

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Pilgrim Nuclear Power Station								DOCKET NUMBER (2) 0 5 0 0 0 2 9 1 3			PAGE (3) 1 OF 0 1 5			
TITLE (4) Inadvertent Actuation of Secondary Containment and Standby Gas Treatment Systems due to Personnel Error														
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 (3)		
0 3	3 1	8 8	8 8	- 0 1 1	- 0 0 0	5 0	2 8	8	N/A			0 5 0 0 0		
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § [Check one or more of the following] (11)												
POWER LEVEL (10)		N	20.402(b)		20.405(c)		X	50.73(a)(2)(iv)		73.71(b)				
			20.405(a)(1)(i)		50.36(c)(1)			50.73(a)(2)(v)		73.71(c)				
			20.405(a)(1)(ii)		50.36(c)(2)			50.73(a)(2)(vii)						
			20.405(a)(1)(iii)		50.73(a)(2)(ii)			50.73(a)(2)(viii)(A)						
			20.405(a)(1)(iv)		50.73(a)(2)(iii)			50.73(a)(2)(viii)(B)						
			20.405(a)(1)(v)		50.73(a)(2)(iv)			50.73(a)(2)(x)						
LICENSEE CONTACT FOR THIS LER (12)														
NAME Douglas W. Ellis-Compliance Management Engineer										TELEPHONE NUMBER 61117 74171-811610				
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)														
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPPDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPPDS				
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)				
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO										MONTH	DAY	YEAR		

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

On March 31, 1988 at 1242 hours, an inadvertent actuation of the Reactor Building Isolation Control System (RBIC) occurred. The actuation resulted in the automatic closing of the ventilation dampers of the Secondary Containment System (SCS) and the automatic start of the SCS/Standby Gas Treatment System (SGTS). Following immediate investigation and corrective actions, the affected systems were restored to normal service at 1258 hours.

The cause was licensed utility operator personnel error. The operator incorrectly performed a portion of a routine surveillance of the Reactor Building refuel floor radiation monitors.

A critique of the event identified the need for improvements to the procedure used for the surveillance. The improvements have not been completed at the time of submittal of this report but are being tracked.

This event occurred during an extended outage while in cold shutdown. The reactor mode selector switch was in the SHUTDOWN position. The control rods were in the inserted position. The reactor water temperature was 92 degrees Fahrenheit with negligible core decay heat. The reactor 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 March 31, 1988 at 1242 hours, an inadvertent actuation of the Reactor Building Isolation Control System (RBIS) occurred. The actuation occurred during a routine (daily) surveillance of the Reactor Building refuel floor exhaust radiation monitors.

The actuation resulted in the automatic closing of the ventilation dampers (Trains 'A' and 'B') of the Secondary Containment System (SCS) and the automatic start of Trains 'A' and 'B' of the SCS/Standby Gas Treatment System (SGTS).

Failure and Malfunction Report 88-82 was written to document the event. Notification was made to the NRC Operations Center on March 31, 1988 at 1355 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 92 degrees Fahrenheit with negligible core decay heat. The Reactor Vessel pressure was zero psig. The reactor power level was zero megawatts - thermal.

CAUSE

The root cause for the actuation was licensed utility operator personnel error. The operator was performing a routine (daily) surveillance of the Reactor Building refuel floor exhaust radiation monitors using Procedure 2.1.15, "Daily Surveillance Log" (i.e., OPER 9 Test Number 44).

Factors contributing to the error were the format of the procedure used for the surveillance and the proximity of the panels associated with the surveillance. The procedure did not provide specific instructions or precautions for resetting the radiation monitors during the surveillance. Communication between the operators at the Panels (C-905R and C-910) was affected because the panels are approximately 30 feet apart and are not visible to each other. The proximity of the panels adversely affected communications at a point in the surveillance that together with the procedure, contributed to the error.

The Process Radiation Monitoring System (PRMS) includes the Reactor Building refuel floor exhaust radiation monitors. The monitors (RM-1705-8A,-8B,-8C, and -8D) function to provide trip signals that automatically actuate the RBIS (i.e., SCS and SGTS) when coincident Channel 'A' and Channel 'B' trip signals occur. Channel 'A' upscale and downscale trip signals are output from each of the two Channel 'A' monitors, RM-1705-8A and -8C. Channel 'B' upscale and downscale trip signals are output from each of the two Channel 'B' monitors, RM-1705-8B and -8D. The coincidence for actuation of the RBIS is as follows: one upscale trip in both channels, or one upscale trip in one channel and two downscale trips in the other channel, or two downscale trips in both channels.

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U.S. NUCLEAR REGULATORY COMMISSION

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The operator at Panel C-910 incorrectly reset each of the first three monitors (RM-1705-8A,-8B,-8C) during the surveillance. The operator pushed the reset switch before moving the function switch of the monitor(s) to the "Operate" position. The operator should have pushed the reset switch after the function switch was moved from the "Trip Test" position to the "Operate" position. The incorrect reset sequence cleared the upscale trip but did not clear the downscale trip.

