UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
COMMONWEALTH EDISON COMPANY	)	Docket Nos. 50-454
	)	50-455
(Byron Station, Units 1 and 2)	)	

TESTIMONY OF NRC STAFF ON REMANDED
ISSUES WITH RESPECT TO THE REINSPECTION PROGRAM

Q1. Please state your names.

~~A2.~~ A1. My name is William Little. I am a Branch Chief in the Division of Reactor Safety, NRC Region III. I have supervisory responsibility for Region III's inspection ~~on~~ of the implementation and evaluation of the Reinspection Program.

My name is Kavin D. Ward. I am a Reactor Inspector in the Division of Reactor Safety, NRC Region III, with responsibility for welding inspection. I inspected welds at Byron and reviewed the Reinspection Report findings with respect to welds.

My name is Ray Love. I am a Reactor Inspector in the Division of Reactor Safety, NRC Region III, with responsibility in the electrical and instrumentation areas. I have conducted inspections of the work of the Hatfield Electric Company at Byron and reviewed the Reinspection Program findings with respect to Hatfield.

My name is James Muffett. I am a Reactor Inspector in the Division of Reactor Safety, NRC Region III. I reviewed the engineering evaluations conducted by Sargent & Lundy of discrepancies identified in the Reinspection Program.

My name is Kevin Connaughton. I am the Resident Inspector (reporting to the Senior Resident Inspector) at Byron. I have conducted inspections of activities under the Reinspection Program, including recertification practices.

Q2. Are your professional qualifications attached to this testimony?

A2. (Panel). Yes.

Q3. What is the purpose of this testimony?

A3. (W. Little). This testimony addresses the issues remanded by the Atomic Safety and Licensing Appeal Board in Commonwealth Edison Company (Byron Nuclear Power Station, Units 1 and 2), ALAB-770, 19 NRC ___ (May 7, 1984) with respect to the reinspection program instituted by Commonwealth Edison Company ("CECo") in response to the Staff's noncompliance identified in Inspection Report finding 50-454/82-05-19; 50-455/82-04-19. The aspects of the reinspection addressed in this testimony are those set forth in ALAB-770 and in the Licensing Board's "Memorandum and Order Following Prehearing Conference" (June 8, 1984) ("Prehearing Conference Order").

Q4. Which contractors covered by the reinspection program does your testimony address?

A4. (W. Little). As the Appeal Board ordered, we are presenting evidence of the reinspection program as it applied to Hatfield Electric Company and Hunter Corporation. At the Licensing Board's direction, this testimony also addresses the reinspection program as it applies to Pittsburgh Testing Laboratory.

Q5. Please clarify the scope of Pittsburgh Testing Laboratory's (PTL) work relative to the reinspection program.

A5. (K. Connaughton). Work, both first line inspections and overinspections, by selected PTL quality control inspectors was subject to the same reinspection program requirements as the other site contractors covered by the reinspection program. The results are discussed in testimony of other Region III personnel on the reinspection program.

PTL also acted to supply quality control inspectors to Hatfield Electric Company during the course of construction at Byron. For the purpose of being selected for reinspection, these QC inspectors were categorized as "Hatfield" inspectors.

The applicant directed PTL, as an independent testing agency, to perform special overinspections during the conduct of the reinspection program to determine if the PTL inspectors could independently arrive at the same inspection results as the contractor's quality control inspectors who were performing the reinspections and to

verify that the contractor inspectors were not biasing inspection results in favor of their company.

Q6. Has the sampling methodology provided adequate confidence in the capability of the Hatfield, Hunter and PTL quality assurance inspectors whose work was not reinspected and the overall quality of the work of those contractors? (ALAB-770; p. 29)

A6. (W. Little). The NRC staff believes that the results of the Reinspection Program provide adequate confidence in the capability of the Hatfield, Hunter and PTL quality control inspectors whose work was not reinspected, and provides additional assurance to support the Region III staff's position that the overall quality of the work of these contractors is acceptable. However, it should be noted that the Region III staff believed at the time of the Program's inception and believes today that the primary purpose of the Reinspection Program was to determine whether quality control inspectors who may not have been properly certified prior to September, 1982 had overlooked significant safety-related hardware deficiencies in their inspections.

The sampling methodology was not statistically conceived, but was based on engineering judgment. Considering that we had no reason to believe that significant hardware deficiencies existed and that we had insufficient evidence to suggest that the inspectors were incapable, the Region III staff believes that the sample size of inspectors whose work was inspected was sufficiently large and did

provide a good basis for evaluating whether there was reason to believe that inspectors whose work was not reinspected had overlooked significant discrepancies.

The Reinspection Program sampling methodology required that each inspector for Hatfield, Hunter and PTL be listed chronologically by date of certification, and the first inspector and every fifth inspector thereafter were selected for reinspection of their work. Generally, if a Hatfield or Hunter inspector had not performed a minimum of 50 inspections (25 inspections in the case of PTL) during the first three months of his work, then the next inspector in chronological order was selected. In addition to the above process, the Byron Senior Resident Inspector reviewed the QC inspector certification records and added two to four additional inspectors of his choice to the group of inspectors selected by the above mentioned process for each contractor.

Since the original certification of the inspectors was suspect, this could mean that the inspectors were not properly trained or they lacked the experience required to enable them to adequately perform their required inspection work. If this ~~were~~ was true we would expect these inspectors to make most of their mistakes during the initial periods of their inspection work. Therefore, the first three months work of each inspector selected was reinspected and if the acceptance criteria were not met the second three months of the inspector's work was reinspected. If the inspector's work failed to

meet the acceptance criteria during the second three month period, the inspector was considered to be unqualified and all of his inspections of the type in which he failed to meet the acceptance criteria were reinspected, and the original inspector sample was expanded by as much as 50%. It was Region III's engineering judgment that this sampling methodology was conservative and adequate for the purpose of the Reinspection Program.

Using the sampling methodology resulted in reinspecting a large sample of the work performed by 27% of the 86 Hatfield inspectors, 26% of the 84 Hunter inspectors, and 27% of the 85 PTL inspectors employed prior to 1982. The following numbers of safety related elements were reinspected: 67,245 objective and 26,660 subjective elements for Hatfield; 69,624 objective and 3,725 subjective elements for Hunter; and 6,016 objective and 6,137 subjective elements for PTL. It is Region III's judgment that the large sample of inspectors whose work was reinspected and the reinspection results give reasonable assurance that the Hatfield, Hunter and PTL inspectors did not overlook significant safety related hardware deficiencies. Region III believes that the reinspection of a total of 179,407 safety related elements for Hatfield, Hunter and PTL, the results of those inspections, and the analysis and disposition of the reinspection findings give us reasonable assurance that the overall quality of the work of those contractors is good. This conclusion is considered valid for both accessible and inaccessible work. Mr. Muffett's testimony addresses inaccessible and non-recreatable attributes.

Q7. Has the Staff accepted the results of the reinspection program as sufficient to resolve noncompliance 82-05-19?

A7. (W. Little). The Region III staff has accepted the results of the Reinspection Program as sufficient to resolve noncompliance 82-05-19, as we documented in NRC inspection number 50-454/84-13 and 50-455/84-09. Our acceptance of the results of the Reinspection Program was based upon:

1. Our evaluation that the program, as conceived and implemented, was adequate to accomplish our purpose, which was to determine whether prior to September, 1982, inspectors who may not have been properly certified overlooked significant safety related hardware problems.
2. An extensive inspection effort of program implementation by numerous NRC inspectors who possess engineering and inspection expertise in the areas covered by the Reinspection Program, which is summarized in the previously referenced report.
3. Our evaluation of the disposition of the discrepancies identified by the Reinspection Program, which was done to assure ourselves that the discrepancies did not indicate that there were significant safety related hardware defects in the work reinspected by Hatfield, Hunter and PTL. This evaluation is described in the previously referenced report and in Mr. Muffett's testimony.

I have already testified why we believe that the sampling methodology used in the Reinspection Program was adequate.

I will now describe our position on the acceptance criteria used in the Program to evaluate the reinspection discrepancies. From the inception of the Reinspection Program until this time it has been the Region III position that the 90% and 95% acceptance criteria are acceptable. Our reasoning is described in the following paragraphs.

The Reinspection Program established the following acceptance criteria:

1. for objective inspections the reinspection results shall agree with the original inspections ~~greater than~~ at least 95% of the time; and
2. for subjective inspections the reinspection results shall agree with the original inspections ~~greater than~~ at least 90% of the time.

We reviewed and accepted these criteria based on considerations of the safety importance of the elements inspected, the importance of the inspections themselves, and the expected performance of inspectors in identifying deficiencies.

The results of the Reinspection Program are summarized as follows:

Hatfield

Objective Inspections - All 17 inspectors sampled passed at the end of the first three months.

Subjective Inspections - A total of 7 inspectors passed at the end of the first three months. One inspector failed at the end of the

first three months but had no more reinspectable work. An additional inspector was substituted whose work was found acceptable at the end of three months, and he is included in the above total.

Hunter

Objective Inspections - Nineteen inspectors passed at the end of the first three months. One inspector passed who had all of his accessible and recreatable work inspected, because he did not have the minimum quantity of inspections during his first three months.

Subjective Inspections - A total of 16 inspectors passed at the end of the first three months. One inspector failed at the end of the first three months, but had no more reinspectable work. An additional inspector was substituted whose work was found acceptable at the end of three months, and he is included in the above total.

Pittsburgh Testing

Objective Inspections - Nine inspectors passed at the end of the first three months.

Subjective Inspections - A total of seven inspectors passed at the end of the first three months. Three inspectors passed who had all of their accessible and recreatable work inspected, because they did not have the minimum quantity of inspections during the first three months. One inspector failed at the end of the first and second three month periods, resulting in all of his work being reinspected

and the addition of the last remaining inspectors (4) to the sample. All four of these inspectors passed at the end of the first three months and are included in the above total.

In summary the Region III staff has accepted the results of the Reinspection Program as sufficient to resolve noncompliance 82-05-19 because we have found the program's sampling methodology and acceptance criteria, the program's implementation, and the evaluation and disposition of discrepancies identified by the program to have satisfied the program's intended purpose.

Q8. With respect to Hatfield, Hunter and PTL, please describe how the Staff monitored the implementation of the reinspection program?

A8. (Ward). Another Staff inspector and I assessed the Hatfield, Hunter and PTL reinspection of welds. A description of our efforts in doing so is found at pages 19-26, 27-29 and 37-38 of Inspection Report 83-39/83-29, dated December 28, 1983, and pages 10-14 of Inspection Report 84-13/84-09 dated April 16, 1984. Those pages are Enclosures 1 and 2 to this testimony attached and I adopt them as part of my testimony.

The review of the weld reinspections consisted of my selecting a number of welds that were subject to the reinspection program. I examined the welds themselves to determine if they had been reinspected and that the reinspector did not overlook a discrepancy. I also examined the documentation of welds generated by the rein-

spection program and the documentation generated by the original inspection of the weld. My inspection also included discussions with supervisors and lead weld inspectors.

In the course of my inspection, I found no instance in which a reinspector missed a deficiency. In fact, in many cases the reinspections were overly conservative and inspectors were classifying welds and attributes as "unacceptable" even though they were in fact acceptable under the American Welding Society (AWS) Code D1.1. I also found no instance in which a reinspection was not being conducted correctly. Furthermore, I found no deficiencies in the documentation generated by the reinspection program. With respect to the documentation of the original inspections, I did not find any deficiencies.

Another inspector observed the Hunter reinspection of components other than welds. The results of that review are found at pages 38-39 of Inspection Report 83-39/83-29 dated December 28, 1983. Those pages are attached to this prefiled testimony. (Enclosure 3).

Q9. With respect to Hatfield, excluding the welding area, please describe how the Staff monitored the implementation of the Reinspection Program? What were the findings and their safety significance?

A9. (R. Love). The implementation of the reinspection program was verified through the review of inspection reports, nonconformance reports, deficiency reports, and observation of work activities including inprocess inspections. The Region also verified CECo's involvement

in the Reinspection Program by reviewing QA audit and surveillance reports and by interviews of CECo personnel.

The findings for these attributes are summarized in Inspection Report 83-37, pages 5-7, and in Exhibit D-1 of CECo's Report on the Byron QC Inspector Reinspection Program, dated February 1984, Pages 7-10. (Enclosures 4 and 5 to this testimony). As indicated on page 9, paragraph 5, of the attached portion of the CECo report, the reinspection program provided a small sample for equipment setting and modifications, and A325 and conduit support bolting work. Additional inspections in these areas were conducted by CECo. The results of this additional inspection effort is documented in CECo's June 1984 supplement to the February, 1984 report. This supplemental response is currently under evaluation by Region III.

With respect to CECo report dated February 1984, Region III concurs that the deficiencies identified in the area of cable terminations, conduit installation, equipment installation and modification, cable tray and hanger installation, A325 bolts, and as-built drawings are not safety significant.

Q10. Have the deficiencies identified during the reinspections been properly included in the statistics of the program regardless of the particular documentation used to record such deficiencies?

A10. (W. Little). Yes, the Region III inspection staff has expended much inspection effort toward ensuring that discrepancies were properly

identified, documented, evaluated and included in the "Report on the Byron QC Inspector Reinspection Program", February, 1984. Our inspections identified no instances of improper documentation practices for Hatfield, Hunter and PTL, that would have resulted in deficiencies not being properly included in the Reinspection Program, and that would have impeded the ability to detect patterns or trends.

In addition, one of the primary objectives of the three Commonwealth Edison Company QA audits was to ensure that deficiencies were properly identified, accurately documented, evaluated and dispositioned. The first audit conducted in June and July, 1983 revealed that certain contractors, including Hatfield, Hunter and PTL were documenting discrepancies in accordance with the Reinspection Program, but the documentation did not meet the specific requirements of each contractors' QA program. However, since all discrepancies were being accurately documented this finding did not call into question the validity of the Reinspection Program results. The second audit conducted in August, 1983 was to ensure that documentation problems that Hatfield experienced during the early years of construction were not being repeated in the Reinspection Program. It was found that Hatfield had instituted special precautions to maintain the integrity of the Reinspection Program. The third audit conducted in November, 1983 identified problems with respect to some instances in which welds were rejected by PTL, reviewed by the required third-party who concurred in the rejection, but later accepted by PTL. A

problem arose because PTL did not obtain third party concurrence in the subsequent acceptances of the rejected welds. The audit found this to be unacceptable and all welds processed in this manner received the third-party review.

Q11. Has the integrity of the reinspection program been established even though the reinspections were conducted by Hatfield and Hunter personnel, rather than by an independent organization (i.e., was there evidence in the reinspection program of a "buddy system", where inspectors reinspected their own work or work of their friends)?

A11. (W. Little). Region III believes that the integrity of the Reinspection Program has been established and that effective measures were taken to prevent a "buddy system" bias of the results. Our belief is based upon the following:

1. Commonwealth Edison established controls to ensure that no inspector would reinspect his own work, and to ensure that the reinspectors did not know ~~either who performed the original inspection, or what the original inspection findings were~~ the original inspection findings for attributes in which as-built measurements were reinspected. It should be noted that it was not possible for inspectors to reinspect their own work on a significant scale in that 61% of the Hunter inspectors, 57% of the Hatfield inspectors and 57% of the Pittsburg Testing Laboratory (PTL) inspectors no longer were on the site at the time of the reinspection.

2. Audits of the reinspection program by Commonwealth Edison Quality Assurance and inspections conducted by the Region III staff, confirmed the integrity of the Reinspection Program.

Commonwealth Edison Company Quality Assurance performed three audits of the Reinspection Program to ensure that the Reinspection Program was properly implemented and to ensure that inspectors chosen to be reinspected were not selected to provide a bias in favor of their company. Their third audit performed after the issuance of the "Preliminary Report on the Reinspection Program", October 28, 1983 involved a 100% review of the QC inspection personnel of all contractors involved in the Byron Reinspection Program and verified that none had been involved in reinspection of work they had either originally inspected or had reviewed and accepted.

The Region III inspection staff inspected the Reinspection Program throughout its implementation and evaluation and found no indication that bias in favor of the original inspectors or the contractors was a problem. In fact, extensive Region III inspection efforts confirmed that the reinspectors, including those for Hatfield, Hunter and PTL, were very conservative in identifying discrepancies. Our inspector found that in the subjective visual weld inspections the reinspectors were identifying weld attributes as unacceptable which were in fact, acceptable under the AWS Code. If a buddy system were in effect, we would expect to find instances where decisions

were made in favor of the original inspector and the Region III inspection staff found none of these instances.

Q12. Has the Applicant provided a system to assure that inspectors certified between September 1982 and early 1983 are capable of performing their tasks?

A12. (K. Connaughton). Yes. Individuals certified after September 30, 1982 were certified in accordance with the Applicant's June 9, 1982 directive which established criteria to be uniformly applied by contractors for QC inspector certification.

Based upon the results of extensive NRC inspections and the Applicant's 100% review of inspector certification documents, only one QC inspector was identified who had been hired and certified after September 30, 1982 and who did not meet the experience requirements for the area and level of certification. That individual was a Level II weld inspector for Hatfield Electric.

The individual had worked once before as a QC inspector for Hatfield Electric prior to September 30, 1982. The first three months of work from his initial period of employment was reinspected as part of the reinspection program and a 96% acceptability rate was established. After being identified as improperly certified for his reemployment after September 30, 1982 the Applicant reinspected his first 30 days work following his reemployment and certification and established an acceptability rate which exceeded 99%.

Individuals hired and certified prior to September 30, 1982 in accordance with earlier QC inspector certification practices were included in the population of inspectors considered in the reinspection program. The reinspection program indicated that these QC inspectors were not overlooking significant discrepancies prior to September 1982. It would not be expected that these inspectors would be overlooking significant discrepancies between September 1982 and early 1983.

All individuals, regardless of when hired and initially certified, were recertified, as necessary, to meet the Applicant's June 9, 1982 directive by April 30, 1983. The Applicant's 100% review of QC inspector certifications was completed in July, 1983. These reviews resulted in the temporary decertification of one individual who did not possess a high school diploma or GED certificate. The individual subsequently obtained a GED and his certification was reinstated.

(K. Ward). Yes. I reviewed 33 visual weld inspector personnel certifications of Hatfield, Hunter and PTL personnel who were onsite and personnel who had left the site, including all visual weld inspectors recertified between September 1982 and early 1983. I found all of the certifications to be acceptable (Inspection Report No. 50-454/83-39; 50-455/83-29, pages 18, 19, 25 and 27).

I also visually examined approximately 330 welds that had been examined by Hatfield, Hunter and PTL and found that the companies did an acceptable job. (Inspection Report No. 50-454/83-39; 50-455/83-29, pages 18-30).

Q13. How many Hatfield inspectors required recertification and/or retraining at the inception of the recertification program?

A13. (K. Connaughton). Hatfield employed 46 inspectors as of September 30, 1982 who were previously certified in accordance with Hatfield procedures. In order for Hatfield to comply with the QC inspector certification requirements established in the Applicant's June 9, 1982 directive, all of these inspectors required one or more of the following: additional testing, documented on-the-job training, classroom training or additional objective evidence in support of their education and/or experience.

Q14. What significance is there to this number?

A14. (K. Connaughton). The Applicant's June 9,1982 directive regarding QC inspector certification included requirements which were highly prescriptive in regard to certain certification activities. For example, the directive established minimums for the number of questions to be contained on a required "closed book" written examination and for the number of hours of on-the-job training.
Whether or not previously certified inspectors had received adequate testing and on-the-job training for their area(s) and level(s) of certification, they were required to be recertified

if they had not met the Applicant's newly established minimums. Regardless of the reason(s) inspectors required recertification, they were included in the population considered in the reinspection program. There is, therefore, no particular significance to the number of Hatfield inspectors who required recertification to meet the Applicant's June 9, 1982 directive.

Q15. What were Hunter's documentation practices regarding discrepant conditions identified during the reinspection program?

A15. (K. Connaughton). As documented in the Applicant's QA audit report No. 6-83-66, an audit was conducted of Hunter and other contractors between June 21 and July 6, 1983 which resulted in a finding that Hunter and others were not utilizing the formal corrective action documentation specified in their QA programs to document discrepancies identified during the reinspection program. Instead, Hunter documented discrepancies with "field problem sheets". The discrepancies were captured in the reinspection program results. The audit finding was subsequently closed after Hunter issued discrepancy and nonconformance reports covering these discrepancies. Appropriate corrective action documentation was generated by Hunter for later identified discrepancies.

Q16. Were the reinspection results for Hunter compromised in any way by the "tabling" practices alleged by Michael Smith?

A16. (K. Connaughton). The tabling practices were alleged to have occurred prior to the reinspection program. There is no evidence that "tabling"

(i.e., failure to document and control) discrepancies occurred at Hunter during the reinspection program. As noted in the previous answer, Hunter did, however, document and control identified discrepancies prior to July 6, 1983 outside of the corrective action system specified in the Hunter QA program.

(K. Ward). In reviewing Hunter's documentation in the reinspection program the NRC inspectors found no problems. (See attached Report No. 50-454/83-39; 50-455/83-29, pages 18, 25, paragraph 12 on page 37, 38 and 39.) I reviewed visual weld inspection reports and visual weld inspection personnel certifications. Another inspector reviewed components.

No indication was found that the practice referred to as "tabling" was applied to discrepancies during the Reinspection Program. In fact, we uncovered no discrepancies in any documentation generated by the Hunter reinspections.

Q17. What significance is there to Hunter's alleged "tabling" practices in terms of assurance of the quality of Hunter's work?

A17. (K. Connaughton). Prompt identification and correction of nonconforming conditions is an objective of QA programs and required by 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action". The basis for this objective is that if identification of problems and initiation of corrective actions are put off, the system of checks and balances provided by a proper QA program could be rendered ineffective. Deferral

of inspections and corrective actions by Hunter had been identified as having occurred by the NRC during and subsequent to the employment of the individual who alleged to have personally witnessed the tabling of identified problems. Hunter instituted programmatic improvements to ensure that QC inspections and corrective actions were more timely and NRC findings relative to this issue have been satisfactorily resolved. "Tabling", if it occurred as alleged, has been addressed such that assurances of the quality of Hunter's work have not been compromised.

Q18. How were inspection attributes determined to be inaccessible or non-recreatable for the purpose of the reinspection program?

A18. (J. Muffett). Certain work activities by their nature and location are not generally reinspectable. CECo divided these attributes into two categories.

1. Inaccessible: The item which requires reinspection is located in an area or inside a structure which would require "extensive dismantling" to gain access for reinspection.
2. Non-recreatable: A condition where a process or event cannot feasibly be recreated for reinspection.

