

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

REGION III

Report No. 50-329/77-09; 50-330/77-12

Docket No. 50-329; 50-330

License No. CPPR-81; CPPR-82

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

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

Inspection at: Midland Site, Midland MI

Inspection Conducted: August 30 to September 2, and 13-15, 1977

Inspectors: C. M. Erb

Cm E. 10/3/77

K. R. Naidu

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R. J. Cook

Other Personnel: M. Auerback

Approved by: *D. H. Danielson*
D. H. Danielson, Chief
Engineering Support Section

10/3/77

Inspection Summary

Inspection on August 30 to September 2, and 13-15, 1977 (Report No. 50-329/77-09; 50-330/77-12)

Areas Inspected: Procedures, installation, and quality records for containment penetrations, Units 1 and 2; procedures observation of work, and quality records for safety related piping, Units 1 and 2; procedures and installation of tendon sheaths, Units 1 and 2; audit activities; work activities, welding, and review of quality records relative to concrete placement and structural steel erection, Units 1 and 2. The inspection involved 107 inspector-hours by three NRC inspectors.

Results: Of the fourteen areas inspected, no items of noncompliance or deviations were identified in eleven areas. Three apparent items of noncompliance were identified in three areas (Infraction - failure to follow audit procedures - Section II, Paragraph 3; Infraction - failure to qualify stud welding procedures - Section II, Paragraph 4; Infraction - inadequate welding inspection criteria - Section II, Paragraph 7)

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DETAILS

Persons Contacted

Consumers Power Company (CPC)

*T. C. Cooke, Project Superintendent
*J. L. Corley, Quality Assurance Superintendent
*W. R. Bird, Quality Engineering, Section Head
*D. R. Keating, Quality Assurance Engineer
D. E. Horn, Field Quality Assurance Engineer
R. Whittaker, Field Quality Assurance Engineer
R. Ostrowski, Nondestructive Testing Engineering Level III
J. Wood, Quality Engineer
J. Walvoord, Welding Engineer

Bechtel Power Corporation (Bechtel)

*J. F. Nervgen, Project Superintendent
*C. L. Richardson, Lead Quality Assurance Engineer
*A. J. Boos, Project Field Engineer
*L. F. Stornetta, Assistant Project Field Engineer
*W. L. Barclay, Project Field Quality Control Engineer
*H. D. Foster, Assistant Project Field Quality Control Engineer
A. Boulden, Lead Welding Quality Control Engineer
P. Ratter, Assistant Quality Control Welding Engineer
T. J. Behres, Supervisor, Document Control
W. Pardue, NDE Coordinator
B. Check, Lead Civil Inspector
R. Southon, Supervisor, Quality Group
J. Savoie, Welding Engineer
J. Miller, Quality Control Documentation Coordinator
G. C. Lithen, Supervisor, Field Procurement

Bechtel Associates Professional Corporation (BAPC)

*J. Milandium, Quality Assurance Manager
*J. M. Klacking, Quality Engineer

X-Ray Engineering

G. Williams, Project Manager

Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (Report No. 50-329/77-05; 50-330/77-08):
Timely resolution and closing of NCR's. The licensee representative produced a list showing the status of CPC nonconformance items of the months of March to September. This list indicated a marked improvement in the time for resolution and corrective action on such items.

Functional or Program Areas Inspected

Details of the functional and program areas inspected are documented in Sections I, II, and III of this report.

SECTION I

Prepared by C. M. Erb

1. Review of Safety Related Piping

No Class 1 piping has been installed onsite so this inspection covered only Class 2 and 3 piping.

- a. The following welds were reviewed to determine whether the Bechtel Specification, ASME Section III, 1971 Edition, Summer 1973 Addenda, and ASME Section IX, latest edition, requirements were being met.

