

UNITED STATES NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Construction Inspection

IE Inspection Report No. 050-329/76-02
IE Inspection Report No. 050-330/76-02

Licensee: Consumers Power Company
1945 West Parnall Road
Jackson, Michigan 49201

Midland Plants, Units 1 & 2
Midland, Michigan

Licenses No. CPPR-81
and No. CPPR-82
Category: A

Type of Licensee: PWR (B&W) Unit 1 - 650 Mwe
Unit 2 - 818 Mwe

Type of Inspection: Routine, Unannounced

Dates of Inspection: March 16-18, and 24-26, 1976

I. Yin
Principal Inspector: I. T. Yin

4/15/76
(Date)

Accompanying Inspectors: None

Other Accompanying Personnel: None

D. W. Hayes
Reviewed By: D. W. Hayes, Chief
Projects Section

4/15/76
(Date)

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SUMMARY OF FINDINGS

Inspection Summary

Inspection on March 16-18, and 24-26, (Unit 1, 76-02) and (Unit 2, 76-02): Review of U. S. Testing Company, and Champion Company QA Manuals, review of nonconformance reports, and followup on previously identified noncompliance items and unresolved matters. Two items of noncompliance relative to audit requirements and review and resolution of audit findings were identified during this inspection.

Enforcement Items

A. Violations

None.

B. Infraction (Units 1 and 2)

1. Contrary to 10 CFR 50, Appendix B, Criterion V, and the U. S. Testing Company QA requirement, the Vice President of Engineering Inspection did not audit test reports issued to Bechtel. (Paragraph 1, Report Details)
2. Contrary to 10 CFR 50, Appendix B, Criterion XVIII, the U. S. Testing Company's quarterly internal audits, some of the corrective actions required by the audit findings had not been performed. (Paragraph 2, Report Details)

C. Deficiencies

None.

Licensee Action on Previously Identified Enforcement Items

Items of noncompliance.

A. Violations

None.

B. Infractions

(Units 1 and 2, identified in IE:III Inspection Reports No. 050-329/76-01 and No. 050-330/76-01)

1. Drying Oven Without Calibration

A drying oven used in concrete testing activities had not been calibrated to assure that it would not exceed temperature limits. This item was resolved satisfactorily. (Paragraph 3, Report Details)

2. Nonconforming Aggregate Identification

Measures had been established to identify nonconforming aggregate. This matter is closed. (Paragraph 4, Report Details)

3. Disposal of Nonconforming Aggregate

The batch plant operation QA procedure was revised, and the nonconforming aggregate had been disposed of properly. This item is considered resolved. (Paragraph 5, Report Details)

Other Significant Items

A. Systems and Components

1. Unresolved Matter - The deteriorated rebar identification tabs did not appear to meet the material purchase specification requirements. (Paragraph 6, Report Details)
2. Unresolved Matter - Unit 1 pressurizer tarp cover spacers were not installed, whereas, the latest storage specification indicated that such spacers are required. (Paragraph 7, Report Details)
3. Unresolved Matter - Bechtel QC had omitted a number of NSSS storage inspection requirements which are considered important by the inspector. (Paragraph 8, Report Details)
4. Unresolved Matter - Insufficient corrective measures were identified in CP nonconformance Report QF-56. This is considered as a generic problem that calls for additional attention. (Paragraph 9, Report Details)

5. Unresolved Matter - A number of deteriorated pipe covers had not been removed in compliance with the latest storage specification. Some tendon sheath end covers were blown off, and an opening in a deteriorated small nozzle cover was observed. Some of these deficiencies were corrected promptly. Detailed corrective actions will be reviewed by the inspector during a future inspection.

B. Facility Items (Plans and Procedures)

1. Unresolved Matter - A review of U. S. Testing Company QA manual was conducted by the inspector. The comments are listed in Appendix A of this report.
2. Unresolved Matter - A review of Champion, Inc. QA Manual was conducted by the inspector. The comments are listed in Appendix B of this report.
3. Unresolved Matter - The operational and QA/QC personnel training and indoctrination activities at the U. S. Testing Company site laboratory were not performed in accordance with approved procedures. However, a draft procedure is in the process of review and approval. (Appendix A, Section 3)

C. Managerial Items

None.

