

METROPOLITAN EDISON COMPANY  
JERSEY CENTRAL POWER & LIGHT COMPANY

AND

PENNSYLVANIA ELECTRIC COMPANY  
THREE MILE ISLAND NUCLEAR STATION UNIT 1

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Operating License No. DPR-50  
Docket No. 50-289  
Technical Specification Change Request No. 19  
Amendment No. 1

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This Technical Specification Change Request is submitted in support of Licensee's request to change Appendix A to Operating License No. DPR-50 for Three Mile Island Nuclear Station Unit 1. As a part of this request, proposed replacement pages for Appendix A are also included.

METROPOLITAN EDISON COMPANY

By *R. C. Arnold*  
Vice President-Generation

Sworn and subscribed to me this 15th day of September, 1976.

*Rita M. Powers*  
Notary Public

RITA M. POWERS  
Notary Public, Muhlenberg Twp., Berks Co.  
My Commission Expires September 30, 1978

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THREE MILE ISLAND NUCLEAR STATION UNIT 1 (TMI-1)  
OPERATING LICENSE NO. DPR-50  
DOCKET NO. 50-289

Technical Specification-Change Request No. 19, Amendment No. 1

The Licensee requests that the enclosed pages be added to the TMI-1 Technical Specifications Sections 3 and 4, as appropriate, and that Item 11, Page 4-8 (Table 4.1-2) be deleted from the existing Technical Specifications. These pages replace those previously submitted by Change Request No. 19 on August 23, 1975.

Reason for Proposed Change

To reflect changes to Change Request No. 19 as a result of revisions to the USNRC model technical specifications relating to hydraulic snubbers.

Safety Analysis Justifying Change

This proposed Technical Specification Change does not involve any unreviewed safety questions in that it only incorporates additional restrictions to ensure the reliability of hydraulic snubbers already in use at TMI-1.

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### 3.17 Shock Suppressors (Snubbers)

#### Applicability

Applies to the operability of the hydraulic snubbers listed in Table 3.17.1.

#### Objective

To identify those conditions for which the operability of the hydraulic snubbers are required and to identify the time limits in which either the snubber must be made operable or reactor shutdown must occur.

#### Specification

- 3.17.1 During all modes of operation except Cold Shutdown and Refueling, all safety-related hydraulic snubbers listed in Table 3.17.1 shall be operable except as noted in 3.17.2 through 3.17.4 below.
- 3.17.2 From and after the time that a hydraulic snubber is determined to be inoperable, continued reactor operation is permissible only during the succeeding 72 hours unless the snubber is sooner made operable.
- 3.17.3 If the requirements of 3.17.1 and 3.17.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in cold shutdown condition within an additional 36 hours.
- 3.17.4 If a hydraulic snubber is determined to be inoperable while the reactor is in the shutdown or refuel mode, the snubber shall be made operable prior to reactor start-up.
- 3.17.5 Snubbers may be added to safety-related systems without prior License Amendment to Table 3.17.1 provided that a revision to Table 3.17.1 is included with the next License Amendment Request.

#### Bases

Snubbers are designed to prevent unrestrained pipe motion under dynamic loads as might occur during an earthquake or severe transient, while allowing normal thermal motion during startup and shutdown. The consequence of an inoperable snubber is an increase in the probability of structural damage to piping as a result of a seismic or other event initiating dynamic loads. It is, therefore, required that all hydraulic snubbers required to protect the primary coolant system or any other safety system or component be operable during reactor operation or other periods when severe transients might cause damaging dynamic loads.

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Because the snubber protection is required only during relatively low probability events, a period of 72 hours is allowed for repairs or replacements. In case a shutdown is required, the allowance of 36 hours to reach a cold shutdown condition will permit an orderly shutdown consistent with standard operating procedures. Since plant startup should not commence with safety equipment having known defects, specification 3.17.4 prohibits startup with inoperable snubbers.

Table 3.17.1 lists all hydraulic snubbers installed on nuclear safety related systems throughout the plant. Snubbers were classified for the table in accordance with the following guidelines:

- a. High Radiation Area: A general field of greater than 100 mr/hr.
- b. Especially difficult to remove: Those snubbers that are elevated more than 10 feet off the floor and that, due to interferences, may not be safely reached from a suitable work platform.
- c. Inaccessible during normal operation: Those snubbers that are located within the secondary shield wall of the Reactor Building or within any area where the general field is 100 mr/hr. or greater.
- d. Accessible during normal operation: Those snubbers that do not fall into paragraph a, b, and c above.

