

LICENSEE EVENT REPORT (LER)

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|----------------------------------------------------|--------------------------------------|----------------------|
| FACILITY NAME (1) Pilgrim Nuclear Power Station | DOCKET NUMBER (2) 0 5 0 0 0 2 9 3 | PAGE (3) 1 OF 0 4 |
|----------------------------------------------------|--------------------------------------|----------------------|

TITLE (4)
Automatic Actuation of Primary Containment System Group 6 Isolation Valve

| 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) |
| 12 | 17 | 87 | 87 | 019 | 00 | 01 | 14 | 88 | N/A | | 0 5 0 0 0 |
| | | | | | | | | | N/A | | 0 5 0 0 0 |

OPERATING MODE (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) | <input type="checkbox"/> | 20.405(c) | <input checked="" type="checkbox"/> | 50.73(a)(2)(iv) | <input type="checkbox"/> | 73.71(b) | <input type="checkbox"/> |
| 20.405(a)(1)(i) | <input type="checkbox"/> | 50.38(c)(1) | <input type="checkbox"/> | 50.73(a)(2)(v) | <input type="checkbox"/> | 73.71(e) | <input type="checkbox"/> |
| 20.405(a)(1)(ii) | <input type="checkbox"/> | 50.38(c)(2) | <input type="checkbox"/> | 50.73(a)(2)(vii) | <input type="checkbox"/> | OTHER (Specify in Abstract below and in Text, NRC Form 356A) | |
| 20.405(a)(1)(iii) | <input type="checkbox"/> | 50.73(a)(2)(i) | <input type="checkbox"/> | 50.73(a)(2)(viii)(A) | <input type="checkbox"/> | | |
| 20.405(a)(1)(iv) | <input type="checkbox"/> | 50.73(a)(2)(ii) | <input type="checkbox"/> | 50.73(a)(2)(viii)(B) | <input type="checkbox"/> | | |
| 20.405(a)(1)(v) | <input type="checkbox"/> | 50.73(a)(2)(iii) | <input type="checkbox"/> | 50.73(a)(2)(ix) | <input type="checkbox"/> | | |

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER |
|--------------------------------------------------|-----------------------|
| Douglas W. Ellis, Compliance Management Engineer | 6 1 7 7 4 7 - 8 1 6 0 |

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NRRDS | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NRRDS |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

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 December 17, 1987 at 1105 hours, an actuation in the Reactor Water Cleanup (RWCU) System portion of the Primary Containment Isolation Control System (PCIS) occurred. The actuation resulted in the automatic closure of the inboard RWCU/Primary Containment System isolation valve (MO-1201-2) and thereby caused a temporary interruption in the operation of the RWCU System.

The actuation occurred during the installation of a calibrated temperature switch in the inboard PCIS logic circuit that controls the isolation valve. During the installation, the temperature switch became inadvertently grounded and caused the logic circuit's fuse to blow. The cause for the actuation was non-licensed utility personnel error. The fuse was replaced and the RWCU System returned to service approximately 20 minutes after the actuation.

Long term corrective actions have been identified and will be tracked. The corrective actions are expected to reduce the likelihood of a similar event in the future.

The actuation occurred during an extended outage while in the cold shutdown condition with the mode switch in the Shutdown position and with negligible core decay heat. The reactor vessel head was installed and the control rods were inserted in the core at the time of the actuation.

The interruption in the operation of the RWCU System posed no threat to the public health and safety or to plant operation.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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| | | 87 | — 019 | — 00 | 012 | OF | 04 |

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

EVENT DESCRIPTION

On December 17, 1987 at 1105 hours, an actuation in the Reactor Water Cleanup (RWCU) System portion of the Primary Containment Isolation Control System (PCIS) occurred. The actuation resulted in the automatic closure of the inboard PCS/RWCU isolation valve (MO-1201-2) while the RWCU System was in service and thereby interrupted operation of the RWCU system for approximately 20 minutes. An inboard PCIS area high temperature logic trip switch (TS 1291-14E) had been removed for calibration and was being installed following calibration when the actuation occurred.

The actuation occurred during an extended outage while in the cold shutdown condition with negligible core decay heat and with the mode selector switch in the Shutdown position. The reactor vessel was refueled with the control rods inserted in the core. The reactor water temperature was approximately 114° F with the Residual Heat Removal (RHR) System in the shutdown cooling mode of operation.

The actuation was documented in Failure and Malfunction Report 87-680. The NRC Operations Center was notified at 1220 hours on December 17, 1987. The actuation was reviewed and determined to be reportable pursuant to 10CFR50.73(a)(2)(iv) because the PCS/RWCU isolation valve closed automatically from a (false) accident mitigating PCIS logic trip signal (cleanup area high temperature).

