

PHILADELPHIA ELECTRIC COMPANY

PEACH BOTTOM ATOMIC POWER STATION

R. D. 1, Box 208

DELTA, PA 17314

(717) 456-7014



KEN POWERS  
PLANT MANAGER

April 14, 1992

Docket No. 50-277

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

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

This LER concerns the inoperability of the High Pressure Coolant Injection System to support repairs of the turbine exhaust drain line inboard isolation valve.

Reference: Docket No. 50-277  
Report Number: 2-92-004  
Revision Number: 00  
Event Date: 03/16/92  
Report Date: 04/14/92  
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)(v).

Sincerely,

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

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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN FOR RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20549, 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 1 OF 0 4

PAGE (3): 1 OF 0 4

TITLE (4): High Pressure Coolant Injection System Inoperability due to Steam Exhaust Drain Line Isolation Valve 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
03	16	92	92	004	00	04	14	92	
								DOCKET NUMBER(S):	
								0 5 0 0 0	
								0 5 0 0 0	

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(b)	20.405(a)	50.73(a)(2)(iv)	73.71(a)
20.405(a)(1)(i)	50.36(a)(1)	X 50.73(a)(2)(v)	73.71(a)
20.405(a)(1)(ii)	50.36(a)(2)	50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 306A)
20.405(a)(1)(iii)	50.73(a)(2)(ii)	50.73(a)(2)(vii)(A)	
20.405(a)(1)(iv)	50.73(a)(2)(iii)	50.73(a)(2)(vii)(B)	
20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12):

NAME: Albert A. Fulvio, Regulatory Engineer

TELEPHONE NUMBER: 717 741 5611

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):

YES (If yes, complete EXPECTED SUBMISSION DATE):  NO:

EXPECTED SUBMISSION DATE (15):

MONTH	DAY	YEAR

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

On 3/17/92 at 0430 hours, the High Pressure Coolant Injection (HPCI) System was determined by Operations personnel to be inoperable due to isolation of the HPCI turbine exhaust drain line. The outboard isolation valve (OIV) was closed on 3/16/92, 2130 hours due to inoperability of the inboard isolation valve (IIV). The HPCI Turbine Exhaust Drain line inboard isolation valve was repaired. HPCI was declared operable on 3/19/92. The cause of the event has been determined to be a failure of the HPCI Steam Exhaust drain line IIV to seat. Maintenance performed on the valve revealed that a one inch bolt and its associated locking tab were wedged in the valve seating area. An extensive review was conducted concerning the effect of the loose HPCI turbine bolt on the HPCI system. The review concluded that there is currently no operability impact on either the HPCI or Primary Containment Isolation Systems. One other bolt was recovered during a pre-planned inspection. Appropriate HPCI Piping will be evaluated to determine the need for future inspections. Inspections on the Unit 3 HPCI turbine have identified no similar missing bolts, however, Unit 3 will be evaluated further for any similar concerns.

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-500), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, 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 15 0 0 0 2 7 7	LER NUMBER (3)			PAGE (3)	
		YEAR 9 2	SEQUENTIAL NUMBER 0 0 4	REVISION NUMBER 0 0	OF	0 4

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

Requirements for the Report

This report is being submitted to satisfy the requirements of 10 CFR 50.73 (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 100% of rated thermal reactor (EIIS:RPV) power. There were no systems, structures, or components that were inoperable that contributed to the event.

Description of Event

On 3/17/92 at 0430 hours, the High Pressure Coolant Injection (HPCI) System was determined by Operations personnel to be inoperable due to isolation of the HPCI (EIIS:BJ) turbine exhaust drain line. The outboard isolation valve (OIV)(EIIS:BJ) was closed at 3/16/92, 2130 hours due to inoperability of the inboard isolation valve (IIV) to comply with the inoperable primary containment isolation valve technical specification. The inboard isolation valve is the valve closest to the suppression pool (EIIS:BT) and the HPCI Turbine Exhaust line. Because the HPCI turbine steam line drain was isolated, HPCI may have been incapable of performing its safety function due to potential turbine damage. Damage may occur if the HPCI turbine is started with water in the exhaust line.

