

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-461/85-13(DRS)

License No. CPPR-137

Docket No. 50-461

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: February 19-22, February 25 - March 1, 1985

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

3/20/85
Date

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

3/20/85
Date

Inspection Summary

Inspection on February 19 - March 1, 1985 (Report No. 461/85-13(DRS))

Areas Inspected: Routine, unannounced inspection of licensee activities in the areas of: the Field Verification Program; electrical cable tray hanger reinspection program; and applicable procedures and records. This inspection involved a total of 66 inspection-hours on site by one NRC inspector.

Results: Of the areas inspected, one item of noncompliance was identified (inadequate disposition of Nonconformance Reports - Paragraph 2.d.(3)).

8503260532 850320
PDR ADOCK 05000461
Q PDR

DETAILS

1. Persons Contacted

Illinois Power Company (IP)

*D. P. Hall, Vice President
*H. R. Victor, Manager of NSED
*H. E. Daniels, Jr., Project Manager
*G. W. Bell, Director - Construction and Procurement QA
*J. S. Perry, Manager of Nuclear Programs Coordination
*F. A. Spangenberg, Director of Nuclear Licensing
*R. E. Campbell, Director of Quality Systems and Audits
*J. H. Greene, Manager of Startup
*R. G. Collings, Supervisor of Audits
*F. C. Edler, Supervisor of Construction/Startup (NSED)
*J. G. Cook, Assistant Plant Manager
*J. R. Sprague, Station QA Specialist
R. J. Kennedy, QA Engineer (Surveillance)
G. Bousquet, QA Engineer (Surveillance)
W. D. Connell, Manager of Quality Assurance
D. W. Wilson, Supervisor of Licensing Administration (NSED)
E. W. Kant, Director of Nuclear Safety (NSED)
J. E. Loomis, Construction Manager

Baldwin Associates (BA)

*L. W. Osborne, Manager of Quality and Technical Services
E. D. Rosol, Deputy Plant Manager
T. Black, Senior Electrical QC Supervisor
J. Wiley, Electrical Superintendent
G. O. Roberts, Resident Electrical Field Engineer
L. R. Blankenship, Staff Assistant
P. Suchanoff, Office Manager (Electrical)
R. Manville, Administrative Assistant (Electrical)
D. W. Ferrara, Senior QA Engineer (Field Verification)
R. Gunter, Senior QA Engineer (Field Verification)

Soyland/WIPCo Cooperative

*J. Greenwood, Manager - Power Supply

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

*Denotes those present at the exit interview on March 1, 1985.

2. Field Verification Program

a. Background

The purpose of the Field Verification/Overinspection Programs are to provide additional assurance that the structures, systems, and components at Clinton Power Station are installed and inspected in accordance with the applicable codes, standards, drawings, specifications, and procedures. These objectives are being accomplished by performing additional inspections of completed and QC/TC inspected work. These additional inspections are performed by the BA QA Field Verification Group and the IP QA Overinspection Group. This Inspection Report will address the activities of the BA QA Field Verification (FV) Program and the subsequent dispositioning of nonconformance reports (NCR) prepared by the FV Group.

The BA FV Group performs inspections of a sample of completed and inspected work. The sampling procedures used by the FV Group are based on sample size and acceptance criteria derived from Mil-STD-105D. If the results of these inspections do not satisfy the acceptance criteria, the results are evaluated to determine the need for further inspections of the lot from which the sample was selected. It should be noted that although this program was designed for sampling inspections (from latest data available) BA FV has inspected 100% of all of its lots due to the small size of the lots and the stringency of Mil-STD-105D and the acceptance criteria.

In the electrical/instrumentation areas, the FV inspections focus on installation of safety-related systems in the following categories:

- . Small bore piping (instrument sensing lines)
- . Electrical hangers
- . Electrical raceway (conduit and cable tray)
- . Electrical cable terminations
- . Electrical equipment
- . Instrumentation (electrical and mechanical)

These categories are related to those areas in which significant deficiencies had been discovered in 1981 and 1982.