<u>System</u>	<u>Weld No.</u>	<u>Size</u>	<u>Material</u>	<u>Welder Sym</u>
Decay Heat Removal	12R2	18 x .375	ss/s.s.	P-7
Decay Heat Removal	22	4 x .120	ss/s.s.	P-7
Makeup Purification	39	6 x .280	ss/s.s.	P-36
Auxiliary Feedwater	6	6 x .562	CS/CS	P-81, P-39
Auxiliary Feedwater	4C1	6 x .562	CS/CS	P-39, P-98
Auxiliary Feedwater	17	4 x .337	CS/CS	-
Service Water	72	26 x .375	CS/CS	-
Service Water	74	26 x .375	CS/CS	P-168, P-183, P-52

- b. Inspection procedures were issued on the above welds and indication of hold points was shown for Quality Control. The authorized Inspector (AI) also indicated his hold points on weld procedures such as WP-P8-AT-Ag, Revision 0.
- c. Storage procedures and conditions for storage were satisfactory with much of the material being stored indoors.
- d. The following welding and NDE procedures were used on safety related piping and met the requirements of Bechtel Specification WQ-1 and ASME Section III, Paragraph 5320:

<u>Procedure No.</u>	<u>Materials</u>	<u>Type</u>
WP-P8-AT-Ag, Rev. 1	Stainless	Welding, Open butt-Manual
RT-XG-2, Rev. 0	-	Radiography
Pl-AT-LH, Rev. 1	Carbon	Welding - Manual
PT-SR 1, 2, Rev. 0	-	Penetrant Test
MT-P 1, 2, Rev. 0	-	Magnetic Particle Test
Pl-T-J-01, Rev 3	-	Welding-Semi automatic

e. Qualification of Personnel

Welders were qualified to ASME Section IX, latest Addenda. For unlimited position qualification, the 2G and 5G positions were utilized. For NDE qualification to SNT-TC-1A requirements, records indicated the following number of Bechtel and X-Ray Engineering inspectors were qualified.

	<u>Bechtel</u>	<u>X-Ray Engineering</u>
Level II, PT	17	8
Level II, MT	15	7
Level II, RT	5	9
Level II, UT	1	5
Vacuum Box VB	10	-

Records for nine welds in Unit 2 and for seven welds in Unit 1 were examined. Welding operations for six welds were examined at various stages of completion.

- f. Twelve (12) NCR's relating to welding were examined and found to be in conformance with disposition and correction action requirements outlined in the QA manual.

Within the areas inspected, no items of noncompliance or deviations were identified.

2. Containment Penetrations

Flued head penetrations for mechanical and electrical penetrations were observed in storage and during installation. Many of the flued head penetrations involve dissimilar metal stainless to carbon steel welds. The electrical penetrations are installed with carbon steel to carbon steel welds.

- a. Penetrations are stored inside the warehouse. The RIII inspector noted that identification was maintained and the Quality Control requirements of Bechtel Engineering Specification C-III, Revision 10 were being implemented.
- b. The following penetration welds were examined at various stages of completion and found to conform to Bechtel Specification 7220-M-111A.

<u>Weld No.</u>	<u>System</u>	<u>Unit</u>	<u>Weld Procedure</u>	<u>Materials</u>	<u>Welder</u>
12R1	Electrical	1	P1-AT-LH	CS/CS	P-98
FW45	Electrical	2	P1-T-I-01	CS/CS	P-34
139	Electrical	2	P1-AT-LH	CS/CS	P-268, P-68
2253	Fluid	2	P1-T-I-01	SS/CS	-
2256	Fluid	2	P1-T-I-01	SS/CS	-

Penetrations were being installed using both manual and semi automatic welding.

Semi automatic welding is done with a portable machine manufactured by Dimetrics Inc. using a TIG torch mounted on a track with wire feed. A rectangular insert is consumed during the first pass with no filler metal added. Subsequent layers use filler material. Three welders are qualified to use the equipment. Eight of these welding machines have been procured. This will require that additional welders be qualified for this equipment. Electrical penetration welds are Magnetic Particle tested while dissimilar welds such as in the flued heads are Liquid Penetrant tested. Several of the automatic welds were examined and found to have a very excellent as welded surface.

- c. The RIII inspector examined certifications of materials from Tube Turns Company. These certifications conform with Bechtel Specification 7220-M-210, Revision 1. Test results for UT performed to procedure UT-038-198, Revision 1, and various heat treat operations were in the records and were found to conform with the Bechtel specification.

