

LER 265/82-010

Event Description: Trip with HPCI Inoperable

Date of Event: June 24, 1982

Plant: Quad Cities 2

Summary

On June 24, 1982, with the plant increasing power in preparation for rolling the turbine and placing the unit online, HPCI pump discharge motor-operated valve 2-2301-8 failed to open when given a signal from the control room during an HPCI valve operability surveillance test. The HPCI was declared inoperable. The valve was manually opened and taken out of service. Investigation revealed that the open torque switch in the motor operator had a broken arm. The arm was replaced and the valve reassembled. The valve was opened successfully three times and high-pressure coolant injection (HPCI) was returned to service the next day.

A plant trip occurred approximately two days prior to the discovery of the faulty HPCI pump discharge valve. Thus, this event was modeled as a transient with HPCI assumed inoperable. The HPCI train probability was set to failed and the HPCI non-recovery probability was set to 0.55 to reflect the ability of the operators to recover HPCI locally within the allowable recovery time (see Appendix A). The estimated conditional core damage probability for this event is 4.7×10^{-6} . The dominant sequence involves the trip with a postulated failure of the power conversion system, successful operation of main feedwater, and the failure of the residual heat removal system.