

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

REGION III

Report No. 50-329/77-05, 50-330/77-08

Docket No. 50-329, 50-330 License No. CPPR-81, CPPR-82

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

Facility Name: Midland Nuclear Power Plant, Units 1 and 2

Inspection At: Midland Site, Midland MI

Inspection Conducted: May 24-27, 1977

Inspectors:	<i>T. E. Vandel</i> T. E. Vandel	<u>6-21-77</u> date signed
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Inspection Summary

Inspection on May 24-27, 1977, (Report No. 50-329/77-05, 50-330/77-08)

Areas of Inspection: Special inspection conducted to examine the QA program implementation by Consumers Power Company, and by Bechtel Power Corporation; also to examine the adequacy of control of work activities and inspection coverage for civil/structural and piping/welding activities. The inspection involved 156 inspector-hours on site by four NRC inspectors.

Results: Of the four areas inspected, examples of a noncompliance were identified in two of the areas. (Infraction-failure to follow established procedures, Paragraphs 1.b(2), 2, and 5.a and b).

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DETAILS

Persons Contacted

Consumers Power Company (CPC)

G. S. Keeley, Project Manager
T. C. Cooke, Project Superintendent
B. W. Marguglio, Quality Assurance Director
H. W. Slager, Quality Assurance Administrator
J. L. Corley, Project Quality Assurance Superintendent
W. R. Bird, Executive Quality Engineer
D. E. Horn, Quality Assurance Engineer
D. R. Keating, Quality Assurance Engineer

Bechtel Power Corporation (Bechtel)

A. J. Boos, Project Field Engineer
J. P. Connolly, Project Field Quality Control Engineer
O. H. Holman, Field Superintendent
G. L. Richardson, Lead Quality Assurance Engineer
J. E. Russell, Quality Control Supervisor
T. W. Vanvick, Mechanical Engineer
B. T. Cheek, Lead Quality Control Engineer Civil
H. D. Foster, Assistant Project Field Quality Control Engineer
J. R. Behres, Lead Quality Control Engineer Med/piping
A. Boulden, Lead Quality Control Engineer Welding
P. M. Pitts, Quality Engineer Piping
K. Pulito, Lead Quality Control Engineer Piping/Med

Bechtel Associates Professional Corporation (BAPC)

P. A. Martinez, Project Manager
J. Milandin, Quality Assurance Manager
J. M. Klacking, Project Quality Engineer
J. L. Hurley, Assistant Project Engineer

Functional or Program Areas Inspected

1. Licensee QA Program Implementation

A review was conducted of the QA program implementation by Consumers Power Company (CPC) at the Midland site. The program and procedural instructions utilized are included in the following manuals:

Consumers Power Company, QA Topical Report CPC-1 A, Revision 4

Electric Plant Projects QA Services Manual

Midland Project Procedures Manual

The results of the review were as follows:

a. Organization

It was learned that Consumer's Project Quality Assurance Services Department (PQAS) is currently being reorganized. The Director of PQAS explained the reorganization and stated that this effort was well underway. Draft organizational charts, staffing patterns and descriptions of functional responsibilities were available; however, no schedule was available to determine when the transition from the old organization to the new organization would occur. It was stated that the Director of PQAS had been authorized to hire additional engineering personnel to staff the new organization.

The NRC inspector commented that the Topical Report, QA Policy Manual, as well as affected Procedures Manuals should be revised to reflect the organization changes. Since plans were incomplete at the time the inspection was performed, this item will be further evaluated during subsequent inspections.

This matter is considered unresolved.

b. CPC Audit/Surveillance System

Presently, four types of audits are being performed by CPC: (1) QA Program audits, (2) Qualified Supplier audits, (3) Department audits, and (4) Construction audits. Only QA Program and Construction audits, were evaluated during this inspection. Construction audits are the only CPC audits performed routinely on site. Other audits were performed by either Nuclear Audit and Testing Company or QA personnel located at the Corporate office in Jackson, Michigan.

(1) QA Program Audit

The QA Program audit is an audit of the Corporate Nuclear QA Program performed every 24 months. The last QA Program audit was performed by a consultant, Nuclear Audit and Test Company, on July 1, 1976. This audit was a very comprehensive analysis of the CPC implementation of their QA Program and Manuals. As a result of this evaluation CPC revised their QA Program to implement most

of the recommendations. However, much of the information regarding implementation recommendations was at the Jackson, Michigan office and was not readily available at the site. This information will be evaluated during subsequent inspections.

