(7-77)

LICENSEE EVENT REPORT

CONTROL BLOCK: ☐☐☐☐☐☐ ① (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01	LICENSEE CODE: MAPPS1 ②	LICENSE NUMBER: 00-00000-00 ③	LICENSE TYPE: 41111 ④	CAT: ⑤	
CON'T 01	REPORT SOURCE: L ⑥	DOCKET NUMBER: 050-0293 ⑦	EVENT DATE: 080180 ⑧	REPORT DATE: 090280 ⑨	

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES ⑩

02 On August 1, 1980 at 0945 hours, RV 203-3D did not respond when given a manual open

03 signal. The unit was being shutdown because of high reactor conductivity at the time.

04 Several attempts were made to open the valve but none were successful. The reactor

05 was shutdown and a drywell entry made to investigate and correct the problem. Public

06 health and safety were not affected since no automatic actuation of the valve had been

07 necessary and redundant valves were tested satisfactorily.

08

	SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
09	SF ⑪	E ⑫	B ⑬	VALVOP ⑭	E ⑮	Z ⑯

⑰ LER/RO REPORT NUMBER	EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
	80	—	047	/	03	L	—	0

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS ㉒	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
X ⑱	Z ⑲	Z ⑳	Z ㉑	0000	Y ㉓	N ㉔	N ㉕	T020 ㉖

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS ㉗

10 Investigation was conducted by Target Rock representative who had air operator

11 assembly, solenoid assembly and pilot assembly removed. Shop testing of individual

12 components and unitized assembly revealed no apparent cause. Unit re-assembled and

13 Relief Valve successfully tested ten (10) times at normal operating conditions.

14

15	FACILITY STATUS: E ㉘	% POWER: 090 ㉙	OTHER STATUS ㉚: N.A.	METHOD OF DISCOVERY: A ㉛	DISCOVERY DESCRIPTION ㉜: Operational Event
16	ACTIVITY RELEASED: Z ㉝	CONTENT OF RELEASE: Z ㉞	AMOUNT OF ACTIVITY ㉟: N.A.		LOCATION OF RELEASE ㊱: N.A.
17	PERSONNEL EXPOSURES NUMBER: 000 ㊲	TYPE: Z ㊳	DESCRIPTION ㊴: N.A.		
18	PERSONNEL INJURIES NUMBER: 000 ㊵	DESCRIPTION ㊶: N.A.			
19	LOSS OF OR DAMAGE TO FACILITY ㊸ TYPE: Z ㊷	DESCRIPTION: N.A.			
20	PUBLICITY ISSUED: N ㊹	DESCRIPTION ㊺: N.A.		NRC USE ONLY	

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NAME OF PREPARER: Charles J. Mathis PHONE: 617-746-7900

BOSTON EDISON COMPANY
PILGRIM NUCLEAR POWER STATION
DOCKET NO. 50-293

Attachment to LER 80-047/03L-0

Investigation into cause for malfunction of RV 203-3D was conducted by Target Rock representative and station I&C personnel. The following is a summary of that investigation.

A. Functional Check of air operator assembly indicated normal characteristics.

1. Visual - satisfactory
2. Manual stroking indicated:
    - a. freedom of movement stem/bushing/O-ring
    - b. suction and discharge of air during stroking -diaphragm o.k.
    - c. length of available stroke sufficient for proper pilot stage operation (> ½")
3. Air op. cover removed - diaphragm inspected - like new appearance.

B. Functional check of solenoid assembly S/N 133 (originally shipped with top-works assembly S/N 1025 - replacement for solenoid assembly S/N 16 - original component of D valve S/N 1040 - replaced during 7/25/80 shutdown)

1. Valve energized with 120 VDC with inlet air pressure of 125 psig - cycled approx. 10 times - operation; crisp opening and closing. Repeated test with lower pressures - ranging from 100 psig to 20 psig approx. 5 additional cycles - operation crisp (opening and closing)

2. Each solenoid assembly cycle resulted in proper cycling of air operator - Test performed per standard production test procedure 2025 and 1629 (applicable revisions). Test setup as illustrated in Tech. manual 7567F-010 (June 1980 draft issue) Figure 16.

3. Leak check of solenoid assembly and air operator attempted - set up as per Tech. manual figures 16 and 17 - (gauges and flowmeter shown in Fig. 17).

    Leakage in excess of 0.5 scfh - rate exceeds 0.1 schf production test criteria - however, test setup fitting leakage was noted and may be cause of high leak rate. It should be noted that this leakage rate does not affect function of solenoid assembly or air operator assembly.

Based on above findings: Solenoid assembly o.k.
Air operator assembly o.k.

C. Pilot assembly removed as Bonnet/Spring sub-assembly and pilot cartridge sub-assembly.

1. Visual inspection and manual check of pilot rod, disc stabilizer indicated free movement.

2. Assembled (unitized) bonnet/spring, pilot cartridge, air op. and solenoid assemblies - functional check (manual mode actuation) of unitized assembly resulted in proper operation each of 10 cycles attempted.

    Stroke verified to be as required for manual mode - approx. 3/8 inch.

Conclusion: based on noted inspections and tests, 'D' valve (S/N 1040) was considered functional and operable for intended service per Target Rock Representative.

Attachment to LER 80-047/03L-0
(cont'd)

D. Plant circuitry was reviewed and checked out with no abnormalities being noted.

While re-installation was in progress, plant personnel received a mild shock from electrical connection. Further investigation revealed a test loop was installed across open indication for all relief valves which applied a -67 volt low amperage potential that bypassed the fused circuit of RV 203-3D. This circuit had been installed since the original startup test program. The test loop was thought to be a possible cause of the problem, however, testing of the loop disclosed no failed components. A special test procedure was developed to test the relief valve and the test loop simultaneously.

On August 3, 1980 RV-203-3D was tested at 150 psig with original components installed and test loop disconnected. The valve opened satisfactorily. On August 5, 1980, RV-203-3D was tested at 90% reactor power and 1000 psig with the test loop connected and the valve operated satisfactorily. The valve was tested satisfactorily a total of eight (8) times on August 5, 1980.

On August 30, 1980, RV-203-3D was again tested satisfactorily at 90% reactor power, 1000 psig with the test loop removed.

A review of all information concerning this incident is continuing. If a determination of cause is made, a followup LER will be issued.