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

REGION III

Report No. 50-461/78-07

License No. CPPR-137 Docket No. 50-461

Licensee: Illinois Power Co. 500 South 27th Street Decatur. IL 62525

Facility Name: Clinton Nuclear Power Station, Unit 1

Inspection At: Clinton Site, Clinton, Illinois

Inspection Conducted: December 19-22, 1978

Inspectors:

Maxwell

1-34.74

1-27-11

R. R. Naidu

Approved By: D. W. Hayes, Chief

Projects Section

Inspection Summary

Inspection on December 19-22, 1978 (Report No. 50-461/78-07) Areas Inspected: Previously identified matters; safety related equipment receipt and storage protection; containment structures and safety related structures observation of work and record review; electrical cables, components and penetration procedures and program review and structural concrete observation of work and records review. The inspection involved a total of 96 inspectorhours on site by four NRC inspectors. Results: Of the 11 areas inspected, no items of noncompliance or deviations were identified.

DETAILS

Persons Contacted

Illinois Power Company

*L. J. Koch, Vice President

*J. O. McHood, Vice President

*J. D. Geier, Manager of Generation Engineering

*G. M. Brashear, Manager of Clinton Site Activities

*J. F. Hampton, QA Supervisor - Site

*W. M. Berry, Superintendent Construction Engineering

R. J. Canfield, Supervisor, Construction

*E. E. Connon, Assistant Supervisor, Construction

M. E. D'Haem, QA Engineer

B. Kacker, Engineer

*M. Tindill, QA Engineer

Other Personnel

*J. S. Simpson, Project Manager, Baldwin Associates (BA) E. Muelhausen, Assistant Project Manager BA *T. Selva, Manager Quality and Technical Services BA *J. R. Hilding, QA Manager BA *J. F. Linehan, QC Manager BA *B. G. Carson, Manager Technical Services BA *G. B. Browne, Assistant Project Engineer BA T. Walker, Senior QC Engineer BA C. Winfrey, Senior QC Engineer BA *W. Woolery, Technical Service BA C. Garner, Senior QA Engineer BA M. Cook, Material QC Supervisor BA T. Bostwick, Storage and Maintenance Supervisor BA T. Wilmeth, NDE Supervisor BA P. Bryand, Project Engineering BA J. Smart, QA Engineer BA H. D. Batthauer, QC ENgineer BA H. C. Reiling, QC Engineer BA D. Heckenberger, Batch Plant Superintendent BA *D. E. Cook, Manager U.S. Testing Company *K. Rademacher, Supervisor U.S. Testing Company *R. Crockett, Bristor Steel Project Engineer

*Denotes those attending the exit interview held on December 22, 1978.

Other licensee and contractor personnel were contacted during the course of the inspection.

Licensee Action on Previous Findings

(Closed) Noncompliance (461/78-05-01) Liquid Penetrant Examination procedure not properly qualified. The inspector reviewed the BA procedures for nondestructive inspection by liquid penetrant examination. It was learned that only BA procedure BTS 301.1 Liquid Penetrant Examination Revison 2, dated May 17, 1978, remained in the procedures manual. A BA transmittal (No. C-2253), dated June 5, 1978, instructed all procedure manual holders to delete procedure NDE-PT 301.2 Revision 3, pages 1-11. As instructed, this procedure was to be removed and destroyed. This procedure, previously listed in the indexas Nonstandard Temperatures for Liquid Penetrant, BTS 301.2, May 17, 1978, was no longer included in the BA procedures manual reviewed by the inspector. In response to questioning, the NRC inspector was informed that a replacement procedure has not been prepared and that presently there are no plans to prepare such a procedure. The inspector was further informed that should BA prepare such a procedure in the future, that they would provide sufficient notice to the NRC so that qualification of the procedure could be observed.

Review of procedure BTS 301.1 established that paragraph 7.2 provided a temperature limitation for base material of 60° F to 125° F for test application.

This matter is considered resolved.

(Closed) Noncompliance (461/78-05-03) Lack of NDE experience documentation. Correct action was reviewed by the NRC inspector. It was learned that for BA personnel, the qualification was recertified for all NDE personnel with the experience record indicated on the certification document. The new certification records were reviewed for five NDE inspectors and found to be acceptably corrected. The U.S. Testing Company records of certification and training were reviewed. Individual sheets have been added to each inspectors record documenting the monthly experience gain per NDE method. In addition a training record listing that individual NDE training received. Suitable experience and training records were available for each NDE inspector.

