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Ref SBP-81-68
SB-11518
I.F. Q 2.2.2



U.S. Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Attention: Office of Inspection and Enforcement

- References:
1. Docket No. 50-443 and 50-444
 2. Telecon of May 21, 1981 between R. Gallo, NRC and D. Maidrand, YAEC

10 CFR 50.55(e) Deficiency
Report on Control and Protection System Interaction
Volume Control Tank Level

Dear Sir:

On May 21, 1981 we reported that Westinghouse had identified a control and protection system interaction concern involving the Volume Control Tank (VCT) level instrumentation control system. This report is being filed in accordance with the thirty day reporting requirements of 10 CFR 50.55 (e).

The following discussion describes the system interaction concern. Assume the plant is operating with a centrifugal charging pump performing the normal charging function. (Normally one of the three available charging pumps is running with another as standby.) A failure of the VCT level control system causes the letdown flow to be diverted to the liquid holdup tank. The VCT liquid inventory decreases due to normal charging without any makeup to the VCT via letdown. Without operator intervention the VCT could empty causing the operating centrifugal charging pump to be damaged due to loss of suction fluid. If it is further assumed that one charging pump is out of service, as allowed by the Technical Specifications, there would then be only one remaining undamaged pump available to provide makeup to the reactor coolant system as required by letdown and reactor coolant pump seal leakage. The one remaining pump does not then meet the single failure criterion.

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

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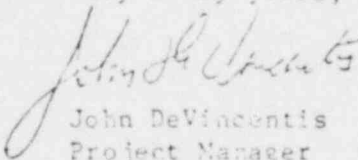
If no operator action occurs at this time, then the pump in operation could be damaged due to loss of suction, and the plant would continue to lose inventory due to letdown. However, this is a slow loss in water inventory. Automatic letdown isolation should occur. Even without letdown isolation or operator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

It is Westinghouse's position and we concur that timely operator action can negate this scenario and positively address the identified concern. Seabrook is equipped with instrument readouts which would indicate the presence of this situation. In addition, we have numerous alarms which would be actuated at various times in the event.

Plant procedures will be 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 in the event of a VOT level control system failure.

Should further action be required as a result of additional NRC concerns, we will reappraise our position and inform you accordingly.

Very truly yours,


John DeVincentis
Project Manager

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