



PEACH BOTTOM—THE POWER OF EXCELLENCE

PHILADELPHIA ELECTRIC COMPANY

PEACH BOTTOM ATOMIC POWER STATION

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November 7, 1990

Docket No. 50-278

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

SUBJECT: Licensee E Report
Peach Bott Atomic Power Station - Unit 3

This LER concerns a Core Spray actuation during testing due to personnel error.

Reference: Docket No. 50-278
Report Number: 3-90-013
Revision Number: 00
Event Date: 10/09/90
Report Date: 11/07/90
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
T. T. Martin, USNRC, Region I

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Peach Bottom Atomic Power Station - Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 2 7 8 1	PAGE 13 1 OF 0 4
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TITLE (4)
Core Spray Pump Actuation During Testing Due to Personnel Error

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	9	9	0	13	1	1	0			0 5 0 0 0
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OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)									
POWER LEVEL (10) 1 0 0	20.402(b)	20.408(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(b)					
	20.408(a)(1)(i)	50.36(c)(1)		50.73(a)(2)(v)	73.71(c)					
	20.408(a)(1)(ii)	50.36(c)(2)		50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 365A)					
	20.408(a)(1)(iii)	50.73(a)(2)(i)		50.73(a)(2)(vii)(A)						
	20.408(a)(1)(iv)	50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)						
20.408(a)(1)(v)	50.73(a)(2)(iii)		50.73(a)(2)(ix)							

LICENSEE CONTACT FOR THIS LER (12)				TELEPHONE NUMBER			
NAME A. A. Fulvio, Regulatory Engineer				AREA CODE 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)		
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)			<input checked="" type="checkbox"/> NO		

ABSTRACT (Limit to 3400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On October 9, 1990, at 10:30 am, with Unit 3 at 100% power, the A & C Core Spray Pumps inadvertently started while Surveillance Test (ST) 1.4, "Core Spray 'A' Logic System Function" was being performed.

The event was the result of a personnel error by one of the maintenance technicians performing the test. The technician failed to perform a self-check prior to repositioning the portable test switch. Upon mispositioning the test switch, the A & C Core Spray Pumps started. Two contributing causes were the lack of familiarity with the test switches and no pre-job briefing prior to performing the test.

The "A" Core Spray logic responded as designed when the mispositioning occurred and there were no adverse consequences to the Core Spray system or the plant.

To prevent recurrence of this event, logic system functional testing will be transferred to the I&C organization which is more experienced in performing these types of tests. Pre-job briefings will be provided. Self-checking has been re-emphasized to the maintenance technicians.

No previous similar events were identified.

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TEXT (If more space is required, use additional NRC Form 386A's) (17)

Requirements for the Report

The LER is required, pursuant to 10 CFR 50.73 (a)(2)(iv), to report an inadvertent actuation of an Engineered Safety Feature (ESF).

Unit Status at Time of Event

Unit 3 was operating at 100% power. A Surveillance Test (ST) was being performed on the Core Spray (EIIS:BM) initiation logic.

Description of Event

On October 9, 1990, at 10:30 am with Unit 3 at 100% power, the A & C Core Spray pumps (EIIS:P) inadvertently started while technicians were performing ST 1.4, "Core Spray 'A' Logic System Functional". The start occurred when a maintenance technician (Non-licensed, Utility) moved a portable test switch (EIIS:HS) being used as part of the test to the wrong position (see Figure 1). The sequence of events was as follows:

The test switch was in the "E-F" position and inserted into a test jack. Negative checks of the reactor pressure permissive logic were to begin by rotating the test switch position from "E-F" to "D-E" to "A-C" as stated in the procedure. Both technicians read the step aloud and then one of the technicians proceeded to rotate the switch in a clockwise direction to position "D-F". Test position "D-F" simulated LO-LO-LO reactor water level to the "A" Core Spray logic. The A & C Core Spray pumps automatically started approximately 10 seconds later. When the technician realized what had happened he asked another technician (non-licensed, Utility) if he could rotate the switch in a counterclockwise direction. Upon confirmation he immediately rotated the switch counterclockwise back to position "E-F", and the reactor operator (Licensed, Utility) secured both pumps.

The two technicians met with control room supervision (Licensed, Utility) and the reactor operator. It was determined that the "A" Core Spray logic had functioned properly during the switch mispositioning and had returned to the "normal" test configuration after repositioning. There were no adverse consequences to the Core Spray system or the plant. At 11:30 am testing resumed and was completed satisfactorily.

Cause of the Event

The primary cause of the event was personnel error (failure to self-check) prior to repositioning the test switch. Three contributing factors of the incident were (1) the lack of familiarity with using the test switch, (2) inadequate understanding of the Core Spray system test, and (3) the confusing labels of the test switch.

The two technicians both read the test step aloud prior to moving the switch, yet when the technician repositioned the switch he moved in the wrong direction. If a self-check would have been performed to ensure that actions were correct prior to manipulation of the switch, the technician would have recognized two "flags" that could have prevented the incident; 1) That "D-F" was in fact position "D-F" and not "D-E", and 2) that to continue in a clockwise rotation he would have had to move the

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switch through positions "off", "A-B" & "B-C" prior to reaching the end position "A-C".

The three contributing factors can be attributed to the following two causes:

1. The technician was under the impression that the test switch could only be moved in a clockwise direction. He had previously been involved in other logic system functional testing, but had not received any formalized training. The presumption that only clockwise movement was permitted stemmed from the technicians' past experience of operating other equipment in which this was the case.
2. The technician did not understand the implications of test switch movement and the effects on the Core Spray logic. The technician had previously been involved in logic system functional testing, but had never participated in performing a Core Spray logic system functional test. After the technician met with the system engineer to review the logic, he felt he would have benefited from a pre-job briefing from the system engineer to include test jack plug-ins and switch positioning interrelationships.

Analysis of Event

No actual safety consequences occurred as a result of the event. The Core Spray system operated properly throughout this event. The Core Spray pumps are designed to start when they receive a LO-LO-LO reactor water level signal. Opening of the motor operated (MO)-3-14-12B "Core Spray Inboard Injection Valve" (EIIS:INV) was inhibited since the reactor LO pressure permissive to the valve was not actuated. The minimum flow valves opened as required to protect the pumps from dead head conditions. Had this event happened during a shutdown period, the MO-3-14-12B still would not have opened since the test defeats the reactor LO pressure permissive.

Corrective Action

To prevent recurrence of this event, logic system functional testing will be turned over to Instrumentation and Controls (I&C) personnel. I&C personnel have been trained in the self checking process and have more experience with surveillance testing and its implications to the plant. The appropriate system engineer will provide a pre-job briefing and act as a temporary test leader, until an adequate amount of tests have been performed by I&C. At that time, I&C will be responsible for pre-job briefings and assuring personnel are qualified to participate in the tests. Self-checking has been re-emphasized to the maintenance technicians. The human factors of the test switch is being evaluated.

Previous Similar Events

There were no other previous similar events identified that involved mispositioning of logic system functional tests switches.

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FIGURE 1

