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 2	0 5 0 0 0 2 7 7	1 OF 0 4

TITLE (4)
Full Scram During Main Turbine Control Valve Testing

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 8	0 5	8 5	8 5	— 0 1 1	— 0 0	0 9	0 3	8 5		0 5 0 0 0
										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)	1 0 0	20.402(b)	20.405(c)	X 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)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 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)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
W. C. Birely, Senior Engineer - Licensing Section	AREA CODE 2 1 5 8 4 1 5 0 1 4 8

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	

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: 2-85-11

On August 5, 1985, with Unit 2 at 100% power, a full scram occurred during main turbine control valve surveillance testing. Following the scram, a reactor water level transient resulted in Group II and Group III isolations. Cause of the event was a momentary decrease in Relayed Emergency Trip System (RETS) oil pressure in conjunction with the setpoint drift of the pressure switch that monitors oil pressure at the RETS supply to the No. 4 main turbine control valve. Normal reactor level was restored by the feedwater control system. The full scram and the Group II and III isolation signals were reset and affected systems were returned to normal operation.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Description of the Event:

On August 5, 1985 at 9:31 p.m., with Unit 2 at 100% power, the reactor protection system initiated a full scram during performance of main turbine control valve surveillance testing. Following the scram, a reactor water level transient resulted in Group II and Group III isolations. Normal reactor level was immediately restored by the feedwater control system. The full scram and Group II and III isolation signals were reset and affected systems were returned to normal operation.

In addition, as a result of this event, the pressure switch that monitors oil pressure at the Relayed Emergency Trip System (RETS) supply to the #4 main turbine control valve was found with a setpoint of 885 psig. Acceptable trip settings per Technical Specification Table 3.1.1 for these switches are 500 to 850 psig. The effect of this setpoint drift is discussed in detail in the "Cause" section.

Consequences of the Event:

The reactor protection system and the primary containment isolation system operated properly. There were no adverse consequences.

Cause of the Event:

Cause of the event was the normal momentary decrease in Relayed Emergency Trip System (RETS) oil pressure in conjunction with the setpoint drift of the pressure switch that monitors oil pressure at the RETS supply to the No. 4 main turbine control valve.

At the time of the event, the monthly control valve functional test was being performed. During this test, the control valves are tested individually beginning with CV-1 and continuing in sequence to CV-4. To test a control valve, an individual test switch is pushed and held. This action causes the control valve to close slowly until the valve is 10% open. At this point, a fast acting solenoid valve energizes to close off the RETS oil supply to the control valve and drain the oil beneath the disk dump valve. This causes the control valve to quickly close the remaining 10% of travel. When the RETS pressure at the control valve decreases to the low pressure setpoint, a pressure switch opens to generate a half-scram signal. Releasing the test switch de-energizes the fast acting solenoid valve thereby allowing RETS oil to re-enter the area beneath the disk dump. This action returns RETS pressure at the valve to normal and permits the half-scram signal to be manually reset. Low RETS pressure to CV-1 or CV-3 generates a Channel 'A' half-scram signal. Similar low pressure to CV-2 or CV-4 generates a Channel 'B' half-scram signal.

Just prior to the scram, CV-2 had been tested satisfactorily. The 'B' channel half-scram signal caused by testing CV-2 was cleared and testing proceeded to CV-3. When the test switch for CV-3 was pushed, CV-3 moved to the closed position. As expected, a Channel 'A' half-scram signal was generated at this time. Appropriate alarms were checked as required by the surveillance test. Upon completing this check, the test switch was released to reopen CV-3. Immediately, a full scram occurred.

As described above, when a control valve test switch is released, oil flows through the fast acting solenoid valve to reseat the disk dump. This in-rush creates a pressure drop in the RETS oil supply header to all four of the control valves. A calibration check was performed on the four pressure switches that monitor RETS oil pressure at the control valves. The CV-4 pressure switch was found to be set at 885 psig. This was a setpoint drift of approximately 210 psig in the conservative direction. Because the CV-4 pressure switch generates a Channel 'B' half-scram signal, the pressure drop in the RETS header actuated this switch to complete the logic required for a full scram.

It is believed that a full scram did not occur when CV-1 was tested due to the piping configuration of the RETS oil supply. RETS oil enters a header, connecting the four control valves, at CV-1. Apparently, testing CV-1 did not create a sufficient pressure drop at CV-4 to actuate the CV-4 pressure switch.

Corrective Actions:

The setpoint on the four pressure switches has been specified as 675 ± 55 psig in Surveillance Test Procedure 2.1.17A-D which is within the Technical Specification range. Based on vendor recommendations, Surveillance Test Procedure 2.1.17A-D has been changed and the setpoints on all four control valve pressure switches were adjusted to 600 ± 50 psig to increase the margin between the setpoints and normal Electro-Hydraulic Control oil pressure.

All four control valves were satisfactorily tested, with Unit 2 at approximately 25% power, on August 12, 1985.

Previous Similar Occurrences

None.

PHILADELPHIA ELECTRIC COMPANY

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September 3, 1985

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 actuation of the reactor protection system and the primary containment isolation system during main turbine control valve surveillance testing.

Reference:	Docket No. 50-277
Report Number:	2-85-11
Revision Number:	00
Event Date:	August 5, 1985
Report Date:	September 3, 1985
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)(iv) and 10 CFR 50.73(a)(2)(i).

Very truly yours,

W. T. Ullrich
Superintendent
Nuclear Generation Division

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

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