These basic terms require a certain amount of judgment and interpretation to be useful in a program conducted on a construction site. During the life of the reinspection program various interpretations were developed by CECo. These interpretations deal with a wide range of issues including the classification of inspections as either

inaccessible or non-recreatable. For example, CECo determined that the inspection of certain Hatfield conduit supports should be classified as inaccessible due to the fact that the supports were covered by firestops, and removal of these firestops had the potential for damaging electrical cables encased in the firestops. In another instance, CECo determined that inspections of structural bolting were non-recreatable due to the fact that the original inspector is only required to check a random 10% sample and not required to record which bolts made up this sample.

The basic categories and the interpretations have been reviewed by Region III and have been found to result in a practical program for reviewing previously inspected work to determine if signficant deficiencies were overlooked by certain inspectors. Therefore, we believe this aspect of the reinspection program was conducted in an acceptable manner.

Q19. Why do the reinspection results give reasonable assurance as to the quality of inaccessible and non-recreatable items?

A19. (J. Muffett). Careful review of the results of the reinspection program identified no cases in which the ability of a component or installation to fulfill its design function was jeopardized by an overlooked defect. This fact indicates that the inspectors were not overlooking significant discrepancies.

To the extent that nonreinspectable attributes are similar to the reinspectable attributes, the sampling of the reinspectable attributes can be readily applied to the nonreinspectable attributes. With respect to Hatfield and Hunter, the nonreinspectable attributes are highly similar to the reinspectable attributes. In addition, only approximately 10% of Hatfield and Hunter's visual weld inspections were classified as inaccessible. Accordingly, the reinspection program provides a high degree of assurance that significant discrepancies were not overlooked in the original Hatfield and Hunter inspections of nonreinspectable attributes.

As for PTL, there is still a fair degree of correlation between reinspectable and nonreinspectable work. Many of the reinspectable attributes, e.g. visual weld inspections, are similar to the nonreinspectable ones. However a number of the nonreinspectable items are not similar to the reinspectable ones, e.g. soils. Also, less of the PTL work was reinspectable than for Hatfield and Hunter. However, even though the reinspection program reveals less about nonreinspectable PTL attributes than it does about Hatfield and Hunter attributes, reasonable assurance as to the quality of the PTL inspections is provided by the reinspection program and by the fact that throughout the construction of the plant nonreinspectable items inspected by PTL have been audited by CECo and inspected by the Staff. No pattern of significant problems has been discovered.

Q20. Could the knowledge that certain work would be inaccessible for reinspection or non-recreatable have influenced craftspersons and inspectors?

A20. (J. Muffett). The question can be asked whether craftspersons and inspectors at Byron did less than their best job when they knew that certain work would become inaccessible or non-recreatable. The Staff has no reason to believe that this occurred, since any attribute at Byron which would become inaccessible or non-recreatable was required to be inspected while still accessible.

Furthermore, it is my understanding that during the construction of the plant, CECo has overinspected and the staff has performed inspections of items that are now inaccessible or non-recreatable. There has been no indication of a pattern of significant problems with those types of inspections. Also in some cases the original inspector did not know the component or installation would be inaccessible or non-recreatable, so in these cases there could be no influence.

Q21. Have all identified discrepant conditions identified in the Reinspection Program been properly resolved? Has CECo's commitment to repair any defect identified during the reinspection program been satisfied and effective? What technical analyses provide assurance that discrepant conditions which are not corrected are not safety-significant?

A21. (J. Muffett). Based on our inspections and reviews we believe all discrepant conditions identifed in the Reinspection Program have been properly resolved. The basis for the resolution of these discrepancies

and defects is a detailed engineering evaluation performed by Sargent and Lundy. All discrepant welds with subjective or objective defects have been evaluated and no weld which required repair has been discovered.

The Staff has reviewed discrepancies relating to all the contractors in the reinspection program and a broad spectrum of the types of discrepancies. These include concrete expansion anchors, pipe ovality, improper fit up gap for a weld, undersized weld and undersized socket weld, among others. The Staff reviewed the Sargent and Lundy analyses which form the bases for the resolution of these discrepancies. On the basis of this review, the Staff concurs in Sargent and Lundy's conclusion that none of the discrepancies have safety significance.

Q22. What was the cause and safety significance of the electrical cable overstressing episodes as described in Inspection Reports 84-02 and 84-09? What is the relationship, if any, between those episodes and the reinspection program? (Prehearing Conference Order, Page 9).

A22. (R. Love) - The occasional overstressing of an electrical cable is not safety significant providing it has been documented, properly analyzed, and appropriate corrective action taken. Even if cable installation procedures are properly implemented, it is expected that a small number of these cables will be overstressed when pulled through raceways. The cable installation activities were not considered during the 82-05-19 reinspection program because this activity is not recreatable.

Following is a summary of the cable pulling effort at Byron Station: As of June 22, 1984, there have been 20,652 electrical cables installed in Unit #1, and 6,769 in Unit #2. The total number of cables to be installed is approximately 36,400. During a followup of an allegation concerning overstressing of cables at the Byron Station, it was identified that approximately 110 cables had been overstressed during the initial installation or during rework activities (Reference: Inspection Report 454/84-09; 455/84-07). After analysis, some of these cables were acceptable as installed while others were replaced. The analysis for the cables that had been accepted as installed was found by the Staff to be adequate.

As discussed in Inspection Report 84-02, Pages 12-15, the NRC had identified shortcomings in the Hatfield cable installation procedure. The prime concerns were with cables installed in conduits prior to December 1982. Sargent and Lundy (S&L) identified that electrical cables had been pulled into approximately 2600 conduits prior to December 1982 and these would require analysis.

As documented in Inspection Report 454/84-27; 455/84-19, pages 10 and 11, the calculations performed by S&L were reviewed and found to be adequate. The worst case accepted, as observed by the inspectors, had a safety factor of approximately 3.3, that is, if the maximum allowable cable pulling tension was 330 pounds, S&L calculations showed that the cable could be pulled with 100 pounds tension or less. This analysis plus the various tests performed

prior to reactor operations provides Region III with a reasonable assurance that these cables will perform their intended function for the life of the plant.

Q23. Is there a pattern of nonconformances by Hatfield which is significant in terms of assurance of the quality of Hatfield's work?

A23. (R. Love). The Staff has not identified any pattern of nonconformances by Hatfield that would indicate widespread or significant problems with Hatfield work. There are, however, two matters of potential safety significance which have been preliminarily identified under 10 C.F.R. § 50.55(e) and which remain open as of the date of this testimony. They are:

1. Potential 50.55(e) (454/83-14-EE; 455/83-14-EE): This item pertains to the improper installation of electrical cable grips. As installed, the cable grips are not supporting the cables in risers (vertical raceway).
2. Potential 50.55(e) (454/84-03-EE; 455/84-03-EE): This item pertains to electrical conductor butt splices and is being investigated by CECo under an inspection plan which has been approved by Region III. That investigation will include an analysis of the safety significance of all defects identified.

Both of these items will be tracked by NRC as open § 50.55(e) potential deficiencies and must be closed prior to fuel load.

PROFESSIONAL QUALIFICATIONS

WILLIAM S. LITTLE

U.S. NUCLEAR REGULATORY COMMISSION

I am employed as the Chief of the Engineering Branch, Division of Reactor Safety, Nuclear Regulatory Commission, Region III. I received a Bachelor of Chemical Engineering degree from Georgia Institute of Technology, Atlanta, Georgia in 1953. I completed eighteen semester hours of graduate study toward a Masters of Nuclear Science degree at the University of Idaho.

Since January, 1982 I have managed the Engineering Branch in Region III responsible for inspections at the Region III nuclear power plant operating and construction sites in the following areas of engineering: civil, structural, electrical, mechanical, metallurgical, nondestructive examination, welding and fire protection. During 1980 and 1981 I supervised a Reactor Projects Section in Region III responsible for the resident inspection program at four operating and construction sites. From August, 1975 through 1979 I supervised a Nuclear Support Section in the Operation Branch in Region III responsible for the inspection of operating nuclear power plants in various areas of engineering. From September, 1971 until August 1975 I was the Principal Inspector for Browns Ferry Units 1 and 2 in Region II during preoperational, startup testing and initial operation.

Prior to joining the U.S. NRC I was employed by Babcock & Wilcox Company, Lynchburg, Virginia from June 1968 through August 1971 as a Licensing Supervisor responsible for the B&W licensing activities for several nuclear power plants. From October 1956 until June 1968 I was employed by the Phillips Petroleum Company, Atomic Energy Division at the National Reactor Testing Station in Idaho. With Phillips Petroleum Company I held numerous engineering and supervisory positions in areas related to the design, construction and operation of nuclear test reactors and experiments conducted in those reactors, and in water reactor safety analysis and testing.

Prior to October 1956 and following my graduation in 1953 I worked in non-nuclear areas as an engineer in organic chemical process development, and as a research engineer in the areas of heat transfer and refrigeration systems development testing.

PROFESSIONAL QUALIFICATIONS

KAVIN D. WARD
U. S. NUCLEAR REGULATORY COMMISSION

I am employed as a Reactor Inspector in the Region III, Materials and Processes Section.

I received a B.S. degree in Mechanical Engineering from Pacific Western University, Encino, California. I am also a Registered Professional Engineer in Quality Engineering from the State of California.

I am assigned as a Reactor Inspector in Region III and have been since January, 1978. In this capacity I perform inspections in construction and operating facilities in accordance with Codes, Standards and Guides. I observe the performance of welding and nondestructive examination (NDE) of support personnel, evaluate and report upon appraisal of their qualifications and performance, primarily in the fields of NDE and welding. Participate in investigations involving or pertaining to nuclear facilities.

Prior to joining the Commission in January, 1978, I worked 7 years for Bechtel Corporation, San Francisco, California. I held the position of Engineering Supervisor and was certified in various methods of NDE, including being a test examiner.

From 1970 to 1971, I was employed by Nebraska Testing Lab as a Quality Assurance Manager.

From 1969 to 1970, I was employed by Peter Kiewit Cons. Company as a Quality Assurance Engineer.

From 1968 to 1969, I was employed by Phillips Petroleum Co. as a Quality Assurance Representative.

From 1966 to 1968, I was employed by Westinghouse Electric Co. as a NDE Technician.

From July 1946 to August 1966, I was in the United States Navy. While in the Navy, I attended several welding and NDE schools and served primarily aboard submarine tenders as a pipefitter, welder and NDE inspector.

PROFESSIONAL QUALIFICATIONS

RAY S. LOVE

U.S. NUCLEAR REGULATORY COMMISSION

I am employed as a Reactor Inspector in Region III, Division of Reactor Safety, Engineering Branch, Plant Systems Section.

In this capacity, I have performed inspections of the electrical and instrumentation nuclear construction work activities in Region III facilities to ascertain licensee conformance with NRC requirements, SAR commitments, applicable codes and standards and locally prepared procedures and instructions.

As a collateral assignment, I served as the NRC representative on the ASME Boiler and Pressure Vessel Committee, Section III General Requirements, Work Group on Duties and Responsibilities. My five (5) year term expired in March 1984.

Prior to joining the Commission in April 1981, I worked 11 years for various contractors in the construction or modification of nuclear power plants as a QC inspector, QA/QC Manager, and an Electrical Engineer. I also worked 3 years as a Reactor Operator at the EBR-II facilities for Argonne National Laboratories.

From December 1945 to July 1965, I was in the United States Navy. While in the Navy, I qualified as an Engineering Officer of the Watch (EOOW) for nuclear facilities.

I am a Registered Professional Engineer, State of California, Number QU-2789, dated February 8, 1978.

PROFESSIONAL QUALIFICATIONS

JAMES W. MUFFETT

U.S. NUCLEAR REGULATORY COMMISSION

I am employed as a Reactor Inspector in Region III, Division of Reactor Safety, Materials and Processes Section.

I received a B.S. degree in Physics from Purdue University in 1972 and a Master of Engineering degree in Mechanical Engineering from the University of Idaho in 1978. I am a registered Professional Engineer in the States of Illinois, Indiana and Minnesota.

Over the last twelve years I have been involved in the design and analysis of piping, pipe supports, structures at various nuclear stations including Zion, Ft. St. Vrain, Monticello, Fermi-2, and the "Loss of Fluid Test" reactor among others.

I was employed at Sargent & Lundy from 1972 until 1975 as a stress analyst and from 1975 to 1978 at the Idaho National Engineering Laboratory as a Group Leader in the Applied Mechanical Branch.

From 1978 until 1981 I was employed outside the Nuclear Industry in the development of analytical methods. From early March 1981 until August 1981 I was employed with Nuclear Power Services' Chicago office as manager of analytical services. From 1981 until 1983 I was employed at Nutech Engineers as Manager of Mechanical Design and Analyses for various nuclear station modifications. In August 1983 I joined US NRC Region III.

KEVIN A. CONNAUGHTON

Organization: Nuclear Regulatory Commission
Region III

Title: Resident Inspector

Education: B.S., Nuclear Engineering, University of Cincinnati, June 1980.

Experience:

8/82 - Present — Resident Inspector, Projects Section 1B - Performs assigned portions of 2513 and 2514 programs at Byron Nuclear Station, Units 1 and 2.

6/82 - 8/82 — Reactor Inspector, Management Programs Section - Inspects reactors in operation and test and startup. Prepares assigned portions of Byron and Perry SER (OL Stage).

2/81 - 6/82 — Reactor Inspector Intern, Management Programs Section - Inspects reactors in operation and test and startup. Prepares assigned portions of Byron and Perry SER (OL Stage).

6/80 - 2/81 — Reactor Inspector Intern, Nuclear Support Section 2 Inspects reactors in operation and test and startup.

9/78 - 3/79 — Inspection Assistant, Reactor Operations and Nuclear Support Branch, Region III - Employed through the Cooperative Education program. Attended PWR Fundamentals Course, assisted Fire Protection Review Team, accompanied and assisted RO&NS Inspectors.

9/77 - 3/78 — Inspection Assistant, Reactor Operations and Nuclear Support Branch, Region III - Employed through the Cooperative Education Program. Accompanied and assisted RO&NS Inspectors. Responsible for familiarization with pertinent aspects of plant design, regulation, operation, etc., of nuclear power facilities.

9/76 - 3/77 — Inspection Assistant, Fuel Facilities and Materials Safety Branch - Employed through Cooperative Education Program. Accompanied inspectors from all branches and sections of the regional office. Attended Headquarters orientation program.

As the re-inspection program progressed beyond the early stages, CECo Quality Assurance and Project Construction personnel became aware of problems at Hatfield in determining which welds were to be included in the re-inspection. These problems were primarily due to the manner in which Hatfield generated and maintained inspection records during the early years of construction. Also, the NRC advised CECo of concerns with the Hatfield inspection records. As a result, CECo Site Q.A. performed an audit to specifically address these concerns. The audit (report #6-83-124) was conducted by a three man team during the period 8/24/83 through 9/1/83.

The scope of the audit included the following:

- Review documentation practices
- Correlation of weld record cards to welders and inspectors
- Identifying the latest weld record
- Re-numbering hangers
- Re-inspection - incorrect assumptions
- Procedures not being followed

In reviewing the above audits the inspector determined that the contractors were actively implementing the re-inspection program.

D. Welding

The following addresses welds that the inspector visually examined and documents the inspector reviewed of various contractors involved in the reinspection program. The welds visually examined were welds located in Unit 1 and Unit 2.

1. Hatfield Electric Company

Hatfield reinspected approximately 22,900 welds. The third party is in the process of reinspecting all of their unacceptable welds. This reinspection will be completed in the near future.

(a) The following are specific examples of noncompliances identified in Inspection Report No. 50-454/82-05; 50-455/82-05.

- The certification records for three (3) of the nine (9) inspector qualifications reviewed did not contain a Certification Evaluation Sheet.

- The certification record for one (1) of the nine (9) QC inspector qualifications reviewed did not have records of examinations or work samples.

- The certification records for two (2) of the nine (9) QC inspector qualifications reviewed did not provide complete evaluation and justification for certification to perform the level of inspection identified.

To verify the licensee's corrective actions taken in response to noncompliance 454/82-05-19; 455/82-04-19, the inspector reviewed Hatfield Class I Visual Weld Examination Procedure No. 13AE, Revision 2, Hatfield Qualification and Training of Inspection and Audit Personnel Procedure No. 17, Revision 10; and nine (9) weld inspection personnel certifications which included the following documents. All were found to be acceptable in the following areas.

- Training
- Eye Tests
- Written tests; no oral tests are given
- Verification of prior work (letter or telephone conversations documented resumes)
- Diplomas or verification of education
- Certification of qualification
- Experience profile report
- Personnel evaluation letters
- Surveillance

(b) The following welds were visually examined by the inspector:

Weld Inspection Abbreviations

A/S	Arc Strike
U/S	Undersize (leg or throat)
N/F	Non Fusion
U/C	Under Cut
O/L	Overlap
PROF	Profile
P or POR	Porosity
S	Slag
SP	Spatter
CR	Crater
E/L	Excessive leg
E/C	Excessive converity
O/W	Overweld
N/P	Non Penetration

Package or Traveler	Weld ID	Contractor Results		3rd Party Results		Type of Installation
		Acc	Rej-Defects	Agree	Disagree-Defects	
9887	1		x U/C	x		Plate to Tube Steel
	2	x	U/C			"
5396	1		x U/C		U/C	Junction Box to Column
	2		x U/C		U/C	"
9866	1		x U/C		U/C	"
25875	1		x U/S	x		Plate to Tube Steel
	2		x U/S	x		"
	3		x U/S	x		"
	4		x U/S	x		"
	5		x S, N/F	x		"
38,324	1		x U/C		U/C	Plate to Tube Steel
	2	x				"
	3					"
	4	x				"
	5	x				"
	6	x				"
	7	x				"
	8	x				"
25777	1		x N/F	x		Plate to Tube Steel
25778	1		x U/S	x		Plate to Tube Steel
	2		x O/L	x		"
	3		x S	x		"
25750	1		x O/L	x		"
20315	1		x S		S	"
	2		x S		S	"
	3		x Prof		Prof	"
9048	1		x P,CR,N/F	P, NF	CR	Unistrut to Channel
	2		x P, CR	x		"
37218	1		x CR	x		Plate to Tube Steel
	2	x				"
37223	1		x O/L	x		Clips to Tube Steel
	2	x				"
	3	x				"
	4	x				"
	5	x				"
37074	1		x U/C		U/C	Unistrut to Tube Steel
	2		x			"
	3		x			"

Package or Traveler	Weld ID	Contractor Results		3rd Party Results		Type of Installation
		Acc	Rej-Defects	Agree	Disagree-Defects	
37057	1		x U/C		U/C	Unistruct to Tube Steel
	2		x			"
37039	1		x U/C		U/C	"
37067	1		x U/C		U/C	"
25958	1	x				Pan to Unistrut
6871	1	x				Tube to Plate
20370	1		x U/C, O/L		U/C, O/L	Pan to Unistrut
	2		x			Tube to Plate
	3		x			Pan to unistrut
	4		x			Tube to Plate
	5		x			Pan to Unistrut
2196	1	x				Plate to Plate
4217	1	x				Plate to Plate
25777	2	x				Plate to Tube Steel
	3	x				"
	4	x				"
	5	x				"
	6	x				"
	7	x				"
	8	x				"
25778	2	x				"
	3	x				"
	4	x				"
	5	x				"
	6	x				"
	7	x				"
25919	1	x				Tube to Plate
25945	1	x				Pan to unistruct
25916	1	x				"
25923	1		x U/C,O/L S, POR	x		Tube Steel to Tube Steel
	2					"
	3					"
	4					"
	5					"
	6					"
	7					"
	8					"
	9					"
	10					"
	11					"
	12					"
	13					"
	14					"
	15					"
	16					"

Package or Traveler	Weld ID	Contractor Results		3rd Party Results		Type of Installation
		Acc	Rej-Defects	Agree	Disagree-Defects	
25960	1		x U/S	x		Pan to Tube
	2					Tube to Tube
	3					Pan to Tube
	4					Tube to Tube
37069	1		x U/C		U/C	Unistrut to Tube
25918	1		x U/C		U/C	Pan to unistrut
	2		x U/C	x		"
29507	1		x O/L	x		Tube to Plate
	2		x O/L	x		"
37037			x U/C		U/C	Unistrut to Tube Steel
33018	1		x A/S,U/C,O/L	A/S,O/Lx	U/C	Plate to Embed
	2		x A/S,O/L,U/C	x		"
33015	1		x A/S,O/L,U/C	A/S,O/Lx	U/C	"
	2		x A/S,O/L,U/C	A/S,O/Lx	U/C	"
33046	1		x A/S, U/C	A/S x	U/C	"
	2		x A/S, U/C	A/S x	U/C	"
33043	1	x				"
33036	1		x U/C	x		"
	2		x U/C	x		"
	3	x				"
	4	x				"
33042	1		x O/L	x		"
	2		x A/S, U/C	A/S	U/C	"
	3		x U/C, O/L		U/C, O/L	"
20791	1		x U/C	x		Brace to Tube Steel
	2		x S	x		"
	3		x U/C, A/S	x		"
	4		x U/C	x		"
	5		x U/C, O/L	O/L	U/C	"
	6		x O/L, S	x		"
	7		x U/C, O/L		U/C, O/L	"
	8		x U/C, A/S	A/S	U/C	"
	9		x S, U/C	S	U/C	"
	10		x U/C	x		"
	11		x U/C,O/L,S	U/C, S	O/L	"
	12		x O/L, S	x		"
	13		x U/C, S, O/L	S, O/L	U/C	"
	14		x S,O/L,U/C,	x		"
	15		x O/L		O/L	"
	16		x A/S, U/C	x		"
26048	3	x				Brace to Tube Steel
	4	x				"
	5	x				"
33044	1		x U/C	x		Plate to Embed
	2		x A/S	x		

Package or Traveler	Weld ID	Contractor Results		3rd Party Results		Type of Installation
		Acc	Rej-Defects	Agree	Disagree-Defects	
	3		x U/C	x		Plate to Embed
	4	x				"
25878	1		x O/L	x		Brace to Aux Steel
	2		x N/F, S	x		"
25839	1		x U/C	x		"
20316	1		x S		S	Pan to Unistrut
	2		x S		S	"
26105	1		x O/L, N/F	x		Tube Steel to Tube Steel
	2		x O/L	x		"
	3	x				"
	4	x				"
25826	1		x U/C		U/C	Tube Steel to Aux Steel
	2		x U/C, O/L	O/L	U/C	"
25772	1		x U/C	-	U/C	"
	2		x U/C		U/C	"
	3		U/C	x		"
	4	x				"
	5	x				"
	6	x				"
	7					"
20790	1		x U/C		U/C	Plate to Tube Steel
	2		x A/S	x		"
	3		x U/C	x		"
	4		x U/C		U/C	"
	5		x U/C		U/C	"
	6		x U/C		U/C	"
	7		x O/L, S, U/C	U/C	O/L, S	"
	8		x O/L, U/C	U/C	O/L, U/C	"
20784	1		x U/C, O/L	U/C	O/L	"
	2		x U/C, O/L	U/C	O/L	"
	3		x U/C	x		"
	4		x O/L, U/C	O/L	U/C	"
20786	1		x U/C	O/L	U/C	"
	2		x U/C	x		"
	3		x O/L		O/L	"
	4		x O/L		O/L	"
	5		x O/L, U/C	U/C	O/L	"
	6	x				"
	7	x				"
20309	1		x Prof, S	S	Prof	Pan to Tube Steel
	2		x CR, U/C	CR	U/C	"
	3		x Prof, U/C		Prof, U/C	"
	4	x				"

Package or Traveler	Weld ID	Contractor Results		3rd Party Results		Type of Installation
		Acc	Rej-Defects	Agree	Disagree-Defects	
25832	1		x U/C		U/C	Pan to Tube Steel
499	1		x U/C		U/C	Plate to Tube Steel
	2	x				"
26049	1		x CR	x	U/C	Pan to Unistrut
	2		x CR, U/C	CR	U/C	"
	3		x Poro		Poro	"
	4		x CR	x		"
	5		x CR, A/S	x		"
	6		x CR	x		"
	7		x CR	x		"
	8		x U/C	x		"
	9		x CR	x		"
26048	1		x CR	x		"
	2	x				"
33039	1		x U/C	x		"
33042	4		x A/S	x		"
33041	1		x A/S, O/L, U/C	A/S, O/L	U/C	"
33041	2		x A/S, O/L U/C	A/S O/L	U/C	"
	3		x A/S, O/L	x		"
	4		x A/S, O/L	x		"
33034	1		x A/S, O/L U/C	A/S, O/L	U/C	"
	2		x A/S, O/L U/C	A/S O/L	U/C	"
33019	1		x O/L	x		"
	2		x O/L, SP	x		"
33033	1		x A/S, O/L U/C	x		"
33033	2		x O/L, U/C SP	O/L, SP	U/C	"
5832	2	x				"
	3	x				"
	4	x				"
	5	x				"
	6	x				"
	7	x				"

2. Hunter Corporation

Hunter reinspected approximately 3,662 welds, found approximately 724 unacceptable welds and are in the process of repairing.