This matter is considered unresolved.

(2) Construction Audits

A total of 164 construction audits were performed from January 1, 1975 to May 3, 1977. In general, these audits were found to be meaningful and provided a comprehensive analysis of construction activities performed by construction contractors. Sixty-one of 91 audits performed since January 1, 1976 were selected for detailed review. The remainder were reviewed in less detail. The audits primarily focused on observations of work and work records.

Each of eleven audits of Bechtel QA performed since January 1975 were one day audits performed by one person who usually contacted only one or two persons in Bechtel QA. The inspector concluded that those audits were not performed in sufficient depth to be meaningful. Only two findings were documented during the 11 audits conducted.

The following noncompliance was identified by the inspector:

On May 25, 1977, Audit Report Nos. F-77-4, 77-1, 76-58, and 76-52 were reviewed. Those audits were completed between October-November 1976 and February 1977. Reports of those audits had been neither written nor issued, although the audits were completed 3-8 months earlier. Except for the reports being late it appeared that the auditor performing those audits was doing a good job. One explanation given by the licensee for the late audit reports was that more manpower was needed to accomplish all that had to be done.

This item appears to be in noncompliance with 10 CFR Part 50, Appendix B, Criterion V; Consumer QA Topical Report CPC-1 and QA Program Policy No. 18 since the Plant Projects QA Services Department Procedures No. 10 and No. 12 which state, "Within approximately ten

working days after completion of audit, prepare audit report using audit report form (Attachment C)" was not followed.

c. Trend Analysis System

Midland project QA Procedure No. M-10 required that nonconformances and audit findings since January 1, 1976, be logged, classified and reviewed for trends. Subsequent to initial evaluation a quarterly review was required to determine if deficiencies fit a trend. This procedure was approved for implementation prior to December 7, 1976, the date of Revision 1.

On May 26, 1977, the nonconformance log was reviewed for conformance and it was determined that 93 NCRs had been issued since January 1, 1976, however, 34 of this number had not been logged. Further, no logging or classification of 1977 audit findings had been accomplished. Thus, no trend analysis for the period had been accomplished.

This finding represents a noncompliance to 10 CFR Part 50, Appendix B, Criteria V; Consumers QA Topical Report and QA Program Policy No. 5, since Midland Project QA Procedure No. M10 was not followed.

d. Nonconformance Reports (NCR) and Corrective Action System

Project Q. Services Department Procedure No. 8, states that a request for a 30 day reply should be included in the NCR. Additionally, the estimated corrective action date is agreed upon between the parties before that date is placed in the report. In reviewing the NCR Summary Log, it was noted that four to five months to close an NCR was a common occurrence. In several cases, an NCR remained open for more than a year. When extensions were requested there were no notes or documentation in the file to show that the extension was granted which gave the appearance that the extensions were not granted.

On May 26, 1977, seven NCRs (QF135, 139, 142, 145, 146, 147, and 152) were reviewed in detail to evaluate timeliness of replies and corrective action. In five of seven cases the reply date was exceeded by four to twenty days. In all seven cases the corrective action dates given in the NCR were exceeded and in fact were still open. The oldest corrective action date was December 12, 1976, and the most recent was April 7, 1977. It was also noted that several NCR should have been closed but were held open because of very minor points or by a request for a further study.

CPC and Bechtel QA personnel had recognized the concern and implemented a new system on February 23, 1977, to improve the timeliness of replies and corrective action. This action on their part appears to be improving this situation. This area will be reviewed further during subsequent inspections.

This matter is considered unresolved.

2. Control of Measuring and Test Equipment

At 10:00 a.m., May 27, 1977, the inspector was reviewing material control at the concrete batch plant (operated by Champion Co.). While material control appeared to be adequate it was noted that automatic scale, SN 533465, for weighing ice was not being used and was pulled about one foot away from this conveyor where ice was being weighed for concrete mixes. The ice was being weighed on a manual scale, SN 29942 which was properly calibrated. It was noted that the automatic scale had been found defective the previous day but had not been tagged to prevent inadvertent use as required by Champion Quality Control Manual, Section 15.

