



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Arkansas Nuclear One, Unit Two	DOCKET NUMBER (2) 0151010131618	LER NUMBER (6)			PAGE (3) 01210F1012
		Year	Sequential Number	Revision Number	
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

On 1/2/85, at ~0838 hours with the unit at 100% full power, Instrumentation and Control (I&C) technicians were performing the Plant Protection System (PPS) channel 'A' AB logic matrix actuation test for the Recirculation Actuation System (RAS) portion of the Engineered Safety Features Actuation System (ESFAS) as part of normal monthly PPS surveillance testing. Per procedure, the anticipated result of this testing was the de-energization of the 4AB-1 logic matrix relay (ESFAS RAS trip path #1) with annunciation, status panel indication and "half-leg" actuation of the ESFAS RAS. However, due to a spurious signal within the logic matrix relaying of the PPS, a coincident RAS logic matrix relay de-energized resulting in a "2 out-of 4" RAS actuation logic. The inadvertent RAS actuation resulted in the gravity draining of ~50,000 gallons of borated water from the Refueling Water Tank to the Containment Sump.

The RAS transfers suction of the Emergency Core Cooling System safety injection pumps from RWT to the Containment Sump on low RWT level. Upon RAS actuation containment sump suction valves open with a normal open stroke time of ~22 seconds. The RWT outlet valves begin to close as soon as containment suction valves reach full open with a normal close stroke time of ~80 seconds. During this suction path alignment period, the RWT level decreased from ~98% to ~88%. At ~0840 hours, during the resetting of the RAS, plant operators noted that control room PPS status lights indicated channel 'A' (trip path #1) and channel 'D' (trip path #4) generated the inadvertent RAS.

The system was realigned to the non-actuated condition. Makeup to the RWT was commenced at ~0848 hours and Technical Specification required level was restored at ~1100 hours. At ~0855 hours draining of the containment sump and processing of the borated water commenced. The draining of the reactor building sump was completed on 1/5/85, at ~0400 hours. A reactor building entry was made on 1/7/85, to inspect the containment floor area. Inspection of the containment sump screen revealed the west side door to be open. Apparently the door was forced open by the reverse flow from the RWT gravity drain to the containment sump. This door is normally closed to prevent debris from entering the sump during sump recirculation. Controls have been implemented to verify the sump doors are closed and secured when the plant is above cold shutdown.

At 1430 hours on 1/2/85, I&C technicians recommenced 'A' PPS monthly testing at the RAS procedure section. A temporary procedure change was made requiring closure of RWT outlet valves as a precaution to prevent recurrence of RWT draining should another inadvertent actuation occur. The 'A' PPS channel monthly functional test was completed with no further incidents.

Subsequent bench testing of each ESFAS trip path #4 logic matrix relay did not identify a relay degradation or failure. Replacement of the AB logic matrix relay card containing the relay being tested at the time of the inadvertent RAS has been performed as a precautionary measure.



ARKANSAS POWER & LIGHT COMPANY

POST OFFICE BOX 551 LITTLE ROCK, ARKANSAS 72203 (501) 371-4000

February 6, 1985

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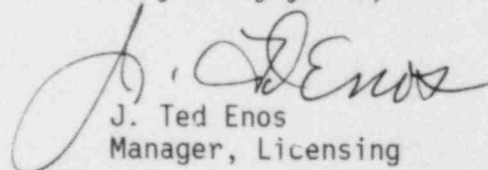
U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 20555

Subject: Arkansas Nuclear One - Unit 2  
Docket No. 50-368  
License No. NPF-6  
Licensee Event Report  
No. 85-001-00

Gentlemen:

In accordance with 10CFR50.73 (a)(2)(i) and 10CFR50.73 (a)(2)(iv), attached is the subject report concerning an inadvertent recirculation actuation signal during plant protection system testing.

Very truly yours,

  
J. Ted Enos  
Manager, Licensing

JTE:RJS:ds

Attachment

cc: Mr. Richard C. DeYoung  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Mr. Norman M. Haller, Director  
Office of Management & Program Analysis  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

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