

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-461/82-10(DETP)

Docket No. 50-461

License No. CPPR-137

Licensee: Illinois Power Company  
500 South 27th Street  
Decatur, IL 62525

Facility Name: Clinton Nuclear Power Station, Unit 1

Inspection At: Clinton Site, Clinton, IL

Inspection Conducted: June 22-25, July 19-23, July 26-30, 1982

*R. S. Love*  
Inspector: R. S. Love

9/1/82

*C. C. Williams*  
Approved By: C. C. Williams, Chief  
Plant Systems Section

9/1/82

Inspection Summary

Inspection on June 22-25, July 19-23, and July 26-30, 1982 (Report No. 50-461/82-10(DETP))

Areas Inspected: Followup on previously identified inspection findings and a review of the licensee's progress in their recovery program in the electrical area (Reference: Confirmation of Action Letter, dated January 27, 1982). This inspection involved a total of 108 inspector-hours onsite by one NRC inspector.

Results: Of the areas inspected, no apparent items of noncompliance were identified.

## DETAILS

### Persons Contacted

#### Illinois Power Company

\*#W. C. Gerstner, Executive Vice President  
#J. O. McHood, Vice President and Project Manager  
#L. J. Koch, Vice President  
\*#A. J. Budnick, Director - Quality Assurance  
\*#R. J. Canfield, Director - Construction  
\*#W. L. Calhoun, Supervisor - Electrical Construction  
\*#E. E. Connon, Director - Compliance  
\*#R. E. Campbell, Supervisor - Quality Assurance  
#G. W. Bell, Supervisor - Quality Assurance  
\*#R. D. Weber, Quality Assurance Engineer  
D. E. Korneman, Assistant Director - Construction  
#J. S. Spencer, Director - Design Engineering  
R. W. Dillman, Quality Assurance Engineer  
F. C. Edler, Quality Assurance Engineer  
D. E. Bowling, Quality Assurance  
R. Cox, Quality Assurance  
D. Ennen, Quality Assurance  
M. H. Shanbhag, Quality Assurance

#### Baldwin Associates

\*#J. E. Findley, Manager - Quality and Technical Services  
\*W. J. Harrington, Project Manager  
#T. G. Yearick, Assistant Project Manager  
\*#J. W. Smart, Manager - Quality Assurance  
\*G. Chapman, Manager - Technical Services  
\*#H. R. Swift, Project Engineer  
\*#D. R. Murphy, Senior Electrical Engineer  
\*H. J. Harris, Assistant Project Engineer  
K. Reinhardt, Training Engineer  
P. Koester, Technical Assistant - Quality Assurance  
C. Garner, Quality Control

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

\*Denotes those present at the exit interview on June 25, 1982.

#Denotes those present at the exit interview on July 30, 1982.

#### 1. Licensee Action on Previous Inspection Findings

- a. (Open) Noncompliance (461/81-09-01): During a previous inspection it was observed that a non-divisional cable enclosed in flexible conduit was routed with divisional cables where they entered Termination Cabinet H13-P709. This item will remain open until it can be verified that the installation is in accordance with the attachments to IPCo letter to NRR, dated April 20, 1982.

- b. (Open) Noncompliance (461/81-09-02): During a previous inspection it was observed that a smoke and fire detector cable enclosed in flexible conduit was routed from a Division 2 floor duct into a Division 4 floor duct and finally into a non-divisional floor duct. This item will remain open until it can be verified that the installation is in accordance with the attachments to IPCo letter to NRR, dated April 20, 1982.
- c. (Closed) Unresolved item (461/81-20-01): During a previous inspection it was observed that field run cables and jumpers associated with Class 1E batteries were terminated, using tinned copper lugs and zinc or cadmium plated hardware. The licensee has developed maintenance Procedure ISP9382.03S, which requires a periodic inspection of battery hardware (lugs, nuts, bolts, etc.) for rust and deterioration. This item is closed.
- d. (Closed) Unresolved item (461/81-20-02): During a previous inspection it was observed that there was a conflict between the Clinton PSAR and FSAR as relating to the vertical separation of cable trays. Further investigation indicates that neither the PSAR nor the FSAR are in violation of IEEE 384 or Regulatory Guide 1.75. This item is closed.
- e. (Closed) Open Item (461/81-27-03): During a previous inspection it was observed that STD-EA-205 and QCI 408 allowed the use of vinyl self-insulated butt splices. The word vinyl had been deleted in the two subject documents. This item is closed.

