U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-456/84-19(DRS); 50-457/84-18(DRS)

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: July 11-12, 1984

Inspectors: A. S. Gautam 8/14/84
Date

K. Tani 8/14/84
Date

F. Hawkins 8/14/84
Date

Approved By: C. C. Williams, Chief 8/14/84
Plant Systems Section Date

Inspection Summary

Inspection on July 11-12, 1984 (Report No. 50-456/84-19; 50-457/84-18)
Areas Inspected: Licensee action on previous v identified items. This involved a total of 21 inspector-hours by three NRC inspectors.
Results: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

Commonwealth Edison Company (CECo)

*C. W. Schoeder, Licensing and Compliance Superintendent
*N. P. Tomis, Poad Supervising Engineer
*L. Kline, Licensing and Compliance
*D. Hoffer, Quality Assurance Engineer
*S. J. Rentcke, Quality Assurance Engineer
*C. Mennecke, Lead Electrical Engineer
*D. L. Shamblin, Project Construction Superintendent
*L. J. Tapella, Project Licensing and Compliance

L. K. Comstock and Company, Inc. (LKC)

*R. Seltmann, Quality Assurance Engineer

U. S. Nuclear Regulatory Commission (NRC)

*A. S. Gautam, NRC, Reactor Inspector, Region III
K. Tani, NRC, Reactor Inspector, Region III
F. Hawkins, NRC, Reactor Inspector, Region III

The inspector also contacted and interviewed other licensee and contractor personnel during this reporting period.

*Denotes those persons present at the exit interview on July 12, 1984.

2. Licensee Action on Previous Inspection Findings

(CLOSED) Unresolved item (50-456/83-18-01; 50-457/83-17-01): This item referred to a lack of evidence of LKC QC inspections for sharp edges in conduits, prior to QC receiving the raceway installation report from LKC Construction. Procedure 4.8.1, Revision A, January 18, 1984, Paragraph 3.1.8.1 has since been revised to require in process inspections by LKC QC during cutting, threading, and reaming of conduits. The frequency of this inspection is based on the QC managers discretion, and is currently 10 per month. A sample in process inspection report for conduits COA5430, COA3476, and COA3473 was reviewed for evidence of these inspections and no deficiencies were found. This item is closed.

(OPEN) Unresolved item (50-456/83-18-02; 50-457/83-17-02): This item referred to inadequate inspection checklists associated with LKC Procedure 4.3.4 on battery and battery rack installations.

The licensee has since issued appropriate inspection checklists for these activities. However, since most of these activities have been completed prior to issuance of these checklists, it remains to be verified if all activities listed on these checklists were in fact completed. Pending this review, this item remains unresolved.

(CLOSED) Violation (50-456/83-18-03; 50-457/83-17-03): The following subsections were reviewed for closure of this item:

(CLOSED) 18-03A - This subsection referred to deficiencies identified in Procedure 4.8.5, Revision A, "Inspection of Class IE Safety-related Cable Pan Installations."

The following paragraphs of revised LKC Procedure 4.8.5, Revision C, dated April 17, 1984, now address and resolve the following previously identified deficiencies:

Paragraph 3.5.2 - requires the validation of a Level I QC inspector's inspection record by a Level II QC inspector.

Paragraph 3.3.1 - requires QC verification for possible cable damage, and cable pan debris prior to installation of cable pan covers.

Paragraph 3.3.7 - requires QC verification for cable pan cover installation to be in accordance with S & L drawings and specifications.

Paragraph 3.1.11 - requires torquing of horizontal hanger member bolts.

(CLOSED) 18-03B - This subsection referred to deficiencies identified in LKC Procedure 4.3.7, May 21, 1978. The following paragraphs of revised LKC.

Procedure 4.3.7, Revision A, April 17, 1984, now address and resolve the following deficiencies:

Paragraph 3.12 - requires the swabbing of embedded conduit prior to concrete setting. This activity is also addressed in revised LKC Procedure 4.8.7, Revision A, April 17, 1984, Paragraph 3.2.9.

