

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Peach Bottom Atomic Power Station - Unit 3	DOCKET NUMBER (2) 050000278	PAGE (3) 1 OF 04
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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	SEQUENT NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES			DOCKET NUMBER(S)											
0	10	6	8	4	84	0	0	1	0	2	0	6	0	1	8	4	0	5	0	0	0		

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)									
POWER LEVEL (10)	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(a)	<input type="checkbox"/> 90.73(a)(2)(iv)	<input type="checkbox"/> 72.71(b)						
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 90.36(a)(1)	<input checked="" type="checkbox"/> 90.73(a)(2)(v)	<input type="checkbox"/> 72.71(a)						
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 90.36(a)(2)	<input type="checkbox"/> 90.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Test, NRC Form 306A)						
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 90.73(a)(2)(ii)	<input type="checkbox"/> 90.73(a)(2)(vii)(A)							
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 90.73(a)(2)(iii)	<input type="checkbox"/> 90.73(a)(2)(viii)(B)							
<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 90.73(a)(2)(iii)	<input type="checkbox"/> 90.73(a)(2)(ix)								

LICENSEE CONTACT FOR THIS LER (12)

NAME B. L. Clark, Senior Engineer - Special Projects	TELEPHONE NUMBER AREA CODE 215 841-5017
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPSDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPSDS
X	B	J	IRBD	C151815	Y				

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

Abstract

While at power during surveillance testing, the HPCI turbine exhaust rupture diaphragm alarm annunciated following startup of the Unit 3 HPCI Turbine. Investigation revealed that the inner rupture disc, PSD3-23-6, had ruptured. Since the outer disc had not ruptured, the HPCI turbine remained operable until it was intentionally removed from service to replace the inner rupture disc. Prior to 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. Cause of the event is under investigation. The rupture disc was replaced and HPCI was declared operable following surveillance test verification.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		

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

Description of the Event:

On January 6, 1984, Peach Bottom Atomic Power Station was operating under normal conditions with both Units 2 and 3 at 100% power. At approximately 10:30 a.m., while conducting a surveillance test (ST-1.1 'HPCI Logic System Functional Test') on the Unit 3 HPCI system, the turbine exhaust rupture diaphragm alarm annunciated following startup of the HPCI turbine. 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 itself exhausts to the torus room. Investigation revealed that the inner rupture disc, PSD3-23-6 (manufactured by Continental Disc Corporation), had ruptured. The setpoint of the rupture disc is 175 psig. The outer rupture disc, PSD3-23-7, had not ruptured, and therefore the HPCI turbine was not declared inoperable at that time.

At 4:44 p.m. on January 6, 1984, the HPCI turbine was intentionally removed from service and declared inoperable in order to replace the inner rupture disc. At 8:31 p.m. on January 6, 1984, the HPCI turbine, which was out of service for three hours and forty-seven minutes, was declared operable and returned to service following surveillance test (ST-6.5) verification.

As of January 1, 1984, the newly imposed 10CFR50.72(b)(2)(iii) requires reporting an inoperable HPCI system within four hours on the Emergency Notification System (ENS). Administrative Procedure A-31, Rev. 8 "Procedure for Notification of NRC", addresses this new reporting requirement; however, the four hour report was not made. The notification error was due to an administrative oversight as a result of an unfamiliarity with the new reporting requirements. The NRC Site Inspector was notified of the reporting error. Senior station personnel were informed on January 9, 1984 of the importance of being familiar with the new reporting requirements.

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

Consequences of the Event:

The outer rupture disc, PSD3-23-7, did not rupture therefore the HPCI system remained in service at the time of the occurrence. Prior to blocking the HPCI system out of service, 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. The HPCI system was returned to service within four hours after being declared inoperable.

Cause of the Event:

Determination of the cause remains under investigation. A Problem Analysis has been performed by representatives from the station staff, Mechanical Engineering, Quality Assurance, and the Nuclear Safety Section. This Problem Analysis included: (1) verifying the proper material of the rupture disc, (2) a review of the piping configuration of the turbine exhaust line, (3) investigating the performance of the vacuum breakers between the torus air space and turbine exhaust line, (4) investigating the turbine exhaust stop/check valve performance, and (5) reviewing dynamic pressure test data of the turbine exhaust system. The conclusions of the Problem Analysis show that the most probable cause of the failure is due to intermittent sluggishness of the check valves in the exhaust line. The check valves will be inspected at the next outage of sufficient duration to accomplish the inspection. A supplemental report will be submitted following completion of the investigation.

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TEXT (If more space is required, use additional NRC Form 366a) (17)

Corrective Actions:

ST 6.5 HPCI Pump, Valve, Flow, Cooler Test verified the operability of the HPCI system after the inner rupture disc was replaced. Turbine exhaust pressure indicated normally during the test and the system was returned to service. A subsequent ST-6.5 was successfully completed on January 30, 1984 with all functions indicating normally.

Previous Similar Occurrences

LER's: 3-83-15/3L-0, 3-82-23/3L-0.

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4000

June 1, 1984

Docket No. 50-278

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

SUBJECT: Licensee Event Report

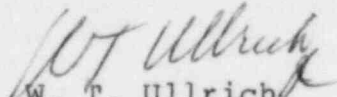
Dear Dr. Murley:

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:	3-84-01
Revision Number:	02
Event Date:	January 6, 1984
Report Date:	June 1, 1984
Facility:	Peach Bottom Atomic Power Station RD #1, Delta, PA 17314

This LER is submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(v). The revised portion of this LER is identified by a vertical bar in the margin.

Very truly yours,


W. T. Ullrich

Superintendent
Nuclear Generation Division

cc: Mr. A. R. Blough, Site Inspector
Dr. Thomas E. Murley, USNRC

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