

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Construction Inspection

IE Inspection Report No. ~~050-329/76-01~~
IE Inspection Report No. 050-330/76-01

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

Midland Plant, Units 1 and 2
Midland, Michigan

License No. CPPR-81
License No. CPPR-82
Category: A

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

Type of Inspection: Unannounced, Routine

Dates of Inspection: January 13-16, 1976

Principal Inspector:

I. T. Yin

I. Yin

1/30/76
(Date)

Accompanying Inspectors: None

Other Accompanying Personnel: None

Reviewed By: *D.W. Hayes*
D. W. Hayes
Section Leader
Projects

1/30/76
(Date)

8006250 391

SUMMARY OF FINDINGS

Inspection Summary

Inspection on January 13-16, (Unit 1, 76-01) and (Unit 2, 76-01): Review of nonconformance reports, followup on previous unresolved matters, and inspection of concrete placement related activities. Three items of noncompliance relative to identification and disposal of non-conforming aggregate and failure to calibrate equipment used in testing activities were identified in the inspection. Also one deviation item was identified in regard to the QA Manual review and approval sign-offs.

Enforcement Items

Items of Noncompliance

A. Violations

None.

B. Infractions (Units 1 and 2)

1. Contrary to 10 CFR Part 50, Appendix B, Criterion XII, a drying oven used in concrete testing activities had not been calibrated to assure temperature limits were not exceeded. (Report Details, Paragraph 6)
2. Contrary to 10 CFR Part 50, Appendix B, Criterion XV, measures have not been established to identify nonconforming aggregate. (Report Details, Paragraph 1)
3. Contrary to 10 CFR Part 50, Appendix B, Criterion V and the Champion, Inc. QA program manual, Appendix A, Paragraph 12, nonconformance aggregates were not disposed of as required. (Report Details, Paragraph 7)

C. Deficiencies

None.

Other Significant Items

A. Systems and Components

1. Unresolved Matter: The repair of liner plate coating in containment Unit 2 due to the fire damage was completed, and was considered satisfactory by the inspector. However, measures to

ensure liner plate coating work will be accomplished by qualified personnel is to be discussed during a future inspection.

2. Unresolved Matter: Relative to the Consumers Power Company Non-conformance Report No. QF-48, the requirement and the verification of the corrective action were improperly worded and recorded. The revision of QF-48 is undertaken by the licensee, and will be reviewed by the inspector during next site inspection. (Report Details, Paragraph 2)

B. Facility Items (Plans and Procedures)

None.

C. Managerial Items

None.

D. Noncompliance Identified and Corrected by Licensee

None.

E. Deviation

Contrary to the licensee commitment as indicated in IE:III Inspection Report No. 75-05, Appendix A, Item No. 1, no index register was made for Rev. 3 of the QA manual Volume I. (Report Details, Paragraph 8)

F. Status of Previously Unresolved Items

Discrepancy Between PSAR and Specification 7220-C-230 (IE Inspection Reports No. 050-329/75-01, No. 050-330/75-01, No. 050-329/75-03, No. 050-330/75-03, No. 050-329/75-06 and No. 050-330/75-06)

The slump measurement requirement discrepancy between Midland PSAR and Bechtel Specification 7220-C-230 had been reviewed by IE:III inspector and IE:HQ personnel, and the matter is considered closed during this inspection. (Report Details, Paragraph 5)

Management Interview

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

Consumers Power Company (CP)