This item is considered to be resolved.

(Closed) Noncompliance (461/78-05-06) Inadequate procedure to assure protection, cleanliness and the integrity of the stainless steel drywell liner plate.

NCR 1319, dated July 12, 1978, was initiated to clean the concrete splattered on the stainless steel liner of the drywell weir wall. Corrective action recommended was to remove the concrete by power brushing, clean the area with Oakanite 33, inspect the area (wipe test and visual) to ASTM-A-380 paragraph 7.2.1 and request IP Bio-Lab to verify the cleanliness in accordance with ASTM-A-380 paragraph 7.3.1. Documented results of the wipe tests indicate that the area was cleaned. In a memorandum to the QC managers, dated December 21, 1978, the construction managers stated that the pertinent superintendents were directed to inform the craft personnel the contents of procedure BAP 1.9 titled "Control of stainless Steel," to preclude recurrence. The inspector determined that the implementation of the corrective action outlined in the licensee's letter dated August 31, 1978, is adequate.

(Closed) Unresolved Item (Report No. 50-461/77-07) It was previously reported that there was no objective evidence in the Baldwin Associates audit of Rockwell Engineering Company (REC) relative to the vendor's compliance with AWS D1.1-75 Section 4.2.5 Studwelding and Section 6.5 Inspection. Baldwin Associates performed an audit on REC on September 7 and 8, 1977, and identified seven adverse findings; one of the findings was that several procedures and welding qualifications do not reference the standard AWS D1.1-75. These procedures were revised and resubmitted on November 9, 1977, for the A/E's approval. Additionally, the inspector reviewed several "Supplier Quality Control Activity Reports" (SQCARs) which document the vendor surveillances performed by Baldwin QC personnel. The SQCARs indicate that compliance to AWS D1.1-75 relative to studwelding was verified.

(Closed) Unresolved Item (461/78-05-06) It was previously reported that additional information was required to correlate the Material Test Reports (MTR) provided by Mississippi Valley Structural Steel Company (MVSS) with the components used to fabricate the drywell assembly. During the current inspection, the inspector reviewed the MTRs for the drywell steel plate work assemblies No. MK-Al and MK-A2. Documents indicate that the material was supplied Lukens Steel Company (LSC). MTRs from LSC identify the material through the Melt No./ Heat No. and furnish the physical and chemical test results of the material. The test results were verified to meet the material specification requirements.

(Closed) Unresolved Item (461/78-05-05) It was previously reported that those audits performed by the licensee on Chicago Bridge and Iron (CBI) verifying the existence of documents to substantiate shop releases were not available for review. Trip report No. Q36-PY-77-Y-10090 dated October 29, 1978, and Supplier Quality Assurance Activity Report dated November 29, 1976, indicate that the existence of documents to substantiate CBI shop releases was selectively verified.

(Closed) Noncompliance (461/78-05-11) General porosity of the cadweld filler material. Sargent and Lundy issued ECN No. 699 to Specification K-2944, Amendment 12 to further clarify the term 'general porosity' and to more clearly define what constitutes acceptable and unacceptable

porosity during inspection of completed cadwelds. Baldwin Associated Procedure 3.1.5, Revision 4, Section 5.10.1(b) for field inspection, incorporates ECN No. 699.

(Closed) Unresolved Item (461/78-05-09) Inspection, testing and certification of non-shrink grout. Baldwin Associates Procedure 3.1.1, Revision 7, Section 5.8 was revised to include inspection requirements for the sampling and testing of centrally mixed and non-shrink grout. Adequate provisions for the sampling and testing of centrally mixed and non-shrink grout are specified in Division IV of U.S. Testing QCP-3, Revision 6 and Sargent and Lundy Specification K-2944, Amendment 12, Form CPS-1-GW, Revision 1, Section 5.2 and Table 5-1. Licensee personnel stated that material certifications will accompany non-shrink grout shipments when safety related work begins.

