

MALFUNCTION OF POOL WATER LEVEL SENSING SWITCH

Amended Report

This report was prepared and forwarded to the Nuclear Regulatory Commission (NRC) pursuant to paragraph 4(a) of reactor license R-84 and Table I of the Technical Specifications.

I. Description of Malfunction.

At 11:52 a.m. on 10 July 1979 a reactor operator discovered that the float switch, which senses the reactor pool level, was not operable.

II. Cause of Malfunction.

The malfunction was caused by wear on the jacketing around the wires leading to the switch which provided a path to ground, thereby circumventing the switch function. A physical check of the switch function is part of the annual maintenance requirements and had been performed in February 1979. A physical check of the switch function had been performed on 26 June 1979, and it was found operable.

III. Corrective Action Taken.

The switch unit was replaced and additional sleeving was placed at the wear point. It was back in service at 12:30 p.m. on 10 July 1979. It must be recognized that the circuitry which failed had been in continuous operation for over fifteen years without failure, and therefore is proven reliable. In order to insure that the function of this switch is acceptable in the future, a physical test will be performed at least monthly.

IV. Safety Evaluation.

This switch provides the scram signal which shuts down the reactor if the pool water level drops more than four inches. It is the only on-line scram for this parameter, but the level is checked visually each morning and a television monitor system is continuously available to the operator. In addition, there are anti-syphoning holes drilled in the intake and exhaust pipes for the primary system to prevent the pool from being drained by syphoning. The only other mechanism by which pool water could be lost would be a break of the tank wall in an exposure room. Loss of water through this method would be indicated by an alarm of R-1 of the area monitoring system.

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V. Safety Review.

The AFRRI Reactor and Radiation Facility Safety Committee met on 16 July 1979 and reviewed the initial report. It recommended forwarding to the NRC for information. This amendment is not substantially different in technical aspects from the original and will be reviewed at the next regular meeting.