D. Noncompliance Identified and Corrected by Licensee

None.

E. Deviations

None.

F. Status of Previously Unresolved Items

1. Measures to Ensure Liner Plate Coating Work to be Accomplished By Qualified Personnel (IE Inspection Reports No. 050-329/76-01, and No. 050-330/76-01)

Bechtel QA/QC procedures for the subject measures were reviewed by the inspector, and were considered satisfactory. (Paragraph 10, Report Details)

2. Report QF-48 Inaccurate Wordings (IE Inspection Reports
No. 050-329/76-01 and No. 050-330/76-01)

Relative to the Consumers Power Company Nonconformance Report No. QF-48, the requirement and the verification of the corrective action were improperly worded and recorded. The revision of QF-48 was reviewed by the inspector and this matter is now considered resolved.

Management Interview

- A. The following personnel attended the management interview at the conclusion of the inspection:

Consumers Power Company (CP)

H. W. Slager, Midland Project QA Administrator
B. H. Peck, Field Supervisor
D. R. Keating, Quality Assurance Engineer

Bechtel Power Corporation (Bechtel)

P. A. Martinez, Project Manager
J. F. Newgen, Project Superintendent
T. C. Valenzano, Project Field Engineer
J. Milandin, QA Supervisor, Projects
A. G. Tucker, QC Supervisor
G. L. Richardson, Lead QA Engineer
H. D. Foster, Assistant Project Field QC Engineer

Bechtel Associates Professional Corporation (BAPC)

J. L. Hurley, Assistant Project Engineer

Babcock & Wilcox Company (B&W)

V. N. Asgaonkar, Site Representative

- B. Matters discussed and comments on the part of management personnel were as follows:

1. The two noncompliance items identified during the inspection were discussed by the inspector.

2. The inspector stated that the three noncompliance items identified in IE:III report 76-01 were considered resolved.
3. The unresolved matters identified in this report were discussed with the attendees. The licensee stated that corrective actions on a number of the items had been initiated, and the inspector's comments on U. S. Testing, and Champion QA manuals (Appendix A and B) will be reviewed by responsible organizations for implementation. In addition, improved clarification and description on work interfaces between Bechtel, U. S. Testing, and Champion will be undertaken by Bechtel QA Department.
4. The inspector stated that the two unresolved matters recorded in IE:III report 76-01 were considered resolved.
5. The inspector indicated that IE:III, as previously discussed with licensee management personnel, will hold a meeting (at the site) with licensee and electrical contractor personnel to discuss NRC requirements, SAR commitments, and electrical problems identified at other facilities. This meeting is tentatively scheduled for the week of June 6, 1976.

REPORT DETAILS

Persons Contacted

In addition to the individuals listed under the Management Interview section of this report, the following persons were contacted:

Consumers Power Company (CP)

J. L. Corley, Midland QA Superintendent
R. E. Whitaker, Field QA Engineer
W. H. Benkert, Field QA Engineer
D. E. Horn, Field QA Engineer
R. Wheeler, Midland Project Field Engineer

Bechtel Power Corporation (Bechtel)

J. P. Connolly, Project Field QC Engineer
A. J. Boos, Assistant Project Field Engineer
W. F. Holub, Project QA Engineer
L. R. Albert, Lead Civil QC Engineer
E. D. Newman, Project QC Supervisor
T. Lieb, Batch Plant and Laboratory Coordinator
J. C. Church, Contract Administrator
G. A. Waldrop, QA Engineer

Bechtel Associates Professional Corporation (BAPC)

J. R. McBride, Project Quality Engineer
J. Arora, Civil Engineering Group Leader

U. S. Testing Company, Inc. (U.S. Testing)

B. D. Water, Chief of Laboratory

Champion, Inc. (Champion)

P. E. Schmanski, Superintendent of Concrete Plant
R. F. Kraegen, Superintendent of Concrete Plant
K. Holman, QC Engineer in Training

Results of Inspection

1. U. S. Testing-Test Report Audits

The U. S. Testing Company QA Manual, in Section 3.5, states in part, that "The Vice President of Engineering Inspection reviews the work of the field group by auditing the test reports issued to Bechtel," contrary to this, no documentation was available to establish that this requirement had been implemented.

