CCN-89-14190

PHILADELPHIA ELECTRIC COMPANY
PEACH BOTTOM ATOMIC POWER STATION
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PEACH BOTTOM—THE POWER OF EXCELLENCE

D. M. Smith
Vice President

November 22, 1989
Docket No. 50-278

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

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

This LER concerns an unplanned Engineered Safety Feature (Reactor Protection System) actuation.

Reference:	Docket No. 50-278
Report Number:	3-89-006
Revision Number:	00
Event Date:	10/23/89
Report Date:	11/22/89
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

IE22
1/1

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/88

LICENSEE EVENT REPORT (LER)

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TITLE (4) Reactor High Pressure Scram During Reactor Temperature Adjustment Due To Improper Planning and Coordination of Multiple Evolutions

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 3	8 9	8 9	0 0 6	0 0	1 1	2 3	8 9		0 5 0 0 0
										0 5 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)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		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)

NAME	TELEPHONE NUMBER
T. E. Cribbe, 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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

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 23, 1989 at 0900 while performing a Hydrostatic test of the Reactor Pressure Vessel (RPV), RPV pressure and temperature were required to be maintained around 1000 psig and greater than 175 degrees Fahrenheit (F). RPV pressure and temperature were being maintained by adjusting the Reactor Water Cleanup (RWCU) discharge to radwaste flow (192 degree F water) to match the Control Rod Drive flow entering the vessel (65 degree F water). RWCU discharge to radwaste was reduced to maintain RPV drain temperatures above 175 degrees F. During this evolution, RPV pressure indication on the process computer display remained unchanged leading the Reactor Operator to believe RPV pressure was under control. The process computer, however, had stalled and was not providing updates. In actuality, RPV pressure had begun a 6 psi per minute increase. At 0939, reactor pressure reached 1055 psig and the reactor scrammed on high pressure. The root cause of this event was inadequate planning and coordination of the multiple work activities being performed resulting in the RPV narrow range pressure recorder being out of service and the RPV high pressure alarm (1040 psig) being inoperable. As corrective actions: (1) a Unit Coordinator will be established to coordinate numerous work activities, (2) this event will be reviewed by appropriate Licensed Operators, and (3) the RPV Pressure Surveillance and Hydrostatic Tests will be revised to ensure the RPV narrow range pressure recorder is operable.

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

Requirements for the Report

This report is required per 10 CFR 50.73(a)(2)(iv) because of an unplanned Engineered Safety Feature (Reactor Protection System (RPS) (EIIS:JC)) Actuation.

Unit Status at Time of the Event

Unit 3 Reactor Mode Switch (EIIS:HS) was in the Refuel position. Reactor Pressure Vessel (RPV) (EIIS:RPV) Hydrostatic (Hydro) testing was in progress.

Unit 3 process computer (EIIS:ID) had stalled, failing to update the most recent displayed plant parameter process variables.

The RPV narrow range pressure recorder (EIIS:PR) was out of service.

Unit 3 RPV high pressure alarm (1040 psig) was inoperable.

Description of the Event

On October 23, 1989 while performing the RPV Hydro test procedure, RPV pressure and temperature were required to be maintained around 1000 psig and greater than 175 degrees Fahrenheit (F), respectively. RPV pressure was being maintained around 1000 psig to simulate normal operating pressure during the performance of Excess Flow Check Valve (EFCV) (EIIS:V) testing per Surveillance Test (ST) 13.8-2 and Control Rod Drive (CRD) (EIIS:AA) scram insertion time testing per ST 10.13. At 0930, the RPV drain (EIIS:DRN) temperature was logged as required by ST 9.12-1 "Reactor Vessel Temperatures" as decreasing to 179.7 degrees F. In order to increase the RPV drain temperature, the Unit 3 Reactor Operator (RO) (Utility, Licensed) bumped open MO-3-12-68 "Unit 3 Reactor Water Cleanup (RWCU) (EIIS:CE) Outlet Isolation Valve" increasing the RWCU recirculation flow of 192 degree F water back to the RPV which resulted in a decrease of RWCU discharge to radwaste flow. The purpose of this action is to minimize the amount of 192 degree F water being discharged from the RPV to offset the 65 degree F CRD water being supplied to the RPV. In a Hydrostatic condition a change in the mass flow rate of water either entering or being discharged from the RPV will affect RPV pressure. During this evolution RPV pressure indication displayed on the process computer remained unchanged leading the RO to believe RPV pressure was under control and therefore, it was not necessary to reduce CRD flow entering the vessel. The RO did not realize the process computer was stalled, not updating the displayed plant parameter process variables. In actuality, RPV pressure had begun a 6 psi per minute increase. At 0939, reactor pressure reached 1055 psig and the reactor scrammed on high pressure. At the time of the scram the Control Rods were fully inserted. Seconds after the scram the RPV high pressure condition cleared. At 1122, the scram was reset.

