

## CAR 1444

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

CON'T

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

(continued on <sup>80</sup>  
page 2)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

(continued on page 2 and 3)

NRC USE ONLY

PHONE: 315/524-4446 Ext. 255

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (cont.)

cold leg nozzle thus allowing air to pass through, resulting in an air bubble formation passing through the RCS and entraining the RHR pump suction thus causing loss of RHR located on the hot leg of the same loop. The RHR pump in operation at the time was manually tripped by the Control Room Operator to prevent damage to the pump. Prior to this event the RCS boron concentration had been borated to greater than 2400 ppm (2000 ppm required for Refueling Shutdown mode) based on calculation that assumed loss of all the 2500 gallons of S/G channel head volume of water into the RCS loop being maintained at greater than loop centerline level and above pressurizer surge line nozzle. This was done to comply with Technical Specification on Containment Integrity that states, "Positive reactivity changes shall not be made by rod drive motion or boron dilution whenever the containment integrity is not intact unless the boron concentration is greater than 2000 ppm".

This is a Limiting Condition for Operation allowed by Tech. Specs. 3.1.1.1.(f).

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (cont.)

the running RHR pump to prevent damage to the pump. The RHR loop was properly vented and RHR was returned to service approximately 12 minutes after it was lost. During this period of time the temperature of the RCS, as measured by the RHR pump outlet temperature indicator, increased by 15°F then returned to normal after re-initiation of RHR. Calculations were also performed to determine the RCS temperature rise with loss of all RHR flow. The calculation was within 4°F of actual. Thus it can be concluded that at all times the core outlet temperature was well below the 10°F below saturation temperature Tech. Specs. requirement. Also when the RHR pump suction was lost the dilution of the RCS had already taken place. The following corrective actions were initiated:

- A) Two scenarios regarding the Loss of RHR Flow were presented to the Plant Operations Review Committee.
- B) The first scenario involved failure or leakage of the hot leg 'decon dam' which consisted of the air pocket pushing water into the Reactor Vessel and the nitrogen entering the RHR suction piping.

- C) The second scenario involved failure or leakage of the cold leg "decon dam" which consisted of the air\*pocket pushing water into the Reactor Coolant Pump, the Reactor Vessel, and subsequently becoming entrained in the RHR Suction Piping.
- D) After much discussion, the PORC Committee concurred that the two scenarios were indeed plausible. Currently, based on investigation into the channel head, it appears as though the cold leg scenario was the most likely.
- E) The PORC acknowledged the loss of RHR Flow could not be precluded during the "decon operations", but also acknowledged that our procedures have actions which mitigate this event. Use of RWST water via MOV-856 has successfully restored RHR flow twice in Plant history.
- F) Add note to procedure to indicate that at greater than 15 inches loop level, the pressurizer surge line nozzle would be entirely covered with water.
- G) Change decon procedure(s) to require a static test of "decon dams" pressurized in 5 psi increments to monitor for leakage, and require depressurization during "decon operation" if the skid pump cavitates for no known reason.
- H) Investigate a method to monitor "decon dam" leakage during pressurization, which could consist of a wide range level indicator on the channel head, or primary system inventory monitoring.
- I) Insure there is a vent Plant via the Reactor Head Vent during decon operation.
- J) Investigate future decon operations to preclude the loss of RHR before 1984 AI&O.