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. 77A 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:

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METROPOLITAN EDISON COMPANY

By _____
Vice President

Dated: March 31, 1980

8004070325

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

Technical Specification Change Request No. 77A

The licensee requests that the attached changed pages replace pages ii, v, vii, 4-35 through 4-36f, figures 4.4-1 through 4.4-5, tables 4.4-1 through 4.4-3, and page 6-18. This Amendment Change Request supercedes T.S.C.R. No. 77.

Reason for Change Request

This Amended Change Request is being submitted to revise the tendon surveillance specification to reflect Regulatory Guide 1.35 Proposed Rev. 3, and to delete the Ring Girder Surveillance Program.

Safety Evaluation Justifying the Change

This Change Request has been prepared to reflect the surveillance requirements of Proposed Revision 3 of NRC Regulatory Guide 1.34, and the ACI-ASME Article CC-9000 Section CC-9222.2. This change does not constitute and unreviewed safety question in that it only modifies the tendon surveillance program.

Additionally, as stated in our submittal of Technical Specification Change Request, the Commission stated that, as a result of their review of the previous Reactor Containment Building Ring Girder Surveillance Tests, the safety margins in the structure at the present time, are adequate.

The Commission has concluded that there is reasonable assurance that the containment structure will continue to perform its intended safety function.

In their letter of December 29, 1977, the Commission requested to be informed of the repairs committed to in our letter of June 3, 1977. These repairs have been completed in strict accordance with the repair procedure for the cleaning, packing and curing of exposed concrete voids adjacent to dome bearing plates.

License Amendment Fee (10 CFR 170.22)

This is an amendment to a previously submitted change request, therefore, no fee is required.

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3.19 CONTAINMENT SYSTEMS

3.19.1 CONTAINMENT STRUCTURAL INTEGRITY

APPLICABILITY: Applies to the structural integrity of the reactor building.

OBJECTIVE: To define the inservice tendon surveillance program for the reactor building prestressing system.

Specification

3.19.1.1 With the structural integrity of the containment not conforming to the requirements of 4.4.2.1.1.b, perform an engineering evaluation of the structural integrity of the containment to determine if COLD SHUTDOWN is required. The margins available in the containment design may be considered during the investigation. If the acceptability of the containment tendons cannot be established within 48 hours, restore the structural integrity to within the limits within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

3.19.1.2 With the structural integrity of the containment otherwise not conforming to the requirements of Specification 4.4.2.1, submit a report to the Commission pursuant to NRC Regulatory Guide 1.16, Rev. 3. This report shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedures, the tolerances on cracking, and the corrective actions taken.

4.4.2 Structural Integrity

Specification

4.4.2.1 Inservice Tendon Surveillance Requirements

The surveillance program for structural integrity and corrosion protection conforms to the recommendations of the U.S. Atomic Energy Commission Regulatory Guide 1.35, proposed Revision 3, "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 Containment Tendons

Tendon surveillance was completed for one year and three years following the initial structural integrity using a Tech. Spec. based on Regulatory Guide 1.35 Rev. 1. The containment tendons structural integrity shall be demonstrated at the end of five years following the initial containment structural integrity test and at five year intervals thereafter by:

a. Determining that for a representative sample* of at least 23 tendons (6 dome, 7 vertical, and 10 hoop) each tendon has a lift off force equalling, or exceeding, its lower limit predicted for the time of the test as defined in NRC Regulatory Guide 1.35, "Inservice Inspection for Ungrouted Tendons in Prestressed Concrete Containments", Proposed Revision 3, April, 1979.

   If the lift off force of a selected tendon in a group lies between the prescribed lower limit and 90% of that limit, one tendon on each side of this tendon shall be checked for their lift off forces. If the lift off forces of the adjacent tendons are equal to, or greater than, their prescribed lower limits at the time of the test, the single deficiency shall be considered unique and acceptable. If the lift off force of either of the adjacent tendons lies below the prescribed lower limit for that tendon, the condition is reportable per T.S. 6.9.2.A3.

   If the lift off force of any one tendon lies below 90% of its prescribed lower limit, the tendon shall be considered a defective tendon. It shall be completely detensioned and a determination made as to the cause of the occurrence. The condition is reportable per T.S. 6.9.2.A3.

