

From: Thomas Shedlosky *NER*
To: Wayne Schmidt
Date: Fri, Jul 21, 2000 9:17 AM
Subject: Fwd: Re: ConEd Risk Analysis of IP-2 SGTR

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X/12 *(2)*

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From: Steven Long *NRR*
To: Richard Barrett, Thomas Shedlosky *NRR*
Date: Thu, Jul 20, 2000 11:22 AM
Subject: Re: ConEd Risk Analysis of IP-2 SGTR

Tom,

I read the licensee's risk assessment and have some observations:

1. I basically agree with their results for what they did, but note that it is a calculation of the conditional core damage probability (CCDP) for an SGTR event with low break flow rate, not an assessment of the level of risk increase (deltaCDF and deltaLERF) that the plant had due to the degraded condition of the tubes. There are two important differences discussed below.
2. The licensee had no way of knowing before the tube failure that it would have such a low flow rate. The average SGTR has had about 350 gpm and the maximum has been around 700 gpm. So, part of the difference between their CCDP for the event that they actually experienced and the deltaLERF that the NRC uses for our significance determination process (SDP) is their luck in having the degradation revealed by a small failure instead of a large one. From our review of the size of the flaw that failed, it is obvious that much larger flow rates could have occurred if that long flaw had not been held mostly closed by multiple remaining ligaments. There is no guarantee that such ligaments will always be present in flaws or even that those that were present in this flaw would hold for the 52 hour duration assumed to be available in the licensee's human error probability calculations. (Some of the human errors involve leaving the flaw under stress for extended periods.)
3. There are other types of accidents, besides spontaneous tube rupture, that contribute to deltaLERF. These are steam-side depressurization events and core damage events that would have induced the tube to rupture if they had occurred before the spontaneous rupture occurred. These types of events are included in the PRAs (and some in the design basis), but without the potential for complication by induced SGTR. My risk assessment input to our SDP does consider these other types of accident sequences in addition to the spontaneous rupture sequence. They come in at the low E-5/RY range, so they don't dominate my result. However, they would have to be considered in detail before one could conclude that the deltaLERF for the IP2 SG condition was less than 1E-5, and therefore not "red".

So, in summary, I don't dispute IP2's CCDP analysis, but I do not agree that it is the proper basis for assessing the risk of the situation that was created by your finding that their inspection of their tubes was inadequate to justify the run time that they attempted.

Steve Long

>>> Thomas Shedlosky 07/20 8:55 AM >>>

Attachment 5

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I've attached a copy of the ConEd risk assessment of the February 15th SGTR, please note that ConEd has evaluated the condition at the actual maximum primary to secondary flow rate of 109 g.p.m. This allowed them to update the HRAs and also to take credit for charging.

The issue will be moving into enforcement space shortly because the inspection that reviewed the steam generator tube inspection program concludes today with its exit meeting. We'll continue to need your support.

Tom Shedlosky
610-337-5171

Attached: MSWord Document psa-000717-1rev0.doc

CC: Brian Holian, Wayne Lanning