

BOSTON EDISON

Pilgrim Nuclear Power Station
 Rocky Hill Road
 Plymouth, Massachusetts 02360

Ralph G. Bird
 Senior Vice President — Nuclear

June 16, 1989
 BECo Ltr. 89-080

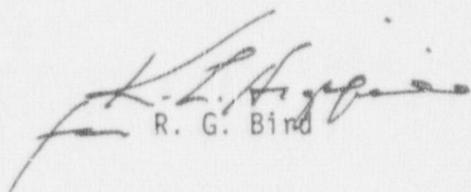
U.S. Nuclear Regulatory Commission
 Attn: Document Control Desk
 Washington, D.C. 20555

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

Dear Sir:

The enclosed Licensee Event Report (LER) 89-016-00, "Unplanned Scram Signal While Shutdown due to Licensed Operator Error", is submitted in accordance with 10 CFR Part 50.73.

Please do not hesitate to contact me if there are any questions regarding this report.


 R. G. Bird

DWE/bal

Enclosure: LER 89-016-00

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

Sr. NRC Resident Inspector - Pilgrim Station

Standard BECo LER Distribution

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Pilgrim Nuclear Power Station	DOCKET NUMBER (2) 0 5 0 0 0 0 2 0 3 1	PAGE (3) 1 OF 0 4
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TITLE (4) Unplanned Scram Signal While Shutdown due to Licensed Operator 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(S)		
05	18	89	89	0116	0	06	16	89	N/A			0 5 0 0 0 0		
									N/A			0 5 0 0 0 0		

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5; (Check one or more of the following) (11)									
POWER LEVEL (10) 0 0 0	20.402(b)	20.405(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(b)					
	20.405(a)(1)(i)	50.36(a)(1)		50.73(a)(2)(v)	73.71(e)					
	20.405(a)(1)(ii)	50.36(c)(2)		50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 365A)					
	20.405(a)(1)(iii)	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)						
	20.405(a)(1)(iv)	50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)						
20.405(a)(1)(v)	50.73(a)(2)(iii)		50.73(a)(2)(ix)							

LICENSEE CONTACT FOR THIS LER (12)

NAME Douglas W. Ellis - Senior Compliance Engineer	TELEPHONE NUMBER AREA CODE 510 874 71-18 11610
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NFRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NFRDS

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 May 18, 1989 at 2209 hours, an unplanned Reactor Protection System (RPS) scram signal occurred while shutdown. The control rods remained in the inserted position.

The cause for the scram signal was utility licensed operator error. The operator moved the reactor mode selector switch (RMSS) to the STARTUP position to clear a rod block while a sensed Scram Discharge Volume high water level condition existed from a previous activity.

The RMSS was moved to the REFUEL position and the RPS circuitry was reset after verifying the cause for the scram signal. The responsible operator was counselled and has received refresher training regarding the related circuitry. The other licensed operators will receive similar refresher training.

This event occurred while shutdown in a cold condition. The Reactor Vessel (RV) pressure was zero psig and the RV water temperature was approximately 109 degrees Fahrenheit. The reactor power level was zero percent. This report is submitted in accordance with 10 CFR 50.73(a)(2)(iv) and this event posed no threat to the public health and safety.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

EVENT DESCRIPTION

On May 18, 1989 at 2209 hours, an unplanned Reactor Protection System (RPS) scram signal occurred while shutdown. The control rods remained in the inserted position.

The scram signal occurred when a utility licensed operator, stationed at the Reactor Control Panel C-905, moved the reactor mode selector switch (RMSS) from the REFUEL position to the STARTUP position. The movement was made while the Scram Discharge Volume (SDV) high (water) level scram bypass switch was in the BYPASS position and with a sensed SDV high water level condition.

Initial Control Room licensed operator response was to move the RMSS to the REFUEL position after verifying the cause for the scram signal. The RPS circuitry was reset at 2212 hours.

Failure and Malfunction Report 89-197 was written to document the event. The NRC Operations Center was notified on May 18, 1989 at 2255 hours.

This event occurred while shutdown in a cold condition. The Reactor Vessel (RV) pressure was zero psig and the RV water temperature was approximately 109 degrees Fahrenheit. The reactor power level was zero percent.

CAUSE

The cause for the scram signal was utility licensed operator error.

Prior to the event, a full scram signal had been initiated on May 18, 1989 at 1825 hours for a planned activity. A scram signal results in the introduction of Control Rod Drive (CRD) System water into the SDV tanks. After the activity was completed, the RPS circuitry was reset on May 18, 1989 at 2120 hours. As part of the resetting sequence, the SDV high water level scram bypass switch (5A-S4) was moved to the BYPASS position in accordance with procedure 2.1.6, "Reactor Scram".

