

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) <u>Pilgrim Nuclear Power Station</u>	DOCKET NUMBER (2) <u>0 5 0 0 0 2 9 3</u>	PAGE (3) <u>1 OF 0 4</u>
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TITLE (4) Inadvertent Actuation of Portions of the Primary Containment, Secondary Containment, and Standby Gas Treatment Systems

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)											
<u>0</u>	<u>5</u>	<u>0</u>	<u>8</u>	<u>8</u>	<u>0</u>	<u>1</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>6</u>	<u>0</u>	<u>3</u>	<u>8</u>	<u>8</u>	N/A	<u>0</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<u>0</u>	<u>5</u>	<u>0</u>	<u>8</u>	<u>8</u>	<u>0</u>	<u>1</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>6</u>	<u>0</u>	<u>3</u>	<u>8</u>	<u>8</u>	N/A	<u>0</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

OPERATING MODE (8) <u>N</u>	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following) (11)																			
POWER LEVEL (10) <u>0 1 0 1 0</u>	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 20.406(c)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(vii)(A)	<input type="checkbox"/> 50.73(a)(2)(vii)(B)	<input type="checkbox"/> 50.73(a)(2)(ix)	<input type="checkbox"/> 73.71(b)	<input type="checkbox"/> 73.71(c)	OTHER (Specify in Abstract below and in Text, NRC Form 365A)

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME <u>Douglas W. Ellis - Compliance Division Engineer</u>		AREA CODE <u>6117</u>	<u>7147 1-18 11610</u>

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)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO				

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

On May 4, 1988 at 1100 hours, an inadvertent actuation of portions of the Primary Containment Isolation Control System (PCIS) and Reactor Building Isolation Control System (RBIS) occurred.

The actuation resulted in the following responses. The appropriate Primary Containment System (PCS) isolation valves closed automatically (or received an isolation signal). The Train 'B' dampers of the Secondary Containment System (SCS) closed automatically. The 'B' Train of the SCS/Standby Gas Treatment System started automatically.

The root cause for the actuation was utility technician personnel error. The technician mistakenly removed the wrong fuse from its circuit during a planned work activity in a PCIS/RBIS logic panel. The removal of the fuse de-energized normally energized logic relays that resulted in the actuation. The fuse was re-installed and the affected circuits were reset. The affected systems were returned to normal service on May 4, 1988 at approximately 1115 hours. Additional measures have been taken, other measures are being planned and will be tracked.

This event occurred during an extended outage while in cold shutdown conditions. The reactor mode switch was in the SHUTDOWN position. The control rods were in the inserted position. The Reactor Vessel water temperature was 94 degrees Fahrenheit with negligible core decay heat. The Reactor Vessel pressure was zero psig. The reactor power level was zero megawatts-thermal. This event posed no threat to the health and safety of the public.

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

EVENT DESCRIPTION

On May 4, 1988 at 1100 hours, an inadvertent actuation of portions of the Primary Containment Isolation Control System (PCIS) and Reactor Building Isolation Control System (RBIS) occurred.

The actuation resulted in the following automatic responses observed in the Control Room. An outboard Primary Containment System (PCS) Group 1 isolation valve (AO-220-45) closed. Portions of the Train 'B' PCS Group 2 (i.e., Sample System) isolation valves closed (or received an isolation signal). The Train 'B' ventilation supply and exhaust dampers of the Secondary Containment System (SCS) closed automatically. The 'B' Train of the SCS/Standby Gas Treatment System (SGTS) started automatically.

The actuation was the result of logic relays 16A-K18, -K18X, and -K57 becoming de-energized. The relays are located in the outboard PCIS/RBIS logic Panel C-942. The relays are normally energized and are designed to become de-energized as a result of receiving an appropriate isolation signal(s). The relays became de-energized when a fuse (16A-F22), located in the 120 VAC power supply circuit of the coil(s) of the relays, was mistakenly removed instead of an adjacent fuse (16A-F18). Fuse 16A-F18 was to be removed for the preventive maintenance replacement of the coil(s) for three General Electric type CR120A relays energized by the fuse. A technical evaluation of type CR120A relay coil failures recommended the replacement of selected relays (or relay coils) including three (16A-K27, -K55, and -K65) of the relays powered through fuse 16A-F18.

Water was being introduced into the Reactor Vessel by the normal operation of a Control Rod Drive System pump. The Reactor Vessel water level was being maintained by gravity induced letdown of water from the Reactor Vessel and through the RWCU System to the Main Condenser. The inboard PCS/RWCU System letdown line isolation valve (MO-1201-2) was energized and in the open position, the outboard letdown line isolation valve (MO-1201-5) was de-energized and in the open position, the outboard return line isolation valve (MO-1201-80) was de-energized and in the closed position. This configuration was planned and made for the replacement of the coils of three functioning CR120A logic relays (16A-K27, -K55, and -K65). The relays are part of the circuit that controls the position of the outboard PCS/RWCU System isolation valves.

Failure and Malfunction Report 88-100 was written to document the event. Following immediate investigation by the shift operating personnel the isolations were reset, the SGTS was returned to normal standby service and the SCS dampers were reopened at approximately 1115 hours. The NRC Operations Center was notified of the event on May 4, 1988 at 1200 hours.

This event occurred during an extended outage while in cold shutdown with plant conditions that were as follows. The reactor mode selector switch was in the SHUTDOWN position. The control rods were in the inserted position. The Reactor Vessel water temperature was approximately 94 degrees Fahrenheit with negligible core decay heat. The Reactor Vessel pressure was zero psig. The reactor power level was zero megawatts-thermal.