This finding represents a noncompliance to 10 CFR Part 50, Appendix B, Criterion V; Consumers QA Topical Report and QA Program Policy No. 5 and No. 12 since the Champion QA Manual, Section 15, stated that, "defective" or "out of calibration" equipment shall be tagged and corrective action taken in accordance with the procedure.

3. Special Processes

Recoating of the Unit 1, linear plate, dome was inspected. Nondestructive thickness measurements, taken by the NRC inspector met the specified coating thickness. The coating had been damaged in several areas by heat applied and metal parts bumping the surface during recent work activities. No NCR had been written, however, NCRs were immediately issued after the areas were pointed out by the NRC inspector. It is understood that all repairs will be made after work activities are completed in the area. This area will be re-inspected during subsequent inspections.

This matter is considered unresolved.

4. Construction QA Program Implementation

The inspector performed an inspection of the QA Program implementation by Bechtel Power Corporation at the Midland site by review of the applicable QA manuals, procedures, and other instructions, by interviews with personnel, by observations of work activities, by

review of related documents and records, and by review of QA auditing activities. No items of noncompliance were identified as a result of this review. The results of this review are as follows:

a. Applicable Manuals, Procedures, and Instructions

The applicable manuals reviewed were:

- Nuclear Quality Assurance Manual
- Engineering Department Procedures Manual (Volumes 2 and 3)
- QC Notices Manual (replacing the previously utilized Field Inspection Manual) Containing the applicable Project Special Provision Notices.
- QA Department Manual.

b. Inspector Interviews and Observations

The NRC inspector reviewed the system of qualifications, training, and certification of the Bechtel QC Engineers and in addition reviewed the qualification/certification records. During interviews with QC Engineers the Inspector was able to determine the adequacy of the Engineers knowledge and familiarity with the procedural instructions, applicable drawings, specifications, as well as other procedures, and instructions. During a walk through of the Auxiliary Building the inspector determined that the following QC Engineers and Inspectors were performing inspection in the building at the time:

Five U. S. Testing inspectors inspecting concrete being placed at two different locations

Two Bechtel Mechanical QC Engineers

One Bechtel Welding QC Engineer

One Bechtel Rebar QC Engineer

One Bechtel Civil QC Engineer

One Bechtel Lead Civil QC Engineer

One Bechtel Grouting and Drilling QC Engineer

The inspector was informed that there is a staff of 63 QC Engineers presently assigned to Midland.

c. QA Auditing

The inspector in addition to reviewing the QA auditor qualifications and training records, reviewed the following information regarding QA auditing activities:

Bechtel management audit schedule

The last two management audit reports

The Bechtel Project Master Audit Plan

Selected audit reports for the last quarter 1976 and first quarter 1977

Handling of Management Corrective Action Report (MCAR No. 17, April 19, 1977)

Results of trend analysis performed per procedure Section C, Number 101 "Project QA Trend Analysis"

Two recent audit reports regarding rebar control, installation, and inspection, one dated March 29, 1977, and one dated May 2, 1977

The inspector was informed that a total of six QA auditors are presently performing audits at the Midland site.

d. Documents and Records

In response to questioning the inspector was informed and shown documents to demonstrate the awareness of the QC Engineers of the applicable drawings and specifications, and other related information, procedures, instructions, involved. The inspector was also able to determine: (1) The availability of the information, (2) that the latest revision was available, and (3) that the QC Engineers utilized the information on the documents when they prepare, inspect, and complete the Quality Control Inspection Records (QCIR's).

5. Piping and Welding Activities

The inspector performed an inspection of the facility observing piping and related equipment installation activities. He examined work practices, piping storage and handling conditions, welding material control, cleanliness precautions, and quality control documentation. The following items were identified:

a. Failure of Safety Related Pipe Supports to Meet Specification Requirements

The inspector examined the completed installation of several pipe supports for safety related systems. He noted that in two instances, pipe supports 18-1HCB-2-H9 and 3-1FCB-28-H5, there was a gap in excess of 1/16" between the concrete supporting wall and the support bearing plate.

