

DUKE POWER COMPANY  
OCONEE NUCLEAR STATION - UNIT 1  
UNUSUAL EVENT REPORT UE-269/73-9  
BORATED WATER STORAGE TANK OUTLET VALVE LP-22

Received w/Lit Dated 10-31-73

Description of the Incident

On October 1, 1973 during the monthly test of Engineered Safeguards Channel 8, the borated water storage tank outlet valve LP-22 failed to operate. The Engineered Safeguards control station (see Oconee FSAR Figure 7-3) was in manual for this test, and the signal to open the valve was introduced at that station. Another attempt to open the valve was made immediately, and the valve operated properly. LP-22 was again tested and operated three out of five trials. It was verified that the Engineered Safeguards logic functioned properly each time.

Evaluation

To evaluate this failure of LP-22 to open, further tests were conducted and it was determined that the  $R_0$  contacts in Engineered Safeguards Channel 8 were operating properly, and that the valve could be opened from the control room benchboard independent of the Engineered Safeguards System. Auxiliary circuitry associated with Channel 8 actuation of LP-22 was thoroughly inspected, but the cause of the problem could not be found. The failure of LP-22 to open was apparently due to an electrical malfunction of the field circuitry associated with the Engineered Safeguards Channel 8.

Corrective Action

In addition to the tests and inspections that were performed immediately after the occurrence of the incident, LP-22 was checked for proper operation once each day for a week. The valve operated properly each time. In addition to the extensive testing of Engineered Safeguards Channel 8, Channel 4, which also supplies an Engineered Safeguards signal to LP-22, was tested on October 1, 1973 and operated properly. Valve LP-21 and Engineered Safeguards Channels 3 and 7 are the redundant counterparts of LP-22 and Engineered Safeguards Channels 4 and 8. LP-21 was also tested successfully using Engineered Safeguards Channels 3 and 7 on October 1, 1973.

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Safety Analysis

The borated water storage tank outlet valve LP-22 can be actuated by Engineered Safeguards Channels 4 or 8 and from the control room benchboard. There is also a redundant system from the borated water storage tank to the reactor building spray pumps through valve LP-21 actuated by Engineered Safeguards Channels 3 and 7. If Channel 8 failed to open LP-22 on Engineered Safeguards actuation, the valve could be actuated by either Channel 4 or from the control room by the operator. Additional reliability of the reactor building spray system is provided by the redundant flow path through LP-21, actuated independently by Channels 3 and 7. It is concluded that this incident did not affect the safe operation of the plant.