



PECO ENERGY

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

Docket No. 50-277

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

This LER concerns the High Pressure Coolant Injection system being inoperable due to a electronic control problem.

Reference:	Docket No. 50-277
Report Number:	2-94-004
Revision Number:	00
Event Date:	07/18/94
Report Date:	08/15/94
Facility:	Peach Bottom Atomic Power Station RD1, Box 208, Delta, PA 17314

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

Sincerely,

Garrett D. Edwards  
Plant Manager

GDE/GAJ:gaj

enclosure

cc: R. A. Burricelli, Public Service Electric & Gas  
R. R. Janati, Commonwealth of Pennsylvania  
INPO Records Center  
T. T. Martin, US NRC, Administrator, Region I  
R. I. McLean, State of Maryland  
W. L. Schmidt, US NRC, Senior Resident Inspector  
A. F. Kirby III, DelMarVa Power  
H. C. Schwemm, VP - Atlantic Electric

CCN 94-14123

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## LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20585, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Peach Bottom Atomic Power Station Unit 2

DOCKET NUMBER (2)

0 5 0 0 0 2 7 7

PAGE (3)

1 OF 0 3

TITLE (4)

HPCI Inoperable due to Failed Signal Isolator

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)
0 7	1 8	9 4	9 4	0 0 4	0 0	0 8	1 5	9 4		0 5 0 0 0

OPERATING MODE (9)

N

20.402(b)

20.405(c)

50.73(a)(2)(iv)

73.71(b)

POWER LEVEL (10)

0 8 8

20.405(a)(1)(i)

50.36(c)(1)

X

50.73(a)(2)(iv)

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)(ix)

LICENSEE CONTACT FOR THIS LER (12)

NAME

Anthony J. Wasong, Manager, Experience Assessment

TELEPHONE NUMBER

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)

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 07/18/94, during the performance of a normally scheduled Surveillance Test (ST), the High Pressure Coolant Injection (HPCI) system was declared inoperable when turbine speed could not be raised greater than 1000 rpm. An investigation revealed that the HPCI Flow Controller Signal Isolating Device (XS-2-23-144) failed thus preventing the HPCI turbine from achieving its design turbine speed. XS-2-23-144 was removed and replaced with a new device. The required calibration testing was performed on the HPCI control system. In addition, ST-O-23-400-2 was successfully performed and the system was restored to its normal condition. The cause of this event has been determined to be a problem with the HPCI Signal Isolator. The device was sent to the PECO Energy Laboratory which determined that the isolator's voltage regulator failed. A review of similar devices at PECO Energy Nuclear facilities found no other instances of failure. There are thirty six devices in service at various locations. The failure mode of this device is being evaluated to determine what corrective actions are required to ensure continued operability of these type devices. Corrective actions will be implemented as needed. No actual safety consequences occurred as a result of this event. No previous similar events have been identified.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  Peach Bottom Atomic Power Station Unit 2	DOCKET NUMBER (2)  0 5 0 0 0 2 7 7	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		9 4	— 0 0 4	— 0 0	0 2	OF	0 3

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

Requirements for the Report

This report is submitted to satisfy the requirements of 10CFR50.73(a)(2)(v) describing conditions that alone could have prevented the fulfillment of a safety function.

Unit Conditions at Time of Discovery

Unit 2 was in the RUN mode at approximately 88 % of rated thermal reactor (EIS:EA) power. There were no systems, structures, or components that were inoperable that contributed to the event.

Description of the Event

On 07/18/94 at 2100 hours, during the performance of a normally scheduled Surveillance Test (ST)-O-023-400-2 "HPCI CHECK VALVES IN-SERVICE TEST AND PUMP, VALVE, FLOW AND UNIT COOLER FUNCTIONAL TEST", the High Pressure Coolant Injection (HPCI) system (EIS:BJ) was declared inoperable when turbine speed could not be raised greater than 1000 rpm. The HPCI system was then shut down and secured. This condition would have prevented the HPCI system from performing its intended function. Therefore, the HPCI system was declared inoperable and the applicable Technical Specification (Tech Spec) Limiting Condition for Operation (LCO) was entered. The NRC was notified via ENS at 2202 hours. An investigation revealed that the HPCI Flow Controller Signal Isolating Device (XS-2-23-144) (EIS:FB) failed thus preventing the HPCI turbine from achieving its design turbine speed. XS-2-23-144 is installed on the HPCI Flow Controller output signal for Appendix R isolation purposes. On 07/19/94, XS-2-23-144 was removed and replaced with a new device. The required calibration testing was performed on the HPCI control system. In addition, ST-O-23-400-2 was successfully performed and the system was restored to its normal condition. The associated Tech Spec LCO was exited on 07/19/94.

Cause of the Event

The cause of this event has been determined to be a problem with the HPCI Signal Isolator. An investigation revealed that the output signal from XS-2-23-144 failed low thus causing turbine speed to remain very low during ST performance. The device was sent to the PECO Energy Laboratory which determined that the isolator's voltage regulator failed. A review of similar devices at PECO Energy Nuclear facilities found no other instances of failure. There are thirty six devices in service at various locations. XS-2-23-144 is manufactured by "Technology for Energy Corporation" model number 156.

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FACILITY NAME (1)

DOCKET NUMBER (2)

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Peach Bottom Atomic Power Station  
Unit 2

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

Analysis of Event

No actual safety consequences occurred as a result of this event.

If a design basis accident or transient would have occurred and HPCI did not perform properly, the Automatic Depressurization System (EIS:RV) was operable, if required, to reduce reactor (EIS:RPV) pressure to allow the Low Pressure Coolant Injection (EIS:BO) Systems to inject. The Reactor Core Isolation Cooling (RCIC) System (EIS:BN) was also operable to provide core cooling.

Corrective Actions

Following discovery of the event, XS-2-23-144 was removed and replaced with a new device. The required calibration testing was performed on the HPCI control system. In addition, ST-O-23-400-2 was successfully performed and the system was restored to its normal condition. The associated Tech Spec LCO was exited on 07/19/94.

The failure mode of this device is being evaluated to determine what corrective actions are required to ensure continued operability of these type devices. Corrective actions will be implemented as needed.

Previous Similar Events

No previous similar events have been identified which involved similar failures with this type device.