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CAUSE

The root cause for the event was utility technician personnel error. An Electrical Maintenance technician mistakenly removed the wrong fuse from its circuit during a work task being performed in the outboard PCIS/RBIS logic Panel C-942.

Factors contributing to the error were the arrangement, location, and identification of some of the fuses located within Panel C-942. The fuse (16A-F18) to be removed for the work is one of nine fuses that are horizontally oriented and vertically adjacent in a cluster type arrangement. The cluster is located approximately 18 inches above the bottom of the panel (i.e., above floor level) on the inner right hand wall of the panel. The fuse holders in this cluster, unlike the other fuse holders in Panels C-941 and C-942, were not individually labelled at the time of the event. Moreover, electrical type conduits extend across the inside lower portion of the panel's (C-942 only) door opening. The conduits limited access to the lower portion of the panel where the fuse cluster is located. The limited access precluded independent verification at the time the fuse was removed from its holder.

The work to be performed had been adequately planned and reviewed. The location of the fuse to be removed for the work was identified prior to the work. The fuse (16A-F18) is located in the third position (from the top) in the cluster. The technician located the position of the correct fuse. The correct fuse location was independently verified. The technician then applied a fuse puller to the wrong fuse (16A-F22) located at the position adjacent to the correct fuse (16A-F18). The technician, believing the fuse puller had been applied to the correct (unlabelled) fuse and together with the limited access that precluded simultaneous independent verification, pulled the wrong fuse (16A-F22) from its holder.

The removal of the fuse de-energized the coil(s) of normally energized logic relays 16A-K18, -K18X, and -K57. The resulting automatic actuations were the appropriate responses to the relays becoming de-energized.

CORRECTIVE ACTION

A critique of the event was conducted. The critique was attended by appropriate personnel including the responsible technician. The critique was conducted to determine relevant facts and possible corrective actions.

Prior to resuming the work in Panel C-942, a small gauge fuse puller was applied to the fuse (16A-F18) to be removed. The fuse puller provided a positive means for identifying the fuse to be removed. Independent verification was then performed prior to physical removal of the fuse from its holder. This method of independent verification is believed to be appropriate because limited access in this location (i.e., lower portion of Panel C-942) precludes simultaneous independent verification for the removal of a fuse(s).

The preventive maintenance replacement of the coil(s) of the relays (16A-K27, -K55, and -K65) was completed satisfactorily. The RWCU System was returned to normal service on May 4, 1988 at 1410 hours. The fuse holders in the cluster that were not labelled at the time of the event have been labelled.

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A review of maintenance procedures is being planned. The review will consist of applicable procedures that involve the removal of a fuse(s) in a location(s) with limited access and independent verification. The review is expected to be completed in June 1988. Based on the review, the appropriate procedure(s) will be revised to identify the method(s) to be used to positively identify the fuse(s) to be removed prior to removal.

SAFETY CONSEQUENCES

This event posed no threat to the health and safety of the public.

Control Room operator actions for this type of event are addressed in written procedures that include the following: "Alarm Response Procedure", ARP-C7L (Left); 2.4.147, "Reset of Secondary Containment Isolation on Panel C-7"; and 2.2.50, "Standby Gas Treatment".

The actuation was determined to be reportable pursuant to 10 CFR 50.73 (a)(2)(iv) because portions of accident mitigating systems (PCS, SCS and SGTS) were actuated from a (false) PCIS/RBIS logic trip signal(s).

SIMILARITY TO PREVIOUS EVENTS

A review was conducted of Pilgrim Station Licensee Event Reports (LERs) written since January 1984. The review focused on LERs submitted pursuant to 10 CFR 50.73(a)(2)(iv) that were caused by the removal of a fuse.

The review identified a similar event reported in LER 50-293/88-007-00. For that event, a fuse was removed from its holder during an outage work task being performed in Panel C-941. The correct fuse was removed for the planned preventive maintenance replacement of the coil of a functioning CR120A relay. The removal of the fuse resulted in a similar (but unexpected) automatic actuation of the 'A' Trains of the SCS dampers and SGTS. The actuation was unexpected because the affects of removing the fuse were not clearly identified to the shift Watch Engineer prior to the work. The correct fuse was removed for the work to be performed. The root cause for the unexpected actuation was a lack of adequate communication.

ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIIS) CODES

The EIIS codes for this event are as follows:

<u>SYSTEM</u>	<u>CODES</u>
Containment Isolation Control System (PCIS/RBIS)	JM
Engineered Safety Features Actuation System (PCIS/RBIS)	JE
Reactor Building (SCS Dampers)	NG
Standby Gas Treatment System (SGTS)	BH

COMPONENTS

Fuse (16A-F22)	FU
Relay, tripping (16A-K18, -K18X, -K57)	94



BOSTON EDISON

Pilgrim Nuclear Power Station
Rocky Hill Road
Plymouth, Massachusetts 02360

Ralph G. Bird
Senior Vice President — Nuclear

June 3, 1988
BECo Ltr. #88-91

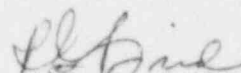
U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Docket No. 50-293
License No. DPR-35

Dear Sir:

The attached Licensee Event Report (LER) 88-015-00 "Inadvertent Actuation of Portions of the Primary Containment, Secondary Containment, and Standby Gas Treatment Systems" is submitted in accordance with 10 CFR Part 50.73.

Please do not hesitate to contact me if you have any questions regarding this report.


R.G. Bird

DWE/bl

Enclosure: LER 88-015-00

cc: Mr. William Russell
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Rd.
King of Prussia, PA 19406

Sr. Resident Inspector - Pilgrim Station

Standard BECo LER Distribution

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