To Vonna Ordaz 4/9/c

DRAFT TASK FOR INNEL TO STUDY
THE RISK FROM LOSS OF SPENT FUEL COOLING AT
DECOMMISSIONED PLANTS

1. Extend existing PRA models of spent fuel pools (SFPs) at four nuclear power plant sites to model SFP behavior when the plants are decommissioned.

2. Estimate frequency of occurrence of and time to boiling in the SFP, frequency of occurrence of and time to fuel uncovery, and frequency of occurrence of occurrence and time to a Zircoloy fire. Include recovery.

3. Estimate the resulting public risk from the SFPs at 90 days, 365 days, and 3 years since the last fuel was removed from the reactor.

4. Evaluate the effect on operator actions from high radiation fields near the pool if the pool level drops sufficiently close to the top of the bundles.

5. Perform a sensitivity study to determine the benefit of having diverse, redundant, good quality instrumentation to monitor the SFPs that is required to be operable by TS.

6. Perform a sensitivity study to determine the benefit of having fire suppression equipment available to mitigate loss of cooling to the spent fuel. Consider both as a source of makeup and as a spray over the spent fuel pool to minimize the probability and consequences of a Zircoloy fire.

7. Initiators should include seismic events, tornado missiles, loss of cooling, and loss of inventory.

8. When performing offsite dose estimates, evacuation should be considered either to go according to the Emergency Plan, to be ad hoc and a function of the time available for police to warn the populous, or not to occur at all.

9. Decommissioned facilities have historically had less equipment operable or available than operating reactors. The degree to which the SFP is an "island" varies from site to site. Include the impact of the following assumptions:

   a. At one year no emergency diesel generators will be available on site.

   b. There will be no technical specification requirements for instrumentation to monitor or alarm spent fuel pool temperature or level, nor will there be instrumentation requirements for radiation monitors in the spent fuel pool area (except when fuel is being moved).

   c. At one year, the decommissioned sites will not be staffed by licensed operators, but will be staffed by individuals that pass a licensee-developed fuel handling course.

   d. There are no requirements for the fuel handlers to tour the plant at regular intervals.

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e. At one year, there will be no NRC day-to-day oversight at the site (i.e., no resident inspectors only regional inspections).

f. At one year, the licensee has disconnected all makeup sources except for one pumped and one gravity feed makeup source.

g. At one year, there is only a skeleton crew on site.

h. Spent fuel pool gates are not opened once the plant is decommissioned.