NRC FORM 366
(7-77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

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

Field	Value
01 Licensee Code (2)	PATMI1
License Number (3)	00-00000-00
License Type (4)	41111
CAT (5)	
CON'T 01 Report Source (6)	L
Docket Number (7)	05000289
Event Date (8)	041382
Report Date (9)	042982

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 While in long term, ordered shutdown, results of EPRI valve test results indicated
03 a potential problem with TMI-1 Pressurizer code safety valves (Dresser model 31739A)
04 Tests were done as part of NUREG 0737 Item II.D.1. Public Health and Safety is
05 unaffected. Reported per Technical Specification 6.9.2A(9).
06
07
08

09	System Code (11)	Cause Code (12)	Cause Subcode (13)	Component Code (14)	Comp. Subcode (15)	Valve Subcode (16)
	CA	B	A	VALVEX	P	B

(17) LER/RO REPORT NUMBER

Event Year		Sequential Report No.		Occurrence Code	Report Type		Revision No.
82	—	004	/	01	T	—	0

Action Taken (18)	Future Action (19)	Effect on Plant (20)	Shutdown Method (21)	Hours (22)	Attachment Submitted (23)	NPRD-4 Form Sub. (24)	Prime Comp. Supplier (25)	Component Manufacturer (26)
X	X	Z	Z	0000	Y	Y	N	D243

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.

15	Facility Status (28)	% Power (29)	Other Status (30)	Method of Discovery (31)	Discovery Description (32)
	X	000	NRC ORDER	C	NOTIFICATION FROM EPRI

16	Activity Released (33)	Content of Release (34)	Amount of Activity (35)	Location of Release (36)
	Z	Z	N/A	N/A

17 Personnel Exposures	Number (37)	Type (38)	Description (39)
	000	Z	N/A

18 Personnel Injuries	Number (40)	Description (41)
	000	N/A

19 Loss of or Damage to Facility (43)	Type (42)	Description
	Z	N/A

20 Publicity	Issued (44)	Description (45)	NRC Use Only
	N	N/A	

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GPO 917-926

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 conditi. 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).