

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-456/82-01(DETP); 50-457/82-01(DETP)

Docket No. 50-456; 50-457

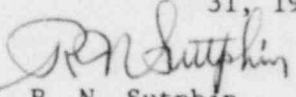
License No. CPPR-132; CPPR-133

Licensee: Commonwealth Edison Company
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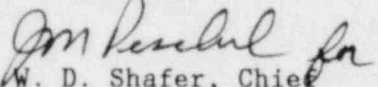
Facility Name: Braidwood Station, Units 1 and 2

Inspection At: Braidwood Site, Braidwood, IL

Inspection Conducted: February 10, 11, 17-18, 22-24; March 2-3, 10, 16-18,
31, 1982

Inspector:  R. N. Sutphin

4/15/82

Approved By:  W. D. Shafer, Chief
Management Programs Section

4/23/82

Inspection Summary

Inspection on February 10-11, 17-18, 22-24; March 2-3, 10, 16-18, 31, 1982
(Report No. 50-456/82-01(DETP); 50-457/82-01(DETP))

Areas Inspected: Licensee action on previous inspection findings, unresolved items and document control. The inspection involved a total of 82 inspector-hours onsite by one NRC inspector.

Results: Of the three areas inspected, four items of noncompliance were identified (failure to provide stressing sequence drawings, failure to initiate corrective action to preclude repetition, failure to provide lifting and handling procedures, and failure to maintain control of superseded drawings).

DETAILS

1. Persons Contacted

Commonwealth Edison Company

R. Cosaro, Site Project Superintendent
*J. T. Merwin, Project Mechanical Supervisor
*T. R. Sommerfield, Site Q.A. Superintendent
*C. D. Gray, Project Structural Supervisor
D. A. Brown, Q.A. Supervisor
L. T. Tapella, Project Construction Engineer
C. C. Hunsader, Q.A. Supervisor
M. A. Gorski, Q.A. Engineer
*W. D. Bruns, Quality Assurance Inspector
*R. C. Schleiter, Administrative Assistant
*C. A. Mennecke, Lead Electrical Engineer, PCD

Napoleon Steel Contracting, Inc.

*D. Rayka, Project Engineer
*C. R. Zavada, Manager Quality Control

Phillips Getschow Company

*A. Rubino, Supervisor Quality Control
*L. G. McGregor, NRC SRI

*Denotes those present at the exit interview on March 31, 1982.

2. Licensee Action on Previous Inspection Findings

A. (Closed) Unresolved items (456/81-14-05; 457/81-14-04):
Identity and Traceability of Documents Governing Containment
Post Tensioning.

Specification L-2722 "Post Tensioning Installation" issued to Napoleon Steel Contractors, Inc., via P. O. 229958, to establish requirements for containment post tensioning work, included the following:

13-105. Requirements for installers shop drawings.

13-105.2 Shop drawings shall include detail and erection drawings, and shall be accompanied by the following:

- (a) Stressing sequence drawings, and also stressing records for each tendon.
- (b) All other pertinent design information affecting sequence, clearances and design requirements for placing, stressing and greasing.

13-304.3---Consulting engineers must review the post-tensioning sequence drawings prior to start of work.---

13-603.1 Post tensioning shall follow the general sequence indicated in Article 13-304.

13-603.2 Based on this general stressing sequence, installer shall prepare a detailed stressing sequence schedule that shall be submitted in the form of stressing sequence drawings.

13-603.3 After final approval of these drawings all stressing shall follow the approved schedules.

13-604.2 Stressing sequence drawings shall clearly indicate the actual stresses, in psi, that contractor proposes to use for temporary stresses, based on the actual wire provided for the work.

These references indicated that post-tensioning stressing sequence drawings were a requirement. They were to have been prepared, reviewed and approved prior to start of the work and the post-tensioning work was to be accomplished accordingly.

Post-tensioning stressing was completed for Unit #1 and was in progress for Unit #2 without the stressing sequence drawings having been prepared, reviewed, approved, used to control the work, and to provide a drawing record for the results of the work.

Contrary to the above drawing requirements, the stressing sequence used was proposed in the form of a letter from the contractor which was then approved and used to control the work. This is a violation of Criteria V. Instructions, Procedures, and Drawings, 10 CFR 50 Appendix B, which states that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings.

