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May 13, 1982

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Washington, D.C. 20555

In the Matter of  
Metropolitan Edison Company  
(Three Mile Island Nuclear Station, Unit No. 1)  
Docket No. 50-289 (Restart)

Dear Administrative Judges Edles, Buck and Gotchy:

Please find enclosed, for your information, Licensee's follow-up (letter, May 7, 1982, from H. D. Hukill to R. C. Haynes) to Licensee Event Report No. 82-004, which I transmitted to you by letter of April 22, 1982.

Sincerely,

*Thomas A. Baxter*

Thomas A. Baxter

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Encl.

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Appeal Board

In the Matter of	)	
	)	
METROPOLITAN EDISON COMPANY	)	Docket No. 50-289 SP
	)	
(Three Mile Island Nuclear	)	(Restart)
Station, Unit No. 1)	)	

CERTIFICATE OF SERVICE

I hereby certify that a copy of Licensee's letter to the Appeal Board with attachment was served this 13th day of May, 1982, by deposit in the United States mail, postage prepaid, addressed to the parties on the attached Service List.

Thomas A. Baxter  
Thomas A. Baxter

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING APPEAL BOARD

In the Matter of	)	
	)	
METROPOLITAN EDISON COMPANY	)	Docket No. 50-289
	)	(Restart)
(Three Mile Island Nuclear	)	
Station, Unit No. 1)	)	

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May 7, 1982

5211-82-102

Office of Inspection and Enforcement  
Attn: R. C. Haynes, Director  
Region I  
U. S. Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, PA 19406

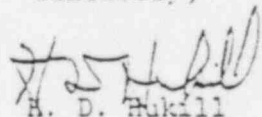
Dear Sir:

Three Mile Island Nuclear Station, Unit 1 (TMI-1)  
Operating License No. DPR-50  
Docket No. 50-289  
LER 82-004/01T-0

Attached please find the two week follow-up Licensee Event Report No. 82-004/01T-0 concerning TMI-1 Dresser pressurizer safety valves. This event is considered reportable per Technical Specification 6.9.2.A(9).

Your attention is drawn to our previous letters 82-090 dated 4/14/82, and 82-076 dated 4/16/82. All future correspondence on this matter will be filed under NUREG 0737 Item II.D.1. Mr. R. Conte (NRC) was notified of our delay (from 4/27/82) in submitting this report.

Sincerely,

  
H. D. Hukill  
Director, TMI-1

HDE:WJM:vjf

cc: D. Haverkamp  
J. Stolz  
R. DeYoung c/o USNRC Document Management Branch

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0	1	P A T M I 1										2	0	0	-	0	0	0	0	-	0	0	3	4	1	1	1	1	4			5								
7	8	9 LICENSEE CODE 14										15	25 LICENSE NUMBER										26	30 LICENSE TYPE										31	57 CAT 58					59

CON'T

0	1	REPORT SOURCE 1										6	0	5	0	0	0	2	8	9	7	0	4	1	3	8	2	8	0	4	2	9	8	2	9															
7	8	60 REPORT SOURCE 61										62	66 DOCKET NUMBER										67	69 EVENT DATE										70	74 REPORT DATE										75	80				

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 While in long term, ordered shutdown, results of EPRI valve test results indicated

0 3 a potential problem with TMI-1 Pressurizer code safety valves (Dresser model 31739A)

0 4 Tests were done as part of NUREG 0737 Item II.D.1. Public Health and Safety is

0 5 unaffected. Reported per Technical Specification 6.9.2A(9).

0 6

C 7

0 8

7 8 9 80

SYSTEM CODE C A 11		CAUSE CODE B 12		CAUSE SUBCODE A 13		COMPONENT CODE V A L V E Y 14				COMP. SUBCODE P 15		ALVE SUBCODE B 16					
EVENT YEAR 8 2 21 22		SEQUENTIAL REPORT NO. 0 0 4 24 25 26		OCCURRENCE CODE 0 1 28 29		REPORT TYPE T 30		REVISION NO. 0 32									
ACTION TAKEN X 18		FUTURE ACTION X 19		EFFECT ON PLANT Z 20		SHUTDOWN METHOD Z 21		HOURS 0 0 0 0 22 37 40		ATTACHMENT SUBMITTED Y 23 41		NPRD-4 FORM SUB. Y 24 42		PRIME COMP. SUPPLIER N 25 43		COMPONENT MANUFACTURER D 2 4 3 26 44 47	

## CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 Enveloping EPRI Valve tests have identified a need for evaluation of TMI-1 safety  
11 valves under water discharge conditions. Further evaluation, planning, scheduling  
12 and engineering activities are in progress in accordance with NUREG 0737, Item II.D.1.  
13 Long term corrective action will be reported in relationship to NUREG 0737 prior to  
14 7/1/82.