The Technical Specification for Installation, Inspection, and Documentation of ASME III Pipe Supports, Hangers, and Restraints for 2 1/2" and Larger Pipe, 7220-M-326(Q) states in paragraph 5.11: "The clearance between the concrete walls and structural attachment plates should not exceed 1/16" over a maximum of 20% of the bearing area. If the gap exceeded 1/16" or if the clearance exists over more than 20% of the bearing area, grouting is required...."

The inspector reviewed the Quality Control Instruction (QCI) P-2.10, Revision 1, Paragraph 3.4, which directs the quality control inspector to verify the requirements of the Technical Specification, Paragraph 5.11 as quoted above. He also examined the Quality Control Inspection Reports P-2.10-610-3 and P-2.10-610-4 which indicated that these pipe supports had been accepted by the quality control inspectors without grouting.

This finding is noncompliant with 10 CFR 50, Appendix B, Criterion V, in that activities were not accomplished in accordance with instructions and procedures.

b. Failure to Control Drawing Changes Within Established Requirements

The inspector examined the drawings being used by workmen to assemble the safety related pipe supports 10-1GCB-23-H2 and 12-1HBC-124-H5. He noted that handwritten instructions had been added to the drawings which directed the workmen to assemble the supports different than as depicted on the approved drawings.

The workmen stated that these notes were provided by the cognizant field engineer to correct installation interferences. The licensee stated that for pipe supports, the applicable Specification No. 7220-M-326, permits certain drawing changes to be made by field engineers without the filing of a Field Change Request (FCR) form. The FCR is a control document that provides field engineering with a means of reporting drawing discrepancies to project engineering for a drawing revision.

These handwritten instructions on the drawings allow work to progress concurrently with the drawing revision process, although the changes have not been reviewed, approved, and new drawings issued to the field. The Bechtel Quality Assurance Manual (BQAM) - ASME III, Division 1, Section 3000, describes the procedure for field engineering to initiate drawing revisions by submitting an FCR. The BQAM Section 3000 satisfies the requirements of 10 CFR 50, Appendix B, Criterion VI, which outlines document control practices. Therefore, the issuance of design drawing changes by handwritten notes from field engineers is noncompliant with 10 CFR 50, Appendix B, Criterion V, in that the established drawing revision requirements were not being followed.

The licensee issued a memorandum, dated May 26, 1977, suspending further use of field engineering handwritten drawing revisions.

c. Illegible Pipe Support Drawings

The inspector examined the pipe support drawing 12-1HBC-124-H5 being used by workmen and noted that parts of the drawing were not legible. The quality control inspector's copy was also illegible. The licensee stated that this condition had been identified previously and that corrective actions have been initiated. The corrective actions are the acquisition of first generation copies of the vendor's drawings and the purchase of an improved drawing reproduction machine. He stated that the recall and replacement program for the illegible vendor drawings will be completed in approximately 60 days.

This matter is considered unresolved pending the licensee's completion of the above described corrective actions.

d. Other Items Reviewed

The inspector also reviewed selected specifications, quality control instructions, and quality control inspection reports

relating to the field fabrication, installation, and inspection of nuclear service piping and piping supports. He interviewed the piping quality control inspectors and construction craftsmen concerning their duties.

No items of noncompliance or deviations were identified.

6. Civil-Structural Activities

The inspector performed an inspection in the civil/structural area to determine whether the present QA/QC program is adequate to assure that reinforcing steel and other embedments are properly placed and inspected in order to produce structures which meet the design requirements. Also reviewed were the corrective actions, and improvements and/or changes in the QA/QC program related to civil-structural matters.

a. Documents Reviewed

(1) Bechtel Engineering Department Procedures (EDP'S)/Project Instructions (EDPI's).

- (a) 2.14.1, Rev. 2 - Resident Engineer for Midland Project 7220
- (b) 4.47, Rev. 2 - Drawing Change Notice (DCN)
- (c) 4.61, Rev. 1 - Nonconformance Reports (NCR)
- (d) 4.62, Rev. 3 - Field Change Request/Field Change Notice (FCR/FCN)
- (e) 4.65, Rev. 0 - Design Deficiency Processing
- (f) 5.16.1, Rev. 3 - Project Engineering Review of Field Sketches and Fabrication Details

(2) Bechtel Quality Control Instructions (QCI's).