On 3/16/92 at 1805 hours, the IIV for the drain line did not give full closed indication when stroked during a routine surveillance. Subsequent troubleshooting including adjustment of the valve actuator was then commenced to identify the reason for indication failure. Operations review of the troubleshooting determined the valve to be inoperable for containment at 2130 hours and identified that a local leak rate test was required since the valve actuator was adjusted. Operations was not aware prior to troubleshooting that the valve actuator would be adjusted.

Prompt notification concerning the HPCI inoperability was made to the NRC via the ENS on 3/17/92 at 0500 hours.

The HPCI Turbine Exhaust Drain line inboard Isolation valve was repaired and the appropriate testing including local leak rate testing was completed satisfactorily. HPCI was declared operable on 3/19/92.

Cause of the Event

The cause of the event has been determined to be a failure of the HPCI Steam Exhaust drain line IIV to seat. Maintenance performed on the valve revealed that a one inch bolt and a locking tab were wedged in the valve seating area. Subsequent review identified the bolt as the type used in securing the HPCI turbine reversing chamber. This review also concluded that the bolt could be attributed to a bolt lost prior to 1987.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 HRS. FORWARD COMMENTS REGARDING BURDEN: ITIMATI TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (2150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

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

TEXT (if more space is required, use additional NRC Form 3, A's:177)

Analysis of Event

No actual safety consequences occurred as a result of these events. If a design basis accident or transient would have occurred, the Automatic Depressurization System (E11S:RV) was operable, if required, to reduce reactor pressure to allow the low pressure coolant injection (E11S:BO)(E11S:BM) systems to inject. Additionally, the Reactor Core Isolation Cooling system (E11S:BN) was operable to provide core cooling.

No primary containment concerns existed due to the inoperability of the HPCI turbine steam line drain IIV due the operability of the OIV.

Corrective Actions

The HPCI Turbine Exhaust Drain line Inboard Isolation valve was closed to support testing and repairs and the appropriate Limiting Conditions for Operation were entered. The inboard isolation valve was repaired and tested satisfactorily. HPCI was declared operable on 3/19/92.

An extensive review was conducted concerning the effect of the loose HPCI turbine reversing chamber bolt on the HPCI system including the Primary Containment function of the HPCI steam line drain isolation valves. This review included an analysis of maintenance conducted on both Unit 2 and Unit 3 HPCI since 1977. The review concluded that there is currently no operability impact on either the HPCI or Primary Containment Isolation Systems.

One other bolt was recovered during a pre-planned inspection involving fiberoptics during a forced outage in late March. Although it is believed that loose parts have been retrieved from critical components that could affect the safety function of HPCI or Primary Containment, appropriate HPCI piping will be evaluated to determine the need for future inspections.

Subsequent to the 1987 inspectio.. of the HPCI turbine reversing chamber, the bolting of the reversing chamber was torqued to a higher value. HPCI turbine inspection in 1990 identified no missing bolts. Similar inspections on the Unit 3 HPCI turbine have identified no similar missing bolts, however, Unit 3 will be evaluated further for any similar concerns.

This event has been discussed with Technical personnel (Utility, non-licensed) involved with the troubleshooting activity as well as other technical staff. Causes and other corrective actions concerning troubleshooting will be identified as appropriate in the event investigation.

Previous Similar Events

There were no previous LERs identified resulting in HPCI inoperability due to missing turbine reversing chamber bolts.

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. SEND 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   9   2	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
					0   4	OF	0   4

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

The review concerning maintenance on HPCI since 1977 identified two previous occasions when bolts were discovered in the Unit 2 HPCI Steam Drain line IIV. In 1977, the cap screws missing were due to a generic industry problem with HPCI turbine socket head cap screws. In 1980, the turbine reversing chamber screws were changed to hex bolts to alleviate the problem. In 1990, bolts found in the IIV were attributed to pre-1980 lost screws as well as missing bolts prior to 1987. Corrective actions in these events did not prevent recurrence due to a lack of a comprehensive evaluation concerning missing bolts in 1987. Fiberoptic inspections conducted and future planned activities should preclude recurrence.