Section I

Prepared by F. C. Hawkins

Reviewed by R. L. Spessard, Chief Engineering Support Section 1

1. <u>Observation of Auxiliary Building Concrete Placement Work</u> Activities and Related Quality Records

The inspector observed concrete placements A-1W-1-14-525, A-1W-1-13-573, and A-S- $\frac{1}{2}$ -2-575. The two internal walls and the adjoining slab were placed simultaneously with approximately 135 cubic yards of concrete. The following specific observations were made:

- a. Placement Preparation
 - Review of the Pour Traveler for each placement confirmed that all checklist criteria had been met and signed off.
 - (2) Forms were observed by the inspector to be properly secure and clean.
 - (3) Reinforcing steel and imbedments were observed to be free of excessive rust, mill scale, and concrete.
 - (4) Horizontal and vertical construction joints were found to be properly prepared for concrete placement.
- b. Delivery and Placement
 - Concrete Mix Design No. 230-L4090-P01 (4000psi, 3/8" MSA) was specified and delivered to the placement area.
 - (2) Concrete was pumped to the placement area and then deposited via concrete drop chutes which adequately confined the concrete with a maximum five foot free fall. Concrete was consolidated using adequate equipment and techniques.
 - (3) Heating of the placement area prior to concrete placement was observed. All interior surfaces in the placement area were maintained above 32° F to assure that concrete, as placed, would not be susceptable to freezing.

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(4) United States Testing field QC personnel performed slump, temperature, percent entrained air and unit weight tests, and cast compressive strength cylinders as follows:

Ticket Number	38848	38854	38863
Slump	412"	31/2"	31/2"
Temperature	66	63	62
% Entrained Air	4.4	5.6	6.0
Cylinder Number	1203-1	-	1203-2
Unit Weight	-	-	140.56

All test results were within acceptable limits and performed at the frequencies specified. Concrete sampling and testing techniques were observed and determined to be acceptable. Concrete test equipment was calibrated and properly marked to indicate calibration status.

Field curing boxes to maintain the freshly cast compressive strength cylinders at the initial curing temperature specified by ASTM C31-69 were inspected and determined adequate

(5) Placement inspection was observed and discussed with the Baldwin Associates QC inspector responsible for this placement. The inspector determined that the BA QC inspector's activities were adequate to properly control the placement of concrete.

c. Curing

Adequate cold weather protection and curing for temperature and moisture control were observed during post placement inspection activities.

- d. Batch Plant Operation
 - Volumetric batching devices and scale calibration reports for the main and back-up batch plants were reviewed and found to meet required calibration frequencies and tolerances.
 - (2) The inspector reviewed the central mixer and truck mixer uniformity test results and found them acceptable.
 - (3) The inspector reviewed the NRMCA check list certificates for both the main and back-up batch plants and found them acceptable.

- (4) Baldwin Associated QC inspection records for truck mixer blade wear, drum cleanliness, chute cleanliness, and counter operation were reviewed and found acceptable. QC inspection reports for the central mixer cleanliness and blade wear were also reviewed and determined to be acceptable.
- (5) The inspector noted that no QC representative was present in the batch plant control room during production operations. Licensee personnel stated that all batch tickets are checked to verify proper material weights after the placement is completed and that random surveillance of the control room is performed by the Baldwin Associates batch plant inspector. Because of the fully automatic control board and the confidence which has been established in its performance, the licensee feels that 100% QC inspection in the control room is unwarranted. Based on a review of batch tickets and NCR's generated due to batching error, the licensee's confidence in the batching apparatus appears valid, and the inspector has no further questions at this time.

e. Concrete Material Storage

- Size segregation, deleterious material contamination control, handling techniques, and pile heights for fine and coarse aggregate were inspected and found acceptable.
- (2) Cement silos which excluded moisture and contaminants were inspected.
- (3) Liquid admixtures were adequately stored to avoid ontamination or evaporation.

No items of noncompliance were identified.

2. Material Testing and Inspection Laboratory

The inspector performed an inspection of the U.S. Testing Laboratory. This facility is responsible for performing the testing and inspection of concrete, solls, and reinforcing materials. The inspector also toured the U.S. Testing Aggregate Laboratory at the batch plant. This laboratory performs receipt and daily in-process tests on fine and coarse aggregates. The following specific observations were made:

a. <u>Qualification of Testing Personnel</u> - The inspector reviewed the training and qualification records of five QC laboratory/ field inspectors and determined that each met the requirements of ANSI N45.2.6. b. Equipment Calibration - The inspector observed the following calibrated laboratory equipment and pertinent records:

Equipment ID and No.