When the BA QA field verification inspection of a lot is completed, the lot is turned over to IP QA Overinspection Group for over-inspection.

b. IP QA Surveillance of FV Program

During this reporting period, the Region III inspector reviewed 34 IP QA Surveillances of the BA QA Field Surveillance Programs. In general, these surveillances consisted of verifying the qualifications of the FV inspector and witnessing the inspection

activities of the FV inspector. As a result of an NRC concern, the IP QA Surveillance Group made a concerted effort to verify the effectiveness of the FV Program. As a result of this effort, the 34 surveillances were conducted in the field versus an in office review of documentation. The following IP QA Surveillance Reports were reviewed and found acceptable:

- . Y-26471 - Electrical Structural Steel
- . Y-26408 - ASME III Supports
- . Y-26416 - ASME III Supports
- . Y-26417 - ASME Large Bore Pipe Hangers
- . Y-26424 - Electrical Cable Installation
- . Y-26427 - Electrical Cable Terminations
- . Y-26428 - HVAC
- . Y-26430 - Piping Supports
- . Y-26432 - Pipe Hangers
- . Y-26436 - Component Supports using CEAs
- . Y-26439 - Large Bore Pipe Hangers
- . Y-26441 - Electrical Modifications of Motor Operated Valves (MOV)
- . Y-26443 - HVAC
- . Y-26444 - Instrument and Instrument Piping Supports
- . Y-26447 - 2 1/2" Piping
- . Y-26450 - Electrical Raceway Hangers
- . Y-26453 - Cable Tray Hangers
- . Y-26454 - Electrical Auxiliary Steel
- . Y-26455 - Electrical Conduit Supports
- . Y-26456 - Electrical Auxiliary Steel
- . Y-26458 - Electrical Auxiliary Steel
- . Y-26460 - Electrical Conduit Supports
- . Y-26461 - Electrical Conduit Supports
- . Y-26463 - Small Bore Pipe Hangers
- . Y-26466 - Pipe Supports
- . Y-26467 - Pipe and Valves
- . Y-26468 - Electrical Conduit Supports
- . Y-26470 - Electrical Conduit Terminations
- . Y-26472 - Electrical Conduit Supports
- . Y-26476 - Electrical Conduit Supports
- . Y-26478 - Electrical Conduit Supports
- . Y-26479 - Electrical Auxiliary Steel
- . Y-26489 - HVAC Fabrication Shop

c. Field Verification Procedures

During this reporting period, the Region III inspector reviewed the following electrical/instrumentation FV procedures and found them to be adequate except as noted:

- . BQAI-190-1, Revision 4, dated August 3, 1984, "Concrete Expansion Anchor Field Verification."
- . BQAI-190-3, Revision 3, dated January 13, 1984, "Mechanical Equipment Field Verification."

- BQAI-190-4, Revision 4, dated November 9, 1984, "Piping/Valve, Instrument Lines/Valves, Installation Field Verification."
 - (1) Verification of the installation of instrument sensing line color coded identification tags is not addressed.
 - (2) Verification of separation of redundant instrument sensing lines is not addressed.
- BQAI-190-5, Revision 4, dated August 24, 1984, "Component Support Field Verification."
- BQAI-190-6, Revision 3, dated January 13, 1984, "Electrical Equipment Field Verification."
- BQAI-190-7, Revision 3, dated January 13, 1984, "Electrical Cable Terminations."
 - (1) Verification of the proper installation of conductor butt splices is not addressed.
- BQAI-190-8, Revision 3, dated January 13, 1984, "Electrical Raceway Hanger/Support Field Verification."
- BQAI-190-9, Revision 3, dated January 13, 1984, "Electrical Raceway Field Verification."
- BQAI-190-11, Revision 6, dated September 27, 1984, "Welding Field Verification." This procedure was reviewed by Region III welding inspectors. This review is documented in Inspection Report 461/84-36.
- BQAI-190-12, Revision 4, dated February 5, 1985, "Electrical Cable Installation Field Verification."
- BQAI-190-13, Revision 1, dated July 27, 1984, "Auxiliary Steel Field Verification."

Pending a review of procedures BQAI-190-4 and BQAI-190-7 to verify the incorporation of the inspector's concerns into the applicable procedures, this item is open (461/85-013-01).

d. Field Verification Nonconformance Reports

To assist in tracking and trending of NCRs prepared by IPQA Overinspection, BA QA Field Verification, and BA QC Hanger Reinspection Groups, each group has been assigned a block of NCR numbers, as follows:

- IP QA Overinspection - 50,000 series,
- BA QA Field Verification - 60,000 series,
- BA QC Hanger Reinspection - 90,000 series.