Paragraph 3.9 - Addresses conduit bend radius. This criteria now conforms to Standard EF-103, Revision 5, Paragraph 3.10. The licensee reported that based on Paragraph 3.9, prior conduit bends were required to conform to bend radii in Paragraph 3.9. Since prior conduit bend radii of Paragraph 3.9 exceeded that of Standard EF-103, Paragraph 3.10, actual pull tension of prior cable runs was lower than the maximum allowable pull tension calculated from Standard EF-103, Paragraph 3.10, bend radii values.

(CLOSED) 83-18-03C - This subsection referred to deficiencies identified in LKC Procedure 4.8.7, dated July 5, 1980. The following revised procedures resolve the following previously identified deficiencies:

Procedure 4.3.7, Revision A, dated March 27, 1984, Paragraph 3.11, now requires QC to be notified to perform inprocess inspections and for QC to signify acceptance by sign off on embedded raceway installation reports, prior to concrete placement.

Procedure 4.8.7, Revision A, dated March 29, 1984, Paragraph 3.1, 3.2, and 3.3, now requires the LKC QC inspector to perform inprocess inspections, verify listed activities and sign off embedded Class IE conduits, prior to concrete placement.

(CLOSED) 50-456/83-18-03D - This subsection referred to deficiencies in LKC Procedure 4.3.8, "Cable Installation," Revision B, dated July 20, 1983:

Revised Procedure 4.3.8, Revision C, dated March 14, 1984, resolves the previously identified discrepancies through the following paragraphs:

Paragraph 3.1.4 now defines the terms cable pull and termination report.

Paragraph 3.7.2.1 resolves concerns regarding the smallest cable pull shear size and requires power pulls in conduit to have the same constraints as power pulls in trays.

Precautions for pulling small cables with less than 100 pounds maximum pulling tension remain within the scope of pulling any cable. Tension is required to be monitored with a dynamometer, and exceeding of tension prevented by breakable pull links.

Paragraph 3.8.6.1 now requires cable grips installed every 35' in vertical runs.

A prior note in Paragraph 3.2.8.5 on tyraps has been corrected in revised Paragraph 3.8.8 and in Procedure 4.8.8, Revision A, Paragraph 3.5.3.2.

The note in prior Paragraph 3.2.8.5 regarding verbal authorization by CECo lead engineers has been deleted.

(CLOSED) 50-457/83-17-03E - This subsection referred to deficiencies identified in LKC Procedure 4.8.8 dated August 19, 1982, "Cable installation inspection."

The following paragraphs of revised LKC Procedure 4.8.8, Revision A, dated March 13, 1984, now addresses and resolves the following previously identified deficiencies:

Paragraph 3.2.3 - requires verification for sharp edges in raceways.

Paragraph 3.2.3 - requires verification of the installation of edge softeners.

Paragraph 3.2.9 - requires verification for swabbing of embedded conduits.

Paragraph 3.2.5 - requires verification of the installation of scaffolding in relation to cables.

Paragraph 3.2.13 - requires verification of cable type and cable pull card information.

Paragraph 3.2.10 - requires availability of cable pull calculations.

Paragraph 3.2.11 - requires verification of temperature during cable pulling.

Paragraph 3.2.14 - Addresses verification of cable pull rigging.

Paragraph 3.1 - requires verification that raceway is inspected and accepted prior to cable pull.

Paragraphs 3.2, 3.3, and 3.5 - Addresses prepull, cable pull, and post pull activities separately.

Paragraph 3.5.7 - requires verification that cables are installed at designated raceways.

Paragraph 3.2.6 - requires verification of cable segregation code.

Paragraphs 3.5.6, 3.2.16, and Form 37 - requires correct filling out and signing/initialing of the cable pull card.

Paragraph 3.4.7 and Attachment A1 - requires verification of cables for reverse bends, kinks, and twists.

Paragraph 3.2.12 - requires verification of cable for damage after removing from reel.

Paragraph 3.5.3 - requires installation of cable grips.

Form 37-QC pulling checklist has been revised to list prepull and cable pull activities under separate headings.