TABLE 3.17.1

## SAFETY RELATED HYDRAULIC SNUBBERS

Snubber MK No.	Location	Elevation	Snubber In High Radiation Area*	Snubber Especially Difficult To Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
RC-4	R.B. Inside Sec. Shield N.E. Quad.	355	Yes	Yes	Yes	No
RC-5	Rx. Bldg. Inside Sec. Shield N.E. Quad. Top of PZR Near RC-V3	355	Yes	No	Yes	No
RC-15	Rx. Bldg. Inside Sec. Shield N.E. Quad. Top of PZR Near RC-V3	355	Yes	No	Yes	No
RC-16	Rx. Bldg. Inside Sec. Shield N.E. Quad. Top of PZR Near RC-V3	355	Yes	No	Yes	No
RC-17	Rx. Bldg. Inside Sec. Shield N.E. Quad. Near RC-V1	355	Yes	No	Yes	No
RC-18	Rx. Bldg. Inside Sec. Shield N.E. Quad. Near RC-V1	355	Yes	No	Yes	No
RC-19	Rx. Bldg. Inside Sec. Shield N.E. Quad. Near RC-V1	355	Yes	No	Yes	No
RC-23	Rx. Bldg. Inside Sec. Shield N.E. Quad. Near RC-V1	355	Yes	No	Yes	No
RC-20	Rx. Bldg. Inside Sec. Shield N.E. Quad.	353	Yes	No	Yes	No
RC-21	Rx. Bldg. Inside Sec. Shield N.E. Quad.	353	Yes	No	Yes	No
RC-22	Rx. Bldg. Inside Sec. Shield N.E. Quad.	353	Yes	No	Yes	No
RC-9	Rx. Bldg. Inside Sec. Shield N.E. Quad. Near RC-V31	346	Yes	No	Yes	No
RC-7	Rx. Bldg. Inside Sec. Shield N.E. Quad. Near RC-V31	353	Yes	No	Yes	No
RC-8	Rx. Bldg. Inside Sec. Shield N.E. Quad. Near RC-V31	353	Yes	No	Yes	No
RC-6	Rx. Bldg. Inside Sec. Shield N.E. Quad.	353	Yes	No	Yes	No
RC-10	Rx. Bldg. Inside Sec. Shield N.E. Quad.	346	Yes	No	Yes	No
RC-11	Rx. Bldg. Inside Sec. Shield N.E. Quad.	328	Yes	No	Yes	No
RC-12	Rx. Bldg. Inside Sec. Shield N.E. Quad.	328	Yes	No	Yes	No

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TABLE 3.17.1

## SAFETY RELATED HYDRAULIC SNUBBERS

Snubber MK No.	Location	Elevation	Snubber In High Radiation Area*	Snubber Especially Difficult To Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
RC-13	Rx. Bldg. Inside Sec. Shield N.E. Quad.	321	Yes	No	Yes	No
RC-14	Rx. Bldg. Inside Sec. Shield N.E. Quad.	321	Yes	No	Yes	No
MUE-38	Rx. Bldg. Inside Sec. Shield N.E. Quad.	318	Yes	No	Yes	No
MUE-39	Rx. Bldg. Inside Sec. Shield N.E. Quad.	318	Yes	No	Yes	No
PR-23	Rx. Bldg. Inside Sec. Shield N.E. Quad. RC-RV-1A Disch. Line	340	Yes	No	Yes	No
PR-24	Rx. Bldg. Inside Sec. Shield N.E. Quad. RC-RV-1A Disch. Line	340	Yes	No	Yes	No
PR-25	Rx. Bldg. Inside Sec. Shield N.E. Quad. RC-RV-1B Disch. Line	340	Yes	No	Yes	No
PR-26	Rx. Bldg. Inside Sec. Shield N.E. Quad. RC-RV-1B Disch. Line	340	Yes	No	Yes	No
PR-34	Rx. Bldg. Inside Sec. Shield N.E. Quad. RC-RV-1A Disch. Line	340	Yes	No	Yes	No
PR-36	Rx. Bldg. Inside Sec. Shield N.E. Quad. RC-RV-1A Disch. Line	345	Yes	No	Yes	No
PR-35	Rx. Bldg. Inside Sec. Shield N.E. Quad. RC-RV-1B Disch. Line	345	Yes	No	Yes	No
PR-37	Rx. Bldg. Inside Sec. Shield N.E. Quad. RC-RV-1B Disch. Line	345	Yes	No	Yes	No
PR-47	Rx. Bldg. Inside Sec. Shield N.E. Quad. RC-RV-2 Disch. Line	355	Yes	No	Yes	No
PR-48	Rx. Bldg. Inside Sec. Shield N.E. Quad. RC-RV-2 Disch. Line	355	Yes	No	Yes	No
NSE-77	Rx. Bldg. Inside Sec. Shield N.E. Quad.	333	Yes	No	Yes	No
NSE-78	Rx. Bldg. Inside Sec. Shield N.E. Quad.	334	Yes	No	Yes	No
NSE-79	Rx. Bldg. Inside Sec. Shield N.E. Quad.	331	Yes	No	Yes	No
NSE-75	Rx. Bldg. Inside Sec. Shield N.E. Quad.	332	Yes	No	Yes	No

