

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1): Peach Bottom Atomic Power Station - Unit 3

DOCKET NUMBER (2): 0 5 0 0 0 2 7 1 8

PAGE (3): 1 OF 0 4

TITLE (4): ESF Actuation of Emergency Diesel Generators due to an Unexpected Feeder Breaker Trip

EVENT DATE (5)			LER NUMBER (6)		REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	DOCKET NUMBER(S)
0	8	8	8	8	0	0	9	0	0
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OPERATING MOD (9): N

POWER LEVEL (10): 0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

20.402(b)	20.406(a)	X	80.73(a)(2)(iv)	73.71(b)
20.406(a)(1)(i)	80.36(a)(1)		80.73(a)(2)(v)	73.71(c)
20.406(a)(1)(ii)	80.36(a)(2)		80.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 306A)
20.406(a)(1)(iii)	80.73(a)(2)(i)		80.73(a)(2)(vii)(A)	
20.406(a)(1)(iv)	80.73(a)(2)(ii)		80.73(a)(2)(vii)(B)	
20.406(a)(1)(v)	80.73(a)(2)(iii)		80.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME: T. E. Cribbe, Regulatory Engineer

TELEPHONE NUMBER: 7 1 7 4 5 6 - 1 7 0 1 4

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

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 August 31, 1988 at 2145 EDT, the Unit 3 feeder breaker to the E23 emergency bus tripped unexpectedly. Since the Unit 2 Startup and Emergency Auxiliary Transformer was out of service for outage support, all power was lost to the bus, initiating a start and loading of the E-2 Emergency Diesel Generator (EDG). Four outboard Group II and Group III Primary Containment Isolation System (PCIS) isolation valves closed because of the momentary loss of power. The E-23 bus was returned to normal and the EDG was shutdown by 2215. The isolation valves were reset by 2223. The cause of the breaker trip is unknown. The probable cause of the event is that electricians were performing work, in a cubicle released for work, that contained energized bus undervoltage trip circuitry for the E-323 feeder breaker. Since the Unit 3 core is offloaded and the EDG and PCIS valves performed as designed, there were no actual or potential safety consequences resulting from this event. No breaker deficiencies were found that could account for the event. The work instructions used by the electricians have been revised to require the job leader to caution the workers that disturbing components in the cubicle could cause adverse plant responses. There have been no previous LER's on EDG starts caused by breaker malfunction, personnel error or procedure inadequacy.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
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TEXT (If more space is required, use additional NRC Form 388A's) (17)

Requirement for the Report

This LER is being submitted pursuant to 10CFR50.73(a)(2)(iv) to report an event which resulted in an automatic ESF actuation of the E2 Emergency Diesel Generator.

Status of Units at Time of Event

Unit 2 was in cold shutdown and Unit 3 was in the refuel mode with the core offloaded.

Unit 2 Startup and Emergency Auxiliary Transformer was out of service.

Description of the Event

On August 31, 1988 at 2145 EDT, The E-323 Feeder Breaker (EIIS:BKR) tripped open. Since the Unit 2 Startup and Emergency Auxiliary Transformer (EIIS:XFMR) was out of service for outage support, power was interrupted to the E-23 emergency 4160VAC bus (EIIS:BU). This resulted in the loss of the E-234 480VAC load center (EIIS:JX) and associated loads. The loss of power to the E-23 bus initiated an automatic start and loading of the E-2 Emergency Diesel Generator (EDG) (EIIS:DG). The loss of E-234 resulted in the loss of the 30Y34 120VAC distribution panel which caused closure of four Group II and Group III Primary Containment Isolation System (PCIS) (EIIS:JM) valves. Upon E-2 EDG loading, the E-23 bus was re-energized along with E-234. Loads were maintained on the E-2 EDG to accommodate a brief investigation. At 2212, the E-323 breaker was closed, paralleling offsite power to the E-23 bus. At 2223, the PCIS isolation valves were reset.

Cause of Event

The exact cause of the trip of the E-323 breaker has not been identified. Immediately after the event, utility licensed operators went to the tripped breaker and inspected the protective relays for indicating flags. While one tripped flag was found, that particular relay would have to be de-energized for 60 seconds to trip the bus, which is unlikely. It was discovered, though, that utility maintenance electricians were performing preventive maintenance on the breaker elevator mechanism and general cleaning in the cubicle adjacent to the E-323 feeder breaker. In this same cubicle, there are relays (EIIS:27) and fuses (EIIS:FU) which are part of the E-323 feeder breaker undervoltage trip circuit.