Within the areas inspected, no items of noncompliance or deviations were identified.

3. Post Tension System

No tendons have been received onsite to date. Inland-Ryerson (IR) has the contract to furnish the tendons and related parts. Bechtel will perform the tendon installation with a technical representative of IR onsite.

- a. The following drawings for location of tendon sheath were examined, in document control and in the shop, and found to reflect the latest revisions (the last number represents the revision number).

Dwg No. 7220-C-2-46-5

Dwg No. 7220-C-2-47-3

Dwg No. 7220-C-2-147-3

Dwg No. 7220-C-2-46-5

- b. Certifications for trumplate materials (ASTM A-36) were found to meet Bechtel Specification C-2, Revision 8, requirements. Impact tests were performed and sheath materials conformed to

ASTM A-366-68 requirements. Couplings for sheaths were certified to meet Bechtel specification 7220-C-2, Revision 5, Paragraph 11.3.

- c. The Bechtel specification requires that concrete under the trumplates meet ACI-318-63. Treatment for prevention of corrosion is specified and provision have been made for additional tendons to be placed.
- d. An inspection of the gallery for vertical tendons in Unit 1 revealed an exceptionally damp area. Water was on the floor and droplets of water covered the ceiling and trumplates. Rusting along the edges of metal was visible even though the metal was coated. The RIII inspector informed the licensee that steps should be taken to minimize ingress of water and also to establish air circulation through the gallery. The inspector also observed that the opening to the gallery was not posted as to possible gas hazard. Site procedures require personnel entrance to be cleared through the safety department. The licensee representative stated appropriate corrective steps would be taken. This is considered an unresolved item.

Within the areas inspected, no items of noncompliance or deviations were identified.

SECTION II

Prepared by K. R. Naidu

1. Observation of Structural Concrete Activities

The inspector observed the following concrete placements:

- Service water pipe encasement between turbine building and diesel generator building, Pours No. Y(624.0) A West and No. Y(624.0) B East.
- Unit 1 containment wall elevation 744'-3" to 754'-5", Pour No. C(754.42)a.
- Primary shield Unit 2 Pour No. CC(630)b' elevation 630'.

Work and inspection activities were being accomplished according to applicable specifications, standards, drawings, and procedures in the following areas.

a. Placement Preparation

- (1) Forms were properly secured, leak tight, and clean.
- (2) Rebar and other embedments were properly placed, secured, and had the minimum cover distance.
- (3) Preplacement inspections had been completed prior to placement.

b. Delivery and Placement

- (1) Specified mix had been delivered.
- (2) Duration of mixing and transportation activities did not exceed the prescribed period.
- (3) Piping material for pumped concrete was acceptable.
- (4) Tests were being performed at the placement location at prescribed frequency and met the acceptance criteria; calibrated equipment was being used.

- (5) Concrete temperatures were within the specified limits.
- (6) Adequate crew, equipment and vibrating techniques were being used; chutes were of proper length to prevent excessive free fall.
- (7) Inspections were being performed during placement.

c. Curing

- (1) Concrete was being cured with wetted burlap.
- (2) Inspections were performed during curing.

d. Aggregate and Cement Storage

- (1) Cement was adequately stored and protected against moisture.
- (2) Size segregation and pile heights of stored aggregates were considered acceptable.

e. Batch Plant Operation

- (1) Material control was considered acceptable; all measuring equipment had been currently calibrated.
- (2) Generation and control of batch records were considered acceptable.
- (3) The concrete temperature was being controlled with the addition of appropriate quantities of ice.
- (4) The batch plant activities were being inspected by qualified inspectors from Bechtel and Champion, the batch plant contractor.

No items of noncompliance or deviations were identified in the above areas.

