

**BOSTON EDISON**

Pilgrim Nuclear Power Station
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Ralph G. Bird
 Senior Vice President — Nuclear

October 16, 1989
 BECo Ltr. 89- 152

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

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

Dear Sir:

The enclosed Licensee Event Report (LER) 89-029-00, " Locked High Radiation Area Door to the Condenser Bay Found Unsecured", is submitted in accordance with 10 CFR Part 50.73.

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

R.G. Bird
 R.G. Bird

BPL/b1

Enclosure: LER 89-029-00

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

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Pilgrim Nuclear Power Station	DOCKET NUMBER (2) 0 5 0 0 0 2 9 3	PAGE (3) 1 OF 07
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TITLE (4)
Locked High Radiation Area Door to the Condenser Bay Found Unsecured

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		
0	9	14	8	9	8	0	2	9	N/A		
0	9	14	8	9	8	0	2	9	N/A		

OPERATING MODE (9) N

POWER LEVEL (10) 017.5

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"/>	20.406(c)	<input type="checkbox"/>	50.73(a)(2)(iv)	<input type="checkbox"/>	73.71(b)	<input type="checkbox"/>
20.406(a)(1)(i)	<input type="checkbox"/>	50.36(c)(1)	<input type="checkbox"/>	50.73(a)(2)(v)	<input type="checkbox"/>	73.71(c)	<input type="checkbox"/>
20.406(a)(1)(ii)	<input type="checkbox"/>	50.36(c)(2)	<input type="checkbox"/>	50.73(a)(2)(vii)	<input type="checkbox"/>	OTHER (Specify in Abstract below and in Text, NRC Form 365A)	
20.406(a)(1)(iii)	<input checked="" type="checkbox"/>	50.73(a)(2)(i)	<input type="checkbox"/>	50.73(a)(2)(viii)(A)	<input type="checkbox"/>		
20.406(a)(1)(iv)	<input type="checkbox"/>	50.73(a)(2)(ii)	<input type="checkbox"/>	50.73(a)(2)(viii)(B)	<input type="checkbox"/>		
20.406(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 Brian P. Lunn - Senior Plant Engineer	TELEPHONE NUMBER 5 1 0 1 8 7 1 4 1 7 - 1 8 1 2 1 4 1
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

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 September 14, 1989, a locked high radiation area (LHRA) access door was found to have been unsecured from about 1120 hours to 1235 hours. The door latching mechanism was locked but the latch did not extend into the doorjamb. The unsecured door provides one of three access points to the Condenser Bay (CB). While unsecured, the door was accessed by two individuals who had not been authorized entry. The dose received was below allowable limits. Pocket dosimeter readings for the entries were logged at 15 milli-rem and 5 milli-rem.

The event was contrary to the requirements of Technical Specification 6.13.2 which required the door to be locked. Also, entry was made without the required dose rate indicating device or dose integrating device with preset alarm, and the two individuals were not accompanied by an individual qualified in radiation protection procedures.

Initial actions taken verified that only two individuals had gained unauthorized access, and that LHRA doors were secure and LHRA door keys were accounted for.

Corrective actions include specialized training on access requirements to high radiation areas, and the development of a job aid to assure that accessible LHRA doors are properly checked upon exiting the applicable area.

The plant was at 75% power at the time of the event. The reactor mode selector switch was in the RUN position, reactor vessel pressure was 995 psig and the reactor coolant temperature was approximately 540 degrees Fahrenheit.

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

EVENT DESCRIPTION

On 9/14/89, a locked high radiation area (LHRA) access door was found to have been unsecured from about 1120 hours to 1235 hours. The door latching mechanism was locked, but the latch did not extend into the doorjamb. The unsecured door provides one of three access points to the Condenser Bay (see Figure I, Pg. 7). While unsecured, the door was accessed by two individuals who had not been authorized entry. The dose received was below allowable limits. Pocket dosimeter readings for the unauthorized entries were logged at 15 milli-rem and 5 milli-rem. The highest whole body dose rate measured in the Condenser Bay was 1600 milli-rem/hour.

The event was contrary to Technical Specification (T.S.) 6.13.2 which requires that locked doors be provided for an area with a radiation dose rate greater than 1000 milli-rem/hour. Additionally, the two individuals who entered the unsecured door were not equipped with a radiation dose rate indicating device or a dose integrating device with preset alarms, nor were they accompanied by an individual qualified in radiation protection procedures equipped with a radiation dose rate monitoring device, as required by T.S. 6.13.2 for entry to a LHRA.

