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

CO Inspection Report No. 50-289/72-02

Subject: Metropolitan Edison Company
Three Mile Island Unit No. 1 License No. CPPR-40

Location: Three Mile Island (near Middletown) Priority
Pennsylvania Category B

Type of Licensee: PWR, 2535 (B & W)

Type of Inspection: Special (Unannounced)

Dates of Inspection: January 27, 1972

Dates of Previous Inspection: December 16-17, 1971

Principal Inspector: A. A. Varela, Reactor Inspector — Date: 2-24-72

Accompanying Inspectors: None — Date

Date

Date

Other Accompanying Personnel: None — Date

Reviewed By: E. M. Howard, Senior Reactor Inspector — Date: 2-25-72

Proprietary Information: None

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SECTION I

Enforcement Action

None

Licensee Action on Previously Identified Enforcement Matters

A. Nonconformance in moist cure of freshly placed concrete on containment building dome. Comparative strength tests by Swiss Hammer indicate no loss in strength resulted in the area where concrete curing was in nonconformance with the specifications. Proced ·l changes necessary to assure that this deficiency would not recur were reviewed. This item will be reinspected at our next inspection. (Paragraph 4, Section II)

B. Repair is continuing on the ring girder concrete voids in accordance with proposal submitted to DRL. This item is not considered resolved. (Paragraph 3, Section II)

Unresolved Items

None

Design Changes

Not applicable.

Unusual Occurrences

Not applicable.

Persons Contacted

Metropolitan Edison Company/GPU

Mr. B. Avers, QA Manager
Mr. M. Stromberg, Site QA Supervisor*
Mr. J. Wright, Resident Civil Engineer*
Mr. R. Neidig, Assistant Resident Civil Engineer*

United Engineers and Constructors

Mr. B. Moyer, QC Supervisor*
Mr. B. Haugen, Ring Girder Repair Supervisor
Mr. D. Lambert, QC Engineer

*Attended Exit Meeting.

Management Interview

The licensee stated that the earliest date for first concrete was expected in mid February and, CO would be notified three days in advance. The location of the first concrete replacement was identified as Segment II, azimuth 33° to 63°, lower part only, where minor damage resulted from concrete excavation.

SECTION II

Additional Subjects Inspected, Not Identified in Section I, Where No Deficiencies or Unresolved Items Were Found

1. Butt Welding Procedure and Welder Qualification

United Engineers & Constructors (UE&C) Procedure No. 25 revised January 18, 1972, for Field Welding of Reinforcing Bars was audited, it was qualified in accordance to requirements specified in AWS-D12.1 and found without deficiency.

UE&C records were audited and eight welders were noted to have qualified to the parameters of the procedure.

2. Defects in Reinforcing Steel - Study of Repair by Filler Metal Weld

The inspector reviewed in detail a report of tests conducted in the PTL laboratory on reinforcing steel, bar sizes 6, 8, 9, and 11, which were notched to a depth of up to 3/16", ground out to 7/32" and then repaired by welding. Strength tests on these bars which were repaired in accordance with UE&C Weld Procedure No. 25 met the ASTM A-615, Grade 40 requirements for yield, ultimate and elongation.

Details of Subjects Discussed in Section I

3. Repair of Ring Girder Concrete Voids

a. Status of Concrete Excavation

All of Segments I and II of the Ring Girder appeared to have been excavated to sound concrete. The inspector was informed that the required depth of the excavation was determined by core boring and borescope survey. Verification cores are being taken, and probes are being made to assure that the remaining concrete is sound. Additional concrete is being removed where required with small pneumatically actuated wedge point tool to a sound face.

No Segment III concrete, beyond that removed during the initial investigation, has been excavated.

The inspector was informed by the licensee that QC approval and Engineering approval of the excavation of Segments I and II has not been obtained.

b. Core Drilling and Borescope Survey

The inspector was informed that about twenty-five (25) 1" diameter cores and bore surveys have been completed of the thirty-six (36) initially planned for verification of sound concrete in Segment I and II.

c. Rebar Replacement

Rebar replacement by Cadweld splicing stated in Segment I between azimuth 333° and 03°. The inspector observed about twenty-five completed Cadweld splices of No. 8 and No. 9 rebar. Some lap splicing, but only of dome tendon spirals, were observed in this segment only. The inspector was informed that other rebar replacements have been prepared, fitted into position, and matchmarked, then removed pending completion of other work. Preparation of rebar replacement follows QC mapping of each location and photographing of some locations, the inspector was informed. Records were not audited at this inspection by the inspector on Cadwelds or rebar.

d. Tendon Conduit Repair

Tendon Conduits were observed to be repaired only in Segment I, azimuth 333° to 03°. Six vertical and two roof ducts, epoxy patched with a curved section of conduit were observed to be completed at the time of this inspection.

4. Containment Dome Concrete

The licensee states that comparative strength tests made with the Swiss Hammer indicated no loss in strength resulted in the area where concrete was in nonconformance when compared with that in adjacent area cured in conformance to specifications. The licensee additionally states that clarification of specifications were implemented December 17, 1971 to assure that activities fully comply with specification requirements. Quality Control procedures in concrete cure will be audited at the next CO inspection to verify that apparent loop holes have been closed. Therefore, this item remains unresolved.