2. Review of Containment Structural Concrete Quality Records

The inspector reviewed the pertinent work and quality records associated with Unit 1 basemat and determined that the records reflected work accomplishment consistent with applicable requirements in the following areas.

a. Preplacement Preparation

- (1) Records indicated that the preplacement inspections were performed and identified no adverse findings.

b. Delivery and Placement

- (1) Logs No. 273 and No. 438, dated April 17, 1974, identified pour No. C(591.5)a was placed in Unit 1 basemat; Mix C2 was specified and delivered.
- (2) Records indicate that approximately 4936 cubic yards of concrete was placed from elevation 578'-6" to 591'-6" records of batches delivered were on file.
- (3) Required tests of placement were taken; concrete which met the specification was placed; unacceptable concrete with high slump was rejected.
- (4) Inspection records did not identify adverse conditions relative to segregations, consolidation and temperature.
- (5) Records of the inspection personnel indicate that they were qualified.

c. Curing

Records indicate that the placement was properly cured and that the forms were removed after the specified interval.

d. Rebar Splicing

- (1) Rebar splicings were performed according to the pertinent drawings.
- (2) Required tests for splicings were performed and determined acceptable.
- (3) Inspection personnel were qualified.

e. Concrete Materials

- (1) Records confirm that cement type II was used; material certifications for aggregate and admixtures indicate that the material conformed to the applicable ASTM standards.

Chemical analysis on the water indicate that the chemical content was below the specified limits.

- (2) Inspection records indicate that the established requirements were met relative to the control of material - receipt, handling and storage.

f. Batch Plant Operations

Production records for the placement identified no adverse findings.

g. Compressive Strengths

The compressive strengths on cylinders after 90 days exceeded the specified 4000 psi requirement.

h. Review of NCRs

The inspector reviewed the following NCRs and determined that appropriate corrective action was recommended and that the corrective action taken was verified prior to closing the NCR.

- (1) NCR No. 195, dated October 8, 1974, identified a five inch deep crack from azimuth 243° to 253°. Recommended corrective action was to prepare the area of the crack and place 6000 psi concrete. This was accomplished on February 7, 1975, when the first lift of the exterior concrete was placed.
- (2) NCR No. 247 dated December 10, 1974 identified 2" to 4" deep crack extending from azimuth 30° to 42° approximately ten feet long. Corrective action was to chip and remove loose aggregate, prepare the area and place 6000 psi concrete. Corrective action was completed and verified on February 7, 1975.

No items of noncompliance or deviations were identified in the above areas.

3. Review of U.S. Testing Company (UST) Management Audits

The inspector reviewed an audit performed by UST Management on the Midland Site office and determined the following:

- a. Audit No. 11 documented the management audit performed on April 21, 22, and 26, 1977.
- b. The principal auditors were from their main office in Hoboken, NJ.
- c. The following four findings were identified:
 - (1) Inadequate specification of accuracy levels to which measuring equipment was to be calibrated.
 - (2) Inadequate instructions to the site personnel to provide surveillance to activities of UST subcontractors such as Scientific Glass (calibration of hydrometer ID No. 214) or Forney (calibration of the compression testing machine).
 - (3) Incomplete testing personnel records at their main office.
 - (4) Corrective action had not been recommended on Corrective Action Requests for 14 reports; the earliest report was in January 1977.
- d. There was no documented indication on the four audit finding reports that corrective action was initiated. This is contrary to Paragraph 6.2 of procedure UST-Audit-1, Revision 3, which in part states "The project manager shall submit a written report to audit manager within 30 days from the date the audit report is issued defining the corrective action taken and a date for implementing the corrective action."

Failure of the licensee to ensure that his contractor UST followed his procedure (UST Audit 1, Revision 3) by taking timely corrective action within the period stipulated in the procedure is contrary to 10 CFR 50, Appendix B, Criterion V. This matter is considered an apparent item of noncompliance.

Prior to the conclusion of the NRC inspection, UST obtained the recommended corrective action information; implementation is to be accomplished and verified.