T. C. Cooke, Project Superintendent
H. W. Slager, Midland QA Administrator
J. L. Corley, Midland QA Superintendent

Bechtel Power Corporation

J. F. Newgen, Project Superintendent
G. L. Richardson, Lead QA Engineer
J. P. Connolly, Project Field QC Engineer

Bechtel Associates Professional Corporation

R. L. Castleberry, Project Engineer

- B. Matters discussed and comments on the part of management personnel were as follows:
1. Five unresolved matters were presented by the inspector. Three items were considered noncompliance items after consultation in the IE:III office. The other two items remained unresolved at the present time.
 2. One item of deviation was stated by the inspector in regard to the departmental sign-offs during QA Manual review.
 3. The inspector noted the licensee position on code application requirements per 10 CFR Part 50.55a. (Report Details, Paragraph 9)
 4. Regarding IE:III Inspection Report No. 050-329/75-05, and No. 050-330/75-05, Appendix A, open item No. 5, the licensee response is now a corporate commitment. (Report Details, Paragraph 8)
 5. The previous unresolved matter, concrete slump discrepancy between PSAR and the Bechtel specification is considered resolved by the inspector.

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)

D. E. Horn, Field QA Engineer - Civil
D. R. Keating, Field QA Engineer - Mechanical
R. E. Whitaker, Field QA Coordinator
B. H. Peck, Field Supervisor

Bechtel Power Corporation (Bechtel)

T. C. Valenzano, Project Field Engineer
H. D. Foster, Lead Mechanical QC and Level 1 Civil QC Engineer

Bechtel Associates Professional Corporation

R. L. Ryden, Senior Engineer, Civil Group Project Engineering

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

B. D. Water, Chief of Laboratory
D. Henick, Laboratory Technician

Champion, Inc. (Champion)

P. E. Schmanski, Batch Plant Supervisor

Results of Inspection

1. Inspection Per ALAB-106, Conditions 2 and 3 (Construction Permit Amendment No. 1, Paragraphs 2.F.b and 2.F.c)

The CP quarterly reports on concerned personnel site attendance and construction schedules were reviewed by the inspector. The activities in the period October 1 to December 31, 1975, had been carried out as closely as planned. A complete list of supervisors and engineers of the licensee and A-E with quality related duties onsite during 1975, was obtained. The inspector indicated that

the present reporting method of showing only those names that were added and/or removed from the previous reports is acceptable. However, a complete name listing to be kept by IE:III at the end of each year is recommended.

2. Inspection Per ALAB-106, Condition 4 (Construction Permit Amendment No. 1, Paragraph 2.F.d)

The CP monthly nonconformance reports (NCR's) for the months of June through October, 1975, 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-48. In QF-48, the inspector identified an inaccurate statement that a training session was given, and an incorrect statement that the documentation of the training session was reviewed. Correction of these deficiencies and review for similar problems were undertaken by the licensee. This matter is considered unresolved pending future inspection.

Other NCR's Reviewed

Bechtel NCR No. 268, issued on January 7, 1975, and closed on July 30, 1975.

Bechtel NCR No. 275, issued on January 24, 1975, and closed on September 22, 1975.

Bechtel NCR No. 316, issued on June 30, 1975, and closed on July 30, 1975.

CP NCR No. QF-21, issued on August 21, 1974, and closed on September 9, 1975.

CP NCR No. QF-64, issued on September 16, 1975, and closed on October 21, 1975.

3. Major Safety Related Equipment Onsite

- a. Unit 1 and 2 reactor vessels.
- b. Unit 1 and 2 reactor cover heads.
- c. Unit 2 pressurizer.
- d. Unit 2 steam generators (two).
- e. Unit 2 reactor internals.
- f. Unit 2 reactor coolant piping.

- g. Unit 1 reactor coolant piping (partial, 2/3).
- h. Unit 2 core flood tank.
- i. Unit 2 reactor coolant pump cases (two).
- j. Decay heat removal pumps.
- k. Decay heat removal heat exchangers.
- l. Seal return coolers.
- m. Demineralizer tanks.
- n. Reactor building cranes (2 complete systems).
- o. Unit 2 containment spray header piping (complete set).
- p. nuclear services pipes and valves.