(a) The following is a specific example of noncompliance identified in Inspection Report No. 454/82-05; 455/82-04.

- The certification records for two (2) of the seven (7) QC inspector qualifications reviewed did not provide determination of equivalent inspection experience to support the level of certification.

- To verify the licensee's corrective actions taken in response to noncompliance 454/82-05-19; 455/82-04-19 the inspector reviewed Hunter Acceptance Criteria for Visual Examination, Application and Reports Procedure No. 6001, Revision 3, Hunter Qualification and Inspection Examination, Testing, Auditing Personnel No. 1,702, Revisions 10; and 12 visual weld inspection personnel certifications which included the following documents. All were found to be acceptable:

  - Certification of qualifications
  - Personnel evaluation sheets
  - Training
  - Written tests (no oral tests are given)
  - Eye tests
  - Resumes
  - Diplomas or verification of education
  - Verification of prior work (letters or telephone conversations documented).

(b) The following welds were visually examined by the inspector:

WELD INSPECTION ABREVIATIONS

See paragraph D.1.(b) above.

Package or Traveler	Weld ID	Contractor Results			3rd Party Results		Type of Installation
		Acc	Rej-Defects		Agree	Disagree-Defects	
S-CC-001-20	798		x	U/C	x		Pipe weld
S-SI-001-48	1660		x	U/S	x		Pipe weld
S-SI-001-48	1662		x	U/S	x		Pipe weld
S-CC-100-52	1884		x	POR	x		Pipe weld
S-SX-100-14	96		x	U/S	x		Pipe weld
S-SX-100-14	1919		x	U/S	x		Pipe weld
S-SX-100-24	569		x	U/S	x		Pipe weld
S-SX-100-24	570		x	U/S	x		Pipe weld
S-SX-100-24	1275		x	U/S	x		Pipe weld
S-SX-100-24	1276		x	U/S	x		Pipe weld
1RY3	2		x	U/S	x		Pipe weld
1RY3	9		x	U/S	x		Pipe weld
1RY3	10		x	U/S	x		Pipe weld
S-CC-100-33	1265		x	POR	x		Pipe weld
AF25	224		x	POR	x		Pipe weld
S-CC-001-20	785	x					Pipe weld
S-CC-001-20	786	x					Pipe weld
S-CC-001-20	787	x					Pipe weld
S-CC-001-20	788	x					Pipe weld
S-CC-001-20	794	x					Pipe weld
S-CC-001-20	796	x					Pipe weld
S-CC-001-20	797	x					Pipe weld
S-CC-001-20	804	x					Pipe weld
S-CC-001-20	805	x					Pipe weld
S-CC-001-20	808	x					Pipe weld
S-CC-001-20	809	x					Pipe weld
S-CC-001-20	810	x					Pipe weld

3. Nuclear Installation Service Co. (NISCo)

NISCo reinspected approximately 229 welds and found all the welds acceptable.

(a) The inspector reviewed the following:

- NISCo, QC Perform Visual Inspection of Weld Procedure, ES 100-5, Revision B.
- NISCo, Qualification and Certification of Inspection Personnel Procedure No. ES 116-2, Revision E.
- NISCo, Four Visual Weld Examination Personnel Certifications.

(b) The following are welds visually examined by the Inspector.

Package or Traveler	Weld ID	Contractor Results		3rd Party Results		Type of Installation
		Acc	Rej-Defects	Agree	Disagree-Defects	
405-22	22	x				Fuel Transfer
405-21	21	x				Tube Supports
405-20	20	x				Fuel Transfer
405-19	19	x				Tube Supports
405-15	15	x				Fuel Transfer
405-13	13	x				Tube Supports
405-12	12	x				Fuel Transfer
405-11	11	x				Tube Supports

4. Pittsburgh Testing Laboratory (PTL)

PTL reinspected approximately 4,973 welds and found approximately 724 welds unacceptable. No repairs have started.

(a) The following is a specific example of a noncompliance previously identified in Inspection Report No. 50-454/82-05; 50-455/82-04.

. The certification record for one of the three (3) QC/QA inspector qualification records reviewed did not have a verification of prior work experience.

To verify the licensee's corrective actions taken in response to noncompliance 454/82-05-19; 455/82-04-19, the inspector reviewed PTL Visual Inspection of Welding Procedure No. IS-BY-1, Revision 3; PPL Personnel Qualification/Certification Procedure No. IS-BY-49-PQ, Revisions 4; and 12 visual weld inspector personnel certification packages which included the following documents. All were found to be acceptable:

. Training
. Eye tests
. Written test
. Verificatior of prior work
. Diplomas or vertification of education
. Certification of qualification
. Resumes

(b) The following welds were visually examined by the inspector:

Weld Inspection Abbreviations

See paragraph D.1 (b) above.

Package or Traveler	Weld ID	Contractor Results		3rd Party Results		Type of Installation
		Acc	Rej-Defects	Agree	Disagree-Defects	
2211	263		x E/L		x E/L	I-Beam to Embed
2211	263		x E/L		x W/L	I-Beam to Embed
2211	247		x N/F	x		Structural
2211	247		x N/F	x		Structural
2211	247		x N/F	x		Structural
2211	247		x O/L	x		Structural
2211	247		x O/L Prof	x		Structural
2211	247		x E/L	x		Structural
2211	247		x O/L	x		Structural
2211	247		x O/L	x		Structural
2211	247		x UC, E/L	x		Structural
2211	247		x Prof, Por	x		Structural
2211	247		x U/S	x		Structural
1895	106		x U/C		x U/C	Structural
2108	106	x				Structural
2112	632	x				Structural
2060	633	x				Structural
2730	641		x O/L, E/L		x E/L	Structural
2730	641		x O/L, E/L		x E/L	Structural
2730	615		x N/F, O/L	x		Structural
2083	570		x N/F		x	Structural
2086	570		x N/F		x N/F	Structural
2081	571		x U/C, N/F		x	Structural
2168	609		x U/C		x U/C	Structural
2168	610	x				Structural
2168	610		x N/F, U/C	x		Structural
2168	610		x N/F,O/L,U/C	x		Structural
2168	610		x O/L	x		Structural
1867	1	x				Structural
1867	1	x				Structural
1899	402	x				Structural
1899	402	x				Structural
1899	403		x U/C	x		Structural
1899	403	x				Structural
1108	4AWC7		x U/C E/L		x E/L, U/C	Clip to embed
1108	4AWC7		x C/L,U/C,O/W	x O/L	x U/C, O/W	Clip to embed
2472	Ho47A		x U/C, U/S	x		Electrical
2472	Ho47A	x				Stiffeners
2472	Ho47A	x				Electrical
2472	Ho47A	x				Stiffeners
2472	Ho47A	x				Electrical
2472	Ho47A		x U/S	x		Stiffeners
2472	Ho47A	x				Electrical
2472	Ho47A	x				Stiffeners
2472	Ho47A		x U/S	x		Electrical
2472	Ho47A	x				Stiffeners
2472	Ho47B	x				Electrical
2472	Ho47B	x				Stiffeners

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Package or Traveler	Weld ID	Contractor Results		3rd Party Results		Type of Installation
		Acc	Rej-Defects	Agree	Disagree-Defects	
2472	Ho47B	x				Electrical
2472	Ho47B	x				Stiffeners
2472	Ho47B	x				Electrical
2472	Ho47B	x				Stiffeners
2472	Ho47B	x				Electrical
2472	Ho47B	x				Stiffeners
2472	Ho47B	x				Electrical
2472	Ho47B	x				Stiffeners
2472	Ho37	x				Electrical
2472	Ho37	x				Stiffeners
2472	Ho37	x				Electrical
2472	Ho37		x U/S	x		Stiffeners
2472	Ho37	x				Electrical
2090	226		x U/C	x		Structural
2090	227	x				Structural
1966	305	x				Structural
1966	305	x				Structural
1966	289	x				Structural
1966	289	x				Structural
2146	562		x O/L,U/C,E/L CR		x O/L,U/C,E/L,CR	Structural
1990	688		x U/C,POR, CR	x		Structural
1980	689		x S,POR	x		Structural
1963	689		x U/C	x		Structural
1892	691		x O/L,U/C	x		Structural
1845	692		x U/C	x		Structural
1988	672		x U/C,U/S	x		Structural
2665	CC10		x O/L		x O/L	Electrical to Structural
2665	CC10		x U/S	x		"
2665	CC10		x N/F		x N/F	"
2665	CC10		x U/S,U/C		x U/S,U/C	"
2665	CC10		x N/F,O/L		x N/F,O/L	"
2665	CC9		x E/C		x E/C	"
2665	CC9		x O/L	x		"
2665	CC9		x N/F	x		"
2665	CC9		x U/S,U/C	x		"
2665	CC9		x O/L,E/C		x E/C	"
2003	MS126	x				Steel to Structural
2003	MS126	x				"
2003	MS126	x				"
2003	MS126	x				"
2070	366	x				Stiffeners to Structural
2070	366	x				"
2070	366	x				"
2070	366	x				"

There was also a telecon on November 10, 1983, between Region III Messrs. DelGeorge and Tramm of CECo regarding the preliminary report.

As discussed during the telecon, the NRC believes the report should address the following items:

- The report should be drafted in accordance with the original program. Specifically, the tables and conclusions based on those tables should be based on the findings of the Level II examiner or the independent Level III examiner. Use of a CECo Level III examiner to change the results of the independent Level III findings is not in accordance with the original program.

- It was the NRC understanding, that CECo will provide tabulation of the results of inspection attributes (weld overlap, undercut, etc.) in order to determine the need if any, for further inspections. This tabulation may be made available to the NRC inspectors, and need not be in the report, but as a minimum, the conclusions CECo have reached regarding the tabulations should be included in the report.

- It was also the NRC understanding that CECo will review different inspection activities and determine if certain areas such as final hanger inspections warrant further review based on reject rates.

11. Disposition of Discrepancies

All discrepancies identified as a part of the reinspection are being corrected either by physical rework to correct the condition or by detailing condition on nonconformance reports to perform engineering analysis to determine acceptability of the condition without correction. The determination, as to the course of action employed to disposition the condition, is a function of the estimate of the more cost effective path to resolution. That is, when it appears that the cost to physically correct the condition is less than the costs associated with detailing data and performing an engineering analysis, then physical correction is chosen, and vice versa.

12. NRC Regional Inspector Observations

The performance and results of visual weld reinspections were reviewed by the inspector. The review consisted of discussions with supervisors/lead weld inspectors, examination of original inspection records and reinspection records, and visual examination of 500 welds which had been reinspected by several companies. In the visual examination, the inspector found that in many cases the reinspections were overly conservative and inspectors were classifying weld attributes as unacceptable which, infact, were acceptable under the AWS Code. The third party inspection was correcting most of these over calls. The

overly conservative inspection findings resulted from the evaluations of overlaps, undercuts, and craters. For example, there were several instances of undercut that were less that 1/32-inch in depth, which were acceptable under AWS Code requirements but were determined unacceptable by the original reinspections. There were also problems in interpretation where the welder had welded a brace and a plate to tube steel. In most cases these were 90° joints. Often, where the welder started welding there was a slight undercut indication and where the welder stopped at the end of the weld, there was a dish type indication. Some inspectors were rejecting the welds (for a crater) when in fact, most met AWS Code requirements. Other welds were erroneously being rejected (for overlap) because of a slight build-up which occurred if the welder had hesitated a fraction of a second at the end of a weld.

The inspector also found that in the area of the instrumentation piping socket to piping fillet welds, the welds are being rejected due to undersize because the fillet welds are almost polished for liquid penetrant examination. The welds were acceptable prior to grinding.

E. Components

The NRC inspector verified the reinspection program by reviewing the documentation and observing the work activities. The documentation review covered 100% of the reinspection as follows:

Section 1

Prepared by K. D. Ward

Reviewed by D. H. Danielson, Chief
Materials and Processes Section

1. Licensee Action on Previous Inspection Findings

a. (Closed) Noncompliance (454/82-05-19; 455/82-04-19): The Reinspection Program conducted as a result of concerns defined in Region III Inspection Report No. 50-454/82-05; 50-455/82-04 associated with the qualification and certification inspection personnel is completed.

An extensive program of reinspections was agreed upon and documented in a CECo letter to NRC Region III dated February 23, 1983. The deficiencies in the training and certification of QC inspectors called into question the initial capabilities of some inspectors. The program was initiated to determine whether these deficiencies resulted in the QC inspectors overlooking significant safety deficiencies in their inspection work.

The Reinspection Program began February 22, 1983, by meeting with contractors to identify purpose and content of the activities to be performed. The individual inspectors whose work was selected to be reinspected were established, and the process of record search to identify individual inspections to be reinspected was initiated.

A preliminary report dated October 28, 1983, was submitted to the NRC-Region III office. Comments on the preliminary report were identified in NRC-Region III letter dated November 18, 1983. One additional HECo, one Hunter and four PTL weld inspectors had to be selected and their first 90 days of work reinspected to complete the reinspection activities. The reinspection activities of these weld inspectors are now completed.

Based on the inspection of welds by the NRC inspector for Hunter and PTL activities (See Region III Inspection Report No. 50-454/83-39; 50-455/83-29) and the amount of welds that the additional inspectors had examined it was decided that the NRC inspector should visually examine only the HECo welds. The added HECo weld inspector had inspected 5,070 welds during his first 3 months. Hatfield reinspected the 5,070 welds and found 656 of the welds did not meet specification. The 3rd party Level III inspected the 656 welds and found 501 of those welds did not meet specification. The NRC inspector reviewed the inspection records and visually examined the following 240 welds and basically found the same results as the 3rd party.

Weld Inspection Abbreviations

Acc.	Acceptable
U/L	Unacceptable length
U/S	Undersize
M/W	Miss weld
O/G	Over ground
NPD	Not per detail
I/L	Insufficient length
CV	Concavity
D	Damaged
Pro	Unacceptable profile
O/L	Over lap
I/T	Incomplete throat
Por	Porsity
W/T	Welds together
W/I	Welds intersect
U/C	Under cut
C	Crater
S	Slag
L/F	Lack of fussion
N, P, DWG	Not per drawing

Weld No.		Material Welded	Reinspection Results	3rd Party Agreed	3rd Party Disagreed
H 190	(4 welds)	Tube steel to plate	Acc		
H 190	(4 welds)	Gusset to embed	Acc		
H 190	(3 welds)	Gusset plate to embed	Acc		
H 190	(1 weld)	Gusset plate to embed	U/L	U/L	
H 683	(6 welds)	Angle iron to gusset plate	Acc		
H 683	(1 weld)	Angle iron to gusset plate	U/L	U/L	
H 683	(1 weld)	Angle iron to gusset plate	U/S	U/S	
H 683	(2 welds)	Plate to plate	Acc		
H 182	(4 welds)	Tube steel to plate	Acc		
H 182	(4 welds)	Gusset to embed	Acc		
H 191	(12 welds)	Tube steel to angle clips	Acc		
H 191	(4 welds)	Angle clips to web of beam	Acc		
H 186	(3 welds)	Gusset to embed	Acc		
H 186	(1 weld)	Gusset to embed	U/L	U/L	
H 186	(8 welds)	Angle to plate	Acc		
H 186	(2 welds)	Plate to plate	Acc		
H 186	(20 welds)	Plate to channel	Acc		
TS 182	(20 welds)	Tube steel to angle clip	Acc		
TS 182	(1 weld)	Tube steel to angle clip	Missing	Missing	
H 122	(16 welds)	Tube steel to unistrut	Acc		
H 122	(3 welds)	Tube steel to unistrut	U/L	U/L	
H 122	(1 weld)	Tube steel to unistrut	Overground	Overground	
H 122	(4 welds)	Plate to I beam	Acc		
H 122	(3 welds)	Plate to embed	Acc		
H 122	(1 weld)	Plate to embed	O/L		O/L
H 079	(2 welds)	Pan to unistrut	Acc		
H 079	(4 welds)	Pan to unistrut	Not per detail	Not per detail	
H 566	(5 welds)	Angle to plate	Acc		
H 566	(2 welds)	Angle to plate	I/L	I/L	
H 566	(1 welds)	Angle to plate	CV		Damaged
H 566	(5 welds)	T beam to I beam	Acc		
H 566	(1 weld)	T beam to I beam	Unacc profile	Unacc profile	
H 566	(1 weld)	T beam to I beam	U/S, O/L	U/S, O/L	
H 566	(1 weld)	T beam to I beam	U/S	U/S	
H 128	(11 welds)	Tube steel to tube steel	Acc		
H 128	(1 weld)	Tube steel to tube steel	U/S	U/S	
H 128	(3 welds)	Gusset to tube steel	Acc		
H 128	(1 weld)	Gusset to tube steel	U/S	U/S	
H 141	(8 welds)	Pan to unistrut	Acc		
H 141	(1 weld)	Pan to unistrut	I/T, I/L	I/T, I/L	
H 141	(1 weld)	Pan to unistrut	U/L	U/L	

Weld No.		Material Welded	Reinspection Results	3rd Party Agreed	3rd Party Disagreed
H 102	(1 weld)	Pan to unistrut	I/T, L/F		POR
H 102	(7 welds)	Pan to unistrut	Acc		
H 640	(2 welds)	Plate to I beam	Acc		
H 640	(2 welds)	T beam to tube steel	Acc		
H 640	(2 welds)	Angle to plate	Acc		
H 640	(1 weld)	Angle to plate	Welds together		Weld intersect
H 640	(1 weld)	Angle to plate	O/L, U/S	O/L, U/S	
H 640	(1 weld)	Angle to plate	U/S	U/S	
H 640	(2 welds)	Angle to plate	U/L	U/L	
H 640	(1 weld)	Angle to plate	U/C	U/C	
H 106	(6 welds)	Unistrut to pan	Acc		
H 106	(1 weld)	Unistrut to pan	I/T	I/T	
H 106	(1 weld)	Unistrut to pan	C	C	
H 146	(5 welds)	Pan to unistrut	Acc		
H 146	(1 weld)	Pan to unistrut	U/S	U/S	
H 100	(3 welds)	Unistrut to pan	Acc		
H 100	(1 weld)	Unistrut to pan	O/L PROF	O/L PROF	
H 177	(1 weld)	Unistrut to channel	Acc		
H 177	(1 weld)	Unistrut to channel	S	S	
H 177	(2 welds)	Gusset to I beam	Acc		
H 107	(4 welds)	Pan to unistrut	Acc		
H 107	(2 welds)	Pan to unistrut	O/L	O/L	
H 88	(1 weld)	Tube steel to plate	U/L, CV	U/L, CV	
H 88	(1 weld)	Tube steel to plate	U/L	U/L	
H 88	(1 weld)	Tube steel to plate	U/L, L/F, S	U/L	L/F, S
H 88	(1 weld)	Tube steel to plate	U/L, Not per dwg	U/L, Not per dwg	
H 88	(4 welds)	Gusset to embed	Acc		
H 88	(7 welds)	Unistrut to channel	Acc		

The NRC inspector reviewed the results of the reinspection program as it progressed. Results are presented in Region III Inspection Report Nos. 50-454/84-05, 50-455/84-04; 50-454/83-39, 50-455/83-29.

The performance and results of visual weld reinspections were reviewed by the NRC inspector. The review consisted of discussions with supervisors/lead weld inspectors, examination of original inspection records and reinspection records, and visual examination of 500 welds which had been reinspected by several companies. (Region III Inspection Report No. 50-454/83-39; 50-455/83-29).

All discrepancies identified as a part of the reinspection were corrected either by physical rework to correct the condition or by detailing the condition on nonconformance reports to perform engineering analysis to determine acceptability of the condition without correction (Ref. CECo letter dated February 24, 1984 to NRC). All welds that were repaired were also evaluated and it was determined that they would have met specification even if they had not been repaired. The determination as to the course of action employed to disposition the condition was a function of the estimate of the more cost effective path to resolution. That is, when it appeared that the cost to physically correct condition was less than the costs associated with detailing data and performing an engineering analysis, then physical correction was chosen, and vice versa.

Based on discussions with cognizant personnel, review of records and engineering evaluations, and verification inspection, documented in this Section and Section II below, no further NRC review is considered necessary at this item. This item is closed.