TABLE 3.17.1

## SAFETY RELATED HYDRAULIC SNUBBERS

Snubber MK No.	Location	Elevation	Snubber In High Radiation Area*	Snubber Especially Difficult To Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
NSE-76	Rx. Bldg. Inside Sec. Shield N.E. Quad.	332	Yes	No	Yes	No
NSE-103	Rx. Bldg. Inside Sec. Shield N.E. Quad.	334	Yes	No	Yes	No
NSE-104	Rx. Bldg. Inside Sec. Shield N.E. Quad.	334	Yes	No	Yes	No
NSE-105	Rx. Bldg. Inside Sec. Shield N.E. Quad.	334	Yes	No	Yes	No
NSE-108	Rx. Bldg. Inside Sec. Shield N.E. Quad.	334	Yes	No	Yes	No
NSE-110	Rx. Bldg. Inside Sec. Shield N.E. Quad.	331	Yes	No	Yes	No
NSE-112	Rx. Bldg. Inside Sec. Shield N.E. Quad.	332	Yes	No	Yes	No
NSE-113	Rx. Bldg. Inside Sec. Shield N.E. Quad.	338	Yes	No	Yes	No
MS-201	Rx. Bldg. Inside Sec. Shield N.E. Quad.	338	Yes	Yes	Yes	No
NSE-80	Rx. Bldg. Inside Sec. Shield S.E. Quad.	332	Yes	No	Yes	No
NSE-81	Rx. Bldg. Inside Sec. Shield S.E. Quad.	331	Yes	No	Yes	No
NSE-82	Rx. Bldg. Inside Sec. Shield S.E. Quad.	331	Yes	No	Yes	No
NSE-96	Rx. Bldg. Inside Sec. Shield S.E. Quad.	338	Yes	No	Yes	No
NSE-96A	Rx. Bldg. Inside Sec. Shield S.E. Quad.	338	Yes	No	Yes	No
NSE-151	Rx. Bldg. Inside Sec. Shield S.E. Quad.	334	Yes	No	Yes	No
NSE-153	Rx. Bldg. Inside Sec. Shield S.E. Quad.	331	Yes	No	Yes	No
EF-116	Rx. Bldg. Inside Sec. Shield S.E. Quad.	330	Yes	No	Yes	No
FW-109	Rx. Bldg. Inside Sec. Shield S.E. Quad.	325	Yes	Yes	Yes	No

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TABLE 3.17.1

## SAFETY RELATED HYDRAULIC SNUBBERS

Snubber MK No.	Location	Elevation	Snubber In High Radiation Area*	Snubber Especially Difficult To Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
FW-110	Rx. Bldg. Inside Sec. Shield S.E. Quad.	325	Yes	Yes	Yes	No
MUE-20	Rx. Bldg. Inside Sec. Shield S.E. Quad.	315	Yes	No	Yes	No
MUE-69	Rx. Bldg. Inside Sec. Shield S.E. Quad.	310	Yes	Yes	Yes	No
SE-85	Rx. Bldg. Inside Sec. Shield N.W. Quad.	332	Yes	Yes	Yes	No
NSE-86	Rx. Bldg. Inside Sec. Shield N.W. Quad.	331	Yes	Yes	Yes	No
NSE-87	Rx. Bldg. Inside Sec. Shield N.W. Quad.	331	Yes	Yes	Yes	No
NSE-88	Rx. Bldg. Inside Sec. Shield N.W. Quad.	334	Yes	Yes	Yes	No
NSE-131	Rx. Bldg. Inside Sec. Shield N.W. Quad.	334	Yes	No	Yes	No
NSE-132	Rx. Bldg. Inside Sec. Shield N.W. Quad.	334	Yes	No	Yes	No
NSE-133	Rx. Bldg. Inside Sec. Shield N.W. Quad.	334	Yes	No	Yes	No
NSE-138	Rx. Bldg. Inside Sec. Shield N.W. Quad.	331	Yes	Yes	Yes	No
SE-141	Rx. Bldg. Inside Sec. Shield N.W. Quad.	331	Yes	No	Yes	No
NSE-142	Rx. Bldg. Inside Sec. Shield N.W. Quad.	331	Yes	No	Yes	No
MUE-43	Rx. Bldg. Inside Sec. Shield N.W. Quad.	310	Yes	No	Yes	No
MUE-44	Rx. Bldg. Inside Sec. Shield N.W. Quad.	310	Yes	No	Yes	No
MUE-42	Rx. Bldg. Inside Sec. Shield N.W. Quad.	310	Yes	No	Yes	No
CF-16	Rx. Bldg. Inside Sec. Shield N.W. Quad.	310	Yes	No	Yes	No
CF-16A	Rx. Bldg. Inside Sec. Shield N.W. Quad.	316	Yes	No	Yes	No