4. Observation of Nelson Stud Welding Activities

The inspector observed shear connectors (Nelson studs) being welded to safety related embedment plates on the auxiliary building. The

stud welding was being performed to procedure "P-1 Stud Welding," Revision 2, dated July 29, 1976, where in the requirements of AWS D1.1-72 are specified. The inspector observed several Nelson studs without a full 360° weld fillet; several of these studs which had been struck with a hammer for the routine bend tests appeared to have questionable separations between the weld and the shank. Through his observations and discussions with the licensee and contractor QC personnel, the inspector established that the following was not available:

- Documentation that the Bechtel Welding procedure "P-1 stud welding" was duly qualified.
- Certified results of an independent test laboratory on the Nelson Stud Welds; physical and chemical test certificates on the Nelson Studs were available.
- Records to indicate that the stud welding was being performed within the voltage, current and time parameters specified in the welding procedure.
- Records to indicate that the welding stud gun operator was indoctrinated in the operation of the equipment.

The above conditions are contrary to the following requirements:

- Policy No. 9 of Consumers Power Company Quality Assurance Program Topical Report CPC-1, Revision 4, dated March 1, 1977, (initiated by letter submitted to NRC from R. Sewell, May 23, 1975) titled "Control of Special Processes, Revision 5, dated December 10, 1976, which in Paragraph 1, in part stated "Whether performed by Consumers Power Company or a principal supplier, special processes are performed using qualified procedures, equipment, and personnel."
- Paragraph 5.2 of Quality Assurance Program Procedure for Design and Construction, Control of Special Procedures, Procedure No. 9-1, Revision 3, dated February 29, 1977, which in part states "CPCo departments perform special processes using approved qualified procedures and qualified equipment the design documents."
- Paragraph 5.3.d, of CPCo Electric Plant Projects Quality Assurance Services Department Procedures, Procedure No. 7, Revision 6, dated June 20, 1975, which in part states

" quality documentation is submitted and provides verification of approvals, materials, applicable inspection, and tests."

The inspector informed the licensee that the above condition was contrary to the requirements of 10 CFR 50, Appendix B, Criterion IX, and is considered an apparent item of noncompliance.

The inspector, along with licensee personnel observed, that as a result of hammer test performed approximately 20 Nelson Studs installed broke instead of bending and appeared to exhibit brittle fracture type failures.

Except as noted, no items of noncompliance or deviations were identified.

5. Observation of Safety Related Structural Steel Work Activities

The inspector observed completed work on Beams 423-B3-E and 428-B2-E to Column D7.4, at elevation 659' of the auxiliary building to ascertain whether applicable requirements as well as work and inspection procedures were met and determined the following.

- Receipt inspection records identified no adverse conditions.
- The beams were installed per drawing C228 titled, "Auxiliary building steel on elevation 659" and continued on drawing 242.
- Specified bolting material had been used.
- Inspections were performed on the installation and the results recorded.
- Qualifications of the QC inspection personnel appeared to be adequate.

No items of noncompliance or deviations were identified in the above areas.

6. Review of Quality Records of Safety Related Steel Structures

The inspector reviewed the quality records associated with the installation of Beam 424-B3-E, to Column D7.4 to ascertain whether the records met established procedures and reflected work accomplishment consistent with the SAR requirements in the following areas.

a. Materials

- (1) Materials reports supplied by Engels Iron indicated that the material met the ASTM A-36-7-0 specifications.
- (2) Receiving inspection reports indicated no adverse findings.
- (3) NCRs 301 and 302, dated April 2, 1975, and NCR 315 dated May 29, 1975, identified defective shop welds on beams. All NCRs were closed by returning the beams to the manufactures.

b. Installation

The components had been installed to the design drawing C-228.

c. Inspection Records

- (1) Records of inspection activities were complete, legible and retrievable.
- (2) Bolting inspection record sheet 2Z indicated the bolting was inspected with an inspection wrench type Skidmore Type 462 wheel helm; calibration was current.
- (3) Tension torque values were established on three bolt and the average tension was used for bolt torquing values.
- (4) Quality Control Inspection Record indicates that the structural steel erection was performed to PQCI 7220/C-2110, Revision 3.

d. Review of Discrepancy Reports

The inspector reviewed one Discrepancy Report (DR) (four pages) and observed that all discrepancies identified were corrected. The DR was considered closed after the QC inspector verified that the corrective action was completed.