4. Unit 2 Repair of Liner Plate Fire Damage

On November 21, 1974, a fire occurred in the Unit 2 Reactor Containment Building. The event was reported to NRC in accordance with 10 CFR 50.55e requirements. The licensee evaluation indicated that: (1) the liner plate bulging areas will not affect the safety related functions of the plate, (2) no metallurgical damage done to the liner plate, (3) no heat damage to the concrete, (4) no heat damage to rebars, and (5) liner plate coating needs repair. The inspector reviewed the liner plate coating rework procedures, inspected the work performance, and audited the Bechtel quality records and CP audit reports. No problem areas had been identified. The inspector considered the matter closed.

Documents Reviewed

- a. Bechtel NCR No. 239, issued on November 25, 1974, and closed on December 4, 1975.
- b. Technical Specification for Recoating Work of the Containment Building Liner Plate, 7220-110(Q), Rev. 7, dated November 25, 1975.
- c. Bagwell Coatings, Incorporated (Bagwell) QA Manual for the Installation of Protective Coatings.
- d. Bagwell QA Manual approval letter from BAPC to Bechtel Power Corporation, BEBC-893, dated December 9, 1975.
- e. CP Audit Report No. F-75-64, Recoating of Containment Liner Plate, Work performed November 11 through 21, 1975, report dated November 21, 1975.
- f. Bechtel QC Inspection Plans C-110-(a through d), Recoating work, Unit #2, Lower Lift 190° to 330° (a total of seven plans).

5. Concrete Slump Requirement Discrepancy Between PSAR and Bechtel Specification 7220-C-230

Subject matter was discussed in IE:III Inspection Reports No. 75-01, No. 75-03, and No. 75-06. The inspector considered the licensee position of specifying inadvertency margin only in the specification is valid. Further, the trial mix test data at the batch plant showed that consistency, of which slump is a measure per ACI 318-71, Section 4.2.1 requirements, had been established. This matter is considered resolved.

Documents Reviewed

- a. BAPC Letter, BLC-1413, R. L. Castleberry to R. C. Bauman of CP., dated February 12, 1975.
- b. Approximately 20 Bechtel reports of concrete cylinders were reviewed. Among which, 4 or 5 recorded high slump and air content at the batch plant. However, all cylinders met the 90-day strength requirement.

6. Testing Laboratory Surveillance

A brief surveillance check on the testing laboratory operated by the U. S. Testing Company, Inc., was made by the inspector. This included (1) personnel qualification check, (2) interview technician, (3) review training session records, and (4) review some equipment calibration records.

During the inspection, a drying oven for the aggregate was found without temperature verification record. The drying temperature acceptable ranges are a part of ASTM C566-67, ASTM C136-71, and ASTM C117-69 requirements. Later on, the licensee indicated that a hole will be drilled in the oven, and a calibrated thermometer will be inserted for verifying the oven temperature.

7. Nonconforming Aggregates

As the inspector drove by the batch plant, two piles of improperly shaped aggregates were observed. It was later revealed that these are nonconforming materials unfit for safety related structural concrete mix use. Reviewing the Champion, Inc. QA Manual for Ready Mix Concrete, dated June 5, 1975, Contract No. 7220-C-230, and Control No. R-373-4, the inspector considered that some provisions for nonconforming material control were lacking. These included: (1) rejected material identification (2) disposition of nonconforming materials, (3) wording, that removal of material "as soon as possible", "as early as possible", constitutes no specific meaning and has no implementation value. Reviewing the

batch plant supervisor's daily log, the 1 1/2" aggregate, approximately 50 yards, was rejected on December 23, 1974. The second pile of nonconforming aggregates, about the same size as the first pile, was told to be spills and waste material and no records had been kept. The inspector considered that the handling of the nonconforming material has not met the QA program requirement.

8. Followup on Open Items Listed in Previous IE:III Inspection

On July 16-17, 1975, an IE:III inspection was held in CP corporate office to discuss IE concerns after reviewing the CP's new QA Program Manual. In the Inspection Reports No. 050-329/75-05 and No. 050-330/75-05, Appendix A, the IE:III questions and CP responses were listed. Since then, a revision (Rev. 3, dated December 1, 1975) of the QA Manual, Vol. I, was made, and many of the response commitments had been fulfilled. The following is the status of the open items:

- Q.1. Should the Vice President's and department head's approval initials and dates be included in the manual?

