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## REGULATORY DOCKET FILE CORY 5 1980

MEMORANDIM FOR: R. W. Reid, Chief, Operating Reactors Branch #4

FROMI V. S. Noonan, Chief, Engineering Branch Division of Operating Reactors

SUBJECT: THREE-MILE ISLAND UNIT #1 - AMENDMENT OF THE TECHNICAL SPECIFICATIONS TO FACILITY OPERATING LICENSE NO. DPR-50 (TACS #10793)

Plant Name: Three Mile Island Unit No. 1 Licensing Stage: Operating Plant Docket Number: 50-289 Documents Reviewed: a. Metropolitan Edison Co .-- Letter from Gilbert/Common-

wealth to METEO dated December 7, 1979.

b. Three Mile fisland Nuclear Station Unit 1 -- Reactor Containment Suilding Structural Integrity Test Report prepared by Gilbert Associated, Inc., June 14, 1974.

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Branch and Project Manager Requesting Assistance: DR8-4 - D. C. Dilanni, R. W. Re Operating Reactor Branch Involved: Engineering Branch Description of Request: TACS #10793 Review Status: Complete

The Engineering Branch, Division of Appreating Reactors, has reviewed the information submitted by the Metropolitan Edison Company in the Documents listed above proposing to eliminate the temporary ring girder surveillance program and to allow future inspections of the tendon anchorage assemblys to be performed in conjunction with the normal containment structural surveillance.

## Background

In our previous memorandum dated November 28, 1978 regarding the temporary ring girder surveillance program and the Tendon surveillance, we made the following recommendations:

1. Upon the completion of the repairing work of the ring girder, the temporary surveillance tests of the ring girder can be eliminated.

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 Visual inspections of the ring girder be performed by the licensee and its results reported to NRC in accordance with the recommendations of the Regulatory Guide 1.35.

The licensee proposes as stated in the first document that the overall visual inspection for cracking and anchorage conditions during the ILRT be eliminated citing that this requirement has been removed from Regulatory Guide 1.35 Revision 3. Since the Revision 3 of the Regulatory Guide 1.35 modifys the same recommended procedures from that of the Revision 2, concern was raised with regard to the technical basis of modifying the regulatory position C.3: specifically, the technical basis of removing the sentence "The technical basis of Concern Shoring be scheduled during integrated leakage testing while the containment is at its maximum test pressure."

## Discussion

Our review of the above documents, Regulatory Guide 1.35 both Revision 2 and 3, and Appendix J to 10 CFR Part 50, reveals the following:

- 1. Appendix J "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactor" sets forth the requirements for the containment leakage rate testing. The required "Type A tests" are to measure the primary reactor containment overall integrated leakage rate (1) after the containment has been completed and is ready for operation (ISIT), and (2) at periodic intervals thereafter. The pressure Reached For IsTTShall wells belows than Streement of peak containment internal pressure related to the design basis accident the PRCSSuperequired for periodic tests shall not be less than 50 percent of that pressure used in ISIT. A general inspection of the accessible interior and exterior surfaces of the containment structures and components shall be performed.
- 2. Although the details of the containment inspection have not been specified in the Appendix J, reasonable engineering judgment should enable the engineer to pick up what and where to monitor the structural behavior during the tests. Sound judgment has been demonstrated by METED during the TMI-1's ISIT, performed in 1974. Instrumental measurements and visual inspections were utilized to measure the displacements, strains, concaste conditions and crack patterns at preselected locations - at the outside surface of the containment and the tendon anchorage zones.
- 3. Regulatory Guide 1.35 Revision 3 adds the recommendation that the exterior surface of the containment should be visually examined for cracking, spalling, and grease leakage while deletes the sentence "The visual examination of the concrete should be scheduled during integrated leakage testing while the containment is at its maximum test pressure." Apparently, this has been misinterpreted as that the overall inspection for cracking and anchorage conditions

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during the ILRT would be eliminated as a requirement (Document a.). It should be noted that ILRT is required by the Appendix J. The visual inspection is only one of measures to detect the early signs of deterioration of the containment and the associatedccost is rather minimal.

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- 4. Reasons have been cited: (a) ISIT was tested at higher pressure than the peak accidental pressure without any sign of apparent structural deterioration, (b) past ILR tests indicate no sign of deterioration; thus, the visual inspection of the concrete during ILRT could be eliminated. Based on these rationing, we may not need any monitoring during normal operations because the interior pressure is much lower than that during the ILRT.
- The cost of performing a visual examination of the concrete during normal operation or during ILRT should be the same.
- 6. The "maximum test pressure" may have been construed as the calculated peak containment internal pressure related to the design basis accident, thus the tendon surveillance must be performed when the plant is in a shut-down condition.

## Conclusion

Since the periodic integrity leakage rate tests are required for all water cooled reactors in accordance with Appendix J and a general inspection of the containment shall be performed to evaluate the structural conditions which may contribute to the failure in meeting the acceptable leakage criteria, the visual concrete inspection, presumably, will be performed during any ILRT. The visual conditions of the tendon anchorage zones may be considered as a by-product obtainable from the ILRT and can be used to evaluate the tendon conditions. The visual inspection as recommended in Regulatory Guide 1.35 Revision 3 should not be construed as the basis for eliminating the inspection during ILRT. It probably should be interpreted that the schedule of the tendon surveillance does not have to coincide with that of the ILRT.

> V. S. Noonan, Chief Engineering Branch Division of Operating Reactors

cc: D. Eisenhut, DOR L. C. Shao, DOR R. H. Vollmer, DOR D. C. DiLanni, DOR 3. D. Liaw, DOR K. Herring, DOR G. Arndt, 90 H. Ashar, SD J. Chen, SD

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