These unresolved items are considered closed and are upgraded to Items of Noncompliance with Criteria V 10 CFR 50 Appendix B, Instructions, Procedures and Drawings (456/82-01-01; 457/82-01-01).

B. (Closed) Unresolved Items (456/81-14-07; 457/81-14-05)
Attention to Specification and Procedural Detailed Requirements

Results of quality control inspection activities performed by various contractors at the site were reviewed and found to be effective in addressing details of the requirements, specifications, procedures, instructions and drawings. Areas where the Q.A. program responses to these Q.C. inspection reports were considered to be inadequate or incomplete are identified in other sections of this report as violations of Criteria V,

VI, XIII, and XVI, of 10 CFR 50, Appendix B. As a result of these violations a further review of this aspect of the Q.A. program is not deemed necessary at the present time. This unresolved item is considered closed.

- C. (Closed) Unresolved items (456/81-14-08; 457/81-14-06)
Is Frequent "Use-as-is" Recommended NCR Disposition, Prior to Design Review, etc., Consistent with Quality Program Objectives.

Subsequent to the inspection in which this unresolved item was identified the licensee had conducted an extensive analysis of the L. K. Comstock Nonconformance Reports (NCRs), which were the basis for this item, and had documented the results in memo BRD #5953 dated December 17, 1981.

A review of the results of this analysis indicated the following 6 special groupings from 319 NCRs on cable pan and conduit hangers over an 8 month period (March 26, 1981 to November 23, 1981):

(1) Nonconforming hangers due to incorrect materials:	68
(2) Nonconforming hangers due to dimensional errors:	60
(3) Nonconforming hangers for general noncompliance:	71
(4) Nonconforming hangers for incorrect fitup gaps:	27
(5) Nonconforming hangers for incorrect location:	8
(6) Nonconformances for welding deficiencies:	16

TOTAL 250

The number of hangers inspected for configuration, out of 11,025 total for the job to date, was 3,388, approximately 31%, with nominally 70% not inspected.

The numbers of essentially identical or similar nonconformances in the groupings listed above were indications of potentially significant conditions or trends adverse to quality and did not result in quality program management action to determine the cause and take timely appropriate corrective action to preclude repetition or continuation.

The failure of the Quality Assurance Program to recognize this adverse trend and initiate appropriate corrective action to preclude repetition was a violation of Criteria XVI of 10 CFR 50 Appendix B.

These unresolved items were considered closed and upgraded to items of noncompliance with Criteria XVI of 10 CFR 50, Appendix B (456/82-01-02; 457/82-01-02).

Subsequent to the inspection in which this unresolved item was identified and after the analysis groupings outlined above, a Site Q.A. Supervisor notified L. K. Comstock (LKC), via memo BRD #5953, December 17, 1982, that:

"While welding of hangers doesn't appear to have any significant trend, hanger rejection due to nonconformities such as location, dimension, or substitution merits immediate attention by LKC Production and Engineering."

It is expected that "Immediate Attention" will result in LKC addressing the requirement of corrective action.

- D. (Closed) Unresolved Items (456/81-14-09; 457/81-14-07)
Prevailing Attitude to Change Specifications and Requirements as Adverse to Q.A. Program Compliance

In reviewing the requirements and QA program records associated with Specification L2722, for post tensioning work contracted to Napoleon Steel Contractors, Inc. (NSCI), a violation of the inspection Criteria X of 10 CFR 50 Appendix B, was identified and documented as Noncompliance Item 356/81-14-06, in report 50-456/81-14, January 5, 1982. In addition to this violation there were indications that revisions were being proposed to change (NSCI) Procedure #7B, the contractor's implementing procedure, associated with the work controlled by Specification L2722. The apparent objective of the proposed change was to more nearly reflect the character of the work actually completed vs. that which was specified thereby making the evaluation and acceptance of the results more convenient.

Subsequent to the inspection in which this unresolved item was identified, the proposed revision to (NSCI) procedure 7B was completed, submitted, reviewed, and accepted. It downgraded the level of quality program confidence compared to that which was previously provided for in specification L2722, for inspection of corrosion of post-tensioning tendons.

A similar review of quality program records for another specification, L-2850, which was issued to control the work contracted to Pittsburgh Testing Laboratory (PTL), revealed two changes which appeared to reflect the same considerations. One was in the specification and the other was in a referenced procedure, BY/BR/CEA.

