

L I C E N S E E E V E N T R E P O R T (L E R)

FACILITY NAME (1) Arkansas Nuclear One, Unit Two										DOCKET NUMBER (2) PAGE (3)																							
TITLE (4) Reactor Trip on High Pressurizer Pressure Resulting From a Turbine Trip Caused By a Loss of Vacuum										10151010101 31 61 81101012																							
EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)																							
Month	Day	Year	Year	Sequential Number	Revision Number	Month	Day	Year	Facility Names					Docket Number(s)																			
01	8	1	3	8	5	--	01	1	7	--	01	01	01	9	01	9	8	5	0151010101														
OPERATING MODE (9) 1										THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)																							
POWER LEVEL (10)		11/010		20.402(b)		20.405(a)(1)(i)		20.405(a)(1)(ii)		20.405(a)(1)(iii)		20.405(a)(1)(iv)		20.405(a)(1)(v)		50.73(a)(2)(iv)		50.73(a)(2)(v)		50.73(a)(2)(vii)		50.73(a)(2)(viii)(A)		50.73(a)(2)(viii)(B)		50.73(a)(2)(x)		73.71(b)		73.71(c)		Other (Specify in Abstract below and in Text, NRC Form 366A)	
Name										Patrick C. Rogers, Plant Licensing Engineer										Telephone Number													
Area										Code										51011916141-1311010													
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																	
Cause	System	Component	Manufacturer	Reportable to NPRDS	Cause	System	Component	Manufacturer	Reportable to NPRDS																								
B	B	A	C	L	I	X	9	9	9	Y	B	W	I	P	I	C	6	6	6	Y													
B	W	I	V	I	I	A	3	9	1	Y																							
SUPPLEMENT REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)										Month Day Year													
Yes (If yes, complete Expected Submission Date) No										X																							
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																																	

On 8/13/85 at 1727 hours, a reactor trip occurred while operating in Mode 1 at 100% full power (FP). The casing of Steam Generator (SG) blowdown tank drain pump 2P-139A broke apart because of a water hammer. Blowdown isolation to secure the resultant steam leak allowed air to enter the condenser from the blowdown tank vent and broken pump casing resulting in a turbine trip on low condenser vacuum. The reactor tripped on high pressurizer pressure because of the turbine trip. Post trip plant response was normal. Emergency feedwater (EFW) actuated on low SG level. When the "A" EFW train was being secured, control valve 2CV-1039 failed to close. Redundant equipment was operable. The closing coil for 2CV-1039 had shorted. Investigation revealed that the closing coil was connected to a 'break before make' auxiliary switch instead of a 'make before break' auxiliary switch. This configuration ultimately led to coil failure. The closing coil for 2CV-1039 was replaced. The wiring discrepancy was corrected on 2CV-1039 and a similar EFW valve (2CV-1037) in the same EFW train. The valves were tested, found to be acceptable, and returned to service. Pump 2P-139A was replaced. Further investigation revealed that SG blowdown tank bypass valve 2SGS-22 was leaking by the seat allowing high energy water to bypass the blowdown tank pressure reduction control valve causing flashing in the pump suction and the resultant water hammer. Valve 2SGS-22 will be replaced during the next outage of sufficient duration.

8509200130 850909
PDR ADOCK 05000368
S PDR

IE 22
41

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Arkansas Nuclear One, Unit Two		Year	Sequential Number	Revision Number	
	10151010101 31 61 81	81 51 --	01 11 71 --	01	0101210F1012

TEXT (If more space is required, use additional NRC Form 366A's) (17)

On 8/13/85 at 1727 hours a reactor trip occurred while operating in Mode 1 at 100% FP. The casing of Steam Generator (SG) blowdown tank drain pump 2P-139A (EIIS Identifier = 2WI-P-139A) broke apart because of a water hammer. Blowdown was isolated to stop the steam leakage. Before 2P-139A isolation valves could be shut the plant tripped. Blowdown isolation had allowed air to enter the condenser from the blowdown tank vent and the broken blowdown tank drain pump casing. The main turbine/generator tripped on low condenser vacuum. The reactor tripped on high pressurizer pressure because of the turbine trip. Post trip plant response was normal. Emergency feedwater (EFW) actuated on low SG level. When the "A" EFW train was being secured, control valve 2CV-1039 (EIIS Identifier = 2BA-CL-1039) failed to close. Redundant equipment was operable.

Investigation of EFW valve 2CV-1039 failure revealed that the closing coil on the contactor for the motor operator had shorted. Further investigation revealed that the closing coil was connected to a 'break before make' auxiliary switch. This tended to set up a 'chatter' condition in the switch contactor which ultimately resulted in coil failure. Similarly, EFW valve 2CV-1037 (EIIS Identifier = 2BA-CL-1037), which operated properly and which is in the same EFW train as 2CV-1039, was discovered to have the same wiring configurations. The closing coil for 2CV-1039 was replaced. The wiring for the closing coil for both 2CV-1039 and 2CV-1037 was moved to a 'make before break' auxiliary switch. The valves were tested, found to be acceptable and returned to service. The cause for the miswiring has not been determined. Similar failure of 2CV-1039 and "A" train EFW valve 2CV-1037 were reported in LERs 50-368/85-15 and 50-368/85-16. An informational LER will be submitted regarding these EFW valve failure events.

Pump 2P-139A was replaced. Investigation of the reason for the water hammer revealed that SG blowdown bypass valve 2SGS-22 (EIIS Identifier = 2WI-V-22) was leaking by the valve seat. This allowed high energy water from the SG to bypass the blowdown tank pressure reduction control valve causing flashing in the suction line for 2P-139A and the resultant water hammering. Replacement could not be accomplished prior to startup, but 2SGS-22 will be replaced during the next outage of sufficient duration.



ARKANSAS POWER & LIGHT COMPANY

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

September 9, 1985

2CANØ985Ø2

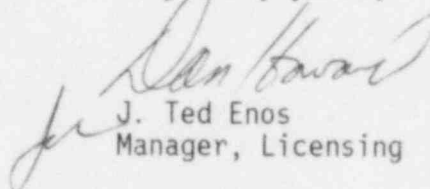
U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Subject: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Licensee Event Report
No. 85-017-00

Gentlemen:

In accordance with 10CFR50.73(a)(2)(iv), attached is the subject report concerning a reactor trip on high pressurizer pressure resulting from a turbine trip caused by a loss of vacuum.

Very truly yours,


J. Ted Enos
Manager, Licensing

JTE:RJS:ds

Attachment

cc: Mr. James M. Taylor
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