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TABLE 3.17.1

## SAFETY RELATED HYDRAULIC SNUBBERS

Snubber MK No.	Location	Elevation	Snubber In High Radiation Area*	Snubber Especially Difficult To Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
NSE-89	Rx. Bldg. Inside Sec. Shield S.W. Quad.	334	Yes	No	Yes	No
NSE-90	Rx. Bldg. Inside Sec. Shield S.W. Quad.	334	Yes	No	Yes	No
NSE-91	Rx. Bldg. Inside Sec. Shield S.W. Quad.	334	Yes	No	Yes	No
NSE-92	Rx. Bldg. Inside Sec. Shield S.W. Quad.	334	Yes	No	Yes	No
NSE-122	Rx. Bldg. Inside Sec. Shield S.W. Quad.	342	Yes	No	Yes	No
NSE-129	Rx. Bldg. Inside Sec. Shield S.W. Quad.	334	Yes	No	Yes	No
NSE-130	Rx. Bldg. Inside Sec. Shield S.W. Quad.	334	Yes	No	Yes	No
FW-114	Rx. Bldg. Inside Sec. Shield S.W. Quad.	325	Yes	No	Yes	No
FW-115	Rx. Bldg. Inside Sec. Shield S.W. Quad.	325	Yes	No	Yes	No
EF-113	Rx. Bldg. Inside Sec. Shield S.W. Quad.	320	Yes	Yes	Yes	No
DH-4	Rx. Bldg. Inside Sec. Shield S.W. Quad.	302	Yes	Yes	Yes	No
JH-5	Rx. Bldg. Inside Sec. Shield S.W. Quad.	302	Yes	Yes	Yes	No
CF-6	Rx. Bldg. Inside Sec. Shield S.W. Quad.	316	Yes	No	Yes	No
DH-32	Rx. Bldg. Outside Sec. Shield N.E. Quad.	340	No	No	No	Yes
MS-202	Rx. Bldg. Outside Sec. Shield N.E. Quad.	337	No	Yes	No	No
MS-203	Rx. Bldg. Outside Sec. Shield N.E. Quad.	337	No	Yes	No	No
MS-206	Rx. Bldg. Outside Sec. Shield N.E. Quad.	337	No	Yes	No	No
MS-207	Rx. Bldg. Outside Sec. Shield N.E. Quad.	337	No	Yes	No	No

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TABLE 3.17.1

## SAFETY RELATED HYDRAULIC SNUBBERS

Snubber MK No.	Location	Elevation	Snubber In High Radiation Area*	Snubber Especially Difficult To Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
MS-292	Rx. Bldg. Outside Sec. Shield N.E. Quad.	337	No	Yes	No	No
MS-286	Rx. Bldg. Outside Sec. Shield N.E. Quad.	337	No	Yes	No	No
PR-38	Rx. Bldg. Outside Sec. Shield N.E. Quad.	326	No	Yes	No	No
PR-39	Rx. Bldg. Outside Sec. Shield N.E. Quad.	326	No	Yes	No	No
PR-40	Rx. Bldg. Outside Sec. Shield N.E. Quad.	326	No	Yes	No	No
PR-41	Rx. Bldg. Outside Sec. Shield N.E. Quad.	326	No	Yes	No	No
PR-42	Rx. Bldg. Outside Sec. Shield N.E. Quad.	326	No	Yes	No	No
PR-43	Rx. Bldg. Outside Sec. Shield N.E. Quad.	326	No	Yes	No	No
PR-44	Rx. Bldg. Outside Sec. Shield N.E. Quad.	309	No	No	No	Yes
PR-45	Rx. Bldg. Outside Sec. Shield N.E. Quad.	309	No	No	No	Yes
PR-46	Rx. Bldg. Outside Sec. Shield N.E. Quad.	309	No	No	No	Yes
PR-49	Rx. Bldg. Outside Sec. Shield N.E. Quad.	326	No	Yes	No	No
PR-50	Rx. Bldg. Outside Sec. Shield N.E. Quad.	326	No	Yes	No	No
CF-14	Rx. Bldg. Outside Sec. Shield N.E. Quad.	309	No	No	No	Yes
CF-15	Rx. Bldg. Outside Sec. Shield N.E. Quad.	309	No	No	No	Yes
MS-200	Rx. Bldg. Outside Sec. Shield S.E. Quad.	338	No	Yes	No	No
MS-204	Rx. Bldg. Outside Sec. Shield S.E. Quad.	338	No	Yes	No	No
MS-205	Rx. Bldg. Outside Sec. Shield S.E. Quad.	338	No	Yes	No	No