In Part 1207.2 of the specification, covering Mortar Surveillance Tests, the frequency for water retention tests was changed from "Weekly for the duration of masonry work" to "Monthly for the duration of masonry work."

In the referenced procedure BY/BR/CEA a requirement for reporting of all "cut" and "nicked" rebar during the drilling for concrete expansion anchors was revised to eliminate the requirement to report "nicked" rebar.

In both cases the S & L review record indicated the changes were made at client's request.

Quality Program Records reviewed for another specification, L-2739, which was issued to control the work of Phillips, Getschow Co. (PG Co) indicated a similar attempted change reflecting the same considerations. An audit finding indicated that PG Co had failed to comply with Section 6.1 of their procedure #QCPB4 pertaining to the preparation of special lifting instructions (required by ANSI N45.2.2 Section 7.2) for lifts on Unit #2. Their response to the finding was a proposal to revise the procedure to substantially eliminate the requirement.

The procedure was revised and the requirement was eliminated completely. The revision was processed through the entire review cycle including Site Project Construction, Site Quality Assurance, Commonwealth Edison Project office, and Sargent & Lundy. The revision was approved and returned to PG Co. The elimination of the requirement was a convenient way to resolve the problem, as opposed to the expected response of taking proper corrective action to remedy the nonconformance. This and the initial successful acceptance through the review and approval cycle indicates a potential failure of the objectivity and effectiveness of the change review process and questions the competence of those performing reviews.

Subsequent to the complete review and approval cycle for this revision and its return to the site, a Quality Engineer recognized the fact that this change was improper, since it eliminated compliance with the special handling requirements of ANSI N45.2.2. Phillips Getschow Co. then withdrew their Revision 2 of QCP-B4, reinstated the requirement, and initiated action to comply with its provisions for the remaining work on Unit #2.

The inspector inquired as to the compliance with the special lifting requirements for PG Co work on Unit #1, which was essentially completed. The licensee indicated that the status of compliance was completely unknown.

This failure to comply with the special lifting and handling requirements on Unit #1 was a violation of Criteria XIII, 10 CFR 50 Appendix B, and the similar requirements in ANSI N45.2.2.

This unresolved item was closed and upgraded to an item of non-compliance with Criteria XIII, Handling, Storage and Shipping, 10 CFR 50 Appendix B (456/82-01-03), and raises the questions of the adequacy of the change review process, the competence of those performing reviews, and the apparent prevailing attitude to change specifications and requirements rather than to comply with Quality Program objectives.

It is expected that the response to this item of noncompliance in the area of effort undertaken to preclude recurrence will address the related concern for the perceived prevailing attitude to change specifications rather than to comply with established quality program objectives.

E. (Closed) Unresolved Items (456/81-14-10; 457/81-14-08)
Apparent Flexibility in Penciled Changes to the Audit Plans

Audit reports reviewed for compliance with the Quality Assurance Program Requirements and the concern for apparent flexibility included the following:

<u>Number</u>	<u>Spec</u>	<u>Vendor or Contractor</u>
(1) QA-20-81-46	F/L-2721	Inryco Inc.
(2) QA-20-82-1	L-2790A	L. K. Comstock
(3) QA-20-82-2	L-2790	L. K. Comstock
" QA-20-82-2	L-2739	Phillips Getschow Co.
(4) QA-20-81-7	L-2739	Phillips Getschow Co.
(5) QA-20-81-22	L-2739	Phillips Getschow Co.
(6) QA-20-81-13	L-2790A	L. K. Comstock
(7) QA-20-81-28	L-2790	L. K. Comstock
(8) QA-20-81-5	L-2782	Pullman Construction

Audit QA-20-82-1 had a typographical error on one question corrected in pencil without a set of initials or date, and audit QA-20-82-2 had a typographical error on one question corrected in pencil with date and initials of the person making the correction. The other audits reviewed had no changes to the plan or checklist questions, such as the change in Audit QA-20-81-31 which prompted this unresolved item.

Audit File QA-20-81-22 was missing four documents that should have been in the file. The file was updated prior to the conclusion of the inspection.

Finding no additional significant indications of concern regarding the planning, checklists, approvals, and conducting of the audits, this unresolved item was closed.

F. (Open) Noncompliance Item (456/81-14-06)
Failure to Satisfy Inspection Requirements on Inspection of Tendons for Corrosion

The complete final official copies of the documents and information needed to close out this item were not available at the site for review during this inspection. This item remains open.