(1) The NRC inspector and the NRC staff of Region III reviewed the final report on the Byron QC Inspector Reinspection Program, dated Feburary 24, 1984. The Staff requested the NRC inspector to review and verify the following items taken out of the final CECo report. The first paragraph is a paragraph out of the final CECo report and the second paragraph is the NRC Findings. This same method continues into the report. The attached pages are out of the CECo final report and are located at the end of this report.

. <u>CECo's Final Report, Section IV, D. Page IV-6 (See Attached Page 1)</u>

Hatfield Electric has completed the reconciliation of hanger and weld inspections, which are documented on the weld travelers. For hangers that have weld traveler cards with incomplete data, new inspections are being performed. These new inspections are in addition to, and outside the scope of, the Reinspection Program. These inspections are expected to be completed in March 1984. Audit No. 6-83-124 remains open pending completion of these inspections.

overly conservative inspection findings resulted from the evaluations of overlaps, undercuts, and craters. For example, there were several instances of undercut that were less that 1/32-inch in depth, which were acceptable under AWS Code requirements but were determined unacceptable by the original reinspections. There were also problems in interpretation where the welder had welded a brace and a plate to tube steel. In most cases these were 90° joints. Often, where the welder started welding there was a slight undercut indication and where the welder stopped at the end of the weld, there was a dish type indication. Some inspectors were rejecting the welds (for a crater) when in fact, most met AWS Code requirements. Other welds were erroneously being rejected (for overlap) because of a slight build-up which occurred if the welder had hesitated a fraction of a second at the end of a weld.

The inspector also found that in the area of the instrumentation piping socket to piping fillet welds, the welds are being rejected due to undersize because the fillet welds are almost polished for liquid penetrant examination. The welds were acceptable prior to grinding.

E. Components

The NRC inspector verified the reinspection program by reviewing the documentation and observing the work activities. The documentation review covered 100% of the reinspection as follows:

1. Hunter

LEVEL II	NO. OF REINSPECTIONS AND NO. OF REJECTS BY TYPE							
INSPECTOR	DOC	REJ	HDW	REJ	WELD	REJ	TORQUE	REJECTS (REJ)
1130	8214	71	935	10	263	14	36	15
1211	1185	4	0	0	34	1	0	0
1284	0	0	0	0	51	4	0	0
1313	331	3	934	2	181	0	52	41
1354	102	1	0	0	33	0	0	0
1515	41	1	265	7	214	6	0	0
1529	19	0	12	0	55	6	16	7
1533	6363	60	5390	22	392	11	4	0
1562	8520	16	81	0	237	5	161	32
1605	283	3	190	4	344	11	116	77
1714	2144	56	64	3	301	18	104	46
1782	3725	74	8060	36	822	25	0	0
1946	366	0	206	2	273	0	68	28
9076	161	0	21	0	129	13	12	10
9208	138	4	0	0	14	0	0	0
9446	47	0	133	4	319	4	44	37
TOTALS	31639	293	16291	90	3662	118	613	293
LEVEL I -								
INSPECTOR	DOC	REJ	HDW	REJ	WELD	REJ	TORQUE	REJECTS
1041	294	5	921	18	NA	-	NA	-
1705	1804	15	6323	72	NA	-	NA	-
1867	130	4	339	8	NA	-	NA	-
1958	442	27	1253	7	NA	-	NA	-
9357	2269	74	7893	57	NA	-	NA	-
TOTALS	4939	125	16729	162	NA	-	NA	-

-- Rework on all of the above rejects will be initiated as of September 14, 1983, and the licensee estimates that the rework will be completed by December 31, 1983.

The NRC inspector observed field installations in verifying the following reinspection work:

- 12 component supports, Unit 1 auxiliary feedwater system, auxiliary feed tunnel-confirmed hardware configuration, dimensions, and location (Inspector 1533).

- 4 mechanical joints, essential service cooling for pumps in Unit 1 and 8 mechanical joints, boron thermal regeneration station; Unit 1 auxiliary building - verified documentation, identification, and full thread engagement (Inspectors 1529, 1130 and 1605).

- 9 piping dimensions, boron thermal regeneration station, Unit 1 auxiliary building - verified dimensions and documentation (Inspectors 1605 and 1946).

1 - Flexible hose for instrument 1FT-426 was not installed within the 1/2" installation tolerance. This is documented on an FIS report.

f. Attribute #7 - One rejectable pipe bend was identified in the OPI-W0008 system. NRC 178 was prepared to document this bend as having excessive flatness.

Hatfield Electric Company

Inspector	Att. #1	Att. #2	Att. #3	Att. #4	Att. #5	Att. #6	Att. #7	Att. #8	Att #
A	625(166)								
B	51(0)								
C	4190(400)								
D	2841(109)								
E	572(41)								
F	10868(1383)	60(0)	41(4)						
G	933(166)	564(2)	304(14)	(0) 1 report					
H		770(0)	40(8)		24(0)			8(0)	
I		132(0)	137(1)	(0) 2 reports					
J			1046(40)						
K			586(48)						
L						80(0)	1734(56)		
M		8208(7)			24(0)				
N							198(5)		
O									1509(9
P									4488(2
Q									2879(1
R									2113(1
S									88(3
T									7020(2
U									2542(2C
V									2012(15
Totals	20,140 (2,265)	9,734(9)	2,154(115)	(0) 3 reports	48(0)	80(0)	1932(61)	8(0)	22,66C (1,20C

The numbers in parentheses are the number of rejects for that attribute.

Attribute #1 - Visual weld inspection of raceway hangers and cable tray to hanger welds.
Attribute #2 - Inspection of cable terminations.
Attribute #3 - Inspection of conduit installation.
Attribute #4 - Inspection of equipment modifications.
Attribute #5 - Inspection of equipment installation.
Attribute #6 - Inspection of cable pan (tray) installation.
Attribute #7 - Inspection of cable pan hanger installation.
Attribute #8 - A-325 bolt inspection.
Attribute #9 - Preparation of as-built drawings.

a. Attribute #1 is discussed in NRC inspection report 50-454/83-39; 50-455/83-29.

b. Attribute #2. A total of 9 rejectable items were identified in this area. Breakdown is as follows:

1 - Copper exposed at terminal lug. DR 2380 prepared.
2 - Cable jacket damaged. NCR/DR 771 prepared.
1 - Conductor not terminated per drawing. DR 2380 prepared.
1 - Cable separation was not to drawing/specification requirements.
1 - Copper conductor was nicked when insulation was removed.
3 - Conductor not terminated per drawing. Drawing ~~was~~ revised after termination was inspected.

c. Attribute #3. A total of 115 rejectable items were identified in this area. Breakdown is as follows:

7 - Condulets installed without Engineering approval.
2 - Exposed threads on conduit were not galvanized.
4 - Conduit run contained more than 270° of bends.
8 - Insulated bushings were not installed in conduit fittings.
9 - Grounding was not installed per drawings.
1 - 90° conduit fitting installed without Engineering approval.
2 - Conduit bends were less than minimum radius specified.
11 - Installed seal-tite flex conduit is greater than 6' in length.
2 - Wrong type fasteners utilized on J-Boxes.
1 - Improper size conduit installed.
5 - Damaged seal-tite flex conduit.
6 - Installed pull-sleeves are less than standard length.
21 - Paper type gaskets installed.
6 - J-Boxes did not have barriers installed per drawings.
3 - Wrong type J-Box installed (bolted vs hinge cover).
1 - Conduits not separated per drawing/specification.
2 - Hanger strap missing or was not of proper length.
3 - Conduits were not terminated per drawing.
1 - J-Box cover was missing.
2 - J-Box had been removed.
10 - Conduit hanger location was not per drawings.
8 - Hanger material was of improper size.

d. Attribute #4, #5, #6 - No rejectable items were identified in these areas.

e. Attribute #7 - A total of 61 rejectable items were identified in this area. Breakdown is as follows:

38 - Configuration, approved alternate connection details utilized but documentation indicated that scheduled connection detail had been installed.
11 - Hanger member size was not per drawing (tube steel rotated 90° on its axis or oversized unistrut installed).
1 - Auxiliary steel was oversized.

1 - Auxiliary steel plate was undersized.
2 - Fit-up gap larger than specified.
1 - Auxiliary steel elevation was out of specifications.
1 - Wrong hanger connection detail installed.
1 - Hanger brace location was out of specifications.

f. Attribute #8 - No rejectable items were identified in this area.

g. Attribute #9 - A total of 1200 rejectable items were identified in this area. A detailed breakdown of the rejectable items was not available as of August 19, 1983. A detailed breakdown was available for two of the eight as-built personnel. Location of items for as-built drawings are to be within ± 1" of actual locations. Typical dimension discrepancies ranged between 1-3/8" and 6-7/8".

This item of noncompliance remains open. Region III will continue to monitor the re-inspection program at the Byron station.

(Closed) Unresolved item (50-454/82-17-07; 50-455/82-12-07): This item pertains to the effectiveness of the HECo training program in the area of welding. A review of the HECo reinspection program indicated a weld rejection rate of approximately 11%. Pittsburgh Testing Laboratory (PTL) is performing a 10% overinspection of welds accepted by HECo. Between January 1, 1983 and August 16, 1983, PTL inspected 889 welds accepted by HECo. Of the welds inspected, 865 were accepted and 21 were rejected. The rejection rate for the overinspection program is approximately 2.3%, indicating that the training program appears to be effective. This item also closes an allegation pertaining to the effectiveness of the HECo training program. The alleger stated that the HECo training program accomplishes nothing. Based on the results of the PTL over-inspect program, this allegation could not be substantiated.

(Open) Open item (50-454/83-16-02): This item pertains to the separation of instrument sensing lines installed by Powers-Azco-Pope (PAP). In accordance with FCR-15437, PAP prepares as-built drawings of the installed instrument sensing lines. These as-built drawings are submitted to Westinghouse Electric Corporation - Nuclear Technology Division (WNTD) for analysis. WNTD letter, No. CAE-2.1.205, to Ceco, dated July 22, 1983, indicates that there are 12 potential separation violations for the installed sensing lines. The licensee prepared NCR 187 to document the 12 separation violations. NCR 031 and FIS 992 also document sensing line separation violations. Pending review of actions taken to close NCR 031, NCR 187, and FIS-992, this item remains open.

3. Functional or Program Areas Inspected

A. Powers-Azco-Pope (PAP)

(1) The Region III inspector reviewed the following PAP procedures and found them to be adequate, except as noted:

QC-2, Revision 7, "Welding Equipment Calibration". This proce-

Table DE-4
Summary of Objective Discrepancy Evaluation
NISCo

Type of Discrepancy By Attribute	Total Quantity	Category X No. Within Parameters	Category Y No. Acceptable by Judgment	Category Z No. Acceptable by Calculation	No. with Design Significance
Mechanical					
1. Length of stitch welds on shim plates	12	0	12	0	0
TOTAL	12	0	12	0	0

Note for Table DE-4:

The discrepancies in Category Y cover minor variations (approximately 1/4") in the length of stitch welds on shim plates. These are non-load bearing welds and were, therefore, considered to be acceptable.

Table DE-5
Summary of Objective Discrepancy Evaluation
Hatfield Electric

Type of Discrepancy By Attribute	Total Quantity	Category X No. Within Parameters	Category Y No. Acceptable by Judgment	Category Z No. Acceptable by Calculation	No. with Design Significance
Conduit Installation					
1. Supports	3	1	2	0	0
2. Auxiliary steel	1	0	0	1	0
3. Conduit	42	7	23	12	0
4. Junction box	13	3	10	0	0
5. Other	7	0	7	0	0
Cable Termination					
1. Workmanship	7	0	7	0	0
2. Wiring	2	0	2	0	0
Cable Pan Hanger					
1. Configuration change	8	2	4	2	0
2. Detail substitution	15	1	13	1	0

Table DE-5, Cont.

Type of Discrepancy By Attribute	Total Quantity	Category X No. Within Parameters	Category Y No. Acceptable by Judgment	Category Z No. Acceptable by Calculation	No. with Design Significance
3. Dimensions out of tolerance	18	1	5	12	0
4. Other	1	1	0	0	0
Conduit As-Built:					
1. Supports	972	813	0	159	0
2. Auxiliary steel	14	1	0	13	0
3. Conduit	298	178	0	120	0
4. Junction box	247	209	0	38	0
5. Other	27	26	1	0	0
TOTAL	1675	1243	74	358	0

Notes for Table DE-5:

1. The majority of the evaluations in Category X are as-built location dimensions of conduit, conduit supports and junction boxes that are within the 6-inch installation tolerance. These were identified in the Reinspection Program because the reinspector was using a 3-inch tolerance to ensure that all potential discrepancies were identified.

2. The evaluations in Category Y cover such items as grounding discontinuities, missing insulated throats in conduit fittings, cable pan hanger detail substitutions and in one case a missing junction box barrier. Alternate ground paths existed for all grounding discontinuities. The insulated throats while providing an extra measure of cable protection are not necessary. The substituted details were similar in member size and capacity and varied only in their attachment configuration. The missing barrier was not separating cables of different divisions but rather power and control cables of the same division. The cables are in fact separated without the barrier.

3. The evaluations in Category Z consist primarily of as-built location dimensions of conduit, conduit supports and junction boxes and other minor dimensional differences that exceeded installation tolerances. Generally, the dimensional difference was limited to a few inches. The installation drawings and supporting calculations have been revised to show the actual dimensions as standard practice and the revision confirms that the actual dimensions are acceptable.

4. Discrepancy HE-129 covers a termination error for cable 1VA075. This discrepancy would result in damper 0VA052YA not closing automatically on the start of charcoal booster fan OE which starts automatically on a safety injection

signal. Operation of the damper is required in the event that radioactive effluents are present in the auxiliary building exhaust air. Radiation monitors in the exhaust plenum alarm in the control room and damper 0VA052YA can be closed manually through a control switch in the main control room. Byron operating procedure BOA-RAD-1 requires that the operator check the damper position in response to the alarm. Therefore, the termination error is judged to be not significant. However, the FSAR description of the auxiliary building exhaust systems states that the damper operates either automatically on a safety injection signal or manually through a control switch in the main control room. If undetected, the design would have differed from the FSAR description, but it would not affect the safe operation of the plant. The termination error did not go undetected. The inspection of this design feature by the electrical contractor is only the first of three checks made to ensure the design functions properly. The discrepancy was actually detected and corrected independent of the Reinspection Program during construction testing, and the interlock would have been tested as part of the auxiliary building ventilation system (VA) pre-operational test. It is also worth noting that only two wiring errors were identified out of the 7,784 terminations reviewed in the reinspection program. The other involved the diesel generator cylinder temperature indication at the local control panel which does not serve either an operating or alarm function.

5. The Reinspection Program provided a small sample for Hatfield Electric's equipment setting and modifications, A325 bolting and conduit support bolting work. Additional inspections are being undertaken for these objective attributes. It should be noted that QC inspections for all objective attributes require similar skills and training. The Hatfield inspectors who were reinspected did exceptionally well on other objective attributes. Therefore the effectiveness of their QC inspections is not in question. The additional work is being performed to complete the data base. The inspection plan being implemented is as follows:

   - Equipment Setting and Equipment Modifications
     To confirm that the safety-related electrical equipment that was installed, mounted, or modified in the field by Hatfield Electric is installed properly, the total population of approximately 250 of such items has been identified, and a program for reinspection of a sample size of 50 has been selected for reinspection in accordance with Mil. Std. 105D single sampling plan. In case the success criterion is not met for the selected sample, the total population will be reinspected.

   - A325 Bolting
     The Reinspection Program in the area of A325 bolting resulted in a total sample population of 8. Although no discrepancies were noted, further reinspections are being performed to increase the confidence level. The total population of such items has been determined to be approximately 170, and a sample of 50 has been selected for reinspection in accordance with Mil. Std. 105D single sampling plan. In case the success criterion is not met for the selected sample, the total population will be reinspected.

- Conduit Support Bolting
  The Reinspection Program did not include checking the torque level on the conduit support bolting. This was considered acceptable inasmuch as the Program was designed to validate the qualifications of the inspectors rather than the quality of construction. However, in view of the specific apparent concerns expressed by the ASLB, a reinspection of this attribute has also been included. The total population of this attribute has been determined to be approximately 25,000. The reinspection sampling will be in accordance with Mil. Std. 105D multiple sampling plan. The initial sample size is 125. Additional samples of 125 will be inspected if required.

Table DE-6
Summary of Objective Discrepancy Evaluation
Powers-Azco-Pope

Type of Discrepancy By Attribute	Total Quantity	Category X No. Within Parameters	Category Y No. Acceptable by Judgment	Category Z No. Acceptable by Calculation	No. with Design Significance
Pipe Material Verification					
1. Incorrect quantity on piping bill of material	19	19	0	0	0
2. Incorrect size on piping bill of material	3	3	0	0	0
3. Incorrect heat number on bill of material	28	28	0	0	0
Hanger Material Verification					
1. Incorrect quantity on hanger drawing bill of material	34	34	0	0	0
2. Incorrect size of hanger drawing bill of material	45	37	2	6	0
3. Incorrect heat number on hanger drawing	84	84	0	0	0
Final Hanger					
1. Incomplete weld length	55	22	2	3	0

MR. LEWIS: Thank you. If I may, Your Honor, I would like to proceed with some brief supplemental direct.

JUDGE SMITH: All right.

BY MR. LEWIS:

Q Mr. Love, on page 12 of the testimony, which would be the answer to number 9, you refer to the fact that the Applicants' supplement to the Reinspection Program was under review by Region III at the time that you prepared that answer. Can you advise us of the status of that review?

A (Witness Love) Yes, sir. The Supplemental Reinspection Program was basically to look at the additional A325 bolting, conduit support bolting. Those two items have been reviewed by Staff and found to be adequate. With respect to the Supplemental Reinspection on equipment, setting or equipment installation, and equipment modifications, those two items are still being reviewed by the Staff, or reviewing the information as provided by the Applicant.

Q Mr. Little, does the fact that Region III still has under review the information in the supplemental report with regard to electrical equipment setting and equipment modification affect the Staff's conclusion on the acceptability of the reinspection program?

A (Witness Little) No, it does not in that the supplemental program did not directly address inspector

proficiency?

Q The supplemental report?

A Right.

Q Thank you. Mr. Muffett, on page 25 of the testimony, Answer 21, the statement appears, "All discrepant welds with subjective or objective effects have been evaluated." And I'd like to ask you two questions about that language.

First of all, what are you referring to when you refer to objective defects regarding welding?

A (Witness Muffett) The objective defects basically deal with documentation concerning the weld. They are not things that have to do with the visual inspection. They are signatures left off of records, or in the wrong line of a record. Overall, they deal with documentation.

Q And are these defects identified in the Reinspection Report?

A Yes, they are.

Q You also, in that sentence, referred to the fact that all discrepant welds had been evaluated. Could you explain what you meant by the term "evaluated"?

A Yes. I make a distinction here between an engineering evaluation, which is a calculation, a specific calculation for a specific weld, and an evaluation on a large number of the welds. They were divided into welds

which had high stress, welds which had the worst visual appearance, and other welds. These were welds that had the highest stresses and the worst visual inspection appearances and enveloped the other ones. So that a large portion of the other ones weren't specifically evaluated, but one could reach the conclusion that they were stronger or better able to do the job than the ones that were.

Q In other words, you're using -- if I understand correctly -- evaluation to mean either a specific evaluation or some type of evaluation to envelope certain types of defects. Is that correct?

A Correct.

Q Mr. Ward, in Region III's March 22, 1983 acknowledgement letter regarding the Reinspection Program, it was stated as follows, "Regarding visual weld examination being classified as a subjective inspection attribute, we understand this classification will be used only for surface conditions which do not affect the integrity of the weld."

Mr. Ward, does visual weld inspection include any inspection of surface conditions which could not affect the integrity of the weld?

A (Witness Ward) No.

Q Mr. Little, I will address the next question to Mr. Little as the branch chief responsible for the review

mgc10-1

of the reinspection program.

What, then, was meant by the statement in the March 22, 1983 letter?

A (Witness Little) There was a concern among the Staff at that time that they did not feel that cracks or instances such as gross lack of fusion, that those types of deficiencies should be considered as subjective, with an acceptance criteria of 90 percent.

Unfortunately, this concern didn't get accurately reflected in our acknowledgement letter. I would like to assure the Board, though, that early in the inspection program, our inspectors knew that visual weld inspections were considered to be subjective inspections. Our Region III management was aware of this, either in the August or September meeting that we had with the Licensee, in which he described the results of the program up to that point in time, and neither the inspectors nor Region III management had a problem with the way the program was conducted.

Q Mr. Little, as the results of the reinspection program came in, what were the results with respect to cracking or lack of fusion in welds?

A I think only two cracks were identified, and no gross lack of fusion, which caused us to conclude or caused the Licensee to conclude that they had a design-defective weld.

mgc10-2

JUDGE SMITH: Are those the only two examples that you had concern about fusion, lack of fusion, and cracking?

WITNESS LITTLE: As we tried to reconstruct the thinking back at that time and as best as we could reconstruct it, those were the only two.

BY MR. LEWIS:

Q Mr. Little, having testified as you just have, did the reinspection program provide in the Staff's view any indication that inspectors failed to identify cracks or gross lack of fusion?

A (Witness Little) No, it did not.

MR. LEWIS: With that, Your Honor, I would make the panel available for cross-examination.

JUDGE SMITH: I think this would be a good time for a lunch break. You can start your cross-examination after lunch.

MR. CASSEL: I don't know whether you want to do this on or off the record. I do have that motion to which I referred earlier, the attachments.

JUDGE SMITH: Why don't you give the motions to us now, and then if there is any argument, it will be after lunch? We can read the written motion over the lunch break.

MR. MILLER: Judge, I don't know the nature and extent of the motion, and I don't know that an hour's worth

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of review over a sandwich is going to be sufficient for me to respond to Mr. Cassel's arguments.

JUDGE SMITH: Well, I guess we won't know until we see it.

MR. CASSEL: Judge, with the motions, do we need to give copies of this to the court reporter?

JUDGE SMITH: Yes. And the court reporter has the option -- let's defer it to see how we handle it until after lunch, whether it is bound in or whatever. We will see what portion gets bound into the transcript.

Off the record.

MR. MILLER: I have the reworked version of Mr. Marcus' testimony, which I have identified with the date 7/30/82 in the upper righthand corner.

JUDGE SMITH: We will return at 1:00 o'clock.

(Whereupon, at 12:05 p.m., the hearing was recessed to reconvene at 1:00 p.m. this same day.)

End 10-SY

MMmgc11-1

AFTERNOON SESSION

(1:15 p.m.)

