RELATED CORRESPONDENCE

COMMONWEALTH EDISON COMPANY
Date: July 2, 1984

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In The Matter Of	)	
	)	
COMMONWEALTH EDISON COMPANY	)	Docket Nos. 50-454-OL
	)	50-455-OL
(Byron Nuclear Power Station, Units 1 & 2)	)	
	)	

SUMMARY OF THE TESTIMONY OF
WALTER J. SHEWSKI
ON CONTENTION 1
(REINSPECTION PROGRAM - INSPECTOR QUALIFICATION)

I. Walter Shewski is Commonwealth Edison Company's Corporate Manager of Quality Assurance.

II. Edison's QA department conducted three audits and four surveillances of the Reinspection Program. Additional surveillances were performed to close out audit findings and observations. In addition, throughout much of 1983, Quality Assurance personnel attended weekly meetings held with contractors involved with the Reinspection Program. Mr. Shewski's testimony describes the scope, results, and corrective action, if any, for each of the audits and surveillances of the Reinspection Program, with particular attention to Hatfield, Hunter and PTL.

III. Edison's QC department directed PTL to conduct a special Unit Concept Inspection of a sample of attributes reinspected by site contractors during the Reinspection Program. This special inspection provides an additional level of confidence that the contractors' QC personnel were performing adequate reinspections under the Reinspection Program. Mr. Shewski describes the qualifications of the PTL overinspectors, how the work to be inspected was selected, and the results of the special Unit Concept Inspection as they pertain to Hatfield and Hunter Reinspection Program implementation. The reproducibility of Hatfield's and Hunter's results by PTL demonstrates that no favoritism was shown to any particular inspector during the Reinspection Program.

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IV. One PTL inspector involved in the Reinspection Program failed to achieve the acceptance threshold at the end of both the first and second three month periods. A thorough review of his certification package showed that it was complete and accurate.

V. Mr. Shewski's testimony describes the steps taken by Edison's QA department to ensure that reliable Reinspection Program records were maintained by site contractors. He concludes that there is no evidence that the certification records of QC and QA personnel or the Reinspection Program results are inaccurate or unreliable.

VI. Mr. Shewski concludes as follows:

A. That the Reinspection Program was properly implemented in accordance with the Program requirements;

B. That the personnel performing the reinspections were properly qualified and were not reinspecting their own work; and

C. That the Program results were properly processed and evaluated and that the corrective actions for the deficiencies identified in the Edison QA audits were appropriate and adequate to resolve the audit concerns.

VII. Mr. Shewski describes the scope of the work performed by PTL at Byron, including nondestructive testing of welds, concrete testing, aggregate testing, concrete expansion anchor inspection and testing, soils testing, calibration, bolting inspection, and overinspections of work already inspected by site contractors. In addition, since 1982, PTL has been performing Unit Concept Inspections.

VIII. Mr. Shewski finally describes the extent of Edison's QA oversight of Hatfield, Hunter and PTL since August 1983. Edison's program of audits and surveillances continued to be actively and intensely performed to identify problems, ensure that requirements are fulfilled and verify that inspection and testing of facilities were performed, reviewed and accepted by properly qualified personnel.

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TESTIMONY OF WALTER J. SHEWSKI

Q.1. State your full name

A.1. Walter J. Shewski

Q.2. By whom are you employed?

A.2. Commonwealth Edison Company

Q.3. In what capacity?

A.3. I am the Corporate Manager of Quality Assurance for the Company.

Q.4. Have you previously testified in this proceeding?

A.4. Yes.

Q.5. On what date?

A.5. My prior testimony was bound into the transcript of March 28, 1983.

Q.6. Is the statement of your professional qualifications appended to your previous direct testimony still accurate and complete?

A.6. Yes.

Q.7. Please describe the scope of your present testimony.

A.7. The scope of my testimony is a description of (1) the activities of Commonwealth Edison Company's Qualtiy Assurance Department in the conduct of the quality control inspector reinspection program ("reinspection program") which was conducted at the Byron Station; (2) the results of an examination of the certification package of the one quality control inpsector (employed by PTL) who did not achieve a "passing" grade in the reinspection; (3) the steps taken to assure that the documentation of the Quality Control Inspector reinspection program was accurate and reliable; (4) a description of the scope of PTL's inspection activities at the Byron site; and (5) the extent of CECo's quality assurance oversight of Hunter, Hatfield and PTL since the previous close of the record in this proceeding August, 1983.

Q.8. What is your personal involvement in the Quality Assurance Department's activities in connection with the reinspection program?

A.8. After the formulation of the program in February, 1982, I reviewed and evaluated reports and surveillances prepared by quality assurance personnel and I reviewed the inspection reports on the reinspection program prepared by the NRC Staff. In addition I prepared a portion of the report on the reinspection program; more specifically Chapter IV which describes quality assurance activities in connection with the reinspection program and Appendix E.

Q.9. Please describe generally the activities of the Quality Assurance Department in connection with the reinspection program in so far as that program reviewed the qualifications of quality control inspectors employed by Hatfield Electric Company ("Hatfield"), Hunter Company ("Hunter") and Pittsburgh Testing Laboratory ("PTL").

A.9. Through the course of the reinspection program (February, 1983 through the conclusion of the program) Quality Assurance conducted 3 audits and 4 surveillances of the reinspection program. Additional surveillances were performed to close out audit findings and observations. These audits and surveillances are discussed in detail in subsequent portions of my testimony. Two of these audits involved the activities

of all site contractors including Hunter and Hatfield. The third dealt with Hatfield alone. Three of the 4 surveillances dealt with the activities of Hatfield and the other one involved the disposition of an interpretation of the reinspection program initiated by Hunter.

Q.10. Did the Quality Assurance Department participate in any other activities concerning the reinspection program?

A.10. Yes. Concurrent with the start of the reinspection program in late March, 1983, weekly meetings were held with contractors involved with the reinspection program until mid-September, 1983. The purpose of the meetings was to resolve any questions that the contractors had relative to implementation of the reinspection program, to obtain information on the progress made by each contractor on a weekly basis. Quality Assurance was present at a majority of these meetings. Either the QA Superintendent or a designated QA representative involved with the recertification/reinspection attended the meetings. During the meetings, questions arose relative to the implementation of the reinspection program, many of which resulted in documented interpretations that were

acceptable to Site Quality Assurance. The QA audit performed in June, 1983 provided formal documentation of acceptance of the existing interpretations.

Q.11. What other activities of the Quality Assurance Department took place in connection with the reinspection program?

A.11. The QA Department directed Pittsburgh Testing Laboratory ("PTL") to conduct a special Unit Concept Inspection of a sample of attributes reinspected by site contractors during the reinspection program. This special Unit Concept Inspection, which is discussed in detail later in my testimony, was designed to determine whether the results reported in the reinspection program were reliable and valid. This was done by reinspecting again the work of the site contractors.

Q.12. Please identify the surveillances of the reinspection program by number.

A.12. The surveillances are identified as #5682 dated 1/21/84, #5700 dated 1/23/84, #5753 dated 2/2/84 and #5811 dated 2/21/84.

Q.13. Please describe the scope, results and corrective action, if any, for Surveillance #5682.

A.13. Surveillance #5682 (Attachment A) reviewed the tallying accuracy of the reinspection results for a Hatfield inspector's first ninety (90) days of inspections after his certification in the visual welding area. The reinspection record and the third party concurrence for 20% of the weld travelers were reviewed. With the exception of one weld traveler, the results given were accurate. For the one weld traveler, the number of welds rejected by the Hatfield inspector totalled 18 not 28. The correction was made to the data base. The error did not impact true rejectability as determined by the third party.

Q.14. Please describe the scope, results and corrective action, if any, for Surveillance #5700.

A.14. Surveillance #5700 (Attachment B) was a review of Interpretation 19 which provided concurrence to (1) use AWS D1.1-82, Articles 2.3.2 and 2.3.2.1 for inspection of fillet welds, and (2) to allow a variance of up to .025" undersize as acceptable when inspecting fillet weld size. This variation was deemed acceptable because of varying accuracy between gauges employed by Hunter Corporation. Quality Assurance determined from the information provided that

this interpretation is reasonable and would not affect the validity of the inspection results.

Q.15. Please describe the scope, results and corrective action, if any, for Surveillance #5753.

A.15. Surveillance #5753 (Attachment C) dated February 2, 1984 again reviewed the issuance and processing of field problem sheets by Hatfield. The use of these sheets had first been identified as a problem in Audit 6-83-66 (see Answer 19). This surveillance was undertaken to confirm that Hatfield was continuing to use field problem sheets to identify problems needing attention and not as a substitute for discrepancy or nonconformance reports. Various field problem sheets were reviewed. It was found that they were correctly being written by Hatfield Production to Hatfield Engineering describing problems which prevented installation per the design document and that no field problem sheets were being used in lieu of deficiency reports. Also, it was found Hatfield was documenting deficiencies using the deficiency report and nonconformance system as provided in their procedure. No deficiencies were identified and no further corrective action as a result of this surveillance was required.

Q.16. Please describe the scope, results and corrective action, if any, for Surveillance #5811.

A.16. Surveillance #5811 (Attachment D) was a review to verify the accuracy of the data tabulated by Hatfield in connection with the Reinspection Program. The nine (9) attributes reinspected by Hatfield were visual welding, conduit, cable termination, equipment setting and modification, bolting and cable pan hanger and cable pan inspections and all were checked. Tabulation errors were identified and corrected. The corrections did not affect the final results. It was found that the Reinspection Program results involving these nine (9) attributes were acceptably tabulated.

Q.17. Are the audits of the reinspection program identified by number?

A.17. Yes. They are identified as #6-83-66, #6-83-93 and #6-83-124.

Q.18. What was the scope, findings and observations of audit #6-83-66?

A.18. Audit #6-83-66 is in evidence as Intervenors Exhibit 29. That exhibit describes the scope of the audit, its findings and observations. For the convenience of

the Board and the parties that audit is attached to my testimony as Attachment E.

Q.19. Please describe how the findings directed at the activities of Hatfield, Hunter and PTL in audit #6-83-66 were resolved.

A.19. Finding #1 Part A applies to Hunter; Finding #1 Part B applies to Hatfield; and Finding #1 Part C applies to PTL.

Finding #1 Part A identified two potential problems which could have affected the analysis of reinspection results. The first item involved the use of field problem sheets rather than a discrepancy report by Hunter. Quality Assurance Surveillance #5189 (Attachment F) dated 10/12/83 verified that discrepancy reports had been inititated for the supports identified in Finding #1 Part A as required by Hunter's procedures.

The second problem identified in Finding #1 Part A was concerned with the reinspection of bolted connections by Hunter. This item was dispositioned by a letter from Sargent & Lundy which stated "flange bolt torque values will relax over time" and thus are not reproducible.

Finding #1 Part B identified the fact that Hatfield was using field problem sheets to resolve discrepancies identified during reinspections for the conduit and termination attributes. Quality Assurance Surveillance #5202 R1 (Attachment G) identified that HECo. NCR #674 was written to disposition a deficient item discovered during the reinspection process which had previously been the subject of a field problem sheet.

Finding #1, Part C identified the fact that PTL had not yet transmitted inspection reports generated during the Reinspection Program to the appropriate contractors. These inspection reports described discrepant conditions in work performed by other contractors, but inspected by PTL. PTL was working on the premise that reports with nonconforming conditions would be reported to the contractors upon completion of the Program. Upon being advised during the audit to immediately transmit nonconforming reports to the appropriate contractors after concurrence by the independent third party inspector, PTL began and continued transmitting such reports as they were prepared. No further corrective action was required. Quality Assurance surveillance 4939 (Attachment H) described the corrective action taken to close this audit finding.

Q.20. Were nonconformance reports issued as a result of any audit finding of Audit #6-83-66 included in a trend analysis program?

A.20. Hatfield issued NCR-674 for an isolated problem dealing with a relay which was eventually determined to be a temporary installation. This NCR was included in the 1983 third quarter trend analysis by Hatfield. All other NCRs initiated as a result of discrepancies observed during the reinspection program were included in trend analyses.

Q.21. Please describe how the observations directed at the activities of Hatfield and Hunter in audit #6-83-66 were resolved.

A.21. Observation #1 applies to Hunter and Hatfield. The Hunter portion of Observation #1 was closed by Quality Assurance Surveillance #5188 dated 10/12/83 (Attachment I). The surveillance stated "per R. B. Klinger, CECo PCD, the Hunter Corporation application of interpretation #2 is correct." Interpretation #2 was a clarification of the term inaccessible as used in the reinspection program. The Hatfield portion of Observation #1 was similar in nature to the Hunter item and was closed by Quality Assurance Surveillance #5210 dated 10/14/83 (Attachment J). Hatfield researched the inspections termed inaccessible. Hatfield

response dated 8/4/83 to Audit 6-83-66 clarified that some inspections identified as inaccessible were actually not recreatable. In both instances, it was not possible to redo the inspections that were initially performed.

Observation #2 applies to Hatfield. Quality Assurance Surveillance #5211 (Attachment K) dated 10/14/83 documents the fact that Hatfield determined that the fireproofing had been removed and the original hanger inspection did include verification of the connection detail. The inclusion of connection detail verification with the proper inspection to be reinspected assured that this reinspection was properly performed.

Observation #3 applies to Pittsburgh Testing Laboratory. Quality Assurance Surveillance #4939 (Attachment L) dated 8/26/83 documents that after complete review of certification packages of inspectors involved with the Reinspection Program that only one PTL inspector had two inspection certifications. They covered visual weld inspection and concrete expansion anchor installation inspection. Only visual weld inspection was covered by the Reinspection Program as concrete expansion anchor torque checks are not recreatable. Thus, there was no deficiency and no further corrective action was required.

Observation #5 Part A applies to Hunter. In the case of Hunter, Quality Assurance Surveillance #5197 (Attachment M) documents the expansion of three inspectors' data base to include all their work during employment. For two of the inspectors, the minimum sample size could not be achieved but were deemed acceptable based on the fact that all their inspections of this attribute during employment were reinspected and their original inspections of other attributes were found to be acceptable under the Reinspection Program.

Observation #8 applies to Hatfield. Observation #8 was a situation in which Hatfield was gathering data concerning an inspection which was actually not recreatable. Conduit bolt torque could not be reinspected. Bolt count was a portion of the original bolt torque inspection. Surveillance #5210 (Attachment J) documents the fact that since torque checks were not within the reinspection program, bolt counts would also be excluded. Since the original inspector and the individual reviewing his inspection reports were no longer employed by Hatfield, there were no means available to identify which conduit bolts were subject to the original inspection.

Q.22. When was Audit #6-83-93 conducted?

A.22. Audit #6-83-93 (Attachment N) was conducted between November 14 and November 17, 1983.

Q.23. What was the reason for that audit?

A.23. The purpose of Audit 6-83-93 was to assure that conclusions drawn from the Byron Reinspection Program were valid and reliable.

Q.24. Please describe the Audit Program.

A.24. For each of the 7 contractors involved in the reinspection program a review was conducted of the a) correction of discrepancies b) expansion of an inspector's reinspection sample size and the number of inspectors to be inspected upon a failure to pass the acceptance criteria, c) independence of the reinspection program reinspection personnel and d) accuracy of results reported in the Interim Report to NRC. Also, the design basis for the Sargent & Lundy evaluations of the visual weld discrepancies, the qualification of the individuals who perform the third party review of subjective deficiencies and the adequacy of the basis for Interpretations established by the Project Construction Department were reviewed during the course of the audit.

Q.25. What were the results of audit 6-83-93 as concerns the activities of Hatfield, Hunter and PTL?

A.25. One audit finding was applicable to PTL. After implementation of Interpretation 11, PTL had changed the deficient status of some welds that previously had received third party concurrences for true rejectability without allowing the independent third party inspector to concur or disagree with the changes. The completed corrective action for this Finding was the resubmittal to the third party inspector of the reinspection reports that changed the deficient status of welds rejected for reason other than those addressed by Interpretation 11. Also, the contractors were advised to carefully watch that such second inspections are not done without allowing the third party to concur or disagree. This corrective action was documented in CECo Surveillance 5696 (Attachment O).

No audit findings or observations were identified for Hunter or Hatfield. There was, however, one minor misunderstanding by Hatfield regarding the timing of submission of confirmed weld discrepancies to Sargent and Lundy for engineering evaluation. Any confirmed weld discrepancies resulting from this third party review were to be submitted to engineering for evaluation and disposition under a Commonwealth Edison non-

conformance report rather than issue Hatfield deficiency reports. Hatfield deficiency reports were used to disposition objective deficiencies identified by the Reinspection Program. The use of a Commonwealth Edison Company nonconformance report insured that no repair of the discrepant weld would take place prior to the engineering evaluation. Hatfield was documenting welding inspection deficiencies on inspection reports and weld maps and accumulating them after third party review. All weld discrepancies were being identified and controlled on weld traveller cards as well as being reported to Project Construction for inclusion in weekly computerized status updating of the Reinspection Program results. During the audit a Commonwealth Edison Company nonconformance report was issued to engineering covering the weld deficiencies identified during the Reinspection Program by Hatfield and confirmed as deficiencies by the third party reviewer. Issuance of the NCR insured that Sargent and Lundy engineering evaluation would be initiated.

A.27. Audit #6-83-124 (Attachment P) was conducted between August 24 and September 1, 1983.

Q.28. Why was this audit conducted?

A.28. The purpose of Audit 6-83-124 was to verify proper implementation of Hatfield's QA Program as applicable to the QC Inspector Reinspection Program. This audit specifically examined welding and Hatfield's methodology of reinspection in this area.

Q.29. What was the scope of this audit?

A.29. The scope of this audit included the following:

A. Inspection

B. Inspection, Test, and Operating Status

C. QA Records

The audit consisted of field and record reviews to determine whether Hatfield had adequate traceability of weld travelers to installations in the field. Weld travelers are the document setting forth the basic characteristics of welds on a particular connection as well as its inspection history. The reviews were accomplished by retrieving weld travelers for a component from Hatfield and then going into the field to determine which weld travelers corresponded to which weld on the component. Since welders identify welds on a component with a unique identification number assigned to them traceability of weld traveler to weld could be made. In addition, this audit reviewed the method that Hatfield used to identify hangers which

had been reworked or renumbered so that a reinspection could be performed if required. This was performed by reviewing the inspection history of a component to determine the completeness of inspection as well as identification of the most current inspection.

Finally, the audit was performed to verify whether Hatfield was properly inspecting combination cable pan hanger welds (hangers shared with the HVAC contractor). This was performed through identification of combination hangers, and review of installation and inspection documentation to support the installation.

Q.30. What were the results of the audit?

A.30. As a result of this audit, two findings and one observation were identified. The first finding was that in some cases the weld traveler cards did not adequately identify the weld in the field for inspection. The second finding was that not all combination hangers had inspections documented to indicate conclusively that the inspection was completed. The observation identified one hanger that was inspected and accepted to the wrong hanger detail.

Q.31. What corrective actions were implemented for the findings and observation of audit 6-83-124?

A.31. The corrective action for Finding 1 was to correlate the weld traveler inspection data to design drawing cable pan hanger data using computer data base management techniques to demonstrate traceability of inspection. This use of the computerized date base identified the welders and inspectors who worked on and inspected the component as well as components not inspected. For those components which for no correlation existed between component and inspection data, an inspection was initiated to complete the documentation and any repair requirements. This corrective action was documented in Surveillance 5275 (Attachment Q).

The corrective action for Finding 2 consisted of the identification of all combination hangers for which inspection accountability was indeterminate. The hangers identified were considered never inspected. An inspection was performed and where required, rework was performed. This corrective action was documented in Surveillance 5274 (Attachment R).

The corrective action for the Observation consisted of a reinspection of the identified hanger which was inspected to the wrong drawing detail. When inspected to the correct hanger detail, this hanger was found acceptable. In addition, a sample of 10 additional hangers whose hanger type had changed from the origi-

nal design were reinspected for acceptability. The results indicated that all hangers inspected were found acceptable. This corrective action was documented on Surveillance 5276 R1 (Attachment S).

Q.32. You previously referred to an overinspection of the reinspection program by PTL. What was the reason for this overinspection?

A.32. A special Unit Concept Inspection was conducted, to provide an additional level of confidence that the on-site contractor's QC personnel were performing adequate reinspections under the Reinspection Program.

Q.33. Please describe the qualifications of the PTL personnel who conducted the overinspection.

A.33. The reinspection activities were conducted by five (5) PTL Technicians, who were qualified and certified to the requirements of ANSI N45.2.6-1978.

Q.34. How was the work to be overinspected selected?

A.34. PTL was instructed to perform a sample reinspection of the items inspected during the reinspection program. PTL was instructed by CECo QA to randomly select the QC Inspector and randomly select QC activities for reinspection. The inspection was conducted in accordance to PTL's approved procedure.

Q.35. What were the results of the special Unit Concept Inspection for Hatfield and Hunter reinspection program implementation?

A.35. An evaluation by CECo QA of the results of the over-inspection performed by the Unit Concept group of PTL found the six contractors' inspectors to be within the acceptance standard set forth in the February 23, 1983 letter of response to I&E Inspection reports, Number 50-454/82-05 and 50-455/82-04. During the overinspection of Hunter, five (5) inspectors were overviewed and eighty (80) items were reinspected. The results are as follows:

Hunter Inspector	Items Inspected	% of Correct Calls
G. Inboden	19	100%
D. Sager	16	100%
J. McVeigh	18	100%
S. Burstein	17	100%
J. Lincoln	10	100%

During the overinspection of Hatfield, seven (7) QC inspectors were overviewed and 917 items were reinspected. The results are as follows:

Hunter Inspector	Items Inspected	% of Correct Calls
D. Opantry	259	100%
J. Moehling	98	90.8%
J. Mandurano	162	100%
J. Elgin	157	98.1%
C. Cavins	87	95.4%
D. Richards	68	100%
T. Wells	86	96.5%

Furthermore, this independent check by PTL of the respective contractor inspectors provided good correlation of the acceptability of the reinspection activities, provided verification the contractors QC personnel were doing accurate and acceptable work, and provided added confidence that the reinspection results were valid.

Q.36. What conclusions, if any, did you draw from the special Unit Concept Inspection regarding any favoritism which might have been shown in the reinspection program towards a particular inspector's work?

A.36. The special Unit Concept Inspection as well as the results of audit 6-83-93 verified that the reinspection personnel for Hatfield and Hunter were not involved in the reinspection of work that they had originally inspected. In addition, the reproducibility of the results by PTL, whose inspection personnel had no known connection with Hatfield and Hunter employees, demonstrates that no favoritism was shown to any particular inspector during the reinspection program.

Q.37. Did the Quality Assurance Department have the results and qualifications of Inspector J. Moehling examined?