Cause of the Event

The root cause of this event was inadequate planning and coordination of the multiple work activities being performed resulting in the narrow range pressure recorder being out of service and the RPV high pressure alarm (1040 psig) being inoperable. A contributing cause associated with this event was the process computer stalling (not updating the displayed plant parameter process variables).

Inadequate planning and coordination lead to multiple Control Room activities which distracted the RO from monitoring other available RPV pressure indications. On going concurrent activities that the RO was involved with during his shift included: (a) Control Rod Drive Stroking (performed by a second licensed RO), (b) troubleshooting RPV high pressure alarm (1040 psig), (c) swapping CRD discharge filters (EIIS:FLT), (d) troubleshooting MO-14-26B "Core Spray Full Flow Test Valve," (e) EFCV testing, (f) RPV parameter readings every 15 minutes in accordance with (IAW) Technical Specifications (TS), (g) RPV parameter readings required every hour IAW TS, and (h) Local Leak Rate Testing.

The RPV narrow range pressure recorder and RPV high pressure alarm (1040 psig) were not operable at the time of the event. Had the narrow range pressure recorder been available, it would have been used to monitor RPV pressure. Because the narrow range pressure recorder was out or service the RO was using the process computer to monitor RPV pressure. During this event, however, the process computer was in a stalled condition (not updating the displayed plant parameter process variables) indicating a pressure value corresponding to the one at the time of the stall. There was no indication that the process computer had stalled, thus the RO was unaware that the computer was not functioning.

Additionally, had the RPV high pressure alarm (1040 psig) been operable the Operator would have been alerted to a high RPV pressure condition and the scram may have been prevented. The annunciator was inoperable because of incomplete maintenance activities.

Analysis of the Event

No safety consequences occurred as a result of this event.

At the time of the event, the Control Rods were fully inserted. The RPS initiated the scram signal and its logic functioned properly. Therefore, there were no adverse consequences.

The Main Steam Relief Valves (EIIS:RV) were operable and could have functioned to terminate the pressure rise.

This event would not have occurred at power because the initial conditions, in which the RPV is in a hydrostatic test condition maintaining pressure and temperature using the RWCU and CRD systems, would not be duplicated during power operations.

Corrective Actions

The role of Unit Coordinator will be established and implemented. The responsibilities of the Unit Coordinator will be to coordinate numerous work activities to minimize their impact on the operation's shifts.

This event will be reviewed by Appropriate Licensed Operators.

The Unit 2 and Unit 3 RPV Pressure Test STs (Check Off List (COL) ST 25.1-2 and COL ST 25.1-3 "RPV Pressure Test Instrumentation") and the Unit 2 and Unit 3 RPV Hydro Test STs (COL ST 25.2-2 and COL ST 25.2-3 "RPV Hydrostatic Test Instrumentation")

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

will be revised to ensure the RPV narrow range pressure recorder is operable prior to the commencement of a RPV Hydro test.

Previous Similar Events

One previous LER 2-85-02 was identified in which a high pressure scram occurred during a RPV Hydro test and EFCV testing. The corrective actions in LER 2-85-02 would not have prevented this event because its cause was poor communications. The Control Room RO increased CRD flow responding to a pressure decrease caused by a leaking EFCV. The Test Engineers stopped the EFCV leak without notifying the Control Room and the subsequent rapid pressure rise resulted in a RPV scram.