No items of noncompliance or deviations were identified in the above areas.

7. Review of Quality Records of Safety Related Structures Welding

The inspector selected welds on the following safety related structures to ascertain whether the records reflect work accomplishment consistent with SAR and applicable AWS D1.1-72 code requirements.

a. At Elevation 652'

Beam 410 B7 (W21 X 82) to C5 Embed (North)
Beam 410 B8 (W21 X 92) to C5 Embed (North)

Installation was to Bechtel Drawing C242 and Ingall's Drawing E242.

b. At Elevation 659'

Beam 428 B2 (W30 X 132) to C6 Embed (South)
Beam 414 B2 (W24 x 68) to C5 Embed (North and South)
Beam 414 B1 (W24 X 68) to C5 Embed (North and South)

Installation was to Bechtel Drawing C228 and Ingalls Drawing E228.

The inspector determined the following:

- (1) Log No. 4196; QCIR No. 304 - 144W indicates that welding Procedure P1-A-LH, Revision 0, dated October 17, 1974, was used; welds and weldors were identified; visual inspection for size, length, and location of the welds identified no adverse findings.
- (2) Log No. 5893; QCIR No. 304-246 W indicates that welding Procedure P1-A-LH, Revision 0, dated October 17, 1974 was used; welds and weldors were identified; visual inspections for size, length, and location of the welds identified no adverse findings.
- (3) Review of one quality control welding surveillance log dated June 4, 1977, indicated that the welding current parameter of four weldors was checked with a tong type ammeter and determined to be acceptable.
- (4) Qualification of the weldors identified was verified and determined to be current.

At the NRC inspectors' request the welds were reinspected for size and length. It was determined that the size of several fillet welds were substantially in excess of those specified in the design drawings; the lengths of four welds were less than those specified in the drawing.

Furthermore, the inspector determined that neither the Bechtel design drawings nor the QC inspection checklists specify any tolerances on either the size or lengths of the welds.

The inspector stated that the above condition was contrary to the requirements of 10 CFR 50, Appendix B, Criterion X, and the implementation of Paragraph 1.c of Policy No. 10, Revision 3, dated December 1, 1975, of the Consumers Power Company Quality Assurance Program Topical Report CPC-1, Revision 4, dated March 12, 1976, titled "Inspection."

This is considered an apparent item of conformance.

The inspector reviewed the following Discrepancy Reports (DRs) on welds:

C304-244W, dated September 13, 1977
C304-169W, dated August 6, 1977
C304-174W, dated July 18, 1977
C304-282W, dated July 18, 1977
C304-50W, dated December 15, 1976
C304-51W, dated December 15, 1976
C304-36W, dated October 29, 1977

The above DRs identified discrepancies related to over sized and unauthorized welds. The DRs were closed by obtaining telephone approvals from Bechtel's Ann Arbor office engineering personnel. Corrective action in the form of indoctrination either to assert adherence to ASW D1.1-72 code inspection requirements or discourage placing unauthorized, oversized fillet welds had not been considered.

Except as noted, no items of noncompliance or deviations were identified.

SECTION III

Prepared by: R. J. Cook

R. J. Cook

Reviewed by: *W. Hayes*, Chief
Projects Section

William Hayes

1. Observation of Structural Concrete Activities

The inspector observed the concrete placement for the service water intake structure and determined that work and inspection activities were being accomplished according to applicable specifications; codes and drawings in the following areas.

a. Placement Preparation

- (1) Forms were properly secured leak tight and clean.
- (2) Rebar and other embedments were properly placed according to applicable drawings C-86, C-84, C-96 and C-97.
- (3) Preplacement inspections had been completed prior to placement.

b. Delivery and Placement

- (1) Mix C1 was specified and delivered to the service water intake structure (SWI) pour number SWI (628) a'.
- (2) Duration of concrete mixing and transportation was within the specified limits.
- (3) The piping material for pumping concrete was acceptable.
- (4) Testing was being performed at specified intervals at the placement site using calibrated equipment and met acceptance criteria; samples were being collected at the end of the line. One truck load of concrete did not meet air entrainment requirements and was rejected.
- (5) Temperature of the concrete was within specified limits; ice was used to control temperature.
- (6) Adequate crew and equipment were being utilized during concrete placement. Vibrators were observed to be

properly used and chutes appeared to be of proper length to limit the free fall to approximately five feet.

