

METROPOLITAN EDISON COMPANY
JERSEY CENTRAL POWER & LIGHT COMPANY

AND

PENNSYLVANIA ELECTRIC COMPANY

THREE MILE ISLAND NUCLEAR STATION UNIT 1

Operating License No. DPR-50

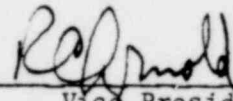
Docket No. 50-289

Technical Specification Change Request No. 11

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.

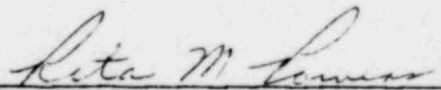
METROPOLITAN EDISON COMPANY

By



Vice President

Sworn and subscribed to me this 14th day of May, 1975


Notary Public

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

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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

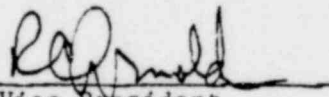
This is to certify that a copy of Technical Specification Change Request No. 11 to Appendix A of the Operating License for Three Mile Island Nuclear Station Unit 1, dated May 14, 1975, and filed with the U.S. Nuclear Regulatory Commission on May 14, 1975, has this 14th day of May been served on the chief 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, Chairman
Board of Supervisors of
Londonderry Township
R.D. #1, Geyers Church Road
Middletown, Pennsylvania 17057

Mr. Charles P. Hoy, Chairman
Board of County Commissioners
of Dauphin County
Dauphin County Court House
P.O. Box 1295
Harrisburg, Pennsylvania 17120

METROPOLITAN EDISON COMPANY

By


Vice President

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Metropolitan Edison Company
Three Mile Island Nuclear Station Unit 1
Operating License No. DPR-50
Docket No. 50-289

Technical Specification Change Request 11

Licensee requests revision to Appendix A of the Technical Specifications for its Three Mile Island Nuclear Station Unit 1 (TMI-1). As a part of this request, revised pages for Appendix A, marked "Change Request 11", are attached.

Change Request 11A

Alter the requirements of the Tendon Surveillance program related sections of the TMI-1 Technical Specifications, Appendix A, by removing the current section 4.4.2.1 (pages 4-35 through 4-36b) and replacing them with the revised section 4.4.2.1 (pages 4-35 through 4-36b).

Reason for Change 11A

The change is necessary to ensure that the Tendon Surveillance program can be conducted. Further, the change, if implemented, would serve to make the TMI-1 Technical Specifications consistent with Regulatory Guide 1.35 (Rev. 1) and thereby more accurately describe the required tendon surveillance program.

Safety Analysis Justifying Change 11A

Although the change involves a change to a safety-related test described in the TMI-1 Technical Specifications, it does not involve an unreviewed safety question in that if implemented:

- a. it will not increase the probability of occurrence or consequences of an accident as analyzed in the TMI-1 Final Safety Analysis report (FSAR),
- b. it will not increase the probability of an accident not described in the TMI FSAR, and
- c. it will not reduce the margin of safety defined as the basis for any Technical Specification.

Further, it should be noted that the proposed change, if implemented, would allow for a more accurate assessment to be made of the time behavior of tendon relaxation and concrete shrinkage.

Change Request 11B

Page 4-36d. In section 4.4.2.2.B.2, the third line, change "+ 0.004 in/in" to "+ 0.0004 in/in". In the fifth line of 4.4.2.2.B.2, and in the third line of 4.4.2.2.C.2, change "Engineer" to "Station/Unit Superintendent."

Reason for Change 11B

The proposed changes correct a typographical error and remove any ambiguity as to whom deficiencies should be reported.

Safety Analysis Justifying Change 11B

There are no unreviewed safety questions in that the change, if implemented, would simply serve to make typographical and editorial corrections.

Change Request 11C

Page 6-13. In the first line of 6.7.3.C.4, change "6 months" to "three months".

Reason for Change Request 11C

The change is proposed to make Technical Specifications 6.7.3 and 4.4.23 (renumbered as 4.4.2.1.4) consistent and in accordance with the reporting requirements of Regulatory Guide 1.35 (Revision 1).

Safety Analysis Justifying Change 11C

There are no unreviewed safety questions in that the change simply provides for consistency and requires reporting in accordance with the more stringent reporting requirement.

4.4.2 Structural Integrity

Applicability

Applies to the structural integrity of the reactor building.

Objective

To define the inservice tendon surveillance and the ring girder inspection programs for the reactor building prestressing system.

Specification

4.4.2.1 Inservice Tendon Surveillance Program

The surveillance program for structural integrity and corrosion protection conforms to the recommendations of the U.S. Atomic Energy Commission Regulatory Guide 1.35, Revision 1, "Inservice Surveillance of UngROUTED Tendons in Prestressed Concrete Containment Structures." The detailed surveillance program for the prestressing system tendons shall be based on periodic inspection and mechanical tests to be performed on selected tendons, as specified hereafter.