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TABLE 3.17.1

## SAFETY RELATED HYDRAULIC SNUBBERS

Snubber MK No.	Location	Elevation	Snubber In High Radiation Area*	Snubber Especially Difficult To Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
MS-291	Rx. Bldg. Outside Sec. Shield S.E. Quad.	338	No	Yes	No	No
BS-27	Rx. Bldg. Outside Sec. Shield S.W. Quad.	341	No	Yes	No	No
BS-27A	Rx. Bldg. Outside Sec. Shield S.W. Quad.	341	No	Yes	No	No
MUE-40	Rx. Bldg. Outside Sec. Shield S.W. Quad.	318	No	No	No	Yes
MUE-41	Rx. Bldg. Outside Sec. Shield S.W. Quad.	318	No	No	No	Yes
BS-5	Rx. Bldg. Outside Sec. Shield S.W. Quad.	335	No	Yes	No	No
BS-6	Rx. Bldg. Outside Sec. Shield S.W. Quad.	335	No	Yes	No	No
BS-26	Rx. Bldg. Outside Sec. Shield S.W. Quad.	337	No	Yes	No	No
DH-11	Rx. Bldg. Outside Sec. Shield S.W. Quad.	297	No	No	No	Yes
DH-12	Rx. Bldg. Outside Sec. Shield S.W. Quad.	297	No	No	No	Yes
CF-7	Rx. Bldg. Outside Sec. Shield S.W. Quad.	297	No	No	No	Yes
CF-8	Rx. Bldg. Outside Sec. Shield S.W. Quad.	297	No	No	No	Yes
CF-9	Rx. Bldg. Outside Sec. Shield S.W. Quad.	308	No	Yes	No	No
BS-7	Rx. Bldg. Outside Sec. Shield S.W. Quad.	307	No	Yes	No	No
BS-22	Rx. Bldg. Outside Sec. Shield S.W. Quad.	291	No	No	No	Yes
BS-23	Rx. Bldg. Outside Sec. Shield S.W. Quad.	291	No	No	No	Yes
BS-24	Rx. Bldg. Outside Sec. Shield S.W. Quad.	291	No	No	No	Yes
BS-25	Rx. Bldg. Outside Sec. Shield S.W. Quad.	293	No	No	No	Yes

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TABLE 3.17.1

## SAFETY RELATED HYDRAULIC SNUBBERS

Snubber MK No.	Location	Elevation	Snubber In High Radiation Area*	Snubber Especially Difficult To Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
DH-23	Rx. Bldg. Outside Sec. Shield S.W. Quad.	295	No	No	No	Yes
DH-24	Rx. Bldg. Outside Sec. Shield S.W. Quad.	295	No	No	No	Yes
MS-208	Rx. Bldg. Outside Sec. Shield N.W. Quad.	338	No	Yes	No	No
MS-209	Rx. Bldg. Outside Sec. Shield N.W. Quad.	338	No	Yes	No	No
MS-210	Rx. Bldg. Outside Sec. Shield N.W. Quad.	338	No	Yes	No	No
MS-211	Rx. Bldg. Outside Sec. Shield N.W. Quad.	338	No	Yes	No	No
MS-212	Rx. Bldg. Outside Sec. Shield N.W. Quad.	338	No	Yes	No	No
MS-213	Rx. Bldg. Outside Sec. Shield N.W. Quad.	338	No	Yes	No	No
MS-214	Rx. Bldg. Outside Sec. Shield N.W. Quad.	338	No	Yes	No	No
MS-215	Rx. Bldg. Outside Sec. Shield N.W. Quad.	338	No	Yes	No	No
MS-287	Rx. Bldg. Outside Sec. Shield N.W. Quad.	338	No	Yes	No	No
MS-288	Rx. Bldg. Outside Sec. Shield N.W. Quad.	338	No	Yes	No	No
FW-112	Rx. Bldg. Outside Sec. Shield N.W. Quad.	320	No	No	No	Yes
FW 113	Rx. Bldg. Outside Sec. Shield N.W. Quad.	320	No	No	No	Yes
FW-108	Rx. Bldg. Outside Sec. Shield N.W. Quad.	320	No	No	No	Yes
FW-111	Rx. Bldg. Outside Sec. Shield N.W. Quad.	320	No	No	No	Yes
DH-20	Rx. Bldg. Outside Sec. Shield N.W. Quad.	298	No	No	No	Yes
DH-21	Rx. Bldg. Outside Sec. Shield N.W. Quad.	298	No	No	No	Yes

TABLE 3.17.1

## SAFETY RELATED HYDRAULIC SNUBBERS

Snubber MK No.	Location	Elevation	Snubber In High Radiation Area*	Snubber Especially Difficult To Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
DH-22	Rx Bldg. Outside Sec. Shield N.W. Quad.	295	No	No	No	Yes
MS-216	Int. Bldg. on MS-V-1D	355	No	Yes	No	No
MS-217	Int. Bldg. on MS-V-1C	341	No	Yes	No	No
MS-218	Int. Bldg. on MS-V-1C	341	No	Yes	No	No
MS-219	Int. Bldg. on MS-V-1C	355	No	No	No	Yes
MS-220	Int. Bldg. on MS-V-1D	355	No	No	No	Yes
MS-221	Int. Bldg. on MS-V-1D	341	No	Yes	No	No
MS-222	Int. Bldg. on MS-V-1B	341	No	Yes	No	No
MS-223	Int. Bldg. on MS-V-1A	341	No	Yes	No	No
MS-224	Int. Bldg. on MS-V-1A	341	No	No	No	Yes
MS-225	Int. Bldg. on MS-V-1B	355	No	No	No	Yes
MS-226	Int. Bldg. on MS-V-1C	355	No	No	No	Yes
MS-227	Int. Bldg. on MS-V-1A	355	No	No	No	Yes
MS-289	Int. Bldg. on MS-V-1A	355	No	No	No	Yes
MS-290	Int. Bldg. on MS-V-1B	341	No	No	No	Yes
MS-228A	Int. Bldg. on A RV Hdr.	337	No	Yes	No	No
MS-228B	Int. Bldg. on A RV Hdr.	337	No	Yes	No	No
MS-229	Int. Bldg. on B RV Hdr.	337	No	Yes	No	No