2. Functional or Program Areas Inspected

As part of the electrical stop work recovery program, (Reference: Confirmation of Action Letter, dated January 27, 1982) Illinois Power Company (IPCo) committed to various steps to strengthen their Quality Assurance Program at the Clinton Power Station. During this inspection period, the Region III inspector reviewed certain of these commitments and verified IPCo actions. The following observations were made:

- a. IPCo committed to revise certain procedures or develop new procedures and train Quality Assurance, Quality Control, Technical Services, engineering, construction, management, and craft personnel to these new/revised procedures. As a sample, the inspector selected Baldwin Associates (BA) Procedures BAP 3.3.9, BAP 3.3.10, and BAP 3.3.11 for review.
  - (1) BAP 3.3.9, Cable Protection, Revision 3, dated July 21, 1982. It was observed that by procedure, a Cable Protection Traveler Addendum is required only on work normally performed by electrical craft personnel. This means that if piping or pipe hanger installation is being performed in the area of cable trays containing electrical cables, a Cable Protection Traveler Addendum is not required. The licensee was requested to consider the incorporation of

cable protection requirements into all applicable travelers. It should be noted that the licensee is making a concerted effort to install temporary covers on all cable trays containing Class 1E cables.

- (2) BAP 3.3.10, Cable Tray Installation, Revision 2, dated July 21, 1982. It was observed that the tray installation travelers are being transmitted from the Senior Electrical Engineer direct to the Electrical Superintendent for work instead of being transmitted to the Traveler Control Group in accordance with the commitments made to the NRC. With reference to Paragraph 6.2 of the subject procedure, it is not clear if a Cable Protection Traveler Addendum to a Cable Tray Installation Traveler constitutes a revision to the Tray Installation Traveler. Also, traveler revisions should be reviewed in accordance with paragraph 6.1, rather than Paragraph 6.2.
- (3) BAP 3.3.11, Cable Tray Attachment Installation, Revision 3, dated July 21, 1982. The above comment to BAP 3.3.10 are generally applicable to BAP 3.3.11.
- (4) A review of the training records presented to the Region III inspector on June 22, 1982, indicated that limited training had been conducted to Revision 1 of the above listed procedures. Revision 2 to BAP 3.3.9 and BAP 3.3.11 were effective May 14, 1982. Following is a list of the dates that training was conducted, and number of personnel attending.
  - (a) April 26, 1982, 18 IPCo and BA Quality/Technical Services/Engineering/Supervisory personnel.
  - (b) April 26, 1982, 28 General Foremen/Foremen.
  - (c) May 3, 1982, 30 non-manual (Supervisory/Engineering/Quality).
  - (d) May 4, 1982, 80 General Foremen/Foremen.
  - (e) May 5, 1982, 158 non-manual (Engineering/Quality/Technical Services).
  - (f) May 7, 1982, 13 IP and 30 BA non-manual (Engineering/Quality).
  - (g) May 11, 1982, nine non-manual (Engineering).

It was observed that there were no training records to indicate that craft personnel below the grade of foreman had received training on the subject procedures per IPCo commitments to the NRC.

To verify that the craft had or had not been trained to the aforementioned procedures, on June 24, 1982, the inspector

toured the power block and talked to craft electricians. These interviews confirmed that craft, below the grade of foreman, personnel and not been trained in the new/revised subject procedures.

- b. Corrective Action Request (CAR) 097, dated June 17, 1982, was prepared by BA to document the fact that Electrical Stop Work 007 had been violated as evidenced by Deviation Report (DR) 1819, DR 1868, and Nonconformance Report (NCR) 7153.

- (1) DR 1819, dated April 22, 1982, documents that Class 1E Cable 1RI25F had been pulled out of Cable Tray 16373C in order to build scaffolding on top of Cable Tray 16375C in violation of Stop Work 007.
- (2) DR 1868, dated April 27, 1982, documents that cable trays containing Class 1E cables had work performed on the inside of the cable tray in violation of Stop Work 007.
- (3) NCR 7153, dated June 11, 1982, documents that the cable identified in DR 1819 was reworked without an approved disposition of the subject DR and in violation of the DR tag and Stop Work 007.

It would appear that a possible root cause to the above listed NCR and DRs was a lack of training of craft personnel. When this was pointed out to IPCo personnel, the IPCo Director of Quality Assurance issued Management Corrective Action Request (MCAR) 003, dated June 23, 1982. The specific concerns listed on the MCAR were:

- (1) No formal training was performed on Revision 2 of BAP 3.3.9.
- (2) Cable protection training, with a few exceptions, was only presented to personnel in electrical discipline.
- (3) Training of craft personnel, generally, is not being adequately performed and documented.

- c. While a general housekeeping program is in progress, the inspector made the following observations during a tour of the power block on June 24, 1982.

- (1) Trash, lumber, etc. was observed in Cable Trays 19117D-P2E, 19117E-C2E, 19117F-K2E, 19107A-P1E, 19107B-C1E, and 191-7C-K1E in the diesel generator rooms.
- (2) Pop cans, bottles, and trash were observed behind the diesel oil storage tank at 742' elevation between Columns AG and 128.
- (3) Hanger/scaffolding material was stored on top of RW C11 Pump and Motor No. 1G33-C001C and piping connected to the pump housing was not capped/sealed at the piping flange.