4.4.2.1.1 Frequency

The frequency of the inspection and testing shall be as follows:

1st Inspection Period - one year after "The Structural Integrity Test "

2nd Inspection Period - three years after "The Structural Integrity Test "

3rd Inspection Period - five years after "The Structural Integrity Test "

4th-10th Inspection Periods - Every five years thereafter throughout

the life of the unit.

4.4.2.1.2 Selected Tendons

Representative samples from homogeneous subgroups of tendons have been selected for periodic inspection. Table 4.4-1 shows the selected tendons and their corresponding inspection periods.

4.4.2.1.3 Tests

The tests to be performed at each periodic inspection on the selected tendons shall consist of the following:

- a. Tendon Prestress Force Confirmation Test
 1. Lift-off test shall be performed on all selected tendons, with the maximum force greater than the maximum inservice prestress force. The lift-off force and the corresponding elongation shall be recorded. After the lift-off the tendon shall be subjected to an unloading cycle going down to complete detensioning, and inspected for broken wires. After inspection, the tendon shall be retensioned to the lift-off force level observed during detensioning. Any changes in the shim thickness shall be recorded.
 2. The acceptance criteria for the allowable jacking load and allowable tolerances during the lift-off test shall be established prior to performing the test. The measured prestress force shall be checked against the predicted lower bound and upper bound at the time of test. The criteria taken into account shall include the following items:
 - a. The time that has elapsed since the tendon was stressed
 - b. The location of the tendon in the structure
 - c. The tendon configuration straight or curved
 - d. The approximate age of concrete at the time the tendon was stressed
 - e. The initial lift-off force of the tendon

- f. The lift-off force from the previous lift-off test (if used for more than one lift-off test)
 - g. Stress relaxation in the wire
 - h. Temperature variation in the wire
 - i. Shrinkage, creep, and temperature stresses in the concrete
 - j. Tolerances for possible errors in jack pressure, gage readings, and elongation measurements.
3. The allowable limit shall be one defective tendon out of the total sample population. If one sample tendon is defective, an adjacent tendon on each side of the defective tendon shall also be checked. If both of these tendons meet the acceptance criteria, then the single deficiency is considered unique and acceptable.
- b. Tendon Physical Condition Test
1. Table 4.4-2 shows the tendons and their corresponding inspection periods, selected from Table 4.4-1, for the Tendon Physical Condition Test.
 2. After detensioning, one random wire shall be removed from selected tendons shown in Table 4.4-2. The wires shall be visually inspected for corrosion, pitting, and other signs of deleterious changes.
 3. After visual inspection, three samples shall be taken from the pulled wire (one at each end and one from the middle) and subjected to tensile test. The acceptance criteria shall stipulate no failure below the guaranteed ultimate strength of all samples.
 4. After inspection, the tendons shall be retensioned to the lift-off stress level observed before detensioning. Any changes in the shim thickness shall be recorded.

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c. Tendon Anchorage Assembly Inspection

The tendon anchorage assemblies and the associated hardware (bearing plates, stressing washers, stressing shims, button heads, etc.) of all selected tendons shall be visually inspected for signs of corrosion, off-size or cracked button heads, cracks, missing wires, and broken wires. The concrete around the tendon anchorage area shall be inspected for crack width and the general cracking pattern. The acceptance criteria shall be that all crack widths greater than 0.010 inch shall be recorded and reported for evaluation and resolution, and any crack width greater than 0.050 inch shall be cause for investigation to determine the amount of structural impairment upon the reactor building and its continued structural integrity.

d. Inspection of Corrosion Protection System.

The inspection of Corrosion Protection System shall be based on visual observations and tests. The procedure for removing the grease in order to make visual inspection shall insure that no damage to the steel (by scratching) and no increase of corrosion effects shall occur during grease removal even under most unfavorable conditions.

Thermal degradation of the filler grease is not anticipated. The system is designed to remain stable in the range of temperature likely to be encountered during the life of the unit.

Representative grease sample shall be taken from each end anchorage of the selected tendons specified in Table 4.4-2 and tested for chloride, sulphide, nitrate, and moisture content. The acceptance criteria shall limit the amount of any one of the contaminants to 10 ppm and the ratio of water/dry weight shall not exceed 5%.

To uncover possible voids in the trumpet, the grease pump hose shall be inserted into the trumpet through a hole in the split bearing washer and heated grease

pumped until it starts flowing from the hole on the opposite side of the washer.
A similar procedure shall be used in refilling the tendon cap.

4.4.2.1.4 Reporting Procedure

The failure of the tendon or parts of tendon and its anchorage to meet the criteria of this Inservice Tendon Surveillance Program shall be treated as an indication of abnormal degradation of the containment structure, and it shall be reported to the U.S. Nuclear Regulatory Commission in accordance with Regulatory Guide 1.35. The initial report shall be made within 10 days after the completion of the tests and the detailed report may follow within 90 days after the completion of the tests.