During the subsequent investigation, the electricians were interviewed to determine, what extent, if any, they may have contributed to the event. The electricians stated that they had pulled various fuse blocks (EIIS:FUB) for cleaning and lubrication. Approximately 30 seconds after the control fuses were pulled, Feeder breaker E-323 tripped, initiating the event. The close proximity of the E-23 bus undervoltage (UV) relays and fuses was discussed.

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

The electricians indicated that the fuses they pulled were properly tagged and they could not recall any actions, intentional or otherwise, that would have disturbed the UV relays.

The fuses they serviced were confirmed to be in their work scope and would not electrically affect the feeder breaker. The working environment was determined not to have an impact on the electricians ability to perform the task. The feeder breaker was inspected during a subsequent bus outage. No degradation was found that would account for this event. Operator logs and printouts from the alarm printer were also reviewed and no correlation could be drawn between the breaker trip and other plant activities. Though the cause of the breaker trip is indeterminate, the probable cause of the event is that the electricians were performing work, in a cubicle released for work, that contained energized bus undervoltage trip circuitry for the E-323 feeder breaker. The electricians performing the work were experienced in the performance of this task, however, until this year, this work was generally performed during bus outages. The work instructions have been previously used without problem, however, neither the Maintenance Request Form (MRF) nor the work instructions cautioned the workers that the cubicle had various components that, if disturbed, could cause adverse plant responses.

Analysis of the Event

Since the unit affected by this event was defueled, the momentary loss of this bus was inconsequential. It is also unlikely that this event would occur at power because preventative maintenance work of this nature would be scheduled to be performed during shutdown.

When the Unit 3 Startup and Emergency Auxiliary Transformer, via the E-323 breaker, is supplying the E-23 bus, the loss of 4kv emergency power, for any reason, would initiate a transfer, via the E-223 feeder breaker, to the Unit 2 Startup and Emergency Auxiliary Transformer. If power from the Unit 2 transformer is unavailable, as in this event, or the bus fails to transfer, the function of the E-2 EDG is to start and assume the emergency loads of this bus. Had this event occurred at power, this event demonstrated that the E-2 EDG would supply backup emergency power to the 4kv bus, as designed.

When power was lost, there were four valves which isolated. They were the Drywell Instrument Nitrogen supply, the Torus Instrument Nitrogen Supply, the Drywell floor drain and the Drywell Equipment drain. Since a PCIS signal did not cause the isolations, these functions could be restored once the E-2 EDG had re-energized the bus. No malfunctions were observed and the valves were reset.

Based on the above evaluation of the event, and the circumstances involved, it is concluded that there were no actual or potential safety consequences resulting from this event.

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TEXT (if more space is required, use additional NRC Form 306A's) (17)

Corrective Action

The E-23 bus was removed from service on 9/6/88 for scheduled preventative maintenance on the bus and all the breakers, including E-323. The bus was returned to service on 9/16/88.

The work instructions that the electricians were using have been revised to have the job leader caution the workers, prior to starting work, that disturbing components in the cubicle could cause adverse plant responses.

Previous Similar Events

There have been no previous LER's on EDG starts caused by breaker malfunction, personnel error or procedure inadequacy.



PEACH BOTTOM--THE POWER OF EXCELLENCE

PHILADELPHIA ELECTRIC COMPANY

PEACH BOTTOM ATOMIC POWER STATION

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D. M. Smith
Vice President

September 26, 1988

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 concerns an event which resulted in the automatic ESF actuation of an emergency Diesel Generator due to an unexpected feeder breaker trip.

Reference: Docket No. 50-278
Report Number: 3-88-09
Revision Number: 00
Event Date: 08-31-88
Report Date: 09-26-88
Facility: Peach Bottom Atomic Power Station
RD 1, Box 208A, Delta, PA 17314

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

Very truly yours,

cc: W. T. Russell, Administrator, Region I, USNRC
T. P. Johnson, NRC Senior Resident Inspector
T. E. Magette, State of Maryland
INPO Records Center

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