

## LICENSEE EVENT REPORT

CONTROL BLOCK: 

1	2	3	4	5	6
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(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0	1	N	C	B	E	P	2	2	0	0	-	0	0	0	0	0	-	0	0	3	4	1	1	1	1	4		5
7	8	9	14						15	25						26	30				57	CAT	58					

CON'T

0	1	L	6	0	5	0	-	0	3	2	4	7	0	3	2	1	8	2	8	0	4	0	2	8	2	9
7	8	60		61	68						69	74				75	80									

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 | During plant operation, the "HPCI Turbine Trip Solenoid Energized" annunciator alarmed.

0 3 | An automatic closing of the HPCI turbine steam supply valve, E41-F003, was also noted.

0 4 | The trip solenoid circuit receives its inputs from HPCI steam line low pressure instru-

0 5 | ments, E41-PS-N001A-D. To energize either trip channel, both inputs to that channel

0 6 | must actuate. At the time of this event, the ADS and RCIC system were operable. This

0 7 | event did not affect the health and safety of the public.

0 8 | Technical Specifications 3.5.1, 6.9.1.8e

0	9	S	F	11	A	12	X	13	I	N	S	T	R	U	14	S	15	Z	16										
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26										
17		EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE		REPORT TYPE		REVISION NO.		ACTION TAKEN		FUTURE ACTION		EFFECT ON PLANT		SHUTDOWN METHOD		HOURS		ATTACHMENT SUBMITTED		NPRD-4 FORM SUB.		PRIME COMP. SUPPLIER		COMPONENT MANUFACTURER	
21		8 2		0 1 1		0 1		T		0		X		X		Z		Z		0 0 0 0		Y		Y		N		B 0 8 1 0	
33		34		35		36		37		40		41		42		43		44		47									

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | This event occurred when N001A actuated as a result of a closed instrument isolation

1 1 | valve and N001C actuated due to an instrument failure. The isolation valve to N001A

1 2 | was reopened. N001C was repaired, calibrated and returned to service. Following the

1 3 | return of both instruments, Model No. 288, to service the trip signal was reset and

1 4 | the HPCI system was then returned to standby readiness.

1	5	E	28	0	4	8	29	NA	30	A	31	Operational Event	32
7	8	9	10	11	12	13	14	15	16	17	18	19	20
16		Z		Z		NA		NA		NA		LOCATION OF RELEASE	
7	8	9	10	11	12	13	14	15	16	17	18	19	20
17		0 0 0		Z		NA		NA		NA		NA	
7	8	9	10	11	12	13	14	15	16	17	18	19	20
18		0 0 0		NA		NA		NA		NA		NA	
7	8	9	10	11	12	13	14	15	16	17	18	19	20
19		Z		NA		NA		NA		NA		NA	
7	8	9	10	11	12	13	14	15	16	17	18	19	20
20		N		NA		NA		NA		NA		NA	
7	8	9	10	11	12	13	14	15	16	17	18	19	20

8204160352 820402  
PDR ADOCK 05000324  
S PDR

NRC USE ONLY

NAME OF PREPARER M. J. Pastva, Jr. PHONE: (919) 457-9521

LER ATTACHMENT - RO #2-82-11

Facility: BSEP Unit No. 2

Event Date: 3-21-82

During plant operation, the HPCI System was rendered inoperable due to energizing of the HPCI turbine trip solenoid by "A" channel HPCI steam line low pressure instruments, E41-PS-N001A and C. The "B" channel was operating without a trip input. To energize either trip channel, A or B, both inputs supplying that channel must actuate.

The investigation revealed the instrument isolation valve N001A was closed. It is believed that closure of the valve occurred following the satisfactory performance of the functional test of the N001A-C instruments as per PT-2.1.2P, performed on March 20, 1982. Actuation of N001A occurred when the system pressure isolated by the valve closure to the instrument decreased to the low pressure actuation point. It is believed the pressure decrease to the instrument occurred due to minute leaks around the isolation valve stem and/or the sensing piping connections to the instrument. A thorough review of the PT performance with the technicians involved indicates a high probability that the valve was opened correctly following the PT. No evidence has been obtained which can account conclusively for the unexplained closure of the instrument isolation valve.

N001C was found to have actuated due to the instrument's actuation cam follower arm separating from its pivot attachment point at a indeterminate time following the satisfactory completion of the PT. It is postulated that following the satisfactory performance of the PT, the instrument isolation valve was reopened. The PT presently does not require checking the state of the relays actuated by the instruments when they are restored to service. Since the trip channel logic requires both instrument inputs to actuate for the trip solenoid to be energized, the N001C actuation went undiscovered.

Following discovery of the N001C failure, the dislodged cam arm was reattached and the instrument was calibrated and returned to service. Plant documentation does not reveal any prior history of cam follower arm failures associated with this particular application.

PT 2.1.2P is currently being revised to include a verification that the relays actuated by the N001A-D instruments are deenergized following completion of the PT. I&C Maintenance will also determine if other PTs need to have a post test verification to ensure equipment operability. This will ensure an instrument is not inadvertently left in an actuated condition when returned to service. Completion of this investigative effort will be accomplished by July 1982.