2. U. S. Testing-Test Finding Corrective Action

After reviewing the U. S. Testing Company's quarterly internal audit report, the auditor's position and qualification could not be determined. The audit findings and corrective actions taken were not performed consistently, and some audit finding corrective actions had not been taken. No management review and assessment of the resolutions were identified. In addition, audit procedures, handling of audit findings and reaudit requirements are not identified in the QA manual.

3. Drying Oven Without Calibration

Subject matter was identified in IE:III Inspection Report 76-01 as a noncompliance item. The inspector reviewed the CP's response, dated March 5, 1976, and verified the corrective action implementation including calibration record review of the Blue M. Oven, Model No. DOM-246E. This matter is considered resolved.

4. Nonconforming Aggregate Identification

Subject matter was identified in IE:III Inspection Report 76-01 as a noncompliance item. The inspector reviewed the CP's response dated March 5, 1976, and considered it satisfactory. The inspector also observed that a location, at a remote distance from the batch plant, was designated for the rejected aggregate and concrete, and signs were posted for identification. This matter is considered resolved.

5. Disposal of Nonconforming Aggregate

Subject matter was identified in IE:III Inspection Report 76-01 as a noncompliance item. After reviewing the CP's response,

dated March 5, 1976, and the revised U. S. Testing QA Manual, dated March 23, 1976, the inspector considers this matter resolved.

6. Rebar Tags

A large number of rebars was stored near the testing lab. These rebars are almost all with badly deteriorated tabs or without identification tabs. Bechtel Specification C-39, Revision 7, Section 10.7, states, in part, that "all the reinforcing steel delivered to the job site shall be tagged. Tags shall be made of durable, noncorroding, nonfading, weather-proofed material." The licensee is requesting Bechtel to re-evaluate the subject discrepancy. This is an IE:III unresolved matter pending future inspection resolution.

7. NSSS Equipment Tarp Cover Spacers

All NSSS equipment requires that tarp covers be placed during long-term, onsite, outdoor storage. Spacers between the tarp and the vessel are required for Units 1 and 2 reactor vessels, steam generators, and pressurizers according to the latest storage requirement. Previously spacers were not required but had been installed without instructions. The Unit 1 pressurizer was without spacers, which were called for in the latest revision (Revision-4) of F-1-84, however, no instruction was provided as to how and when such a requirement is to be implemented. Before the inspector concluded his site inspection, he was informed that the spacers for Unit 1 pressurizer had just been installed. This matter is considered unresolved pending review of the installed spacers.

8. NSSS Storage Inspection Requirements

A number of inspection items were omitted by the Bechtel QC organization for routine maintenance and inspection of NSSS equipment stored onsite. These include: (1) equipment support conditions, (2) tarp cover, tie rope, and spacer conditions, and (3) action to document any deficiencies identified and corrective actions taken. This is an IE:III unresolved matter pending future inspection resolution.

9. Inspection Per ALAB-106, Condition 4 (Construction Perm't Amendment No. 1, Paragraph 2.F.d)

The CP monthly nonconformance reports (NCR's) for the months of June, 1975 through January, 1976, were reviewed by the

inspector in the IE:III office to: (1) determine that proper and adequate corrective action was taken, (2) identify possible generic QA/QC program implementation problems, and (3) identify nonconformance to applicable requirements. A number of NCR's were selected to be inspected at the site, and as a result, all were considered handled and closed properly except CP NCR No. QF-56.

QF-56 indicated that the spray header stainless steel pipe was observed in contact with the ground and a damaged pipe cap was also identified. The corrective action did not include: (1) material qualification evaluation, (2) cleaning of the pipe bottoms and openings, and (3) methods to prevent repetition. The licensee had initiated the corrective action for QF-56, and is to review other NCR's that may contain similar deficiencies. This is an IE:III unresolved matter pending future inspection resolution.

Other Documents Reviewed

CP Letter to Bechtel, "Midland Project - Consumers Power Company NCR QF-56," dated March 22, 1976.

Bechtel NCR No. 102, issued on March 30, 1974, and closed on November 6, 1975.