A.37. Yes. An evaluation was performed to determine if the 90.8 percentage by J. Moehling was an indication that his qualifications were suspect. A third party inspection was performed by the S&L Level III inspector, as welding inspection is a subjective examination. The result of the third party inspection found five (5) of the deficiencies to be acceptable. This acceptance of the welds by the third party inspector placed J. Moehling's correct calls at 98%. An additional review was performed on J. Moehling's QC personnel qualification/certification package which identified that he received a general education degree and had worked as a welder from 1972 to 1983. While working as a welder, he obtained a certification as an AWS Visual Weld Inspector in November, 1980. After working one (1) year and nine (9) months with Hatfield Electric Company, J. Moehling was trained and certified as a Level II Visual Weld Inspector. He received scores of 90% in the specific exam, 95% in the Quality Assurance exam, 88% in the general exam and 97.5% in his practical exam. The review found that J. Moehling exceeds the minimum qualification requirements as a Level II Visual Weld Inspector. Based on the results of the reinspection by PTL and the third party review by Sargent & Lundy, it has been determined that J. Moehling has adequately performed inspections within

the acceptable standard set forth in the February 23, 1984 letter of response to I&E Inspection Report 50-454/82-05 and 50-455/82-04.

Q.38. Were the certification documentation packages of other inspectors of Hunter, Hatfield or PTL involved with the Reinspection Program examined?

A.38. Yes, where they failed. One PTL inspector involved in the Reinspection Program failed to achieve the acceptance threshhold at the end of both the first and second three month periods. His certification package was examined and in accordance with the reinspection program all his work was reinspected. A review of the certification package found that he had received indoctrination and technical training and had successfully passed the related exams. Initial certification as a Level I was based on the training and exams. The certification package was complete and accurate.

Q.39. Please describe the steps taken to assure that the documentation of the Quality Control Inspector Reinspection Program was accurate and reliable.

A.39. I have previously described Audit 6-83-93 insofar as that audit involved review of the independence of the reinspection program reinspection personnel, and the accuracy of the results reported in the interim report

to the NRC, and the reliability of the records so addressed. Similarly, the special Unit Concept Inspection with its emphasis on reproducibility of results, was a strong indicator of reliable documentation.

Q.40. Did the Quality Assurance Department undertake any other measures to ensure that reliable records were being maintained by the site contractors?

A.40. Yes. Since mid-1982 and continuing to the present, special attention has been given by Byron Site Quality Assurance to actions by site contractors which could lead to inaccurate and unreliable records. Training for detecting possible alterations to documents was conducted for Site Quality Assurance personnel. Lead Auditor retraining also covers this subject. Auditors have been trained to check for improper records as part of document review activities, even when specific questions are not on the audit checklist. Indication of such checking is evident in the objective evidence established on the audit checklist. Cases have been identified where records have not been properly revised such as the use of white-out which is contrary to procedures. There is no evidence that the records of certification of Quality Control and Quality Assur-

ance personnel and the reinspection program are inaccurate and unreliable.

As a follow-up of the two month CECo audit of over 10,500 records in late 1982 to verify the authenticity of contractor quality control documentation, another related audit was performed by General Office Quality Assurance in early 1984 relative to the Reinspection Program. Hunter, Hatfield and PTL records were covered by the audit. One purpose of the audit was to ensure that no fraudulent documentation practices had occurred. The contractors' method of control and administration of QC qualification tests were reviewed, including reviews to verify that retests were done with a different test than the original and that tests and test answers were controlled.

In addition, calibration records were reviewed to ensure that information/date was unique, complete and not improperly altered and that signatures on documents were original and by authorized personnel. Reviews to verify that CECo Site Quality Assurance was checking contractor welder qualifications and QC Inspector qualification packages for acceptability and authenticity were also conducted. No fraudulent activities were identified.

Q.41. As a result of the quality assurance activities which you have described in the testimony, have you reached any conclusion regarding the reinspection program?

A.41. Yes. The Quality Assurance Department monitored the contractors' QC inspector requalifications and the Reinspection Program through audits, surveillances and meetings. On the basis of these activities, we have concluded that: (1) the Reinspection Program was properly implemented in accordance with the Program requirements, (2) the personnel performing the reinspections were properly qualified and were not reinspecting their own work, (3) the reinspection results were properly processed and evaluated and the corrective actions for the deficiencies identified in the CECo QA audits were appropriate and adequate to resolve the audit concerns. It is concluded that the Reinspection Program provided reliable results.

Q.42. Please describe the scope of PTL's work at the Byron site.

A.42. PTL has been on site at Byron since September 1977. PTL reports to the Commonwealth Edison Site QA Department and performs independent inspections, destructive testing and nondestructive testing involving many of the key activities of the site contractors. The scope of work performed by PTL includes nondestructive test-

ing of welds, concrete testing, aggregate testings, concrete expansion anchor inspection and testing, soils testing, calibration, bolting inspection, etc. The non-destructive testing includes radiographic testing of welding and most of the magnetic particle, liquid penetrant and ultrasonic testing. Site QA also uses Pittsburgh Testing to perform overinspections to check construction work performed and inspected by the site contractors and to perform surveillances of many contractor activities in the structural, mechanical and electrical disciplines. These overinspections by PTL are in addition to the QC inspections required to be done by the site contractors. These independent overinspections have been performed since about 1980, generally cover up to 10% of a work activity and have been concentrated in the areas of welding, electrical installations aand HVAC installations. The purpose of these overinspections is to provide another level of confidence that the field work and the inspection activities by the contractors have been done acceptably. In September 1982, another form of inspection was added by Commonwealth Edison Quality Assurance to the work scope for PTL to perform each week at Byron. This new inspection is called "Unit Concept Inspection" ("UCI"). PTL uses a team of inspectors who are qualified in various disciplines per ANSI N45.2.6.

(1978) to inspect items installed within specific spatial boundaries or in conjunction with specific equipment for compliance to vendor and engineering documents. This inspection encompasses all contractors who performed work activities within a given area. These UCIs are also in addition to the normal inspection and the specifically directed overinspections performed on site.

As part of the Reinspection Program and as described above, PTL was specifically directed to perform a Unit Concept Inspection to provide an additional level of confidence that the contractors' QC personnel were performing adequate reinspections which is discussed previously herein.

Q.43. Please describe the extent of the Company's quality assurance oversight of Hunter, Hatfield and PTL since the close of the record in this proceeding in August, 1983.

A.43. Since the close of the record in this proceeding in August, 1983, our program of audits and surveillances continued to be actively and intensely performed to identify problems, ensure requirements are fulfilled and verify inspection and testing of the facilities were performed, reviewed and accepted by properly

qualified personnel. The frequency of the audits and surveillances for these contractors were nearly doubled during the period.

In the case of Hunter, Commonwealth Edison Quality Assurance conducted fourteen audits and at least 142 separate surveillances of this contractor since August, 1983. The auditing coverage included the key aspects of Hunter's work activities and Quality Program requirements as was the case for the other site contractors. Coverage by these audits included, for example, whip restraint installations, handling, storage and shipping, nonconformances, welder qualification testing, inspector qualifications, the Reinspection Program, design and installation methodology, control of Field Change Notices, concrete expansion anchors and bolted connections, equipment installation, corrective action, auditing, piping and equipment component support, installation and engineering activities, document control, Quality Assurance Program implementation, etc. The results of these audits demonstrated exceptional performance on the part of Hunter in view of the extensive scope of these audits. Of the sixteen (6 Findings and 10 Observations) deficiencies identified, none were found to be significant and only required minor corrective

action. The deficiencies were closed by audit close out surveillances. The (142) surveillances performed on Hunter involved such items as personnel qualifications, calibration activities, welding and weld rod control, housekeeping/storage, inspecting and walkdown activities and installation activities.

For PTL, eight audits and at least fifty-one surveillances were performed since August, 1983. The audits covered PTL's work activities involving such areas as: tool, gauge and instrument control, calibration activities, corrective actions, trending, inspections of electrical installations, document control, test/inspection reports, visual weld inspections, handling, storage and shipping, procurement and material control, the Reinspection Program, QA records, auditing, radiographic and ultrasonic examination, etc. These eight audits identified ten deficiencies (4 Findings and 6 Observations) requiring corrective action. The findings involved an inspector incorrectly accepting seven two-inch welds, a receiving inspector not being certified, white out being used by one person on sample logs and documentation on a Ultrasonic Test Records not being complete. The corrective actions mainly involved retraining. The fifty-one surveillances of PTL covered such items as calibration

cation errors, inadequate identification on weld traveller cards, lack of inspection of combination hangers, improper disposition of Discrepancy Reports and failure of certain QC Inspectors to perform required read/study activities.

The corrective actions consisted of additional inspections, auditing, training, review of personnel documentation packages and review of Discrepancy Reports to assure proper disposition. Acceptable corrective action has been achieved or is underway. The two hundred twenty-two (222) surveillances performed on Hatfield involved such items as corrective actions, personnel qualifications, calibration activities, document control, welding, inspection reports, installation activities, design change control, etc.

The Commonwealth Edison Quality Assurance audits and surveillances of Hatfield Electric have examined and evaluated applicable areas of Hatfield's Quality Assurance Program. These audits and surveillances have identified deficiencies which resulted in corrective actions that improved Hatfield's performance and QA Program implementation. Overall, the quality assurance implementation by Hatfield during this period has been acceptable.

activities, personnel qualifications, ultrasonic, radiographic, magnetic particle and dye penetrant examinations, visual weld inspections, document control, material control and civil testing activities. Overall, the findings and observations did not have significance, and the corrective action were easily achieved.

Hatfield was audited fourteen (14) times since August, 1983. Also, at least two hundred twenty-two (222) surveillances were performed. Special audit and surveillance attention and emphasis was applied to Hatfield during this period to ensure requirements were being fulfilled. The audits covered Hatfield's work activities involving such items as welder qualification testing, material traceability, procedures, inspections, auditing, personnel qualifications, corrective actions, training, installation activities, calibration activities, records, fire protection, the Reinspection Program, storage and housekeeping, field change requests, design control, document control, etc. As a result, seventeen (17) deficiencies (7 Findings and 10 Observations) were identified by Commonwealth Edison Quality Assurance. The findings involved audit follow-up and objective evidence omissions, personnel qualifications and certifi-

F GRM

BYRON SITE Q.A. SURVEILLANCE

QF: 2790.22.2.1

Report No. 5082

Date: 01/21/84

Contractor/Organization : Hatfield Electric Co.

SUBJECT: Reinspection Program Results

OBSERVATIONS:

Reviewed the tallying of the "reinspection" results for Peter Lanes' first ninety (90) days of inspections after his certification in the visual welding area. This review entailed a review of the reinspection record and the third party concurrence for 20% of the Weld Travellers to verify that the numbers listed were accurate. Those items reviewed are highlighted on the attached list. With the exception of Weld Traveller 22438, the results given were accurate. For Weld Traveller 22438, the number of welds rejected by the HECo. reinspector total eighteen (18) not twenty-eight (28). The correction has been made to the data base. This error did not impact true rejectability as determined by the third party.

This surveillance is closed.

Reported by [signature] Date 1-23-84

Approved by K.J. Hlavin Date 1/24/84

LAS:tj:1647S
Attachment ✓ 1-25-85
cc: ~~W.J. Shewski~~/G.F. Marcus
QA Supt./Site Q.A. File
Contractor
PCD Supt
LAS

1/27/84

Attachment A

TIME: 3:00 P.M.
DATE: 01-20-84
WPS ID.0036D

PETER LANES - 1st 90 Days - REJECTED

W/T	Amt	MECo Rej	Third Party	Inspection Date	# Cds	Comments
32041 OK	6	2	1	79-02-26	1	
20994	32	6	5	79-03-05	1	
27711	39	1	1	79-03-05	1	
31026	12	7	7	79-03-05	1	
22359	4	2	2	79-03-06	1	
22360 OK	2	1	1	79-03-06	1	
32028	20	1	1	79-03-06	1	
22686	4	1	1	79-03-07	1	
31944	18	0	0	79-03-08	1	
28301	30	15	14	79-03-10	1	
22374 OK	8	6	4	79-03-12	1	
22455	33	2	2	79-03-12	1	
27010	39	1	1	79-03-13	1	
27023	20	4	4	79-03-13	1	
28226	4	1	1	79-03-13	1	
22353 OK	6	2	2	79-03-14	1	
22355	8	2	2	79-03-14	1	
22460	4	2	2	79-03-14	1	
22690	4	3	3	79-03-14	1	
22479	2	1	1	79-03-15	1	
31861 OK	4	2	2	79-03-15	1	
22461	18	7	7	79-03-16	1	
20442	8	1	1	79-03-20	1	
26678	6	1	1	79-03-20	1	
26851	4	3	3	79-03-20	1	
27008 OK	21	3	2	79-03-20	1	
27009	26	1	1	79-03-20	1	
28115	4	1	1	79-03-20	1	
28136	4	3	3	79-03-20	1	
28145	1	1	1	79-03-20	1	
22477 OK	5	2	3	79-03-22	1	
22481	7	2	2	79-03-22	1	
22482	4	2	2	79-03-22	1	
23380	10	4	4	79-03-22	1	
22366	12	4	4	79-03-26	1	
22605 OK	8	1	1	79-03-26	1	
22665	8	2	2	79-03-26	1	
22669	6	3	2	79-03-27	1	
22601	24	2	0	79-03-28	1	
22603	12	1	0	79-03-28	1	
21402 OK	8	1	1	79-03-29	1	
27491	2	1	1	79-03-29	1	
26854	6	3	3	79-03-29	1	
27247	8	1	1	79-03-29	1	
28955	11	3	2	79-03-29	1	
28957 OK	0	0	0	79-03-29	1	OK See W/T 29012
29039	8	1	0	79-03-29	1	
22606	8	2	2	79-04-02	1	
22439	12	2	1	79-04-03	1	
22494	4	3	2	79-04-03	1	
22502 OK	10	4	4	79-04-03	1	

* - THESE WELDS WERE REPAIRED BEFORE S/L COULD GIVE AN EVALUATION.

TIME: 3:00 P.M.
DATE: 01-20-84
WPS ID 0036D

PETER LANES - 1st 90 Days - REJECTED

W/T	Amt	HECo Rej	Third Party	Inspection Date	# Cds	Comments
30892	6	2	2	79-04-03	1	
22489	6	4	3	79-04-05	1	
27499	2	1	0	79-04-05	1	
22500	12	4	2	79-04-05	1	
235320K	4	2	2	79-04-05	1	
26513	24	1	1	79-04-05	1	
28966	11	4	4	79-04-05	1	
28968	8	2	2	79-04-05	1	
29011	8	8	7	79-04-05	1	
207250K	8	2	2	79-04-06	1	
290120K	8	7	7	79-04-06	1	
23367	6	2	2	79-04-09	1	
23371	16	2	2	79-04-09	1	
23372	6	2	2	79-04-09	1	
233730K	4	1	0	79-04-09	1	
23531	16	8	8	79-04-09	1	
20724	8	1	0	79-04-10	1	
29010	40	2	3	79-04-10	1	
29033	10	1	2	79-04-10	1	
296500K	8	2	2	79-04-10	1	
22495	4	3	2	79-04-11	1	
22696	8	4	0	79-04-11	1	
22504	6	6	4	79-04-13	1	
26782	16	2	2	79-04-13	1	
268500K	28	~~12~~ 12 1-21-84	3	79-04-13	1	
26855	16	5	5	79-04-13	1	
29034	8	1	0	79-04-16	1	
23376	16	3	2	79-04-17	1	
23534	4	1	0	79-04-17	1	
266920K	11	7	6	79-04-17	1	
26693	14	6	6	79-04-17	1	
26780	33	5	4	79-04-17	1	
27063	12	1	1	79-04-17	1	
28046	6	2	0	79-04-17	1	
276960K	21	1	1	79-04-19	1	
27697	8	1	1	79-04-19	1	
27698	32	2	0	79-04-19	1	
22582	8	1	1	79-04-20	1	
26847	8	6	5	79-04-20	1	
280620K	2	1	0	79-04-23	1	
28064	6	3	1	79-04-23	1	
28965	8	7	7	79-04-24	1	
28993	33	6	5	79-04-24	1	
21372	11	1	1	79-04-25	1	
216510K	11	2	2	79-04-25	1	
21676	16	1	1	79-04-25	1	
26515	2	2	1	79-04-25	1	
26827	20	5	4	79-04-25	1	
27057	20	1	1	79-04-25	1	
271020K	14	3	3	79-04-25	1	
29393	8	3	3	79-04-25	1	

* - THESE WELDS WERE REPAIRED BEFORE S/L COULD GIVE AN EVALUATION

TIME: 3:00 P.M.
DATE: 01-20-84
WPS ID.0036D

PETER LANES - 1st 90 Days - REJECTED

W/T	Amt	MECo Rej	Third Party	Inspection Date	# Cds	Comments
29399	10	6	6	79-04-25	1	
29413	6	6	4	79-04-25	1	
29636OK	241	36	19	79-04-25	1	
29637OK	0	0	0	79-04-25	1	OK See W/T 29636
29639	16	3	3	79-04-25	1	
29640	0	0	0	79-04-25	1	See W/T 29636
29647	8	5	4	79-04-25	1	
20727	8	2	2	79-04-26	1	
22210OK	2	2	2	79-04-26	1	
22211	4	2	1	79-04-26	1	
22212	4	2	1	79-04-26	1	
22298	2	2	1	79-04-26	1	
22299	4	4	2	79-04-26	1	
26222OK	4	3	3	79-04-26	1	
26226	2	1	1	79-04-26	1	
29391	7	2	2	79-04-26	1	
29662	9	1	1	79-04-26	1	
21626	10	3	3	79-04-30	1	
26684OK	4	1	1	79-04-30	1	
26818	6	1	1	79-04-30	1	
27710	33	1	1	79-04-30	1	
28981	17	11	11	79-05-01	1	
22016	30	2	8	79-05-02	1	
22020OK	4	2	2	79-05-02	1	
22832	4	1	1	79-05-02	1	
22834	4	2	2	79-05-02	1	
22842	2	1	1	79-05-02	1	
26815	6	4	4	79-05-02	1	
26817OK	10	2	1	79-05-02	1	
26819	8	1	0	79-05-02	1	
26820	8	1	0	79-05-02	1	
27706	12	2	2	79-05-02	1	
28980	8	1	1	79-05-02	1	
20692OK	8	1	1	79-05-03	1	
20723	8	1	1	79-05-03	1	
20732	11	2	2	79-05-03	1	
22886	13	1	1	79-05-03	1	
26860	16	14	14	79-05-03	1	
29367OK	8	4	4	79-05-03	1	
29656	0	0	0	79-05-03	1	See W/T 29636
29658	0	0	0	79-05-03	1	See W/T 29636
26541	8	1	0	79-05-04	1	
26646	16	1	1	79-05-04	1	
27705OK	15	4	4	79-05-06	1	
21371	8	2	2	79-05-07	1	
29231	11	3	3	79-05-07	1	
29233	19	8	9	79-05-07	1	
27216	4	3	2	79-05-09	1	
22013OK	2	2	2	79-05-10	1	
22014	2	1	1	79-05-10	1	
23991	8	1	1	79-05-10	1	

* - THESE WELDS WERE REPAIRED BEFORE S/L COULD GIVE AN EVALUATION.

TIME: 3:00 P.M.
DATE: 01-20-84
WPS ID.0036D

PETER LANES - 1st 90 Days - REJECTED

W/T	Amt	MECo Rej	Third Party	Inspection Date	# Cds	Comments
23993	80.	12.	6	79-05-10	1	
23995	47	4	4	79-05-10	1	
29648	7	5	4	79-05-10	1	
29649	8	2	1	79-05-10	1	
29652	8	3	3	79-05-10	1	
33862	3	3	3	79-05-10	1	
22795	8	3	2	79-05-11	1	
22796 OK	8	4	3	79-05-11	1	
22799	6	4	4	79-05-11	1	
20661	8	3	1	79-05-16	1	
22840	4	3	3	79-05-16	1	
29651	6	1	1	79-05-16	1	
29653 OK	8	2	0	79-05-16	1	
29654	6	6	4	79-05-16	1	
33866	6	1	1	79-05-16	1	
21674	10	2	0	79-05-17	1	
22024	20	3	2	79-05-17	1	
22026 OK	2	1	0	79-05-17	1	
22028	8	3	3	79-05-17	1	
22388	2	2	2	79-05-17	1	
22389	2	2	2	79-05-17	1	
22397	6	6	6*	79-05-17	1	
22398 OK	12	12	12* - NOTE	79-05-17	1	
22446	4	4	4	79-05-17	1	
22447	2	2	2	79-05-17	1	
22448	4	4	3	79-05-17	1	
22449	2	2	2	79-05-17	1	
22451 OK	2	2	2* - NOTE	79-05-17	1	
22452	2	2	2	79-05-17	1	
22453	4	4	4*	79-05-17	1	
22755	10	3	2	79-05-17	1	
22819	2	2	2	79-05-17	1	
27683 OK	14	4	3	79-05-17	1	
37356	8	8	8	79-05-17	1	
37360	10	6	6	79-05-17	1	
37367	8	4	4	79-05-17	1	
21648	24	2	2	79-05-18	1	
NOT TO DETAIL — 22391 OK	14	6	4	79-05-21	1	
27127	20	3	2	79-05-21	1	
27682	32	4	4	79-05-21	1	
37363	16	2	2	79-05-21	1	
23982	34	5	3	79-05-22	1	
23983 OK	113	9	6	79-05-22	1	
26946	2	1	1	79-05-22	1	
29666	8	1	1	79-05-22	1	
37357	16	4	4	79-05-22	1	
37358	16	4	4	79-05-22	1	
37362 OK	12	4	4	79-05-22	1	
21625	16	3	3	79-05-23	1	
21647	12	3	0	79-05-23	1	
21677	10	3	2	79-05-23	1	

* - THESE WELDS WERE REPAIRED BEFORE S/L COULD GIVE AN EVALUATION.

TIME: 3:00 P.M.
DATE: 01-20-84
WPS ID 0036D

PETER LANES - 1st 90 Days - REJECTED

W/T	Am[redacted]	NECo Rej	Third Party	Inspection Date	# Cds	Comments
22438?	3[redacted]	~~28~~ ~~20~~ 18 LS 1-21-84	18 - ~~DID NOT ADDRESS ALL~~	79-05-23	1	
~~22600~~ OK	8	5	5 ~~28 WELDS~~	79-05-23	1	
27117	4	2	2 LS	79-05-23	1	
27118	6	6	6 1-21-84	79-05-23	1	
27122	6	5	4	79-05-23	1	
27123	6	4	4	79-05-23	1	
~~27130~~ OK	4	1	1	79-05-23	1	
27207	8	3	2	79-05-23	1	
29638	24	2	1	79-05-23	1	
29659	6	4	2	79-05-23	1	
29661	8	1	1	79-05-23	1	
	2,646	700	577	215		

* - THESE WELDS WERE REPAIRED BEFORE S/L COULD GIVE AN EVALUATION.

