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Alabama Power

the southern electric system

P. O. Drawer 470
Ashford, Al 36312
May 26, 1981
FNP-81-0647

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Mr. J. P. O'Reilly, Director
U. S. Nuclear Regulatory Commission
101 Marietta Street, N.W.
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

This is to confirm the telephone call to NRC Region II I&E by
Mr. J. D. Woodard (APCo) at approximately 1800 hours on May 22, 1981.

Westinghouse notified Alabama Power Company that the Westinghouse Water Reactor Division's Safety Review Committee has identified a potential control and protection system interaction concern involving the Volume Control Tank (VCT) level instrumentation control system. This situation represents a violation of the Nuclear Regulatory Commission regulations related to separation of protection and control systems and single failure criteria as delineated in GDC-24 and IEEE-279. Engineering review of this notification resulted in a determination on May 22, 1981, that this situation is potentially reportable under Technical Specification 6.9.1.8.i (Unit 1) and 6.9.1.12.i (Unit 2). This situation is being evaluated for reportability under 10CFR Part 21 and will be addressed in the follow-up report.

Westinghouse does not see this item as one with serious safety implications, but rather, as one which violates current Regulatory requirements. The postulated event is as follows:

Assume the plant is operating with a centrifugal charging pump performing the normal charging function. The failure of the VCT level control system (LT-115 or LT-112 failing high) causes the let-down flow to be diverted to the Recycle Holdup Tanks. The VCT liquid inventory is reduced due to normal charging without any make-up to the VCT due to letdown. Assuming LT-115 or LT-112 fails high, charging pump suction is not transferred to the RWST, and without operator intervention the VCT could empty causing the centrifugal charging pump to be damaged due to loss of suction fluid. The second centrifugal charging pump is then taken to be the assumed active

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failure. The RCS inventory decreases due to normal letdown flow and, following letdown isolation, due to RCP seal leakage. However, borated water cannot be injected into the RCS from the centrifugal charging pumps. The operator must find a means to restore the primary inventory lost via letdown and RCP seal leakage. In addition, the operator must be capable of borating the RCS prior to going to a cold shutdown condition.

This scenario assumes that during normal plant operation, one charging pump is running with another on standby. Actually, three charging pumps exist, although the Technical Specifications require only two.

Following the failure in the VCT level control system, the operator would have approximately 10 minutes to transfer the charging pump suction from the VCT to the RWST, simply stop the pump, or restore letdown to the VCT.


If no operator action occurs at this time, then the pump in operation could be damaged due to loss of suction, and the plant would continue to lose inventory due to letdown. However, this is a slow loss in water inventory. Automatic letdown isolation should occur. Even without letdown isolation or operator intervention, approximately two days would elapse prior to core uncover. The operator would have considerable time to align the standby pump to the RWST.

Timely operator action can negate this scenario and positively address the identified concern. FNP is equipped with instrument readouts which would indicate the presence of this situation and numerous alarms would be actuated at various times in the event.

FNP plant procedures are being reviewed to assure that the operator would be properly alerted to this situation and would take the appropriate action necessary to assure an adequate water supply to the charging pumps.

Further details will be furnished in the 14-day follow-up report.

Sincerely yours,


W. G. Hairston, III
Plant Manager

WGH/DWH:sjs

cc: H. O. Thrash
R. D. Hill
K. W. McCracken
File