While in the BYPASS position, the bypass switch (5A-S4) provides an SDV high water level scram bypass function and a control rod block function. The bypass function is provided via the SDV high water level scram bypass relays (5A-K18A, -K18B, -K18C, and -K18D). The bypass relays are normally de-energized and are energized when the bypass switch is in the BYPASS position. When energized, the bypass relays enable the RPS circuitry to be reset and the SDV tanks to be drained. In addition, when the bypass switch is in the BYPASS position, the energized bypass relays 5A-K18A and 5A-K18B provide a rod block function via the Reactor Manual Control System.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

As the SDV tanks were draining, the SDV high water level signal remained illuminated on the right side of Panel C-905. The signal remained because the high water level sensors, i.e. resistance temperature detectors (RTDs) were not then sufficiently reheated. Meanwhile, a control rod block signal was illuminated on the left side of Panel C-905. The rod block signal existed because the SDV bypass switch was in the BYPASS position. The process computer was being re-initialized during this period and consequently, a rod block signal existed from the rod worth minimizer. The RMSS was moved from the REFUEL position to the STARTUP position in an attempt to clear the rod block signal. The movement was contrary to procedure (2.1.6) in that the bypass switch was in the BYPASS position because the SDV high water level indications had not cleared. The sensed SDV high water level condition (RTDs) together with the RMSS in the STARTUP position resulted in the scram signal.

CORRECTIVE ACTION

Initial Control Room licensed operator response was to move the RMSS to the REFUEL position. The RPS circuitry was reset on May 18, 1989 at approximately 2212 hours.

The responsible licensed operator was counselled and has received refresher training regarding the RPS and related SDV circuitry. The other licensed operators will receive similar refresher retraining.

A functional test of the SDV circuitry and the SDV bypass switch was performed with satisfactory results on June 8, 1989.

SAFETY CONSEQUENCES

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

An SDV high water level scram signal existed because the high water level sensors (RTDs) had not reheated sufficiently after the SDV tanks were drained. The water that had been introduced into the SDV tanks was the result of a previous scram signal that was initiated for a planned activity. The (keylocked) SDV high water level scram bypass switch was in the BYPASS position in order to reset the RPS circuitry and drain the water from the tanks. The bypass function provided by the SDV bypass switch is available only when the RMSS is in the REFUEL or SHUTDOWN position.

This report is submitted in accordance with 10 CFR 50.73(a)(2)(iv) because the scram signal, although a designed response, was not planned.

SIMILARITY TO PREVIOUS EVENTS

A review was conducted of Pilgrim Station Licensee Event Reports (LERs) submitted since January 1984. The review was focused to LERs submitted in accordance with 10 CFR 50.73(a)(2)(iv) that involved a scram signal and the SDV high water level scram bypass switch.

The review identified events reported in LERs 50-293/84-001-00, 86-008-01 and 88-022-00.

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

For LER 84-001-00, two scram signals occurred during a refueling outage. At the time of the events, the RMSS was in the REFUEL position and the Reactor Vessel was completely defueled. The scram signals occurred when the RPS Channel 'A' power supply was transferred as planned and with the SDV high water level scram bypass switch in the BYPASS position. The coils of the bypass relays 5A-K18A/-K18C and 5A-K18B/-K18D are powered by the RPS Channel 'A' and Channel 'B' power supplies, respectively. The contacts of the bypass relays (e.g. 5A-K18A and -K18B) are wired in-series such that a full scram signal occurs if one bypass relay becomes de-energized while a sensed SDV high water level condition exists. The cause for the scram signals was attributed to operator error.

For LER 86-008-01, a full scram signal occurred while shutdown. At the time of the event, the RMSS was in the SHUTDOWN position following a previous reactor scram that occurred during a shutdown. The (second) scram signal occurred when a licensed operator moved the SDV bypass switch to the NORMAL position in accordance with an approved procedure while a sensed SDV high water level condition existed. The procedure (2.1.C) was revised relative to moving the bypass switch to NORMAL five minutes after the SDV water indications (high water level and not drained) have cleared.

For LER 88-022-00, a scram signal occurred during an extended outage. At the time of the event the RMSS was in the REFUEL position, the control rods were in the inserted position, the RV pressure was zero psig, and the RV water temperature was 95 degrees Fahrenheit. The scram signal occurred when a licensed operator reset (i.e. opened and closed) the RPS Channel 'A' power supply breaker (5A-CB1A) while the SDV bypass switch was in the BYPASS position and with a sensed SDV high water level condition. The cause for the scram signal was attributed to utility licensed operator error.

ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIIS) CODES

The EIIS codes for this report are as follows:

<u>COMPONENTS</u>	<u>CODES</u>
Switch, Hand	HS
 <u>SYSTEMS</u>	
Control Rod Drive System (SDV)	AA
Engineered Safety Features Actuation System (RPS)	JE
Plant Protection System (RPS)	JC