The licensee was advised that corrective action to preclude repetition should take into consideration the fact that post-tensioning and tendon stressing on Unit #2 was now underway at the site.

3. Functional Areas Inspected

A. Document Control

Criteria VI of 10 CFR 50 Appendix B states the following, in part:

Measures shall be established to control the issuance of documents, such as instructions, procedures, and drawings, including changes thereto, which prescribe all activities affecting quality.

These measures shall assure that documents, including changes, are reviewed for adequacy and approved for release by authorized personnel and are distributed to and used at the location where the prescribed activity is performed....

Commonwealth Edison Quality Procedure Q.P. No. 6-1 states the following, in part:

"Each recipient listed on the applicable distribution list shall, upon receipt of new documents, destroy or segregate and clearly mark all superseded documents. Each receiving office or area shall have a controlled method for checking receipt of new or revised documents, and assuring that the latest revised document is in use."

Commonwealth Edison Company Procedure BG-2, Revision 5, Section 4.B.3.b states the following, in part:

"One copy of required vendor drawings will be put in a file drawer or on a rack as determined by the responsible field engineer. --- If a superseded vendor print is kept, it will be stamped "superseded" ---."

On February 18, 1982, all of the post tensioning vendor drawings on the rack in the Braidwood site construction office were checked for compliance with this procedure using as a reference the CECO Foreign Document Status Report, (FDSR), dated 30 January 1982, which included the current revisions of the vendor drawings applicable to post tensioning work.

Twenty-five drawings for post-tensioning work on Unit #1 were checked. Of the 25 the following 9 were found to be of a superseded revision and not identified as such:

<u>List No.</u>	<u>Unit #1 Drawing No.</u>	<u>Revision On Stick</u>	<u>FDSR Revision</u>	<u>Drawing Title</u>
1	781/782-10	E	F	Wall Tendon Layout 465-7
2	781/782-11	D	E	Wall Tendon Layout 464-8
3	781/782-12	D	E	Wall Tendon Layout 464-8

<u>List No.</u>	<u>Unit #1 Drawing No.</u>	<u>Revision On Stick</u>	<u>FDSR Revision</u>	<u>Drawing Title</u>
4	781/782-14	C	D	556-579 Wall Tendon Layout
5	781-782-15	C	D	557-579 Wall Tendon layout
6	781-782-16	C	D	557-579 Wall Tendon Layout
7	781/782-17	E	F	Wall & Dome Sections & Det.
8	781/782-18	B	D	Dome & Tendon Layout
9	781/782-23	D	F	A/BLT-Rail-PT/ Work Platform

The last two examples were two revisions out of date.

The correct latest revisions were not on the rack and available for use.

Twenty-two drawings for post-tensioning work on Unit #2 were checked. Of the 22 the following 6 were found to be of a superseded revision and not identified as such:

<u>List No.</u>	<u>Unit #1 Drawing No.</u>	<u>Revision On Stick</u>	<u>FDSR Revision</u>	<u>Drawing Title</u>
1	781/782-204	B	C	WL Tend layout 374/464
2	781/782-215	B	C	WL Tend Layout 557-3/579-7
3	781/782-216	A	B	WL Tend Layout 557-3/579-7
4	781/782-217	C	D	WL/Dome Sections/Details
5	781/782-218	B	C	Dome Tendon Layout
6	781/782-225	B	C	Roof Vert. Tend Trumplate

The correct latest revisions were not on the rack and available for use.

The unidentified superseded status of these fifteen, approximately one-third of the required post tensioning vendor drawings, on the rack in the site construction office, used frequently by site construction personnel, and the unavailability of the correct latest revisions is in violation of the document control requirements of Criteria VI, 10 CFR 50 Appendix B (456/82-01-04; 457/82-01-03).

One day later, in response to these findings, the licensee initiated a wide ranging surveillance of the status of drawings at the

site, as recorded in Surveillance Report 2110, February 19, 1982. Findings of that surveillance were communicated to the Project Construction Department (PCD) for action. A follow-up surveillance on March 15, 1982 indicated that the status of drawings which had been marked unacceptable had been corrected.

4. Exit Interview

The inspector met with Licensee Representatives (denoted under Persons Contacted) at the conclusion of the inspection on March 31, 1982. The inspector summarized the scope and findings of the inspection. The licensee acknowledged the information.