Whereupon,

KAVIN D. WARD

JAMES MUFFETT

WILLIAM LITTLE

RAY LOVE

KEVIN CONNAUGHTON

resumed the stand and, having been previously duly sworn, were examined and testified further as follows:

JUDGE SMITH: With respect to the motion by Applicant to exclude portions of Answer 23, Mr. Lewis, we couldn't recall, after you heard the discussion, was it still your intention to allow those paragraphs to remain, or do you wish to remove them?

MR. LEWIS: I took the position that it was for purposes of full disclosure. I thought it was appropriate to leave them in there.

JUDGE SMITH: So given your desires, you would have them in?

MR. LEWIS: Yes.

JUDGE SMITH: In that event, we will overrule the objection. We believe since, as even counsel concedes, it is appropriate subject matter for cross-examination, we think for a complete, full record it should be in the

mgc11-2

record in some way, and this is the best way to have it.

MR. GALLO: Can I move for reconsideration, Your Honor?

JUDGE SMITH: Certainly.

MR. GALLO: On Mr. Lewis' first point, if the question is full disclosure, that can be achieved without this material being submitted into evidence, and indeed, it has been achieved. At least full disclosure has been achieved by filing this information.

On the point of the use of this information for cross-examination, I may not have been clear when I made that point. What I meant was, was that the substance of these two open items might be used by Intervenors to question the validity or the weight to be attached to other conclusions that are stated in the witnesses' testimony, which are properly within the ambit of this proceeding.

JUDGE SMITH: That's right.

MR. GALLO: If I understand the Board's ruling, unless the admission of this material is so limited, it comes into the record on the merits of those two items, and they stand open before us, and we would have to submit testimony and address them.

JUDGE SMITH: I see your concern. I don't think that those two items, standing alone there -- of course, you are responsible for presenting any case that you believe

mgc11-3

is necessary, but I don't believe those two items, standing alone there, as we had already indicated with respect to the electric conductor butt splices, requires any inquiry that the Board would ask for. I don't believe that this Board could make any finding adverse to or in favor of the utility based upon these potential 5055(e) matters. They are simply premature. They are raw, and the significance is not in the record, and this would not put it in the record.

MR. GALLO: Could I move that the Board modify its ruling on the admissiblity of this material on either one of two grounds: that the matters that are shown as open are properly delegable to the Staff, or that they are admitted for the limited purpose of satisfying the Staff's disclosure obligation and to provide cross-examination -- a tool for cross-examination on other issues that are properly within the ambit of the proceeding?

JUDGE SMITH: I think your second category is an accurate one. I don't believe that we can make finding one way or the other as to delegability. I think we could just find that we, ourselves, have not been moved to inquire further into the matter.

I did have anote here, "Why was not the electrical cable grips the subject of a formal Board notification, or was it and I've overlooked it?"

mgc11-4

MR. LEWIS: I will just have to check. I believe that that would be in an inspection report that would have been made available.

JUDGE SMITH: Okay.

MR. LEWIS: But that's just something I might check.

JUDGE SMITH: In any event, since you agree that the second category is an appropriate one, I think that is the sense in which we have looked at it, too, in coming in -- satisfying the Staff's responsibility to notify and to provide the proper context for cross-examination, which I think is what the Intervenors wanted anyway. So I think everyone is in agreement.

Okay, now are we prepared to hear arguments on the motion?

MR. MILLER: Yes, Judge, as far as the Applicant.

JUDGE SMITH: The motion properly should be served on the case. I think we can properly do, for the purposes of our proceeding now, -- off the record.

(Discussion off the record.)

JUDGE SMITH: Please bind the entire motion package into the record.

(The packet of documents entitled "Motion to Include Intervenors' Proposed Issue No. 1 with Respect to One Alleger within Scope of Hearing" follows.)

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JUL 09 1984

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

July 9, 1984

Douglas Cassel, Esq.
109 N. Dearborn Street
Chicago, Illinois 60602

In the Matter of
COMMONWEALTH EDISON COMPANY
(Byron Station, Units 1 and 2)
Docket Nos. 50-454 and 50-455

Dear Doug:

In accordance with a commitment I made to Jane Whicher during a meeting among counsel held on May 24, 1984, I am enclosing a memorandum prepared by James G. Keppler, Administrator of NRC Region III. The memorandum documents a telephone conversation held in April 1984 between Mr. Keppler and Mr. Cordell Reed, of Commonwealth Edison Company, regarding the need for an audit by the National Board of Boiler and Pressure Vessel Inspectors of ASME related work at Byron. This letter and the enclosed memorandum contain "protected information" which is subject to the Affidavit of Non-Disclosure executed by you on May 4, 1984 and should be treated under the terms of that affidavit. Copies of this letter and the enclosed memorandum are being made available only to persons who have signed Affidavits of Non-Disclosure, the Atomic Safety and Licensing Board, and members of the NRC staff.

Sincerely,

Stephen H. Lewis
Deputy Assistant Chief Hearing
Counsel

Enclosure: As stated

cc w/enclosure:
Alan S. Rosenthal, Chairman
Dr. Reginald L. Gotchy
Dr. A. Dixon Callihan
Michael Miller, Esq.
Howard A. Wilber
Ivan W. Smith, Chairman
Dr. Richard F. Cole

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

June 29, 1984

MEMORANDUM FOR: Byron Files

FROM: James G. Keppler, Regional Administrator

SUBJECT: INVOLVEMENT OF NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS IN INVESTIGATION OF CERTAIN ALLEGATIONS AT BYRON

At Region III's request, Commonwealth Edison Company retained the National Board to perform an independent audit of ASME related work at the Byron construction site. This request was prompted by allegations received by the NRC from workers at the site.

In April of this year, the NRC received allegations that could have impact on the adequacy of ASME related work at the Byron site. Based on the general nature of the allegations, the source, and the desire to conserve NRC resources, we concluded that it would be best to have the National Board pursue these allegations. This matter was discussed with Mr. DeYoung, IE, who agreed with the approach. It was agreed that I would attempt to elicit Commonwealth Edison Company's cooperation in retaining the National Board as a consultant, without disclosing the nature of the allegations.

In May, 1984, I discussed the matter with Cordell Reed, CECo Vice President. I told him that we had received allegations that related to ASME work and that I thought it was in CECo's best interest at this time if they would retain the National Board as a consultant and have them audit the ASME work. Mr. Reed was told I could not disclose the nature of the allegations but that we would inform the National Board of the concerns raised by the allegations before the audit so that audit plans could be developed to pursue the concerns raised. Mr. Reed called me a few days later to tell me that CECo would retain the National Board and would have the National Board contact NRC prior to commencing its audit.

The Region III staff is working closely with the National Board and is receiving copies of reports generated by the National Board simultaneously with the licensee.

James G. Keppler
Regional Administrator

cc: H. R. Denton, NRR
R. C. DeYoung, IE

May 31, 1984

MEMORANDUM FOR: File

FROM: J. M. Hinds Jr., Senior Resident Inspector
Byron Station

THRU: D. W. Hayes, Chief
Projects Sections 1B

SUBJECT: ALLEGATIONS CONCERNING INTIMIDATION OF AUTHORIZED NUCLEAR INSPECTORS (ANIs) AND IMPROPRIETIES ON THE PART OF ANI SUPERVISION - HARTFORD STEAM BOILER INSPECTION AND INSURANCE CO.

REFERENCE: Memorandum Hinds to File, dated March 14, 1984, same subject.

Initial Contacts With Alleger

On March 6, 1984, Mr. Sargent Podworny, authorized Nuclear Inspector employed by Hartford Steam Boiler Inspection and Insurance Company (Hartford) contacted the Resident Inspectors Office by telephone. Mr. Podworny stated that he and seven other ANIs were assigned, under contract, to Hunter Corporation, the Byron Site contractor for large bore piping, including ASME Code piping. He stated that he had experienced frustration in trying to carry out his job responsibilities (as prescribed by the ASME Code) and that he felt he had no avenues for seeking relief but to contact the NRC.

On March 13, 1984, Messrs. K. Ward and J. Muffet of the Region III Office and the Byron Resident Inspectors met with the alleger to discuss his concerns in more detail and to receive documents which he felt supported his concerns as well as his creditability.

NRC Staff Meeting With the ASME National Board (the Board)

On May 17, 1984, members of the Region III NRC Staff met with the Board which has jurisdiction over ANIs in Columbus, Ohio, to advise the Board members of the generic concerns expressed to NRC inspectors by an ANI at Byron Station. At this meeting the allegations were described to the Board in general terms with a recommendation that an unannounced audit be conducted at the Byron Station in the immediate future.

At the conclusion of the May 17, 1984 meeting an agreement was reached between the NRC Staff and the Board that an audit of this nature, i.e. designed to encompass the generic concerns expressed by the alleger, would be conducted

beginning the week of May 28, 1984. The Board also expressed the desire to meet with the alleger, if possible, to discuss the specific issues and gather details in order to narrow the scope of the proposed audit plan to encompass the specific concerns of the alleger.

Contact With the Alleger

At the request of the Board, via Region III NRC Staff, I contacted the alleger at his home on May 25, 1984, to discuss the proposed meeting with the members of the Board Audit Team. After discussing the meeting objectives at length, the alleger was very cooperative and a time and place for the meeting with the Board auditors was agreed upon with three conditions. The conditions were: (1) that a member of the Region III NRC Staff be present at the meeting with the Board auditors; (2) maximum effort be expended to maintain his confidentiality; and (3) that the Board auditors would conduct interviews with the other ANIs who had performed inspection activities at Byron Station during the alleger's tenure in an effort to corroborate the concerns presented by the alleger in the form of documentation and oral allegations.

Contact With the ASME National Board Audit Team Members

On May 29, 1984, I was contacted by Mr. D. J. McDonald, Director of Inspections, and Mr. M. F. Sullivan, Consultant, of the National Board of Boiler and Pressure Vessel Inspectors. I advised them of the scheduled meeting with the alleger and made arrangements to meet with them in my office on May 30, 1984, to discuss the plans and details of the upcoming audit, answer questions, and provide additional information as appropriate.

On May 30, 1984, I met with Messrs. McDonald and Sullivan in the Resident Inspectors Office. At this meeting information was exchanged relative to ANI activities at Byron, status of construction, historical data, proposed audit plan outline, related communication, allegation details, and conditions of the meeting with the alleger. At the conclusion of this meeting Messrs. McDonald and Sullivan met with the Licensee's Production and Construction Department staff for a brief entrance meeting where scheduling, office space, and other details were discussed. I did not attend the meeting with CECo PCD.

Interview of Alleger

On the afternoon of May 30, 1984, Messrs. McDonald and Sullivan, the alleger and I met to discuss his concerns in more detail. During the course of the afternoon, in response to questions from the Board auditors, the alleger recounted, almost verbatim, without notes, references, or documentation of any form, the concerns expressed to the NRC inspectors on March 13, 1984, as set down in the referenced memorandum. From a computer list of the ANIs involved in inspection activities at the Byron Station for the Hartford Company (supplied by Mr. McDonald) the alleger identified nine individuals who, in his opinion, shared his concerns related to the Byron ANI activities during his employment by the Hartford Company and could,

if they were so inclined, corroborate his allegations. The Board auditors posed questions which were fashioned after the general descriptions given to the Board by the Region III NRC Staff in the meeting of May 17, 1984. The alleger sincerely responded to the questions with no apparent trepidation or reservation and expanded his answers in areas he felt beneficial to the Board auditors objectives. The Board auditors requested permission from the alleger to obtain copies of the material supplied to the NRC inspectors at the March 13, 1984 meeting with the alleger to assist the Board in the development of an audit plan that would encompass all the allegers concerns and narrow the scope of the Board audit. It was agreed that the Resident Inspector's Office would provide copies of the material to the Board and a copy to the alleger since the material supplied to the NRC inspectors were the alleger's originals.

Conclusions and Agreements

The meeting concluded with an agreement that I would provide the Board auditors with a copy of the material supplied by the alleger at the March 13, 1984 meeting by express mail to their Columbus, Ohio, office on May 31, 1984, and that I would provide a duplicate copy of the material to the alleger at the same time. The alleger agreed to further contacts by the Board as necessary to provide additional information to support his allegations/concerns. The Resident Inspectors' Office will maintain contact with both the alleger and the Board to monitor progress of the Board's audit, assist the Board auditors as necessary, receive weekly Board audit reports, and provide copies of applicable documentation related to this matter to the Board and the alleger as appropriate.

J. M. Hinds Jr.
Senior Resident Inspector
Byron Station

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DATE: April 27, 1984

"ATTENTION: RESTRICTED DOCUMENT ENCLOSED".

Docket Nos.: STN 50-454
and STN 50-455

MEMORANDUM FOR: The Atomic Safety and Licensing Appeal Board for Byron
Alan S. Rosenthal, ASLAB
Dr. Reginald L. Gotchy, ASLAB
Howard A. Wilber, ASLAB
The Atomic Safety and Licensing Board for Byron
Ivan W. Smith, ASLB
Dr. Dixon Callihan, ASLB
Dr. Richard F. Cole, ASLB

FROM: Thomas M. Novak, Assistant Director
for Licensing
Division of Licensing

SUBJECT: ALLEGATIONS AT BYRON (ALLEGATION NOTIFICATION 84-070)

In accordance with the present NRC procedures for Board Notifications, the following information is being provided:

1. Memorandum dated March 22, 1984, "Allegation - Byron Station," from D. W. Hayes to C. E. Norelius.

These documents transmit allegations concerning quality assurance matters that are the subject of planned or ongoing inspections and investigations and, until completed, should be withheld from public disclosure. Therefore, consistent with the procedures of the Commission's Policy Statement of August 5, 1983 regarding Investigations and Adjudicatory Proceedings (48 Fed. Reg. 36358, Aug. 10, 1983), the staff provides the three enclosures only to the Boards at this time for their in camera consideration. The other parties to the proceeding are being notified by copy of this memorandum that the staff is presenting this information to the Boards.

Thomas M. Novak, Assistant Director
for Licensing
Division of Licensing

Enclosures:
As stated

cc: w/encl.: SECY (2)
OPE
OGC
EDO
w/o encl.: Parties to the Proceeding

"IN CAMERA DOCUMENT"

March 22, 1984

MEMORANDUM FOR: C. E. Norelius, Director
Division of Project and Resident Programs

FROM: R. F. Warnick, Chief
Projects Branch No. 1

FROM: D. W. Hayes, Chief
Projects Section 1B

SUBJECT: ALLEGATIONS - BYRON STATION

The purpose of this memo is to provide information on allegations concerning [illegible] which were received on March 13, 1984. The general allegations [illegible] being referred to the ASME National Board which has jurisdiction over ANIs with a recommendation that an unannounced audit be conducted at Byron Station in the immediate future. Allegations which are supported by specific information in the provided documents will be inspected/investigated by Region III. This information should be provided to the Atomic Safety and Licensing Appeal Board.

An Authorized Nuclear Inspector (ANI) employed by Hartford Steam Boiler Inspection and Insurance Company who in turn is a subcontractor to a Byron piping contractor has made allegations of intimidation and other improprieties by his supervision. The alleger requested that his name be kept confidential. The allegations are summarized as follows:

1. Unrealistic deadlines for ANI certification of Data Reports have been established.

2. ANIs have been threatened with loss of job if they do not accept items solely on the supervisor's instructions to do so.

3. Scope and depth of ANI reviews are being prescribed to the exclusion of elements considered necessary by the ANI to determine acceptability.

4. Blanket waivers of certain ANI reviews have been made including those for Class 2 and 3 piping and Class A, B and C pipe hangers.

5. A Hartford ANI inspection manual (SIS Manual) states that Hartford ANI personnel cannot raise concerns beyond the next higher management level under any circumstances.

6. Section XI process sheets have been used to satisfy Section III requirements and included in data packages in support of N-5 data reports.

7. When required ANI sign offs are missing from process sheets, the item is assumed to have been inspected and accepted based on "Field Inspection Requests" which may not pertain to the item in question.

8. Verification of material heat numbers for particular installations have been waived based on information contained on Field Orders. Field Orders may not be adequately controlled or otherwise traceable to the installation in question.

9. Uncontrolled rubber stamps (stars) are used by ANI personnel at discretion of ANI supervision to indicate ANI review and acceptance of [illegible] sheets, [illegible] performance reports, Discrepancy Reports, etc. The ANI reviewing documentation packages for final acceptance via the N-5 data report is required by ANI supervision to accept documents based upon the presence of the star stamp.

The [illegible] provided IE documents which he feels supports his allegations. He stated other ANI's assigned to the Byron piping contractor (Hunter Corporation) share his sentiments but are afraid to come forward for fear of losing their jobs. He also stated that he would provide additional documentation in support of his concerns.

D. W. Hayes

D. W. Hayes, Chief
Projects Section 1B

CC: J. G. Keppler
R. L. Spessard
W. S. Little
D. Danielson
K. Ward
T. Tuffet
J. Hinds
R. Lerch
C. Weil
S. Lewis
F. Rawson, ELD

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

March 14, 1984

MEMORANDUM FOR: File

FROM: J. M. Hinds Jr., Senior Resident Inspector
Byron Station

THRU: D. W. Hayes, Chief
Projects Section 1B

SUBJECT: ALLEGATIONS CONCERNING INTIMIDATION OF AUTHORIZED NUCLEAR INSPECTORS (ANIs) AND IMPROPRIETIES ON THE PART OF ANI SUPERVISION - HARTFORD STEAM BOILER INSPECTION AND INSURANCE CO.

Initial Contact With Alleger

On March 6, 1984, Mr. Sargent Podworny, authorized Nuclear Inspector employed by Hartford Steam Boiler Inspection and Insurance Company contacted the Resident Inspectors office by telephone. Mr. Podworny stated that he and seven other ANIs were assigned, under contract, to Hunter Corporation, the Byron site contractor for large bore piping, including ASME Code piping. He stated that he had experienced frustration in trying to carry out his job responsibilities (as prescribed by the ASME Code) and that he felt he had no avenues for seeking relief but to contact the NRC. Mr. Podworny expressed his belief that Hunter Corporation and Commonwealth Edison were applying "monetary" pressure to his line supervision to support production schedules. Succumbing to this pressure, (i.e. in the interest of remaining under contract with Commonwealth Edison) line supervisors had compromised their own integrity by instituting written and unwritten policies and practices which resulted in inadequate ANI reviews and ANI acceptance of items for which ASME Code requirements were not met. Mr. Podworny indicated that the other first line ANI's assigned to Hunter Corporation shared his sentiments but that, for fear of losing their jobs, they were afraid to come forth. An interview was arranged with the alleger and Region III personnel.

Interview of Alleger

On March 13, 1984, Messrs. K. Ward and J. Muffet of the Region III Office and the Byron Resident Inspectors met with the alleger to discuss his concerns in more detail and to receive documents which he felt supported his concerns as well as his credibility. Specific issues extracted from these discussions are listed below under "Allegations". Each document received from the alleger is also listed .

Allegations

3-14-84-1 ANI supervision has established unrealistic deadlines for

EXEMPT FROM DISCLOSURE

ANI review and acceptance (sign off on N-5 data reports).

3-14-84-2 ANI supervision has threatened loss of job if ANIs do not accept items and without explanation of the basis for acceptance, other than "because I said so".

3-14-84-3 ANI supervision prescribes the scope and depth of ANI reviews to the exclusion of elements required for a determination of item acceptability.

3-14-84-4a ANI supervision has provided blanket waivers of ANI reviews for certain code items.

3-14-84-4b ANI reviews for Class 2 and 3 piping have been blanketly waived.

3-14-84-4c Local policy of ANI supervision limits ANI review of Class A, B and C pipe hanger process sheets and drawings.

3-14-84-5 SIS manual states that Hartford ANI personnel cannot raise concerns beyond the next higher management level under any circumstances. No encouragement or protection for "boatrockers".

3-14-84-6 Section XI process sheets have been used to satisfy Section III requirements and included in data packages in support of N-5 data reports.

3-14-84-7 When required ANI sign offs are missing from process sheets, the item is assumed to have been inspected and acceptable based on "Field Inspection Requests" which may or may not have pertained to the item in question.

3-14-84-8 Verification of material heat numbers for particular installations have waived based on information contained on Field Orders. Field Orders may not be adequately controlled or otherwise traceable to the installation in question.

3-14-84-9 Uncontrolled rubber stamps (stars) are used by ANI personnel (at the direction of ANI supervision) to indicate ANI review and acceptance of process sheets, NCR's, DR's etc. The ANI reviewing documentation packages for final acceptance via the N-5 data report is required by ANI supervision to accept documents based upon the presence of the "star".

