

Michael Rabins' Commentary on "Dissent About Nuclear Safety"

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Dissent About Nuclear Safety

It would seem that Alison Turner and her fellow committee members on the PNSRC do not yet have all of the information available to enable them to make a carefully considered judgement. But even before considering analysis of a single heat exchanger failure, as in part II, she has some professional obligations to consider. If Alison does not express her reservations in part I of this case, it is likely that the Justification for Continued Operation (JCO) will be forwarded onto the Nuclear Regularly Commission (NRC) for approval with no mention of the contingency check on the loss of one of the two heat exchangers under the required Single Failure Criteria.

It is not unreasonable to expect that the people who serve on the NRC have sufficient experience and expertise to turn down the JCO from the PNSRC just on the basis of the omission of this Single Failure Criteria assessment of the effect of losing one heat exchanger. Alison can make this point following the moment of silence on the initial vote in part I. She can try to convince her fellow PNSRC members that it is in their and their company's best interest to maintain the confidence of the NRC.

Most important she can try to convince her fellow PNSRC members about their responsibility to check all contingencies in order to hold paramount public safety according to all professional society codes of ethics. This is particularly sensitive given the nature of what is potentially at risk in this case.

In part II of the case it emerges that the Nuclear Safety and Licensing Department would only require 3 hours to perform the necessary calculations for the Single Failure Criteria issue of the effects of a possible loss of one heat exchanger. At this point in the discussion it appears that Mark Reynolds on the PNSRC is leaning towards supporting Alison's concerns. The fact that the containment spray heat exchanger is optional and the company track record is excellent, as Joe Carpello

points out, is really not relevant to the question at hand, namely the responsibility of the PSNRC to consider all possible consequences of their actions. The fact that this is an accident mitigation system and there never has been an accident in the plant, as pointed out by Brad Louks, is also not relevant to the basic responsibilities the PNSRC faces.

Joe Carpello's statement that nothing is ever totally risk free is exactly right. But his point that their company has always been a leader in safety, so "...Let's not get carried away with 'possibilities'" seems precisely wrong just because nothing is ever totally risk free. It is exactly by letting oneself get deeply immersed in all failure mode possibilities that one maintains a position of leadership in safety.

Given that it is only 1:30 p.m. in the afternoon when this discussion takes place, and that the calculations for the missing Single Failure Criteria assessment would only take another 3 hours, it would seem that Alison and Mark could reasonably call for a tabling of the PNSRC vote until 4:30 that afternoon.

In part III of the case, it is hypothesized that subsequent calculations have shown that Alison's concerns were unfounded. Does that make it wrong for her to have requested a delay on the PNSRC vote? Just the fact that the substantiating subsequent analysis can now be included in the JCO to be forwarded to the NRC would seem to justify the delay.

The issue of setting a precedent of proceeding without unanimity on the PNSRC does not really seem to be an issue. Undoubtedly, once the Single Failure Criterion analysis is available, Alison will for sure be willing to join the majority to make the final recorded vote unanimous. But even without such a vote change, in something as critical as reviews like this one coming before the NRC, non-unanimity of a PNSRC vote may achieve the important function of requiring the NRC to look at any situation more carefully than it might otherwise have done.

The early days of the NRC actions are replete with some misguided risk assessment analyses that did not properly alert us to the kind of problems that arose at Three Mile Island. The interested reader is referred to the literature regarding the famous Report to the NRC headed by Professor Rasmussen of MIT (the so called WASH-1400 Report). There are also a number of informative reports and TV tapes on Three Mile Island that are relevant to some of the issues in this case.