At that point, two downscale trips for Channel 'A' (i.e., RM-1705-8A,-8C) and one downscale trip for Channel 'B' (i.e., RM-1705-8B) existed. The operator monitoring the upscale and downscale alarms (annunciators) on Panel C-905R realized that a problem existed when the downscale trip windows for Channel 'A' and Channel 'B' did not clear as expected. The operator at Panel C-905R verbally communicated the problem to the operator at Panel C-910. The operator at Panel C-910, believing that the upscale and downscale trips had been correctly reset and not clearly hearing the operator at Panel C-905R, proceeded with the surveillance and moved the function switch of the fourth monitor (RM-1705-8D) from the "Operate" position to the "Trip Test" position. During the movement, the function switch must pass through the "Zero" position. When the switch was in the "Zero" position, a downscale trip signal was output from the monitor as expected. The downscale trip of the monitor (RM-1705-8D) together with the existing downscale trip of the other Channel 'B' monitor (RM-1705-8B), resulted in both Channel 'B' monitors being in the downscale trip condition. The downscale trips for both monitors in Channel 'B' coincident with the downscale trips for both monitors in Channel 'A' thereby resulted in the inadvertent actuation of the RBIS.

There were no component or system failures that caused this event or resulted from this event.

CORRECTIVE ACTION

Immediate operator actions taken included the following. The cause for the event was investigated. The SCS supply and exhaust ventilation fans were verified tripped at 1243 hours. The trip circuitry was reset on Panel C-910 and Panel C-7. The SCS ventilation dampers were reopened and the SGTS was returned to normal standby service at 1255 hours. The SCS supply and exhaust ventilation fans were restarted at 1258 hours on March 31, 1988.

A critique of the event was conducted on March 31, 1988 at approximately 1500 hours. The critique was attended by appropriate Operations Section personnel on shift at the time of the event including the operators involved with the surveillance. The critique was conducted to establish facts related to the event, and to identify cause(s) and recommendations in order to reduce the likelihood of a similar event in the future.

A review of the surveillance being performed at the time of the event has identified the need to revise the surveillance (i.e., Test Number 44). Moreover, all surveillances performed via OPER 9 (i.e., Procedure 2.1.15) will be reviewed for possible improvements. These corrective actions have not been completed at the time of submittal of this report but are being tracked.

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TEXT (If more space is required, use additional NRC Form 386A's) (17)

SAFETY CONSEQUENCES

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

The closing of the SCS ventilation dampers and the start of the SGTS, although unnecessary, was the appropriate and designed response to the PRMS/RBIS trip signals.

Control Room operator actions for response to the closing of the SCS ventilation dampers and the start of the SGTS are addressed in procedures. The procedures include: "Alarm Response Procedure", ARP-905R (Right); 2.2.50, "Standby Gas Treatment"; and 2.4.147, "Reset of Secondary Containment Isolation of Panel C-7."

This event was determined to be reportable pursuant to 10CFR50.73(a)(2)(iv) because PRMS/RBIS trip signals actuated accident mitigating systems (SCS and SGTS).

SIMILARITY TO PREVIOUS EVENTS

A review was conducted of Pilgrim Station Licensee Event Reports (LERs) submitted since January 1984. The review focused on LERs submitted pursuant to 10CFR50.73(a)(2)(iv) that involved a similar actuation(s) during a surveillance of the Reactor Building refuel floor radiation monitors.

The review identified similar events reported in LERs 50-293/85-015-00 and 50-293/87-022-00.

For the 1985 event, an isolation (closing) of the SCS (dampers) and start of the SGTS occurred during power operation. The event occurred while a Channel 'B' radiation monitor was being checked for the upscale trip function. During the check a cover associated with a Channel 'A' radiation monitor was closed (too hard) by a licensed operator that resulted in a Channel 'A' upscale trip. The coincident upscale trips resulted in the event. The cause for the Channel 'A' upscale trip was licensed utility operator error.

For the 1987 event, an actuation (closing) of the SCS (dampers) occurred during a refueling outage. The SGTS did not start because the SGTS fans were removed from service for maintenance while the Reactor Vessel was defueled. The event occurred while a Channel 'A' radiation monitor was being checked for the upscale trip function. During the check, a Channel 'B' upscale trip occurred. The coincident upscale trips resulted in the event. The cause for the Channel 'B' upscale trip was the random failure of a relay (Potter and Brumfield).

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ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIIS) CODES

The EIIS codes for this event are as follows:

COMPONENTS

COMPONENTS	CODES
Annunciator (C-905R)	ANN
Control Board (C-905)	MCBD
Control Station, Indicating, Special (C-910)	XIK
Indicator, Radiation (RM-1705-8A,-8B,-8C,-8D)	RI
Monitor, Atmosphere Condition (RM-1705-8A,-8B,-8C,-8D)	45
Panel (C-905R, C-910)	PL

SYSTEMS

SYSTEMS	CODES
Containment Isolation Control System (RBIS)	JM
Engineered Safety Features Actuation System (RBIS)	JE
Radiation Monitoring System (PRMS)	IL
Reactor Building (SCS)	NG
Reactor Building Environmental Control System (PRMS/RBIS)	VA
Standby Gas Treatment System (SGTS)	BH

BOSTON EDISON
Pilgrim Nuclear Power Station
Rocky Hill Road
Plymouth, Massachusetts 02360

Ralph G. Bird
Senior Vice President -- Nuclear

May 2, 1988
BECo Ltr. #88-080

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) 88-011-00 "Inadvertent Actuation of the Secondary Containment and Standby Gas Treatment Systems due to Personnel Error" is submitted in accordance with 10CFR Part 50.73.

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

R.G. Bird
R.G. Bird

DWE/b1

Enclosure: LER 88-011-00

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

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