BYRON SITE Q.A. SURVEILLANCE

~~GF-7~~ F

QG: 54.3

Report No. 5700 Date: 1-23-84

Contractor/Organization : Project Construction Dept.

SUBJECT: Reinspection Program Interpretations

OBSERVATIONS:

Quality Assurance has reviewed Interpretation 19 issued by the Project Construction Department to be used in the implementation of the Reinspection Program. In light of the information supplied (attached), this interpretation is reasonable and will not affect the validity of the reinspection results.

This surveillance is closed.

Reported by _____ Date 1-24-84

Approved by K.A. Ehrling Date 1-25-84

LAS:jc:1667S

cc: ~~W.J. Shewski/G.F. Marcus~~ 2.1.1
2/1/84
QA Supt./Site Q.A. File
Contractor
PCD Supt
LAS

Attachment B

L SIMON (LEGO QA)

Interpretation 19
12-16-83
Page 1 of 5

HUNTER CORPORATION

3800 - 179TH STREET HAMMOND, IN 46323 219/ 147-5111

HC-QA-485

December 15, 1983

Commonwealth Edison Company
4450 North German Church Road
Byron, Illinois 61010

Attention: Project Construction Department
R. P. Tuetken
Assistant Project Superintendent

Subject: Interpretation for NRC Reinspection

Mr. Tuetken,

The Hunter Corporation requests the following interpretation.

Interpretation No. 1: Is it acceptable to use 2.3.2 and 2.3.2.1 from AWS D1.1-82 for the inspection of fillet welds?

Interpretation No. 2: Attachments 2, 3, and 4 indicate the accuracy of the welding gages we use for the measurement of fillet size. As you can see the best they can offer is ± .025". Telephone conversation with Goodwin Lycan, President of the GAL Gage Co. indicated that there are no commercially manufactured gages that are more accurate than his. Comparison of his fillet gages against like gages manufactured by Fibre Metal have shown differences of up to .050". Therefore, using similiar gages will it be acceptable to find any fillet weld up to .025" undersize acceptable under the NRC reinspection program?

Yours very truly

Lee E. Hadick

LEE E. HADICK
Quality Control Supervisor

Reply: Interpretation 1 it is acceptable to use AWS D11 articles 2.3.2 and 2.3.2.1. 12-16-83

Interpretation 2 when reinspecting fillet weld size, based on the varying accuracy of gages employed the reinspector measurement shall allow variance up to .025" undersize to be acceptable. 12-16-83

cc: M.L. Somsay
K. Selman
QA Vault

LEH/pb

STRUCTURAL WELDING CODE
ANSI/AWS D1.1-82

Interpretation 19
Page 2 of 5
ATTACHMENT 1

(1) having an included angle of 60 deg or greater at the root of the groove when deposited by any of the following welding processes: shielded metal arc, submerged arc, gas metal arc, flux cored arc, or electrogas welding; or

(2) having an included angle not less than 45 deg at the root of the groove when deposited in flat or horizontal positions by gas metal arc or flux cored arc welding.

2.3.1.4 The effective throat thickness for flare groove welds when filled flush to the surface of the solid section of the bar shall be as shown in Table 2.3.1.4.

(1) Random sections of production welds for each welding procedure, or such test sections as may be required by the Engineer, shall be used to verify that the effective throat is consistently obtained.

(2) For a given set of procedural conditions, if the contractor has demonstrated that he can consistently provide larger effective throats than those shown in Table 2.3.1.4, the contractor may establish such larger effective throats by qualification.

(3) Qualification required by (2) shall consist of sectioning the radiused member, normal to its axis, at midlength and terminal ends of the weld. Such sectioning shall be made on a number of combinations of material sizes representative of the range used by the contractor in construction or as required by the Engineer.

2.3.1.5 The minimum effective throat of a partial joint penetration groove weld shall be as specified in Table 2.10.3.

2.3.2 Fillet Welds. The effective area shall be the effective weld length multiplied by the effective throat. Stress in a fillet weld shall be considered as applied to this effective area, for any direction of applied load.

2.3.2.1 The effective length of a fillet weld shall be the overall length of the full-size fillet, including end returns. No reduction in effective length shall be made for either the start or crater of the weld if the weld is full size throughout its length.

2.3.2.2 The effective length of a curved fillet weld shall be measured along the center line of the effective throat. If the weld area of a fillet weld in a hole or slot computed from this length is greater than the area found from 2.3.3, then this latter area shall be used as the effective area of the fillet weld.

2.3.2.3 The minimum effective length of a fillet weld shall be at least four times the nominal size, or the size of the weld shall be considered not to exceed one fourth its effective length.

2.3.2.4 The effective throat shall be the shortest distance from the root of the face of the diagrammatic weld. See Appendix A, Note. See Appendix B for formula governing the calculation of effective throats for fillet welds in skewed T-joints. A convenient tabulation of measured legs (W) and acceptable gaps (G) related to effective throats (E) has been provided for dihedral angles between 60 deg and 135 deg.

2.3.3 Plug and Slot Welds. The effective area shall be the nominal area of the hole or slot in the plane of the faying surface.

2.3.4 The effective throat of a combination partial joint penetration groove weld and a fillet weld shall be the shortest distance from the root to the face of the diagrammatic weld minus 1/8 in (3.2 mm) for any groove detail requiring such deduction (see Appendix A).

Part B
Structural Details

2.4 Fillers

2.4.1 Fillers may be used in:

2.4.1.1 Splicing parts of different thicknesses.

2.4.1.2 Connections that, due to existing geometric alignment, must accommodate offsets to permit simple framing.

2.4.2 A filler less than 1/4 in (6.4 mm) thick shall not be used to transfer stress but shall be kept flush with the welded edges of the stress-carrying part. The sizes of welds along such edges shall be increased over the required sizes by an amount equal to the thickness of the filler (see Fig. 2.4.2).

2.4.3 Any filler 1/4 in (6.4 mm) or more in thickness shall extend beyond the edges of the splice plate or connection material. It shall be welded to the part on which it is fitted, and the joint shall be of sufficient strength to transmit the splice plate or connection material stress applied at the surface of the filler as an eccentric load. The welds joining the splice plate or connection material to the filler shall be sufficient to transmit the splice plate or connection material stress and shall be long enough to avoid overstressing the filler along the toe of the weld (see Fig. 2.4.3).

2.5 Partial Joint Penetration Groove Welds

Partial joint penetration groove welds subject to tension normal to their longitudinal axis shall not be used where design criteria indicate cyclic loading should produce fatigue failure. Joints containing such welds, made from one side only, shall be restrained to prevent rotation.

ATTACHMENT 2
interpretation 19
Page 3 of 5

G.A.L. Gage Co.

Post Office Box 23
2953 Hinchman Road
Stevensville, Michigan 49127
616-465-5750

November 23, 1982

Mr. Lee Hadlock

c/o Hunter Corp.
P. O. Box 674
Byran, IL 61010

Subject: 72 Partial Sets Fillet Weld Gage
P. O. #265003

Dear Mr. Hadlock,

The manufactures tolerance of the Fillet Weld Gage on your P. O. #265003 are within the .025" range.

The welding gage is intended for general dimensional inspection of welded fabrication where close tolerances are not ecpected. It should not be compared in precision with gages where a high degree of accuracy is required.

Sincerely,
G.A.L. Gage Co.

Goodwin A. Lycan
President

GAL/gkn

G.A.L. Adjustable Fillet Weld Gage

MEASURE ANY FILLET WELD TO 1/32" ACCURACY WITH JUST ONE SIMPLE-TO-USE GAGE.

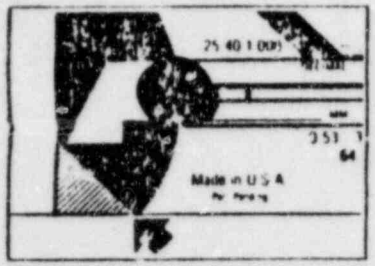
Measuring fillet welds used to be a trial with complicated or inaccurate gages. Not anymore. Now you can measure fillet welds from 1/8" to 1" (with + 1/32" accuracy) with one economical, simple-to-understand gage.

The G.A.L. Adjustable Fillet Weld Gage uses an offset arm which slides at a 45° angle to make fillet weld length measurements. Simply adjust the arm until it touches the toe of the vertical leg. The gage is calibrated to 32nds, with metric equivalents given, so you get more accurate readings. Four screws hold the offset arm in position for future adjustments.

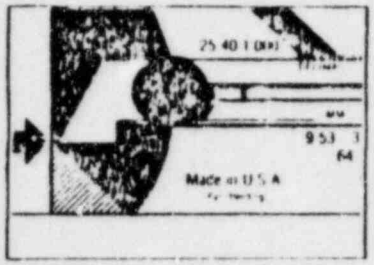
This gage also measures weld throat thicknesses to 32nds of an inch by adjusting a pointer until it touches the center of the weld. A thumb screw holds the pointer in position for future reference. If the weld is concave, more filler material can be added to build the weld throat up to standard.

The G.A.L. Adjustable Fillet Weld Gage is made of durable, rust resistant stainless steel. Its 2¼" x 3" slim design weighs only 1½ oz., fits easily into a shirt pocket. And because there is just one gage needed to make all measurements, the chance of losing essential fillet weld gage blades is eliminated. Fumbling through seven different, inaccurate gage blades is also eliminated.

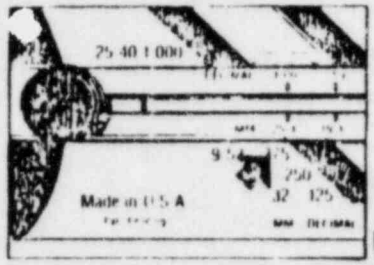
G.A.L. Adjustable Fillet Weld Gage is easy to use.



To measure fillet welds place irregular curve edge flush to horizontal toe of weld so the straight edge is in line with the horizontal member.



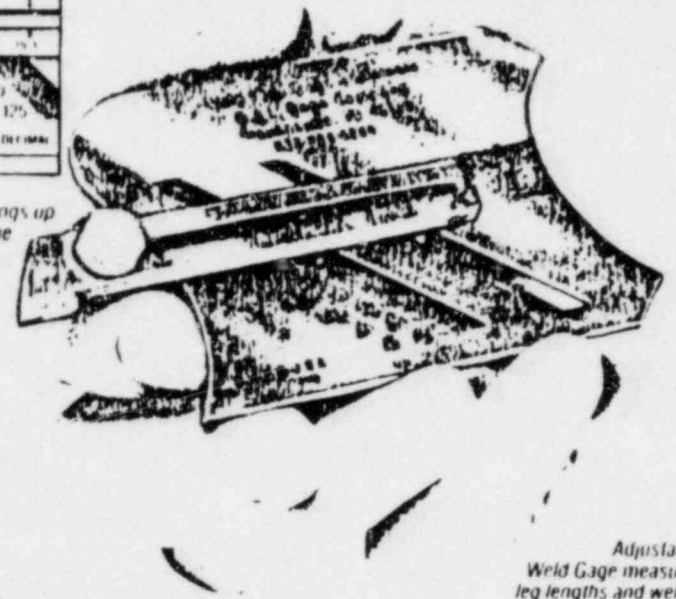
Adjust the offset arm up or down along the diagonal slots until the tip of the arm touches the top of the weld.



Read the weld size indicated. The increments are in 32nds and ¼" markings up to 1". All numerals are etched into the surface and filled for easier reading.

To measure weld throat thickness place the 45° angle end flush to the horizontal and vertical members. Loosen the thumb screw and slide the pointer until it touches the face of the weld.

Tighten the thumb screw and read the measurement from the 32nds calibrations along the pointer. A quick, sure way to find convex or concave welds and to correct them with additional filler material to meet standards.



G.A.L. Adjustable Fillet Weld Gage measures both leg lengths and weld throat fillet weld thickness.

U.S. patents pending.
Gages available through your welding supply distributor or contact

G.A.L. Gage Co.

P.O. Box 23, Stevensville, Michigan 49127 Telephone 616/465-5750 TELEX 729453 GAL GAGE STVL

© 1983, G.A.L. Gage Co.

B-5

ATTACHMENT 4
Interpretation 19
Page 5 of 5

WELDING GAUGE

IMPORTANT NOTICE

The Welding Gauge is intended for general dimensional inspection of welded fabrications where close tolerances are not expected. It should not be compared in precision with gauges used for measuring machined components and, where a high degree of accuracy is required, machine shop type measuring instruments will need to be used.

The Welding Institute Abington Hall Cambridge CB1 6AL

01.80

BYRON SITE Q.A. SURVEILLANCE

QF: 2790.22.2.1

Report No. 5753

Date: 2-02-84

Contractor/Organization : Hatfield Electric Co.

SUBJECT: 1. Document Control
2. Installation Activities

OBSERVATIONS:

A surveillance was conducted at Hatfield to document the issuance and processing of field problem sheets.

Field problem sheets are written by production to Hatfield Engineering Department, describing problems encountered in the field which cannot be installed per the design document. The equipment has not been installed and the foreman is asking a question, "How should I install it". Problem sheets are categorized by drawing area.

These field problem sheets have suggested corrective action, such as: a drawing or drawings may be changed, an FCR may be written, a DR may be written if it pertains to a drawing error or it may remain as is.

DR's and NCR's are written by the QC Department after work has been completed by production and the equipment has been turned over for inspection. A DR is written to document a deficiency in which the installation is not per the drawing. If the foreman cannot rework the deficiency into an acceptable conforming item a HECo. Nonconformance Report (NCR) is written.

Field problem sheets are not used in lieu of a DR. Copies of field problems may be found in QC but only as a reference document. No QC inspector signs these field problem sheets. Deficiencies are documented using the DR and NCR system proceduralized in HECo.'s Procedure #6.

Twenty-three (23) field problem sheets were reviewed. Of these twenty-three (23), two (2) field problem sheets referenced a deficiency report. Fifteen (15) field problem sheets are attached for reference. All were found acceptable.

This surveillance is closed.

Reported by [signature] Date [illegible]

Approved by [signature] Date 2-7-84

2-8-84

MVD:jc:1706S

cc: ~~W.J. Shewski/G.F. Marcus~~
QA Supt./Site Q.A. File
Contractor
PCD Supt
MVD

2/13/84

Attachment C

FPS#	IIAR	7-15-83	KW
FOREMAN	D. Olsen		
PRINT#	0-3374	REV. BA	
CABLE#	IAROSS		
LOCATION	18+Q	ELV. 451	

K.V.

FCR# F-

AL. O.

FP-1881

REASON FOR CHANGE	cannot comply with detail Section "B-B"

1

PROBLEM:

Section "B-B" on 0-3374 shows (55) which is now 1½" conduit entering a 1" sleeve on 'Q' wall (55) was changed from 1" to 1½" on 0-3374 CT1 Rev. Y

REFERENCE ONLY

C-2

NOT TO BE USED FOR INSTALLATION

SUGGESTION:

CA. # IAROSS HAS AN O.D. OF 0.9" CA. WILL FIT IN 1"ϕ SLEEVE IN WALL. HOWEVER, 1½"ϕ COND. IS BEING USED TO ACCOMODATE AN EASIER PULL THRU FLEX. A 1½"ϕ TO 1" REDUCER SHOULD BE USED @ SLEEVE, & DOESN'T HAVE TO BE STATED ON DWG. (PER K. DIETZEN)

7-26-83

FIELD PROBLEM SHEET

REWORK

	SYS	DATE	G.F.	
FPS#	IPR	6-6-83	KW	
FOREMAN C. Reints				
PRINT# 0-3374		REV. AH		
CABLE# IPR005 IPR006				
LOCATION 18 + Q to S		ELV. 451		

FCR# F- FP-1764

ART

REASON FOR CHANGE	Blount Structural Rework

PROBLEM: Need re-design For two CC-405^S Removed per ORR 3106.

[redacted] NOT TO BE USED FOR INSTALLATION

SUGGESTION:

0-3374A - REV. AK
0-3374C01 - REV. AA
0-3374C02 - REV. AF
} 6/27/83

C-3

	SYS	DATE	G.F.
FPS#	155	9-7-83	EVANS
FOREMAN	J. SCHAPPELTEIER		
PRINT#	0-3372	REV. BA	
CABLE#			
LOCATION		ELV.	

0-3372 CO2 REV V
0-3372 CT1 W

FT-31-E

FCR# F-

BL

REASON FOR CHANGE	PRINT ERRORS

REFERENCE ONLY

PROBLEM:

AT L 415 YOU RENUMBERED CONDUIT 2" ▽2 TO ▽3

THERE IS ALREADY A ▽3 ON THE PRINT AT 23 & M WHICH IS LISTED ON 0-3372 CT1 REV. W

C14

NOT TO BE USED FOR INSTALLATION
SUGGESTION:

PLEASE CORRECT! AGAIN!

SEP 27 1983

0-3372 — BP
↓ CO2 — Z
↓ CT1 — Z
9/22/83

SYS	DATE	G.F.
FPS#	1-7-84	IVAL
FOREMAN J. SCHANBACHER		
PRINT# 0-3371D	REV. BP	
CABLE#		
LOCATION 8.2 + 12.7	ELV. 451	

Mark

FCR# F-

FP-3632

REASON FOR CHANGE	

PROBLEM:

Print 0-3371D SHOWS CONDUIT C0A81D1 INTO CAB. 1DA28 J. NOT INSTALLED

JAN 17 1984

ON PRINT 0-3381 CT2 Rev. Y NO CONDUIT IS LISTED

SHOULD CONDUIT BE DELETED FROM 0-3371D

C-5

NOT TO BE USED FOR INSTALLATION
SUGGESTION:

0-3371D - "BR" 1-18-84

FIELD PROBLEM SHEET

SYS	DATE	G.F.	
FPS# IVC	12/7/83	IVAN	BC
~~FOREMAN~~ ENG: Bill Cook			
PRINT# 0-3371C01	REV. Y		
CABLE# IVC505, 506, 553			
LOCATION 10-L	ELV 451		

PRI I
D3526

1M022

FCR# F-
FP-3531

REASON FOR CHANGE	Drawing Discrepancy

PROBLEM: 0-3371C01 calls out ½" CEA's for WS-7, they should be ¼" CEA's.

RECEIVED
DEC 19 1983
HATFIELD ELECTRIC COMPANY

NOT TO BE USED FOR INSTALLATION
SUGGESTION:

0-3071C01 - "Z" 12/19/83

C-6

FIELD PROBLEM SHEET

	SYS	DATE	G.F.	
FPS#		10/7/83		
FOREMAN				
PRINT# 0-33604		REV. AP		
~~CABLE#~~ HGR FOR IJB2260A				
LOCATION 366 BELOW		ELV. -		

FCR# F-

FP-3105

REASON FOR CHANGE	DWG. DISCREPANCY

PROBLEM:

NO NORTH-SOUTH LOCATING DIMENSIONS FOR IJB2260A

REFERENCE ONLY

OCT 7 1983

REF-D.R. 2822

NOT TO BE USED FOR INSTALLATION

SUGGESTION:

G.E.O 3364, REV. "AT", 9/21/83 PUT TO FIELD.

C-7

	SYS	DATE	G.F.	
FPS#	2MS	12-15-83		
FOREMAN	George W. Hedtke			
PRINT#	0-3363	REV. BV		
CABLE#	2MS 112			
LOCATION	1'3" N/24	ELV. 446' 9"		

Below

FCR# F-

FP-4392.

REASON FOR CHANGE	

PROBLEM:

Chipped concrete revealed 1 vertical Re-bar and 1 horizontal Re-bar diectly in the way of 2" core hole centers -

RECEIVED
JAN 24 1964
HATFIELD ELECTRIC COMPANY
PER _____

NOT TO BE USED FOR INSTALLATION

SUGGESTION:

will possibly work by raising elev 1½" (or 446' 10½") and moving north 2½"

0-3363 REV. BV
1-25-84
FCR F24139

AEC 914

C-8

FIELD PROBLEM SHEET

	SYS	DATE	G.F.	
FPS#	2VR	12-7-83	WA	
FOREMAN	Geo. Hoftke			
PRINT#	0-3363A	REV. BJ		
CABLE#	2VR115			
LOCATION	25+N	ELV.		

BV

FCR# F-

FP-4310

REASON FOR CHANGE	

PROBLEM:

Supports CC-73 and CC-124 are reattached to a reinforced beam and are located too close together to be able to attach #: 3/4" x 3" x W between the two hangers as called for on ECN 5769 per page 7, 8, and 9 of 14.

Previous FP-4189 did not solve problem

RECEIVED
DEC 19 1983
HATFIELD ELECTRIC COMPANY

C-9

NOT TO BE USED FOR INSTALLATION
SUGGESTION:

0-3363 C02 REV. AJ

12-21-83

	SYS	DATE	G.F.	
FPS#	2 VR	10-28-83	wa	
FOREMAN Geo. Hodges				
PRINT# O-3363A		REV. BG		
CABLE# 2 VR 165				
LOCATION 25+N		ELV. 439		

(ADT)

~~Dave Henry~~

MISC.

REWOR

FCR# F-

FP-4189

REASON FOR CHANGE	

PROBLEM:

Supports CC 73 and CC-124 Need to be reattached to Reinforced Beam. They are located to close to allow attachment per ECN 5580. Can you come up with a detail for attaching those two hangers

REFERENCE ONLY

DEC 5 1983

NOT TO BE USED FOR INSTALLATION

SUGGESTION:

ECN # 5769 12-1-83

FIELD PROBLEM SHEET

	SYS	DATE	G.F.	
FPS#	2NR	10-18-83	WG	
FOREMAN	Geo. Hedtke			
PRINT#	0-3363		REV. BN	
CABLE#	2NR072, 003, ETC			
LOCATION	25+P-Q		ELV. 432	

FCR# F-

FP-4157

REASON FOR CHANGE	Over 270° IN Conduit Run

83 84

PROBLEM:

Conduits 83 + 84 have a pull point shown approx 6' S of 26 line. We will have over 270° of Bend If we locate the pull points as shown. If Those pull points were relocated 10' S of their present location we would not be over 270° IN these respective runs

C-11

NOT TO BE USED FOR INSTALLATION

SUGGESTION:

0-3363 REV. BR 10-26-83

	SYS	DATE	G.F.	
FPS#	2Fr	9-29-83	Wa	
FOREMAN Geo. Hedtke				
PRINT# O-3362, ADO1, 78, A	REV. BK, BF, AH, S			
CABLE# 2FP475, 476, 477				
LOCATION 18+L	ELV. 419			

O-BK

FCR# F-

FP-4099

REASON FOR CHANGE	Conduit going into wiring part of Cabinet for Terminating Cables

79 3" C 2B

PROBLEM:

Conduit 79 from 2JB 2058H to 2RMC9J O-3378 is located in compartment of cabinet which will not allow Termination of Cables. Need to relocate conduit South approx. 2' (per Steve Royden Cable terminations)

REFERENCE ONLY

NOT TO BE USED FOR INSTALLATION
SUGGESTION:

O-3362 — "BT"
ADO1-AH
C06-R
O-3378 — AJ
A — T
C01-W
10-10-83

C-12

FIELD PROBLEM SHEET

	SYS	DATE	G.F.	
FPS#	2UX	9-12-83	WA	
FOREMAN	Geo. Hodge			
PRINT#	0-3362003	REV. B		
CABLE#	2UX041			
LOCATION	18+N	ELV. 439		

Jerry N.