   If the inspections performed at one, three, and five years indicate no abnormal degradation of the post-tensioning system, the number of tendons checked for lift off force during subsequent tests may be reduced to a representative sample of at least 11 tendons (3 dome, 3 vertical, and 5 hoop).

* For each inspection, the tendons shall be selected on a random but representative basis so that the sample group will change somewhat for each inspection; however, to develop a history of tendon performance and to correlate the observed data, one tendon from each group (dome, vertical, and hoop) may be kept unchanged after the initial selection.

b. Determining that the average of the normalized* tendon lift off forces for each tendon group (vertical, dome, and hoop) is equal to, or greater than 1010 Kips for vertical tendons, 1040 Kips for dome tendons, and 1121 Kips for hoop tendons. If this requirement is not met, the condition is reportable per T.S. 6.9.2.A3 and an additional sample of 4%, with a minimum of four and a maximum of ten, of the same group of tendons shall be inspected. If the total population of each group of the sampled tendons meets the criteria above, the structural integrity of the containment shall be considered acceptable.

c. Detensioning one tendon in each group (dome, vertical and hoop) from the representative sample. One wire shall be removed from each detensioned tendon and examined to determine:

   1. That over the entire length of the wire, the tendon wires have not undergone corrosion, cracks, or damage beyond that which was originally recorded and the extent of corrosion is within specified acceptable limits. Failure to satisfy these limits is a reportable condition per T.S. 6.9.2.A3.

   2. A minimum tensile strength value of 240,000 psi (guaranteed ultimate strength of the tendon material) for at least three wire samples (one from each end and one at mid-length) cut from each removed wire. Failure of any one of the wire samples to meet the minimum tensile strength test is reportable per T.S. 6.9.2.A3.

   Upon retensioning, the elongation shall be within plus or minus 5% of that recorded at original stressing of the tendon. If the 5% limit is not met, an investigation shall be made to determine if wire failure is the cause.

d. Determining for each tendon in the above representative sample, that the sheathing filler grease is within acceptable limits as to:

   1. presence of voids.
   2. presence of free water.
   3. chemical and physical properties.

   Failure of the grease to meet acceptable limits is reportable per T.S. 6.9.2.A9.

* In order for the tendon lift off forces to be indicative of the average level of prestress, each lift off force is adjusted for differences which exist among the tendons due to initial lock off force and elastic shortening loss.

4.4.2.1.2 End Anchorages and Adjacent Concrete Surfaces

The structural integrity of the end anchorages of all tendons inspected pursuant to Specification 4.4.2.1.1 and the adjacent concrete surfaces shall be determined through visual inspection. The condition of the end anchorage and adjacent concrete shall be recorded. The acceptance criteria shall be that all crack widths greater than 0.010 inch shall be recorded and evaluated. 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. Changes in the condition of the end anchorage or the concrete from that previously recorded shall be noted on the record. Any condition or change in condition which indicates abnormal material or structural behavior is reportable.

4.4.2.1.3 Containment Surfaces

The structural integrity of the exposed accessible interior and exterior surfaces of the containment, including the liner plate, shall be determined during the shutdown for each Type A containment leakage rate test (specification 4.4.1.1) by a visual inspection of these surfaces. This inspection shall be performed prior to the Type A containment leakage rate test. Any abnormal degradation must be documented and if it affects structural integrity it is reportable per T.S. 6.9.2.A9.

6.9 REPORTING REQUIREMENTS (cont'd)

6.9.3 Unique Reporting Requirements

A. Special reports shall be submitted to the Director of the Office of Inspection and Enforcement Regional Office within the time period specified for each report. These reports shall be submitted covering the activities identified below:

Tests	Submittal Dates
(1) Containment Structural Integrity Test	
(a) Tendon Surveillance Program	Within 3 months after performance of surveillance program.
(2) Steam Generator Tube Inspection Program (See Section 4.19.5)	Within 3 months after completion of inspection.
(3) Containment Integrated Leak Rate Test	Within 6 months after completion of test.
(4) Inservice Inspection Program	Within 6 months after five years of operation.

FOOTNOTES

1. A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station.

2. This tabulation supplements the requirements of §20.407 of 10 CFR Part 20.

3. These reporting requirements apply only to Appendix A technical specifications.