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

REGION III

Report No. 50-456/78-10; 50-457/78-10

Docket No. 50-456; 50-457 License No. CPPR-132; CPPR-133

Licensee: Commonwealth Edison Company
P. O. Box 767
Chicago, IL 60690

Facility Name: Braidwood Nuclear Power Station, Units 1 and 2

Inspection At: Braidwood Site, Braidwood, IL

Inspection Conducted: September 8 and 13-14, 1978

Inspectors: C. M. Erb 10/12/78

F. C. Hawkins 10/12/78

E. J. Gallagher 10/12/78

Approved By: D. H. Danielson, Chief 10/13/78
Engineering Support Section 2

Inspection Summary

Inspection on September 8 and 12-14, 1978 (Reports No. 50-456/78-10; 50-457/78-10)

Areas Inspected: Observation of work and quality record review for safety related components; Observation of Class 1 concrete placement; QA records on equipment and history of concrete operation; and licensee action on previous inspection findings. The inspection involved a total of 39 inspector hours onsite by three NRC inspectors.

Results: Of the four areas inspected, no apparent items of noncompliance were identified in three areas; two apparent items of noncompliance were identified in one area (infraction - failure to perform truck mixer uniformity test at prescribed frequency - Section II, paragraph 2a; infraction - failure to identify and take corrective action after central mixer uniformity tests failed - Section II, paragraph 2b).

DETAILS

Persons Contacted

Commonwealth Edison Company (CECo)

*R. Cosaro, Project Superintendent
*T. Quaka, QA Supervisor
*J. Schlunz, Lead Structural Field Engineer
*P. Benoy, QA Engineer
*S. Gaconis, QA Engineer
*C. Gray, Structural Engineer
*G. Tanner, Lead Mechanical QA Engineer

G. K. Newberg (GKN)

*A. Archer, Project Manager
*M. Cooper, QC Supervisor

Pittsburg Testing Laboratory (PTL)

*M. Tallent Jr., Site Manager

*Denotes those present at the exit interview

Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (546/78-06-02; 547/78-06-02) - Failure to maintain trumplets and bearing plates in Units 1 and 2 tendon tunnel. Licensee response to IE report 78-06 stated that rust was removed from the bearing plates and trumplets in both Units 1 and 2 and additional protective grease applied to minimize corrosion potential. In addition, a monthly surveillance program was instituted in order to maintain this grease coating. The inspector observed the corrective action noted above and determined it had been performed satisfactorily.

Functional or Program Areas Inspected

The functional and program areas inspected are discussed in Sections I and II.

Section I

Prepared by C. M. Erb

Reviewed by D. H. Danielson, Chief
Engineering Support Section No. 2

1. Observation of Work and Quality Record Review for Safety Related Components (Units 1 and 2)

a. Welds (weld No. AB-4-WG and AB-4-W4) in the Boric Acid System were inspected and found to be acceptable to ASME Section III. These welds were 4-inches in diameter and made to S&L specification FL2739. These stainless steel type 304 pipe and fittings were welded using weld procedure No. 1A-MA-88 using an insert. Welder identification No. 88 produced these welds using the GTAW process for the root and SMAW for the finish welding.

b. A class 3 weld (weld no. CC-23-W6) in the Component Cooling System was inspected. This 12-inch weld in carbon steel was made to S&L specification FL2739. The pipe was SA-155 material welded to SA106B. Weld procedure No. MA-11-D-5 was used which is SMAW for the entire weld using a backing ring which is not removed. Welder symbol 164 produced this joint.

c. A class 2 weld (weld no. RH-3-FWS) was examined. This 8-inch weld is in the RHR system and is made to the requirements of S&L specification FL2739. Weld procedure No. 1A-MA88 RW6 which requires an insert and GTAW for the root was used. Welder symbol 6E made this weld and it was inspected visually to PG QAP-2, Rev. 1A, and radiographically examined to PTL QC-RT-1, Rev. 9.

d. The Unit 1 polar crane was inspected. This containment crane was manufactured by Harnischfeger to S&L specification L2720. NCR's 110, 125 and 134 had been issued against this item because of underwelding, slag, undercut, and poor paint. This crane (S/N 25547) had repair welding done by American Bridge Co. An inspection revealed that the repair welds had not been ground or painted and that numerous poorly painted areas still existed. These conditions were also present in the Unit 2 crane (S/N 25548). This matter is an unresolved item pending final review during a future inspection. (456/78-10-01; 457/78-10-01)

e. Records for a boron injection tank, equipment specification no. 679065, Rev. 3, were examined. This tank had been built by Southwest Fabricating and Welding Company and bore code form N-1A. ASME Section III, 1971 Edition, Summer 1973 Addenda and Code Case No. 1637 were applicable to this item, National Board No. 318. Westinghouse QR 31310 was in the documentation indicating a Class 2 item with a design pressure of 2735 psi and maximum temperature of 300°F.

f. A Residual Heat Removal System (RHR) pump and motor, MR-2800, was inspected. This item had been manufactured by Ingersoll Rand and supplied by Westinghouse. QR 31885 indicated ASME Section III, 1971 Edition, Summer 1972 Addenda was applicable to this Class 2 pump. The shop certificate of inspection was signed by the Hartford Steam Boiler Insurance Representative and Code forms NPV-1, N-1 and N-2 appeared in the documentation.

