition.

Steve

CC: James Trapp