FACILITY STATUS		N POWER		OTHER STATUS		METHOD OF DISCOVERY		DISCOVERY DESCRIPTION	
1	5	X	28	0	0	0	29	C	31
				NRC ORDER				NOTIFICATION FROM EPRI	
ACTIVITY CONTENT		RELEASED OF RELEASE		AMOUNT OF ACTIVITY				LOCATION OF RELEASE	
1	6	2	33	2	34			N/A	
				N/A					
PERSONNEL EXPOSURES		NUMBER		TYPE		DESCRIPTION			
1	7	0	0	0	37	2	38	N/A	
PERSONNEL INJURIES		NUMBER		DESCRIPTION					
1	8	0	0	0	40			N/A	
LOSS OF OR DAMAGE TO FACILITY		TYPE		DESCRIPTION					
1	9	2	42					N/A	
PUBLICITY		ISSUED		DESCRIPTION				NRC USE ONLY	
1	0	1	44	9205170420				N/A	



# LICENSEE EVENT REPORT

## NARRATIVE REPORT

TMI-1

LER 82-004

### I. CURRENT ACTIVITIES AT THE TIME OF THE OCCURRENCE

TMI-1 was in a long term cold shutdown condition by NRC Order dated July 2, 1979.

### II. LEADING CIRCUMSTANCES

As a sponsor of the EPRI Safety and Relief Valve Test Program GPUN closely monitored the activities of this test program developed to provide the basis for meeting the requirements of NUREG 0578 Item 2.1.2 and NUREG 0737 Item II.D.1. In April, 1982 EPRI Test Program results were formally submitted to NRC on behalf of the participating PWR utilities. A separate letter dated April 16, 1982 (82-076) indicated areas of additional and plant specific evaluations to be performed for TMI-1.

### III. DESCRIPTION

Safety valve testing for the Dresser safety valves model (31739A), the type used at TMI-1, were performed very late in the EPRI program. This testing was performed on both short inlet and long inlet configurations. The long inlet configuration includes a loop seal and represents the TMI-1 plant specific inlet piping.

Long Inlet Configuration - Several steam tests (drained loop seal) were performed at various ring settings to optimize valve performance (stable with rated lift). Blowdown was increased to achieve rated lift. The ring settings established for the increased blowdown were used in the remaining long inlet configuration tests.

On two of the loop seal-steam (with water in the loop) tests the valve exhibited an instability during loop seal discharge, stabilized on steam and had a maximum blowdown of 13.8%. The valve also exhibited temporary instability during loop seal discharge in the transition test and then stabilized on steam and closed on water with 13.9% blowdown. The valve had stable performance during the 650°F water test and had a 18.5% blowdown. The valve opened and chattered during the 550°F water test. The test was terminated after the valve was manually opened to stop chatter and no data was collected. Upon valve disassembly, following the full series of tests, some galling was seen and several parts were damaged.

### IV. RESULTANT EVENTS

Since the pressurizer code safety valves were tested at a separate facility and no event at TMI-1 occurred, there was no threat to the health and safety of the public.

V. PREVIOUS EVENTS OF A SIMILAR NATURE

None

VI. ROOT CAUSE

- Safety valves are in general designed for a single fluid medium discharge applications and the design of the valves is based on extrapolation of smaller valve designs to a large valve.
- The B&W specification for a pressurizer safety valve specified only steam conditions for the valve. At the time when the TMI-1 valves were purchased it was not specified that the pressurizer safety valves would experience significant 2-phase transition and water discharge transients. After the accident at TMI-2, transition and water discharges were included as part of the Relief and Safety Valve testing in the NUREG 0578 requirements.
- The dynamics of the long inlet identified in the EPRI Test program were not originally considered. The EPRI tests show, however, that the long inlet introduces dynamic forces which affect the valve performance.

VII. IMMEDIATE CORRECTIVE ACTION

We are evaluating the test results further including results applicable to other safety valve inlet configurations. Currently, our initial evaluation has concluded the 20% blowdown is acceptable for TMI-1 in its present configuration. GPUN has initiated further evaluation, planning, scheduling and engineering activities associated with completion of the plant specific evaluations.

VIII. LONG TERM CORRECTIVE ACTION

The complete results of relief and safety valve testing are necessary for accurate analysis and assessment and to define potential plant modifications. As discussed in our letter of April 16, 1982 (82-076) our valve operability and discharge piping and support evaluations are underway to define a specific schedule which will be reported to you in a timely manner prior to July 1, 1982 in relation to NUREG 0737, Item II.D.1.

IX. COMPONENT DATA

Dresser model 31739A pressurizer safety valve(s).