CAUSE

The cause for the actuation was non-licensed utility personnel error. An Instrumentation and Control (I&C) Technician was installing a calibrated temperature switch (TS 1291-14E) in accordance with Procedure Number 8.M.2-1.2.2, "Reactor Water Cleanup Area High Temperature". The temperature switch is part of the logic circuit in the RWCU portion of the inboard PCIS logic panel C-941. The position of the switch (containing two leads) is normally closed. During installation, connection of either lead energizes the lead that remains to be connected. Following removal of the switch for calibration and during installation, the energized lead (not then connected) was inadvertently grounded causing fuse 16A-F17 to blow thereby de-energizing the logic circuit. The circuit, controlling the inboard PCS/RWCU isolation valve MO-1201-2, caused the valve to close automatically when it became de-energized.

There were no component or system failures that caused the actuation or resulted from the actuation in that the PCIS actuation resulted in a designed response, i.e. the automatic closure of the inboard PCS/RWCU isolation valve MO-1201-2.

CORRECTIVE ACTION

The Control Room staff promptly investigated the closure of the isolation valve for cause and summoned the I&C Technician to the Control Room for questioning. Following the investigation (refer to the cause section) the fuse was replaced and the isolation was reset. The RWCU System was returned to service at approximately 1125 hours on December 17, 1987.

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

Long term corrective actions have been identified and will be tracked. The Procedure (8.M.2-1.2.2) will be revised to provide cautions to the I&C Technicians and Control Room Staff. The revision is expected to be completed by March 1988. An Engineering Service Request (ESR) will be prepared for a possible change to the calibration frequency of the area high temperature switches. The corrective actions are expected to reduce the likelihood of a similar event in the future.

SAFETY CONSEQUENCES

The actuation occurred during an extended outage while in the cold shutdown condition and with negligible core decay heat. The actuation resulted in the automatic closing of the inboard isolation valve in the RWCU System portion of the Primary Containment System (PCS) and thereby interrupted operation of the RWCU System for approximately 20 minutes.

The RWCU System has power generation design bases only. The objectives of the system are to: maintain high reactor water purity; remove corrosion products from the reactor water; and, provide a method for decreasing reactor water inventory (level) during heat up.

Had the interruption occurred during refueling, the clarity of water in the reactor vessel would have been insignificantly affected.

Had the interruption occurred during plant startup, the ability to reject reactor water inventory to the Main Condenser or to the Radwaste System would have been affected. The affect would cause an increase in the reactor water level due to the swell (expansion) of water during heat up. The increased water level could result in a delay for startup or possibly result in a high reactor vessel level trip signal.

Had the interruption occurred during power operation, the affect to the reactor water chemistry would have been insignificant.

Control Room Operator corrective actions for response to RWCU System alarms or malfunctions are addressed in written procedures ARP-904C (Alarm Response Procedure) and 2.4.27 (Reactor Water Cleanup System Malfunctions), respectively.

Therefore, the temporary interruption in the operation of the RWCU System posed no threat to the public health and safety or to plant operation.

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SIMILARITY TO PREVIOUS EVENTS

A review was conducted for similarity to previous Pilgrim Station Licensee Event Reports (LERs) written since January 1984. The review focused on LERs submitted pursuant to 10CFR50.73 (a)(2)(iv) that involved RWCU System (Group 6) isolation valves.

The review revealed similar events reported in LERs 50-293/84-016-00 and 50-293/87-018-00. The 1984 report included a partial (outboard) Group 6 isolation. The 1987 report consisted of partial (inboard and outboard) Group 6 isolations.

ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIIS) CODES

The EIIS codes for the actuation is as follows:

| <u>SYSTEMS</u> | <u>CODES</u> |
|----------------------------------------------------|--------------|
| Containment Isolation Control System (PCIS) | JM |
| Engineered Safety Features Actuation System (PCIS) | JE |
| Primary Containment System (PCS) | JM |
| Reactor Water Cleanup System (RWCU) | CE |
| <u>COMPONENTS</u> | <u>CODES</u> |
| Switch, temperature | TS |
| Fuse | FU |



10CFR50.73

BOSTON EDISON

Executive Offices
800 Boylston Street
Boston, Massachusetts 02199

Ralph G. Bird
Senior Vice President — Nuclear

January 14, 1988
BECo Ltr. #88-005

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

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

Dear Sir:

The attached Licensee Event Report (LER) 87-019-00 "Automatic Actuation of Primary Containment System Group 6 Isolation Valve" is submitted in accordance with 10CFR Part 50.73.

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


R.G. Bird

DWE/1a

Enclosure: LER 87-019-00

cc: Mr. William Russell
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Sr. Resident Inspector - Pilgrim Station

Standard BECo LER Distribution

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