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TABLE 3.17.1

## SAFETY RELATED HYDRAULIC SNUBBERS

Snubber MK No.	Location	Elevation	Snubber In High Radiation Area*	Snubber Especially Difficult To Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
MS-230	Int. Bldg. on C RV Hdr.	337	No	Yes	No	No
MS-231	Int. Bldg. on D RV Hdr.	337	No	Yes	No	No
MS-65	Int. Bldg.	314	No	No	No	Yes
MS-233	Int. Bldg.	314	No	Yes	No	No
MS-234	Int. Bldg.	314	No	Yes	No	No
MS-235	Int. Bldg.	314	No	Yes	No	No
MS-236	Int. Bldg.	314	No	Yes	No	No
MS-237	Int. Bldg.	314	No	Yes	No	No
MS-238	Int. Bldg.	314	No	Yes	No	No
MS-239	Int. Bldg.	314	No	Yes	No	No
MS-240	Int. Bldg.	314	No	Yes	No	No
MS-243	Int. Bldg.	314	No	Yes	No	No
MS-277	Int. Bldg.	320	No	Yes	No	No
MS-277A	Int. Bldg.	320	No	Yes	No	No
MS-247	Int. Bldg. Near EF-P-1	300	No	No	No	Yes
MS-245	Int. Bldg. Near EF-P-1	300	No	No	No	Yes
MS-246	Int. Bldg. Near EF-P-1	300	No	No	No	Yes
MS-270	Int. Bldg. Near EF-P-1	300	No	No	No	Yes

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TABLE 3.17.1

## SAFETY RELATED HYDRAULIC SNUBBERS

Snubber MK No.	Location	Elevation	Snubber In High Radiation Area*	Snubber Especially Difficult To Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Norm Operation
MS-271	Int. Bldg. Near EF-P-1	300	No	No	No	Yes
FW-121	Int. Bldg. B FW Catch Hdr.	325	No	No	No	Yes
FW-122	Int. Bldg. B FW Catch Hdr.	325	No	No	No	Yes
EF-74	Int. Bldg. Near EF-P-2A	302	No	No	No	Yes
EF-75	Int. Bldg. Near EF-P-2B	302	No	Yes	No	No
EF-76	Int. Bldg. Near EF-P-2B	302	No	Yes	No	No
EF-85	Int. Bldg.	302	No	No	No	Yes
EF-87	Int. Bldg. Near EF-P-1	302	No	No	No	Yes
EF-88	Int. Bldg. Near EF-p-1	302	No	No	No	Yes
EF-89	Int. Bldg.	305	No	Yes	No	No
FW-116	Turb. Bldg. A FW Catch Hdr.	323	No	No	No	Yes
FW-118	Turb. Bldg. A FW Catch Hdr.	323	No	No	No	Yes
DCH-58	Aux. Bldg. HX Vault	286	No	Yes	No	No
DCH-59	Aux. Bldg. HX Vault	286	No	Yes	No	No
DCH-68	Aux. Bldg. HX Vault	286	No	Yes	No	No
NSE-12	Aux. Bldg. HX Vault	286	No	Yes	No	No
NSE-13	Aux. Bldg. HX Vault	286	No	Yes	No	No
NSE-14	Aux. Bldg. HX Vault	286	No	Yes	No	No

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TABLE 3.17.1

## SAFETY RELATED HYDRAULIC SNUBBERS

Snubber MK No.	Location	Elevation	Snubber In High Radiation Area*	Snubber Especially Difficult (*) Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
NSE-15	Aux. Bldg. HX Vault	284	No	Yes	No	No
NSE-16	Aux. Bldg. HX Vault	284	No	Yes	No	No
NSE-17	Aux. Bldg. HX Vault	284	No	Yes	No	No
MUE-6	Aux. Bldg. Valve Alley	283	Yes	Yes	No	No
MUE-7	Aux. Bldg. Valve Alley	283	Yes	Yes	No	No
MUH-318	Aux. Bldg. Valve Alley	288	Yes	Yes	No	No
MUH-319	Aux. Bldg. Valve Alley	288	Yes	Yes	No	No
MUH-321	Aux. Bldg. Valve Alley	288	Yes	Yes	No	No
MUH-322	Aux. Bldg. Valve Alley	288	Yes	Yes	No	No
DHH-196	Aux. Bldg.	297	No	Yes	No	No
NSE-7	Aux. Bldg.	295	No	Yes	No	No
NSE-8	Aux. Bldg.	295	No	No	No	Yes
NSE-9	Aux. Bldg.	293	No	No	No	Yes
NSE-10	Aux. Bldg.	291	No	Yes	No	No
NSE-11	Aux. Bldg.	291	No	No	No	Yes
NSF-18	Aux. Bldg.	291	No	No	No	Yes
NSE-23	Aux. Bldg.	297	No	Yes	No	No
NSE-37	Aux. Bldg.	293	No	No	No	Yes

