

BWR4 RHR System MSO Analysis

The PRA credits the RHR system in 5 ways. The first is LPCI with the RHR pumps taking suction from the suppression pool. The second is LPCI with the RHR pumps taking suction from the CST. The third is containment pressure control with drywell sprays. The fourth is decay heat removal with suppression pool cooling. The fifth is decay heat removal with shutdown cooling. (Refer Figures 1 through 3 of System Drawings Handout).

RHR System Modes Modeled in the PRA

1. LPCI injection with suction on the suppression pool is credited in the PRA model for low pressure injection before a primary containment vent (if required) and after a successful primary containment vent.
2. The drywell sprays are credited for drywell pressure and temperature control in the PRA model.
3. Suppression pool cooling is credited for decay heat removal in PRA model.
4. Shutdown cooling is credited for decay heat removal in the PRA model only after a successful primary containment vent. The mode of shutdown cooling modeled in both models is through the SDC suction valves from the RPV.

Postulated MSOs

BWR4 HPCI MSO Analysis

The fire PRA credits the HPCI system in 2 ways. The first is initial short term (<4 hours) high pressure injection to the RPV with suction on the CST. The second is long term (>4 hours) high pressure injection to the RPV with suction on the suppression pool. (Refer Figure 4 of System Drawings Handout).

HPCI System Modes Modeled in the PRA

HPCI is credited in both the PRA model for injection to the RPV for both the short term (initial source) and long term accident sequences. The short term model credits only the CST as a

suction source. The long term model credits the suppression pool as a suction source but requires successful suppression pool cooling.

Postulated MSOs

Electrical System MSO Analysis

Electrical System Modes Modeled in the PRA

The PRA credits the availability of power from the 480V and Higher AC Electric Power System. A study was performed to determine the impact on the offsite power system of the potential overload conditions due to multiple spurious breaker actuations. The study concluded that the offsite power transformers could be overloaded if two buses are connected. This is not modeled in the PRA due to low probability of multiple spurious operation of breakers (Refer Figure 5 of System Drawings Handout).

Postulated MSOs