(7) Inspections were being performed by qualified persons.

c. Curing

The inspector noted that the exposed surface of the SWI structure was not completely wetted. The surfaces were wetted shortly afterwards and QC records indicated that the curing process was being adequately performed.

The existing QC inspection requirements could allow relatively long periods of inadequate curing to occur without detection. Prior to conclusion of the inspection the Project Field QC Engineer stated that a directive had been issued to increase QC surveillance to alleviate the potential for inadequate curing without timely detection.

The Project Field Engineer stated that accelerated training in concrete placement for Field Engineers would be instituted.

d. Aggregate and Cement Storage

(1) Cement storage appeared to be adequate.

(2) Aggregate storage was in separate piles for 3/4 and 1 1/4 inch sizes. Piles appeared to be stored in acceptable heights.

e. Batch Plant Operation

(1) Measuring equipment appeared to be calibrated as indicated by attached calibration stickers.

(2) Temperature was being controlled by ice addition for hot weather concrete.

(3) Two QC inspectors were present in the batch plant during the production of concrete.

(4) Generation and control of batch records appeared to be adequate.

In the areas inspected, no items of noncompliance or deviations were identified.

2. Observation of Safety Related Component Storage

The inspector observed the storage of the reactor pressure vessels, steam generators, upper and lower internals (Unit 1 only) for Units 1 and 2 and determined that the storage requirements appeared to be adequate in the following areas:

- a. The components were stored in well drained areas on dunnage.
- b. Tarpaulins were used to protect the components from weather.
- c. Moisture desiccant was used in the reactor pressure vessels and pressurizers; moisture content was being periodically determined. Nitrogen purge was being used on the other components and the pressure was observed on oil manometers.
- d. The inspector reviewed the storage surveillance records for the components and determined that periodic inspections were conducted.

Within the areas inspected, no items of noncompliance or deviations were identified.

3. Observation of Weld Work and Work Activities

The inspector observed the setup and tack weld for field weld (FW20) between piece mark 1CCB-12-S-603.7 and limitorque valve 403-2-077 and determined that the applicable procedure requirements were met in the following areas:

- a. Joint preparation and alignment appeared to be acceptable.
- b. Weld identification and location were as specified on isometric drawing No. 603.7.
- c. The inspector observed that weld rod 308L was used for tack welding by the TIG method.
- d. The following day the inspector observed that the root pass had been completed; welding was being performed to weld procedure P8-AT-A9.

Within the areas inspected, no items of noncompliance or deviations were identified.

4. Observation of Pipe Restraint Installations

The inspectors selected the hangers listed below, observed the installation and later verified the status of QC inspections.

- a. Seismic pipe restraint 4"-2HCB-19-H14.
- b. Seismic pipe restraint 4"-2HCB-19-H18.
- c. Seismic pipe restraint 4"-2HCB-19-H22.
- d. Hanger assembly 12"-2HCB-5-H1.

These above hangers are located in the decay heat removal and reactor building spray systems.

Review of the QC inspection records indicated that the inspection findings were outstanding.

Nonconformances were documented and indicated that the hanger components supplied did not agree with the component list. Corrective action taken, was in the form of QA audits which scrutinized the suppliers QC program and is considered adequate. The licensee stated that improvements have been observed since the audits.

Within the areas inspected, no items of noncompliance or deviations were identified.

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 Section 1 under Paragraph 3.d.

Exit Interview

The inspectors met with licensee and contractor representatives (indicated in the Persons Contacted paragraph) at the conclusion of the inspections on September 2 and 15, 1977. The inspectors summarized the purpose and scope of the inspection and the finding. The apparent items on noncompliance relating to; (1) failure to follow procedures, (2) stud welding procedure qualification, and (3) QC welding acceptance and rejection criteria were discussed in detail.