FCR# F-

FP-4065

REASON FOR CHANGE	

PROBLEM:

Unable to weld P1004A Unistrut to plate as shown in Det A. & Sec. A-A

Also floor Thickness will not allow us to install 1/2 Ø C.E.A. per John Steven S&L Stru.

NOT TO BE USED FOR INSTALLATION

SUGGESTION:

0-3362003 – "C" 11/16/83

	SYS	DATE	G.F.	
FPS#	IC X	12-15-83	WA	
FOREMAN Geo Hodtko				
PRINT# 0-3362		REV.		
CABLE# IC X 129				
LOCATION 14+L		ELV. 437		

TOPY

(MISC.)

FCR# F-

FP-35073

REASON FOR CHANGE	Rebar Hit

COA 62 EO

PROBLEM:

Hit Rebar coring hole CDR 689 F-23918 S-1302

Unable to move location within Tolerance to miss rebar.

Need New location for hole. HEC915

C-14

NOT TO BE USED FOR INSTALLATION
SUGGESTION:

SEE FCR F-24140 1-4-84

JAN 7 1984

FIELD PROBLEM SHEET

	SYS	DATE	G.F.	
FPS#	IPS	12-3-83	wa	
FOREMAN Geo Holtko				
PRINT# 0-3362		REV. BW		
CABLE# IPS-477				
LOCATION		ELV.		

SD

"O-PRI"

FCR# F-

FP-3486

REASON FOR CHANGE	

PROBLEM:

Conduit COF6208 routed to Wrong compartment IN panel. Conduit routed to ~~Com~~ Section A Needs to Terminate IN Section H.

RECEIVED
DEC 12 1983
LAFAYETTE ELECTRIC COMPANY

C-15

NOT TO BE USED FOR INSTALLATION
SUGGESTION:

REFERENCE ONLY

SEE FCR F24056 12-3-83

FIELD PROBLEM SHEET

	SYS	DATE	G.F.
FPS#	YA	6-28-88	Q.C.
FOREMAN A. SCHUTT			
PRINT# 0-3374		REV.	
CABLE# 2VA011, 2VA012, 2VA013			
LOCATION 21 ℄ S		ELV. 451	

K.D. HOT

FCR# F- FP-2901

STEVE CLARK

REASON FOR CHANGE	

2VA011 & 12 - FUNCTIONAL

PROBLEM: 6"x6" CWW FROM 2JB587A TO 0VA01JD HAS A 4" CONDUIT @ THE FLOOR ON 465' ELEV. THIS CWW AND 4" CONDUIT HAVE CABLES ALREADY INSTALLED IN THEM. THE 4" CONDUIT IS TOO SMALL TO PULL THESE CABLES WHICH ARE 12/C - #14's THROUGH, WITHOUT DAMAGING THE EXISTING INSTALLED CABLES. WE HAD THE SAME PROBLEM ON UNIT I SIDE.

INFORMATION ONLY

C-16

NOT TO BE USED FOR INSTALLATION

SUGGESTION: PER FCR# 23,491

INSTALL 1 DWG 0-3374C-1 REV. AB

0-3721 REV. L

9/17/

4" FLEX FROM 2JB587A: CABLES PULLED 2VA040

CABLES YET TO BE PULLED: 2VA011, 2VA012, 2VA023, OUT ~~2VA033~~, 2VA256, 2VA300, 2VA350, 2VA421, 2VA774, 2VA786, 2VA798, 2FP068

TOTAL ALLOWABLE FILL FOR A 4"ø SLEEVE = 763

ACTUAL FILL INCLUDING CABLES YET TO BE PULLED = 4.866

ALLOWABLE FILL FOR 4"ø CONDUIT = 5.09

6"x6" W.W FROM 2JB587A: CABLES PULLED 2FP072

CABLES YET TO BE PULLED: 2VA787, 2VA799, 2FP078, 2VA010, 2VA020, 2VA031, 2VA032, 2VA034, 2VA256, 2VA319, 2VA398, 2VA399, 2VA784, 2VA794

CABLES THAT SHOULD NOT HAVE BEEN IN WIREWAY: 2FP072, 2FP078, 2VA256, 2VA319, 2VA784

TOTAL ALLOWABLE FILL FOR A 4"ø SLEEVE = 7.6.

ACTUAL FILL INCLUDING CABLES YET TO BE PULLED = 7.42

ALLOWABLE FILL FOR 6"x6" W.W. = 8.00

BYRON SITE Q.A. SURVEILLANCE

QF: 2790.22.2.1

Report No. 5811

Date: 2/21/84

Contractor/Organization : Hatfield Electric Co.

SUBJECT: NRC Reinspection Program Results Verification

OBSERVATIONS:

Attribute #1 - Visual Weld Inspections

The visual weld inspection attribute for Hatfield Electric Company included eight (8) inspectors. For two (2) of the eight (8) inspectors, a complete 100% verification of the data used in the final database was performed. The two (2) inspectors were P. Lane and E. Dumas. For each inspector, the primary source documents (weld traveller and third party inspection record) used for the initial data were compared to the Hatfield Wang database. For P. Lane a total of 488 weld travelers were reviewed which accounted for approximately 5000 welds, and for E. Dumas a total of 205 weld travelers were reviewed which accounted for approximately 700 welds. Then the Wang data was compared to the final inspection report database dated February 15, 1984.

In all cases for both inspectors, the final data was found to be an accurate representation of the primary data. Minor typographical errors were found but were minimal. The effect of the errors was randomly distributed and did not skew the final results. Errors found during the course of the surveillance were addressed during the surveillance and corrected as necessary.

Attribute #2 - Conduit

Attribute No. 2 (Conduit Inspections) consisted of the work of six inspectors performing 134 inspections. The initial review of the tally sheets, inspection reports and reinspection reports raised a number of questions regarding the method used to tabulate the results. This matter was discussed with Mr. Greg Cason of Hatfield, Group Leader, who originally tallied the results. It was determined that Mr. Cason had not included those items marked "not applicable" on both the original checklists and reinspection checklists in the total reinspection population. Since this was contrary to the method used in tabulating the results for the other attributes, a recount was performed. The resulting tally sheets were reviewed by J. Bergner of CECo. QA for mathematical accuracy and found acceptable. The reinspection sheets for inspectors "G", "J", and "K" were checked against the tally sheets to verify the accuracy of the tally sheets. This sample, which included 120 of the 134 inspections, indicated that the tally sheets were accurately and correctly completed.

Based on the aforementioned activities, it appears that the results of attribute No. 2 are correct.

Attribute #3 - Termination

The third attribute, terminations, involved the reinspection of five (5) inspectors' work and covered approximately 664 original inspections. 100% of the reinspection reports for Dumas and Buchanan and a random sample of the reinspection reports for Getzelman, Cripps and Hanson were verified against the termination tally sheets. The tally sheets appeared to accurately reflect the data contained in the reinspection reports; however, the final results contained in the "Detailed Inspector Results" did not accurately reflect the data in the tally sheets. Specifically, the total number of items and the number of acceptable items both included those items that were found to be non-reproducible. It appears that the error occurred when the total item count was computed by multiplying the total number of reports by the number of items per report. The error was pointed out to Hatfield QA and a recount was performed in the presence of J. Bergner of CECo. QA. The resulting figures are now believed to be accurate and acceptable.

Attribute #4 - Equipment Setting

In the area of equipment setting (Attribute #4), no results were shown on the "Detailed Inspection Results". The reason for this, as verified by review of the reinspection reports, was that the few inspections performed in this area were either inaccessible or nonreproducible.

Attribute #5 - A325 Bolting

A325 Bolting, which is listed as Attribute #5, included only two (2) inspections by one (1) inspector. These inspections were reviewed by C. Nagel and J. Bergner of CECo. QA with one (1) apparent discrepancy noted. One of the items on a reinspection checklist had been marked unacceptable because three (3) of four (4) nuts in a bolted connection had been turned around and could not be verified to be of A325 composition. Upon review of Procedure 25 (A325 Bolting) it was verified that this was an "in process" type of inspection where the original inspector would have been able to check the markings on each nut. Since the nut that was accessible was of A325 composition and the other three (3) nuts were effectively inaccessible, this item was found to be acceptable. Based on this, the "Detailed Inspector Results" were found to be correct.

Attribute #6 - Equipment Modification

The reinspection reports for equipment modifications (Attribute #6), involved inspectors Dumas, Cripps, and Hanson. The six (6) reinspection reports that make up this area were examined and found acceptable.

Attribute #7 - Equipment Modification

In the matter of Attribute #7, (Conduit As-Built), forty-nine (49) conduit as-built reports were examined for numerical accuracy. Items on the reports were counted and compared to results found on the clarification of as-built information sheets. It appears that the number of items inspected have been accurately tallied.

The reinspection reports were examined for the equipment modification inspections and no rejectable items were found, thus confirming the results of the final report in this area.

Attribute #8 - Cable Pan Hangers

The results of Attribute No. 8 (cable pan hangers) are comprised of the reinspection of two (2) inspectors' work consisting of 324 inspection reports. The initial tabulation of the reinspection was found to be in error due to the method used to tally the items. The 9A-1 inspection reports consists of two parts: the HP-9A-1 form, which is a six (6) item checklist, and a supplementary sheet which contains detailed information regarding hanger dimensions, connection types, aux. steel, etc. The reinspections were performed using the supplementary sheets but the tally sheets accounted for only the six (6) items on the HP-9A-1 checklists. The reinspection population appeared much lower than it actually was because of this. A recount was performed on 2/18/84. When this recount was reviewed by CECo. PCD and Hatfield QA, several new problems were noted. First, a clerical error was noted in that the Hatfield QC personnel performing the recount were using a tolerance of zero to plus three inches for internal braces and zero to plus six inches for external braces. The actual tolerances were plus or minus three inches and plus or minus six inches respectively as noted on note 37, drawing 0-3275 and note four, drawing 0-3277.

A second problem encountered during the recount was that, in certain instances, criteria used during the reinspection have changed since or were non-existent during the original inspections. In these cases, it was decided that the original criteria should be used in determining the validity of the original inspection. The aforementioned items were reviewed by M. Dellabetta, CECo. QA, and found acceptable. Mr. Dellabetta also reviewed forty-nine (49) of the reinspection reports against the tally sheets and checked the addition on the tally sheets for errors. Both were found acceptable. Based on the items examined, it appears that the final results of the recount are accurate.

Attribute #9 - Cable Pan

The reinspection of cable pans, (Attribute #9) involved eight (8) inspections by one (1) Hatfield inspector. The reinspection reports were reviewed and compared to the "Detailed Inspector Results". All of the aforementioned were found acceptable.

Evaluation

All nine (9) attributes reviewed during the course of this surveillance were found to be acceptably documented, and in accordance with the guidelines and interpretations of the NRC Reinspection Program I&E Report 50-454/82-05 and 50-455/82-04.

The following CECo. QA personnel were involved in this surveillance:

P. T. Myrda	J. W. Zid
M. V. Dellabetta	C. J. Nagel
J. L. Bergner	S. Stimac
T. G. Hibst	L. Bihlman

This surveillance is closed.

Reported by P T Myrda / J. L. Bergner Date 2/22/84

Approved by K J Hansing Date 2/22/84

JLB:jc:1773S

3-1-84

cc: ~~W. J. Shewski~~/G.F. ~~Marcus~~ 3/2/84
QA Supt./Site Q.A. File
Contractor
PCD Supt
P.T. Myrda
K.J. Hansing
E.L. Martin
J.L. Bergner
M.V. Dellabetta

Commonwealth Edison Company

Q.P. FORM 18-1.
DATE 8/4/81

QUALITY ASSURANCE MANUAL

AUDIT REPORT

Byron Reinspection Program Audit
#6-83-66

Type Audit: ☐ Program Audit ☐ Product Inspection Point
☐ Records ☐ Special

To: (As Listed on Distribution Page)

Project Byron Visit Date 6/21/83 7/06/83 Report Date 7/18/83

System Various Component Identification N/A

Material Description N/A

Vendor Site Contractors Location Byron

Subcontractor N/A Location N/A

Contacts See Attached Reports

P.O. No. Various Spec. No. Various

Recommended Inspections: 6 mos 3 mos 1 mo

Other: As Scheduled

Notes: For items listed in the report as requiring a written response, please respond by 8/05/83. Responses to Findings and Observations will include the following:
* 1. Corrective action and results achieved.
* 2. Action to prevent recurrence.
* 3. Date of full compliance.

* (As required by the content of each item)

Auditor [signature] Date 7/19/83

Reviewed M.A. Stanish Date 7/21/83

AJR:jc:0221A
Attachments

cc: ~~Manager QA~~ 7-25-83
Manager-Projects
~~Project Manager~~ J Pittel 8/1/83
~~Engr Manager~~
~~Director-QA-Construction~~ (As Listed on Distribution Page)
~~Site Construction Superintendent~~
~~Site QA~~
~~Auditee~~
~~Site QA Supervisor~~

Attachment E

DISTRIBUTION PAGE
COMMONWEALTH EDISON AUDIT OF THE
BYRON REINSPECTION PROGRAM

TO:	M. L. Somsag	Hunter Corporation
	J. T. Hill	Hatfield Electric Company
	B. Shah	Johnson Controls Inc.
	M. R. Tallent	Pittsburgh Testing Lab.
	R. P. Larkin	Powers Azco Pope
	R. Allen	NISCO
	R. H. Bay	Blount Brothers Corporation

cc: ~~Manager QA~~ 7-25-83
Manager Projects
Project Manager
Eng. Manager
Director QA Construction
Site Construction Superintendent
Site QA
Auditee
Site QA Supervisor
Director Nuclear Licensing
QA ANSI N45.2.6 Coordinator

(0221A)

LIST OF AUDITEES

Contractor	P.O.	Specification
Hunter Corporation	207010	2739
Hatfield Electric Company	197131	2790
Johnson Controls Inc.	213415	2783
Pittsburgh Testing Lab.	216025	2850
Powers-Azco-Pope	222445	2906
NISCO	213839	2834
Blount Brothers Corporation	181186	2722

COMMONWEALTH EDISON AUDIT OF THE
BYRON REINSPECTION PROGRAM
AUDIT No. 6-83-66

Purpose:

To observe, assess and verify the implementation of the Reinspection Program at Byron as performed by on-site contractors and directed by C.E.Co. Project Construction Department. A description of the reinspection program and the audit methodology is included in this report.

Description of the Byron Reinspection Program:

In March of 1983, a reinspection program was instituted to validate the certification programs of the Byron on-site contractors as they relate to Level I and Level II QC inspectors. The program was outlined in a letter from W. L. Stiede to J. G. Keppler dated February 23, 1983. (See Attachment). The mechanics of the program were directed by Commonwealth Edison Project Construction at Byron.

Description of the Reinspection Program Audit:

The audit was conducted between 6/21/83 and 7/06/83. The auditors observed all contractors involved in the reinspection program for the items listed under scope. The reference document for the audit was the W. L. Stiede letter dated February 23, 1983, which was the response to I&E Inspection Report Numbers 50-454/82-05 and 50-455/82-04. Deficiencies or items of concern identified during the audit are listed in the appropriate portion of the audit report. With each deficiency, the organization responsible for response is listed. All responses to items identified in this report will be reviewed by Commonwealth Edison Quality Assurance Department to determine acceptability.

Several items identified during the audit were closed prior to or at the exit meeting. These items are presently acceptable and are not classified as deficiencies in this report. In most cases, these items required clarifying information to be resolved. A section of the audit report labeled "Items Dispositioned during the Audit" describes these items and their respective dispositions.

Scope:

The audit examined the following areas:

1. Reinspection sample size of inspectors and inspection items.
2. Items determined to be inaccessible.
3. Third party review of potentially unacceptable subjective type inspections.
4. Dispositions of nonconforming conditions discovered during the reinspection program.
5. Adequate documentation of the reinspection program as implemented by the contractors.
6. Qualifications of inspection personnel performing reinspection.

Audit Team:

The reinspection audit team consisted of the following personnel:

A. J. Rosenbach	Lead Auditor	QA Inspector	- Byron
L. A. Simon	Auditor	QA Engineer	- Byron
S. A. Altmayer	Auditor	QA Engineer	- Byron
P. T. Myrda	Auditor	QA Supervisor	- Byron
C. J. Nagel	Auditor	QA Engineer	- Byron
M. A. Stanish	Auditor	QA Superintendent	- Byron

Summary:

An entrance meeting was held on 6/21/83 at the Byron Quality Assurance Department. Attendees were as follows:

P. T. Myrda	C.E.Co. QA
M. A. Stanish	C.E.Co. QA
A. J. Rosenbach	C.E.Co. QA
L. A. Simon	C.E.Co. QA
C. J. Nagel	C.E.Co. QA
S. L. Bindenagel	Hatfield Electric Co.
T. Maas	Hatfield Electric Co.
J. D. Spangler	Hatfield Electric Co.
M. R. Tallent	Pittsburgh Testing Lab.
B. Shah	Johnson Controls Inc.
L. E. Hadick	Hunter Corporation
D. L. Smith	Pittsburgh Testing Lab.
M. L. Somsag	Hunter Corporation
R. P. Larkin	Powers-Azco-Pope
G. Cason	Hatfield Electric Co.
R. B. Klingler	C.E.Co. PCD
Bob Allen	NISCO
C. C. Novak	NISCO
Ghaus Mohammed	Pittsburgh Testing Lab.
S. A. Altmayer	C.E.Co. QA

Two exit meetings were held, one on 6/30/83 and the other on 7/06/83. Attendees were as follows:

6/30/83 exit with C.E.Co. PCD:

R. P. Tuetken	C.E.Co. PCD
R. B. Klingler	C.E.Co. PCD
M. A. Stanish	C.E.Co. QA
E. L. Martin	C.E.Co. QA
P. T. Myrda	C.E.Co. QA
K. J. Hansing	C.E.Co. QA
L. A. Simon	C.E.Co. QA
A. J. Rosenbach	C.E.Co. QA

7/06/83 exit with Byron Contractors:

A. J. Rosenbach	C.E.Co. QA
R. H. Bay	Blount Brothers Corp.
L. E. Hadick	Hunter Corporation
J. T. Hill	Hatfield Electric Co.
K. J. Hansing	C.E.Co. QA
E. L. Martin	C.E.Co. QA
M. R. Tallent	Pittsburgh Testing Lab
D. L. Smith	Pittsburgh Testing Lab
R. P. Larkin	Powers-Azco-Pope
S. A. Altmayer	C.E.Co. QA
M. L. Somsag	Hunter Corporation
R. B. Klingler	C.E.Co. PCD
R. P. Tuetken	C.E.Co. PCD

At the exit meetings, deficiencies and items of concern were discussed to assure understanding by all involved parties. The auditors would like to express their appreciation for the level of cooperation exhibited by contractor and PCD personnel during the audit.

The Reinspection Audit resulted in a total of one (1) finding and eight (8) observations. Findings and Observations are listed and discussed in Part A of this audit report.

Responses are required from the following organizations as delineated below:

Finding #1	Hunter Corp., Hatfield Electric, PTL, and Blount Brothers
Observation #1	Hunter Corp., Hatfield Electric
Observation #2	Hatfield Electric
Observation #3	Pittsburgh Testing Lab
Observation #4	Powers-Azco-Pope
Observation #5	Hunter Corp., NISCO
Observation #6	Blount Brothers
Observation #7	Powers-Azco-Pope
Observation #8	Hatfield Electric

PART A
AUDIT No. 6-83-66

Finding #1:

Contrary to 10CFR50 Appendix B, Criterion XV, certain contractors were not taking appropriate measures to identify, document, segregate, disposition, and notify affected organizations of nonconforming items identified under the reinspection program.

Closed 9/1/83

Discussion: Finding #1 Part A (Hunter Corporation)

During the reinspection program, nonconforming conditions were identified which did not result in discrepancy reports being initiated. Problems with component support 2FP12016 were documented on Field Problem Sheet #FP109F rather than on a discrepancy report. No DR was issued for rejectable items associated with component support 2FP14056X because Hardware Removal Report #1380 has been initiated due to W ECN 52901 dated 6/22/83. The reinspection for 2FP14056X was prior to the issuance of the ECN. The following mechanical joints failed to meet the specified torque of 70% of the initial value when reinspected: SSX 100-23 MJ177, SSX 100-23 MJ178, SAB 100-43 MJ23, SDO 100-34 MJ49; these joints were retorqued by production immediately following inspection. No DR's were issued to document this

Closed 10/7/83

Discussion: Finding #1 Part B (Hatfield Electric)

During the reinspection program, nonconforming conditions were identified which did not result in discrepancy reports being initiated. Field Problem Sheets were being implemented to resolve reinspection items in the conduit and terminations area. The Field Problem Sheet is not proceduralized.

Closed 11/3/83

Discussion: Finding #1 Part C (Pittsburgh Testing Lab)

At the time of the audit, PTL had not yet transmitted open inspection reports generated because of the reinspection program to the appropriate contractors. Therefore, no corrective action has been taken for the apparently nonconforming conditions.

Closed 12/8/83

Discussion: Finding #1 Part D (Blount Brothers Corporation)

At the time of this audit, Blount Brothers Corporation had not yet generated any DR's or DRC's for rejectable items discovered as a result of the reinspection program.

Closed 10/14/83

Observation #1:

Application of the term "inaccessible" to those items which receive multiple inspections does not correspond directly to the definition of "inaccessible" offered in the Stiede-Keppler letter dated February 23, 1983.

Discussion: Observation #1 Part A (Hunter Corporation)

According to the Stiede-Keppler letter, "Inaccessible shall be defined as: condition where dismantling would be required to gain access, or condition where process was an event which can not be recreated."

When inspections of the same type occur after that inspection to be sampled in the reinspection program, the item of the original inspection is labeled by Hunter as inaccessible. For example, if a Type 3 inspection is performed in January, 1980 and a subsequent Type 3 performed in May, 1982, the one in 1980 is termed inaccessible. This is done without research to determine if the later inspection occurred as a result of rework etc. thus making the original inspection unrecreateable.