When the above listed items were pointed out to the licensee, he took immediate action to have them corrected.

- d. IPCo committed to review IPCo Surveillance Reports and document items of nonconformance on NCRs or DRs as applicable. During a review of IPCo Surveillance Reports on July 22-27, 1982, the following observations were made.
- (1) Report C216 dated April 5, 1982, documents that Zack Co. is using Field Interference Notices (FIN) to document nonconforming items rather than an NCR in accordance with their Quality Assurance Program. The inspector could find no evidence that IPCo was requiring Zack Company to review their FINs and document nonconforming items on NCRs.
  - (2) Report C232, dated May 14, 1982, documents that the wiring inside HVAC Panels 1PL53JA, 1PL53JB, and 1PL53JC does not meet the separation requirements of IEEE 384. No NCRs had been prepared on these items as of the date of review.
  - (3) Report C243, dated June 9, 1982, documents that 7/8" - A-490 bolts had been substituted for A325 bolts in the structural steel area without authorization. The licensee stated that NCR 7229 had been prepared.
  - (4) Report C-250, dated June 17, 1982, documents that GE wiring list drawings found in the field were superseded. Drawings were 287A5651, Revision 0 (should have been Revision 4) and 287A5660, Revision 0 (should have been Revision 2). There was no evidence that the superseded drawing had been removed from the field until BA's response to the surveillance report was received on July 27, 1982.
  - (5) Report C252, documents that the cable end was not sealed on installed cable 1HP01C which is a violation of the K2999 electrical specifications. No NCR had been prepared on this item as of the date of review.
  - (6) Report C254, dated June 22, 1982, states that Documentation Packages for valves supplied by Yarway did not contain the visual inspection reports for the valve disc. No NCRs had been prepared on these items as of the date of review.
  - (7) Report C255, dated June 22, 1982, documents that motor insulation resistance test results, vibration test results, and direction of rotation test results were missing for Units 1E21-C001, 1E22-C003, 1E51-C003, and 1E12-C003. This report also states that the High-Potential and winding resistance test data was missing for the motors on three of the four units. No NCR had been prepared on these items as of the date of review.



- (8) Report C258, dated July 7, 1982, documents that pipe Hanger 1DG02003R was not installed per design drawings. No NCR had been prepared on this item as of the date of review.

After the Region III inspector brought these items to the attention of the IPCo QA Department, they took action to have BA prepare NCRs/DRs on the items.

- e. On July 28, 1982, the inspector reviewed the BA open and closed Surveillance Reports for the period of December 14, 1981 through June 28, 1982, to verify that identified nonconforming items had been documented on NCRs or DRs, as applicable. All nonconforming items had been documented on NCRs or DRs.
- f. On July 28, 1982, it was learned during an interview with BA QA personnel that they had just started (July 27, 1982) to review the BA audit reports to verify that nonconforming items documented and controlled by NCRs or DRs as applicable. Although BA audit reports were not included in the CAL's laundry list of documents to be reviewed for nonconforming items, the NRC believes that the natural reaction would be to include the subject audit reports in the review.
- g. During the Region III inspector's review of Surveillance Reports, it was observed that BA was delinquent in their response to 16 IPCo Surveillance Reports and there was no documented evidence that IPCo QA department was following up on these delinquent responses.
- h. During a meeting in the Region III office, IPCo committed to control the number of travelers issued to the field for work by discipline, i.e.:
- (1) Large Bore Piping 50 travelers
  - (2) Small Bore Piping 100 travelers
  - (3) Large Bore Hangers 100 travelers
  - (4) Small Bore Hangers 100 travelers
  - (5) Electrical Hangers 500 travelers
  - (6) Instrumentation Piping 25 travelers
  - (7) Instrumentation Hangers 50 travelers
  - (8) Mechanical Equipment 10 travelers

During a review of the traveler control system in the Traveler Control Group office in the power block on July 21, 1982, the following observations were made:

- (1) Electrical Hanger travelers issued - 496 (500 allowed)
- (2) Instrumentation travelers issued - 187 (75 allowed)
- (3) 303 additional travelers were issued, but it could not be determined how many piping or piping hanger travelers were issued. The only control established was the number of travelers being issued to each building.
- (4) During interviews with BA traveler control group personnel, it was learned that BA construction supervision had issued an Inter-Office Memo on July 19, 1982 (No. TJC-7-82) that revised the method for controlling the number of travelers issued to the field. This revised method was in violation to the commitments made to the NRC for traveler control.

#### Exit Meeting

The inspector met with licensee representatives (denoted under Persons Contacted) and conducted exit meetings on June 25 and on July 30, 1982. The inspector summarized the purpose and findings of the inspection. The inspector informed the licensee that as part of the electrical stop work recovery program, the NRC had established that we would review the first group of electrical travelers before they could be issued to the field. The inspector also informed the licensee that he must meet his commitments to the NRC before we would accept any travelers for review. The licensee acknowledged the findings reported herein.