Bechtel NCR No. 116, issued on June 12, 1975, and closed on November 6, 1975.

Bechtel NCR No. 345, issued on October 17, 1975, and closed on December 9, 1975.

CP NCR No. QA-48, reissued on January 19, 1976, originally issued on May 9, 1975, and closed on June 9, 1975.

CP NCR No. QF-49, issued on May 22, 1975, and closed on June 18, 1975.

CP NCR No. QF-50, issued on June 12, 1975, and closed on July 29, 1975.

CP NCR No. QF-52, issued on August 7, 1975, and closed on August 14, 1975.

CP NCR No. QF-54, issued on August 13, 1975, and closed on September 26, 1975.

CP NCR No. QF-58, issued on September 15, 1975, and closed on December 4, 1975.

CP NCR No. QF-59, issued on September 15, 1975, and closed on December 4, 1975.

CP NCR No. QF-63, issued on September 15, 1975, and closed on December 4, 1975.

CP NCR No. QF-68, issued on September 15, 1975, and closed on November 21, 1975.

10. Liner Plate Coating Worker Qualification

Measures to ensure that liner plate coating work will be accomplished by qualified personnel was carried as an unresolved matter in IE:III report 76-01. During this inspection, the inspector reviewed a number of Bechtel working and inspection procedures and considered these procedures adequate. This matter is resolved.

Documents Reviewed

- a. Bechtel Field Inspection Manual (FIM), No. G-6, Revision 6, dated June 7, 1974, titled "Quality Control Inspection Plans."
- b. Bechtel Nuclear Quality Assurance Manual (NQAM), Section IV, No. 11, Revision 0, dated December 20, 1974, titled "Field Subcontractor Control."
- c. Bechtel "Technical Specification for Recording Work of the Containment Building Liner Plate," No. 7220-C-110 (Q), Revision 7, dated November 25, 1975.

11. Defective Flow Meter

During a previous NRC inspection, a defective flow meter on the nitrogen system for the protection of Unit 1 and Unit 2 steam generators was observed. During this inspection, a flow meter was again observed to be defective. According to the licensee, the flow meters are not a part of the safety system

design requirement, but are to determine the usage rate of the nitrogen gas. Prior to the conclusion of IE:III inspection, the defected flow meter was replaced. The inspector indicated that any component that is installed in a safety related system should be checked to ensure no defective parts that may affect the integrity of the system.

12. Rejected Concrete Test Cylinders

Approximately 20 to 30 rejected and unbroken concrete test cylinders were placed outside the lab on the edge of the building wall. Some of these cylinders are marked 'reject', some are marked with an identification number, and some are without markings. The inspector questioned the handling of these rejected concrete test cylinders and commented that the control of nonconforming material should be addressed in the U. S. Testing QA manual.

Prior to the conclusion of the inspection the cylinders were placed in a rejected material area. The licensee also indicated that the handling of rejected cylinders and other nonconforming materials will be included in the next U. S. Testing QA manual revision.

APPENDIX A

QA MANUAL REVIEW FINDINGS

U. S. Testing Company, Incorporated, Hoboken, New Jersey
QA Manual for Material Testing Services
Revision 2, dated March 31, 1974

SECTION 2 - ORGANIZATION

Paragraph 2.2: In part, "The U. S. Testing field group, therefore, serves as a division of the Bechtel construction site QA organization."

1. No definition and responsibility description of "field group."
2. U. S. Testing QA and Bechtel QA interfaces not defined in the manual.

Paragraph 2.4: The "U. S. Testing QA Staff".

1. QA staff is not identified in the organization chart. Its responsibilities are not defined.

Page 2J: The "Assistant Inspector-Field Concrete".

1. Personnel position and interfaces not identified in the organization chart.

SECTION 3 - QA PROGRAM

Paragraph 3.2: In part, "The organization's interfacing with the program and their designated functions shall also be identified by Bechtel".

1. This is contradicting to the Paragraph 2.1 statement that the establishing and executing of a QA program covering the contracted activities are delegated to U. S. Testing by Bechtel.

Paragraph 3.3: In part, "The program is documented in this manual".