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TABLE 3.17.1

## SAFETY RELATED HYDRAULIC SNUBBERS

Snubber MK No.	Location	Elevation	Snubber In High Radiation Area*	Snubber Especially Difficult To Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
MUH-311	Aux. Bldg. N. End Valve Alley	295	No	Yes	No	No
MUH-312	Aux. Bldg. N. End Valve Alley	295	No	Yes	No	No
DHH-187	Aux. Bldg. DH-P-1A Room	275	No	Yes	No	No
DHH-188	Aux. Bldg. DH-P-1A Room	275	No	Yes	No	No
SPSE-2	Aux. Bldg. DH-P-1A Room	275	No	Yes	No	No
SPSE-3	Aux. Bldg. DH-P-1A Room	275	No	Yes	No	No
SPSE-12	Aux. Bldg. DH-P-1A Room	275	No	Yes	No	No
DHH-197	Aux. Bldg. DH-P-1B Room	275	No	Yes	No	No
DHH-198	Aux. Bldg. DH-P-1B Room	275	No	Yes	No	No
SPSE-7	Aux. Bldg. DH-P-1B Room	275	No	Yes	No	No
SPSE-10	Aux. Bldg. DH-P-1B Room	275	No	Yes	No	No
SPSE-11	Aux. Bldg. DH-P-1B Room	275	No	Yes	No	No
BS-19	Aux. Bldg. BS-P-1A Room	275	No	Yes	No	No
SPSE-5	Aux. Bldg. BS-P-1A Room	275	No	Yes	No	No
SPSE-9	Aux. Bldg. BS-P-1B Room	275	No	Yes	No	No
BS-21	Aux. Bldg. BS-P-1B Room	275	No	Yes	No	No
NSE-2	Aux. Bldg.	310	No	Yes	No	No
NSP 3	Aux. Bldg.	310	No	Yes	No	No

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TABLE 3.17.1

## SAFETY RELATED HYDRAULIC SNUBBERS

Snubber MK No.	Location	Elevation	Snubber In High Radiation Area*	Snubber Especially Difficult To Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
NSE-23	Aux. Bldg. NSP Discharge	322	No	Yes	No	No
NSE-24	Aux. Bldg. NSP Suction	324	No	Yes	No	No
NSE-27	Aux. Bldg.	320	No	Yes	No	No
NSE-29	Aux. Bldg. NS to SF Cooler	320	No	Yes	No	No
RW-72	Aux. Bldg. HX Vault	290	No	Yes	No	No
RW-73	Aux. Bldg. HX Vault	290	No	Yes	No	No
RW-75	Aux. Bldg. HX Vault	290	No	Yes	No	No
RWE-8	Aux. Bldg. HX Vault	290	No	Yes	No	No
RWE-9	Aux. Bldg. HX Vault	290	No	Yes	No	No
RWE-10	Aux. Bldg. HX Vault	290	No	Yes	No	No
RWE-11	Aux. Bldg. HX Vault	290	No	Yes	No	No
RWE-12	Aux. Bldg. HX Vault	290	No	Yes	No	No
RWE-13	Aux. Bldg. HX Vault	290	No	Yes	No	No
RWE-14	Aux. Bldg. HX Vault	290	No	Yes	No	No
IPE-1	Intake Pump House	290	No	No	No	Yes
IPE-2	Intake Pump House	290	No	No	No	Yes
IPE-3	Intake Pump House	290	No	No	No	Yes
IPE-4	Intake Pump House	290	No	No	No	Yes

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#### 4.17 Shock Suppressors (Snubbers)

##### Applicability

Applies to the inspection of hydraulic snubbers listed in Table 3.17.1 to determine their operability.

##### Objective

To provide assurance of the operability of the hydraulic snubbers.

##### Specification

- 4.17.1 All hydraulic snubbers whose seal material has been demonstrated by operating experience, lab testing, or analysis to be compatible with the operating environment shall be visually inspected. This inspection shall include but not necessarily be limited to, inspection of hydraulic fluid reservoir, fluid connections, and linkage connections to the piping and anchor to verify snubber operability in accordance with the following schedule:

Number of Snubbers Found Inoperable During Inspection or During Inspection Interval	Next Required Inspection Interval
0	18 months + 25%
1	12 months + 25%
2	6 months + 25%
3, 4	124 days + 25%
5, 6, 7	62 days + 25%
> 8	31 days + 25%

The required inspection interval shall not be lengthened more than one step at a time.

Snubbers may be categorized in two groups, "accessible" or "inaccessible" based on their accessibility for inspection during reactor operation. Snubbers classified as "accessible" will be inspected according to the above schedule. Snubbers classified as "inaccessible" will be inspected according to the above schedule if plant conditions permit or during the first reactor shutdown thereafter.

These two groups may be inspected independently according to the above schedule.

- 4.17.2 All accessible hydraulic snubbers whose seal materials are other than ethylene propylene or other material that has been demonstrated to be compatible with the operating environment shall be visually inspected for operability at least every 31 days. Snubbers classified as inaccessible whose seal materials

have not been demonstrated to be compatible with the operating environment shall be visually inspected for operability at least every 31 days if plant conditions permit or during the first reactor shutdown thereafter.

