U. S. ATOMIC ENERGY COMMISSION
REGION I
DIVISION OF COMPLIANCE

Report of Inspection

CO Report No. 289/68-1

Licensee: METROPOLITAN EDISON COMPANY
(Three Mile Island Nuclear Station)
Provisional Construction Permit
No. CPPR-40

Date of Inspection: August 22, 1968

Date of Previous Inspection: None

Inspected By: F. S. Cantrell, Reactor Inspector — 8/30/68 Date

Reviewed By: N. C. Moseley, Senior Reactor Inspector — 9/4/68 Date

SUMMARY

A meeting was held at the offices of the Metropolitan Edison Company in Reading, Pennsylvania, to discuss the Compliance inspection program with management. A tour of the Three Mile Island construction site was made after the meeting.

DETAILS

I. Management Meeting

Persons attending included:

Mr. Ralph Niedig, Vice President, Engineering, MET-ED
Mr. John Miller, Chief Engineer, MET-ED
Mr. George Bierman, Project Manager, MET-ED
Mr. George Heward, Manager, Nuclear Safety, GPU

Messrs. N. C. Moseley and F. S. Cantrell visited the Metropolitan Edison Company offices in Reading, Pennsylvania, during the morning of August 22, 1968. The purpose of this visit was to discuss the Compliance inspection program with company management.

The topics discussed included the following:

A. The Basic Goal of the Inspection Program

1. The AEC's regulatory organization
2. The inspector's responsibility
3. The regional office responsibility
4. The relationship between the Division of Compliance and the Division of Reactor Licensing

B. The Background and Experience of the Inspectors and Supervisors

C. Scope of the Inspection Program

1. Construction of the plant
2. The plant organization and training
3. The preoperational testing and procedure development
4. The adequacy of preparation for compliance with the license and federal regulations

D. Quality Assurance

1. The responsibility of the licensee
2. The sample approach used by Compliance. Examples were given in the fabrication, shipping, storage and installation of equipment.

E. Type, Frequency and Length of Inspections

F. Methods of Inspection, including the Use of Backup Inspectors and Consultants

G. Method of Informing Management of Inspection Results

H. Content, Review and Distribution of Inspection Reports

I. Enforcement Methods Available

J. Availability of the Inspector and the Regional Office for Assistance in Regulatory Matters

K. The Desire for a Sound Professional Relationship and Good Communication

Emphasis was placed on the fact that the Compliance inspection program does not relieve the licensee of any responsibility for quality control or operational safety.

Mr. Bierman, the Project Manager, explained Metropolitan Edison's three level approach to quality construction, namely, the man doing the job, the contractors' inspectors, and the independent groups hired by MET-ED as a third level of inspection and quality control.

Mr. Niedig, Vice President, Engineering, stated that MET-ED had the same desire for quality construction as Compliance and that he would like to meet with us periodically to discuss problems that arise. He cited the removal of about 475 yards of concrete from the base for the containment vessel because of low compressive strength as an example of their determination to have a quality plant (Section II). Mr. Niedig was complimented for MET-ED's early start in developing a preoperational test program. (A group from MET-ED visited the Region I Office in June to discuss preoperational testing.)

II. Site Tour

Persons Contacted:

Vernon Stuebner, Resident Engineer, MET-ED
George Dorn, General Supt., U.E.&C.
Jim McKee, Supt., U.E.&C.
Harry Alexander, Field Quality Control Engineer, U.E.&C.
Robert Eshbach, Gilbert Associates, Quality Assurance, Concrete
Norman Cole, Project Engineer, M.P.R.
Julian Nichols, Project Engineer, M.P.R.

During the afternoon of August 22, 1968, Messrs. Moseley and Cantrell toured the Three Mile Island construction site with Messrs. Stuebner, Dorn and Miller.

Two lifts, approximately 475 yards, of concrete were removed from the containment vessel base due to low compressive strength of the first lift. The 28 day test cylinders for the first lift averaged breaking at 4589 psi, and for the second lift, 5533 psi. Slump test results for the first lift ranged from 2" to 5", but the range on the second lift was only 3 1/2" to 4". The design requires concrete with 5000 psi minimum compressive strength. Ice was used to provide part of the water for the second lift concrete in order to reduce batch temperatures (66°F vs 86°F), otherwise, the design mix was identical.

The records indicated continuing difficulty in obtaining uniform concrete as shown by erratic slump test results. All parties were aware of the problem and were attempting to find the solution.

MET-ED has an automatic concrete batch plant on the site. The inspectors observed concrete being prepared for the island bridge.