

50-289

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FILE NUMBER
INCIDENT REPORT

TO: J.P.O'REILLY

FROM: METROPOLITAN EDISON CO.
READING, PA.
J.G. HERBEIN

DATE OF DOCUMENT

6/7/77

DATE RECEIVED

6/13/77

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DESCRIPTION

LTR. TRANS THE FOLLOWING.....

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PLANT NAME: THREE MILE ISLAND # 1
SAB

ACKNOWLEDGED

ENCLOSURE

LICENSEE EVENT REPORT FOR R.O.# 77-8/3L, ON 5/4/77
CONCERNING SNUBBERS FAILING TO PERFORM WITHIN
ACCEPTANCE CRITERIA.....

(1P)

NOTE: IF PERSONNEL EXPOSURE IS INVOLVED
SEND DIRECTLY TO KREGER/J. COLLINS

FOR ACTION/INFORMATION

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EXTERNAL DISTRIBUTION

LPDR:	<i>HARRISBURG PA.</i>
TIC:	
NSIC:	

CONTROL NUMBER

1476 08
771650123



METROPOLITAN EDISON COMPANY

POST OFFICE BOX 542 READING, PENNSYLVANIA 19603

TELEPHONE 215 - 929-3601

June 7, 1977
GQL 0758

Mr. J. P. O'Reilly, Director
Office of Inspections and Enforcement, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406



Dear Sir:

Docket No. 50-289
Operating License No. DFR-50

REGULATORY DOCKET FILE COPY

In accordance with the Technical Specifications of our Three Mile Island Nuclear Station Unit I (TMI-1), we are reporting the following reportable occurrence.

- (1) Report Number: 77-8/3L
- (2a) Required Report Date: 06/03/77
- (2b) Date of Occurrence: 05/04/77
- (3) Facility: Three Mile Island Nuclear Station - Unit 1
- (4) Identification of Occurrence:
Title: Snubbers Failed to Perform Within Acceptance Criteria

Type: A reportable occurrence as defined by Technical Specification 6.9.2.B.(2) in that during functional testing of safety-related hydraulic shock & sway suppressors (snubbers), a number of snubbers failed to perform within acceptance criteria leading to operations in a degraded mode permitted by a limiting condition for operation as defined by Technical Specification 3.16.4.*

*Please note that Technical Specification 3.16.4 is included in Technical Specification Change Request 19 Amendment 2. Although Met-Ed does not have to report this event because section 3.16.4 had not yet been approved, we feel it is appropriate to inform you of the occurrence and after T.S.C.R. 19 amendment 2 is approved will report such occurrence under the stated section.

(5) Condition Prior to Occurrence:

Power: Core:	0	PRZR Level:	0
Elec:	0	PRZR Temp.:	Ambient
R.C. Flow :	0		
R.C. Pressure:	0		
R.C. Temp. :	Ambient		

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6/7/77

(6) Description of Occurrence:

During functional testing of snubbers in accordance with TMI Unit #1 Technical Specifications, a total of forty-five (45) snubbers did not lockup in the tension and/or compression stroking directions. Because of the number of snubbers which did not operate properly, all testable safety related snubbers (259 units) were tested. All of these 259 snubbers had been removed for seal replacement with ethylene propylene seals, tested on a site manufactured test stand, and re-installed during the previous Refueling Outage in 1976.

(7) Apparent Cause of Occurrence:

The apparent cause for the improper locking observed on 35 snubbers was improper adjustment of the locking velocities during the 1976 testing following the ethylene propylene seal replacement program. One snubber failed during test stroking as a result of a flattened "O" ring seal on the piston. This snubber's piston and cylinder were disassembled in 1975, reusing the original ethylene propylene "O" ring seals due to a lack of replacement seals. Slightly eccentric tolerances for the piston and cylinder bore also contributed to the "O" ring flattening which lead to the failure. Another snubber had failed due to a damaged seal which had been cut. This was apparently an installation related failure since burrs on the end of the piston rod could have cut the seal as it was being installed. The specific cause for the failure of the 8 remaining snubbers is not known. It is thought that these failures could have been the result of one or more of the following factors.

1. Air entrainment in the hydraulic fluid as a result of:
 - a) Insufficient purging of air after reassembly and replacement of fluid during the 1976 Refueling Outage.
 - b) Loose couplings, fittings or seals which could have allowed air to be drawn into fluid during stroking of the snubber.
2. Possible misinstallation or damage to seals or valve spring block internals during the seal replacement program during the 1976 Refueling Outage.

(8) Analysis of Occurrence:

This occurrence may have constituted a threat to the health and safety of the public in that:

1. The consequence of a snubber which does not lockup within acceptable limits is an increase in the probability of structural damage to piping resulting from a seismic or other postulated event which initiates dynamic loads.
2. However, it should be noted that the likelihood of a seismic event or other initiating event occurring is very small.

