LER 321/82-070, Rev. 1

Event Description: HPCI and RCIC Simultaneously Unavailable

Date of Event: August 5, 1982

Plant: Hatch 1

Summary

On August 5, 1982, the reactor core isolation cooling (RCIC) minimum flow bypass valve was found to be cycling open and closed during full RCIC pump discharge flow. On August 20, 1982, the high-pressure coolant injection (HPCI) system was tagged out of service for maintenance. When RCIC was tested on August 20, 1982 to verify its availability, the minimum flow bypass valve experienced the same malfunction.

This event was modeled as an unavailability of both RCIC and HPCI. RCIC was assumed to be unavailable for 30 days (half the time between tests plus the 15 days involved in this event.) HPCI was assumed to be unavailable for seven days (half the assumed LCO period) because the cause and duration of the maintenance activities are unknown. Therefore both systems were assumed to have been simultaneously unavailable for seven days. HPCI was assumed to not be recoverable and a non-recovery probability of 1.0 was assigned to the system. The increase in core damage probability (CDP), or importance, over the duration of the event is 3.4×10^{-6}. The base-case CDP over the duration of the event is 1.3×10^{-6} resulting in an estimated conditional core damage probability of 4.7×10^{-6}. The dominant core damage sequence involves a postulated loss of offsite power, failure and recovery of emergency power, failure of HPCI, and failure of RCIC.