

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1): Peach Bottom Atomic Power Station - Unit 2
 DOCKET NUMBER (2): 05000277
 PAGE (3): 1 OF 03

TITLE (4): High Pressure Coolant Injection System Inoperable Due to Control Box Failure

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 NAME	DOCKET NUMBER (8)	
07	09	86	87	016	01	02	04	87		05000	

OPERATING MODE (9): N
 POWER LEVEL (10): 100
 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11):
 20.402(a)
 20.402(b)(1)
 20.402(b)(2)
 20.402(b)(3)
 20.402(b)(4)
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 20.402(b)(100)
 OTHER (Specify in Abstract Section and in Foot, NRC Form 204-4)

LICENSEE CONTACT FOR THIS LER (12):
 NAME: W. C. Birely, Senior Engineer - Licensing Section
 TELEPHONE NUMBER: 215 841-5048
 AREA CODE: 215

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
X	B, J	S, C	W 21910	Y					

SUPPLEMENTAL REPORT EXPECTED (14):
 YES (15) (16) (17) (18) (19) (20) (21) (22) (23) (24) (25) (26) (27) (28) (29) (30) (31) (32) (33) (34) (35) (36) (37) (38) (39) (40) (41) (42) (43) (44) (45) (46) (47) (48) (49) (50) (51) (52) (53) (54) (55) (56) (57) (58) (59) (60) (61) (62) (63) (64) (65) (66) (67) (68) (69) (70) (71) (72) (73) (74) (75) (76) (77) (78) (79) (80) (81) (82) (83) (84) (85) (86) (87) (88) (89) (90) (91) (92) (93) (94) (95) (96) (97) (98) (99) (100)
 NO
 EXPECTED SUBMISSION DATE (14): MONTH: DAY: YEAR:

ABSTRACT (14) (15) (16) (17) (18) (19) (20) (21) (22) (23) (24) (25) (26) (27) (28) (29) (30) (31) (32) (33) (34) (35) (36) (37) (38) (39) (40) (41) (42) (43) (44) (45) (46) (47) (48) (49) (50) (51) (52) (53) (54) (55) (56) (57) (58) (59) (60) (61) (62) (63) (64) (65) (66) (67) (68) (69) (70) (71) (72) (73) (74) (75) (76) (77) (78) (79) (80) (81) (82) (83) (84) (85) (86) (87) (88) (89) (90) (91) (92) (93) (94) (95) (96) (97) (98) (99) (100)

Abstract: 2-86-16, Revision 1

On July 9, 1986 at approximately 1400 hours with Unit 2 at 100% power, the High Pressure Coolant Injection (HPCI) System was declared inoperable because the turbine control valve would not open beyond 75%. A control device (EG-M control box) in the HPCI turbine electro-hydraulic controls was found to have a ground. As a result, the HPCI System was not capable of achieving rated flow and discharge pressure. The back-up emergency core cooling systems and the Reactor Core Isolation Cooling System were available. The control box was replaced and the HPCI system was declared operable at approximately 1830 hours on July 10, 1986. The failed control box was returned to the manufacturer for testing and repairs. Two printed circuit boards were replaced and after verifying proper operation, the control box was returned.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Peach Bottom Atomic Power Station - Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 2 7 7	LER NUMBER (5)			PAGE (3)		
		YEAR 8 7	SEQUENTIAL NUMBER - 0 1 6	REVISION NUMBER - 0 1			
						0 2 OF 0 3	

TEXT (if more space is required, use additional NRC Form 366A (17))

Unit Conditions Prior to the Event

100% Reactor Power

Description of the Event:

While performing a weekly surveillance test to assure the operability of the High Pressure Coolant Injection (HPCI) System auxiliary oil pump, turbine control valve, and turbine stop valve on July 9, 1986, at approximately 1400 hours, the HPCI System was declared inoperable because the turbine control valve would not open beyond 75%; therefore, the HPCI pump was not capable of achieving rated flow and pressure conditions. Investigation revealed that the source of the failure was a control device in the turbine electro-hydraulics which converts a flow-speed error signal into a governor valve position signal (EG-M control box-Woodward Model No. 8270-811). The Reactor Core Isolation Cooling (RCIC) System, low pressure emergency core cooling systems (ECCSs), and Automatic Depressurization System (ADS) actuation logic were demonstrated to be operable immediately in accordance with Technical Specification 4.5.C.2.

An indication of a battery ground appeared in the Main Control Room at approximately 0945 hours on July 9, 1986 and it was under investigation when the event occurred. The ground was subsequently determined to be in the control box.

The EIIS codes are BJ, for the HPCI System, and SC, for the failed control device. The HPCI System was inoperable for approximately 28 hours and 30 minutes.

Consequences of the Event:

Although failure of the EG-M control box to function properly rendered the HPCI System incapable of achieving rated flow and discharge pressure (approximately 5000 gpm and 1000 psig) while Unit 2 was at 100% power, the consequences of this event are considered minimal because the required back-up core cooling systems were operable. The RCIC System, which is a high pressure back-up to the HPCI System with a lower flow capacity, was

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Peach Bottom Atomic Power Station - Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 2 7 7 8 7	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		87	016	01	03	OF	03

TEXT (if more space is required, use additional NRC Form 366A (17))

available while the HPCI System was inoperable. In addition, the low pressure ECCSS and the ADS were available to satisfy the safety design basis. When the HPCI System was determined to be inoperable, the ECCSS, ADS actuation logic and the RCIC System were demonstrated to be operable in accordance with the Technical Specifications.

Cause of the Event:

The cause of the event was failure of an EG-M control box component. An electrical ground was discovered in the control box. The EG-M control box was sent to Woodward, the manufacturer, for a failure analysis and repairs. Woodward found that two printed circuit boards in the control box (part nos. 379499 and 5430.229) were out of tolerance (resistance too low) due to failed circuit board components. The precise cause of the circuit board failures was not determined.

Corrective Actions:

The control box was replaced on July 10, 1986, and calibrated in accordance with a written station procedure. The HPCI System was satisfactorily tested (ST 6.5) and declared operable at approximately 1830 hours on July 10, 1986.

Woodward replaced the failed printed circuit boards and, after verifying proper operation, returned the control box to Peach Bottom.

Previous Similar Occurrences:

LER 2-83-18 concerned failure of the HPCI turbine control valve to open because of a burned out resistor in the power supply to the EG-M control box. The control box did not fail.

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4000

February 4, 1987

Docket No. 50-277

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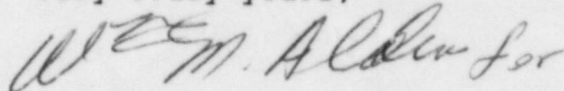
SUBJECT: Licensee Event Report
Peach Bottom Atomic Power Station - Unit 2

This revised LER concerns the High Pressure Coolant Injection System being inoperable due to failure of a control device in the turbine electro-hydraulic controls.

Reference:	Docket No. 50-277
Report Number:	2-86-16
Revision Number:	01
Event Date:	July 9, 1986
Revised Report Date:	February 4, 1987
Facility:	Peach Bottom Atomic Power Station RD 1, Box 208, Delta, PA 17314

This revised LER is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(v) and provides additional information regarding the control device failure. Revisions are indicated by a vertical bar in the margin.

Very truly yours,



R. H. Logue
Assistant to the Manager
Nuclear Support Department

cc: Dr. Thomas E. Murley, Administrator, Region I, USNRC
T. P. Johnson, NRC Resident Inspector

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