NRC Form 366 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

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

TITLE (4)
HPCI Turbine Exhaust Line Inner Rupture Disc (PSD3-23-6) 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 NAMES	DOCKET NUMBER(S)
										0 5 0 0 0
1 2	2 4	8 4	8 4	— 0 1 6	— 0 0	0 1	2 3	8 5		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 8 0	20.402(b)	20.405(c)	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)	X 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)	Voluntary Report
		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
	AREA CODE
J. C. Nagle, Engineer/Supervisory Special Projects	2 1 5 8 4 1 - 5 1 8 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
B	B J	R P D	C 5 8 5	Y					

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)

Abstract: 3-84-16

While at power during surveillance testing, the HPCI turbine exhaust rupture diaphragm alarm annunciated during operation of the Unit 3 HPCI Turbine. Inspection revealed that the inner rupture disc, PSD3-23-6, had failed. The HPCI turbine was intentionally removed from service to replace the inner rupture disc. Immediately after removing the turbine from service, the systems required by Technical Specification 4.5.C.2 (RCIC, ADS, LPCI, and Core Spray) were verified to be operable. The rupture disc was replaced and HPCI was declared operable following surveillance test verification.

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

Description of the Event:

On December 24, 1984, Peach Bottom Atomic Power Station Unit 3 was operating under normal conditions at 85% power. At approximately 3:00 a.m., while conducting a surveillance test (ST-6.5, HPCI Pump, Valve Flow and Cooler Test) on the Unit 3 HPCI system, the turbine exhaust rupture diaphragm alarm annunciated after the HPCI turbine had been running for about ten minutes. This alarm senses a pressure of greater than 10 psig between the inner and outer rupture discs located in series in a 16" line which taps off the turbine exhaust line and exhausts to the torus room. Investigation revealed that the inner rupture disc, PSD3-23-6 (manufactured by Continental Disc Corporation), had failed. The nominal setpoint of the rupture disc is 175 psig. The HPCI system was intentionally removed from service and declared inoperable at 7:30 a.m. to replace the inner rupture disc. The HPCI turbine was declared operable and returned to service at 11:05 a.m. the same day, following surveillance test (ST-6.5) verification.

Consequences of the Event:

The outer rupture disc, PSD3-23-7, was not affected; therefore, the HPCI system could have remained operable if HPCI operation was required. As a result of the inner rupture disc failure, a small amount of steam was passed to the torus compartment through the one-eigth inch orifice between the inner and outer rupture disc. After intentionally removing the HPCI system from service to replace the inner rupture disc, the Reactor Core Isolation Cooling System, Automatic Depressurization System, Low Pressure Coolant Injection System, and Core Spray systems were verified as operable as required by Technical Specification 4.5.C.2.

Cause of the Event:

Inspection of the inner rupture disc, following this event, revealed a one-quarter inch puncture which allowed the pressure between the inner and outer rupture discs to slowly increase to the alarm setpoint while the HPCI turbine was operating.

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

Corrective Actions:

ST 6.5 HPCI Pump, Valve, Flow, Cooler Test verified the operability of the HPCI system following replacement of the inner rupture disc. Turbine exhaust pressure indication was normal during the test and the system was returned to service.

The Philadelphia Electric Company Metallurgical Laboratory is performing an analysis of the failed rupture disc in an attempt to determine the failure mechanism exhibited by the one-quarter inch puncture.

Previous Similar Occurrences:

LER's: 3-83-15/3L-0, 3-82-23/3L-0, 3-84-001-00, 3-84-013-00, 3-84-015-00.

PHILADELPHIA ELECTRIC COMPANY

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January 23, 1985

Docket No. 50-278

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

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

This LER deals with the failure of the Unit No. 3 HPCI turbine exhaust inner rupture disc, PSD3-23-6, while performing surveillance testing on the HPCI system.

Reference:	Docket No. 50-278
Report Number:	3-84-16
Revision Number:	00
Event Date:	December 24, 1984
Report Date:	January 23, 1985
Facility:	Peach Bottom Atomic Power Station RD #1, Box 208, Delta, PA 17314

Since the HPCI turbine could have remained operable following failure of the inner rupture disc, this LER is submitted as a voluntary report.

Very truly yours,

W. T. Ullrich
Superintendent
Nuclear Generation Division

cc: Dr. Thomas E. Murley, Administrator
Region I, USNRC

Mr. T. P. Johnson, Resident Inspector

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