



PEACH BOTTOM—THE POWER OF EXCELLENCE

PHILADELPHIA ELECTRIC COMPANY

PEACH BOTTOM ATOMIC POWER STATION

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November 20, 1989

Docket No. 50-278

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

SUBJECT: Licensee Event Report
Peach Bottom Atomic Power Station - Unit 3

This LER concerns a Scram and Primary Containment Isolation System actuation while shutdown due to a spurious pressure spike in reactor vessel instrument tubing.

Reference:	Docket No. 50-278
Report Number:	3-89-005
Revision Number:	00
Event Date:	10/20/89
Report Date:	11/20/89
Facility:	Peach Bottom Atomic Power Station RD 1, Box 208, Delta, PA 17314

This LER is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(iv).

Sincerely,

cc: J. J. Lyash, USNRC Senior Resident Inspector
W. T. Russell, USNRC, Region I

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Peach Bottom Atomic Power Station - Unit 3	0 5 0 0 0 2 7 8	1 OF 0 3

TITLE (4) Scram and Primary Containment Isolation System Actuation While Shutdown Due To Spurious Pressure Spike In Instrument Tubing From Unknown Cause

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)			
1	0	2	0	8	9	8	9	0	0	5	0	0	0	0
1	0	2	0	8	9	8	9	0	0	5	0	0	0	0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following) (11)									
POWER LEVEL (10)	0	0	0	20.402(b)	20.405(c)	X	50.73(a)(2)(iv)	73.71(b)			
				20.405(a)(1)(i)	50.36(c)(1)		50.73(a)(2)(v)	73.71(c)			
				20.405(a)(1)(ii)	50.36(c)(2)		50.73(a)(2)(vii)				
				20.405(a)(1)(iii)	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)			
				20.405(a)(1)(iv)	50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)				
				20.405(a)(1)(v)	50.73(a)(2)(iii)		50.73(a)(2)(x)				

LICENSEE CONTACT FOR THIS LER (12)										TELEPHONE NUMBER			
NAME										AREA CODE			
T. E. Cribbe, Regulatory Engineer										7 1 7 4 5 6 - 7 0 1 4			

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)										X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On October 20, 1989, at 0616 hours a Unit 3 Reactor Protection System actuation and Primary Containment Isolation System actuation occurred due to a false high reactor pressure signal and LoLoLo reactor vessel level signal respectively. The actuations occurred due to a spurious pressure spike in the "B" reactor vessel instrument rack following closure of the Excess Flow Check Valve (EFCV) bypass valve. This instrument rack contains pressure and level transmitters which use a common reference line and supplies input to the logic in both trip systems. The "A" reactor vessel instruments were isolated at the time of the event for EFCV testing. There were no actual safety consequences as a result of this event. The false signals were of short duration and automatically reset in less than 1/10 seconds. The EFCV surveillance test will be revised to add a note of caution that the EFCV bypass valve shall not be manipulated until the instruments associated with that instrument line are isolated. No previous similar LERs were identified.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Peach Bottom Atomic Power Station Unit 3	05000278	89	005	00	02	OF	03

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

Requirements for the Report

This report is required per 10CFR 50.73(a)(2)(iv) due to actuation of the Reactor Protection System (RPS) (EIIS:JC) and the Primary Containment Isolation System (PCIS) (EIIS:JM) which are Engineered Safety Feature Systems.

Unit Status at Time of Event

Unit 3 was in the Refuel Mode with reactor pressure vessel (RPV) (EIIS:RPV) hydrostatic testing in progress. Reactor vessel pressure was approximately 100G psig, temperature 193 degrees F and water level 350 inches above the top of fuel.

Description of Event

On October 20, 1989, at 0616 hours a Unit 3 RPS actuation occurred due to a false high reactor pressure signal sensed on the "B" reactor vessel instrument rack (EIIS:RK). A Group I PCIS (EIIS:ISV) actuation occurred due to a false LoLoLo reactor vessel level signal also from the "B" instrument rack. At the time of the event testing was in progress on the reactor vessel instrumentation "A" reference leg Excess Flow Check Valve (EFCV) 37A, and the "A" rack reactor vessel instruments were isolated. During this test the System Engineer discovered that both the 37A and 37B EFCV bypass valves were open. Since the EFCV bypass valves must be closed for performance of the test the System Engineer proceeded to close them. The actuations occurred approximately one minute after closure of the 37B EFCV bypass valve. The high reactor pressure and LoLoLo vessel level signal were of short duration and automatically reset in less than 1/10 seconds. A pressure recorder in the control room which receives input from the "B" instrument rack indicated a pressure spike at the time of this event. The control rods (EIIS:ROD) were already inserted at the time of the event, therefore, no control rod movement occurred. Two sample line valves and one main steam line drain valve isolated during this event. The Main Steam Isolation Valves are Group I PCIS valves, however, these valves had been closed prior to the event for hydrostatic testing and therefore did not change position.

Cause of the Event

The cause of this event was a spurious pressure spike on the "B" reactor vessel instrument rack. This instrument rack contains pressure and level transmitters (EIIS:PDT) which use a common reference line and which supply input to the logic in both RPS trip systems and both PCIS Group I trip systems. Only those instruments located close downstream of the EFCV reacted to the pressure spike. An activity on this instrument line approximately one minute prior to the actuations was closure of the EFCV bypass valve. However, due to the small diameter of the bypass valve (0.375 inches) the short travel to seat and the fact that the EFCV was open with no test flow makes it unlikely that closing this valve could have generated a sufficient pressure spike to cause the actuations. Thus the root cause of this event is unknown.

Just prior to the event technicians calibrated a pressure transmitter on this instrument rack. However, they had returned the transmitter to service several minutes prior to the event and it did not react to the pressure spike.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

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

Analysis of the Event

No safety consequences occurred as a result of this event.

If this event had occurred during power operation (Run Mode) a full scram would have occurred and PCIS Group I valves would have isolated. EFCV testing is performed once per operating cycle prior to startup during hydrostatic testing. It is not performed during power operation due to the necessity of rendering instrument channels in both RPS, PCIS, and ECCS trip systems inoperable.

Since the reactor vessel pressure and level instruments involved share a common reference line a pressure spike in this line would have resulted in both the indicated high reactor pressure and low reactor vessel level observed in this event. Other pressure and level instruments on this line which provide input to Emergency Core Cooling System (ECCS) actuation logic are further downstream from the EFCV and did not sense the pressure spike. Therefore, no ECCS actuations occurred. Apparently the pressure spike dampened as it transmitted thru the instrument rack.

Corrective Actions

The EFCV Surveillance Tests ST 13.8-2(3) will be revised to add a note of caution to require that the EFCV bypass valves shall not be manipulated until the instruments associated with that instrument line are isolated.

Previous Similar Events

There were no previous similar Licensee Event Reports.

While there has been one previous RPS actuation and several PCIS isolations due to various evolutions involving reactor vessel instruments, none of these events involved EFCV testing, therefore, actions to prevent recurrence would not have prevented this event.