



PECO NUCLEAR

A UNIT OF PECO ENERGY

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April 7, 1997

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

Docket Nos. 50-278

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

This LER concerns a manual reactor scram due to a loss of forced reactor core circulation at power as a result of a 13kv feeder breaker auxiliary switch failure.

Reference: Docket No. 50-278
Report Number: 3-97-002
Revision Number: 00
Event Date: 3/09/97
Report Date: 4/07/97
Facility: Peach Bottom Atomic Power Station
1848 Lay Road, Delta, PA 17314

This LER is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(iv).

Sincerely,

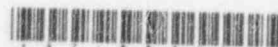
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enclosure

cc: B. Gorman, Public Service Electric & Gas
R. R. Janati, Commonwealth of Pennsylvania
INPO Records Center
H. J. Miller, US NRC, Administrator, Region I
R. I. McLean, State of Maryland
W. L. Schmidt, US NRC, Senior Resident Inspector
A. F. Kirby III, DelMarVa Power
H. C. Schwemm, VP - Atlantic Electric

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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Peach Bottom Unit 3

DOCKET NUMBER (2)

0 5 0 0 0 2 7 8 1 OF 0 3

PAGE (3)

TITLE (4) Manual Scram Due to a Loss of Forced Reactor Core Circulation at Power as a Result of a 13kv Feeder Breaker Auxiliary Switch 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)	
03	09	97	97	002	00	04	07	97			050000	
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)									
1			20.402(b)			20.406(c)			<input checked="" type="checkbox"/> 50.73(a)(2)(iv)			73.71(b)
POWER LEVEL (10)			20.406(a)(1)(i)			50.36(c)(1)			50.73(a)(2)(v)			73.71(c)
014			20.406(a)(1)(ii)			50.36(c)(2)			50.73(a)(2)(vii)			OTHER (Specify in Abstract below and in Text, NRC Form 366A)
			20.406(a)(1)(iii)			50.73(a)(2)(i)			50.73(a)(2)(viii)(A)			
			20.406(a)(1)(iv)			50.73(a)(2)(ii)			50.73(a)(2)(viii)(B)			
			20.406(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(ix)			

LICENSEE CONTACT FOR THIS LER (12)

NAME

George Lengyel

TELEPHONE NUMBER

AREA CODE 717 456 --- 701 4

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 3/9/97, at 0600 hours, the 3B reactor recirculation pump unexpectedly tripped when the Unit 3 main turbine was manually tripped at 14 percent power. The main turbine was tripped during preparations to enter the drywell with the unit in single-loop operation. An auxiliary switch in the #4 13kv feeder breaker failed to change state after a manual bus transfer. This switch verifies the 13kv transfer from the main generator output to off-site sources for the 3B reactor recirculation pump motor logic. Without this transfer verification the 3B reactor recirculation pump motor breaker tripped when the main turbine was manually tripped and the generator locked-out. The unit was manually scrammed, in accordance with procedure, due to the loss of all forced core circulation at power. Examination of the auxiliary switch revealed internal binding due to a buildup of a dirt-like substance on various shaft pieces and contacts. The switch assembly was cleaned, lubricated and exercised until it functioned properly, then re-installed. A failure analysis will be performed to further pinpoint the failure mechanism and any generic implications. No previous similar events have been identified.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Peach Bottom Unit 3

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

Requirements of the Report

This report is being submitted pursuant to 10CRF50.73 (a)(2)(iv) due to an Engineered Safety Feature (ESF) actuation.

Unit Conditions at Time of Event

Unit 3 was in the "RUN" mode at 14 percent rated thermal reactor power in preparation for a drywell entry to troubleshoot the 3A reactor recirculation pump (EIIIS: AD). The 3A reactor recirculation pump was not in service due to receipt of a low oil level alarm. This condition placed the unit in single-loop operation.

Description of the Event

On 3/9/97 at 0600 hours, the 3B reactor recirculation pump unexpectedly tripped when the Unit 3 main turbine was manually tripped at 14 percent power. In preparation for a drywell entry, unit loads, normally fed from the main generator, had been transferred to off-site sources in order to maintain power to the 3B reactor recirculation pump motor. The unit was manually scrammed, in accordance with procedure, due to the loss of all forced core circulation (i.e., natural circulation) at power. The unit was stabilized in the hot shutdown condition prior to notifying the NRC at 0938 hours.

Cause of the Event

The manual scram was initiated, as directed by station procedures, due to the loss of all forced core circulation at power when the 3B reactor recirculation pump tripped.

The auxiliary switch in the 13kv feeder breaker (EIIIS: EA) failed to change state due to internal binding of the switch's square shaft that is operated by the plunger assembly. This switch verifies the 13kv transfer as sensed by the reactor recirculation pump motor logic (EIIIS: AD). Without this transfer verification, the reactor recirculation pump motor breaker tripped with the manual turbine trip. The binding has been preliminarily attributed to a dirt-like buildup on various shaft pieces and contacts internal to the switch. The switch assembly was repaired and returned to service. A failure analysis will be performed to further verify the failure mechanism and any generic implications.

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, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Peach Bottom Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 2 7 8 9 7 — 0 0 2 — 0 0	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

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

Analysis of the Event

No actual safety consequences occurred as a result of this event. Although the plant operated for a brief time in natural circulation, there were no thermal hydraulic instability conditions. Prompt action by operations personnel to scram the reactor was a conservative measure required by station procedures to prevent entering a region of power-flow operation where instabilities may occur.

This event could pose a slightly higher challenge to thermal hydraulic instability if the manual turbine trip would have occurred at a higher power level. However, the same conservative actions by operations personnel, an immediate scram, would apply.

The 3B reactor recirculation pump functioned as designed in response to the failure of the #4 13kv feeder breaker auxiliary switch.

Corrective Actions

The auxiliary switch assembly was cleaned, lubricated, verified to operate properly and re-installed in the #4 13kv feeder breaker cubicle. A failure analysis will be performed on a sample lot of similar auxiliary switches to further verify the failure mechanism and identify any generic implications.

Previous Similar Events

No previous similar events have been identified.