

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)
Pilgrim Nuclear Power Station - Unit No. 1

DOCKET NUMBER (2)

0 5 0 0 0 2 9 3 1 OF 0 3

PAGE (3)

TITLE (4)
Main Steam Line High Flow Switch Setpoint Drift

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)	
11	25	85	85	032	001	12	21	98		0 5 0 0 0	
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8: (Check one or more of the following) (11)								
N											
POWER LEVEL (10)			20.403(b)			20.406(c)			50.73(a)(2)(iv)		
11010			20.406(a)(1)(i)			50.36(a)(1)			50.73(a)(2)(v)		
			20.406(a)(1)(ii)			50.36(a)(2)			50.73(a)(2)(vii)		
			20.406(a)(1)(iii)			50.73(a)(2)(i)			50.73(a)(2)(viii)(A)		
			20.406(a)(1)(iv)			50.73(a)(2)(ii)			50.73(a)(2)(vii)(B)		
			20.406(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(ix)		

LICENSEE CONTACT FOR THIS LER (12)

NAME
Gregory Belmonte - Plant Engineer

TELEPHONE NUMBER

AREA CODE

6 1 7 7 4 6 - 7 9 0 0

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD
B	JM	FISB	0810	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)		NO		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
		X					

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

On 11/25/85, during a routine Primary Containment Isolation System surveillance test of the main steam line high flow switches, 5 of 16 switches were found outside of the Technical Specification required setpoint. In each case redundant switches and trip systems were operable.

Cause of the setpoint drift is believed to be due to improper alignment of the switch linkage during field installation of a conversion kit. Interim corrective action has been to increase the surveillance frequency of the switches from once per three (3) months to once per week. The subject switches were recently converted as the result of equipment qualification work. The same model switch has also been installed in other systems as the result of equipment qualification work with no setpoint drift problem.

To preclude recurrence, the switch linkages were realigned and the switches were modified.

A search of LER records identified no previous occurrences of a similar nature with this model switch.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104
EXPIRES 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Pilgrim Nuclear Power Station	05000293	85	032	00	02	OF	03

TEXT (If more space is required, use additional NRC Form 365A's) (17)

On 11/25/85, during a routine quarterly calibration surveillance of the Primary Containment Isolation System, Main Steam Line High Flow (Procedure 8.M.2-1.4.3), 5 of 16 main steam line (M.S.L.) high flow switches were found outside the Technical Specification (T.S.) setpoint limits of $\leq 140\%$ of rated steam flow. An additional five (5) switches were found to have drifted, but were within T.S. limits. In each case, redundant switches and trip systems were operable. Attachment 1 of this LER provides detail on the trip system configuration and lists the as found setpoints of each switch that had drifted. Reactor power was 100% just prior to the event.

The 16 M.S.L. high flow switches, manufactured by I.T.T. Barton (Model #278) were converted in the field to Model #288A in response to equipment qualification requirements. The conversion was made by replacing the set point micro switches (see ref. chart for dates). An investigation of existing Barton Model #288 and #288A switches in other systems revealed a satisfactory operating history (e.g. no evidence of excessive drift). During the investigation process it was discovered that the main steam line switch linkages were aligned in the field while the other Model #288 and #288A switch linkages were aligned at the factory. The element of field vs. factory alignment of the linkages during installation is believed to be the cause of the drift. Contributing to the misalignment is the fact that the vendor's technical manual utilized for the conversion did not emphasize the importance of linkage alignment during a field conversion. In addition, this was the first field conversion of a Model #278 switch to a #288A by Boston Edison Maintenance personnel.

The logic of the M.S.L. high flow switches provide a main steam line isolation in the event of a pipe break. There are four main steam lines and four high flow switches per steam line. The isolation logic is one out of two taken twice.



In each case of setpoint drift the immediate corrective action was to recalibrate the M.S.L. high flow switch. In addition, the surveillance frequency for the M.S.L. switches was increased from once per three months to once per week as an interim measure.

During a subsequent weekly calibration surveillance, the setpoint of one switch (261-2M) had drifted low but remained within the T.S. limit. The calibration frequency of that switch was increased to once per day. In addition the linkage of 261-2M was realigned as per telephone discussion with ITT Barton. The setpoint remained stable over the next three days and subsequently the calibration frequency was returned to a weekly schedule.

From 12/12/85 to 12/15/85 an ITT Barton field representative and Boston Edison Maintenance personnel realigned the linkages of the 16 MSL high flow switches. In addition the low switch cam roller arm, which has no function in this application, was removed to prevent any potential low switch mechanical drag. The low switch modification was performed under Plant Design Change #85-73 at the recommendation of ITT Barton. These actions are believed adequate to preclude recurrence of excessive setpoint drift. Boston Edison plans to maintain a weekly surveillance interval until sufficient data is available to reasonably ensure reliability of the switches.

A search of LER records identified no previous occurrences of a similar nature with the Model #288 and #288A switches. The EEIS system, component and manufacturer codes are JM, FIS and B080 respectively.

ATTACHMENT I TO LER 85-032

STEAM LINE	SWITCH NUMBER	TRIP SYSTEM CHANNEL	SWITCHES GREATER THAN T.S. LIMITS	AS FOUND TRIP SETPOINT OF SWITCHES THAT DRIFTED	T.S. SET POINT REQUIREMENTS	DATE CONVERTED TO MODEL#288A
A	261-2A	A ₁	*	128.0 PSIG	 140% STEAM FLOW =  127.2 P.S.I.G.	12/4/84
A	261-2B	A ₂		126.5 PSIG		2/17/85
A	261-2C	B ₁		OKAY		5/10/85
A	261-2D	B ₂	*	128.0 PSIG		4/26/85
B	261-2E	A ₁	*	145.0 PSIG		3/29/85
B	261-2F	A ₂		127.0 PSIG		4/12/85
B	261-2G	B ₁		OKAY		4/19/85
B	261-2H	B ₂		OKAY		4/26/85
C	261-2J	A ₁		127.0 PSIG		5/3/85
C	261-2K	A ₂		126.0 PSIG		4/12/85
C	261-2L	B ₁		126.0 PSIG		4/19/85
C	261-2M	B ₂	*	143.0 PSIG		5/17/85
D	261-2N	A ₁	*	131.0 PSIG		5/3/85
D	261-2P	A ₂		OKAY		6/14/85
D	261-2R	B ₁		OKAY		6/10/85
D	261-2S	B ₂		OKAY		5/17/85

BOSTON EDISON COMPANY
800 BOYLSTON STREET
BOSTON, MASSACHUSETTS 02199

WILLIAM D. HARRINGTON
SENIOR VICE PRESIDENT
NUCLEAR

December 19, 1985
BECO Ltr. #85-225

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Washington, D.C. 20555

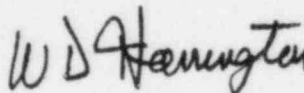
Docket Number 50-293
License No. DPR-35

Dear Sir:

The attached Licensee Event Report 85-032-00, "Main Steam Line High Flow Switch Setpoint Drift," is hereby submitted in accordance with the requirements of 10CFR50.73.

If there are any questions on this subject, please do not hesitate to contact me.

Respectfully submitted,



W. D. Harrington

GGB:caw

Enclosure: LER 85-032-00

cc: Dr. Thomas E. Murley
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Standard BECO LER Distribution

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