

U. S. ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE

REGION III

CO Inspection Report No. 050-346/71-02

Subject: Toledo Edison Company
(Davis-Besse)
Oak Harbor, Ohio

License No. CPPR-80
Priority: N/A
Category: A-2

Type of Licensee: PWR-872 Mwe (B&W)

Type of Inspection: Routine, Announced

Dates of Inspection: June 8-10, 1971

Dates of Previous Inspection: February 18 and 19, 1971

Principal Inspector:

C. E. Jones
C. E. Jones

8-30-71
(Date)

Accompanying Inspector:

D. W. Hayes
D. W. Hayes

8-30-71
(Date)

Other Accompanying Personnel: None

Reviewed By: W. E. Vetter, Sr. Reactor Inspector

W. E. Vetter

8-31-71
(Date)

Proprietary Information: None

8002030193

cpd

SECTION I

Enforcement Action

- A. Fly ash was used without documentation available at the site to establish conformance to material specifications. (Paragraph 6)
- B. Quality control efforts were found to be ineffective in that several cubic yards of concrete were placed in a location calling for concrete of different design. (Paragraph 7)

Licensee Action on Previously Identified Enforcement Matters

There were no previously identified, outstanding enforcement matters.

Unresolved Items

A. Valve Design Verification

In response to a CO:HQ memorandum, dated May 24, 1971, the applicant was informed that CO would be requesting information regarding evidence that measurements have been made to verify that valve casting wall thicknesses conform to the drawing and requirements for certain Class I valves.

B. Shield Building Wall Plumbness

Inspection of the Shield Building indicated some question in regard to the plumbness of one section of the cylindrical wall. The inspector requested that additional details in this area and the engineering analysis be made available for his review next inspection. (Paragraph 9)

Status of Previously Reported Unresolved Items

A. TECO Site QA Staffing (CO Report Nos. 346/70-4 and 71-1)

TECO has added a mechanical and welding engineer and plans to add an electrical engineer in the near future to complete their site QA staff. This item is now considered to have been resolved. (Paragraph 5)

B. Pumped Concrete (CO Report No. 346/71-1)

Bechtel is in the process of generating concrete design specifications and placement procedures for pumped concrete. (Paragraph 8)

C. CB&I NDT Technicians Identified (AEC Criterion XVIII, CO Report No. 346/70-4)

NDT technicians employed by Chicago Bridge and Iron Company (CB&I) were observed to be qualified as required for the tests performed in conjunction with the containment vessel fabrication and no discrepancies were noted. This item is now considered to be resolved.

D. AEC Criterion XI, Test Control (CO Report No. 346/70-4)

Procedures to assure proper coordination, testing, review and acceptance of completed systems have been revised and approved. No deficiencies were noted in the revised procedures with respect to Criterion XI. This item is now considered to have been resolved.

E. AEC Criterion XIV, Inspection, Test, and Operating Status (CO Report No. 346/71-1)

TECO plans and procedures for implementing a tagging procedure for identification and status of inspections and tests performed were reviewed by the inspector. Additionally, procedures have been established identifying the status of the equipment tested. Procedures reviewed appeared to meet the intent of Criterion XIV. This item is now considered to have been resolved.

Unusual Occurrences: None

Persons Contacted

Persons contacted during the inspection, in addition to those listed under the Management Interview Section of this report, were as follows:

Toledo Edison Company (TECO)

L. E. Roe, Project Engineer
N. L. Wadsworth, General Superintendent

Bechtel Corporation (Bechtel)

W. B. Daley, Welding Engineer

Nicholson Concrete and Supply Company (Nicholson)

A. L. Zuvers, Supervisor (Site)

Pittsburgh Testing Laboratory (PTL)

G. F. Bigham, District Manager (Cleveland, Ohio)

F. W. Lohnes, Project Supervisor (Site)

Michigan Testing Laboratory (MTL)

D. (NMI) Ponke, QC Engineer (Acting for A. Bentley and Sons)

Nooter Corporation (Nooter)

J. D. Rainwater, General Foreman

M. C. Hamilton, QA Engineer

Chicago Bridge and Iron Company (CB&I)

W. F. Hiser, Project Welding and QA Supervisor

R. A. Wehrle, Construction QA Manager

Management Interview

Personnel in Attendance

Toledo Edison Company

J. A. Lenardson, QA Engineer for Davis-Besse

G. W. Eichenauer, QA Engineer (Civil)

W. G. Moring, Jr., QA Engineer (Mechanical)

Bechtel Corporation

G. A. Sullivan, Acting Project Construction Manager

A. S. Martin, QA Engineer

D. P. Eisenhart, QC Engineer

D. L. Reddick, Project Field Engineer

Items Discussed

- A. The TECO and Bechtel representatives were informed that fly ash was apparently being received and used without documentation to establish that the fly ash met ASTM C-618 requirements established by the Bechtel Technical Specification as well as by the Nicholson QA/QC Manual.