The Licensee responded that the CP QA will use the index register as a method of indicating with initialling by vice presidents or department heads when they have reviewed and approved changes to Volume I or Volume II which have an effect on them.

No such index register was made for Rev. 3 of Vol. 1. This is considered a deviation from CP's commitment to the IE:III.

The following open items are considered closed except 0.5:

- Q.2. Is any delegation of establishing or executing the QA program indicated?

The response was implemented in Vol. 1, Section 3.1.1 (Rev. 3, dated December 1, 1975).

- Q.3. Is it indicated that responsibility is retained by the applicant for the QA program?

The response was implemented in Vol. I, Sect. 1.0, second sentence. (Rev. 3, dated December 1, 1975).

- Q.4. Policy 15, Paragraph 3.1.1, indicates that "responsibility" is delegated to the A-E, NSSS supplier, etc. It should be clear

that the licensee "authority" but not "responsibility" is to be delegated to these organizations.

The response was implemented in Vol. I, Rev. 3, dated December 1, 1975. There was sufficient evidence that Vol. II will also be changed in accordance to the requirement. This matter is considered closed.

- Q.5. Qualification procedural requirements are to be identified and established for personnel involved in quality related activities including: (a) Education, (b) Experience, (c) Training, (d) Are minimum qualifications consistent with the QA program commitments in this regard?

The response was not fully committed by the licensee, but is now a CP commitment. A followup inspection is planned after the revision of Vol II.

- Q.6. and Q.7. were closed in the previous IE:III inspections.

- Q.8. Policy 3, paragraph 3.4: Quality standards are to be "specified" in design documents.

The inspector considered the licensee alternatives to the responses acceptable.

- Q.9. Policy 17: Inspection and test records shall, as a minimum: (1) identify the inspector or data recorder; (2) type of observation; (3) results; (4) acceptability; and (5) action regarding deficiencies noted.

The response was implemented in Vol. I, Section 1.0 of Policy 17 (Rev. 3, dated December 1, 1975).

9. CP Position on Code Application Requirements Per 10 CFR Part 50.55a

In regard to the open item indicated in IE:III Inspection Reports No. 050-329/73-04 and No. 050-330/73-04, Management Interview, section C.1, the CP position on the subject matter is as follows:

50.55a(j):

Power reactor for which a notice of hearing on an application for a provisional construction permit or a construction permit has been published on or before December 31, 1970, may meet the requirements

paragraphs (c)(1), (d)(1), and (e)(1) of this section instead of paragraphs (c)(2), (d)(2), and (f)(2) of this section respectively.

Since Midland 1 and 2 notice of hearing was dated on October 27, 1970, CP considered that they are qualified for applying the above alternate provision.

50.55a(d)(1), In the area of piping:

For construction permits issued before January 1, 1971, (see CP-1), piping which is part of the reactor coolant pressure boundary shall meet the requirements set fourth in:

(i) ASA B31.1, Addenda, and applicable Code Cases or USAS B31.1.0, Addenda, and applicable Code Cases or the Class I section of the USAS B31.7 in effect on the date of order of the piping (see CP-2) and

(ii) The nondestructive examination. . .

The piping may meet the requirements set forth in editions of ASA B31.1, USAS B31.1.0, and USAS B31.7, Addenda, and Code Case which became effective after the date of order of the piping (see CP-3).

CP Positions:

- CP-1: Although the Midland 1 and 2 construction permit was issued on December 14, 1972, the provision of 50.55a(j) governs.
- CP-2: B&W contract date on June 7, 1968. Primary coolant pipes and fittings are considered purchased at that date.
- CP-3: The Midland Project is not obligated to any code Addenda and Code Cases that became effective after June 7, 1968.

The inspector noted the CP position, and indicated that this matter will be reviewed by NRC Region III office.