REPORTABILITY

An unsecured LHRA door and unauthorized access to a LHRA are conditions prohibited by the T.S. and are reportable per 10 CFR 50.73(a)(2)(i)(B). Failure and Malfunction Report No. 89-351 was written on 9/14/89 to document the event.

PLANT CONDITION

The event occurred with reactor power at 75%. The reactor mode selector switch was in the RUN position, reactor vessel pressure was 995 psig, and the reactor coolant temperature was approximately 540 degrees Fahrenheit.

CIRCUMSTANCES LEADING TO THE EVENT

On September 14, 1989, multiple Condenser Bay (CB) entries occurred for instrument and Control (I&C) work and to define and post a contaminated area. Access to the CB was being controlled through door 'A' (see Figure I, Pg. 7). When the I&C work was completed at approximately 1120 hours, the I&C Technicians were directed by the Radiological Protection Technician (RPT) #1 to exit via door 'B' to prevent crossing a contaminated area. A contaminated area was created when a floor drain backed up after the I&C Technicians had entered the CB. Upon exiting door 'B', the I&C Technicians failed to check that the door was locked and secured. After the I&C Technicians left, RPT #1 checked the door by pulling the door from inside the CB. The door did not open. It was later determined that although the door latching mechanism was locked, the latch did not extend into the doorjamb.

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(EXT. If more space is required, use additional NRC Form 366A s/ (17))

Meanwhile, preparations were being made to clean the contaminated area (approximately a 30 ft. by 30 ft. area around the floor drain) in the CB. Three Nuclear Plant Attendants (NPAs) were briefed on Radiation Work Permit No. 89-14. Two NPAs were to provide decontamination support from outside the CB and a third NPA was to perform the decontamination inside the CB. The two support NPAs needed to get additional supplies and were told to meet the RPT at the CB. The RPT #2 and the third NPA prepared for entry to the CB.

At 1235 hours, the two NPAs who were to provide outside support went to door 'B' expecting to meet the RPT #2 and the third NPA. When the two NPAs arrived at door 'B', the RPT #2 was not present. They assumed the RPT was already in the CB and they should enter. One NPA then pushed on door 'B' with his shoulder and it opened. The two NPAs then entered the CB looking for RPT #2.

A few minutes later, the RPT #2 and the third NPA entered the CB through door 'A' finding the other two NPAs already in the CB.

INITIAL ACTIONS TAKEN

- RPT #2 questioned the two NPAs and determined that they had accessed door 'B' to the CB.
- The NPAs were directed to leave the CB.
- RPT #2 checked door 'B' and determined that it was locked but not latched and then secured door 'B'. RPT #2 also toured the CB and determined that no other personnel were in the CB.
- The two NPAs pocket dosimeters were read and indicated doses of 15 milli-rem and 5 milli-rem.
- Door 'B' was verified locked and secured and appropriate management personnel were informed of the event.
- A guard was posted outside of the CB at door 'B' until its operability was verified.
- The CB was toured by a second individual to reverify no personnel were in the CB. No personnel were found.
- The three doors to the CB were reverified and all other LHRA doors were verified to be secured.
- A LHRA key inventory was performed. The inventory revealed all keys to be present and properly controlled.

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

- Pocket dosimeter readings for September 14, 1989, were reviewed to verify other personnel had not received unauthorized radiation exposures in the CB. The review determined no additional unauthorized exposures had occurred as a result of the event.

CAUSE

Unauthorized access was caused by a failure to adhere to approved procedures. Procedure 6.1-012 "Access Control to High Radiation Areas" requires the RPT who has responsibility for the issued LHRA key to assure all accessible doors are secure (locked and latched) upon exiting a LHRA. Investigations revealed RPT #1 did not properly verify door 'B' to be secure when exiting the CB at 1130 hours. Additionally, on three separate occasions (including the exit at 1130 hours) on September 14, 1989, RPT #1 only checked the doors that were accessed as opposed to all accessible doors (door 'C' was not checked). The I&C personnel who exited door 'B' without checking that the door was secured, also failed to meet the requirements of Procedure 6.1-012.

The failure to check all accessible doors upon exiting a LHRA was a human performance problem. The RPT # 1 had been trained and was generally knowledgeable of the requirements. However, on September 14, 1989, he was focused on properly defining and posting the contaminated area while providing health physics support to ongoing work.

Similarly, the I&C personnel did not fully meet their responsibility to assure door 'B' was properly secured upon egress. They assumed the door had closed behind them.

Attachment 5 to Procedure 6.1-012 "Standard Requirements for Entry to Locked High Radiation Areas" is attached to each issued RWP for LHRAs. This attachment is intended to be reviewed during the RWP briefing. When interviewed, the two I&C technicians involved in the event, stated they were not familiar with the requirements of Attachment 5, and could not recall being briefed on those requirements on the day of September 14, 1989.