   The support feet for this item were made of stainless steel and had been manufactured by Joseph Oat Co.

g. The support legs for the primary coolant pumps were inspected. These supports were made by Teledyne Brown Engineering. Code stamp NPT-1 appeared on the parts. Part S/N 5001-18 was stored outside in an acceptable manner.

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

Section 2

Prepared by F. C. Hawkins
E. J. Gallagher

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

1. Observation of Containment Concrete Work and Work Activities (Unit 1)

The inspector observed concrete placement No. CP103A (Containment Building Dome) on September 8, 1978, and related quality control testing. The following specific items were observed:

a. Pre-placement form inspection was performed and found to be acceptable.

b. Concrete placement and consolidation techniques were determined acceptable.

c. Quality Control concrete sampling and testing were observed. Plastic concrete tests performed by PTL QC technicians included temperature, slump, air content, and casting of compressive strength cylinders.

The inspector noted that the initial 24 hour curing temperature for field cast cylinder sets 3050 and 3052 exceeded the 60° - 80° F requirement per ASTM-C31, Section 7.2. Temperatures were observed to reach 104° F. PTL identified this nonconforming condition with NCR No. 110.

Corrective action was discussed with the licensee at the exit meeting, and the Commonwealth Edison QA Supervisor indicated that high-low thermometers will be installed in the curing boxes used for exterior concrete placements to more closely monitor initial curing temperatures. Temperature deviations from ASTM-C31 requirements will be noted on PTL cylinder break reports.

This item is unresolved pending review by the inspector of implemented corrective action. (456/78-10-02; 457/78-10-02).

d. Curing of placement No. 1R103A (Containment Building Dome) was determined to be acceptable. Some surface cracking at regularly spaced intervals was observed. The inspector concurred with licensee personnel that the extent of cracking present was expected with a placement of this size and configuration and represented no reduction of structural integrity.

2. Review of Concrete Production Quality Records (Units 1 and 2)

a. The inspector completed a review of truck mixer uniformity records. On September 8, 1978, during PTL testing surveillance, associated with concrete placement No. 1R103A the inspector observed the addition of mix water to the truck mixer in accordance with Sargent and Lundy specifications. Discussion with PTL field personnel and the Gust K. Newberg QC supervisor revealed that the addition of water at the point of truck discharge was common practice. Appropriate record review by the inspector revealed that truck mixer uniformity was last performed September 20, 1977. This does not meet the required six month frequency for mixer uniformity testing per ANSI N45.2.5-1974.

During the exit meeting, the licensee concurred with the inspector's finding and indicated that truck mixer uniformity tests will be performed by September 22, 1978, and every six months in conjunction with the requirements set forth in ANSI N45.2.5-1974 and the job specifications.

This failure to execute inspection requirements for truck mixer uniformity at the prescribed frequency according to ANSI N45.2.5-1974 is considered an item of noncompliance with 10 CFR 50, Appendix B, Criterion X as described in Appendix A of the report transmittal letter. No response to this item is required since the licensee initiated actions to correct this matter in a timely manner and to prevent recurrence. These actions will be verified during a subsequent inspection. (456/78-10-03; 457/78-10-03).

b. The inspector completed a review of the central mixer uniformity test records. This review of PTL records revealed that the central mixer uniformity was found to be unsatisfactory on September 19, 1977. Central mixer uniformity tests were next performed on October 17, 1977. Both the PTL lab supervisor and Newberg QC supervisor indicated that neither of them identified or corrected the central mixer unsatisfactory condition during this period. At the exit meeting the licensee representative stated that he felt the item had been identified and requested additional time to locate the records.

Subsequent to the inspection, the licensee telephoned the inspector on September 22, 1978, to supply the following information regarding the central mixer uniformity tests:

(1) On March 15, 1977, the central mixer uniformity tests passed the requirements of ASTM C-94.

(2) On September 19, 1977, the uniformity test failed C-94, e.g., the unit weight of air-free mortar and compressive strength requirement.

(3) On October 17, 1977, a rerun of the tests were performed and once again failed. On the same date a second test run with an increased mixing time of seven seconds at which time the test met the requirements of C-94.

This item had not been identified or corrected until one month after being aware of the mixer uniformity test failure. During the time between September 19, 1977 and October 17, 1977, concrete production continued with 27 placements and a total of 4,141 cubic yards of concrete placed in safety-related structures.

The licensee was advised that, this failure to identify and take corrective action in a prompt manner to preclude production of concrete using a central mixer that did not meet the requirements of ASTM C-94 and placement of this material in safety-related structures is considered an item of noncompliance with 10 CFR 50, Appendix B, Criterion XVI as described in Appendix A of the transmittal letter. (456/78-10-04; 457/78-10-04).

Unresolved Item

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 I, paragraph 1d and Section II, paragraph 1c.

Exit Interview

The inspectors met with licensee and contractor representatives (denoted in Persons Contacted) at the conclusion of the inspection on September 14, 1978, and summarized the inspection scope and findings. The item of noncompliance and the unresolved items identified during the inspection were discussed in detail. Additionally, during a subsequent telephone discussion with the licensee on September 22, 1978, another item of noncompliance was identified based on information provided during this discussion.