

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

REGION III

Reports No. 50-456/81-05; 50-457/81-05

Docket Nos. 50-456; 50-457

Licenses No. CPPR-132; CPPR-133

Licensee: Commonwealth Edison Company  
Post Office Box 767  
Chicago, IL 60690

Facility Name: Braidwood Station, Units 1 and 2

Inspection At: Braidwood Site, Braidwood, IL

Inspection Conducted: April 27-30, and May 1, 1981

Inspectors: J. F. Schapker (April 27-29, 1981)

5/21/81

R. L. Lee (April 27, 30, May 1, 1981)

5/21/81

Approved By: D. H. Danielson, Chief  
Materials & Processes Section

5/26/81

Inspection Summary

Inspection on April 27, through May 1, 1981 (Report No. 50-546/81-05;  
50-457/81-05)

Areas Inspected: Observations of in progress welding for unit two reactor coolant piping, including verification of quality control procedures, welders' qualifications and material control; review of safety related electrical switchgear, cable, and containment penetration QA records. The inspection involved a total of 34 inspector-hours onsite by two NRC inspectors.

Results: No items of noncompliance or deviations were identified.

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DETAILS

Persons Contacted

Commonwealth Edison Company (CECo)

+\*R. Casaro, Site Superintendent  
+\*T. R. Sommerfield, Site QA Superintendent  
+\*S. Hunsader, QA Supervisor  
\*L. Tapella, QA Engineer  
H. Jones, QA Inspector  
S. Jaquez, QA Engineer

Phillips Getschow Company

A. Rubino, QC Manager  
E. Ullrich, QC Foreman  
G. Rogalski, Crib Attendant

The inspectors also contacted and interviewed other licensee and contractor personnel.

+Denotes those attending the exit interview on April 29, 1981.

\*Denotes those attending the exit interview on May 1, 1981.

## Section I

Prepared by J. Schapker

Reviewed by D. H. Danielson, Chief  
Materials & Processes Section

### 1. Observation of Reactor Coolant Loop Piping Welding

The inspector observed in progress welding of the reactor coolant loop by the Phillips Getschow Company. Specific welds inspected in the Unit 2 reactor building were identified on weld map number M196-2-LP4, joints FW3, FW4, and LPI FW3. In process work by welders identified as 8A, VR, and 227 was observed. Qualification records and histories for each welder were verified to meet applicable weld procedure requirements. Welding materials were checked for proper control, both at the weld issue crib and at the welder's station. Proper maintenance and calibration of weld rod ovens was verified, as was identification of weld material being maintained until consumed in the weld. Certified material test reports for welding rod material type E308-16 Heat No. 666486, E316-16 Heat No. 21810, E308-16 Heat No. 74793, and weld insert ER-308L-E Heat No. G1629 were reviewed to verify their conformance with applicable ASME Section II requirements. In addition, ferrite analysis of these weld materials was verified as was the applicable Weld Procedure Qualification Record (PQR). The PQR was reviewed to assure that the applicable ASME Section IX requirements were addressed. Weld Procedure Specification (WPS) IA-MA-88, Revision 10, was reviewed to the PQR requirements. In addition, the inspector verified control of wire brushes, abrasive wheels, flap emery wheels, and grinders for exclusive use on stainless steel. Base material compatibility to PQR and weld materials was satisfactory. Weld joint geometry was as specified and surfaces were properly cleaned and inspected prior to welding. All essential variables were maintained in accordance with the applicable WPS.

No items of noncompliance or deviations were identified.

### 2. Observation of Welding Performance Qualification

The inspector observed the performance qualification of one welder in accordance with WPS IA-11NHW. The test was performed in the 6G position. Weld materials and essential variables were as required by the WPS. The coupon was not identified so as to provide tracability to the welder. However, the welding qualification supervisor assured identification was applied after completion by painting the welders name and social security number on the coupon. (See comment to Procedure QAP-13.)

No items of noncompliance or deviations were identified.

3. Review of Phillips Getchow Company (PGCo) Quality Control Procedures

The inspector reviewed the following PGCo welding procedures:

- a. QCP-B7, Revision 1, dated May 24, 1977, Ferrite Control of Stainless Steel Welds.
- b. QCP-B8, Revision 4, dated August 29, 1979, Issuance and Control of Welding Material.
- c. QCP-B9, Revision 1, dated February 20, 1979, Receiving Inspection of Items, Material, or Equipment.
- d. QCP B13, Revision 3, dated June 4, 1979, Storage of Materials.
- e. QAP-13, Revision 0, dated March 18, 1976, Welding Procedure Qualification and Welder Performance Qualification.

During this procedure review, the following observations were made by the inspector:

- a. Procedure QAP-13, Revision 0, paragraph 6.1.1 states in part that, "facts involved in qualifying the WPS shall be documented on the Performance Qualification Record." This statement is confusing, in that the procedure is written for both weld procedure qualification as required in Article II of ASME Section IX and welding performance qualification as required in Article III of ASME Section IX. This particular paragraph actually applies only to procedure qualification not performance qualification, as stated. Additionally, the procedure is vague in description of welding performance qualification (e.g. method of identification of coupon during performance test).
- b. Procedure QCP-B8, Revision 4, paragraph 4.1.2 and Procedure QCP-B13, Revision 3, paragraph 6.3.3 (concerning covered electrodes) states in part, "When container is punctured or suspect, rods are transferred to oven and maintained at temperature recommended by manufacturer." No reference is made to the dwell time, or baking time required prior to reissue. Additionally, no instructions concerning the dispositioning of damaged or wet electrodes were evident.