Calibration Due

Air Meter No. AM-6	June 8, 1979	
Field Scale No. SC-12	May 2, 1979	
Lab Scale No. SC-15	February 21, 197	
Triple Beam Balance No SC-22	March 9, 1979	
Lab Scale No. SC-25	March 12, 1979	
Flow Table No. EFT-1	January 29, 1979	
Thermometer No. TE-141	June 18, 1979	
Unit Weight Bucket No. AM-6	June 8, 1979	
Slump Cone No. ESL-7	April 11, 1979	
Compression Machine No. ESL-1	June 28, 1979	
Tensile Machine	June 28, 1979	
Gradation Sieves (Aggregate Lab)	Current	

- c. <u>Moist Curing Room</u> Compressive strength specimens were observed to be adequately cured in accordance with ASTM C31-69. Curing room temperature is monitored using a calibrated recording thermometer. Moisture is measured weekly using a sling psychrometer.
- d. <u>Filler Metal Splice Testing</u> Four cadweld qualification test splices (T series) for two iron workers (2 each) were observed being tested by U.S. Testing personnel. The tests were performed in accordance with ASTM A370 and the results exceeded the minimum tensile strength requirements specified in ASTM A615.

- 3. Review of Concrete Material Quality Records
 - a. <u>Cement</u> In-process test reports for sample No.'s OFO-314, OFO-307, and OFO-305 of Type II cement were reviewed and found to conform to the standard chemical and physical tests required by ASTM C150-70. Test frequency was verified to be every 1200 tons as specified in ASTM C183.
 - b. <u>Aggregate</u> In-process test results and test frequencies for fine and coarse aggregates were reviewed and found to conform to the requirements set forth in ANSI N45.2.5-74, Table B.
 - c. Liquid Admixtures
 - (1) <u>Type A Water-reducing Admixture</u> In-process test results for Lot Nos. DP909Y8 and DV510Y8 of Pozzolith 300 N performed in accordance with ASTM C494, were reviewed by the inspector and determined acceptable.

- (2) Air Entraining Admixture In-process test results for Lot Nos. DV170X7 and DV019S7 of MB-AE 10 were reviewed and found to conform to ASTM C260.
- d. <u>Water and Ice</u> In-process test results for water and ice conformed to the physical tests ASTM C151, C191, and C109 as required by ANSI N45.2.5-74, Table B. The six month test frequency required by Table B was also verified by the inspector.

Section II

Prepared by K. R. Naidu

Reviewed by R. L. Spessard, Chief Engineering Support Section 1

1. Observation of Spent Fuel Storage Pool Fabrication Activities

The inspector observed work performance and partially completed work on the West Wall Division 3 of the Spent Fuel Storage Pool (SFSP) liner plate. The SFSP is being fabricated in sections on site by Bristol Steel and Iron Works (Bristol). The inspector determined that applicable inspection requirements were being met in the following areas:

- a. Receipt inspections were performed on the liner plates to identify damage during transit; storage of components, which were not being installed appeared to be adequate.
- b. Installation of the liner plate appeared to be in accordance with Bristol drawing sheet E-S-28-1907.
- c. Materials specified in the drawing were used.
- d. Visual inspection of the welds, Penetrant Examination (PT) and Spot Radiography (SRT) were being performed as applicable.
- e. Inspection results were being documented.

No items of noncompliance were identified.

2. Review of SFSP Quality Records

The inspector reviewed the quality records relative to the West Wall Division 3 section of the SFSP and determined that these records reflect work accomplishment consistent with applicable requirements in the following areas:

a. Site Receiving Inspection Report (SRIR), dated October 20, 1978, indicated that stainless steel liner plates identified as 3-16P1, P2, P3, P4, 3-17P1, P2, P3, 3-18P1 and miscellaneous back-up bars and channels were released for shipment. The SRIR was signed by a Bristol Virginia Shop representative. The report indicates that the material was received at the CPS Site on October 23, 1978 with no visible shipping damage.