- (a) C-1.10, Rev. II - Inspection of Grouting and Drypacking
- (b) C-1.20, Rev. IV - Concrete Preplacement Inspection
- (c) C-1.21, Rev. IV - Inspection of Reinforcing Steel
- (d) C-1.30, Rev. III - Concrete Placement Inspection
- (e) C-1.60, Rev. 0 - Concrete Drilling and Cutting Rebar
- (f) C-6.00, Rev. III - Mechanical Splicing of Reinforcing Bars
- (g) C-9.00, Rev, 0 - Installation of Post-Tensioning Components

(3) Bechtel Construction Field Engineering Procedures/Instructions

- (a) FPC-2.000, Rev. 0 - Rebar Installation and Evaluation Guidelines
- (b) FIC-2.100, Rev. 2 - Rebar Installation Drawing Review
- (c) FIC-2.110, Rev. 0 - Field Revision of Vendor Reinforcing
- (d) FIC-2.200, Rev. 2 - Field Fabrication of Reinforcing Steel Drawing
- (e) FIC-2.300, Rev. 0 - Rebar Design List for Q-List Concrete Placements
- (f) FIC-2.400, Rev. 0 - Operator Guidelines for Cadweld Rebar Splicing (T/B)
- (g) FPC-3.000, Rev. 0 - Concrete Placement Inspection
- (h) FIC-3.100, Rev. 0 - Concrete Placement Guidelines for Crews
- (i) FIC-3.500, Rev. 0 - Grouting of Rebar in Concrete
- (j) FIC-1.100, Rev. 1 - Review of Vendor Drawings and Documents
- (k) FID-1.200, Rev. 3 - Control of Field Work Prints
- (l) FPD-2.000, Rev. 0 - Field Change Request/Field Change Notice
- (m) FID-2.100, Rev. 0 - Outstanding FCR Retirement
- (n) FIG-1.111, Rev. 0 - Concrete Drilling Permit
- (o) FIG-1.700, Rev. 1 - Preparation of Field Sketches
- (p) FIG-2.111, Rev. 0 - Concrete Expansion of Anchor Installer Qualification & ID Procedure
- (q) FIG-3.2000, Rev. 0 - Field Engineer Responsibilities

The Bechtel Engineering Department Procedures/Project Instructions reviewed appear to be sufficiently definitive and reflect the important items that relate to the subject of each specific Procedure/Project Instruction. These are prepared by Bechtel's Corporate Engineering Office of Bechtel Power Corporation in San Francisco and generally apply to all engineering offices in that corporation. An exception in this case was 2.14.1 which applies only to Midland.

The QCI's reviewed appeared to provide sufficient guidance on how the inspections are to be performed. The recent problems have come about from not properly following these or by errors made in preparing and completing a QCI plan for a given location or task.

Within the FP's and FI's there were no specific problems defined in the review of these documents which must interface with the EDP's and EDPI's. It was learned that the Field Engineering Procedures/Instructions are not reviewed by Project Engineering. This could

result in different interpretations and confusion. This matter will be examined during a subsequent inspection.

No items of noncompliance were identified.

b. Implementation of Quality Control Instructions

The implementation and execution of some selected QCI's which are developed into QCIR's (quality control inspection reports) for specific work areas were examined. A representative sample, as time permitted, was taken on completed items in order to review the records, on items just being completed and on items where a portion had been completed. The specific items reviewed are listed below:

- (1) QCIR C-1.10-103
- (2) QCIR C-1.20-214
- (3) QCIR C-1.21-214
- (4) QCIR C-1.30-214
- (5) QCIR C-6.00-380
- (6) QCIR C-9.00-19

Item (1) concerned work being completed as a result of a B&W design change in the steam generator and associated piping supports. This particular item was noted as Log No. 5061 and related to the Unit 2 containment building and the south steam generator at Elev. 593'-6" from 90° to 270° azimuth. The east and west restraints and the curb for the south steam generator were also addressed by the inspection plan/report. Work was in progress which involved the drilling (by coring) of holes into the containment floor in order to allow the grouting of steel anchorages. Specific instructions were available related to the cutting of reinforcing steel as well as the QC requirements for logging the inside of the holes for severed critical reinforcing steel.

