From: Thomas Shedlosky
To: A. Randolph Blough, Brian Holian, David Lew, Hubert J. Miller, James Trapp, James Wiggins, Pete Eselgroth, Peter Habighorst(...)
Date: Thu, Jul 20, 2000 9:05 AM
Subject: ConEd Risk Assessment of February 15 IP-2 SGTR

I've received a copy of a risk assessment completed by ConEd of the February 15th, IP-2 steam generator tube rupture (SGTR) event. ConEd evaluated the event at the actual maximum primary to secondary leak rate of 109 g.p.m., which is significantly less than the 411 g.p.m. flow rate used in the baseline PRA SGTR. To evaluate the event, ConEd re-quantified the top 100 sequences from their conditional SGTR analysis to reflect new human reliability failure probabilities for the additional time that the actual leak rate of 109 g.p.m afforded the operators. They also modified these sequences to take credit for the charging pumps, which are not normally questioned in a SGTR PRA analysis because of their lower flow rate.

ConEd has calculated a conditional core damage frequency (CDF) for the February 15th event at 4.77E-06 per reactor year by re-quantifying the top 34 sequences, which are greater than 1E-07. Additionally by applying the average sequence reduction factor calculated for the top 34 sequences to the remainder of the top 100 sequences, ConEd has calculated a CDF of 2.2E-06 per reactor year for those top 100 sequences.

The ConEd calculation differs from the NRC risk assessment (Reference: Barrett to Blough, dated May 4th, ADAMS #ML0037090430) in the assumption used for the break size. The NRC assumes that although the break was not at the design basis size, based on flaw size information, it could have progressed to a full design basis SGTR. The NRC estimated the conditional probability of core damage and large early release as 1.0E-04

Additionally, ConEd does not believe that radioactive release from a potentially damaged core would meet the definition of a large early release (LERF) because of the additional time afforded by the smaller break size (ConEd assumed a constant flow rate through the event in their analysis as a bounding condition).

In summary, the ConEd analysis estimates a CDF which is low to medium WHITE, 2.2E-06 to 4.77E-06, with no LERF. The NRC estimate for CDF and LERF is RED, 1.0E-04.

I have forwarded the ConEd analysis to NRR/DSSA/PRAB for their review.

Please contact me if you have any questions.
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