Mr. Martin stated that corrective action had been initiated in regard to this item and that recent correspondence with the fly ash suppliers, the Detroit Edison Company, included details as to the type of certification documents needed to satisfy the specifications. Martin also said that the Nicholson QA/QC Manual would be changed to agree with Bechtel's specifications in regard to the required material certification documents for fly ash. (Paragraph 6)

- B. The inspector commented that during a review of concrete work it was learned that one load of concrete (9 cubic yards) designed for use in the shield building was placed, through error, in the spent fuel pit floor slab. The error was apparently undetected by both the testing laboratory representative at the batch plant and the QC engineer at the pour site. The inspector acknowledged that the design specification for the concrete mix used in error met the requirements for the floor slab and that, therefore, the adequacy of the concrete was not in question. Instead, the inspector explained, concern was related to the fact that quality control personnel failed to detect and account for the discrepant situation.

The applicant stated the incident would be thoroughly reviewed and corrective action taken to prevent recurrence.

- C. A review of the erection of the shield building, including the QC records to verify erection conformance to specifications and codes, was discussed in detail by the inspector. The inspector commented that a preliminary review of partial data concerned with shield wall plumbness appeared to indicate that one portion of the wall was out of plumb by as much as 1/8 inch more than the 1 inch tolerance limit. The licensee agreed to make an engineering analysis and supporting data available for further review during the next inspection. (Paragraph 9)

SECTION II

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

1. General

Overall construction is estimated to be 15 percent complete. Design accounts for the major portion of the 15 percent figure and is considered approximately 70 percent complete.

Preparation for the foundation of the cooling tower is complete. Installing of the foundation ring girder was in progress.

Documents have been distributed to qualified companies soliciting bids for the plant mechanical work. All bids have been received and are now being evaluated.

2. Other Areas of Concrete Work

Areas of concrete work reviewed by the inspector included a review of the quality control systems and supporting records and visual examination of cadweld reinforcement steel splices in the field.

3. Spent Fuel Pool Liner

The inspector reviewed Nooter's quality control provisions, procedures, and associated records for the fabrication of the spent fuel pool liner as well as observing the work in the field. No deficiencies were found.

4. Containment Structure

The CB&I QA Manual, site QC organization, NDT personnel certifications, welding specifications, welder qualifications, radiographic procedures and a random sampling of radiographic film for welds in the lower containment vessel head were reviewed in detail.

Details of Subjects Discussed in Section I

5. Organization Changes

Mr. W. G. Moring, Jr., has recently joined TECO's QA staff at the Davis-Besse construction site. Mr. Moring is a registered professional mechanical engineer in the State of Ohio. Mr. Lenardson

stated that TECO had also recently hired a welding engineer for the site QA staff and that it was still their plan to add an electrical engineer by the fall of 1971. The new welding engineer was being processed through employment at the time of the inspection.

6. Fly Ash Quality Documentation

The inspector noted during his review of concrete materials that fly ash was being received at the site and used without quality documentation required by Bechtel's Technical Specification 7749-C-25 and the Nicholson QA/QC Manual.

The inspector acknowledged that some fly ash certification documents were in the QC files and that "users" tests of the fly ash were made by PTL per construction specifications. However, in at least three instances, the quantity of fly ash received and used between the dates of the certification documents, or "users" test, significantly exceeded the 100 ton sampling frequency minimum required by ASTM C-311 Specifications; therefore, compliance to ASTM C-618 (quality requirement), as required by the Bechtel concrete specifications, could not be fully established. In any event, the inspector pointed out, the Nicholson QA/QC Manual requires that certified mill test reports must accompany each shipment of fly ash.

7. Failure of Quality Control System

A review of the concrete delivery tickets for the spent fuel pit floor slab revealed that one load of concrete (9 cubic yards) designed for use in the shield building, was placed in the spent fuel pit floor slab in error. The mix ticket was properly signed and, apparently, the error was undetected by both the testing laboratory representative at the batch plant and by the QC engineer at the pour site. The mix formula number and the types and/or quantities of cement and aggregate recorded on the delivery ticket were different from those for the concrete mix specified for the floor slab.

The inspector reviewed the design specifications for the concrete mix used in error and found that it met the design specifications for the spent fuel pit floor slab concrete. Therefore, the adequacy of the concrete was not in question and concern was related to the apparent shortcomings in the quality control effort which failed to detect and account for the discrepant situation.

DIVISION OF COMPLIANCE
MONTHLY REPORT FOR JUNE 1971

50-346

Toledo Edison Company (Davis-Besse) - A CO inspection was conducted on June 8-10 to verify the implementation of the QA program. Inadequate control of concrete and incomplete records were two items of nonconformance identified. A regional enforcement letter is being prepared.