The above comments were discussed with licensee personnel at the exit meeting. The licensee agreed to initiate corrective measures concerning these comments. Items a. and b. above are considered open pending resolution and review by the NRC inspector. (457/81-05-01)

No items of noncompliance or deviations were identified.

## Section II

Prepared by R. L. Lee

Reviewed by C. C. Williams, Chief  
Plant Systems Section

### Review of Procurement Records

The RIII inspector reviewed procurement and receipt documentation for selected Class 1E electrical switchgear, cable reels and penetration assemblies to confirm that the equipment and quality documentation met the specified procurement and receiving requirements.

1. Final QA acceptance documentation and verifications, reviewed for the following safety related components, were evaluated to be adequate for the applicable codes, standards, QA, and procurement specification requirements.
  - a. ESF electrical control penetration assembly, identified as equipment No. 1SI03E serial No. 970, was verified by Conax Corporation Certificate of Conformance to be manufactured without deviations in accordance with Commonwealth Edison Company (CECo) purchase order 224820 specification L-2804 and ASME Boiler and Pressure Vessel Code Section III. Specification L-2804, Reactor Containment Structure Electrical Penetration Assemblies was observed to include the requirements of IEEE Standards 317-1972 and 344-1971. Braidwood site Engineering and Construction Material & Equipment Receiving & Inspection Report (MRR) No. 3779 verified final acceptance status by site QA supervision dated November 13, 1979. Transmittal of final documentation was verified by Sargent & Lundy (S&L) letter of October 22, 1979.
  - b. 480 volt electrical switchgear, identified as equipment No. 1AP10E bus 131X, was verified by Westinghouse Electric Corporation Certificate of Conformance with one approved deviation notice (DN), to be manufactured in accordance with CECo purchase order (PO) 197409 specification L-2752. DN-1 noted approved replacement of one indicating meter. Specification L-2752, 480 Volt Unit Substations, was observed to include the requirements of IEEE Standards 323-1974 and 344-1971. Final acceptance, with S&L document verification, was dated March 24, 1980 on MRR 5340.
  - c. 5000 volt power cable, identified as three conductor shielded type .03005 reel BR 30, was verified by Okonite Company Certificate of Conformance to be manufactured without deviation in accordance with CECo PO 203609 Specification L-2851. Specification L-2851, 8kV and 5kV Power Cables, included the requirements of IEEE Standard 383-1974. Final acceptance, with S&L document verification, was dated December 11, 1980 on MRR 5824.

No items of noncompliance or deviations were identified in this area.

2. Interim QA acceptance documentation and verifications were reviewed for the following components and found incomplete as noted on MRR forms. They were evaluated as adequate for interim acceptance status in accordance with CECO Procedure QP 7.1. Receiving inspection verifications, noted on MRR forms, and Certificates of Conformance were considered adequate.
  - a. Medium voltage power electrical penetration assembly, identified as equipment No. 2RC01E serial AS-184-12, was verified by the Amphenol Sams division of Bunker-Ramo Corporation Certificate of Conformance to be manufactured without deviation in accordance with CECO PO 190269 specification L-2804 and ASME Boiler and Pressure Vessel Code Section III. Interim acceptance on MRR 6371 was dated November 16, 1980. Assembly 2RC01E rating was specified as 6900 volt, three phase, 680 ampere, seven conductor.
  - b. 4160 volt indoor metalclad switchgear, identified as equipment 2AP06E bus 242, was verified by Westinghouse Certificate of Conformance and six DNs to be manufactured in accordance with CECO PO 197411 Specification L-2737. Specification L-2737, 4160 and 6900 Volt Switchgear and Busduct included the requirements of IEEE Standards 323-1974 and 344-1971. Interim acceptance dated June 28, 1980 was observed on MRR 5941 and 5933.
  - c. 600 volt electrical control cable, identified as type 12146 reel BR 142, was verified by Okonite Certificate of Conformance to be manufactured without deviation in accordance with CECO PO 207114 Specification L-2823, 600 Volt Power and Control Cables. Interim acceptance MRR 6772 was dated February 19, 1981.

No items of noncompliance or deviations were identified in this area.

3. Final QA accepted document packages were observed to contain the required documents including ASME certifications, certified test reports, certificates of conformance, S&L acceptability verifications, and site QA approvals and verifications. Certified test reports confirmed that the specified tests were successfully completed in accordance with the applicable requirements of the procurement specifications. Certificates of conformance confirmed that the specified equipment was designed, manufactured, inspected and tested in accordance with the requirements of the applicable procurement specification, code, and standard.

Sargent & Lundy Engineers (S&L) verification letters for final documentation acceptance, were observed to verify that specified manufacturer's documentation for each component was reviewed, acceptable, correct and complete. S&L documentation checklists were observed to itemize each specified open requirement for each unit of equipment.

Manufacturer's Certificates of Conformance, deviation notices, certified test reports and data reports were observed to verify the acceptability status of all specified equipment characteristics, tests, documentation and certification requirements that have been met or not yet met.

Braidwood MRRs were observed to verify site inspection and acceptance status for all equipment characteristics, tests, documentation and certifications required by the applicable procurement specifications and procedures. MRR status logs were observed to itemize and identify each open item and requirement not yet met for each unit of equipment. The electrical procurement specifications included the appropriate design parameters, test requirements, documentation requirements and QA requirements. The records were in accordance with CECO QA Manual, Quality Requirement 7.0 and Quality Procedure 7.1.

No items of noncompliance or deviations were identified in this area.

#### Exit Interview

The inspectors met with licensee representatives (denoted under Persons Contacted) at the conclusion of the inspections on April 29 and May 1, 1981. The inspectors summarized the purpose and findings of the inspection, which were acknowledged by the licensee.