During this reporting period, the Region III inspector performed a general review of approximately 445 NCRs (65,662 - 66,107) prepared by the FV Group and a detailed review of 97 NCRs in the electrical/instrumentation areas. With respect to the 97 NCRs, the following observations were made:

- (1) IP Nuclear Station Engineering Department (NSED) is providing final engineering disposition on Type A and Type B NCRs for use-as-is, repair, and rework. Examples:

- NCR 65,675, Type A. NSED authorized the repair of a laminated plate.
- NCR 65,688, Type B. NSED authorized the repair of "burn-through" on an J-Box.
- NCR 65,745, Type A. NSED authorized use-as-is for arc strikes and 2 welds that were shorter than design requirements.
- NCR 65,802, Type B. NSED authorized use-as-is for a P-Box that was not identified in accordance with specification requirements.
- NCR 65,719, Type A. NSED authorized the rework of a hanger/weld with arc strikes and slag.
- NCR 65,766, Type B, NSED authorized the rework of AP76E. Rework involved the removal/installation of jumpers, installing a label on a terminal block, and removal of an unauthorized terminal block.

A review of the IP Construction QA Manual, Chapter 15, indicates that Sargent and Lundy (S&L) is responsible for engineering justification for construction related nonconformances which are dispositioned "repair" or "use-as-is" or require a design document change. During an interview of an IP QA engineer, the inspector was informed that the NRC Clinton Resident Inspector had previously identified this item and that IP was in the process of implementing corrective action. The inspector verified that a Deviation had been issued in Inspection Report 461/84-30 and an Unresolved Item was opened in this area as documented in Inspection Report 461/84-41. In that the inspectors' concerns are being tracked by the Deviation and Unresolved Item, no additional action was taken during this reporting period.

- (2) During the general and detailed review of NCRs, the inspector was alert for NCRs that would identify a possible safety significant condition. None were identified in the block of NCRs reviewed. Numerous NCRs were being prepared due to changes in design requirements. Example: Previous criteria on return welds was 2 "-0" and the present criteria is 2" -0 + 1/4". If a return weld is 2 3/8" long, it would have been acceptable under the previous criteria, however, this weld would exceed the new criteria by 1/8" and is therefore a nonconforming condition.
- (3) Of the 97 NCRs reviewed in detail, the Region III inspector selected 9 NCRs for followup on the adequacy of the engineer's (NSED) disposition. Following are the results of this review:
 - (a) NCR 65,719 identified arc strikes, surface slag, and slag inclusions on a conduit support. This is a Type A NCR on old work (installed/inspected prior to June 28, 1982). The disposition was to rework all three conditions. The inspector concluded the disposition was adequate for the deficiencies identified.

- (b) NCR 65,745 identified arc strikes and one undersize weld on a conduit support. This is a Type A NCR on old work. The disposition was to accept the arc strikes and undersize weld in the as found condition. The inspector stated his concern with the use-as-is disposition on the arc strike during the exit interview. This NCR has been or will be forwarded to S&L for a N45.2.11 review. Pending an NRC review of the S&L N45.2.11 review this item is open (461/85-013-02).

Background on N45.2.11 Review: The NRC Clinton Resident Inspector identified the fact that S&L was not providing engineering justification on use-as-is, Type A, NCRs dispositioned by NSED. This concern is being tracked as Unresolved Item No. 461/84-41-02. As a result of this concern, IP QA performed a surveillance of NSED activities in this area. Although not procedurally authorized, IP QA identified that NSED had placed an "NA" in the "designer block" of the NCR form for 12 NCRs that were solely dispositioned by NSED. IP QA Surveillance Finding 0-84-332 was issued to document this observation. As part of the corrective action on the IP QA Finding, NSED procedure D.7, Revision 5, was modified as follows: "If a disposition of "Use-as-is" (Type A) or "Repair" has been made by NSED to a nonconforming item for which the Architect Engineer has design responsibility without an AE signature, enter 'Perform ANSI N45.2.11 Review' in the design organization block by writing or stamping."