Discussion: Observation #1 Part B (Hatfield Electric)

According to the Stiede-Keppler letter, "Inaccessible shall be defined as: condition where dismantling would be required to gain access, or condition where process was an event which can not be recreated." Hatfield was using the term inaccessible to disposition reinspections to which this definition does not apply. The example noted during the audit was, Hatfield had termed those items with subsequent inspections as inaccessible without determining if the original inspection was an event which cannot be recreated because of rework, design change, etc.

Observation #2: (Response: Hatfield Electric Company)

Hatfield has not performed an evaluation of QA/QC Memorandum #295 for its potential effect in the reinspection program.

Discussion:

Hatfield Electric Company QA/QC Memorandum #295 dated 9/17/82 states that an acceptable weld inspection of cable pan or conduit hangers implies verification of the correct connection detail. This manner of acceptance occurred when the cable pan or conduit hanger inspection could not verify the detail due to the presence of fireproofing. Due to the fact that the reinspection program requires re-creation of the original inspection, a determination must be made as to what type of inspection, either weld or hanger inspection, originally included the connection detail. After this determination is made, the connection detail can be included as an element of the proper type of reinspection.

Observation #3: (Response: PTL)

Pittsburgh Testing Laboratory is not reinspecting each individual inspection performed during the inspector's first three (3) months, where accessible. Closed 9/1/83

Discussion:

For inspectors certified in several disciplines within the three month time frame, only those inspections in the area of the original certification during the first 90 calendar days were reinspected as opposed to "each individual inspection performed during the inspector's first three months" as cited in the Stiede-Keppler letter dated February 23, 1983. An example of this situation would be if an inspector was originally certified in one type of inspection and later certified in a second type of inspection, the first certification was reinspected. The second type of inspection was not reinspected even though certification and inspections within that area may have taken place during the inspector's initial 90 days.

Observation #4: (Response: PAP)

The status of rejected reinspection items is not determinable. Closed 10/31/83

Discussion:

The reinspection sample record does not note the FIS report number which is used to disposition nonconforming installations. Without this information supplied, the status of the open items could not be determined by PAP at the time of the audit nor could the auditor assure a discrepancy report had been initiated for those items.

Observation #5:

For some inspectors, the number of items reinspected, though in agreement with the Stiede-Keppler letter, do not provide an adequate sample size.

Discussion: Observation #5 Part A (Hunter Corporation) Closed 8/31/83

Commonwealth Edison's Project Construction Department verbally directed all contractors, with the exception of PTL/Peabody, to provide a minimum sample size of fifty (50) items.

Of the five (5) Level II QC inspectors reviewed during the audit, three (3): P. Pepitone, S. Kilpatrick, and J. Ooten, didn't have the minimum of fifty (50) items reinspected. Closed 10/21/83

Discussion: Observation #5 Part B (NISCO)

Commonwealth Edison's Project Department verbally directed all contractors with the exception of PTL/Peabody to provide a minimum sample size of fifty (50) attributes. Closed 10/11/83

The following inspectors were reinspected for less than 50 inspections:

R. Schultz	16 Inspections
M. Weir	39 Inspections
T. J. Priutt	30 Inspections

The number of items per inspection cannot be determined from information provided.

Observation #6: (Response: Blount Brothers Corporation)

One inspector chosen for the reinspection program was not reviewed in all areas of inspection activity during his first three (3) months of certification. Closed 10/14/83

Discussion:

R. H. Bay had performed masonry inspections during his first 90 days of certification at Blount Brothers Corporation; these have not been reinspected.

Observation #7: (Response: PAP)

Six (6) months as opposed to three (3) months of an inspector's work was reinspected in the original sample. Closed 10/31/83

Discussion:

Because of a misunderstanding, PAP considered the six month time period to be the original sample; failure to meet the acceptable quality level after this time frame, resulted in an additional 90 days of reinspection rather than the entire remainder of an inspector's work as specified in the Stiede-Keppler letter.

Observation #8: (Response: Hatfield Electric Company)

Hatfield Electric could not determine if a portion of the conduit inspection is subject to the reinspection program.

Discussion:

Torque checks in the conduit area were determined to be non-reproducable inspections; dispite this, bolt counts were taken during reinspection. The bolt count was included in the original conduit inspection to determine the proper number of torque checks to perform. Differences in bolt counts between the original inspection and the reinspection are being entered as rejectable items in the reinspection program. These items are remaining open due to confusion on how to disposition them. Hatfield Electric Company needs to determine if bolt counts should be a part of the reinspection program and, if so, how to resolve these items.

Items Dispositioned during the Audit

During the audit, several items were identified which were dispositioned prior to or at the exit meetings. Because these items no longer exist at the time this report is being written, they are not considered deficient.

During the audit, it was noted that the population of Pittsburgh Testing Laboratory inspectors changed due to factors such as inaccessibility and the minimum number of required inspections. It was also noted that it could not be determined which inspectors were replaced and for what reasons they were replaced. Before the exit meeting, a list of Level I and Level II initial and subsequent inspectors selected was provided. The list developed included inspector's level of capability and reasons for all inspector's chosen. Due to the acceptability of the PTL inspector list provided, this item requires no response.

Additionally, it was noted that the status of PTL reinspection reports to be submitted for third party evaluation was difficult to determine. Before the exit meeting, PTL provided a form which included the steps necessary to procure reinspection reports. The PTL form is acceptable.

Powers-Azco-Pope's inspectors were included in the reinspection program only if their certification date fell before March 1982. PAP's new certification procedure was accepted in July, 1982. R. Sutherland was PAP's only QC inspector certified between March and July. His qualification package was reviewed by C.E.Co. QA on Surveillance #4624 dated 5/25/83; it was acceptable to current criteria.

As a result of the audit, it was determined that Hatfield Electric Company QA was not aware of the proper number of additional inspectors to include in the reinspection program. Per the Stiede-Keppler letter, when a failure in the reinspection program occurs, the population of additional inspectors should equal 50% of the initial number of inspectors chosen to be reinspected. Due to the fact that the results of the reinspection program have not yet been analyzed, no additional inspectors have been selected. Prior to the selection of additional inspectors, C.E.Co. PCD will provide Hatfield Electric Company with the proper number of inspectors to include.

Also identified, two of Hatfield Electric Company's reinspection inspectors did not meet the experience/education requirement at the time of certification. Hatfield Electric Company failed to verify high school education or its equivalency for D. Moehling and D. McCarty. This item was identified and followed by C.E.Co. QA Surveillance #4750. Their certifications were revoked prior to any inspections being performed. Presently, McCarty has his high school diploma on file and Moehling a copy of his GED. Both individuals have been recertified.

At the time of the audit, C.E.Co. Site QA has not completed review and verification of all qualifications of those QC inspectors performing reinspections. This item was previously identified and being followed by Finding #4 on General Office QA Audit of Byron Station Construction, June 1983. Review of these qualification packages is currently underway. If any deficiencies are noted, these will be tracked on the surveillance documenting the review.

Problems with Blount Brothers Corporation not properly documenting all facets of their certification program for their reinspection inspectors are documented on Byron Site QA Surveillance #4699. Resolution of these problems will be through this mechanism.

Summary and Assessment, Byron Reinspection Program Audit

The audit team found that all contractors involved are in the process of implementing the reinspection program described in the Stiede-Keppler letter dated February 23, 1983. The audit team also found that in some cases clarification is needed to provide the reinspection program with continuity. It is suggested that all clarifications and directions required be put in writing. The audit team found that in the past, verbal direction had resulted in differences in interpretation and implementation of the Stiede-Keppler letter. In order for C.E.Co. Project Construction to perform a meaningful analysis of the program results, differences in implementation should be eliminated.

As a result of this audit, a total of one (1) finding and eight (8) observations were identified. The only potential QA program violation identified was the finding which concerned identification of non-conforming conditions. The audit team felt that this finding resulted from difficulties incurred when attempting to combine a special program with the contractor's regular program. This finding applied to four of the seven contractors audited. The observations identified in this report were, for the most part, the result of different interpretations of the Stiede-Keppler letter. These differences resulted in discrepancies in such areas as sample size, both initial and expanded, of inspectors and inspections to be reinspected. Another example of a difference in interpretation is the application of the term "inaccessible" to items which do not fit the description of "inaccessible" offered in the Stiede-Keppler letter.

Because the audit occurred while the reinspection program was in progress, the results of the program could not be analyzed. The audit team felt that this situation provides an advantage as it will provide Project Construction with a list of items that could, if not resolved, impact the analysis of the results of the program. This fact is evidenced by the number of items resolved both during the audit and at the exit meeting. Resolution of the finding and observations identified in this report should provide the reinspection program with sufficient clarity and continuity to enable Project Construction to identify the adequacy of the contractor's past QC inspector certification programs. The reinspection program is expected to be complete in September of 1983. The audit team hopes that this audit will assist Project Construction in fulfilling the commitments made in the Stiede-Keppler letter.

Address Reply Post Office Box 7
Chicago Illinois 60690

Attachment, Audit 6-83-66

February 23, 1983

Mr. James G. Keppler, Regional Administrator
Directorate of Inspection and
Enforcement - Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: Byron Station Units 1 and 2
I & E Inspection Report Nos.
50-454/82-05 and 50-455/82-04

References (a): June 24, 1982 letter from C.E. Norelius to Cordell Reed

(b): July 30, 1982 letter from W.L. Stiede to J.G. Keppler

(c): September 22, 1982 letter from C.E. Norelius to Cordell Reed

(d): November 5, 1982 letter from W.L. Stiede to J.G. Keppler

Dear Mr. Keppler:

This letter provides a revised response to an item of noncompliance at Byron Station which was identified as violation 2 in reference (a). In references (b) and (d) we proposed actions to be taken to provide additional assurance that contractor quality control inspectors were properly trained and qualified or to assure that their inspections were valid. This letter documents an alternate plan which supercedes in part the previously proposed programs. We believe this plan will satisfy NRC concerns presented in references (a) and (c) and clarified in discussions with Region III personnel.

During the subject inspection the NRC found that the contractor programs for qualifying Q.A./Q.C. personnel at Byron were inconsistent with their interpretation of the requirements of ANSI N45.2.6-1978. Specifically, they found deficiencies in our contractor's evaluations of initial inspector capabilities, in documentation of initial certification, and in the criteria used to establish inspector qualification. The NRC did not find that these deficiences had compromised the quality of plant construction. In issuing a violation, however, they made it clear that the qualification programs were to be upgraded and the quality of work completed was to be verified in some manner.

Before explaining the program which we propose to implement in verifying the quality of the work completed, it is appropriate that we describe the history of changes made to the inspector qualification practices at Byron. This will demonstrate that we have always required qualified inspectors and that the contractor programs for inspector certification have been upgraded over the years to address the changing interpretation of the applicable industry standards.

Certification Practices

ANSI N45.2.6 is the standard applicable in establishing qualification programs for nuclear power plant Q.A./Q.C. personnel. Since its inception in the early 1970's the interpretation of acceptable application of this standard has evolved throughout the industry and at Byron.

From 1974 to 1977 our contractors were required to develop quality assurance programs and procedures for certification of inspectors which were directed toward their specific contractual scope of work. The certification programs depended on training and experience as the primary basis for qualification in accordance with the intent of ANSI N45.2.6-1973. To assure that the installations and inspections performed by the various contractor organizations were acceptable, the work was checked by reinspections and surveillances conducted by an on-site independent testing contractor directed by the Commonwealth Edison Quality Assurance Department and by technical audits and surveillances performed by Commonwealth Edison Quality Assurance personnel.

In 1979 and 1980 the contractors' programs and procedures for certification of inspectors were revised to address NRC concerns raised in a 1979 inspection. The procedures were made more specific with regard to the basis for qualification and certification of inspectors; yet they remained directed toward the various activities associated with the contractor's specific scope of work. The work continued to be checked by the independent testing contractor's reinspections and surveillances and the Quality Assurance Department's technical audits and surveillances. In early 1980 an audit was performed of the records of all inspectors who were then certified to assure that their training, qualification and certification activities and records conformed to the augumented requirements established after the 1979 NRC inspection. The NRC reviewed the results of this audit and the implementation of the augumented requirements and closed the deficiency identified in the 1979 inspection. We believed that our inspector qualification activities were acceptable according to the interpretation of ANSI N45.2.6 which was being applied at that time.

In 1982 the NRC has again reviewed the programs for qualification and certification of contractor inspectors at Byron. They found that uniform criteria had not been established for qualification of inspectors of various contractors that chose to develop alternate parameters and limitations.

N45.2.6 specifically states that the parameters contained there are recommended and that alternate means are acceptable. The standard provides no guidance on development of the alternate parameters and limitations so the contractors each developed these differently. The procedures and methodologies set forth by the various contractors have been reviewed, approved and audited for compliance by Commonwealth Edison. They all conform to ANSI N45.2.6-1978. As a result of various other inspection and audit results we are confident that the inspections were and are being performed in an acceptable manner.

To address the inspector's concern, however, minimum parameters and limitations were established in April 1982 to institute a common basis for inspector certification requirements for the various contractors. With input from NRC inspectors these requirements were further enhanced and reissued to the contractors on June 9, 1982. The applicable site contractors' procedures for qualification and certification of inspectors were revised between July and September 1982 to incorporate these new requirements.

To summarize, our contractors' inspector qualification and certification activities have been upgraded to remain consistent with the changing interpretation of acceptable application of ANSI N45.2.6. The certification upgrading activities do not imply deficiencies in work previously inspected. This conclusion has been verified through overcheck inspections, audits, and surveillances.

Proposed Corrective Action

In responding to Violation 2 in reference (b) we established a program for assuring that all current inspectors are certified to upgraded requirements established in new contractor procedures. That program is not changed by this letter.

A new plan has been developed to address the NRC's concerns regarding work performed by inspectors no longer on site or inspectors who cannot presently be shown to have been qualified. Details of this plan are provided in Attachment A to this letter. Generally, we are proposing various reinspections which verify the adequacy of past QC inspector training/certification practices employed at Byron. For each site contractor we have delineated the manner in which construction quality would be reverified through reinspection of representative portions of the accessible work. In some cases reinspections which would accomplish this goal have been completed or are in progress. For other contractors new inspection programs are described here. We have delineated the scope of reinspections to be performed and the acceptance criteria which would be utilized. Schedules for this work have not yet been set. In the few cases where all of a contractor's work is inaccessible for reinspection we have highlighted the oversight inspections and testing which provide addition assurance of quality.

We understand that NRC concurrence in these corrective actions is necessary to close out this noncompliance. We also understand that the NRC may wish to identify up to three additional inspectors of each contractor's work to be checked. The reinspection program would be conducted most efficiently if these additional names were known at the outset of our records review. Please contact Tom Tramm with these names as soon as possible and no later than March 1, 1983.

Please contact me if additional information is needed.

Very truly yours,

W. L. Stiede

W. L. Stiede
Assistant Vice-President

TRT/lm

Attachment

6029N

BYRON SITE QA SURVEILLANCE

AUDIT CLOSE OUT

QG: 53.4

Report No. 5189 AUDIT No. 6-83-66 Date 10/12/83

Contractor/Organization: Hunter Corp.

FINDING #1: PART "A"

Contrary to 10CFR50-B, Criterion XV, certain contractors were not taking appropriate measures to identify, document, segregate, disposition, and notify affected organizations of nonconforming items identified under the reinspection program.

DISCUSSION:

During the reinspection program, nonconforming conditions were identified which did not result in discrepancy reports being initiated. Problems with component support 2FP12016 were documented on Field Problem Sheet #FP109F rather than on a discrepancy report. No DR was issued for rejectable items associated with component support 2FP14056X because Hardware Removal Report #1380 has been initiated due to W ECN 52901 dated 6/22/83. The reinspection for 2FP14056X was prior to the issuance of the ECN. The following mechanical joints failed to meet the specified torque of 70% of the initial value when reinspected: SSX 100-23 MJ177, SSX 100-23 MJ178, SAB 100-43 MJ23, SDO 100-34 MJ49: these joints were retorqued by production immediately following inspection. No DR's were issued to document this.

Hunter Reponse Dated: 9/1/83

In relation to 2FP12016, at the time support was initially reviewed by Quality Control, it was suspected that the support was installed outside of tolerances. Our Engineering Department was querried about the condition, and unknown to Qualty Control, the Engineering Department initiated a Field Problem which resulted in the ECN. At that point in time, Quality Contol was just beginning reinspection and the scenario for handling this type of problem may not have been finalized. DR number QC-2FP12-001 was initiated on 7/11/83 to resolve problems associated with this support. In relation to 2FP14056, reinspection was performed 6/7/83 and 6/8/83. The reinspection resulted in generation of Field Problem AB37580, S&L ECN 8233, and DR no. QC-2FP14-004. Hardware Removal Number 1380 and W ECN 52901 are associated with hanger number 1PS190001 not 2FP14056.

In relation to the mechanical joints, data has been turned over to PCD for evaluation of the phenomena associated with this problem. The evaluation will determine a course of action to be taken.

ACTION TO PREVENT RECURRENCE:

None required. Reinspection is completed.

Attachment F

(1228S)

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:

Due to the isolated nature of the cited problem and actions taken since the actual time of the problem, we consider ourselves to be in compliance at this time.

FOLLOW-UP:

10/12/83 - Reviewed Hunter Corp. discrepancy report QC-2FP12-001 (Attached) and QC 2FP14-004. Hunter Corp. discrepancy Report QC-2FP12-001 is associated with component support 2FP12016. Hunter Corp. discrepancy report QC-2FP12-004 is associated with component support 2FP14056X. Hunter Corp. has received direction from CECo. PCD which enables them to consider bolt torque inspections as inaccessible. See attached Hunter Corp. inquiry dated 9/15/83 and S&L letter dated 9/14/83.

This surveillance is closed.

This closes Part "A" Finding #1 of Audit 6-83-66.

Prepared by _____ Date 10/13/83

Approved by _____ Date 10/13/83

AJR:tj:1228S
Attachments
cc: ~~W.J. Shewski/J.S. Bitel~~ 10-14-83 JS Bitel 10/27/83
Q.A. Supt./File
Contractor
Q.A. Audit Staff Jesg.
PCD Supt.
Project Manager
AJR

DISCREPANCY REPORT

NRC HUNTER CORPORATION

DR QC-2FP12-0031 INITIATED AT INSPECTION TYP Preinstallation CC Inc. ZH

DRAWING NO. 2FP12 016 R REV 1A REWORK DRAWING NO. _____ REV. _____

PROCESS SHEET NO. _____ REV. _____ LINE NO OFPK 28B-4"

☑ HARDWARE ☑ DOCUMENTATION AREA Aux Bldg 4, 6'-6" south of (24) & (N) Elev 66'

Q.A. USE ONLY	DISCREPANCY	SKETCH ON BACK
	Case C	
	Upon reinspection it was found that item #3 a fig 66 attachment was 2¼" offset from center of embed plate to the north. CCO shows 1½" thus is beyond MSA tolerance originally inspected and accepted by QC Wit T. Kelly on 4/12/21 and reinspected by QC Wit S. Riprode and QC Wit G. Inboden on 6/3/83 and found to be rejected	
	Hold tag 2-1316 applied by Gary Inboden QC WI Date 7/5/83	

DISCREPANCY REPORTED BY Gary K. Inboden QC WI DATE 7/5/83 PROD. ☐ ENG. ☐ QA/QC ☐

RESOLUTION

DR referred to M Ferris to prepare an NR

Closed

DISCREPANCY RESOLVED BY _____ DATE _____

QA APPROVAL OF RESOLUTION _____ DATE _____

☐ PRODUCTION
☐ ENGINEERING
☐ QA/QC
☐ MATERIAL CONTROL

WHITE - QA CANARY - RESOLUTION PINK - QC GREEN - FILE

FORM HC-144 R/3 1/20/81

Pg 1 of 2

DISCREPANCY REPORT

HUNTER CORPORATION

DR QC-2FP14-004 INITIATED AT INSPECTION TYPE VERIFICATION CC NRC REINSPECTION

DRAWING NO. 2FP1405BX REV. 0/C REWORK DRAWING NO. N/A REV. N/A

PROCESS SHEET NO. N/A REV. N/A LINE NO. QFP21A-10

☑ HARDWARE ☐ DOCUMENTATION AREA 21+Q ELEV. 435'-8" AUX BLDG.

Q.A. USE ONLY	DISCREPANCY	SKETCH ON BACK

DURING NRC REINSPECTION OF THIS HANGER THE FOLLOWING DISCREPANCIES WERE NOTED: (INSPECTED BY T KELLEY #1130 ON 4-20-81)

: THE PIPE CLAMP IS IMPROPERLY TIGHTENED AND THE SPACER IS LOOSE.

: ONE OF THE SNAP RINGS ON THE LOAD PIN IN THE REAR BRACKET IS BROKEN

: Per the CCD ELEVATION OF THE PIPE SHOULD BE 435'8" – IT IS 435'-7 3/8 ACTUAL.

: ITEM #2 IS M4x13x10 5/8" STEEL IT IS SPEC'D AS W 4x13x10 3/16"

: FW-1 IS NOT INSTALLED PER CCD THE LOCATION OF THE WELDS HAS BEEN CHANGED FROM FROM TOP AND BOTTOM TO BOTH SIDES

DISCREPANCY REPORTED BY SEE PAGE #2 DATE 7-2-83 PROD ☐ ENG ☐ QA/QC ☑

RESOLUTION

DR referred to Gilsonite Eng 7-11-83

DISCREPANCY RESOLVED BY _____ DATE _____

QA APPROVAL OF RESOLUTION _____ DATE _____

☐ PRODUCTION
☐ ENGINEERING
☐ QA/QC
☐ MATERIAL CONTROL

WHITE - QA CANARY - RESOLUTION PINK - QC GREEN - FILE

FORM HC-144 R/3 1/20 81

2 of 2

DISCREPANCY REPORT

HUNTER CORPORATION

DR QC-2FP14-004 INITIATED AT INSPECTION TYPE Verification CC: NRC Inspection

ING NO 2FP14056X REV 0/C REWORK DRAWING NO N/A REV N/A

PROCESS SHEET NO N/A REV N/A LINE NO OFP210'-10"

☑ HARDWARE ☐ DOCUMENTATION AREA SEE PAGE # 1

Q.A. USE ONLY	DISCREPANCY	SKETCH ON BACK
	NO AS-BUILT USING M919 TOLERANCES HAS BEEN FOUND ON ANY OF THESE ITEMS.	
	ALSO- THE NON-NF WELDS ON ITEM # 2 ARE BADLY UNDERCUT (1/4" WIDE & IN EXCESS OF 1/32" DEEP THE LENGTH OF THE WELDS). THE WELD ON THE INSIDE OF THE TOP FLANGE OF ITEM # 2 ON THE S.E. SIDE HAS BEEN REACHED BY SOL TO HAVE A 1 3/4" LONG CRACK IN IT HUNTER QC DOCUMENTS	
	THERE IS ALSO EXCESS GRINDING ON THE IN PLACE STEEL IN EXCESS OF 1/32" -	
	Verified by G. Inboden - C Hemander & CME - CLASS 'C'	
	HOLD TAG # 2-1321 APPLIED BY CAW DATE 7-8-83	

DISCREPANCY REPORTED BY Ca[illegible] QCM II DATE 7-8-83 PROD ☐ ENG ☐ QA/QC ☑

RESOLUTION

DISCREPANCY RESOLVED BY _____ DATE _____

QA APPROVAL OF RESOLUTION _____ DATE _____

☐ PRODUCTION
☐ ENGINEERING
☐ QA/QC
☐ MATERIAL CONTROL

WHITE - QA CANARY - RESOLUTION PINK - QC GREEN - FILE

HUNTER CORPORATION

3800 - 179TH STREET. HAMMOND. INDIANA 46323. (219) 845-8000 (312) 731-8000

Reinspection Interpretation # 16 RB Clarke 9-15-83 page 1 of 2

September 15, 1983

Commonwealth Edison Company
4450 North German Church Road
Byron, Illinois 61010

Attention: Mr. R. Tuetken
Assistant Superintendent
Project Construction Dept.