(CLOSED) 50-456/83-18-03F - This item identified a lack of a LKC QC inspection during the termination of cable 1AP146 (P1E) at MCC 1AP26E.

This cable has since been reterminated and witnessed by a LKC QC inspector, documented on Form 36 as well as on a retermination card. All records are identified by the cable number 1AP146 (P1E). Based on review of these documents, this item is closed.

(CLOSED) Unresolved item (456/83-18-04): This item referred to a lack of instruction to consider cable pull calculations as QC records. LKC Procedure 4.3.8, Revision C, dated March 14, 1984, Paragraph 3.7.11, has been revised to require cable pull calculation cards to be maintained as quality documents. Based on this review, this item is closed.

(OPEN) Noncompliance (50-456/83-18-05A): It was previously identified that safety-related conduit CIR2329-(1P2E) was being utilized to support a 2" pipe. The licensee has since taken corrective action by separating the conduit CIR2329-(1P2E) from the 2" pipe, however, it was observed that the conduit CIR 2329-(1P2E) was still being used as a support for scaffolding LCK-1-411. The licensee was informed of this discrepancy and their apparent failure to protect safety-related equipment from damage or deterioration. The licensee is taking corrective action, however, a NRC

walkdown will be performed in relevant areas of the plant to verify prevention of other such discrepancies. Pending this verification, this item remains open.

(CLOSED) Noncompliance (50-456/83-18-05B) - It was previously identified that Instrument Rack 1PL71J was being utilized to support step-ladders. The licensee has since taken corrective action by removing the step-ladders. This item is considered closed.

The noncompliance item 50-456/83-18-05 will be considered open until subsection 50-456/83-05A is closed.

(OPEN) Noncompliance (50-456/83-18-06A): It was previously identified that cable grips were not supporting cables in the cable tray risers numbers 1R267-C1E, 1R270-K1E, and 1R311-C1E. The licensee reported that these cable grips are now supporting the cables in the above listed cable trays, and is now conducting a survey of all other affected cable grips. The NRC plans to review a sample of cable grips on completion of this licensee survey. This item remains open.

(CLOSED) Noncompliance (50-456/83-18-06B): It was previously identified that the licensee did not identify and correct damaged and missing braces inside MCC 1AP26E. The licensee is controlling this discrepancy through NCR #L-588 and new braces are being ordered from the original manufacturer. Based on this review, this item is considered closed.

(CLOSED) Noncompliance (50-456/83-18-06C): It was previously identified that cable 1CV036 was incorrectly terminated inside MCC 1AP26E. The licensee has since taken corrective action through disposition of ICR-3440 dated November 11, 1983. Based on review of this document, this item is considered closed.

(CLOSED) Noncompliance (50-456/83-18-06D): It was previously identified that MCC 1AP26E contained excessive debris. The licensee has since taken corrective action by dispositioning ICR-3439, dated November 2, 1983, to remove debris. This item is considered closed.

(OPEN) Noncompliance (50-456/83-18-06F): It was previously identified that 19 of 19 electrical penetration had no records to identify the following:

a. The ID number of the torque wrench used on each of the electrical penetrations.

b. The torque value applied to each of the electrical penetrations.

c. The calibration due date of the torque wrenches used on the penetrations.

During a review of calibration records and control cards for torque wrenches LKC-837 and LKC-A181, used on the previously identified electrical penetrations, the NRC inspector observed the following:

a. There was no documentary evidence to link either one of these identified torque wrenches to the penetration torqued, nor was there any record of the date of acceptance of such torquing.

b. Calibration issue dates were found missing in two instances on the calibration records of these identified wrenches, and in various instances the frequency of calibration exceeded the required one week period.

Pending further review of licensee action, this item remains open. Noncompliance item 50-456/83-18-06 shall be considered open until subsections 50-456/83-18-06A and 83-18-06F are closed.