- (c) NCR 65,790 identified that pull box 1PB711 was not installed in its design location per drawing E27-1700, Sheet 1, Revision Y. This is a Type B NCR on new work (installed/inspected after June 28, 1982). NSED dispositioned the NCR as Type B, use-as-is (written in error) based on the information that E27-1700 series drawings are intended as reference information and are not intended as a construction location dimension source. During an inspection of pull box 1PB711 by 2 NRC inspectors and an IP QA Engineer, it was determined that the pull box was located in the containment building at approximately AZ 141° and elevation 902' (floor elevation 862'). This location approximates that location described in the NCR. During interviews of BA engineers, it was determined that the design location for pull box 1PB711 is AZ 138° 30' ± 3 inches and elevation 901' 11" ± 3 inches. To make this determination, the BA engineers utilized CB&I as-built drawings, NCR 20528, FCR 27217, S&L drawing E27-1006-03A-E1H, Sheet 1, Revision A, and several other supporting drawings and documents.

During interviews with the NSED engineer that provided the disposition on NCR 65790, and the engineers 1st and 2nd level of supervision, they were unable to provide the

inspector with the AZ location of the pull box. During a review of NSED's "Nonconformance Report Disposition Review" sheet, Form FCE-66-84, there was no justification noted for the "written-in-error" disposition.

Summary: Pull box 1PB 711 is not in its design location $\pm 3"$, no as-built drawings were presented to the inspector that showed the as installed location of the pull box, NSED errored in their "written-in-error" disposition, and it appeared that NSED took no actions to determine if the pull box was in its design location prior to dispositioning the NCR.

The licensee was informed that failure to provide an adequate disposition on NCR 65,790 was an item of noncompliance in accordance with 10 CFR 50, Appendix B, Criterion XV. (461/85-013-03A)

- (d) NCR 65,802 identified that pull box 1PB2201 was not identified by an ID marker or divisional color code in accordance with project requirements. This is a Type B NCR on new work. NSED dispositioned the NCR as Type B, use-as-is (written in error) based on an attached memo that states that the NCR was written in error. The memo was addressed to a BA engineer and was signed by the Field Verification Supervisor of the inspector that prepared the NCR. No justification was provided in the memo for written in error judgement by the Supervisor. An inspection of the pull box on February 27, 1985, revealed that the pull box is properly identified. A craft electrician working in the area stated that the pull box been recently identified (in the last couple of weeks). The subject memo states that NCR's 65,850; 65,804; 65,802; 65,905; 65,866; and 65,803 were written in error. During an interview of the Field Verification Supervisor, he stated that he did not remember the details as to why the memo was prepared. He was unable to provide any backup justification for the memo. The memo addressee (BA engineer) and the inspector that prepared the NCR are no longer employed at CPS so the inspector was unable to interview these personnel. During the interview of the NSED Supervisor of Construction/Startup, he stated that the inspector's supervisor's memo was all the justification that NSED required to disposition all the referenced NCRs as "written-in-error." Although not substantiated by an inspection of the hardware, this appears to be another example of an inadequate/incorrect disposition being provided to an NCR by NSED.
- (e) NRC 65,803 identified that conduit C2334 was improperly routed. This is a Type B NCR on new work. NSED dispositioned this NCR as "written-in error". The NCR states that conduit C2334 is routed from 1AP30E to 1SX014B and

that is should be routed from 1AP30E to 1PB2201. Inspection of the conduit run on February 27, 1985, revealed that the conduit is installed per design drawings. During personnel interviews, the inspector was informed that the section of conduit installed between 1PB2201 and 1SX014B was mislabeled, thus giving the indication that conduit C2334 was improperly routed. It would appear that this NCR was written-in-error, however, if the information provided to the inspector is correct, another NCR should have been prepared to indicate that the section of conduit between 1PB2201 and 1SX014B was incorrectly identified as conduit C2334. The inspector was informed that no NCR was prepared to document this "fact". Again, this would appear to be another example of an inadequate/incomplete disposition being provided on an NCR by NSED.