Subject: NRC Reinspection Program, Piping System Bolt Torque Relaxation.

Mr. Tuetken:

In your opinion does the attribute of piping system bolt torque (as it applies to the NRC Reinspection Program) fall within the definition of inaccessible?

Yours very truly,

Lee E. Hadick

LEE E. HADICK
Quality Control Supervisor

R. Tuetken date 9/15/83

☒ Yes ☒ No
checked no in error R. Tuetken 9/15/83

R. Tuetken

See Attached S&L letter on flange bolt relaxation dated Sept. 14, 1983

R. Tuetken 9/15/83

cc: M. L. Somsag
K. Selman
file

LEH/pb

SARGENT & LUNDY
ENGINEERS
FOUNDED 1891
55 EAST MONROE STREET
CHICAGO, ILLINOIS 60603
(312) 269-2000

Pg 2 of 2

September 14, 1983
Project Nos. 4391/4392-00

Commonwealth Edison Company
Byron Station - Units 1 & 2

Flange Bolt Torque Relaxation

Mr. G. Sorensen
Commonwealth Edison Company
Byron Station
P. O. Box B
Byron, Illinois 61010

Dear Mr. Sorensen:

At the request of Mr. R. P. Tuetken, we have reviewed the subject of flange bolt torque relaxation and determined that all flange bolts will experience some degree of torque relaxation. The two mechanisms responsible for bolt torque relaxation are flange bolt relaxation and flange gasket creep and relaxation.

Flange bolt relaxation normally results from piping system operation (pressure and temperature effects) and operating transients. Flange gasket creep and relaxation normally occur immediately following flange bolt torquing. Flange gasket relaxation may also result from plant construction activities and system start-up testing. Even though the phenomena of flange bolt torque relaxation is understood, it is not possible to accurately predict the level of total bolt torque relaxation.

In summary, flange bolt torque values will relax over time. This will result in lower final bolt torque values than initially applied. If you have any additional questions on this subject, please call me.

Yours very truly,

Dennis Demoss

Dennis Demoss
Mechanical Engineer

DD:cl
Copies:
J. T. Westermeier
R. Cosaro
M. Lohmann
R. P. Tuetken
D. L. Leone/W. C. Cleff
B. G. Treece
R. J. Netzel
D. A. Gallagher

Quality Assurance
Byron File
QF_____

HUNTER CORPORATION

3800 - 179TH STREET, HAMMOND, INDIANA 46323, (219) 845-8000 (312) 731-8000

HC-QA-412

September 1, 1983

Commonwealth Edison Company
4450 North German Church Road
Byron, Illinois 61010

Attention: Construction Quality Assurance
Mr. A.J. Rosenbach
Lead Auditor

Subject: Expanded Hunter Corporation response to your organizations report of Audit 6-83-66.

References (1) Hunter Corporation letter number HC-QA-402 (which is superceeded by this correspondence)
(2) CECo letter number BY 9628

Mr. Rosenbach:

I apologize for the failure to provide a response to observation 5 in letter number HC-QA-402. The responses for Finding 1 and Observation 1 are reiterated in this correspondence along with the response for Observation 5.

CECo Finding #1:

Contrary to 10CFR50 Appendix B, Criterion XV, certain contractors were not taking appropriate measures to identify, document, segregate, disposition, and notify affected organizations of nonconforming items identified under the reinspection program.

Discussion Part A:

During the reinspection program, nonconforming conditions were identified which did not result in discrepancy reports being initiated. Problems with component support 2FP12016 were documented on Field Problem Sheet #FP109F rather than on a discrepancy report. No DR was issued for rejectable items associated with component support 2FP14056X because Hardware Removal Report #1380 has been initiated due to W ECN 52901 dated 6/22/83. The reinspection for 2FP14056X was prior to the issuance of the ECN. The following mechanical joints failed to meet the specified torque of 70% of the initial value when reinspected: SSX 100-23 MJ177, SSX 100-23 MJ178, SAB 100-43 MJ23, SDO-100-34 MJ49; these joints were retorqued by production immediately following inspection. No DR's were issued to document this.

ter Corporation Response:

Corrective Action Taken and Results Achieved:

In relation to 2FP12016, at the time support was initially reviewed by Quality Control, it was suspected that the support was installed outside of tolerances. Our Engineering Department was querried about the condition, and unknown to Quality Control, the Engineering Department initiated a Field Problem which resulted in the ECN. At that point in time, Quality Control was just beginning reinspection and the scenario for handling this type of problem may not have been finalized. DR number QC-2FP12-001 was initiated on 7-11-83 to resolve problems associated with this support. In relation to 2FP14056, reinspection was performed 6-7-83 and 6-8-83. The reinspection resulted in generation of Field Problem A837580, S&L ECN 8233, and DR no. QC-2FP14-004. Hardware Removal Number 1380 and W ECN 52901 are associated with hanger number 1PS190001 not 2FP14056.

In relation to the mechanical joints, data has been turned over to PCD for evaluation of the phenomena associated with this problem. The evaluation will determine a course of action to be taken.

Action Taken To Prevent Recurrence:

None required. Reinspection is completed.

e When Full Compliance Will Be Achieved:

Due to the isolated nature of the cited problem and actions taken since the actual time of the problem, we consider ourselves to be in compliance at this time.

CECo OBSERVATION #1:

Application of the term "inaccessible" to those items which receive multiple inspections does not correspond directly to the definition of "inaccessible" offered in the Stiede-Keppler letter dated February 23, 1983.

DISCUSSION:

According to the Stiede-Keppler letter, "Inaccessible shall be defined as: condition where dismantling would be required to gain access, or condition where process was an event which can not be recreated."

When inspections of the same type occur after that inspection to be sampled in the reinspection program, the item of the original inspection is labeled by Hunter as inaccessible. For example, it a Type 3 inspection is performed in January, 1980 and a subsequent Type 3 performed in May, 1982, the one in 1980 is termed inaccessible. This is done without research to determine if the later inspection occurred as a result of rework etc. thus making the original inspection unrecreateable.

nter Corporation Response:

Corrective Action Taken and Results Achieved:

None required. This approach was in accordance with Reinspection Interpretation #2, a copy of which is attached to this response.

Action Taken to Prevent Recurrence:

N/A

Date When Full Compliance Will Be Achieved:

N/A

CECo Observation #5:

For some inspectors, the number of items reinspected, though in agreement with the Stiede-Keppler letter, do not provide an adequate sample size.

Discussion: Observation #5 Part A

Commonwealth Edison's Project Construction Department verbally directed all contractors, with the exception of PTL/Peabody, to provide a minimum sample size of fifty (50) items.

Of the five (5) Level II QC inspectors reviewed during the audit, three (3): P. Pepitone, S. Kilpatrick, and J. Ooten, didn't have the minimum of fifty (50) items reinspected.

Hunter Corporation Response:

Corrective Action Taken and Results Achieved:

Mr. Pepitone's data base was expanded to include his full term of employment as an inspector with Hunter Corporation. This resulted in reinspection of 51 of his inspections. In relation to Mr. Ooten and Mr. Kilpatrick, an inquiry was made to your organizations Quality Control Supervisor (Mr. R.B. Klingler) to obtain a disposition of their cases. A copy is included as Attachment 1.

Action Taken to Prevent Recurrence:

None required. Reinspection is completed.

Date When Full Compliance Will Be Achieved:

We are in full compliance at this time.

If you have any questions or comments, please contact me.

Sincerely yours,

HUNTER CORPORATION

M.L. Somsag
Quality Assurance Supervisor

cc: K.R. Selman
B. Krasawski
L. Hadick
M.L. Somsag
CECo Audit 6-83-66

jm

ATTACHMENT 1 TO HC-QA-412

HUNTER CORPORATION

3800 - 179TH STREET, HAMMOND INDIANA 46323 (219) 845-8000 (312) 731-8000

HC-QA-411

September 1, 1983

cc: R. Klingler
K.R. Selman
L. Hadick
M.L. Somsag
Original to NRC
Reinspection File

Commonwealth Edison Company
4450 North German Church Road
Byron, Illinois 61010

Attention: Project Construction Department
Mr. R. B. Klingler
Quality Control Supervisor

Subject: NRC Reinspection Program

Mr. Klingler:

In completing our reports for the subject activity it has been identified that we could not attain the minimum of 50 reinspections each for 3 individuals (R. Sturgess, J. Ooten and S. Kilpatrick). The quantities of reinspections that could be performed for each individual are listed below.

R Sturgess	(#9208)	19
. oten	(#1211)	28
S. Kilpatrick	(#1354)	30

In attempting to comply with the minimum of 50 reinspections for each of the 3 individuals, we expanded the 90 day time frame of each individual to their full term of employment as an inspector. As a result of these circumstances, I present the following inquiry.

Is it necessary to expand the inspector population or will it be acceptable to let the record stand as is.

Please indicate your response in the area provided.

Sincerely yours,

HUNTER CORPORATION

M.L. Somsag
Quality Assurance Supervisor

CECo Response

☐ Expand Inspector population.
☒ Record may stand as is.

R.B. Klingler
CECo Q.C. Supervisor

Date 9-1-83

jm

BYRON SITE QA SURVEILLANCE

AUDIT CLOSE OUT QG: 53.4

Report No. 5202R1 AUDIT No. 6-83-66 Date 10-13-83

Contractor/Organization: Hatfield Electric Co.

FINDING #1: (PART B)

Contrary to 10CFR50 Appendix B, Criterion XV, certain contractors were not taking appropriate measures to identify, document, segregate, disposition, and notify affected organizations of nonconforming items identified under the reinspection program.

DISCUSSION:

During the reinspection program, nonconforming conditions were identified which did not result in discrepancy reports being initiated. Field problem sheets were being implemented to resolve reinspection items in the conduit and terminations area. The field problem sheet is not proceduralized.

Hatfield Response Dated 8/04/83

CORRECTIVE ACTION:

Field problem sheets were generated for conduit items which could easily be corrected by the area foreman in a short time period. Some items were corrected immediately, the balance is being checked for completion. All field problem sheets are filed to verify that all corrections were made. Field problem sheets were generated to C.E.Co. OAD to find out if they had made a change to the wiring diagram as the items in question were turned over to the owner.

NCR #674 was written to correct this problem.

ACTION TO PREVENT RECURRENCE:

Instruct inspectors not to use field problem sheets.

FOLLOW-UP: 10/13/83

HECo. NCR #674 was written to disposition the deficient items discovered during termination inspections. This NCR was closed 8/22/83 (See attached).

Discrepancies which had been identified on field problem sheets were included in the results of the reinspection program as submitted to CECo. PCD. A review of the reinspection program reports submitted for E.A. Durras, J. Buchanan, K. Cripps, E. Getzelman, H. Holze and F. Keep revealed field problem sheets to be included. The inclusion of field problem sheets with the reinspection program reports enabled CECo. PCD to make a determination concerning the acceptability of inspections which resulted in field problem sheets being generated. This appears to be an isolated case which has been adequately resolved.

This surveillance is closed.

This closes the Hatfield portion of Finding #1 Audit 6-83-66.

Prepared by [signature] Date 10/26/83

Approved by [signature] Date 10-27-83

AJR:jc:1237S

cc: ~~W.J. Shewski/J.S. Bitel~~
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
AJR

13.CO.05

Form [illegible]
Rev. No. 2
Date 10-9-82

NONCONFORMANCE REPORT

REPORT Nº 674

HOLD TAG No. 674

Material: Vendor N/A P.O. No. N/A MRR No. N/A MSR No. N/A

Equipment: Drawing 1-4665A Rev. G Elevation 383 Columns 15 & N

Equipment Description 1AP22E Compt. A1

Nonconformance: The wrong agastat was installed in compT A1 drawing calls for a 7022AC, but OAD furnished a 7012AC which was installed.

Observed By: [signature] Date: 8-4-83

HECO Q. A. Manager: [signature] Date: 8-4-83

II. Corrective Action: N/A Equipment installed was temporary. OAD had processed RPR #555 to obtain the correct agastat relay.

Action to Prevent Recurrance: N/A

RECEIVED
AUG 15 1983
HATFIELD ELECTRIC COMPANY
REF

Work: May Not Proceed (May Proceed) May Proceed With The Following Restrictions:

REFERENCE ONLY

Approved by CECO PCD: [signature] Date: 8/8/83 ✓

CECO NCR No. N/A CECO Hold Tag No. N/A

Concurred By CECO Q. A.: [signature] Date: 8-8-83 ✓

III. Corrective Action Completion Verified By: N/A Date 8-22-83

Action To Prevent Recurrence Completed Verified By: N/A Date: 8-22-83

Hold Tag Removed By: [signature] Date 8-22-83

NCR Close-out Reviewed By: [signature] Date: 8-22-83
(Level II or Higher)

BYRON SITE QA SURVEILLANCE

AUDIT CLOSE OUT F/E 03 QF: QG 53.4

Report No. 4939 AUDIT No. 6-83-66 Date 08/26/83

Contractor/Organization: Pittsburgh Testing Laboratories

FINDING #1:

Contrary to 10CFR50-B, Criterion XV, certain contractors were not taking appropriate measures to identify, document, segregate, disposition and notify affected organizations of nonconforming items identified under the reinspection program.

DISCUSSION:

At the time of the audit, PTL had not yet transmitted open inspection reports generated because of the reinspection program to the appropriate contractors. Therefore, no corrective action has been taken for the apparently nonconforming conditions.

PTL Response:

Corrective Action Taken:

PTL will transmit reports with nonconforming conditions to the respective contractors through the normal transmittal system.

Action to Prevent Recurrence:

PTL was working on the premise that reports with nonconforming conditions would be reported to the contractors upon full completion of the reinspection program. PTL has since been advised to transmit nonconforming reports upon concurrence with Mr. M. Provenzano, S&L Representative. As this appears to be an isolated incident, no further action is necessary.

Date of Full Compliance: August 8, 1983

FOLLOW-UP ACTION:

PTL has started transmitting rejectable reports to BBC. The first transmittal was #18479 dated 7/1/83. The latest was #18828 Dated 8/19/83. This process is ongoing. This was determined by reviewing PTL transmittal log and transmittal.

Attachment H

(1040S)

OBSERVATION #3: (response PTL)

PTL is not reinspecting each individual inspection performed during the inspector's first three (3) months, where accessbile.

DISCUSSION:

For inspectors certified in several disciplines within the three month time frame, only those inspections in the area of the original certification during the first 90 calendar days were reinspected as opposed to "each individual inspection performed during the inspector's first three months" as cited in the Stiede-Keppler letter dated February 23, 1983. An example of this situation would be if an inspector was originally certified in one type of inspection and later certified in a second type of inspection, the first certification was reinspected. The second type of inspection was not reinspected even though certification and inspections within that area may have taken place during the inspector's initial 90 days.

PTL is not reinspecting each individual inspection performed during the inspector's first three (3) months, where accessible.

Corrective Action Taken:

PTL is now reinspecting each individual inspection performed during the inspector's first three (3) months, as directed by Commonwealth Edison via the Stiede-Kepplor letter 2/23/83.

Action to Prevent Recurrence:

A complete review of selected inspectors certification package to determine what discipline(s) those individuals were certified in during initial three (3) month period.

Date of Full Compliance: August 8, 1983

Observation #3:

The only inspector who had two (2) different certifications and was chosen for the reinspection program was S. Cushman. This was researched by M. Tallent, PTL Site Manager and D. Smith, Unit Concept Supervisor. The type inspection reinspected was visual weld inspection. The certification which also occured during Cushman's first 90 days was concerte expansion anchor installation. Concrete expansion anchor torque checks were inspected by Cushman, due to relaxation torque checks are nonreproducable.

This surveillance is closed.

This closes the PTL portion of Finding #1 and Observation #3 of Audit #6-83-66.

Prepared by R. Wyatt for A.J. Rosenbach Date 8/30/83

Approved by K.J. Dansing Date 8.30.83

AJR:tj:1040S

8-31-83

cc: ~~W.J. Shewski~~/J.S. Bitel
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
AJR

BYRON SITE QA SURVEILLANCE

AUDIT CLOSE OUT QG: 53.4

Report No. 5188 AUDIT No. 6-83-66 Date 10/12/83

Contractor/Organization: Hunter Corp.

OBSERVATION #1:

Application of the term "inaccessible" to those items which receive multiple inspections does not correspond directly to the definition of "inaccessible" offered in the Stiede-Keppler letter dated February 23, 1983.

DISCUSSION: Observation #1 Part A (Hunter Corporation)

According to the Stiede-Keppler letter, "Inaccessible shall be defined as: condition where dismantling would be required to gain access, or condition where process was an event which cannot be recreated."

When inspections of the same type occur after that inspection to be sampled in the reinspection program, the item of the original inspection is labeled by Hunter as inaccessible. For example, if a Type 3 inspection is performed in January, 1980 and a subsequent Type 3 performed in May, 1982, the one in 1980 is termed inaccessible. This is done without research to determine if the later inspection occurred as a result of rework etc. thus making the original inspection unrecreateable.

Hunter Response: Dated 9/1/83

None required. This approach was in accordance with Reinspection Interpretation #2, a copy of which is attached to this response.

ACTION TO PREVENT RECURRENCE:

N/A

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:

N/A

FOLLOW-UP:

10/12/83 - Per R.B Klingler, CECo. PCD, the Hunter Corp. application of interpretation #2 (See Attached) is correct. When subsequent inspection of the same type occured, the later inspection was reinspected and the earlier inspection is considered inaccessable.

Attachment I

(1227S)

This surveillance is closed.

This closes Part A of Observation #1 of Audit #6-83-66.

Prepared by [signature] Date 10/13/83

Approved by [signature] Date 10/13/83

AJR:tj:1227S
Attachment 10/14/83
cc: W.J. Shewski J.S. Bitel 10/27/83
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
AJR

BYRON SITE QA SURVEILLANCE

AUDIT CLOSE OUT

QG: 53.4

Report No. 5210 **AUDIT No. 6-83-66** Date 10-14-83

Contractor/Organization: Hatfield Electric Co.

OBSERVATION #1:

Application of the term "inaccessible" to those items which receive multiple inspections does not correspond directly to the definition of "inaccessible" offered in the Stiede-Keppler letter dated February 23, 1983.

DISCUSSION:

According to the Stiede-Keppler letter, "Inaccessible shall be defined as: condition where dismantling would be required to gain access, or condition where process was an event which can not be recreated." Hatfield was using the term inaccessible to disposition reinspections to which this definition does not apply. The example noted during the audit was, Hatfield had termed those items with subsequent inspections as inaccessible without determining if the original inspection was an event which cannot be recreated because of rework, design change, etc.

Hatfield Response Dated 8/4/83

Items which could not be physically reached or where conduits and hangers had been changed per print revisions, FCR's or ECN's and had been reinspected at a later date were inadvertently noted "Inaccessible" during conduit reinspection. This was an error in terminology and actually the items were non-retrievable. All items noted incorrectly as "Inaccessible" had been researched and the original inspections could not be recreated.

FOLLOW-UP: 10/14/83

The error in terminology has been resolved via the research performed by Hatfield. Inspections which cannot be recreated are properly termed "inaccessible".

OBSERVATION #8:

Hatfield Electric could not determine if a portion of the conduit inspection is subject to the reinspection program.

Attachment J

(1240S)

DISCUSSION:

Torque checks in the conduit area were determined to be non-reproducible inspections; despite this, bolt counts were taken during reinspection. The bolt count was included in the original conduit inspection to determine the proper number of torque checks to perform. Differences in bolt counts between the original inspection and the reinspection are being entered as rejectable items in the reinspection program. These items are remaining open due to confusion on how to disposition them. Hatfield Electric Company needs to determine if bolt counts should be a part of the reinspection program and, if so, how to resolve these items.

Hatfield Response Dated 8/25/83

Bolt counts will not be included as part of the reinspection criteria. Differences in bolt counts on the reports cannot be investigated since both the original inspector and report reviewer are no longer employed by Hatfield Electric Company.

FOLLOW-UP: 10/14/83

The elimination of bolt counts from the reinspection program has resolved this deficiency.

This surveillance is closed.

This closes Observation #8 of Audit 6-83-66.

This closes Observation #1 Part B of Audit 6-83-66.

Prepared by J. L. Lee for A. J. Rosencrans Date 10/17/83

Approved by E. J. Mart Date 10-17-83

AJR:jc:1240S

cc: W.J. ~~Shewski/J.S. Bitel~~
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
AJR

Shewski

BYRON SITE QA SURVEILLANCE

AUDIT CLOSE OUT

QS 11/8/83

(F) QG: 53.4

Report No. 5211 AUDIT No. 6-83-66 Date 10-14-83

Contractor/Organization: Hatfield Electric Co.

OBSERVATION #2:

Hatfield has not performed an evaluation of QA/QC Memorandum #295 for its potential effect in the reinspection program.

DISCUSSION:

Hatfield Electric Company QA/QC Memorandum #295 dated 9/17/82 states that an acceptable weld inspection of cable pan or conduit hangers implies verification of the correct connection detail. This manner of acceptance occurred when the cable pan or conduit hanger inspection could not verify the detail due to the presence of fireproofing. Due to the fact that the reinspection program requires re-creation of the original inspection, a determination must be made as to what type of inspection, either weld or hanger inspection, originally included the connection detail. After this determination is made, the connection detail can be included as an element of the proper type of reinspection.

Hatfield Response Dated 8/25/83

Fireproofing was removed on All items which had to be reinspected for the program. If it was the pan hanger detail itself or a weld traveler to be reinspected, the material was removed so that the connection detail or the welds could be inspected as individual attributes. Memo #295 was not considered during the reinspection.

