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 3

TITLE (4): Full Scram Caused by Starting 2A Recirculation Pump

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 1	2 4	8 6	8 6	— 0 0 4	— 0 0	0 2	2 4	8 6		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)	0 1 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)	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 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: 2-86-04

On January 24, 1986, at 0639 hours, while operators were restoring various systems to normal following a scram from 95% power at 0612 hours, the Reactor Protection System (RPS) initiated another full scram signal. This scram signal occurred when the 2A recirculation pump was started. Starting this pump lowered the voltage on the #2 startup source which caused an undervoltage condition on the E-12 emergency bus. At the time of this event, the 2B RPS logic was being supplied by its alternate feed, E-124-R-C. Loss of power to the 2B RPS logic resulted in de-energization of Scram Discharge Volume (SDV) high water level bypass relays. Loss of power to these relays, coincident with SDV high water level, resulted in generation of the scram signal.

IE22
1/1

Unit Conditions Prior to the Event

Unit 2 at zero percent power. Approximately one-half hour prior to this event, a Unit 2 reactor full scram had occurred at 95% power level (see LER 2-86-03).

Description of the Event:

On January 24, 1986, at 0639 hours, while operators were restoring various systems to normal following the Unit 2 reactor scram that occurred at 0612 hours, the Reactor Protection System (RPS) initiated another full scram signal. This scram signal occurred when the 2A recirculation pump was started. Starting this pump lowered the voltage on the #2 startup source which caused an undervoltage condition on the E-12 emergency bus. At the time of this event, the 2B RPS logic was being supplied by its alternate feed, E-124-R-C. The undervoltage condition resulted in a trip of the alternate feed output breakers which de-energized the RPS Channel 'B' relays. This loss of power, coincident with the status of the Scram Discharge Volume (SDV) as discussed in the following paragraphs, resulted in generation of the full scram signal.

Following any reactor scram, the SDV vent and drain valves close and the SDV fills with water. In order to reset the scram logic, it is necessary to bypass the SDV high water level scram signal. This is accomplished by placing the SDV high water level bypass switch to the "bypass" position. The scram logic is then manually reset and the SDV vent and drain valves are opened to drain the SDV. By design, power must be available to both the 'A' and 'B' RPS logics to enable the SDV bypass feature to function.

After the first Unit 2 scram, the SDV bypass switch was placed in the "bypass" position and the scram was reset. However, before the SDV vents and drains were opened to drain the water from the SDV, the 2A recirculation pump was started. Starting this pump tripped the alternate feed output breakers, thereby de-energizing bypass relays 5A-K19B and 5A-K19D. With the SDV high water level bypass function no longer in effect, the high water level condition in the SDV resulted in generation of a full scram signal. No control rod movement occurred because all rods had been previously fully inserted.

Additionally, Group II and Group III outboard isolations occurred as a result of this event because the Group II/III outboard relays were also being supplied by the alternate feed. De-energization of these relays results in Group II/III outboard isolations.

Cause of the Event:

Cause of the event was a voltage transient on the #2 startup source which occurs whenever a large pump motor is started. This event occurred because the 2B RPS motor-generator (M/G) set, which is the primary source of power for the 'B' RPS logic, was out of service at the time. Normally, the inertia of the M/G set flywheel maintains the RPS relays energized during minor bus voltage dips. The alternate source for the RPS logic does not have such capability.

Corrective Actions:

A modification is being pursued to change the alternate feed from E-124-R-C to a new static inverter. This new source will not be susceptible to bus voltage transients because the inverter will be supplied by the station batteries. In the interim, a 4-second time delay has been added to the undervoltage trip circuit of the alternate source breakers. This time delay will allow the alternate source to remain in service for most motor starts and other transients which affect startup source and emergency bus voltages.

Consequences of the Event:

There were no adverse consequences as a result of this event. It should be noted that the potential for scramming the unit as described in this LER only exists when the mode switch is in the shutdown or refuel positions because electrical interlocking of the bypass switch with the mode switch limits the use of the bypass feature to these modes.

Previous Similar Occurrences

None.

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4000

February 24, 1986

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 a full scram signal caused by starting the 2A recirculation pump.

Reference:	Docket No. 50-277
Report Number:	2-86-04
Revision Number:	00
Event Date:	January 24, 1986
Report Date:	February 24, 1986
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).

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

IE22
1/1