

From: John Lehning *NRR*
To: Tanya Eaton *NRR*
Date: Wed, Jun 28, 2000 9:23 AM
Subject: Re: Fwd: Decommissioning: Responses

Hi Tanya,

I read through Goutam's responses and thought they were fine for the most part. I'm not an expert critiquer, but from my point of view, I would suggest two main things (and I appended the two public comments I cited) :

1. I don't if the response to public comment #7 answers the question completely. I think the commenter was also asking about common mode types of failure, such as a single cause which might harm the pool and knock out electrical power, not necessarily only two random and independent events, as the response suggests. I'm sure similar arguments would apply to the common mode case, but I think they ought to be explicitly stated. Furthermore, it looks like part of this response may have been cut off?
2. Maybe this is just my ignorance, but I think the response to public comment #9 doesn't give a real explanation that I can easily follow. If I were the person making the comment, I don't think the response would satisfy me. Also, implicitly, I think there is necessarily a consideration of cost involved in the reasons for doing it generically! It must be, and I think the response should address that.

DE Public Comment #7

Not all PWR building housing spent fuel are seismically qualified. The NRC should perform a worst case analysis of the result of a seismic event which collapses the spent fuel pool building, and/or drains the pool and/or damages the spent fuel. Both criticality and zirc fires are of concerns. The nine initiating events listed at p. 11 which could occur concurrent with the earthquake should also be considered if the events contribute to the worst case scenario.

Response

The staff identified the following nine initiating event categories to investigate as part of the quantitative risk assessment on SFP risk:

- Loss of Off-site Power from plant centered and grid related events
- Loss of Off-site Power from events initiated by severe weather
- Internal Fire
- Loss of Pool Cooling
- Loss of Coolant Inventory
- Seismic Event
- Cask Drop
- Aircraft Impact
- Tornado Missile

The initiating events indicated above are independent and the event sequences that emanate from each event are carefully modeled in the event tree. This means that a seismic event tree would include the consideration of off-site and on-site power loss. In a PRA assessment no risk insight can be gained by considering worst case combination of truly random and independent events such as a seismic event and a tornado missile. However, the frequency of a combined seismic and tornado missile would be much less than 10⁻⁸. Also, with respect to other structures such as crane girders and super-structures, they are covered in the seismic check list for the

DE Public Comment #9

The NRC should specify why it is not cost effective to perform a plant-specific seismic evaluation for each spent fuel pool and what impact this has on safety. Because there are so many differently

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designed spent fuel pools, it is difficult to perceive how a generic approach could be acceptable without assembling a list of similar &/or identical designs and performing a seismic evaluation of the various groups which are assembled. Specific seismic evaluations for each plant or groups of similar/identical plants should be considered.

Response

A significant body of work exists characterizing the strength and capacity of shear walls based on tests and analyses. The use of a generic parameter, with the underpinning of data, that is to be used solely for the purpose of screening is very appropriate and reliable. Provided that all the conditions in the check list are met, only then a structure could be screened in. At sites where the prescribed seismic demand is greater than the 0.5g peak ground acceleration value or the 1.2g spectral acceleration value, a plant specific evaluation is to be conducted. The use of a screening parameter is a reliable way to determine the need for further evaluation. This concept was developed without any consideration of cost.