- b. Plates identified as 3-16P1, P2, P3, #-17P1, P2, P3 and 3-18P1 were installed in accordance with drawing E-S-28-1907 to form the West Wall Divison 3 section of the SFSP, elevation 712'0" to 755'0".
- c. Seam welds 320, 321 and 322 were examined utilizing Bristol's PT procedure PT-0267-1 Revision 1. PT Report PE 107, dated November 13, 1978, indicates that weld seams 320, 321 and 322 were PT examined and no adverse findings were identified. Dye penetrant type DP-50, cleaner type DR-60 and developer type D-100, all manufactured by Double-Check, were used during the PT.

3. Observation of Reactor Pedestal Installation Activities

The inspector observed work activities related to the installation of the Reactor Pressure Vessel Pedestal (RPVP). Lake Side Bridge and Steel (LSBS) fabricated the RPVP in segments and shipped them to the site where they are installed and welded together by Baldwin Associates (BA). The inspector determined that work and inspection procedures were being met in the following areas:

- a. RPVP shell assemblies, diaphrams and gusset plates were receipt inspected upon arrival at site.
- b. Installation of shell assemblies MK-3 and MK-2-1 appeared to be in accordance with LSBS drawing 9166-3C Revision 7 and 9166-2B Revision 6 respectively.
- c. Inspection and Nondestructive Examination (NDE) were being performed at various stages as specified.
- d. NDE activities were performed by the U.S. Testing Services, the licensee's independent testing laboratories.

No items of noncompliance were identified.

4. Review of RPVP Quality Records

The inspector reviewed the quality records related to the RPVP and determined that the quality requirements were met in the following areas:

a. Receipt Inspection Report (RIR) S-4155, dated August 21, 1978, indicates that the following material was received and Non-Conformance Reports (NCRs) 1456, 1457 and 1458 were generated to document apparent damage during transit.

- (1) RPVP shell segments and base plates.
- (2) Diaphram caps.
- (3) HVAC pipes and penetrations.
- b. Review of NCRs 1456, 1457, and 1458 indicates that corrective action recommended was appropriate and that QC verified the satisfactory accomplishment of the repairs.
- c. Material Requisition (MR) 2794 indicates that the material was requisitioned for installation on August 21, 1978.
- d. Material Test Reports (MTR) from United States Steel Company (USS) certified that the material for shell segment MK-3 conformed to ASTM-A-588-75 grade A requirements. Physical, Chemical, and Charpy 'V' notch test results wer furnished. The material was stress relieved at 1150° F and held for 15 hours.
- e. RIR 4070, dated August 8, 1978, indicates that RPVP shell segments 2-1, 4-1 and several penetrations were received on site. NCR 1423 was generated to document inadequate weld preparations on shell segments 2-1 and 4-1. Review of the NCR indicates that the recommended corrective action to repair the weld preparations was satisfactorily accomplished and verified by QC.
- f. MR 2757 indicates that the material was requisitioned for installation on August 11, 1978.
- g. MTR from USS certified that the material for shell segment MK-2-1 conformed to ASTM-A-588-75 grade A requirements. Physical, Chemical and Charpy 'V' notch test results were furnished. The material was stress relieved at 1150° F and held for 15 hours.

5. Observation of RPVP Welding Activities

The inspector observed welding activities in progress and completed welds in the RPVP area. Several completed welds joining the outer horizontal bottom and the diaphram plates, inner horizontal bottom and diaphram plates and gusset plates and inner horizontal plates were observed to be in accordance with requirements established in the travelers. The inspector determined that welding activities met the established requirements in the following areas:

a. The welds and welders were identified on the travelers.

- b. Semi-automatic Flux Cored Arc Welding (FCAW) process was being used to weld the material; shield gas was not used.
- c. 1/16" diameter flux cored wire type E-70T-1 was being used in accordance with Weld Procedure Specification (WPS) N-588-588 FL.
- d. Heating pads were used on the outer periphery of the RPVP to maintain preheat in the areas being welded.
- The appearance of partially completed single bevelled welds appeared to be acceptable.