(CLOSED) Noncompliance (50-456/83-18-06E): It was previously identified that the licensee failed to perform an installation inspection on MCC 1AP26E. The licensee has since taken corrective action by revising Installation/Inspection Procedures LKC-4.3.13, Revision C, and LKC-4.8.13, Revision C, to combine the installation and inspection checklist on one (1) form. This will prevent discrepancies where the installation checklist is completed and closed without any QC record being initiated. In addition to this, QC inspectors were given "on-the-job training" on June 7, 1984, and a Wang input tracking system has been initiated for tracking items that have not yet been inspected. Based on this review, this item is considered closed.

(OPEN) Open item (50-456/83-18-07): It was previously identified that welds on MCC 1AP26E were not painted. This condition was typical for other safety-related MCCs and electrical equipment in the plant. The licensee is taking steps to clean and paint these welds, and agreed to have a Visual Test (VT) performed by a qualified welding engineer, prior to the painting of these welds. Pending a review of this reinspection, this item remains open.

(OPEN) Unresolved item (50-456/83-18-09): This item was in regard to a lack of seismic bolting requirements for mounting bolts on motor control centers. The licensee has since issued NCR #596 and established the torque value of ½" bolts to be 50 ft. lbs., as per Westinghouse drawing 2660C46. Corrective action, however, will require cutting of MCC panels to allow panel mounting holes to match channel holes. The licensee has been requested to provide qualified evidence that such cutting of the MCC panels will not affect the seismic capability of these MCCs. Pending review of this evidence and verification of retorquing of bolts, this item remains open.

(CLOSED) Noncompliance (50-456/83-18-10): It was previously identified that tightening requirements for electrical connections outlined in CECo position paper dated January 8, 1982, were not included in LKC Electrical Specifications. The licensee has since taken corrective action by revising LKC Procedures 4.3.9, Revision D, dated March 1, 1984, and 4.8.9, Revision D, dated March 16, 1984, to include these tightening requirements. This item is considered closed.

(CLOSED) Unresolved (50-456/83-18-11): This item identified a discrepancy in the applied voltage used during the insulation testing of 4KV motor windings.

During review of the manufacturers instruction manual, Westinghouse 77F14087, it was observed that IEEE43 was recommended as criteria for insulation resistance testing. IEEE43 allows the applied voltage for 4KV motor insulation resistance testing to range from 800VDC to 1500VDC. Accordingly, the licensee is now applying 1000VDC to motor windings which is within this allowable range and apparently meets the manufacturers recommendations. Based on this review, this item is closed.

(OPEN) Unresolved (50-456/83-18-12): This item concerned insulation resistance testing of electrical penetrations, where it appeared the licensee was not meggering between conductor to conductor of the penetration during testing as required by Conax Instruction Manual IPS-370.

The licensee reported that they, in fact, performed this test together with conductor to ground testing. This was effected by meggering each conductor with the remaining conductors connected (bunched) and grounded. This would apparently satisfy both tests.

However, it was observed that test reports reviewed did not reference any procedure nor clearly reflected details of the tests performed. The licensee agreed to correct existing test reports to clearly reflect procedures used and details of acceptability. The licensee also agreed to revise forms for future test reports to reflect the same information. Pending a review of these modifications, this item remains open.

(CLOSED) Unresolved item (456/78-06-03; 457/78-06-03): Total chloride ion content in concrete. On February 17, 1983, representatives of Sargent and Lundy, Commonwealth Edison, and Region III NRC met to discuss the total chloride ion content in concrete at the Braidwood Station. Specific issues discussed included (1) the governing industry standards, (2) the applicable Sargent and Lundy specifications, and (3) the specific site conditions surrounding the chloride issue at Braidwood.

Subsequently, on April 10, 1984, the licensee provided a written submittal documenting their conclusions as discussed in the February meeting. Based on the technical merit of the information provided by the licensee and discussions with representatives from NRR, this item is considered closed. (Reference the memorandum from Spessard to Eisenhut dated April 27, 1984)

3. Exit Interview

The inspector met with licensee representatives (denoted under Persons Contacted) on July 11, 1984, and at the conclusion of the inspection on July 12, 1984. The inspector summarized the scope and findings of the inspection. The licensee acknowledged the information.