

LER 247/83-005

Event Description: Transient with the Turbine-Driven AFW Pump Inoperable

Date of Event: March 8, 1983

Plant: Indian Point 2

Summary

During normal operation on March 8, 1983, while the 22 turbine-driven auxiliary feedwater (AFW) pump was being brought up to operating speed for a bimonthly surveillance test, the outboard bearing began smoking and the pump was removed from service for maintenance. Inspection of the pump indicated that repacking was required. A trip had occurred less than a month prior to this event on February 13 (*Licensed Operating Reactors, Status Summary Report* (NUREG-0020), published monthly, U.S. Nuclear Regulatory Commission, hereafter referred to as NUREG-0020). Assuming that a bimonthly test indicates that a test was performed every two months, half the surveillance period of the turbine-driven AFW pump is a month.

Since the trip occurred less than a month earlier, it was assumed that the problem with the AFW pump existed at the time of the trip. This event was modeled as a transient with the turbine-driven train of AFW failed. The model for the failure of AFW given an anticipated transient without scram (ATWS) requires the use of 2 of 3 pumps. The AFW/ATWS probability was set to 0.04 to reflect the probability of failure for motor-driven pump 22 or motor-driven pump 23. The conditional core damage probability of this event is 3.9×10^{-6} . The dominant core damage sequence involves a successful reactor trip, the failure of AFW, the failure of main feed water, and failure of feed and bleed.