Documents Received

Exhibit No.	Date	From	To	Subject
1	7/8/81	Podworny	Molineaux	Letter of Opinion
2	7/21/81	Podworny	Griffin	Inspector Appraisal Re: Memo 7/12/81

Exhibit No.	Date	From	To	Subject
3	4/21/77	Rainey	Somsag	Site Implemen.ation Procedures
4	4/21/77	Rainey	Somsag	Site Implementation Procedures
5	4/21/77	Rainey	Somsag	Peabody Procedures
6	4/26/77	Rainey	Somsag	Site Implementation Procedure 20.504
7	7/20/77	Rainey	Somsag	Peabody Procedures
8	7/20/77	Rainey	Somsag	Peabody Procedures
9	10/17/77	Rainey	Somsag	PTL Procedures
10	11/23/77	Rainey	Somsag	Class B(2) and Clas (3) Hanger Drawings
11	12/2/77	Somsag	Laughlin	Site Implementation Procedure
12	8/14/78	Somsag	Rainey	Identification of Subsection NF Certification
13	1/21/79	Rainey	Somsag	Office Memo
14	9/26/79	Selman	Richardson	Hunter Corporation Manual for ASME...
15	10/19/79	Jackson	Richardson	C.D. Visit of Oct. 18, 1979. Hunter Co
16	10/26/79	Jackson	Somsag	Our Audit Report da May 9, 1979
17	10/31/79	Jackson	Somsag	QA System Audit
18	10/31/79	Jackson	Richardson	PTL Letter to CECo 9/26/79
19	11/14/79	Richardson	Somsag	Post weld heat trea process....
20	12/28/79	Richardson	Simon	PTL Manual Procedur Changes
21	2/28/80	X	X	Process Sheet
22	5/22/80	Jackson	Richardson	"...Bypass the ANI hold point..."
23	5/30/80	Richardson	Jimenez	SIS Report
24	7/25/80	X	X	Process Sheet
25	9/12/80	X	X	Process Sheet (Red
26	10/3/80	Stewart	Richardson	Routed 10/3/80 Stewart/Shewski mem
27	11/17/80	Richardson	Simon	Personnel Package R
28	1/7/81	Stewart	Richardson	Data Reports Memo
29	1/8/81	Richardson	Jones	Radiograph Review
30	4/21/81	Richardson	Svendsen	Unit 1 Cold Hydro
31	4/30/81	Hendricks	Molineaux	Additional ANI Requ
32	5/22/81	Svendsen	Somsag	Audit Report
33	6/11/81	Hendricks	Simon	NDE Personnel
34	7/3/81	Perry	Troutman	Personnel Qualifica
35	10/3/81	Seuring	Richardson	Repairs to Clear Baseline Defy...Spd
36	10/7/81	Hendricks	Simon	PTL Personnel Qualifications

Exhibit No.	Date	From	To	Subject
37	10/7/81	Hendricks	Simon	Written Practice of
38	10/7/81	Hendricks	Simon	NDE Agreement
39	10/30/81	Hendricks	Simon	Written Practice Certification of NI L III Exam...
40	11/25/81	Hendricks	Simon	Liquid PT Procedure Revision
41	12/11/81	Richardson	Simon	JTP Review (Rainey Memo)*
42	2/2/82	Hendricks	Simon	Liquid PT Procedure Revision
43	2/15/82	Hendricks	Bodine	Support Class A, B C Hanger Review
44	5/10/82	Richardson	Simon	PTL Procedure Revie
45	6/3/82	Hendricks	Simon	Postweld Heat Treat Procedure
46	6/15/82	Hendricks	Simon	Design Spec. F-273
47	6/28/82	Hendricks	Simon	PTL QA Manual QA-M-
48	6/30/82	Hendricks	Simon	Class A Hangers
49	7/15/82	Hendricks	Simon	NDE Personnel
50	7/27/82	Richardson	Morrison	NCR 307 *
51	7/29/82	Hendricks	Simon	Procedure Demonstra
52	9/17/82	Hendricks	Simon	NDE Personnel Quali tions (PTL)
53	9/21/82	Hendricks	Simon	Non ASME NCRs
54	9/27/82	Hendricks	Simon	Procedure Demonstra
55	9/28/82	Hendricks	Simon	Procedure Demonstra
56	10/5/82	Hendricks	Simon	PTL Personnel Packa
57	12/6/82	Hendricks	Simon	Additional ANI - Hu Corp.
58	12/6/82	Hendricks	Simon	Additional ANI - Hu Corp.
59	12/15/82	Hendricks	Simon	NDE Personnel Packa Evaluation
60	1/10/83	Stanish	Tallent	NDE Personnel Packa Evaluation
61	1/11/83	Hendricks	Simon	Personnel Qualifica PTL Technicians
62	2/10/83	Hansing	Tallent	NDE Personnel Packa Evaluation
63	3/7/83	Hendricks	Simon	Personnel Qualifica PTL
64	3/29/83	Hendricks	Simon	ANI Witness Point c
65	4/30/83	Hendricks	Simon	Red Star Applicatic and Use on JTPs*
66	5/3/83	Hendricks	ANI-Southwest	Duplicate Mfg's Ser Nos - Southwest Fab Spools

Exhibit No.	Date	From	To	Subject
67	10/14/83	Hendricks	Bob Saris	ANII Drawing Review
68	10/14/83	Hendricks	Simon	PTL Personnel Qualifications
69	11/9/83	Goodwin	Altmayer	CECo P.O. 194350, Documentation and Marking
70	11/11/83	Rainey	Stewart	Meeting at Hunter Corp., Byron, IL *
71	11/15/83	Fisher	Hendricks	Maintenance and Repa of Pumps and Valves per Sect. XI *
72	11/30/83	Hendricks	Cerasani	As Built Drawings N-5 Sect. XI *
73	12/9/83	Lindquist	Simon	Item No. 1...for hanger...
74	12/28/83	Richardson	Simon	RT film processing
75	1/7/84	Hendricks	For Info	Data Reports ECNs and FCRs
76	2/16/84	Hendricks	Simon	PTL Procedure
77	2/20/84	Hendricks	Simon	Component Supports - Sect. XI
78	3/13/84	Lead ANI	ANI	*Told ANI to sign 1SX2N5 without review of pack covered* 7/28/77 Rainey to Selman Memo and othe assorted memoranda.

Recommendations and Information Required for Followup

The alleger stated that he would be available for further interview and that he would provide additional documentation in support of his allegations/concerns. The documentation previously listed will be maintained in the Resident Inspectors Office files. I recommend that assistance be obtained from appropriate personnel in the Division of Engineering and the Office of Investigations to review the documentation for relevance/significance and conduct followup investigations of the previously identified concerns and any additional concerns identified by document review. The Resident Inspectors will maintain contact with the alleger, continue to document concerns and, receive any additional documentation offered by the alleger.

Personal Data on Alleger

Name: Sargent Podworny
Home Address (Weekends Only): 119 French Street
Braidwood, IL 60408

Address (Weekdays): Howard Johnsons Motel
S. 11th Street
Rockford, IL
Phone: (815)397-9000

Job Title: Authorized Nuclear Inspector (ANI)
National Board Number 8528

Years as ANI: 8

Employer: Hartford Steam Boiler Inspection
and Insurance Company

J. M. Hinds, Sr.
Senior Resident Inspector
Byron Station

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMONWEALTH EDISON	)	Docket Nos. 50-454 OL and 50-455 OL
Byron Station	)	

INTERVENORS' MEMORANDUM IN SUPPORT OF
THEIR MOTION TO INCLUDE THEIR PROPOSED ISSUE NO. 1
with respect to one alleger within scope of hearing

Intervenors DAARE/SAFE and Rockford League of Women Voters, by their undersigned counsel, submit this memorandum in support of their motion, which was presented to the Board in open hearing on July 23, 1984, to include intervenors' proposed issue no. 1, with respect to one alleger, within scope of hearing.

At the July 23 hearing, the Board ruled, in essence, that it needed more information before it could resolve the matter. Further, it directed the NRC staff counsel to advise it, upon presentation by Intervenors' counsel to the Board of information concerning the alleger's identity and specific allegations, whether public disclosure of such information might compromise an ongoing investigation.

Accordingly, pending a statement of position by the NRC Staff and a ruling from the Board on whether public disclosure at t this time is appropriate, Intervenors' counsel submit the remaining pages of this memorandum to the Board in camera.

SUMMARY

The alleger is an Authorized Nuclear Inspector. ("ANI") From approximately April 1983 to April 1984 while employed by the Hartford Steam Boiler Inspection and Insurance Company, he worked under contract to the Hunter Corporation at Byron. He was responsible for final, or near-final, sign-off on certain Hunter documentation packages, including those for 14 of the Hunter attributes listed in Exhibit B to Mr. Del George's pre-filed testimony as "reinspected" and 6 more Hunter attributes listed therein as either "not reinspectable" or "reinspectable, but no inspections captured".

On March 6, 1984, the alleger made numerous allegations to the NRC. In sum, he charged that Hartford ANI's working for Hunter were being rushed, being forced to sign off on items they had not reviewed, being forced to exclude necessary items from their review, being required to sign off on items not reviewed or improperly reviewed, and being prevented from raising concerns beyond the next higher Hartford management level.

To investigate these allegations, NRC Region III asked Edison to retain the National Board of Boiler and Pressure Vessel Inspectors to audit ASME work at Byron. Both NRC Region III and Edison have been receiving reports generated by the Board. Intervenors do not know whether the Board has completed its audit or whether the NRC Staff has completed its evaluation of the allegations.

RELEVANT HUNTER ATTRIBUTES

The alleger was responsible for ANI sign-off on the following Hunter attributes at Byron:

Reinspected in Reinspection Program:

Piping Weld Documentation
Piping-Component Inspection Documentation
Whip Restraint-Component Inspection Documentation
Piping-Fitup Documentation
Piping-Bend Documentation
Component Support Inspection-Documentation

Piping-Mechanical Joint Documentation
Hydrostatic Test Documentation
Weld Interpass Temperature Documentation

Piping Pre-Heat Inspection Documentation
Pipe Weld-Shield Gas Documentation

Piping-Small Bore Final Inspection (Type 3) Documentation
Piping-Small Bore Final Inspection (Type 4) Documentation
Piping-Large Bore Final Inspection (Type 3) Documentation

Not Reinspectable or not Captured in Reinspection Program

Ferrite Inspection Documentation
Code Name Plate Documentation
Documentation of Weld Defect Removal Cavity
Bolting Turn-of Nut Documentation

Component Support-Final Inspection (Type 3) Documentation
Component Support-Final Inspection (Type 4) Documentation

ALLEGER'S CREDIBILITY

The alleger has been an ANI for 8 years. In his initial meeting with the NRC Staff on March 13, 1984, he provided 78 documents to support his allegations. On May 30, 1984, the alleger met with two representatives of the National Board of Boiler and Pressure Vessel Inspectors and the NRC's Senior Resident Inspector at Byron. According to the NRC Inspector, "the alleger recounted, almost verbatim, without notes, references, or documentation of any form, the concerns expressed to the NRC inspectors on March 13, 1984...The alleger sincerely responded to the [Board's] questions with no apparent trep-

idation or reservation, and expanded his answers in areas he felt helpful to the Board auditors objectives." May 31, 1984 Memorandum from J. M. Hinds, Jr., attached hereto, at pp. 2-3.

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 and 2)	)	

MOTION TO INCLUDE INTERVENORS' PROPOSED ISSUE NO. 1, WITH RESPECT TO ONE ALLEGER, WITHIN SCOPE OF HEARING

Pursuant to this Board's Order of June 8, 1984, p. 6, under the heading of "Intervenors' Proposed Issue No. 1," intervenors, by their undersigned counsel, hereby move to admit as an issue in this proceeding questions relating to the allegations of one of the allegers whose identity was disclosed under protective order of April 17, 1984.

Because the investigation is still ongoing, intervenors believe public disclosure of the name and specific allegations of the alleger at this time is not appropriate. However, since the Board and counsel for all parties are aware of the alleger's identity and some information about his allegations, it is possible to present and argue this motion without going in camera.

The grounds of this motion are as follows:

1. The alleger first made his allegations to the NRC staff in March, 1984, and his allegations concern events transpiring since the close of the record in the initial hearings.

2. The Board's June 8 Order (p. 6) recognized that the investigation of his allegations was pending and it was then "too early to determine whether the allegations will develop into issues for the remanded proceeding."

3. Since then, one of intervenors' counsel has interviewed the alleger and now represents the alleger as his legal counsel.

4. The alleger's allegations relate to one of the contractors which is a focus of this proceeding.

5. If true, the allegations raise serious questions about the accuracy and honesty of the QA/QC records of the contractor involved, as well as about the safety of that contractor's work. While not himself a reinspector in the Reinspection Program, the alleger was responsible for inspections, during the same time frame of the reinspections, relating to 14 of the attributes listed in Del George Exhibit B as reinspected, and 6 of the attributes listed therein as either "not recreatable" or "Reinspectable, But No Inspections Captured."

6. Intervenors' counsel, on the basis of discussions with the alleger, believes him to be truthful and reliable.

7. On information and belief, the pending investigation is likely to substantiate his allegations.

July 22, 1984

Respectfully submitted,

Douglass W. Cassel, Jr.
One of the Attorneys for DAARE/SAFE and the Rockford League of Women Voters on matters pertaining to quality assurance and quality control

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JUDGE SMITH: Mr. Miller?

MR. MILLER: Judge Smith and other members of the Board, I think it's fair to say that the Intervenors' memorandum in support of their motion really does very little to illuminate the pertinence of this material to the issues that are before the Board, and it makes no pretense of any showing that it should be as a new and separate issue for the Board's consideration.

I think that in order to understand why there is no pertinence to any issue before the Board from these materials, it is necessary to describe the function of the authorized nuclear inspector at the Byron site.

The authorized nuclear inspector is not an individual, but is rather a company -- in this case, the Hartford Steam Boiler Company -- which provides individuals under contract with the ASME Code contractor at a particular site. In this case, that contractor is the Hunter Corporation. There may be others as well, but let me limit my remarks to Hunter.

Hartford therefore provides individuals whose inspection functions are superimposed on the quality control and quality assurance functions of Hunter and Commonwealth Edison and the other entities such as PTL, about which there has been testimony, for a very specific and limited purpose. That purpose is to determine whether the work performed by

mgc11-6

Hunter at the Byron site is in accordance with the ASME Code.

The allegations that are detailed in this -- these materials rather -- relate to allegations involving the management or supervision of Hartford Steam Boiler.

Outside of a conclusory assertion in the March 14, 1984 memorandum for the file, which states that the alleger, quote, "expressed his belief that Hunter Corporation and Commonwealth Edison were applying" -- this is a qucte within a quote -- "'monetary'", end of quote, "pressure to his line supervision to support production schedules," end quote.

There is simply no other reference to Hunter Corporation or to Commonwealth Edison Company. If one looks at what I would call the Bill of Particulars of the allegations, one sees that virtually all of them begin with the words "ANI supervision," indicating to me that it is the supervision by Hartford Steam Boiler Company that is the focus of the alleger's complaints.

The process by which the ANI conducts his function for Hunter at Byron is as follows: First, there is a quality control inspection by a Hunter employee. The piec: or component being inspected either passes or flunks that inspection. If it passes, it may or may not be subject to inspection by the ANI. It is at the ANI's discretion as to whether or not the company wishes to have its inspectors

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inspect a particular component, and the fact that the ANI has indicated that there is an inspection hold point for a particular component or piece of equipment can be waived by the ANI. Hunter and Commonwealth Edison Company have very little to do with that.

In any event, the activities of the ANI are virtually totally divorced from the quality control inspections, which were the subject of the quality control inspector reinspection program and which have been the subject matter of this hearing.

What we have in these documents -- and you really have to kind of search through the NRC correspondence to get to it -- is an assertion by an employee of a contractor of a contractor at the Byron site that his own supervisors have been putting pressure on him or doing other allegedly improper things which cause him to question the performance of his own duties.

It goes without saying that since Hartford is a contractor to Hunter, that the ANI inspects many of the same components that were the subject of a quality control inspector. That just follows logically, and we can't draw any conclusions from these allegations with respect to the activities of Hunter or Commonwealth Edison Company.

What is sought to be raised without even making a minimal showing for reopening the record is an entirely new

mgc11-8

set of issues relating to an entirely new contractor to this proceeding. I think that the pleading that has been filed by the Intervenors is defective on its face in order to support the admission of such an issue, and it is Commonwealth Edison's position that the motion should be denied out of hand.

JUDGE SMITH: Given your view of the facts, do you believe we have jurisdiction to entertain the motion?

MR. MILLER: I believe you have jurisdiction to entertain the motion in the following respect -- as a Board that is sitting on remand, with a footnote in the Appeal Board's opinion, which more or less gives you unlimited discretion. It seems to me that you have jurisdiction in the technical sense to consider the motion and rule on it.

My point is that the technical requisites for expanding the scope of this proceeding, the type of showing that various NRC decisions have indicated must be made, there hasn't even been an effort on the part of the Intervenors to bring anything to the Board's attention under the Diablo Canyon criteria which would indicate why the Board ought to consider this.

So the answer to your question is, yes, I believe you technically have jurisdiction. I believe that this is just woefully inadequate in providing any basis for admitting it into issue.

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JUDGE SMITH: Yes, I just looked at the footnote, and it says, "It matter related to the reinspection program or otherwise," so we probably do.

MR. MILLER: I just wanted to say one last thing. I am obviously making factual representations on the basis of information that has been transmitted to me by knowledgeable individuals at Commonwealth Edison Company. I feel comfortable with the facts, but if the Board wishes some documented description in the form of an affidavit or some other document, I would be happy to provide that.

But the reason I felt able to respond orally as I did is, the showing that has been made is really so incomplete that I believe that we can and should dispose of it now.

JUDGE SMITH: Does the NRC regulations which incorporate the ASME Code require the use of the authorized nuclear inspector?

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T12 MM/mm

MR. MILLER: I have to do a quick research.

JUDGE SMITH: Do any of you gentlemen know?

MR. LEWIS: Maybe we should ask on the record.

JUDGE SMITH: Does the code require -- well, in the first place, am I correct that the NRC Regulations captures the ASME code.

WITNESS CONNAUGHTON: That's correct.

JUDGE SMITH: And the Code, in turn, requires the use of the authorized nuclear inspector?

WITNESS CONNAUGHTON: That's correct.

MR. MUFFETT: Yes.

JUDGE SMITH: So, one could say use of the authorized nuclear inspector is required by NRC Regulations by using that line of reasoning?

WITNESS CONNAUGHTON: In the absence of request for relief from Code requirements, that is correct. There are provisions for such relief.

JUDGE SMITH: Who is going to argue that?

MR. LEWIS: Let me address this. I agree that the subject matter of the allegations that are involved here are really fundamentally different than the question in this proceeding. Even though the Intervenors argue that although this man was not a reinspector, under the reinspection program, that he was somehow akin to that.

He really was functioning in a completely different

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and removed and independent function.

Now I will represent to the Board that the Staff is aware of the preliminary findings -- let me back up and lay a factual information here.

As the memorandum from Mr. Keppler, which is one of the attachments provided by the Intervenors, indicates, the National Board of Boiler and Pressure Vessel Inspectors was retained by Commonwealth Edison to look into these matters. The National Board is the agency, as I understand it, that certifies the qualifications of ANIs and therefore is in a particularly knowledgeable position to be the investigator on this matter.

Staff has received,and the company has received the preliminary -- the first of, I believe it is to be three reports from the National Board. Up until this point I did not feel that it was appropriate to consider a Board notification of those items, considering the ongoing nature of the investigation.

We will, however -- the Staff will, totally apart from the question of whether or not this issue is admitted into the proceeding -- go back and look at the papers that we have regarding these matters, and as we believe appropriate, make a Board notification of information in our possession. That information in our minds, still does not link up the issues with respect to these allegation to

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issues in the reinspection program.

However, I felt this representation should be made. I believe that when that information is provided, someone might seek to argue from it, that it raises what might broadly be called quality assurance issues with respect to Hunter Corporation. So, when that information is available, Intervenors may seek to rely upon it to argue to the Board. I don't know.

We will make appropriate Board notifications of that.

But, fundamentally the Staff believes that we are dealing with an independent party here whose inspections are conducted for a different purpose, and whose qualifications are not at issue in this proceeding. And we would have to agree with Commonwealth Edison that it really is a fundamentally different issue, and there would have to be a showing before this Board, as to why this new issue should be admitted.

On the basis of the papers filed with them, we would oppose the motion.

JUDGE SMITH: Who is going to argue?

Mr. Cassel?

MR. CASSEL: It is my understanding, Judge, that this may well be a matter separate from the reinspection program, and yet one which sheds some light upon how far

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one can carry the results of the reinspection program.

The equipment installed by Hunter at Byron, in my understanding, went through a series of inspections, and Mr. Somsag from Hunter Corporation this morning testified in response to questions from -- I believe it was Judge Callihan, describing each level, Level I, Level II, et cetera, all the way up the line.

It's my understanding that with respect to those 16 attributes, if I've got the number correctly, that Mr. Podworny was responsible for inspecting, that he is basically in charge of putting the last signature on the page, or nearly the last signature in the package, and that what we have is someone who is working under contract to the Hunter Corporation alleging that when we get very near to the end of the line of the necessary documentation for ASME equipment installed by Hunter at Byron, that there is all kinds of pressure to cut corners, to sign things -- sign off on things that were never really inspected, at least not by the person who was being asked to sign off on them, and that all of this is being done by a company which is under contract to Hunter and for whose conduct, therefore, Hunter is both in law and in fact responsible, and both of whom, in turn, are answerable to Commonwealth Edison, which is both in law and in fact responsible for the proper conduct or lack of proper conduct of that activity.

mgc12-2

That being the case and particularly where we are talking about the same ASME attributes that were the subject of the reinspection program, it seems to me that Mr. Podworny's information does raise questions that any objective observer would want to look into a little bit before deciding that there's a reasonable assurance that the Byron plant can be operated safely.

Now, true, he has not been able to say a whole lot about the direct involvement of Edison or Hunter in their subcontractor's activities, but that's understandable, because he was an employee of the subcontractor, and you have to start somewhere with a witness when you begin looking into an area and take a look at what other witnesses have to say concerning what they know.

But certainly with respect to what he knows, it appears that he is able to speak in great deal and with considerable credibility. I would have preferred, in an ideal world, to wait until the National Board of Pressure Vessel Inspectors report was complete before presenting this matter to you, because presumably that inspection will show something of the broader picture and enable everyone to assess the importance of this better. But given the timing of the situation, with the fuel load date currently scheduled in mid-September, with the hearings here underway on a tight time schedule, we just didn't feel we could wait

mgc12-3

any longer to bring it to your attention as an issue that seems to us to be worthy of looking into, because it relates to the extent to which one can rely on the results of the reinspection program. It seems to me that it is not only within this Board's technical jurisdiction to rule on, but logically within the scope of issues that should be looked at in order to determine whether there's a reasonable assurance that Byron can be operated safely, in light of the reinspection program.

JUDGE SMITH: I think you should develop your argument in more detail as to how these allegations bring into question the results of the reinspection program.

What is the factual chain of events here?

MR. CASSEL: They don't bring directly into question the results of the reinspection program. What they bring into question is the inferences that can be drawn from the results of the reinspection program.

JUDGE SMITH: Well, the inferences that we are asked to accept are that the inspectors inspected adequately, and that they were qualified, and the quality of the work is adequate.

MR. CASSEL: Those are the two central inferences, which several of Edison's witnesses have asked you to draw from the program.

JUDGE SMITH: And how does this bring into

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question those three inferences?

MR. CASSEL: I believe --

JUDGE SMITH: In the first place, it doesn't relate to the qualifications of the Hunter quality control inspectors.

MR. CASSEL: Let me see if I can talk about what it does do and then see how it connects up with those inferences.

It seems to me that it raises questions as to whether the ASME equipment at the plant is worthy of an ANI final sign-off. And to the extent there are questions about -- there are questions about whether either the equipment itself or the documentation of the equipment is adequate for an ASME sign-off, it seems to me that relates directly to the issue of whether the quality of the work is adequate to provide reasonable assurance of safe operation.

That is the principal issue, it seems to me, that is raised by Mr. Podworny's allegations as they relate to this proceeding. I don't want to contend that I can draw anything more than a tenuous relationship between his allegations and the qualifications of the QC inspectors, but I do think --

JUDGE SMITH: You are really making the major thrust of your motion an argument that this matter is so important that it will meet the standards for reopening an

mgc12-5

evidentiary record.