Hatfield Response Dated 8/30/83

Please be advised that connection detail verification is originally included in hanger inspection report.

FOLLOW-UP: 10/14/83

The determination by Hatfield that the connection detail verification is part of the hanger inspection closes this deficiency.

(1241S)

Attachment K

This surveillance is closed.

This closes Observation #2 of Audit 6-83-66.

Prepared by [signature] for A.J. Lombardi Date 10/17/83

Approved by [signature] Date 10-17-83

AJR:jc:1241S 11-7-83

cc: ~~W.J. Shewski/J.S. Bitel~~
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
AJR

BYRON SITE QA SURVEILLANCE

AUDIT CLOSE OUT

QF: QG 53.4

Report No. 4939 AUDIT No. 6-83-66 Date 08/26/83

Contractor/Organization: Pittsburgh Testing Laboratories

FINDING #1: Part C

Contrary to 10CFR50-B, Criterion XV, certain contractors were not taking appropriate measures to identify, document, segregate, disposition and notify affected organizations of nonconforming items identified under the reinspection program.

DISCUSSION:

At the time of the audit, PTL had not yet transmitted open inspection reports generated because of the reinspection program to the appropriate contractors. Therefore, no corrective action has been taken for the apparently nonconforming conditions.

PTL Response:

Corrective Action Taken:

PTL will transmit reports with nonconforming conditions to the respective contractors through the normal transmittal system.

Action to Prevent Recurrence:

PTL was working on the premise that reports with nonconforming conditions would be reported to the contractors upon full completion of the reinspection program. PTL has since been advised to transmit nonconforming reports upon concurrence with Mr. M. Provenzano, S&L Representative. As this appears to be an isolated incident, no further action is necessary.

Date of Full Compliance: August 8, 1983

FOLLOW-UP ACTION:

PTL has started transmitting rejectable reports to BBC. The first transmittal was #18479 dated 7/1/83. The latest was #18828 Dated 8/19/83. This process is ongoing. This was determined by reviewing PTL transmittal log and transmittal.

OBSERVATION [redacted] (response PTL)

PTL is not reinspecting each individual inspection performed during the inspector's first three (3) months, where accessbile.

DISCUSSION:

For inspectors certified in several disciplines within the three month time frame, only those inspections in the area of the original certification during the first 90 calendar days were reinspected as opposed to "each individual inspection performed during the inspector's first three months" as cited in the Stiede-Keppler letter dated February 23, 1983. An example of this situation would be if an inspector was originally certified in one type of inspection and later certified in a second type of inspection, the first certification was reinspected. The second type of inspection was not reinspected even though certification and inspections within that area may have taken place during the inspector's initial 90 days.

PTL is not reinspecting each individual inspection performed during the inspector's first three (3) months, where accessible.

Corrective Action Taken:

PTL is now reinspecting each individual inspection performed during the inspector's first three (3) months, as directed by Commonwealth Edison via the Stiede-Kepplor letter 2/23/83.

Action to Prevent Recurrence:

A complete review of selected inspectors certification package to determine what discipline(s) those individuals were certified in during initial three (3) month period.

Date of Full Compliance: August 8, 1983

Observation #3:

The only inspector who had two (2) different certifications and was chosen for the reinspection program was S. Cushman. This was researched by M. Tallent, PTL Site Manager and D. Smith, Unit Concept Supervisor. The type inspection reinspected was visual weld inspection. The certification which also occured during Cushman's first 90 days was concerte expansion anchor installation. Concrete expansion anchor torque checks were inspected by Cushman, due to relaxation torque checks are nonreproducable.

This surveillance is closed.

This closes the PTL portion of Finding #1 and Observation #3 of Audit #6-83-66.

Prepared by A.J. Rowlett for A.J. Rowlett Date 8/30/83

Approved by K.J. Dansing Date 8.30.83

AJR:tj:1040S
8.31.83

cc: W.J. Shewski/J.S. Bitel
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
AJR

BYRON SITE QA SURVEILLANCE

AUDIT CLOSE OUT QG: 53.4

Report No. 5187 AUDIT No. 6-8'-66 Date 10/12/83

Contractor/Organization: Hunter Corp.

OBSERVATION #5:

For some inspectors, the number of items reinspected, though in agreement with the Stiede-Keppler letter, do not provide an adequate sample size.

DISCUSSION: Observation #5 Part A

Commonwealth Edison's Project Construction Department verbally directed all contractors, with the exception of PTL/Peabody, to provide a minimum sample size of fifty (50) items.

Of the five (5) Level II QC inspectors reviewed during the audit, three (3): P. Pepitone, S. Kilpatrick and J. Ooten did not have the minimum of fifty (50) items reinspected.

Hunter Corporation Response:

CORRECTIVE ACTION:

Mr. Pepitone's data base was expanded to include his full term of employment as an inspector with Hunter Corporation. This resulted in reinspection of fifty-one (51) of his inspections. In relation to Mr. Ooten and Mr. Kilpatrick, an inquiry was made to your organizations Quality Control Supervisor (Mr. R.B. Klingler) to obtain a disposition of their cases. A copy is included as Attachment 1.

ACTION TO PREVENT RECURRENCE:

None required. Reinspection is completed.

DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED:

We are in full compliance at this time.

FOLLOW-UP ACTION:

10/12/83 - Reviewed records of individual reinspections submitted to CECo. PCD by Hunter Corp. P. Pepitone, Emp. #1284, had a total of fifty-one (51) inspections reinspected. Per R.B. Klingler, CECo. PCD, the number of inspections for Ooten and Kilpatrick were determined to be acceptable. (See attached Hunter Memo HC-QA-411 dated 9/1/83)

Attachment M

(1226S)

This surveillance is closed.

This closes part A of Observation #5 of Audit #6-83-66.

Reported by A. J. Rosenbush Date 10/13/83

Approved by [signature] Date 10/17/83

AJR:tj:1226S
Attachment 10-04-84
cc: W.J. ~~Shewski/J.S. Bitel~~ J. Bitel 10/27/83
QA Supt./Site Q.A. File
Contractor
PCD Supt
AJR

Commonwealth Edison Company

Q.P. FORM 18-1.
DATE 8/4/81

QUALITY ASSURANCE MANUAL

12/6/83

AUDIT REPORT

#6-83-93

Type Audit: ☐ Program Audit ☐ Product Inspection Point

☐ Records ☒ Special

To: R. B. Klingler, PCD QC Supervisor

Project Byron Visit Date 11/14-17/83 Report Date 11/28/83

System N/A Component Identification N/A

Material Description N/A

Vendor N/A Location N/A

Subcontractor N/A Location N/A

Contacts See Attachment "B"

P.O. No. N/A Spec. No. N/A

Recommended Inspections: 6 mos 3 mos 1 mo

Other: As specified

Notes: Please respond with
1. Corrective action
2. Action to prevent recurrence
3. Date of completion for the above items for Finding #1 by December 15, 1983

Prepared by Lori A. Simon Date 11-30-83
L. A. Simon - Auditor

Auditor J. S. Hale Date 12/1/83
J. S. Hale - Lead Auditor

Reviewed K. J. Dansing Date 12/1/83

LAS:tj:0437A
Attachments

cc: ~~Manager QA~~ 12-5-83
Manager Projects
Project Manager
Eng. Manager
Director QA Construction
Site Construction Superintendent
Site QA
Auditee
Site QA Supervisor
JSH

Attachment N

QUALITY ASSURANCE AUDIT
BYRON SITE REINSPECTION PROGRAM
NOVEMBER 14-17, 1983
#6-83-93

INTRODUCTION AND PURPOSE:

From November 14 to November 17, 1983, the Commonwealth Edison Byron Quality Assurance conducted an audit on the Byron Site's Reinspection Program. The purpose of the audit was to assure that conclusions drawn from the Reinspection Program are valid and reliable.

SCOPE:

The scope of the audit covered the following areas:

1. Accuracy of Reinspection Program results as reported to the NRC in the Interim Report.
2. The design basis for the engineering evaluation of Visual Weld Inspection Discrepancies as described in the Interim Report.
3. Qualifications of the third party inspectors.
4. Documentation of third party inspections.
5. Basis for PCD "Interpretations" in regards to the Reinspection Program.
6. Correction of deficiencies identified as a result of the Reinspection Program.

AUDIT AGENDA:

An entrance meeting was conducted and the audit started on November 14, 1983. The audit lasted four (4) days with two (2) exit meetings held on November 17, 1983. Attendees of entrance and exit meetings are listed in Attachment "A". A list of those personnel contacted during the audit is given in Attachment "B".

AUDIT TEAM:

The audit team consisted of J.S. Hale, Lead Auditor, L.A. Simon, Auditor and T.J. Mitoraj, Observer.

GENERAL EVALUATION:

The following four (4) areas were reviewed at each of the seven (7) contractors involved in the reinspection Program.

1. Correction of discrepancies - All contractors with the exception of PTL and Hatfield Electric Co. were found to have identified and have or are correcting deficiencies in accordance with their approved nonconformance procedure. PTL and Hatfield have taken these actions on some deficiencies but have refrained on items in which an engineering evaluation is to be performed.

2. Expansion of an inspector's reinspection sample size and the number of inspectors to be reinspected upon a failure as defined by the Stiede-Keppler letter of February 1983 - All contractors were found to have expanded sample size accordingly with those results given in the Interim Report.

3. Independence of the Reinspection Personnel - The reinsepction personnel at each contractor were verified to have not been involved in the reinspection of work that they had originally inspected or had reviewed and accepted.

4. Accuracy of results reported in the Interim Report - The items reviewed during the audit at all contractors matched up with the exception of JCI and PTL. Differences identified at these contractors are discussed in Attachment "C" under Observation #1 and Finding #1 respectively.

Also reviewed during the course of the adult were the following areas which were directed towards the Project Construction Department in their implementation of this program.

The engineering evaluation of the Visual Weld Discrepancies performed by Sargent and Lundy was reviewed for adequate design basis. Calculations which support the evaluation were performed in accordance with appropriate "Structural Design Standards" and the approved Design Control Summary. The Design Control Summary outlines assumptions to be followed in performing the calculations. These assumptions appeared to be based on industry standards and practices. This approach was presented to the NRC on September 22, 1983.

Those individuals who performed the third party review of subjective deficiencies were properly qualified for the task. Additionally, adequate documentation of these inspections exists.

Lastly, those Interpretations offered by the Project Construction Department during the Reinspection Program have adequate basis and fall between the guidelines of the program.

ASSESSMENT:

On the basis of this audit, it appears that conclusions drawn from the Reinspection Program results will be valid and reliable.

ATTACHMENT "A"

BYRON REINSPECTION PROGRAM
AUDIT #6-83-93

ENTRANCE MEETING
11/14/83

NAME	TITLE	ORGANIZATION
J.S. Hale	Lead Auditor	CECo. QA
L.A. Simon	Auditor	CECo.
T.J. Mitoraj	Observer	CECo.
R.B. Klingler	PCD QC Supervisor	CECo.

EXIT MEETING
11/17/83

NAME	TITLE	ORGANIZATION
J.L. Woldridge	QA Supervisor	CECo.
E.L. Martin	QA Supervisor	CECo.
R.B. Klingler	PCD QC supervisor	CECo.
J.S. Hale	Lead Auditor	CECo.
L.A. Simon	Auditor	CECo.
W.E. Wolber	QA Inspector	CECo.
M.R. Tallent	Site Manager	PTL
D. Smith	Supervisor	PTL
S. Pearson	QA Level II	JCI
R.L. Byers	PCD Field Engineer	CECo.
R.H. Bay	QA/QC Manager	BBC
T.J. Mitoraj	Observer	CECo.

ATTACHMENT "B"

BYRON REINSPECTION PROGRAM
AUDIT #6-83-93

PERSONNEL CONTACTED DURING AUDIT

Name	ORGANIZATION
R.B. Klingler	CECo. PCD
R.J. Netzel	S&L
R. Marshalla	S&L
S. Bertheau	S&L
S. Pearson	JCI
D. Smith	PTL
M. Tallent	PTL
W. Wills	BBC
M. Provezano	S&L

ATTACHMENT "C"

BYRON REINSPECTION PROGRAM
AUDIT #6-83-93

OBSERVATION #1 - JOHNSON CONTROLS INC.

Although minor, discrepancies exist between the number of subjective rejections identified by third party inspector and those given in the Interim Report.

Discussions:

The Interim Report listed S. Pearson as having thirty-two (32) subjective rejects. A review of the documentation of third party reviews showed their concurrence on thirty-two (32) welds and twelve (12) items. At the time of the audit, it could not be determined if the items were applicable to subjective reject. Additionally, D. Lindblom was accredited with only twenty-one (21) subjective rejects: third party concurrence was received for twenty-three (23) welds.

Corrective Action:

JCI will review the results and make any needed correction to the numbers given by December 1, 1983.

Action To Prevent Recurrence:

N/A

FINDING #1 - Pittsburgh Testing Laboratory

Contrary to Stiede-Keppler letter dated February 23, 1983, during reiterations of the Reinspection Program, Pittsburgh Testing Laboratory overrode third party concurrence on some welding rejects.

Discussion:

After implementation of Interpretation 11 given in the Reinspection Program which changed the visual weld inspection criteria in the areas of overlap and undercut, a review was performed by PTL on reinspections performed for applicability of the interpretation. In this review, PTL changed the deficient status of some welds which were rejected for reasons other than those changed by the interpretation. The welds had already received third party concurrence for true rejectability as defined in the Stiede-Keppler letter of February, 1983.

Request response providing Corrective Action and Action to Prevent Recurrence.

BYRON SITE QA SURVEILLANCE

AUDIT CLOSE OUT QG: 53.4

Report No. 5696 AUDIT No. 6-83-93 Date 1-17-84

Contractor/Organization: Pittsburgh Testing Laboratories

FINDING #1:

Contrary to the Stiede-Keppler letter dated February 23, 1983, during reiterations of the Reinspection Program, Pittsburgh Testing Laboratory overrode third party concurrence on some welding rejects.

DISCUSSION:

After implementation of Interpretation 11 given in the Reinspection Program which changed the visual weld inspection criteria in the areas of overlap and undercut, a review was performed by PTL on reinspections performed for applicability of the interpretation. In this review, PTL changed the deficient status of some welds which were rejected for reasons other than those changed by the interpretation. The welds had already received third party concurrence for true rejectability as defined in the Stiede-Keppler letter of February, 1983.

RESPONSE:

CORRECTIVE ACTION:

Pittsburgh Testing Laboratory will resubmit for concurrence by the independent third party inspector those PTL overcalls which changed the deficient status of welds rejected for reasons other than those addressed by Interpretation 11.

ACTION TO PREVENT RECURRENCE:

Contractors involved in using interpretations and independent third party inspections were directed on December 12, 1983 to carefully watch the possibility of contractor second reinspection due to an interpretations without allowing the third party to concur or disagree.

FOLLOW-UP ACTION:

1-17-84 - Corrective action is not yet completed: per E. L. Martin, due to activity surrounding license denial, completion date was extended to January 22, 1984.

Attachment O

(1664S)

DATE OF NEXT FOLLOW UP : 1-30-84

Prepared by [signature] Date 1-24-84

Approved by [signature] Date 1-26-84

LAS:jc:1664S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
LAS

FOLLOW-UP ACTION:

2-06-84, 2 07-84 and 2-13-84 - Compared information found in the third Party Inspector's log to that information given by PTL in their reinspection package. This was performed on J. Brown's reinspection package.

This revealed that several reports were missing from the reinspection package: 2457, 2494, 2517, 2521, 2491, 2506, 2489, 2378, 2387, 2521, and 2496. These reports are being located and included in the reinspection package. Additionally, a review will be performed to locate any additional reports for Brown's package and those that might be missing from other packages and to verify the packages are then complete.

Additionally, concerns were raised regarding the second reinspection by the third Party Inspectors. Documentation for eight (8) reinspection reports of Brown was not available at PTL to indicate that the third Party Inspector concurred with all resubmitted reinspection reports.

2-14-84 - A review of the aforementioned eight (8) reinspection reports of Mr. Brown verified that the third Party Inspector had reinspected the following seven (7) reinspection reports: (2493, 2470, 2490 (2), 2468, 2384, 2397 and 2432). Report 2495 could not be reinspected due to a beam removal.

2-22-84 - A review of Mr. Brown's reinspection package verified that all of the previously missing VWI reinspection reports were now in his package. Additionally, a comparison was conducted of forty (40) VWI reinspection reports listed in the third Party Inspector's log with those maintained in the respective reinspector's package. All items were found in the packages. All corrective actions appear to be properly implemented.

Finding #1 of Audit No. 6-83-93 and this surveillance are closed.

F/U Action Verified E Martin Date 2-23-84

F/U Action Approved K Malowney Date 2/23/84
Q.A. Supervisor

LAS:jc:1664S 2-29-84

cc: W.J. Sheinski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
LAS

Letter No. BY 10312

Date December 30, 1983

TO: R. B. Klingler, PCD QC Supervisor

SUBJECT: Response to CECo. Audit #6-83-93

The Commonwealth Edison Company Quality Assurance Department has received your response dated 12-22-83 to the subject audit and find it acceptable. This acceptance is conditional based upon satisfactory demonstration of corrective action and preventative measures concerning the deficient items. A follow-up surveillance will be performed by site QA personnel to close all open deficiencies.

Lead Auditor

K. J. Hansing
QA Superintendent

(1400L)
cc: W.J. ~~Shewski~~/G.F. Marcus (w/copy of response)
V.I. Schlosser (w/copy of response)
G. Sorensen (w/copy of response)
Site File
Site Audit Designee
L.A. Simon

Commonwealth Edison
Byron Generating Station
P.O. Box B
Byron, Illinois 61010

December 22, 1983

K. J. Hansing
C.E.Co. Q.A. Superintendent
Byron Station

SUBJECT: Reference Audit #6-81-93

Please find attained the Pittsburgh Testing Laboratory response to finding #1 of the reinspection audit. If you have any questions please contact me.

R. B. Klepfer 12-22-83
R. B. Klepfer
C. C. Supervisor
Byron Station

Attainment

RBK:kb

cc: R. Tuetken
M. Tallent

FINDING #1 - Pittsburgh Testing Laboratory

Contrary to the Stiede-Keppler letter dated February 23, 1983, during reiterations of the Reinspection Program, Pittsburgh Testing Laboratory overrode third party concurrence on some welding rejects.

Discussion:

After implementation of Interpretation 11 given in the Reinspection Program which changed the visual weld inspection criteria in the areas of overlap and undercut, a review was performed by PTL on reinspections performed for applicability of the interpretation. In this review, PTL changed the deficient status of some welds which were rejected for reasons other than those changed by the interpretation. The welds had already received third party concurrence for true rejectability as defined in the Stiede-Keppler letter of February, 1983

Response:

Corrective Action.

Pittsburgh Testing Laboratory will resubmit for concurrence by the independent third party inspector those PTL overcalls which changed the deficient status of welds rejected for reasons other than those addressed by Interpretation 11.

Action Taken to Prevent Recurrence.

Contractors involved in using interpretations and independent third party inspections were directed on December 12, 1983 to carefully watch the possibility of contractor second reinspection due to an interpretations without allowing the third party to concurr or disagree.

Date When Full Compliance Will Be Achieved.

January 15, 1984

Commonwealth Edison Company

Q.P. FORM 18-1.1
DATE 8/4/81

QUALITY ASSURANCE MANUAL

9/24/82
QA
(F)

AUDIT REPORT

#6-83-124

Type Audit: ☐ Program Audit ☐ Product Inspection Point
☐ Records ☒ Special

To: Mr. J. T. Hill

Project Byron Visit Date 8/24-9/1/83 Report Date 9/15/83

System Various Component Identification N/A

Material Description N/A

Vendor Hatfield Electric Co. Location Byron

Subcontractor N/A Location N/A

Contacts See Report

P.O. No. _____ Spec. No. F-2790

Recommended Inspections: 6 mos 3 mos 1 mo

Other: As Scheduled

Notes: Corrective actions have been agreed upon during the exit meeting. However, please respond by October 4, 1983 to indicate the date corrective actions will be complete for the Findings.

Lead Auditor P. T. Myrda Date 9/19/83
P. T. Myrda

Reviewed M. A. Stanish Date 9/19/83
M. A. Stanish

PTM:jc:0298A
Attachment
cc: ~~Manager QA~~ 9-22-83
Manager Projects
Project Manager
Eng. Manager
Director QA Construction
Site Construction Superintendent
Site QA
Auditee
Site QA Supervisor

P.T. Myrda
G.F. Marcus (Byron Site)

Attachment P

AUDIT REPORT
HATFIELD ELECTRIC COMPANY
AUDIT NO. 6-83-124

Purpose:

To verify proper implementation of Hatfield Electric Company Quality Assurance Program as applicable to the QC inspector reinspection program committed to in NRC Report I&E Inspection Report Numbers 50-454/82-05 and 50-455/82-04.

Scope:

The audit included the following:

Inspection
Inspection, Test and Operating Status
Quality Assurance Records

Reference Documents:

10CFR50 Appendix B, Criteria X, XIV, XVII
Hatfield Procedures: 9A

Entrance Meeting:	August 24, 1983	
P. T. Myrda	QA Supervisor	C.E.Co.
M. V. Dellabetta	QA Engineer	C.E.Co.
T. Maas	QC Supervisor	HECo.
J.D. Spangler	Lead Welding Inspector	HECo.
Exit Meeting:	September 1, 1983	
J. S. Bitel	Director, QA Const/Eng.	C.E.Co.
M. A. Stanish	QA Superintendent	C.E.Co.
P. T. Myrda	QA Supervisor	C.E.Co.
R. G. Gruber	QA Engineer	C.E.Co.
R. Tuetken	Assistant Project Superintendent	C.E.Co.
J. O Binder	Project Electrical Supervisor	C.E.Co.
R. B. Klingler	PCD QC Supervisor	C.E.Co.
J. T. Hill	QA/QC Manager	HECo.
J. D. Spangler	Lead Welding Inspector	HECo.

Personnel Contacted: HECo.

T. Hill	T. Wells
T. Maas	S. Hubler
A. Koca	D. McCarty
J. D. Spangler	

(0298A)

An entrance meeting was held on August 24, 1983 at the Hatfield Electric Company, Byron office during which the audit areas were discussed. During the audit a total of three discrepancies were identified. The discrepant items will be explained in Attachment "A".

Another aspect associated with the concerns related to the reinspection program is the identification of deficient conditions. The issuance and processing of NCR's and DR's will be covered under a separate surveillance.

