

U.S. NUCLEAR REGULATORY COMMISSION  
REGION III

Report No. 50-461/86039(DRS)

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: May 15 through August 1, 1986

Inspector: R. S. Love *James W. Muffett for*

8/6/86  
Date

Approved By: *James W. Muffett*  
J. W. Muffett, Chief  
Plant Systems Section

8/6/86  
Date

Inspection Summary

Inspection on May 15 through August 1, 1986 (Report No. 50-461/86039(DRS))

Areas Inspected: Routine, announced inspection of licensee's action on:  
previous inspection findings; Part 21 Reports; 50.55(e) Reports; and IE  
Bulletins. During this inspection, Inspection Procedures 30703, 92701, 92702,  
92703, 92716, and 99020.

Results: Of the areas inspected, no violations were identified.

## DETAILS

### 1. Persons Contacted

#### Illinois Power Company

- \*W. C. Gerstner, Executive Vice President
- \*D. P. Hall, Vice President
- \*R. E. Campbell, Manager, QA
- \*C. Phillips, Director, Human Resources
- \*J. E. Loomis, Construction Manager
- \*J. S. Perry, Manager, Nuclear Programs Coordinator
- \*J. D. Weaver, Director, Licensing
- \*P. Raysircan, Assistant Director, NSED
- \*J. A. Brownell, Licensing Specialist
- R. Cannon, Licensing Specialist
- A. Sherwood, Construction QA Lead

#### Sargent and Lundy (S&L)

J. S. Steele, Electrical Project Engineer

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

\*Denotes those personnel attending the exit interview on August 1, 1986.

### 2. Licensee Action on Previous Inspection Findings

- a. (Closed) Open Item (461/85005-11): As part of the Safety Evaluation Report (SER), Paragraph 8.2.3, the licensee committed to do the verification testing to determine the adequacy of station electric distribution system voltages in accordance with guidelines in Part 4 of Branch Technical Position (BTP) PSB-1. To perform this verification testing, the licensee prepared and implemented Preoperational Test Procedure (PTP) AP-01. During this inspection, the Region III inspector: reviewed Procedure AP-01; witnessed approximately 60% of the testing; reviewed the test data collected; and reviewed Sargent and Lundy (S&L) comparison of the test data to the analytical models used to design the auxiliary power system. The S&L comparison indicated that the analytical model values were consistently lower than the test valves and are therefore conservative. Based on the inspector's observations as noted above, this item is closed.
- b. (Closed) Open Item (461/85005-17): As part of the SER, Paragraph 8.4.7, the licensee committed to install covers on raceways below conduits which do not meet the IEEE-384 separation criteria. Figure 5 of IEEE-384-1974 is to be used as a guide for determining the length of the cable tray cover. Prior to February 1986, electrical

separation interactions were identified through the CPS Electrical Separation Engineering Walkdown Program. Based on Potential Interaction Reports (PIR), S&L issued FECNs and ECNs to indicate where raceway covers were required. Tray covers were then installed in accordance with these design documents. Starting in February 1986, tray to tray and conduit to tray separation was verified by BAQC during commodity walkdown prior to commodity turnover to IP. Separation violations were documented on NCRs and corrected through the licensee's NCR program. These NCRs were also added to the Commodity Room Punchlist to ensure timely closure. During this inspection, the Region III inspector reviewed the licensee's program as described above and found it to be adequate. The inspector also performed a general plant walkdown to verify electrical separation. The separation criteria contained in Table 8.3-17 of the Clinton FSAR was used to verify raceway separation. No violations were identified.

- c. (Closed) Violation (461/85030-05c): During the CAT inspection, it was identified that three 5kv cables which terminated in switchgear 1E22-S004 and 1AP-07EE were not insulated in accordance with Specification K-2999, Section 1004.1C2 and BA Procedure 3.3.3, Paragraph 4.12.12. The licensee took the following corrective actions:

Terminations for cables 1HP08A and 1HP03D in switchgear 1E22-S004 were documented on NCR 32232 and FCR 38981 and were dispositioned "use-as-is" by S&L. S&L determined that since the busses in switchgear 1E22-S004 are not insulated, the 5kv cable terminations need not be insulated. Terminations for cable 1LP01A were documented on NCR 32081. MWR B21294 was issued to install insulating boots on 1LP01A in 1AP07EE. NCR 32081 was closed June 8, 1985 and MWR B21294 was closed July 19, 1985.

A complete reinspection of safety-related 5kv cable terminations in switchgear was performed by Baldwin Associates Electrical Quality Control personnel. Terminations of 19 additional cables were inspected and documented on Quality Control Inspection Reports No. E85-12,900, No. E85-12,905, and No. E86-1418. Terminations for 14 cables were found acceptable. Terminations for five (5) cables were nonconforming and were documented on NCRs 36427, 36428, 36429, 36429, 36430, and 36431. NCRs 36427, 36428, and 36429 were dispositioned "use-as-is" and were closed October 19, 1985, October 19, 1985, and October 20, 1985 respectively. NCRs 36430 and 36431 were superseded by NCMR 1-2188 which was subsequently superseded by NCMR 1-2336. NCMR 1-2336 was dispositioned "repair" by NSED/S&L and closed May 8, 1986. The repair disposition was implemented by MWR B34173 and inspected by QC on QCIP B34173-0-01.