Items (2) through (6) were associated with the concrete placement known as "Pour C (723.92) a' " which consisted of about 400 cu. yds. to complete a 10' lift on 284 degrees of azimuth of the Unit 1 containment building. The QCIR had been initiated on April 22, 1977, with the placement date for concrete being May 26, 1977. The review of the marked-up source reference drawings indicated that the QCI's had been performing their work functions as the embedments were being placed so as not to preclude access to perform an adequate review. Notes were

in evidence on the QCE's prints and the Discrepancy Reports (DR's) that errors were being picked up for correction by the QCE's. NCR's were noted that applied to this area and the fact that the QCE was keeping abreast of new drawing revisions was evident.

The inspector observed the QCE performing the final phase of QCIR C-1.21-214 and the Bechtel QCE identified some minor tolerance problems on rebar cover associated with hoop reinforcing steel. Corrective measures were taken by the field crews immediately. The inspector climbed down into the forms to observe the preplacement condition. The construction joint had been cleaned of all debris and loose material and no significant discrepancies were found while spot checking reinforcing placement. These observations were made on May 25, 1977. The second field shift was to complete corrections with an assigned QCE at the job site to inspect the yet uncompleted items before releasing the area for concrete placement. Placement was scheduled for 7:30 a.m. on May 26, 1977.

At 7:30 a.m. on May 26, 1977, Bechtel QC had not released the area for placement. The QCE was still completing the inspection and the Consumers Power Company personnel were also still inspecting.

Placement for "Pour C (723.92) a' " did not begin until after lunch on May 26, 1977, after all inspection had been satisfactorily completed by Bechtel and Consumers Power. Observation of the placement revealed that the licensee's commitments were being followed and the activity was being properly conducted.

A field inspection of the ongoing placement of reinforcing steel in the ring girder of the Unit 2 containment building was made to ascertain whether the QCI Plans were being used and how far the QCE effort had progressed. It was obvious that the rebar placement was not far enough along to begin OC work and there was no need to have early QC review as a result of reinforcing congestion. QCE personnel indicated that the QCIR for the C-1.21 series related to the fire ring girder placement had just been completed by the originator and was awaiting review and approval by the lead Civil-Structural QCE.

Another area was examined which was in progress which represents a heavily congested area of reinforcing steel. The QCE for this area was inspecting as portions of the total effort were finished.

No items of noncompliance were identified.

c. Sampling of Field Change Requests

A review of the types of subjects involved with Field Change Requests was made in the civil area for FCR-1 through FCR-156 with the following categories defined.

- (1) Engineering/Specification Errors
- (2) Ease of Construction
- (3) Redesign by Field Engineering
- (4) Clarification
- (5) Improvement
- (6) Substitution of Equal
- (7) Non-safety related
- (8) Unknown

There appeared to be no unusual distribution of the FCR's that could indicate any unequal balance between the authorities of design engineering and field engineering.

In addition, a series of FCR's were selected at random for review of documentation, technical adequacy and resolution. The following FCR's were reviewed.

FCR C-114, 121, 123, 128, 135, 137, 154, 389, 396, 411, 635, 655, 671, 930 to 932 and 943.

The documentation and technical resolution of these sample FCR's were judged to be acceptable and represent a correct resolution to each specific instance. There was evidence that Field Engineering in planning construction activities had discovered design interfaces which were being transferred back to Project Engineering for resolution. The specifics of FCR C-671, dated November 30, 1976, dealt with the subject of tendon interferences between dome and vertical tendons. The fact that the problem has been identified prior to its occurrence in the field indicates that field engineering is performing its function and correcting all errors that surface which could have some affect on the construction of the facility as designed. It also points out that the QC organization is not the only group concerned with completion of a correct installation.

No items of noncompliance were identified.

d. Field Change Notices

The inspector, during the review of the Bechtel Engineering Department Procedures/Project Instructions and the Field Engineering Procedures/Instructions, was unable to assess the adequacy of the Field Change Notice (FCN) implementation procedure since the system has not been used to date. It is, however, soon to be an approved method for Field Engineering to make field design changes. The procedure was not found to be deficient, but the implementing procedure is undefined since the key document yet to be released by Project Engineering controls the scope of the permitted changes by Field Engineering. EDP-4.62 dealing with FCR/FCN's states the following.