The functioning of the door also contributed to the event. The door was sticking against the doorjamb and would not self close. The door could be opened/closed without using excessive force, but did require greater than normal force (a strong push/pull). RPT #1 has a small thin build, making it plausible that the door would have appeared secured when pulled. However, because LHRA doors are designed to open from inside an area, it would not be possible to determine if a door was locked from inside the area.

Entry was made into the CB by the two NPAs without meeting the requirements of T.S. 6.13.2 and Procedure 6.1-022, "Issue Use and Termination of Radiation Work Permits". Investigations found that the NPAs were not generally knowledgeable of the requirements for entry to high radiation areas. Further investigation revealed that General Employee Training (GET) did not fully address the requirements for entry to high radiation areas (i.e., dose rate meter, dose integrating device, or coverage by a RPT with a dose rate meter).

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

CORRECTIVE ACTIONS TAKEN

- Radiological Operations personnel were required to read Procedure 6.1-012, "Access Control to High Radiation Areas" and to discuss any questions with their supervisors.
- Radiological Section Standing Order No. 89-09 was issued allowing only radiological supervisors to exercise LHRA door and key control, and requiring a radiological supervisor to observe and supervise each HRA entry briefing.
- High radiation area (HRA) access was restricted to allow entries only for required operator tours and emergencies until the above two actions were completed.
- Procedure 6.1-012 was revised (Revision 29, approved 9/21/89) to require a job aid that prompts the person responsible for a LHRA key to check all accessible doors upon exiting an area. A job aid was prepared identifying the accessible doors for each LHRA and has a signature block to be signed for each door that is verified and locked.
- Radiological Operations personnel were trained on Revision 29 to Procedure 6.1-012 (complete 9/21/89) and Standing Order No. 89-09 was recinded.
- A "For Your Information" (FYI) notice was issued on September 16, 1989, to reemphasize and clarify HRA entry requirements for PNPS personnel.
- The two NPAs who entered the LHRA improperly were restricted from further HRA entries until retrained and tested in HRA controls.
- The other NPAs were also retrained and tested in HRA controls.
- Appropriate maintenance personnel received special training in HRA controls.
- Station supervisors and managers are receiving a special briefing in HRA controls from the Radiological Protection Manager.
- CET was revised on September 22, 1989 to present and emphasize the requirements for entry to HRAs.
- Maintenance Request No. 89-33-236 has been initiated to repair door 'B' to the CB.
- The radiological technician qualification training program was reviewed and determined that HRA controls were adequately covered.

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CORRECTIVE ACTIONS TO BE TAKEN

- A Quality Assurance Surveillance on HRA controls will be performed.
- A Worker Information Program (WIP) presentation is being developed to reemphasize and clarify HRA and LHRA entry and exit requirements for all site personnel.
- A review of HRA controls will be incorporated to radiological technician cycle training, at quarterly intervals.
- Procedure 6.1-012 "Access Control for HRAs" will be reviewed to determine if further improvements and simplifications can be made. The following items are being considered.
 - Posting the T.S. requirements for HRA entry at the entrance to HRAs.
 - Posting LHRAs in a way that will distinguish them from HRAs.

SAFETY CONSEQUENCES

The personnel who had unauthorized access to the CB received 15 milli-rem and 5 milli-rem. Had door 'B' not been accessed, the unlatched condition of the door would have been identified during the routine LHRA door check that is conducted every 8 hours, minimizing the potential for unauthorized entry. A LHRA area door audit was in progress at the time of the event and the auditor arrived at CB door 'B' only minutes after the event was identified. The event had no potential to adversely impact the public health and safety.

PREVIOUS SIMILAR REPORTABLE EVENTS

A review of Licensee Event Reports (LERs) since 1984 identified a previous similar event reported in LER 89-005-00. On February 3, 1989, a LHRA access door to the Radwaste Trucklock was found unsecured during the routine (every 8 hours) LHRA door audit. Investigations showed that the door was unknowingly opened from inside the trucklock and the door lock striker was stuck in the open position. No unauthorized entry was identified. Procedure No. 6.1-012 "Access Control to High Radiation Areas" was revised to require that all accessible doors to a LHRA be checked upon leaving the area.

ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIIS) CODES

<u>COMPONENT</u>	<u>CODE</u>
Door	DR
Vessel, Reactor	RPV

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FIGURE 1

CONDENSER BAY ACCESS DOOR LOCATIONS