6. Review of RPVP Welding Records

The inspector reviewed the welding records related to the RPVP and determined that the records reflect work accomplishment with applicable requirements in the following areas:

- a. Page 7 of 11 of traveler M-27RP-45 furnishes the necessary information and specifies the inspection requirements for the diaphram welds D-15, D-16 and D-12.
 - Weld Procedure Specification (WPS) N-588-588 FL for use with 1/16" diameter flux cored wire type E-70T-1.
 - (2) Cleanliness and fit up to meet BTS procedure 405, Revision 5.
 - (3) Preheat 200° F; maximum interpass temperature 500° F. QC inspectors used tempsticks to verify the temperatures.
 - (4) Every 3/8" weld build up is to be Magnetic Particle examined.
 - (5) Visually examine the completed weld.
 - (6) Request UST, the licensee's independent testing laboratory, to PT the final weld.
- b. Information on weld wire withdrawal is provided. Provisions to retrieve the certification were determined to be adequate. The following information was available on weld wire identified by lot numbers 95113Z and 95112Z.
 - RIR 4241 indicates that 1260 lbs. of 1/16" diameter Fabco 802 E-70T-1 type weld wire with lot number 951132 were received on site on August 29, 1978, from

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Hobart Brothers (HB). Test reports from HB certified that the weld wire met the requirements of SFA 5.20 of the relevant ASME Code, Sections II and III.

- (2) RIR 4153 indicates that 1860 lbs of 1/16" diameter Fabco 802 E-70T-1 type weld wire with lot number 95112Z were received on site on August 21, 1978, from HB. Test report from HB certified that the weld wire met the requirements of SFA 5.20 of the relevant ASME Code Sections II and III.
- c. Welding surveillance records indicate that the following aspects of the WPS were verified at random intervals:
 - (1) Current setting on the welding machine.
 - (2) Type of material welded.
 - (3) Welding process.
 - (4) Filler material size.
 - (5) Thickness of the material welded.
 - (6) Identification of the grid/welding machine.
 - (7) Current measured with a tong type ammeter.
 - (8) Voltage.
- d. The calibration certificates on the tong type ammeter were reviewed. Industrial Service Laboratories (ISL), St Louis, Missouri, performed the calibration. The NRC inspector identified inconsistencies in the documentation. The licensee agreed to discuss the matter with ISL and update the records. This is considered an unresolved item. (50-461/ 78-07-01)
- e. Discussion with the Baldwin Associates (BA) welding engineer and review of procedures and documents indicate that although adequate measures have been instituted, a documented program to control the welding machines has not been developed. The licnesee agreed to develop such a program. This is considered an unresolved item. (50-461/78-07-02)
- f. The qualifications of three welders identified in the traveller were verified and determined to be current.
- No items of noncompliance were identified.

Section III

Prepared by G. F. Maxwell

Reviewed by R. L. Spessard, Chief Engineering Support Section 1

1. Quality Assurance Program Review - Electrical

- a. The inspector was informed by the licensee that Baldwin Associates (BA), the major contractor for Clinton Units 1 and 2, will install and inspect class IE electrical equipment using the Baldwin Associates Quality Assurance Program. The inspector observed that selected sections of the BA Quality Assurance Program have been previously reviewed by Region III and so documented in IE Inspection Reports numbered 50-461/76-04 and 50-462/76-04. However, since that time there have been several changes made to those sections which were reviewed by the Region III inspectors. Therefore, the inspector selected the following sections of the BA Quality Assurance Program and compared them with the Clinton Units 1 and 2 PSAR Chapter 17, the Illinois Power Company (IP) QA manual and ANSI N45.2.
 - Organization Structure and QA Personnel (reviewed BA QA Manual Section 0, Rev. 5; Section 1, Rev. 5; Section 2, Rev. 4 and BA Procedures BQA-180, Rev. 2; BQA-181, Rev. 1; BAP-1.6, Rev. 2 and BA QC Inspection Training Manual, Rev. 2).
 - (2) Procurement Document Control (reviewed BA QA Manual Section 6, Rev. 5; Section 3, Rev. 4 and BA Procedure BQA-122, Rev. 3).
 - (3) Requirements for Work and Quality Inspection Procedures (reviewed BA QA Manual Section 5, Rev. 4 and Section 4, Rev. 5).
 - Material Control (reviewed BA QA Manual Section 7, Rev. 5 and BA Procedures BAP-3.5.3, Rev. 1; BAP-2.3, Rev. 6; BAP-1.5, Rev. 4; BAP-2.4, Rev. 3 and BAP-2.11, Rev. 3).
 - (5) Document Control (reviewed BA QA Manual Section 0, Rev. 5; Section 4, Rev. 5 and BA Procedure BAP-2.0, Rev. 3).
 - (6) Requirements for Special Processes (reviewed BA QA Manual Section 9, Rev. 4).