"DEFINITIONS"

A Field Change Notice (Exhibit A) is issued by Project Field Construction to notify Project Engineering to make a change to approved engineering drawings, specifications or other design documents to reflect a field change within boundaries or limitations previously approved by Project Engineering. Construction may proceed to incorporate these changes without additional approval by Project Engineering.

SCOPE OF FIELD CHANGES BY FCN

The Project Engineer shall be responsible for transmitting a general specification for allowable field changes to design by FCN's to the Project Field Engineer documenting the scope of changes that may be covered by an FCN. This specification shall be updated and reissued, as necessary, to reflect the current scope of allowable FCN changes. Guidelines for the allowable scope shall be contained in discipline standards provided and maintained by the Chief Engineers.

No items of noncompliance were identified.

e. Review of Non-Conformance Report 803

During the inspection Consumers Power provided a copy of NRC 803 to the inspector as the first notification of a Unit 1 embedment placement error in completed concrete placements. The requirement to provide this information was the result of Item 4 of the April 29, 1977 Immediate Action Letter sent to the licensee.

The item involved two vertical tendon sheaths, V45 and V97, which were displaced several inches circumferentially from their design location. These sheaths were in the concrete placement immediately above the one which contained the error in the hoop tendons at the main steam line. The tolerance limit for construction purposes is set at $\pm 1\ 1/2$ " for these specific types of tendons. V97 was 8" to the right of the original design location and V45 was $4\ 3/8$ " to the left of the design location. These discrepancies were noted at the top of the placed concrete, Elevation 713'-9", when sheathing placement began for the next lift.

The resolution for V45 was to bring the sheath back to design position using a 30' radius within the next lift which was to Elevation 723.92'. For V97 the 8" deflection actually was a displacement which was one-half that which was to begin at Elevation 713'-4" in order to clear one of the embedments for the polar crane rail brackets. The resolution involved completing the deflection at a lower elevation than had been indicated in the original design. The tendon deflection transition is now made between Elevations 707'-0" and 719'-7 $5/8$ " instead of between Elevations 713'-4" and 726'-4 $5/8$ ".

The inspector reviewed these and agreed that there was no safety significance. The displacement of V45 is felt to have been the result of the tendon sheath being moved during concrete placement. V97 had originally been installed properly and was changed as a result of the QA/QC review. The change, however, was incorrect.

This item is considered closed.

f. Summary and Conclusions

As a result of this inspection which involved basic procedural document review, review of documents which recorded completed actions and a review of field in-process construction and documentation it is the inspector's opinion that no major items of safety in the civil-structural area would go unnoticed as a result of construction deficiencies. The present QA/QC program in the civil-structural area is adequate to uncover any major deficiencies which could result in the degradation of the structural safety below the minimum requirements.

7. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspection are discussed in paragraphs 1.a, 1.b.(1), 1.d, 3, 5.c, and 6.a.

8. Management Exit Interview

A management interview was conducted at the Midland Plant site on June 6, 1977. Those attending the interview were as follows:

Consumers Power Company (CPC)

S. H. Howell, Vice President
G. S. Keeley, Project Manager
T. C. Cooke, Project Superintendent
E. W. Marguglio, Quality Assurance Director
W. R. Bird, Executive Quality Engineer
J. L. Corley, Project QA Superintendent
H. W. Slager, QA Administrator

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J. F. Newgen, Project Superintendent
J. E. Russell, QC Supervisor
A. J. Boos, Project Field Engineer
J. P. Connolly, Project Field QC Engineer
G. L. Richardson, Lead QA Engineer

Bechtel Associates Professional Corporation (BAPC)

J. L. Hurley, Project Engineer
J. M. Klacking, Project QA Engineer
P. A. Martinez, Project Manager
J. Milandin, Quality Assurance Manager

The purpose of the special inspection was outlined and that inspectors independent of Region III participated in the inspection.

The inspectors discussed the five examples of a noncompliance regarding failure to follow procedures. Also discussed were the five unresolved matters that are to be reviewed further during future inspections. The licensee acknowledged the findings.

The CPC QA Director presented an outline of the proposed reorganization of the CPC Quality Assurance Department.