ADEQUACY OF REINSPECTION

This audit examined Hatfield Electric Co.'s implementation of Commonwealth Edison's reinspection commitment made to the NRC. The audit specifically examined the welding area and Hatfield's methodology of reinspection in this area. The reispection program's main thrust is to demonstrate the adequacy of quality control inspectors. Based on this, it is essential to ensure the work reinspected is actually the inspector's work and not that of someone else. During the audit, problems were identified with the method used to document cable pan hanger weld inspections (ref. Attachment "A"). As a result of these documentation problems, adequate traceability back to the inspector's work was not always achieved. In cases where it was indetmerminate as to which welds were inspected by the inspector, the contractor identified these welds as unretrievable and removed them from the reinspection population in accordance with the guidelines of the reinspection program. In all cases reviewed during the audit, the decisions made by the contractor during the reinspection program to remove questionable data adds to the credibility of the database thereby ensuring accurate results. The ultimate sample size used for each inspector was found to be adequate and sufficient to determine the acceptability of his work.

AUDIT DEFICIENCIES

During the field verification part of the audit, it became apparent that Hatfield Electric Company's weld traveler cards, in certain cases, lacked adequate information to determine which hanger welds or hangers corresponded to each weld traveler. In certain cases, it is the lack of a definite one-to-one correspondence between the weld traveler and the component that creates a problem in determining the status of the cable pan hanger inspection. (Ref: Attachment "A", Finding #1).

This audit also included field verification of combination cable pan/HVAC hanger inspection completeness. Upon reviewing the records for combination hangers, it was determined that not all welds on these hangers have been inspected. For some hangers that were inspected, the QC inspector was not identified on the weld inspection record. (Ref: Attachment "A", Finding #2)

Also, during the field verification part of the audit, forms 9A-1 (Configuration/Dimensional Inspections) were reviewed to help establish correlation between hanger welds and weld travelers. During this review a hanger was found to be installed, inspected and accepted to a configuration other than shown on the approved drawing. (Ref: Attachment "A" Observation #1)

ANALYSIS OF INSPECTION RECORDS

Hatfield Electric Company is currently implementing a computerized database management system in an effort to reconcile weld travelers to cable pan hangers. This database is being created in parallel with the reinspection program. When the information from the computerized database is finalized and ready for use, the weld travelers used in the reinspection program will be compared to the database. This should insure that the initial hanger inspections assigned to each inspector, were correctly included in the reinspection program results.

The manner in which weld inspection records were generated and maintained at Hatfield makes it difficult to readily identify the specific work which was done by welders and inspectors in past years. As a result, personnel not familiar with all aspects of the record keeping process may misunderstand the manner in which the weld traveler records were selected during the reinspection program. It is expected that these concerns will be resolved when the computerized database is completed and the identification of past work performed by welders and inspectors is readily obtainable and easily understood.

The HDRF Form (Hanger Dehang/Rehang) which covers rework on hangers, has been used for rework performed since November 1981. Prior to November 1981, Hatfield procedures did not require the HDRF Form to be used and therefore, it was not used in all hanger rework situations. When the computerized database is completed, it will provide additional means to retrieve inspection information and the HDRF Forms will no longer be the only means of tracking hanger rework.

EVALUATION

The Hatfield Quality Assurance organization agreed with the problems identified during the audit and showed initiative in identifying the weld traveler problems by writing NCR 701 on August 23, 1983. The HECo. QA/QC inspectors demonstrated an excellent working knowledge of their respective areas and presented an eagerness to do an effective quality job. Overall, the HECo. QA/QC Department, as applicable to this audit, appears to be effective in the performance of their responsibilities.

Hatfield Electric Company Quality Assurance Department is adequately implementing their portion of the reinspection program as committed to in NRC Report I&E Inspection Report Number 50-454/82-05 and 50-455/82-04. The deficient items identified in this report did not impact the purpose of the reinspection program but were significant deficiencies that require prompt attention.

(0298A)

ATTACHMENT "A"

Finding #1:

10CFR50 Appendix B, Criterion XIV, states in part, "Measures shall be established to indicate, by the use of markings such as stamps, tags, labels, routing cards, or other suitable means, the status of inspections and tests performed upon individual items of the nuclear plant... These measures shall provide for the identification of items which have satisfactorily passed required inspections and test,..."

10CFR50 Appendix B, Criterion XVII, states in part, "Sufficient records shall be maintained to furnish evidence of activities affecting quality."

Contrary to the above, Hatfield weld traveler cards inadequately identify the acceptability of the cable pan hangers.

Discussion:

The weld traveler cards used by Hatfield for weld inspection, in many cases, do not adequately identify the item inspected. The problem stems from the variety of ways the weld traveler cards is filled out by field personnel. Essentially, general field coordinates are used to locate the hanger (i.e. 15-N) instead of the exact coordinates. Also, there is no method of assuring all welds are inspected, especially if rework is performed on a given hanger. Additionally, the weld traveler may document one or two connections or the whole hanger. The only way to determine the exact status to which a given hanger is inspected is by field verifying the weld traveler card, the hanger in the field, and the welder identification stamped on the hanger. After this field analysis, the inspection status for a given hanger can be determined. In some cases, even field verification fails to adequately assure the completeness of inspection and a reinspection is necessary.

Corrective Action:

A correlation of weld traveler inspection data to design drawing cable pan hanger data will be established using computer database management techniques to demonstrate accountability of inspection. This demonstration of accountability of inspection identifies the welder(s) and inspector(s) who worked on the component.

For those components which no correlation exists between component and inspection data, an inspection will be initiated.

The acceptability of existing inspection records will be domonstrated by the adequacy of the inspection data created by those components for which no correlation existed. If this data is insufficient in size or inconclusive, additional components will be added to the sample.

Finding #2:

10CFR50 Appendix B, Criterion X, states in part, "A program for inspection of activities affecting quality shall be established and executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity."

Contrary to the above, no weld travelers were written to document the work performed by Reliable Sheet Metal welders on combination hangers.

Discussion:

Not all combination hangers have weld traveler cards for welding performed by Reliable Sheet Metal. For some hangers that do have weld travelers the weld connection is indeterminate due to the lack of information on the traveler. Also, some weld travelers do not identify the QC inspector performing the inspection.

Corrective Action:

A review of all combination hangers for adequate weld inspection will be performed. For those hangers whose status is indeterminate a reinspection of the welds will be performed.

Commitment Date: To be established after scope of work is defined.

Observation #1:

Contrary to Hatfield Electric Company, Procedure 9A Revision 11, Class I Cable Pan Hanger Installation, quality control had inspected and accepted a hanger to the wrong dimensions.

IDI 229B

Discussion:

Hanger 15H2 on Drawing 6E-0-3033 Rev. H was inspected and accepted (HECo. Report 835) to the dimensions for hanger type 635H whose dimensions are different from those of a 15H2.

Corrective Action:

Hanger 15H2 on Drawing 6E-0-3033 Rev. H is going to be reinspected and an addition sample of ten (10) hangers whose hanger type has changed will be reinspected to determine the extent of this problem.

Commitment Date: October 3, 1983

BYRON SITE QA SURVEILLANCE

AUDIT CLOSE OUT

QF: 2790.22.1

Report No. 5275 AUDIT No. 6-83-124 Date 10/21/83

Contractor/Organization: Hatfield Electric Co.

FINDING #1:

10CFR50 Appendix B, Criterion XIV, states in part, "Measures shall be established to indicate, by the use of markings such as stamps, tags, labels, routing cards, or other suitable means, the status of inspections and tests performed upon individual items of the nuclear plant... These measures shall provide for the identification of items which have satisfactorily passed required inspections and test,..."

10CFR50 Appendix B, Criterion XVII, states in part, "Sufficient records shall be maintained to furnish evidence of activities affecting quality."

Contrary to the above, Hatfield weld traveler cards inadequately identify the acceptability of the cable pan hangers.

Discussion:

The weld traveler cards used by Hatfield for weld inspection, in many cases, do not adequately identify the item inspected. The problem stems from the variety of ways the weld traveler cards is filled out by field personnel. Essentially, general field coordinates are used to locate the hanger (i.e. 15-N) instead of the exact coordinates. Also, there is no method of assuring all welds are inspected, especially if rework is performed on a given hanger. Additionally, the weld traveler may document one or two connections or the whole hanger. The only way to determine the exact status to which a given hanger is inspected is by field verifying the weld traveler card, the hanger in the field, and the welder identification stamped on the hanger. After this field analysis, the inspection status for a given hanger can be determined. In some cases, even field verification fails to adequately assure the completeness of inspection and a reinspection is necessary.

Corrective Action:

A correlation of weld traveler inspection data to design drawing cable pan hanger data will be established using computer database management techniques to demonstrate accountability of inspection. This demonstration of accountability of inspection identifies the welder(s) and inspector(s) who worked on the component.

For those components which no correlation exists between component and inspection data, an inspection will be initiated.

4/1/84

(1275S)

Attachment Q

The acceptability of existing inspection records will be domonstrated by the adequacy of the inspection data created by those components for which no correlation existed. If this data is insufficient in size or inconclusive, additional components will be added to the sample.

ACTION TO PREVENT RECURRENCE:

New cross reference will eliminate this type of problem.

FOLLOW-UP ACTION:

The component correlation has been completed and 599 components have been identified as requiring inspection. Preparations for reinspection are inprocess.

DATE OF NEXT FOLLOW UP : 11/2/83

Prepared by [signature] Date 10/25/83

Approved by K.J. Hansing Date 10/25/83

PTM:tj:1275S

cc: W.J. Shewski/J.S. Bitel
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

11-02-83 - HECo. QC reverified the items requiring inspection. This resulted in a new total of 669 hangers to be inspected. The reinspection of 75 hangers is complete and 54 are rejectable. Hatfield is going to track the quantity of welds inspected to welds rejected in order to get a more accurate status of the actual weld rejects.

FOLLOW-UP ACTION DATE: 11-16-83

F/U Action Verified _____ Date 11/2/83

F/U Action Approved K.N. Dansung Date 11/9/83
Q.A. Supervisor

PTM:tj:jc:1275S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

11/16/83 - To date, two hundred forty (240) support hangers have been inspected with two hundred ninty-two (292) hangers left to be inspected. One hundred eighty-three (183) hangers hav been deleted from population because the original hanger has either been deleted or changed in type. For the two hundred forty (240) supports inspected six hundred seventy-one (671) out of three thousand five hundred two (3502) welds, which is approximately 19% have been rejected on initial inspection. These totals include combination hangers.

DATE OF NEXT FOLLOW-UP: 11-30-83

F/U Action Verified Paul T Mgla Date 11/16/83

F/U Action Approved R.J. Hansing Date 11/21/83
Q.A. Supervisor

PTM:tj:1275S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

12/2/83 - To date, 373 hangers have been inspected out of 677 hangers. The total welds inspected are 4016. Of these, 789 are rejected which is 20.7% reject rate. The totals presented do not include combination hangers.

DATE OF NEXT FOLLOW-UP: 12-16-83

F/U Action Verified [signature] Date 12/2/83

F/U Action Approved [signature] Date 12/6/83
Q.A. Supervisor

PTM:tj:1275S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

12/16/83 - To date, 379 weld traveler supplements have been inspected out of 527 weld traveler supplements with 150 supplements deleted. Most of these deletions are due to hanger removals. The total welds inspected are 5338. Of these, 1036 are rejected which is 19.4% reject rate. The totals presented do not include combination hangers.

FOLLOW-UP ACTION DATE: 12-30-83

F/U Action Verified _____ Date 12-20-83

F/U Action Approved _____ Date 12/20/83
Q.A. Supervisor

PTM:tj:jc:1275S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

12-30-83 - 150 weld traveler supplements are remaining to be completed. To date a total of 5358 welds have been inspected. Of this total, 997 welds were rejected by HECo. resulting in an 18.6% reject rate. Of the 997 welds rejected by HECo., 721 welds were determined to be rejected by S&L third party review which is a 13.4% reject rate. Note: these numbers reflect a decrease in total rejects. A recount to verify status numbers is currently in progress.

FOLLOW-UP ACTION DATE: 1-13-84

F/U Action Verified _____ Date 1/10/84

F/U Action Approved _____ Date 1/12/84
Q.A. Supervisor

PTM:tj:jc:1275S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

1-13-84 - To date, 416 weld traveler supplements out of a total of 512 have been completed. A total of 5566 welds have been inspected with 770 welds rejected by S&L. This represents a 13.8% reject rate. This work item is 82% complete with an expected completion date of 2-4-84.

FOLLOW-UP ACTION DATE: 2-3-84

F/U Action Verified _____ Date 1-16-84

F/U Action Approved _____ Date 1/17/84
Q.A. Supervisor

PTM:tj:jc:1275S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

2/6/84 - No change in work progress due to change in priorities. Reinspection efforts were concentrated on the NRC Reinspection I&E Report No. 50-454/82-05 and 50-455/82-04. The reinspection has restarted today 2/6/84.

NEXT FOLLOW-UP DATE: 3-2-84

F/U Action Verified _____ Date 2-7-84

F/U Action Approved _____ Date 2/6/84
Q.A. Supervisor

PTM:tj:jc:1275S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

3-09-84 - Currently, two (2) welds remain to be inspected. Additionally, a final review and reconciliation of all previously reinspected weld travellers will be completed by 3/30/84.

NEXT FOLLOW-UP DATE: 3-30-84

F/U Action Verified E. Mart. Date 3-12-84

F/U Action Approved _____ Date _____
Q.A. Supervisor

PTM:tj:jc:1275S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

4-06-84 - Hatfield Electric Company, on March 31, 1984, completed the cable pan hanger weld inspections for which no inspection record existed. These inspections were done for those components for which no correlation of weld traveler inspection data to design drawing cable pan hanger data existed.

Inspection records for cable pan hanger welds are up to date and satisfactorily reflects the current status of work. The deficiencies identified during these inspections are in process of being corrected using the contractors normal rework practices. This rework amounts to approximately 13% of the total welds inspected and in the auditors judgement is indicative of first time inspection.

OK
4/16/84

Therefore, with the cable pan hanger weld inspections current and inspection reports existing in the contractor's records system, the corrective action required for this audit item is considered complete.

This audit item is considered acceptable and closed.

This surveillance is closed.

F/U Action Verified _____ Date _____

F/U Action Approved _____ Date _____
Q.A. Supervisor

PTM:tj:jc:1275S

cc: ~~W.J. Shewski~~/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

4/13/84

BYRON SITE QA SURVEILLANCE

AUDIT CLOSE OUT

QP: 2790.22.1

Report No. 5274 AUDIT No. 6-83-124 Date 10/21/83

Contractor/Organization: Hatfield Electric Co.

FINDING #2:

10CFR50-B, Criterion X, states in part, "A program for inspection of activities affecting quality shall be established and executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity."

Contrary to the above, no weld travellers were written to document the work performed by Reliable Sheet Metal welders on combination hangers.

DISCUSSION:

Not all combination hangers have weld traveller cards for welding performed by Reliable Sheet Metal. For some hangers that do have weld travellers the weld connection is indeterminate due to the lack of information on the traveller. Also, some weld travellers do not identify the QC inspector performing the inspection.

CORRECTIVE ACTION:

A review of all combination hangers for adequate weld inspection will be performed. For those hangers whose status is indeterminate a reinspection of the welds will be performed.

FOLLOW-UP ACTION:

All combination hangers have been identified and seventy-one (71) require inspections. These hangers are being processed for inspection in conjunction with the hangers identified in Finding #1.

DATE OF NEXT FOLLOW UP : 11/02/83

Prepared by P.T. Nyak Date 10/25/83

Approved by K.J. Hansing Date 10/28/83

PTM:tj:1274S

cc: ~~W.J. Shewski~~/J.S. Bitel
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

4/16/84

Attachment R

FOLLOW-UP ACTION:

11-02-83 - Field verification of combination hangers reduced total to 60 hangers. Two combination hangers currently in process of inspection.

FOLLOW-UP ACTION DATE: 11-16-83

F/U Action Verified _____ Date 11/3/83

F/U Action Approved K.J. Hanaring Date 11/4/83
Q.A. Supervisor

PTM:tj:jc:1274S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

11/16/83 - To date a total of ten (10) combination hangers have been inspected. See Surveillance Report No. 5275 for inspection results.

DATE OF NEXT FOLLOW-UP: 11-30-83

F/U Action Verified Paul T Myrha Date 11/16/83

F/U Action Approved K D Lanning Date 11/21/83
Q.A. Supervisor

PTM:tj:1274S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

12/2/83 - To date, ten (10) hangers have been inspected out of sixty-five (65) hangers. The total welds inspected are 382. Of these, 124 are rejected which is 32% reject rate. These totals are for combination hangers only.

DATE OF NEXT FOLLOW-UP: 12-16-83

F/U Action Verified _____ Date 12/2/83

F/U Action Approved _____ Date 12/6/83
Q.A. Supervisor

PTM:tj:1274S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

12/16/83 - To date, twenty (20) hangers have been inspected out of sixty-five (65) hangers. The total welds inspected are 842. Of these, 197 are rejected which is 23.4% reject rate. These totals are for combination hangers only.

FOLLOW-UP ACTION DATE: 12-30-83

F/U Action Verified _____ Date 12/19/83

F/U Action Approved _____ Date 12/20/83
Q.A. Supervisor

PTM:tj:jc:1274S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

12-30-83 - To date, thirty-two (32) hangers have been inspected out of sixty-five (65) hangers. Individual weld inspection totals were not available at this time.

FOLLOW-UP ACTION DATE: 1-13-84

F/U Action Verified _____ Date 1/3/84

F/U Action Approved _____ Date 1/6/84
Q.A. Supervisor

PTM:tj:jc:1274S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

On 1/13/84 - To date, thirty-seven (37) hangers have been inspected out of sixty-four (64) hangers, with one hanger deleted. A total of 1674 welds inspected with 384 of these welds rejected by S&L. This represents a 22.9% reject rate. This work item is 58% complete with an expected completion date of 2/4/84.

DATE OF NEXT FOLLOW-UP: 2-3-84

F/U Action Verified _____ Date 1-16-84

F/U Action Approved _____ Date 1/17/84
Q.A. Supervisor

PTM:tj:jc:1274S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

2/6/84 - No change in work progress due to change in priorities. Reinspection efforts were concentrated on the NRC Reinspection I&E Reports No. 50-454/82-05 and 50-455/82-04. The reinspection has restarted today 2/6/84.

NEXT FOLLOW-UP DATE: 3-2-84

F/U Action Verified _____ Date 2-7-84

F/U Action Approved _____ Date 2/10/84
Q.A. Supervisor

PTM:tj:jc:1274S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

3-09-84 - Currently, five (5) combination weld hangers remain to be inspected. Additionally, a final review and reconciliation of all previously reinspected weld travellers will be completed by 3-30-84.

NEXT FOLLOW-UP DATE: 3-30-84

F/U Action Verified Emat Date 3-12-84

F/U Action Approved _____ Date _____
Q.A. Supervisor

PTM:tj:jc:1274S

cc: W.J. Shewski/G.F. Marcus
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

FOLLOW-UP ACTION:

4-06-84 - Hatfield Electric Company, on March 31, 1984, completed the combination hanger weld inspections for which no inspection record existed. These inspections were done for those combination hangers for which no correlation of weld traveler inspection data to design drawing combination hanger data existed.

Inspection records for combination hanger welds are up to date and satisfactorily reflects the current status of work. The deficiencies identified during these inspections are in process of being corrected using the contractors normal rework practices. This inspection effort encompassed a 100% review of all combination hangers. This rework amounts to approximately 14% of the total welds inspected and in the auditors judgement is indicative of first time inspection.

OK JW 4/11/84

Therefore, with the combination hanger weld inspections current and inspection reports existing in the contractor's records system, the corrective action required for this audit item is considered complete.

This audit item is considered acceptable and closed.

This surveillance is closed.

F/U Action Verified _____ Date 4/11/84

F/U Action Approved _____ Date 4-11-84
Q.A. Supervisor

PTM:jc:1274S

cc: ~~W.J. Shewski~~/G.F. ~~Marcus~~ 4/16/84
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

2/29/84
95
(F)

BYRON SITE QA SURVEILLANCE

AUDIT CLOSE OUT QF: 2790.22.1

Report No. 5276 R1 AUDIT No. 6-83-124 Date 02/21/84

Contractor/Organization: Hatfield Electric Co.

OBSERVATION #1:

Contrary to Hatfield Electric Co., Procedure 9A Revision 11, Class I Cable Pan Hanger Installation, quality control had inspected and accepted a hanger to the wrong dimensions.

DISCUSSION:

Hanger 15H2 on Drawing 6E-0-3033 Rev. H was inspected and accepted (HECo. Report 835) to the dimensions for hanger type 635H whose dimensions are different from those of a 15H2.

CORRECTIVE ACTION:

Hanger 15H2 on Drawing 6E-0-3033 Rev. H is going to be reinspected and an addition sample of ten (10) hangers whose hanger type has changed will be reinspected to determine the extent of this problem.

ACTION TO PREVENT RECURRENCE:

R1 Not applicable; this was determined to be an isolated case.

FOLLOW-UP ACTION:

All ten (10) hangers reviewed were randomly selected and were checked dimensionally against current design documents. Attachment "A" lists hangers inspected. Hanger 15H2 on Drawing 6E-0-3033 Rev. H was reinspected and accepted to the correct drawing.

This item is considered closed.

Prepared by [signature] Date 2/21/84

Approved by [signature] Date 2/22/84

PTM:tj:jc:1271S
Attachment ✓2 2-29-84
cc: ~~W.d. Shewski/J.S. Bitel~~
Q.A. Supt./File
Contractor
Q.A. Audit Staff Desg.
PCD Supt.
Project Manager
PTM

Attachment S

Surv #5276 Attachment 'A'

6-89-124
1/2

Hanger No.	TYPE	Drawing	
70H2	15H	Rev. P	0-3023H03
	14H	Rev R	0-3023H03
2H1	2H	Rev. J	0-3023 H02
	3H	Rev. K	0-3023 H02
13H30	13H	Rev. S	0-3023 H03
	14H	Rev T	0-3023 H03
12H5	13H	Rev. L	0-3023 H01
	12H	Rev. M	0-3023 H01
15H5	15H	Rev. D	0-3032 H01
	14H	Rev. K	0-3032 H01
	15H	Rev L	0-3032 H01
12H7	2H	Rev H	0-3033 H03
	13H	Rev. J	0-3033 H03
1HV3	1HV	Rev P	0-3022 H02
	402H	Rev. R	0-3022 H02

14H1	14H	Rev.L	0-3002 H01
	13H	Rev.M	0-3002 H01
14H2	14H	Rev.L	0-3002 H01
	13H	Rev M	0-3002 H01
4H3	14H	Rev.L	0-3002 H01
	13H	Rev.M	0-3002 H01
15H2	635H	Rev.J	0-3033 H01
	15H	Rev.R	0-3033 H01