MR. CASSEL: I don't know that I would characterize that as the major thrust. It seem to me that it is so logically part of what this Board is already required to look at, that before passing judgment on just how far these inferences from the reinspection program can be taken -- and as you know, several of Edison's witnesses take them all the way to the bottom line -- that is, reasonable assurance of adequate work quality -- that when we have Edison that comes in and raises questions about how far those inferences can be taken, that that ought to be looked at before the Board reaches a conclusion.

JUDGE SMITH: Let's assume that we granted your motion. What would we be granting? We would have made his allegations an issue, I think, and then what would be the practical effect?

MR. CASSEL: The practical effect would be that on August 13th when we file our other witnesses prefiled testimony, we would file the testimony of Mr. Podworny detailing these allegations. We would further seek to obtain an order from the Board or agreement of the parties, whichever, directing that the interim report of reports, as the case may be, of the National Board, which I gather have already been provided to the NRC Staff and have already been provided to Edison, be provided to Intervenors as well,

mgc12-6

and we would then take a look at them, and to the extent they provide additional evidence in support of Mr. Podworny's -- either in support of Mr. Podworny's allegations or with reference to allegations of work quality and QA at the plant, to go beyond his direct allegations, we might present them to you, or at a minimum Mr. Lewis might present it to you as a Board Notification.

To the extent we present evidence that raises questions, I wouldn't presume the extent to which the Applicant would then want to respond. That would be their decision.

End12-MM

JUDGE SMITH: What if we said okay, this is an issue, and you brought Mr. Podworny in and he testified, and he testifies to those 14 or so points? Now, what would we find? What would be the role of that testimony in our deliberations? Would we say okay, don't run the plant?

How would you use that in your proposed finding?

MR. CASSEL: That single piece of evidence alone would not, I think, be the basis for a conclusion; a conclusion on whether the plant should be licensed is going to be based on the totality of many pieces of evidence, of which this would be one.

But if he came in and explained his allegations, detailed them, and we had substantiation for them, it seems to me the Board would then want to inquire of him and of Hunter and of Edison --

JUDGE SMITH: Well, take the worst case. Let's say that he brought so much doubt into the validity of the ANI role out there, that we gave no credit to it, which incidentally we have not, so far in this proceeding. Then what result would you say that would have on our ultimate conclusion? I mean, what effect would it have on our ultimate conclusion?

MR. CASSEL: I would say that it might raise questions about whether the plant can be safely operated.

JUDGE SMITH: Okay, but you're going to have to

make a proposed finding. Now, what would be your proposed finding?

MR. CASSEL: My proposed finding would be based on far more evidence than I have at hand at the moment, because if this is an issue, Intervenors will want to take discovery in order to find out what the full evidentiary scope of the problem is.

JUDGE SMITH: I'm giving you the worst case; that this witness destroys any credit that can be given to the ANI -- the ANI for Hunter.

MR. CASSEL: The question is whether it's possible for the evidence to go beyond simply subtracting the ANI out of consideration, and raising questions about the reliability of the equipment and documentation of the plant.

JUDGE SMITH: That's where I don't follow your causal connection.

MR. CASSEL: The causal connection which I can only sketch at this point because I haven't had discovery, but the question that I would want to pursue through discovery is whether the requirement that there be an ANI serves any safety purpose whatever. And if so, what is that purpose?

And if there is a safety purpose that is the underlying reason for this ANI requirement being included

in the NRC regulations via the ASME code, then do Mr. Podworny's allegations and the additional investigation of the National Board suggest that whatever purpose relating to safety was intended to be served by the ANI at Byron has, in fact, not been served; and rather than having the ANI provide reassurance of safety, we have a situation where the ANI actually raises questions related to safety.

But I define that in terms of that is the sort of question which I as a litigator would pursue through discovery, through documents and through witnesses if this issue were admitted into the proceeding.

I can't prove the bottom line at this point in time because I have only the first step on that bottom line in the form of Mr. Podworny's evidence. But it does seem to me to be a credible first step, and one which is very difficult, to simply ignore on the a priori belief that there is no conceivable relationship of the ANI process to the safety of Hunter's work, or the reliability of Hunter's documentation of their work at Byron.

JUDGE SMITH: Do you accept Mr. Miller's characterization of the role of the ANI?

MR. CASSEL: I can neither agree nor disagree with his characterization because I don't know enough about the overall picture, Judge.

MR. MILLER: Judge Smith, may I just respond

briefly? It's really very frustrating to hear counsel for the Intervenors talk about a priori assumptions when it is both the Intervenors'burden as a matter of NRC practice and explicitly as a result of the comments that you made a week ago regarding this very same issue, for them to come forward and have made a showing with respect to the significance of this information to the issues before the Board or to some specified safety issue.

Intervenors have done neither. Mr. Cassel suggests instead that this just provides the first step. He needs discovery -- he's not quite sure where his discovery is going to take him, but there's an expectation that if he is just given enough time to brood around in the record somewhere, that he may find something that will give this Board cause.

I submit that this is the same sort of approach, with the issues in this case, which has been the hallmark of earlier allegations that were sponsored by the Intervenors. They are diffuse; there is no couching made for their pertinence to the issues in the proceeding before the Board, and most importantly from my standpoint, Commonwealth Edison Company is left to sort them out, respond to those that may have some merit, and argue to the Board about the others.

We have had indifferent success in the past with

that approach. It has taken a lot of hearing time. In my judgment, it has distracted the Board from the issues that are at the heart of this proceeding, and which are at the heart of the earlier proceeding as well.

JUDGE SMITH: Mr. Lewis, would you tell us again what your plans are with respect to Board and party notification?

MR. LEWIS: We will make available to you the first report from the National Board, which was -- under the National Board's procedures that was made available to Commonwealth Edison Company as the entity which contracted with the National Board, to the NRC Staff and to the state of Illinois boiler inspector, I think his title is.

It's my understanding there will be two additional reports. It's my present understanding that this investigation will be completed at the end of this week.

JUDGE SMITH: Are there any further arguments? We will take the matter under advisement and we will rule probably tomorrow morning.

MR. CASSEL: Could I have just a moment, Judge?

(Pause.)

I have nothing further to argue at the moment.

JUDGE SMITH: You say the investigation will be completed at the end of this week?

MR. LEWIS: That's my understanding. You know, the Staff doesn't have a wonderful track record on its credibility at this point. It's my understanding that the National Board will complete its field investigation. I don't know exactly what the date would be for a final report. My indications are perhaps the middle of this month.

JUDGE SMITH: Okay.

MR. MILLER: Judge Smith, just so the record is clear, we have had in our possession I think since July 17th or 18th an interim report from the audit team, and we considered quite carefully whether it should form the basis for a Board notification, and concluded, both because it was the final report and on the basis of the arguments that I have made to the Board, that it did not appear to relate to the issues before the Board, and that a notification should not be made.

JUDGE SMITH: Yes, but we want to be able to consider both aspects. It's a matter that should be looked at within the issues of the hearing, and as a matter that should be looked at as a motion to reopen the record.

I mean, we want to have both.

MR. MILLER: Surely. I think in that respect, then, my own judgment is now, in effect, that we should get this information to you just as quickly as possible, as soon as we have it in our hands, and we will do so either

mgc13-1

by the end of the day or first thing tomorrow morning.

JUDGE SMITH: Okay.

MR. CASSEL: I assume that any Board Notification gets served on all parties.

MR. MILLER: It always has in the past.

End13-SY

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JUDGE SMITH: Are you ready for cross-examination? Do you have a cross-examination plan?

MR. LEARNER: Yes, I have.

MR. MILLER: Judge Smith, I wonder if I might be excused from the hearing room for perhaps the remainder of the day? I have an interrogatory answer to prepare for the Intervenors and a number of other matters.

JUDGE SMITH: I guess if it's okay with Mr. Gallo, it's okay with me.

(Counsel Miller leaves the hearing room.)

MR. LEARNER: If the Board is ready, I'm prepared to go forward. I would like to start by addressing my questions to Mr. Little.

CROSS-EXAMINATION

BY MR. LEARNER:

Q Were you the NRC official with supervisory responsibility for the implementation and evaluation of the reinspection program?

A (Witness Little) For inspecting the implementation of the program and/or the evaluation of the programmatic results.

Q Did you have the primary NRC responsibility for negotiating the structure of the program with Commonwealth Edison?

A Not primary. It was a collective type of

mgc14-2

responsibility.

Q Who had the final decision at the NRC for the structure -- for signing off, if you will, of the structure of the reinspection program?

A Mr. Spessard, S P E S S A R D (spelling), had primary responsibility, who was the Director of my division. He had the final authority there.

Q And was this sign-off accomplished in the February 23, 1983 letter from the NRC to Edison?

A No, not February 23rd. I think it was March 22, 1983.

Q Excuse me. I transposed two numbers there.

The plan that the NRC approved was not Edison's original plan; is that correct?

A The plant that we approved is the plan described in the Licensee's letter of February 23, 1983.

Q Well, prior to that February letter of 1983, had Edison come in with different proposals for the reinspection plan?

A They had come in with responses to the items of noncompliance, which proposed other things other than reinspection.

Q Let me step back. In March of 1983, the NRC approved a reinspection for Edison; is that correct?

A Right.

mgc14-3

Q And had this reinspection program taken different forms in its proposals prior to the plan that was actually approved by the NRC in March of 1983?

A There was no formal submittal of a reinspection program prior to February 23rd of '83. We had discussed other reinspection programs. They had replied to the item of noncompliance and described other types of corrective action, rather than a reinspection program.

Q Is it fair to say, then, that the reinspection program was something formulative in nature, leading up to March of 1983?

A Yes. Yes.

Q There were a lot of meetings describing -- excuse me -- there were a lot of meetings as to what that reinspection program might include.

A Yes.

Q And were there a lot of evaluations as to specific elements of the reinspection program that Edison was to conduct?

A There were several meetings. The meeting I recall with the Licensee in December of '82, where the reinspection program was discussed, we discussed various aspects of it. Internally, there were many discussions that went on as to the various pros and cons of what should be done.

Q And in these negotiations between Edison and the

mgc14-4

NRC, was there give and take on both sides in terms of the ultimate reinspection program that would emerge?

A The normal amount of give and take.

Q And was Edison flexible in terms of their plan approach?

A They were always willing to talk about various approaches. I think they were receptive to things that we suggested that they consider, and in that light, I think they were flexible.

Q Were they willing to compromise in terms of the elements that would be included in the reinspection program?

A It's my recollection, yes.

Q Similarly, was the NRC flexible in its approach as to what the final reinspection program ought to look like?

A I guess I dislike the word "flexible." But we definitely considered the spectrum of actions that could be taken, and there was give and take, and they would propose something, and we would tell them why we didn't like it or why we found it not to be acceptable.

If that is flexibility, then that's what went on.

Q Was the NRC willing to accomodate and be compromising in its positions with Edison?

MR. LEWIS: I would object. I think those terms really are not adding anything to the discussion about flexibility. I don't know what it was that the Counsel would

mgc14-5

expect the NRC to compromise.

JUDGE SMITH: I don't think you have a good objection. I think the witness can answer that.

My interest is, how does this question differ from the last question?

MR. LEARNER: I think the last question I asked was respecting Edison's position. Now I'm asking regarding the NRC's position.

The witness has indicated some difficulty with the term "flexibility." I'm seeking to find a term that he may be more comfortable with to describe the context of those negotiations.

MR. LEWIS: That was what my objection was, that I felt he had been asked, was the NRC flexible, and I felt he was asking the same thing by saying, "Was the NRC prepared to compromise?"

JUDGE SMITH: Well, let him pursue the NRC's position. It is appropriate

BY MR. LEARNER:

Q Do you recall the question, Mr. Little?

A (Witness Little) I guess I dislike the word "compromise" more than the word "flexible." We were willing to consider any proposal that the Licensee would make to us to resolve this item. We were willing to consider it.

Q And as a result of these negotiations and these

mgc14-6

discussions, did the NRC participate in the give and take in terms of formulating the reinspection program that Edison ultimately followed through with?

A Yes, in the context of the answers that I've already given.

Q Did the NRC get everything it wanted in the reinspection program that Edison did?

A We got everything that we wanted to get satisfactory resolution to the problem.

Q Well, were there some elements that the NRC would have liked to have seen in the reinspection program, but as a result of these negotiations, certain elements were not included?

A I can think of nothing, like I say, that would reflect on the satisfactory resolution of the problem.

If I could explain it, when we identified a problem of this nature, there is much give and take internally amongst the Staff where, you know, you consider the whole spectrum of actions that could be taken. These sort of discussions were held throughout this process.

Q And were there certain elements of the reinspection program that some of the NRC Staff would have liked to have seen included, but ultimately were not included in the plan that Edison followed through with?

A Yes, and that is always the case.

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Q And what were some of those elements?

A There were those who would have liked to have seen 100 percent reinspection. There were those who thought no reinspection was required. You get the whole -- like I say, the whole spectrum of positions on a case like this.

Q And who expressed the view that there ought to be 100 percent reinspection.

MR. LEWIS: If you know.

WITNESS LITTLE: To my recollection, Mr. Forney at times argued for 100 percent reinspection.

BY MR. LEARNER:

Q For the record, who is Mr. Forney, please?

A (Witness Little) He was the Senior Resident Inspector at Byron.

Q Is he the person with the most hands-on inspection experience at the Byron plant?

MR. LEWIS: I object to that. I don't know what the term "hands-on inspection" means. I think it's an unclear --

MR. LEARNER: I will rephrase it.

BY MR. LEARNER:

Q Was he the person with the most inspection experience at the Byron plant on the NRC Staff?

MR. LEWIS: I object to that as well. I don't know how the witness is to quantify who had -- it's unclear

mgc14-8

in the sense that I don't know how he is going to respond to who had the most experience.

JUDGE SMITH: Let's see if Mr. Little has the same difficulty you have.

MR. LEWIS: Okay.

WITNESS LITTLE: I have no way of determining. I have no information at my fingertips that will allow me to say who has the most inspection experience at Byron.

Mr. Forney, as the Senior Resident Inspector, yes, he had a very good feel for what was going on at the Byron site. However, I have welding inspectors who are much more knowledgeable in the area of welding at Byron. I have electrical inspectors who are much more knowledgeable in the electrical area at Byron.

BY MR. LEARNER:

Q And apart from Mr. Forney, were there any other of the NRC Staff members who felt that there ought to be 100 percent reinspection at Byron, to the best of your recollection?

A (Witness Little) I don't recall any. But I would like to explain that when we have these internal discussions, there is sometimes much heated discussion going back and forth on both sides, and, you know, at the meeting today there may be people who would be led to support one extreme and others who would support another extreme, and

mgc14-9

later on you have a meeting, and you may find that people have moved in between, say, the two extremes.

I do not recall any others other than Mr. Forney.

Q Is it fair to say, then, with respect to the NRC Staff, there was a spectrum of views as to what that reinspection program ought to include?

A Yes.

Q Incidentally, you aren't a statistician, are you?

A I am a user of statistics.

Q Are you an expert in statistical analysis?

A I am not an expert.

Q Were any of the NRC Staff persons who were involved in the formulation of the reinspection program experts in statistical analysis.

A No.

Q Any of the people experts in sampling methodology?

A Not what I would call experts. We have many people on the Staff who used various sampling methodologies.

Q And I take it, your answer is, there were no experts, though, in sampling methodology?

A Not in that sense.

Q Were you satisfied -- strike that.

Were you confident that the reinspection program was based on a statistically valid design?

A No. Our approach to the reinspection program was

mgc14-10

based on engineering judgment, not upon statistics.

Q When you refer to engineering judgment, are you referring to your engineering judgment or the judgment of the whole NRC Staff?

A The collective engineering judgment of the Region III Staff.

Q What do you mean by "engineering judgment"?

End14-SY

A Engineering judgment is judgment based upon experience, based upon training, and I think usually to be reliable, it is collective in that it is not a single individual's judgment.

Q Is it fair to say that engineering judgment is your best educated guess based on your experience?

A I would put much more significance on it; I would not call it a guess.

Q You referred earlier to a collective judgment, and I'm having a little trouble understanding how you could have a collective engineering judgment. Can different people with expertise in their given fields have different engineering judgments?

A Yes.

Q And isn't it true that as you testified earlier, given members of the NRC Staff were of different views on the nature of the Reinspection Program?

A There were different views.

Q Is it fair to say that these people had different engineering judgments as to the validity of the Reinspection Program?

A Yes.

MR. LEWIS: No, wait a minute. As to the validity of the Reinspection Program?

MR. LEARNER: As to the validity of the

Reinspection Program. That is the question.

MR. LEWIS: The objection I have, Your Honor, is that it's unclear in the sense that the validity of the Reinspection Program could be something related to output from that program, or it could be related to the design of the program.

I think if it's the design of the program then I think it is permissible and I have no objection.

MR. LEARNER: I think the witness answered the question, he understood the question.

WITNESS LITTLE: I would like to explain --

MR. LEARNER: I would rephrase it, if it's the Judge's preference.

JUDGE SMITH: Well, the distinction he draws is an important one, and I think it should be clarified.

MR. LEARNER: If you'd like, I'd be glad to break it down and clarify it.

BY MR. LEARNER:

Q Is it true that not all the NRC Staff were satisfied with the structure of the Reinspection Program?

A (Witness Little) At the time we accepted the proposed program, to my knowledge we did not have anyone who disagreed with the program to the extent that they did not believe that it would what it was supposed to do.

We had had our give and take prior to that time,

but at the time we accepted it, to my knowledge everyone was satisfied.

Q You referred earlier to Mr. Forney. Isn't it true that Mr. Forney had some reservations as to the program's structure?

A He had reservations. Those reservations were argued out when we met with the Licensee, when he went over his reinspection program which was documented in his letter of February 23rd. Mr. Forney was in on those meetings. He was in on the subsequent discussions that we had arguing the pros and cons, and to my knowledge, he accepted the program as described in the February 23rd letter as being adequate.

Q I don't mean to cut you off and stop you from giving full answers, but I think some of the questions I'm asking are fairly simple and can be answered yes or no with a very short explanation.

end 15

T16MM/mm

JUDGE SMITH: Well, there is a difficulty there, counsellor. His original answer to your question with respect to Mr. Forney has not been adequately and accurately characterized since then.

He stated initially, the first time he characterized Mr. Forney's position was, as closely as I can recall, was that Mr. Forney at times argued for 100 percent inspection.

After that you premised questions based upon an enduring final conclusion of Mr. Forney, that there should be 100 percent reinspection, and there has never been any evidence --

MR. LEARNER: Let me try to lay a little bit better foundation.

BY MR. LEARNER:

Q After March of '83, isn't it true that Mr. Forney expressed some reservations in terms of the structure of the program?

A (Witness Little) To my knowledge, I was not aware of his reservations until I heard of his testimony in the hearing. He did not bring it to my attention.

Q And that hearing was after March of '83, is that correct?

A Yes.

Q So it is fair to say that after March of 1983,

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Mr. Forney expressed some reservations as to the program structure?

A He expressed some reservations. As I read his testimony, he always qualified what he said.

Q Is it fair to say then that his engineering judgment and good faith was different than yours as to the program structure?

MR. GALLO: Objection. It calls for speculation in terms of what Mr. Forney thought or didn't think.

MR. LEARNER: I am not asking what Mr. Forney thought.

I will rephrase the question.

MR. LEWIS: Before you do, let me just say, your Honor, the concern that I see coming here is that this witness is being asked to characterize many things about Mr. Forney's position on things. I question how far this witness, or any of the other witnesses on this panel will reliably be able to state that kind of testimony.

I will note for the record that Mr. Forney will be in attendance later this week, and I have offered to have him sit down with the Intervenors and the Applicants, and they may at that time explore with him informally what his views are.

MR. LEARNER: If I may be heard briefly, your Honor?

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JUDGE SMITH: Yes.

MR. LEARNER: The witness has said that there was a collective engineering judgment here. Namely, I understand him to be saying that there is something of a unified Staff position as to what was an appropriate program structure for the reinspection program.

The purpose of my questioning is not to go to the merits of what Mr. Forney was saying. I don't view that as being hearsay testimony. What I am going to is the question of whether there can be a collective testimony -- if you will, collective engineering judgment when members of the Staff disagree.

What I would like to explore, and I think I am doing properly, is the nature of the disagreement among the Staff members.

JUDGE SMITH: My difficulty with the line of questioning is, that you are trying to get Mr. Little to tell the Board what Mr. Forney told the Board. And we paid very close attention to Mr. Forney and we studied his testimony, and we wrote a little bit of our initial decision on it, and I don't think Mr. Little can tell us any better than we already know, what Mr. Forney testified to.

I think that you may begin the premise of your questions with our findings of Mr. Forney's testimony. You can bring them to his attention, if you wish.

mm4

MR. LEARNER: Let me proceed in that manner.

BY MR. LEARNER:

Q Are you aware, Mr. Little, that Mr. Forney had some disagreements with the rest of the NRC Staff in terms of the appropriateness of the program structure?

MR. LEWIS: Objection. He, at this point is where I think the Judge's admonition comes into play.

If you want to direct the witness to a particular statement on this record by Mr. Forney and ask him about that, please do so.

BY MR. LEARNER:

Q Let's turn to a particular area. For example, Mr. Little, you have testified that from the very beginning of the program, Region 3's position has been that the 95, 90 percent acceptance criteria for objective and subjective attributes respectively was agreed to by all the region, is that correct?

A (Witness Little) I don't think I have ever testified that it was agreed to by all of the region. It was -- the regional position was that the 90, 95 percent acceptance criteria were adequate.

Q Is that the unified position of the NRC Staff?

MR. LEWIS: Objection.

We are getting real hung up on semantics here. The questioner is trying to use the term "unified." I

mm5

believe though, that the question has been asked and answered in terms of spectrum of views, collective judgment. I don't know "unified." I gather the question is asking the witness to agree whether or not there was a unified view.

I think the witness has already said there wasn't a unified view.

But maybe we are dealing with semantics here. I don't know, there is a lot of different terms on the table here now about unified, collective --

MR. LEARNER: I am not sure that the witness finds it half as confusing as Mr. Lewis does. I think I am asking a fairly simple question; namely, was there disagreement among the NRC Staff as to the appropriateness of the 95, 90 criteria.

JUDGE SMITH: When?

MR. LEARNER: I will start now, as of March of '83.

BY MR. LEARNER:

Q Did the NRC Staff have a unified position as to the 95, 90 acceptance criteria?

A (Witness Little) In my definition of unified, yes.

Q Was Mr. Forney a part of the NRC Staff at that time?

A Yes.

Q To the best of your knowledge, did he agree that

hm6

the 95, 90 percent criteria was acceptable?