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3. It should also be noted that some of the snubbers which did not lockup under test stand conditions when they are stroked in only one (1) direction at a time, may lockup when subject to the oscillatory stroking experienced during an actual seismic event.
4. Failure of a pipe, piping system, or major component would not necessarily result from a failure of a snubber or snubbers due to the conservative design of the piping, systems and components involved.

(9) Corrective Action:

Immediate: All testable safety-related hydraulic snubbers (259) have been functionally tested, adjusted, and repaired, if necessary, to achieve acceptable locking velocities. All repaired snubbers were adequately purged to eliminate the possibility of air entrained fluid. All of these snubbers were then reinstalled and visually inspected in accordance with the periodic snubber surveillance procedure. Four failed snubbers which could not be readjusted on the test stand to achieve an acceptable locking velocity were replaced with new units which were satisfactorily tested. A lack of spare parts precipitated the necessity to replace these snubbers.

Long Term: At least five (5) of the sample ten (10) safety-related hydraulic snubbers to be functionally tested during the 1978 Refueling Outage will be selected from those snubbers which had "as found" locking velocities which were unacceptable and were readjusted or repaired. Satisfactory functional testing of these snubbers should provide additional assurance that these events were not attributable to service induced causes. The four (4) snubbers which required replacement will have their valve blocks disassembled to determine the probable cause for the inability to achieve proper adjustment.

The Plant Operations Review Committee and Unit Superintendent have reviewed and approved the above corrective action and have taken steps to assure its completion.

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(10) Failure Data:

SNUBBER

	<u>MARK NO.</u>	<u>MANUFACTURER</u>	<u>SIZE</u>	<u>STROKE</u>
1.	MUE-7	Grinnell	2½"	5"
2.	MUE-41	Grinnell	2½"	5"
3.	MUE-40	Grinnell	2½"	5"
4.	NSE-88	Grinnell	2½"	5"
5.	MUE-38	Grinnell	2½"	5"
6.	CF-9	Grinnell	2½"	5"
7.	DH-20	Grinnell	2½"	5"
8.	CF-14	Grinnell	2½"	5"
9.	DH-5	Grinnell	2½"	5"
10.	RC-15	Basic Engineers	1½"	5"
11.	BS-26A	Grinnell	1½"	5"
12.	NSE-113	Basic Engineers	1"	5"
13.	NSE-13	Grinnell	2½"	5"
14.	NSE-14	Grinnell	2½"	5"
15.	FW-118	Grinnell	2½"	5"
16.	FW-116	Grinnell	2½"	5"
17.	RWE-14	Grinnell	2½"	5"
18.	NSE-12	Grinnell	2½"	5"
19.	RWE-13	Grinnell	2½"	5"
20.	RWE-12	Grinnell	2½"	5"
21.	NSE-33	Grinnell	2½"	5"
22.	PWE-10	Grinnell	2½"	5"
23.	MS-203	Grinnell	5"	5"
24.	RW-73	Grinnell	2½"	5"
25.	RWE-8	Grinnell	2½"	5"
26.	RWE-75	Grinnell	2½"	5"
27.	RW-72	Grinnell	2½"	5"
28.	IPE-6	Grinnell	2½"	5"
29.	IPE-5	Grinnell	2½"	5"
30.	IPE-4	Grinnell	2½"	5"
31.	IPE-2	Grinnell	2½"	5"
32.	IPE-9	Grinnell	2½"	5"
33.	IPE-3	Grinnell	2½"	5"
34.	IPE-1	Grinnell	2½"	5"
35.	IPE-8	Grinnell	2½"	5"
36.	MS-65	Grinnell	1½"	5"
37.	EF-113	Grinnell	1½"	5"
38.	BS-27A	Grinnell	1½"	5"
39.	DCH-59	Grinnell	2½"	5"
40.	NSE-8	Grinnell	2½"	5"
41.	IPE-7	Grinnell	2½"	5"
42.	RC-7	Basic Engineer	1"	5"
43.	NSE-122	Basic Engineer	1"	5" Note 1
44.	RC-22	Basic Engineer	3/4"	5" Note 1
45.	PR-25	Grinnell	2½"	5" Note 1

NOTE 1 - These snubbers were replaced with spare units due to inability to read-just valve blocks to obtain satisfactory lockup.

Mr. J. P. O'Reilly
Similar Events:

GQL 0758
6/7/77

- 76-41
- 76-07
- 75-03
- 75-08
- 75-09
- 75-34
- 74-14
- 74-20
- 74-23
- 74-25
- 74-30

Sincerely,



J. G. Herbein
Vice President

JGH:DGM:njs

Attachment: LER

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