- (f) NCR 65850 identified that conduit C2789 was not identified for approximately 33 feet (segregation code identification is required every 15 feet maximum). This is a Type B NCR on new work. NSED dispositioned this NCR as "written-in-error". During a walkdown of this conduit run on February 27, 1985, it was observed that conduit C2789 is still not identified for approximately 33 feet. See paragraph (d) above for information on personnel interviews, etc. as relating to this and other NCRs. The licensee was informed that this is another example of noncompliance to 10 CFR 50, Appendix B, Criterion XV, failure to provide an adequate disposition on an NCR by NSED (461/85-013-03B).
- (g) NCR 65,866 identified that conduit C2793 was not identified for approximately 40 feet. This is a Type B NCR on new work. NSED dispositioned this NCR as "written-in-error". The inspectors were unable to locate this conduit. See paragraph (d) above for NSED's justification for the "written-in-error" disposition. Again, this would appear to be another example of an inadequate disposition being provided on an NCR by NSED based on their justification.
- (h) NCR 65,905 identified that conduit C2626 was not identified for approximately 25 feet. This is a Type B NCR on new work. NSED dispositioned this NCR as written in error. During walkdown of this conduit run, the inspectors and IP QA observed that this conduit run is still not identified every 15'. The inspectors estimated that it was approximately 40' between labels on February 27, 1985. The licensee was informed that this is another example of noncompliance to 10 CFR 50, Appendix B, Criterion XV, failure to provide an adequate disposition on an NCR by NSED (461/85-013-03C).

(i) NCR 65,994 identified that the return welds on conduit support E27-1518-Z5CL-5 exceeded their design length. This is a Type A NCR on new work. NSED dispositioned this NCR as "use-as-is" based on the excess welding being, quote, "Nonhardware - Not a design violation". The licensee was informed that this is another example of noncompliance to 10 CFR 50, Appendix B, Criterion XV, failure to provide adequate justification for a use-as-is disposition on an NCR by NSED (461/85-013-03D).

As part of the corrective action to prevent recurrence to noncompliance 461/85-13-03, the licensee should consider the following:

- Verify that NSED responsibilities are clearly defined in their implementing procedures and in the FSAR, Chapter 17.1 and 17.2.
- Verify that BA procedures and NSED procedures are compatible. Example: It was the inspector's understanding that the Type B NCR was created to provide a 3rd party (NSED) review of written-in-error (voided) NCRs. Examples are provided in this report that indicates that "rework", "repair", and "use-as-is" dispositions are being accomplished on Type B NCRs. Type A and Type B NCRs should be defined in NSED and BA procedures.
- Define the NCRs that will be reviewed by S&L. In information provided to the inspector during this inspection: (1) Procedure change to NSED procedure D.7 indicates that S&L will review all Type A "use-as-is" dispositions and all "repair" dispositions, (2) NSED Managers' letter to S&L, dated December 31, 1984, directs S&L to review Type A, "use-as-is" dispositions provided by NSED when the NCR is identified for S&L to "perform ANSI N45.2.11 review". These directions to NSED and S&L are not compatible.
- Perform an indepth audit of NSED to verify that they are capable of performing their assigned responsibilities.
- Perform an indepth followup audit of NSED, S&L, and BA to verify that they are implementing their approved procedures.

3. Reinspection Program Status

- a. The electrical cable tray hanger reinspection program is scheduled for completion on September 30, 1985.
- b. The hanger reinspection status as of February 14, 1985, is as follows:

.	Total hangers in the reinspection program	-	5,168
.	Hangers signed-off by QC and TS	-	1,604
.	Hanger packages in DRC/DRG	-	859

- c. To implement the hanger reinspection program, the following numbers and types of personnel are assigned to this reinspection effort:

- .
- .
- .
- .
- .
- Craft - 115 plus supervision (foremen and general foremen)
- Craft superintendent - 2
- Field engineers - 16
- QC inspectors - 14
- TS inspectors - welding inspections are being performed on 1st and 2nd shifts on an as needed basis.

- d. As of the February 14, 1985, report, QC has a backlog of 116 inspections for the reinseption program. During an interview of the BA Senior Electrical QC Supervisor, he indicated that he was aware of the backlog and was evaluating the possible assignment of additional QC inspectors to the second shift for the reinspection program. This supervisor recently came "on-board" and is still trying to identify his problem areas.
- e. During discussions with IP and BA upper management, at during the exit interview, they were aware stated that they of the status of the rein-spection program. The inspector was informed that this program is reviewed in detail at the weekly status meetings.

4. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involved some action on the part of the NRC or licensee or both. Open items disclosed during this inspection are discussed in Paragraphs 2.c., 2.d., 3.(b).

5. Exit Interview

The Region III inspector met with the licensee representatives (denoted under Paragraph 1) at the conclusion of the inspection on March 1, 1985. The inspector summarized the purpose and findings of the inspection. The licensee acknowledged this information. The inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed during the inspection. The licensee did not identify any such documents/processes as proprietary.