To prevent recurrence, BAQC electrical inspection personnel were retrained in the termination and documentation requirements for 5kv cables terminating in switchgear.

During this inspection, the Region III inspector reviewed the above referenced NCRs and NCMRs for proper closure and performed a physical inspection of 1AP07EE and 1AP09EH for proper implementation of MWRs B21294 and B34173. No violations were identified.

- d. (Closed) Violation (461/85030-05b): During the CAT inspection, it was observed that unqualified jumper wires were installed in:
- (1) remote shutdown panel (points 18 and 36 on terminal strip GG);
  - (2) MOV 1SX004C; and (3) MOV 1SX006C. The licensee took the following corrective actions:
- Condition Report 1-85-06-007 - documents misclassification of MWR B02288 and use of unacceptable wire.
  - NCMR 1-1854 - documents use of unacceptable wire.
  - MWR B11255 - removed wire and installed approved wire.
  - NCMR 1-0935 - documents use of unacceptable jumper on MOV 1SX004C.
  - Condition Report 1-85-06-051 - documents use of incorrect wire in Class IE MWRs.
  - MWR B13553 - documents inspection of field cable splicing cited in the inspection report.
  - FCR 24896 - documents authorization to swap motor leads to obtain proper motor rotation.
  - In addition, NCMR 1-1249 and CWR 15068 documents use of unacceptable jumper on MOV 1SX006C and replacement with approved wire.

The above actions address the specific deficiencies identified in the inspection report. The report also indicated that the Maintenance Work Request Program was ineffective in identifying safety-related work and prescribing the appropriate QA requirements for the work. Further evaluation by IP has determined that his apparent breakdown in the MWR Program could be attributed to the fact that the MWRs were being classified by Maintenance Planners instead of by engineering personnel. Two corrective actions have been taken to resolve this item. First, a 100% review of all completed MWRs was performed by NSED, in which 233 were determined to be misclassified. These 233 were further reviewed by IPQA, and five (5) Condition Reports and one (1) NCMR were initiated to document the deficiencies. The second action, to prevent recurrence, was to issue NSED Procedure M.1, Safety Class Statusing of MWRs, to ensure that NSED reviews all future MWRs to provide correct classification and QA requirements for each MWR. Training was conducted in the application of the new procedure.

During this inspection, the Region III inspector reviewed the above referenced procedure (M.1) and found it to be adequate. In addition, the inspector reviewed the above referenced Condition Reports, MWRs, and NCMRs for proper closure. No violations were identified. The NRC Resident Inspector staff performed two in depth inspections of the licensee's MWR program. The Resident Inspector's inspections are documented in IE Inspection Reports 50-461/86023 and 50-461/86037. Based on the Resident and Region inspector's inspections, this item is closed.

e. (Closed) Unresolved Item (461/85041-08): During a previous inspection, it was observed that there was conflicting load data information in the Clinton FSAR and S&L/GE design documents for HPCS MCC 1E22-S002. The licensee implemented the following corrective actions:

- Table 8.3-16 was deleted from the FSAR in Amendment 36. The information in that Table is now included in Figure 8.3-3.
- Figure 8.3-3 was revised in Amendment 36 and 38. The revised figure shows actual loads on bus 1C1 under LOCA conditions, while the connected loads on the HPCS MCC (connected to bus 1C1) are shown on S&L drawing E02-1HP01.
- FDDR-LH1-3627, Revision 0, is a tabulation of nameplate data for all loads that are connected to the HPCS Motor Control Center. The data was assembled from FDDR-LH1-5038.
- After closure of FDDR-LH1-3627, FDDR-LH1-3806, Revision 0, was generated to revise drawing 762E298AC to document correct data for two loads connected to the HPCS MCC.
- FSAR Figure 8.3-2a was revised in Amendment 38 to reflect updated information contained in drawing 762E298AC.
- S&L drawing E02-1HP01 was revised to correctly reflect the loads on HPCS MCC.
- A matrix was prepared to show the consistency of information contained in FDDR-LH1-3627, FDDR-LH-1-3806, FSAR Figures 8.3-2a and 8.3.-3, and drawing E02-1HP01.

During this inspection, the inspector reviewed the above listed corrective actions and found them to be adequate.

### 3. Licensee Action on Bulletin 85-02

(Closed) IE Bulletin (461/85002-BB): IE Bulletin 85-02 was issued to inform all power reactor licensees and applicants of reliability problems with Westinghouse DB-50 type circuit breakers. These circuit breakers are not used at Clinton Power Station (CPS) and since Clinton is a BWR facility that does not utilize reactor trip breakers, IE Bulletin 85-02 is not applicable to CPS.