1. No definition of "the program".

Paragraph 3.4: In part, "program that provides indoctrination and training of personnel".

1. No approved procedures were written for these activities.

Paragraph 3.5: Wording "regularly" and work activities involving the "Vice President of Engineering Inspection".

1. No definition of "regularly".
2. No responsibility description of the "Vice President of Engineering Inspection".

SECTION 5 - PROCUREMENT DOCUMENT CONTROL

1. Lacking of QA review of procurement documents to assure that quality requirements are adequately specified.

SECTION 8 - CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

Paragraph 8.1: Only Laboratory Chief or Vice President of Engineering Inspection is required to review and approve procurement documents.

1. Prior to the use of material and equipment, documented evidence should be provided to show that quality requirements, including material certifications, test reports, receiving inspections, evaluations, and auditing results, are in good order.
2. Who is representing QA for implementing SECTION 8?

SECTION 11 - INSPECTION

Paragraph 11.1: "Bechtel should be responsible for assuring that mandatory inspection hold points, which require witnessing or inspection by U. S. Testing personnel, are indicated in other organizations' work instructions".

1. No definition of "other organizations".

SECTION 12 - TEST CONTROL

Paragraph 12.1: Same as Paragraph 11.1.

1. No definition of "other organizations".

SECTION 13 - CONTROL OF MEASURING AND TEST EQUIPMENT

1. Who determines which piece of equipment will require calibration and what is the basis for that determination?
2. Define which "nationally recognized standards" is indicated in Paragraph 13.2.

SECTION 14 - HANDLING, STORAGE, AND SHIPPING

1. No requirements of implementing procedures and checklists.

SECTION 16 - NONCONFORMING ITEM

1. Lack of provision for handling and disposing nonconforming materials.

SECTION 17 - CORRECTIVE ACTION

1. Define "as soon as possible" and "significant conditions".
2. No indication of identifying the cause and the timely corrective action to be taken.
3. No provision to preclude repetition of activities adverse to quality.

SECTION 18 - QUALITY ASSURANCE RECORDS

1. No provisions to assure the quality records are legible, adequate, retrievable, and refer to markings, identification tags, or other means of identifying materials.

SECTION 19 - AUDITS

1. No requirements on auditor's qualification.
2. Audit procedures are not established.

APPENDIX B

QA MANUAL REVIEW FINDINGS

QA Manual, Ready Mix Concrete, Champion,
Incorporated, Iron Mountain, Michigan
Issued on 3/23/76
Control No. 7229-C-230-Midland
Control No. R-373-1

ORGANIZATION AND ORGANIZATION CHART

1. Lack of description of champion operational and QA/QC interfaces with Bechtel and U. S. Testing Company.
2. "QC supervisor" and "QC Engineer" positions were not filled.
3. No indoctrination and training program for QA/QC personnel.
4. At the present time the responsibilities of the "Safety and personnel Supervisor", the "Equipment and Maintenance Supervisor", and the "Electronic control Engineers" are assigned to one person. The question remains as to whether he is properly qualified for all this work.
5. Personnel qualification requirements are not specified.

JOB DESCRIPTIONS

1. Plant Supervisor is responsible for concrete production and is in parallel responsibility level with QC supervisor per organization chart. Therefore he cannot be "also responsible for on site QA and QC if required".

II POLICY

"Verification of quality is the responsibility of the organization performing the work and by personnel not directly involved in performing the work operation".

1. Name "The organization performing the work".

"Control of quality is the responsibility of our individual performing the work operation".

1. Name "An individual performing the work operation".

"Assurance of quality is a management function and the responsibility of individuals independent of the organization responsible for doing the work".

1. QA is not just a management function.
2. Name the "individuals independent of the work".

III PROGRAM DESCRIPTION

1. The annual Champion management QA audits, a copy of the audit procedures and the audit report should be available at site for evaluation. (Identified also in CP NCR QF-79)

VII DOCUMENT CONTROL

1. Quality related documents should be reviewed by QA personnel for adequacy.
2. No provisions to control revisions of QA manual, and QC procedures.

XVIII QA RECORDS

1. Upon completion of contracted concrete mix activities, what quality related documents are to be transferred to Bechtel?