

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)  
 Peach Bottom Atomic Power Station - Unit 2

DOCKET NUMBER (2)  
 0 1 0 0 0 2 1 7 7

PAGE (3)  
 1 OF 016

TITLE (4)  
 Shutdown Cooling Isolation due to Lack of Supervision and Training of Contractor Personnel Resulting in a Relay being Jarred Causing an Isolation

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 (8)																																																																																																
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LICENSEE CONTACT FOR THIS LER (12)  
 NAME: W. C. Birely, Senior Engineer - Licensing Section

TELEPHONE NUMBER: 215 841-5048

AREA CODE: 215

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  NO

EXPECTED SUBMISSION DATE (15):

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

**Abstract:**

On July 5, 1988 at 1606 hours with Unit 2 in the Cold Condition, a shutdown cooling isolation occurred as a result of a spurious high pressure signal. Actuation of the 10A-K114A relay de-energized the 16A-K28 relay contacts, which generated the high pressure isolation. There were no adverse consequences of this event. All of the affected equipment functioned as designed. To allow a system inspection to determine the cause of the event, shutdown cooling was not restored immediately. This delay was not significant because the decay heat load was minimal due to the reactor being shut down for approximately sixteen months. The root cause of the event is lack of supervision and training provided by the Engineering Division to the contractor engineers which resulted in two contractor engineers replacing the cover to the 10A-K114A relay, jarring the relay during the process and generating a false high reactor pressure signal. To initiate action to prevent recurrence of the event, a letter was issued by the Vice President-Peach Bottom to require that proper guidance be given to all support personnel when entering safety-related panels. Meetings were conducted by the Engineering Division to discuss and reinforce the information contained within the letter. Guidelines which define the interfaces and responsibilities for non-station personnel who wish to have task performed in control panels, and for station personnel who coordinate these activities or act as escorts, will be established and communicated to the appropriate personnel.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (if more space is required, use additional NRC Form 2054's) (17)

Unit Conditions Prior to the Event:

Unit 2 was in the Cold Condition

The "C" Residual Heat Removal (RHR) pump was operating in the shutdown cooling mode.

Description of the Event:

On July 5, 1988, at 1606 hours, a Unit 2 shutdown cooling isolation occurred as a result of a spurious high reactor pressure signal. The actuation of an engineered safety feature (ESF) is reportable under 10 CFR 50.73(a)(2)(iv). The 10A-7114A and 16A-K28 relays are shutdown cooling high reactor pressure isolation relays within the Primary Containment Isolation System logic. The actuation of the 10A-K114A relay in the 20C032 panel caused a false high reactor pressure signal and de-energized the 16A-K28 relay, which generated a Primary Containment Isolation Trip System I and Trip System II high pressure isolation signal. The isolation affected the associated equipment as follows:

<u>Valve/Pump</u>	<u>Normal Position</u>	<u>Isolation Position</u>
Shutdown Cooling Inboard Isolation Valve (MO-2-10-17)	open	closed
Shutdown Cooling Outboard Isolation Valve (MO-2-10-18)	open	closed
"C" RHR pump	running	tripped

The source of the transient could not be immediately identified. A system inspection was conducted, but did not reveal the source of the isolation. Security was then requested to provide a list of personnel who were in the cable spread room at the time of the event.

The isolation was reset after twenty-four minutes. Shutdown cooling was re-established after 5 hours 58 minutes.

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TEXT (if more space is required, use additional NRC Form 266A's) (17)

Consequences of the Event:

There were no adverse consequences of this event. All of the affected equipment operated as designed. There were no physical deficiencies or irregularities identified within the Primary Containment Isolation System (PCIS) logic as a result of this event.

PCIS is designed as a "fail safe" type system. Thus when the 10A-K114A relay contacts were jarred de-energizing the 16A-K28 relay, the shutdown cooling valves isolated to the closed position. Therefore, any potential radioactive material release would have been precluded.

In order to accommodate the investigation into the cause of the event, shutdown cooling was not immediately restored. However, the decay heat load was minimal during this event because the reactor had been shutdown for approximately sixteen months. The consequences of delaying the return of shutdown cooling to service could have been more significant with a greater heat load. In the unlikely event that shutdown cooling could not have been restored, alternative methods of cooling could have been implemented as described in Peach Bottom General Plant Procedure GP-12, "Core Cooling Procedure". The procedure outlines alternative sources of makeup, including condensate transfer from stay-full lines, and Core Spray from the Condensate Storage Tank or Torus. The procedure outlines several methods of energy removal including draining to the torus through RHR piping. It also provides guidance for other methods of makeup and energy removal depending on the reactor pressure and equipment availability.

Cause of the Event:

The root cause of the event was lack of supervision and training provided by the Engineering Division over the contractor engineers examining the relay positions for an electrical drawing change. Although the contractor personnel had unescorted access to the plant and did obtain assistance from the Electrical Maintenance Group for the inspection, Shift Management had not been informed by Engineering or by the contractor of the contractor's activities. Additionally, because Shift Management was not properly notified and the engineers did not receive sufficient guidance, the impact of these activities on the plant had not been properly evaluated.