4. Licensee Action on Part 21 Reports

(Closed) Part 21 Report (461/86005-PP): IP was notified by Brown Boveri, Inc. of a possible defect in K-Line circuit breakers. The potential defect was cut or scraped control wire insulation on the auxiliary switch for the breaker. This condition identified by Brown Boveri was documented, tracked, and resolved by IP Condition Report No. 1-85-04-033. There are 268 K-Line breakers in-service at CPS. Thirty-five of those breakers are used for Class IE service with an additional 14 installed spares that are qualified Class IE. All Class IE breakers were inspected and no occurrences of cut or scraped wire insulation was observed. Based on the inspection results, IP determined that this item was not reportable.

As protection against possible future cuts in the control wire insulation, an adhesive backed foam gasket material was attached to the dust shields as recommended by Brown Boveri instruction IB 8503, Revision 1. During this inspection, the Region III inspector reviewed the applicable inspection reports, Condition Report 1-85-04-033, and the work requests that installed the foam gaskets. The inspector selected 10 Class IE K-Line circuit breakers for physical inspection. No violations were identified.

5. Licensee Action on 50.55(e) Reports

- a. (Closed) 50.55(e) Report (461/85006-EE): On June 26, 1985, IP notified Region III of a potentially reportable deficiency concerning various internal wiring and workmanship deficiencies in safety-related electrical panels supplied by various vendors. A list of 98 Class IE panels to be inspected was generated from S&L's Equipment List. This inspection resulted in the initiation of 77 Nonconforming Material Reports (NCFR) which documented the identified deficiencies. Corrective actions included physical rework of panels as well as drawing corrections as required by the NCFR dispositions.

During this inspection, the Region III inspector performed a general review of the inspections of the 98 panels and 77 NCFRs. The inspector selected 10 of 77 NCFRs for a detailed review. The NCFRs were complete in that they contained, as applicable, a description of the deficiencies, a disposition for each deficiency, a completed Maintenance Work Request (MWR) to correct the deficiency per the approved disposition, QC acceptance inspection reports and post-maintenance test reports. No violations were identified.

- b. (Closed) 50.55(e) Report (461/85010-EE): On September 6, 1985, IP informed Region III of a potentially reportable deficiency involving the installation of Electrical Conductor Seal Assemblies (ECSA) which were installed in a reversed position. The ECSAs are not qualified for installation in the reverse direction. BA QE issued Corrective Action Requests (CAR) 262 and 267 to cause a reinspection of all (579) installed ECSAs. The reinspection effort disclosed the following deficiencies:

- 8 ECSAs installed in a reverse position,

- 30 ECSAs were found with incorrect use of Garfoil tape,
- 7 ECSAs were found with an improper gap,
- 28 Rosemount transmitters were found with broken neck seals.

The scope of the 50.55(e) Report was modified to include all of the identified discrepancies. The above listed deficiencies were documented on BA NCRs and/or IP NCMRs. During this inspection, the Region III inspector performed a general review of the documentation package and a detailed review of: CARs 262 and 267; NCRs 34479, 34678, 35329, 39401, 39459, 39488, 39633, and 39669; and NCMRs 1-1716, 1-1795, 1-1928, 1-1929, and 1-2216. During this review, it was observed that NCMR 1-1716 superseded NCR 34678, NCMR 1-1795 superseded NCR 35329, NCMR 1-2098 superseded NCR 39459, and NCMR 1-2216 superseded NCMR 1-1928. All CARs, NCRs and NCMRs were properly closed and had the appropriate backup data (FECNs, Inspection Reports, disposition justification, etc.) attached. No violations were identified.

- c. (Closed) 50.55(e) Report (461/86002-EE): On May 8, 1986, IP notified Region III of a potentially reportable deficiency concerning electrical termination lugs installed on the motor leads of certain Limitorque valve operators. Objective evidence was obtained which documented that the lugs installed on the motor leads were not the correct size. Of the 195 safety-related MOVs physically inspected, 44 were identified as having oversized (terminal lugs, i.e. 14-16 gauge lugs were installed on 18 gauge wire. The above observations were documented on IP Condition Report 1-86-04-042 dated April 10, 1986 and the specific violations were documented on NCMR 02-0760, dated April 11, 1986. Based on the disposition of NCMR 02-0760, MWRs were issued to inspect the 195 MOVs and replace the oversized lugs with the correct size terminal lugs. During this inspection, the inspector reviewed the Condition Report, NCMR, and associated MWRs for proper closure. NCMR 02-0760 was closed on July 7, 1986 and Condition Report 1-86-04-042 was closed on July 25, 1986. No violations were identified.

## 6. Exit Interview

The Region III inspector met with the licensee representatives (denoted under Paragraph 1) at the conclusion of the inspection on August 1, 1986. The inspector summarized the scope and findings of the inspection. The inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed during the inspection. The licensee acknowledged this information and did not identify any such documents or processes as proprietary.