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- (7) Requirements for Test Control (reviewed BA QA Manual Section 11, Rev. 5).
- (8) Control of Measuring and Test Equipment (reviewed BA QA Manual Section 12, Rev. 5 and BA Procudure BAP-2.5, Rev. 4).
- (9) Requirements for Quality Records (reviewed BA QA Manual Section 16, Rev. 5).
- (10) Corrective Action (reviewed BA QA Manual Section 13, Rev. 6; Section 14, Rev. 4 and BA Procedure BAP-1.1, Rev. 3).
- (11) Audits (reviewed BA QA Manual Section 15, Rev. 5 and BA Procedure 150, Rev. 4).
- b. The inspector was informed by the licensee that Illinois Power Company will be responsible for the testing of class IE electrical equipment/components and that the test procedures program for these tests have not yet been developed.

2. Material Records and Storage

- a. The inspector reviewed the current maintenance records for the forklifts and cranes which are being utilized for construction activities (forklifts identification nos. 93S280 and 73S281 and crane identification nos. 7-32, 7-37, 7-38 and 7-39). The records indicated that inspections of the equipment are being conducted on scheduled frequencies and that actions are being taken to correct unsatisfactory conditions which are observed during the inspections (reference BA Procedure BAP-2.4, Rev. 3).
- b. The inspector observed that IP Site QA personnel have identified in Surveillance Report Q24-PY-78 (12-11)-0 concerns that purchase specifications are not clearly stating requirements for documentation to be supplied by the manufacturers. The inspector was informed by the IP Site QA Supervisor that a surveillance will be conducted during January 1979 to further evaluate the concerns identified in the aforementioned Surveillance Report. The inspector has no further questions about this matter, at this time.

3. Cable Tray and Class IE Equipment Installations

The inspector reviewed the Sargent and Lundy (S&L) Specification (K-2999 dated April 5, 1978) for class IE cable trays and discussed the specification with the S&L Site Electrical and Mechanical Engineers. The inspector was informed that S&L design is assuring that the interface between piping systems and their supports will not jepordize class IE equipment, cable tray and cable tray supports. Specifically, that Seismic 1, Class IE cable tray will not be routed such that failure of the supports for non-seismic 1 piping would damage the seismic 1 mounted cable tray. Further, that the clearances between class IE equipment and adjacent piping will be such that class IE equipment damage would not result from adjacent pipe movements (due to pipe growth, system operation, etc.).

The inspector was informed, by the licensee, that S&L will be doing the design routing of piping larger than two inches in diameter and that it has not been decided who will conduct the design routing of piping two inches in diameter and smaller. This matter will be reviewed futher during future inspections for the design routing requirements of piping two inches in diameter and smaller.

Section IV

Prepared by T. E. Vandel

Reviewed by D. W. Hayes, Chief Projects Section

Safety Related Components

A review was conducted of the receipt inspection and storage protections of safety related components received on site. The results of that review are as follows:

- 1. Components Reviewed
 - a. Standby liquid control pump and motor.
 - b. Feedwater demineralizer precoat pump and motor.
 - c. HPCS 20" gate valve.
- 2. Documents Reviewed
 - a. Storage maintenance instructions.
 - b. Records of maintenance activities.
 - c. Receiving Inspection Reports (RIRs).
 - d. Related NCRs.
 - e. Vendor supplied Quality Documents.

In addition the above listed components were observed in its warehouse storage location.

The receipt inspection, warehousing, and storage protection appear to be under good control and no problem areas were identified as a result of the review.

Unresolved Matters

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 this inspection are discussed in Section II, Paragraphs 6.d and 6.e.

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Exit Interview

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An exit interview was held at the conclusion of the inspections on December 22, 1978. Those persons in attendance are indicated in the Persons Contacted section of this report.

The inspectors outlined the scope and the results of the inspection with those present.