- 4.17.3 The initial inspection shall be performed within 6 months from the date of issuance of these specifications. For the purpose of entering the schedule in Specification 4.17.1, it shall be assumed that the unit had been on a 6 month inspection interval.
- 4.17.4 Once each refueling cycle, a representative sample of 10 snubbers or approximately 10% of the snubbers, whichever is less, shall be functionally tested for operability including verification of proper piston movement, lockup and bleed. For each unit and subsequent unit found inoperable, an additional 10% or ten snubbers, whichever is less, shall be so tested. Snubbers of greater than 50,000 lbs. need not be functionally tested.

#### Bases

All safety related hydraulic snubbers are visually inspected for overall integrity and operability. The inspection will include verification of proper orientation, adequate hydraulic fluid level, and proper attachment of snubber to piping and structures.

The inspection frequency is based upon maintaining a constant level of snubber protection. Thus the required inspection interval varies inversely with the observed snubber failures. The number of inoperable snubbers found during a required inspection determines the time interval for the next required inspection. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

Experience at operating facilities has shown that the required surveillance program should assure an acceptable level of snubber performance provided that the seal materials are compatible with the operating environment.

Snubbers containing seal material which has not been demonstrated by operating experience, lab tests, or analysis to be compatible with the operating environment should be inspected more frequently (every month) until material compatibility is confirmed or an appropriate changeout is completed.

Examination of defective snubbers at reactor facilities and material tests performed at several laboratories (Reference 1) has shown that millable gum polyurethane deteriorates rapidly under the temperature and moisture conditions present in many snubber locations. Although molded polyurethane exhibits greater resistance to these conditions, it also may be unsuitable for application in the higher temperature

environments. Data are not currently available to precisely define an upper temperature limit for the molded polyurethane. Lab tests and in-plant experience indicate that seal materials are available, primarily ethylene propylene compounds, which should give satisfactory performance under the most severe conditions expected in reactor installation.

To further increase the assurance of snubber reliability, functional tests should be performed once each refueling cycle. These tests will include stroking of the snubbers to verify proper piston movement, lock-up and bleed. Ten percent or ten snubbers, whichever is less, represents an adequate sample for such tests. Observed failures on these samples should require testing of additional units. Snubbers designated in Table 3.17.1 as being in high radiation areas or those especially difficult to remove need not be selected for functional tests provided operability was previously verified.

Snubbers of rated capacity greater than 50,000 lbs. are exempt from the functional testing requirements because of the impracticality of testing such large units.

#### Reference

- (1) Report H. R. Erickson, Bergen Paterson to K. R. Goller  
NRC, October 7, 1974  
Subject: Hydraulic Shock Sway Arrestors

TABLE 4.1-2

## MINIMUM EQUIPMENT TEST FREQUENCY

<u>Item</u>	<u>Times</u>	<u>Frequency</u>
1. Control Rods	Rod drop times of all full length rods	Each refueling shutdown
2. Control Rod Movement	Movement of each rod	Every two weeks, when reactor is critical
3. Pressurizer Safety Valves	Setpoint	50% each refueling period
4. Main Steam Safety Valves	Setpoint	25% each refueling period
5. Refueling System Interlocks	Functional	Start of each refueling period
6. Main Steam Isolation Valves	(See Section 4.8)	
7. Reactor Coolant System Leakage	Evaluate	Daily, when reactor coolant system temperature is greater than 525 <sup>o</sup> F
8. Charcoal and high efficiency filters for Control Room, and RB Purge Filters	DOP test on HEPA filters, freon test on charcoal filter units	Each refueling period and at any time work on filters could alter their integrity
9. Spent Fuel Cooling System	Functional	Each refueling period prior to fuel handling
10. Intake Pump House Floor (Elevation 262 Ft. 6 in.)	(a) Silt Accumulation- Visual inspection of Intake Pump House Floor (b) Silt Accumulation Measurement of Pump House Flow	Each refueling period Quarterly

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF

DOCKET NO. 50-289  
LICENSE NO. DPR-50

METROPOLITAN EDISON COMPANY

This is to certify that a copy of Technical Specification Change Request No. 19, Amendment No. 1 to Appendix A of the Operating License for Three Mile Island Nuclear Station Unit 1, has, on the date given below, been filed with the U. S. Nuclear Regulatory Commission and been served on the chief executives of Londonderry Township, Dauphin County, Pennsylvania and Dauphin County, Pennsylvania by deposit in the United States mail, addressed as follows:

Mr. Weldon B. Arehart,  
Board of Supervisors of  
Londonderry Township  
R. D. #1, Geyers Church Road  
Middletown, Pennsylvania 17057

Mr. Harry B. Reese, Jr.  
Board of County Commissioners  
of Dauphin County  
Dauphin County Court House  
Harrisburg, Pennsylvania 17120

METROPOLITAN EDISON COMPANY

By *R. Arnold*  
Vice President-Generation

Dated: September 15, 1976



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