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TEXT (if more space is required, use additional NRC Form 388A's) (17)

Contractor engineers were examining relay positions in the 20C032 panel in preparation for an electrical drawing change. The cover on the 10A-K114A relay was removed and then replaced. When the cover was reinstalled, the relay was jarred, causing the contacts to momentarily open. The opening of the 10A-K114A relay contacts caused a false high pressure signal which de-energized the 16A-K28 relay and initiated the reactor high pressure shutdown cooling isolation. The engineers heard relay contacts open but could not distinguish which relay had opened. Because the inspection team was not familiar with the importance of the panel or the relay, they did not associate the opening of the contacts with causing an isolation.

Corrective Actions:

The isolation was reset at 1630 hours and an investigation into the event was initiated. Shutdown cooling was returned to service at 2204 hours following the system investigation. Security was requested to assist in the investigation when the initial investigation of the system revealed no physical causes for the event. Security was able to produce a computer generated list of 15 persons who were in the panel area at the time of the event. Further investigation by Operations Support resulted in identifying the contractor engineers as being responsible for the event.

Actions Taken to Prevent Recurrence:

On July 7, the contract employees were verbally informed by their supervision of the event and were cautioned on exercising care when entering safety related panels, and were required to notify shift management prior to entering panels to perform any work or inspections.

The Vice President-Peach Bottom issued a letter to the Vice President-Nuclear Engineering, Vice President Nuclear Services and the General Manager-Nuclear Quality Assurance which states that any offsite group, division or department that provides onsite support for work activities at Peach Bottom will:

1. Assure that Shift Management has been notified when the support activities are to be conducted in the cable spread, switchgear or battery rooms, or other safety-related panels.

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TEXT (if more space is required, use additional NRC Form 368A (11/77))

2. Assure that support personnel receive adequate guidance and instruction prior to doing any work, including visual examination of plant equipment.
3. Assume responsibility for the support personnel activities while working in the restricted area.

This letter was issued on August 12, 1988.

The Nuclear Engineering Department issued a letter to the contractor that provided formal notification of this event, and to provide guidance for entry into safety-related panels. This letter was issued on August 5, 1988.

The contractor and the Nuclear Engineering Department held meetings for their personnel who provide support for Peach Bottom to emphasize the use of caution when entering safety-related panels, and to require that Shift Management be notified prior to entering panel areas to perform any work or inspection. The Nuclear Engineering Department participated in the meetings that the contractor held for its personnel. These meetings were based on the information contained in the letter issued by the Engineering Division and were held on August 26, 1988 at Peach Bottom, and on August 30, at the contractor's corporate office.

The Plant Manager issued a letter to the site managers and all supervisory personnel, which emphasized supervision's role in advising personnel on the importance of exercising caution when escorting persons who are working on control panels. This letter also stressed that Shift Management must be informed prior to performing work in any safety-related control panels. This letter was issued on August 12, 1988.

Guidelines which define the interfaces and responsibilities for non-station personnel who wish to have tasks performed in control panels, and for station personnel who coordinate these activities or act as escorts, will be established and communicated to the appropriate personnel. These guidelines are being developed by the Operations Support Group with input from other appropriate groups and are expected to be established and issued by October 14, 1988.

Training will be established for station personnel, based on the previously mentioned guidelines, in their responsibilities as related to escorting non-station personnel in any safety-related panel areas. Additionally, plant access training provided to non-station personnel will further emphasize these guidelines and practices essential to preventing similar events from occurring.



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TEXT (if more space is required, use additional NRC Form 364A s) (17)

EIIS Codes:

The EIIS Codes for the systems and components discussed in this LER are as follows: Containment Isolation Control System (PCIS) - JM; Residual Heat Removal System (shutdown cooling) - BO; Security System (zone computer) - IA; CE; isolation valves - ISV; panel - PL; relay - RLY.

Previous Similar Occurrences:

LERs 2-87-14 and 2-87-24 addressed events caused by inadequate supervisory attention.

Cause Code: All - Failure to assess consequences of actions

PHILADELPHIA ELECTRIC COMPANY

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(215) 841-5020

E. P. FOGARTY  
MANAGER  
NUCLEAR SUPPORT DIVISION

September 26, 1988

Docket No. 50-277

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

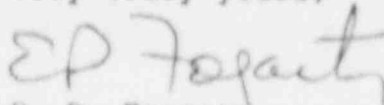
SUBJECT: Licensee Event Report  
Peach Bottom Atomic Power Station - Unit 2

This revised LER concerns a shutdown cooling isolation caused by insufficient supervision and training of contractor personnel who due to their unfamiliarity with plant equipment and procedures jarred a relay which initiated the isolation signal.

Reference: Docket No. 50-277  
Report Number: 2-88-17  
Revision Number: 01  
Event Date: July 5, 1988  
Report Date: September 26, 1988  
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). This revised report is being submitted to report additional information for the "Actions Taken to Prevent Recurrence" as stated in 2-88-17, Revision 0.

Very truly yours,



E. P. Fogarty  
Manager  
Nuclear Support Division

LLM:lc

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

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