

Case I

Assumptions in the SFP Risk Analysis

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- 1. The spent fuel pool has one level, one temperature, and radiation monitors and alarms in the control room. The instrumentation is maintained in an operable state. Annunciators are in computers, which can track trends.**
- 2. The certified fuel handlers are former senior reactor operators who know the facility, the surrounding community, and facility maintenance personnel well.**
- 3. The site has operable two fire pumps (one diesel-driven and one electrically driven from offsite power).**
- 4. There is limited makeup capability (with respect to volumetric flow) with the exception of fire pumps, which can provide makeup via 2.5 inch diameter hoses.**

Assumptions in the SFP Risk Analysis

- 5. The certified fuel handlers enter the spent fuel pool area once or twice per shift (8 to 12 hour shifts).**
- 6. The site is staffed during the day shift Monday through Thursday with maintenance people, health physics staff, QA/QC staff, fuel handlers, and administrative staff. Nights and weekends there is a skeleton staff.**
- 7. Certified fuel handlers are assumed to walkdown the spent fuel pool area at least once per shift. The human error probability (HEP) based on this was estimated to be 0.01.**

Assumptions in the SFP Risk Analysis

- 8. The spent fuel pool water is clear and the fuel is observable. The control room monitors the spent fuel pool level via a camera that can zoom in on a measuring stick in the pool that can alert operators to level changes. The measuring stick is about three to four feet long.**
- 9. There is little fire protection equipment in the spent fuel pool area and it all is manual.**
- 10. Overhead cranes have stops to help prevent heavy loads from being moved over the spent fuel pool.**
- 11. An F4 to F5 tornado would be required if significant damage were to be possible to a PWR or BWR spent fuel pool.**

Assumptions in the SFP Risk Analysis

- 12. An F2 to F5 tornado would be required for possible significant damage to a spent fuel pool support system.**
- 13. Shipping cask handling is the dominant heavy load operation.**
- 14. Spent fuel casks will be the only heavy load moved over the spent fuel pool with sufficient mass to significantly damage the pool.**
- 15. Crane operators will follow safe load path procedures when moving heavy loads near the spent fuel pool.**

Assumptions in the SFP Risk Analysis

- 16. Spent fuel pools are robust and will survive seismic events less than three times the safe shutdown earthquake (SSE)**
- 17. The staff used generic loss of offsite frequencies.**
- 18. No pumps or valves do anything automatically. Every action must be accomplished by a certified fuel handler.**
- 19. The times available for operator actions are based on calculations as described in the draft risk assessment.**

Assumptions in the SFP Risk Analysis

- 20. The effects of recriticality were not specifically modeled in the risk evaluation. Its potential for impact on risk is considered to be very low.**
- 21. One year after the last of the reactor fuel is transferred to the spent fuel pool there is no longer any day-to-day NRC onsite oversight. We did not attempt to quantify the effect of this assumption.**
- 22. External flooding is assumed not to be a significant contributor to loss of spent fuel pool cooling.**
- 23. Note: One plant cleaned its spent fuel pool and found thousands of foreign material pieces. Sizes were not discussed.**

Assumptions in the SFP Risk Analysis

- 24. The utility has removed the emergency diesel generators and other support systems such as residual heat removal and service water that could provide spent fuel pool cooling or makeup prior to the plant being decommissioned.**

- 25. The highest action level of offsite warning for decommissioned plants is an alert.**

- 26. The spent fuel pool cooling system (sled mounted) and any support systems all run off the same electrical bus.**

Assumptions in the SFP Risk Analysis

- 27. The utility has procedures for small leaks from the spent fuel pool or for loss of spent fuel pool cooling system.**
- 28. The only significant Technical Specification applicable to spent fuel pools is the requirement for radiation monitors to be operable when fuel is being moved.**
- 29. There are no large pipes that go into the spent fuel pool that either extend more than a few feet down into the pool or that penetrate the spent fuel pool at a level near the top of the fuel.**
- 30. The evacuation is assumed to begin three hours prior to the release of fission products to the environment.**