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TABLE 4.4-1

SELECTED TENDONS AND CORRESPONDING INSPECTION PERIODS

1. Dome Tendons

<u>Inspection Period</u>	<u>Tendons</u>
1	D-101, D-116, D-201, D-220, D-301, D-316
2	D-102, D-117, D-202, D-219, D-302, D-317
3	D-103, D-118, D-203, D-218, D-303, D-318
4, 7, 10	D-116, D-220, D-316
5, 8	D-102, D-202, D-302
6, 9	D-118, D-218, D-318

2. Vertical Wall Tendons

<u>Inspection Period</u>	<u>Tendons</u>
1	V-16, V-27, V-61, V-86, V-158
2	V-24, V-48, V-72, V-97, V-119
3	V-18, V-31, V-55, V-105, V-138
4, 7, 10	V-16, V-86, V-158
5, 8	V-24, V-48, V-119
6, 9	V-18, V-105, V-138

3. Hoop Tendons

<u>Inspection Period</u>	<u>Tendons</u>
1	H-13-028, H-13-034, H-13-046, H-24-009, H-24-013, H-35-010, H-35-028, H-51-012, H-51-033, H-62-010
2	H-13-029, H-24-010, H-24-019, H-35-011, H-35-029, H-46-020, H-46-024, H-51-010, H-51-034, H-62-011
3	H-24-011, H-24-028, H-35-009, H-46-018, H-46-022, H-24-020, H-51-011, H-51-035, H-62-012, H-62-028
4, 7, 10	H-13-046, H-24-018, H-51-033
5, 8	H-46-024, H-51-034, H-62-011
6, 9	H-24-020, H-51-011, H-51-035

TABLE 4.4-2

TENDONS SELECTED FOR TENDON PHYSICAL CONDITION TEST

TENDON LOCATION

<u>Inspection Period</u>	<u>Dome</u>	<u>Wall</u>	<u>Hoop</u>
1	D-301	V-27	H-35-010
2	D-117	V-119	H-13-029
3	D-103	V-18	H-46-018
4	D-220	V-86	H-51-033
5	D-302	V-48	H-46-024
6	D-218	V-105	H-51-011
7	D-116	V-158	H-13-046
8	D-202	V-24	H-62-011
9	D-318	V-138	H-24-020
10	D-316	V-16	H-24-018

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<u>No. & Rebar Orientation</u>	<u>Azimuth</u>	<u>Elevation</u>
58 Hoop	108°	446'-0"
58 Vertical	108°	446'-0"
59 Hoop	245°	446'-0"
59 Vertical	245°	446'-0"
60 Hoop	352°	446'-0"
60 Vertical	352°	446'-0"
129 Hoop	80°	446'-0"
129 Vertical	80°	446'-0"
130 Hoop	320°	446'-0"
130 Vertical	320°	446'-0"
61 Hoop	108°	452'-0"
61 Vertical	108°	452'-0"
62 Hoop	245°	452'-0"
62 Vertical	245°	452'-0"
63 Hoop	352°	452'-0"
63 Vertical	352°	452'-0"

2. The strain gage readings from each inspection shall be checked against the previous inspection readings and the duration recorded. Any deviation of strain readings, for the same strain gages, greater than ± 0.0004 in/in or $\pm \sim 11,500$ psi. shall be reported to the Station/Unit Superintendent for evaluation and resolution.

C. Visual Inspection

1. Crack pattern charts shall be made during each ring girder inspection period. The areas of the concrete which shall be inspected and charts recorded are as listed below and as shown in Figure 4.4-1. The data shall be recorded on the appropriate Figure; refer to Figures 4.4-2, 4.4-3, 4.4-4 and 4.4-5.

Whitewash Areas

<u>No.</u>	<u>Area Centerline Elevation</u>	<u>Area Centerline Azimuth</u>
131	445'-0"	20°
120	445'-0"	175°
132	445'-0"	320°
133	445'-0"	350°

The Whitewash Areas are 6 ft - 0 in. wide by 12 ft - 0 in. high.

2. The charts from each inspection shall be checked against the previous inspection charts. Any crack widths greater than 0.010 inch shall be reported to the Station/Unit Superintendent for evaluation and resolution.

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4. a progress and status report on any items identified as requiring additional information during the operating license review or during the startup of the plant, including items discussed in the AEC's safety evaluation, items on which additional information was required as conditions of the license and items identified in the licensee's startup report.

c. Special Test Reports

Special test reports shall be prepared and submitted to the Director, Directorate of Licensing, USAEC, as follows:

<u>Tests</u>	<u>Submittal Dates</u>
1. Containment Structural Integrity Test	Within 6 months after completion of test
2. Containment Integrated Leak Rate Test	Within 6 months after completion of test
3. Inservice Inspection Program	Within 6 months after five years of operation
4. Tendon Surveillance Program	Within 3 months after performance of surveillance program.

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