

From: Glenn Kelly *NRR*
To: David Diec; Goutam Bagchi; Jason Schaperow; Joseph Staudenmeier; Kathy Gibson; *NRR + RLS*
Robert Palla; Vonna Ordaz
Date: Wednesday, March 07, 2001 04:16 PM
Subject: Re: International experience on SFP

Dave,

Here is my markup. I think it is important to ask why we are asking a question and what we would do if we got an answer to the question in the context of the Commission's questions and needs.

Glenn

CC: Charles Tinkler; Diane Jackson; George Hubbard; Glenn Tracy; Timothy Collins

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- 1) ~~Has there been any plant shutdown permanently? If yes, how many and how long have they been shutdown?~~
- 2) ~~Was~~ Were there any events associated with a loss of spent fuel pool (SFP) cooling occurred at the decommissioning plants? If Yes, please describe the events, mitigation efforts, and ~~impact of loss of mitigation capability~~ actions performed.
- 3) ~~If the plant shut down permanently, is the pool full or partially full with spent fuel?~~
- 4) What is a storage capacity (number and type of assemblies) of SFP at a decommissioning plant, pool heat up rate, pool water inventory, fuel burnup GWD/MTU, type of monitoring, alarms, and estimated decay heat load?
- 5) What are the current regulatory requirements put in place to ensure the capability of decommissioning plants to provide SFP cooling, leaks detection, pool level indication, pool water makeup, and reporting of the event? How are do these requirements differed from operating plants?
- 6) ~~If loss of SFP cooling at decommissioning plants occurred, how many events were reported?~~
- 7) ~~What are the current spent fuel rack designs (high density or low density) are in your SFPs today? of spent fuel racks? How would they impact the spent fuel during loss of pool coolings at decommissioning plants.~~
- 8) ~~Do you reprocess spent fuel? If Yes, how long would the spent fuel be remained in the pool before being transported to the reprocessing facility and what are the limiting accidents associated with this configuration?~~
- 9) How long will the spent fuel be remained in the pool after at decommissioning plants a plant permanently ceases power operation?
- 10) Do you have an interim spent fuel storage program? (i.e., e.g., dry cask storage) ~~What are the requirements associated with spent fuel dry cask storage?~~
- 11) What are the structural design criteria used to design the SFP? (E.g., seismic design classification, minimum temperature for evaluation of thermal stress from loss of cooling events).
- 12) If a risk assessment (either generic or plant-specific) has been performed for a decommissioning plant, please provide the risk assessment(s), ~~what are the accident initiating events, the worst case accident scenarios, and the likelihood and consequence of spent fuel uncover?~~ Is the risk assessment performed plant specific or generic?
- 13) Have at-power probabilistic plant-wide risk assessments ever included the spent fuel pool? If so, please explain how they were modeled and included in the study. Please provide a reference for the risk assessment(s).
- 14) ~~Are beyond design basis accidents considered for any regulation? If so, what are the accidents~~ How do your regulations treat beyond design bases accidents? If they are

explicitly considered in your regulations, what accidents are considered, and how and in what context do the regulations consider these accidents?

- 15) Has the source term from the failure of spent fuel (e.g., by a zirconium fire), particularly the percentage of ruthenium, ever been investigated? If so, what source term ~~would be used?~~ do you judge to be appropriate for such a failure?
- 16) Have heavy load drops (100 tons) in or near the spent fuel pool or on the wall of the pool been analyzed? If so, please ~~explain.~~ provide a reference for the analysis or provide the analysis results.
- 17) Has any work been performed on zirconium-air oxidation associated with a loss of SFP cooling at a decommissioning plant? If so, please ~~explain.~~ provide references or the analysis.
- 18) What emergency preparedness, safeguards, and security requirements exist ~~are required~~ for decommissioning plants? What are the bases for these requirements, and how ~~are~~ do they differed from operating plants?
- 19) Are exemptions from regulations (~~i.e.,~~ e.g., emergency preparedness, safeguards, insurance, ~~...~~) granted for decommissioning plants? What are they and what were the bases for these exemptions?