A My only knowledge of that period in time was what Mr. Forney said in his testimony.

Q And by "his testimony" you are referring to his August testimony in these proceedings?

A Yes.

Q And what is your awareness as to what he testified to at those hearings?

A Yes.

Q In those hearings, did he testify that he did not believe the 95, 90 percent criteria was acceptable?

A My recollection of that, that is not what he testified to. I would like to see the record.

JUDGE SMITH: I will be somewhat surprised if you can pull that testimony out of the transcript.

MR. LEARNER: Let me reference here the transcript at page 7997. This is not for purposes of impeachment, but just to clarify.

There was a question asked of Mr. Forney by Mr. Becker:

> "Mr. Forney, you responded in answer to a question from Judge Cole that the Staff has documented to the Applicant that the Staff has not necessarily accepted the 90 percent acceptability level. . ."

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JUDGE SMITH: That's my memory.

MR. LEARNER: -- ". . .for subjective weld attributes, correct?

"Answer: I believe that we have not. Yes."

He then refers to a letter, then later says in the same context at page 7999:

"However, within the region we are still considering the unacceptability of the 90 percent. I believe also at the meeting that we had relative to the reinspection program, that we discussed the fact that the region in all likelihood may take objection to the 90 percent."

JUDGE SMITH: Fine. That is accurate.

That is not the question you put to the witness, however. Not only that, but that is a finding that we made, too.

MR. LEARNER: I realize that is a finding.

end T16

BY MR. LEARNER:

Q Mr. Little, in light of that testimony, is it clear that the engineering judgments of the NRC Staff people who were involved in the reinspection program, were different with respect to the 95, 90 acceptance criteria?

MR. GALLO: Objection.

The trouble I am having with this line is lack

mm8

of foundation and correlation between, apparently, Mr. Forney's disagreement on the subjective acceptance criterion of 90 percent, and the concept of engineering judgment. I don't know whether it was a factual dispute or any judgment was brought to bear whatsoever.

We have this vague concept of engineering judgment as used by counsel. And, unless applied to a particular concept or a particular set of facts in particular circumstance, I don't think it has much meaning.

I think the question is vague, and should not be allowed for that reason.

MR. LEARNER: I am using "engineering judgment" in the manner that the witnesses interpreted earlier.

JUDGE SMITH: He alluded to a collective engineering judgment, and now the cross-exmination is trying to challenge that there was a collective engineering judgment.

Is that correct?

MR. LEARNER: That's correct, Judge Smith.

JUDGE SMITH: So, overruled.

However, I hope that the transcript at this point is accurate and complete.

What is the difficulty of accepting our findings?

Do you dispute our findings on Mr. Forney's position, the Staff's position?

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MR. LEARNER: Not at all.

JUDGE SMITH: In the first place, you have yet to establish other than from Mr. Little that Mr. Forney disagreed at the time of the hearing with any collective judgment.

MR. LEARNER: That's correct. I am relying upon the previous testimony that I have cited into the record earlier, the Board's findings, and more particularly the nature of the disagreement on the NRC Staff.

JUDGE SMITH: But, how have you demonstrated a disagreement?

MR. LEARNER: I believe through Mr. Little. We are discussing right now whether there was a collective judgment, or whether there were individuals who differed with that judgment.

JUDGE SMITH: The testimony of Mr. Forney in August of 1983 was never disputed as representing the position of the Staff. To this date I have never heard anyone dispute that Mr. Forney was representing the position of the Staff.

His testimony was that the 90 and 95 percent, and the methodology of the reinspection program was accepted as a tentatively satisfactory approach. And that the final results and the final decision would be withheld until the results of the reinspection program were in.

mm10

And, nothing has disturbed that testimony.

MR. LEARNER: With all due respect, your Honor, I believe in Mr. Little's testimony that was filed earlier today, he says that from the inception of the program, the 95, 90 was relied upon.

JUDGE SMITH: Okay.

MR. LEWIS: I'm sorry, could you please point to where in his testimony, you rely upon that statement you just made?

MR. LEARNER: I refer the Board to the top of page 8 of Mr. Little's testimony, lines 3 through 5. I think that might clarify.

JUDGE SMITH: That's right. As a matter of fact, I have a note myself here -- literally there is a question-mark that says "testimony did not say so." I would ask that question myself.

MR. LEARNER: Rather than save it for you until later, if I could move on with it. I think you understand where I am getting.

JUDGE SMITH: Okay.

BY MR. LEARNER:

Q Mr. Little, Judge Smith has just characterized a minute ago, his understanding of the Staff's view of the 95, 90 acceptance criteria; namely that it was tentative in nature until the program was completed.

Is that your understanding of the Staff's view?

A (Witness Little) No. There is a sense in which everytime we accept a response to an item of non-compliance, you can say that it's tentative. And I think that was what Mr. Forney was trying to express. But being the branch chief responsible for evaluating the implementation of the program, and evaluating the adequacy of the program, I know that we were not, at that point in time, re-evaluating the adequacy of the 90/95 acceptance criteria.

Q So in your view, as of August of 1983, was the Region III staff still considering the unacceptability of the 90 percent subjective attribute acceptance criteria?

A No, we were not.

Q Is it then fair to say based on Mr. Forney's testimony -- and I quote, transcript page 7999, "However, within the Region, we still are considering the unacceptability of the 90 percent subjective attribute acceptance criteria," that there was a difference of view on the NRC Staff at that time?

A To my knowledge, the Region was not re-evaluating the acceptance criteria.

Q Was your engineering judgment different from Mr. Forney's at that time, as to the acceptability of the 95/90 percent acceptance criteria?

A I would like to refresh myself by reading that

part of the testimony again.

MR. LEARNER: If I may approach the witness?

JUDGE SMITH: Sure. Please.

MR. LEARNER: The record can indicate I have a paperclip on the transcript page 7999 referring to the question and answer I discussed earlier.

(Counsel handing document to witness.)

WITNESS LITTLE: Mr. Forney's statement -- and I will read it, "Within the region, we still are considering the unacceptability of the 90 percent." I believe also at the meeting that we had relative to the Reinspection Program, that we discussed the fact that the region, in all likelihood, may take objection to the 90 percent. I don't recall what meeting he's referring to.

I do know, being responsible for this area, that we were not re-evaluating the acceptability of the 90 percent. Yes, I do know there are people in the region that would take differing positions to both extremes.

BY MR. LEARNER:

Q So with respect to those differing positions -- to go back to my prior question -- is it fair to say that you and Mr. Forney had different engineering judgments with respect to the acceptability of the 95/90 percent acceptance criteria for subjective attributes?

MR. LEWIS: I will object to it, Your Honor.

I think the problem we're having here -- the engineering judgment -- in order to state whether or not Mr. Forney was relying on an engineering judgment, the witness is being asked to delve into Mr. Forney's judgment process.

Now, I don't really have any fundamental problem with the concept of saying any engineer who is offering some opinion on an issue of that type is, in some sense, exercising some type of judgment. But my problem and my objection is that the questioner is asking the witness to comment upon how Mr. Forney was formulating his view.

It seems to me that the question is requiring the witness to comment upon how Mr. Forney was formulating his view, and I don't think he is in a position to do that.

MR. LEARNER: I don't think that is true at all. I'm not asking this question in terms of how Mr. Forney was formulating his view. I'm asking the question in terms of objectively, was there a disagreement expressed amongst the NRC Staff.

Mr. Little has testified that there was a collective engineering judgment. Further, he has testified that the 95/ 90 percent acceptance criteria was based on engineering judgment, not on a statistical basis. I think it's a fair level of inquiry at this point whether there is a different engineering judgment being made by Mr. Forney and by Mr. Little, based on the two very different views the

witness has characterized for the 90/95 percent criteria.

JUDGE SMITH: I think that your approach goes off at a site tangent in that we are not clear from the testimony whether Mr. Forney was expressing his own view of the adequacy of the 90 percent criterion, or whether he was expressing his perception of what the Region III view was.

It is a practice in NRC proceedings for an individual witness to represent a collective view. Now, we don't know from that -- it seems to me that the literal words he used was his perception of what the Region III view was; not necessarily what his independent engineering judgment was.

However, I think Mr. Lewis's point is probably the best -- that he's going to be here. I guess he is, isn't he?

MR. LEWIS: Yes. He's not here yet, but he's going to be.

MR. LEARNER: Let me try to phrase the question this way.

MR. LEWIS: Before you do, there's one thing I'd like to clarify on the record. The statement that Mr. Learner is questioning from is a statement that -- in which Mr. Forney stated that it was his understanding that Region III was still considering whether or not certain acceptance criteria were acceptable. So it should be

understood that the engineering judgment which he's asking about is a judgment as to whether or not the acceptance criteria were still an issue. And indeed, it also said whether or not the Staff might decide not to accept it. That's the judgment.

It wasn't a final judgment. I'm not trying to argue here. But it should be understood that Mr. Forney, from what was read into the record by Mr. Learner, was not stating a final position. He was stating as to whether or not there was still discussion going on about the acceptance of a certain criterion.

JUDGE SMITH: I understand that, and that was the tenor of his testimony on the entire subject.

MR. LEWIS: Yes.

JUDGE SMITH: Mr. Little, however, says that Mr. Forney was incorrect.

BY MR. LEARNER:

Q Mr. Little, haven't you also testified that there was a final position of the NRC Staff with respect to the acceptability of the 95/90 acceptance criteria as of March of 1983?

end 17

MMmgc18-1

A (Witness Little) Yes.

Q And was this 95, 90 percent acceptance criteria based upon that statistical approach?

A No. It was based on the collective engineering judgment of knowledgeable people.

Q And was Mr. Forney one of the knowledgeable people involved in those discussions?

A Yes.

Q You have had an opportunity to review his statement in the transcript; that's correct?

A Yes.

Q And does it appear to you that he is expressing a different engineering judgment from the Staff as of August 1983?

MR. GALLO: Objection.

WITNESS LITTLE: No.

BY MR. LEARNER:

Q Why not?

MR. GALLO: I'm going to move to strike the last answer. If they are going to continue to refer to the transcript, I think it's only proper that the pertinent parts of Mr. Becker's examination also be shown to the witness, which to me, at least, indicated that the Mr. Forney had seen a draft of a letter prepared by the Region which was going to be sent to Commonwealth Edison, I would

mgc18-2

guess, a precursor to the Spessard letter that has been testified to in these proceedings, which seem to indicate some difficulty with this criterion.

When shown the letter by Mr. Becker, Mr. Forney, if I recall, was somewhat surprised that the passage that he had seen in the draft did not appear in his letter. I drew from that cross-examination that Mr.Forney was simply mistaken as to what he believed to be the Region's view in this matter.

I could be wrong, but it seems to me, in fairness to the witness, he ought to be able to review that part of the transcript as well.

MR. LEWIS: Can you identify that for me, Mr. Gallo?

MR. GALLO: I believe it follows shortly after where Counsel has already cited.

MR. LEARNER: Your Honor, I'd be glad to show the witness the transcript. I believe the part that Mr. Gallo is testifying to is pages 7997 to page 8000.

MR. GALLO: Lawyers don't testify. They only argue.

MR. LEARNER: I'm not sure there's a difference there. If you think that would be helpful, I'd be glad to show that to the witness.

JUDGE SMITH: I think that would be a fair thing

mgc18-3

to do.

MR. LEARNER. I'd be glad to.

JUDGE SMITH: However, I'm still troubled by your question and answer, and I think we'll sustain the objection and restart again.

Go ahead. Show him the transcript.

MR. LEARNER: I was going to say "from your review of the transcript."

MR. LEWIS: Mr. Chairman, Staff counsel would like to take a brief recess if it could.

JUDGE SMITH: All right. Well, this would be a good time for the midafternoon recess.

MR. LEWIS: Thank you.

(Recess.)

End18-MM

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JUDGE SMITH: On the record; we will proceed.

BY MR. LEARNER:

Q Mr. Little, have you had a chance to review the transcript provided to you?

A (Witness Little) Yes.

Q Having reviewed Mr. Forney's testimony, are you still confident that the Staff had a collective engineering judgment shared by Mr. Forney in support of the 90 percent acceptance criteria?

A Yes. May I explain?

Q Please do.

A To me, collective engineering judgment does not mean unanimous agreement of everyone in the Region. Collective engineer judgment means that the large majority of those people within the Region, who have engineering expertise in the areas, the position that those people arrive at, that is what I call engineering judgment. There will be people who will disagree with that, with the position arrived at by the majority.

Q And Mr. Forney, in this circumstance, was one individual who disagreed with that majority position?

A I think he certainly indicated that. If I can say what I think he was trying to express, I would like to do so.

Q I think with Mr. Forney coming in this afternoon,

mgc19-2

we would probably get into the edge yet, where we can all testify to, as to what Mr. Forney was trying to express.

I would rather ask him the question directly.

JUDGE SMITH: Yes, but you know, you can't pick and choose what you would like from this witness in that way. In the first place, what is there that Mr. Forney said that leads you to the conclusion that he disagreed with the Staff position, as compared to not understanding the Staff position?

WITNESS LITTLE: His statement that the acceptance criteria were, at that time, under reevaluation.

JUDGE SMITH: Now somehow you take that statement as being a statement from Mr. Forney that he disagrees or that he did not understand?

I take it as saying that he did not have the information correctly.

WITNESS LITTLE: I would take it the same. He either didn't have the information, or he is stating his opinion.

JUDGE SMITH: Well, whatever the case is, I think that the Board is qualified to look at Mr. Little's testimony and Mr. Forney's earlier testimony and draw its own conclusions. I don't read anything into what he said that suggests that, an independent, differing professional opinion. I just didn't see that there, to my memory, and

mgc19-3

from the portions of it that I read this afternoon.

MR. LEARNER: Let me perhaps get to the independent, differing opinion.

BY MR. LEARNER:

Q As you sit here today, Mr. Little, is it your testimony that from the very inception of the program that all of the key NRC Staff people agreed with the 95/90 percent criteria as the NRC position?

MR. LEWIS: Objection. I'm unclear. "Key people"? Who are you including, Counsel, as the key people?

MR. LEARNER: Whoever Mr. Little was referring to when he said at the top of page 8, "From the inception of the reinspection program until this time, it has been the Region III position that the 90 percent to 95 percent acceptance criteria are acceptable."

The question is so qualified.

WITNESS LITTLE: Would you repeat your question, please?

BY MR. LEARNER:

Q When you testified that, "From the inception of the reinspection program until now, it has been the Region III position that the 90 percent to 95 percent acceptance criteria are acceptable," were you including Mr. Forney in that position?

A (Witness Little) You know, it is evident that

mgc19-4

not all agreed.

Q And is Mr. Forney one of the people, in your view, who disagreed?

A Based on his testimony, yes.

Q Thank you. Is it true that the NRC Staff viewed the primary purpose of the reinspection program as to determine whether the quality control inspectors had overlooked significant safety-related deficiencies?

A Yes.

Q And did the NRC Staff view the primary purpose of the reinspection program, then, to determine whether hardware problems existed at Byron?

A Not the primary purpose, no.

Q And the primary purpose was what, please?

A The primary purpose was to compare inspection results to determine if inspectors who may not have been certifiable prior to September of 1982, to determine whether those inspectors overlooked significant numbers of safety-related hardware deficiencies.

Q Let me see if I understand. Do you view the reinspection program's purpose of having been more than simply to determine the certification and qualification of the inspectors prior to 1982?

MR. LEWIS: Objection. Lack of foundation. Would you, first of all, ask him whether he views the program

mgc 19-5

as having been to determine the certification and qualifications of QC inspectors?

MR. LEARNER: With all due respect, I'm not sure I understand the difference.

MR. LEWIS: You asked him to accept as a premise that the program was to determine more than the certification of -- and qualifications of QC inspectors. But I would ask --

BY MR. LEARNER:

Q Mr. Little, did you view the primary purpose of the program to be to determine more than simply the certification and qualifications of the inspectors?

MR. LEWIS: He has asked exactly the same question. I guess I'll just ask the Board to rule on my objection.

JUDGE SMITH: Overruled.

You may answer, Mr. Little.

WITNESS LITTLE: Would you repeat the question?

BY MR. LEARNER:

Q In your view, Mr. Little, did the NRC Staff view the primary purpose of the program as being to determine more than the inspectors' qualifications and certification?

A (Witness Little) No. I would like to explain.

Q Please go ahead.

A I think we had a singular primary purpose. I think,

mgc19-6

yes, very definitely, secondarily we were interested in the quality of equipment out in the plant. We are always interested in that.

However, the primary purpose determines how the program is shaped in the sampling methodology that is used, the acceptance criteria, the way things are dispositioned.

Now the primary purpose, I have already stated and I won't repeat again, but in my way of defining it, the primary purpose was not to determine the work quality. I would classify it as a secondary purpose.

Q I'm not sure you understood my question right. Let me try it again.

Did the NRC Staff view the primary purpose of the program as being to validate inspector certification?

A I don't think that was the question you asked?

Q I'm moving on to another question. I'm breaking it down.

Do you understand this question, or should I say it again?

A Just to make sure that you understand, the primary purpose was to determine whether inspectors who may not have been certifiable prior to September 1982, whether those inspectors overlooked significant numbers of safety-related hardware deficiencies.

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Q And is that purpose the same as the purpose of validating former inspector certification practices?

A I believe with that purpose in mind, I can infer about their capabilities and their validation.

Q But is that the same purpose directly or not?

A I guess I don't know how to express it any other way than I've already expressed it.

JUDGE SMITH: Mr. Little, you have said that the given purpose was whether the inspectors overlooked problems, and for that purpose and those results, you can infer inspector certification?

WITNESS LITTLE: Right. You can infer things about it.

JUDGE SMITH: Can you infer anything else?

WITNESS LITTLE: You can infer about the work quality of the plant.

JUDGE SMITH: All right. I think that answers his first question -- that is, there was something more than inspector certification involved in your purposes.

WITNESS LITTLE: Yes. And I do differentiate between primary, though. To me, that's very important.

BY MR. LEARNER:

Q Would you explain to me, Mr. Little, what more than validating inspector certification practices did your purpose embrace?

mgc19-8

A Did my purpose what?

Q I will rephrase it. Did you purpose in the reinspection program include more than validating former inspector certification practices?

A It included more, but the additional things were not primary. They were not the things that determined how the program was set up.

Q So is it fair to say that the purpose of the program as viewed by the NRC Staff was to validate former inspector certification practices?

MR. LEWIS: Mr. Chairman, I have had continuing problems and a stated objection. Counsel keeps on asking the witness to accept a statement that validation of former QC certification practices was the purpose of the reinspection program. The witness never stated it that way, and that really is a somewhat different way of expressing --

JUDGE SMITH: That is right.

MR. LEARNER: And that's exactly, Your Honor, the question that I want to get to. Is that the same, or is that different?

JUDGE SMITH: Well, really consider the structure of that sentence, because the certification practices -- certification practices were never validated, and if they could have been validated, the reinspection program would not have taken place, as I look at the whole body of evidence.

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I think you are asking the wrong question. I think the question you should be asking for your purposes is, did the reinspection program validate inspector competency?

MR. LEARNER: I will gladly take the friendly amendment.

BY MR. LEARNER:

Q Mr. Little, did the NRC Staff view the purpose of the reinspection program as being to validate the competence of inspector performance?

A (Witness Little) Yes.

Q Was that the principal purpose from the NRC Staff's perspective?

A To me there are important differences in the way you say things and the way I say things. I think I have already stated what I believe to be the primary purpose of the program, and the words I used were important words to me.

Now if you want to question some of those words, I'd be glad to give you a yes-or-no answer.

Q That's all right. You used the words, I believe, "determining whether quality control inspectors had overlooked significant safety-related hardware deficiencies."

A Yes.

Q In your view, how is that different than the

mgc19-10

purpose being to validate former inspector certification practices?

Excuse me. Validate former inspector competence.

A I think they are the same.

Q Thank you.

End19-SY

SY20 mm-1

Q In your testimony you refer to the NRC Staff as believing that the results of the reinspection provide adequate confidence in the capability of Hatfield, Hunter and PTL quality and control inspectors whose work was not reinspected.

Was that, again, the collective engineering judgment of the Staff that you are referring to?

A Yes.

Q Did all the members of the NRC Staff agree that the reinspection program results could provide that adequate confidence?

A I can't say that I know in detail what all of the Staff members thought. I know what the large majority of them thought.

Q Well, do you know of any Staff members who would differ in that appraisal?

A I know of Staff members who would differ as far as how much you can infer from the inspection results as to the capability of the original inspectors.

Q Who would those Staff people have been, please?

A Again, to my knowledge only Bill Forney.

Q Was Mr. Hayes a member of the NRC Staff whose collective judgment you are referring to here?

A He was a member of the NRC Staff, yes.

Q And for the record, could you describe who

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Mr. Hayes is, please?

A Mr. Hayes is the project section chief responsible for the Byron site.

Q Were you aware of his views on whether you could -- excuse me, let me rephrase that.

Were you aware of whether he believed that the results of the reinspection program provided adequate confidence in the capability of quality control inspectors whose work was not reinspected?

A I cannot tell you what his views were at any point in time. I do know from many discussions that I have had with him recently, that he is satisfied with it.

Q Are you familiar with a memorandum of February 13, 1984, wnich Mr. Hayes sent to Mr. Spessard concerning the Byron reinspection program?

A Yes, I am familiar with it. I don't remember allthe details.

MR. LEARNER: If I could approach the witness?

JUDGE SMITH: Certainly.

(Counsel handing document to witness)

MR. LEARNER: I will note that the letter is --

MR. LEWIS: If I may, I would like to look over the witness' shoulder.

MR. LEARNER: I'm sorry. I didn't expect that we would be putting this into evidence. I would note for

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the record that the letter even has my notes on it.

(Pause)

MR. LEARNER: Judge Smith, I have another copy that I would be glad to show you.

(Counsel handing document to the Board.

I am referring specifically to the first page of that letter.

Could we go off the record?

JUDGE SMITH: Off the record.

(Discussion off the record)

BY MR. LEARNER:

Q Mr. Little, have you had a moment to review the letter?

A (Witness Little) Yes.

Q Do you recall having received a copy of this letter?

A Yes.

MR. LEARNER: I would like to note for the record, it is a memorandum to Mr. R. L. Spessard from Mr. D. W. Hayes. It is dated February 13, 1984 on U.S. Nuclear Regulatory Commission letterhead. The last page also reflects a cc: that Mr. Little received a carbon copy.

BY MR. LEARNER:

Q Is it true, Mr. Little, that in this letter Mr. Hayes suggests that the results of the reinspection

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program would not be germane to other inspectors whose work was not reinspected?

A (Witness Little) He stated that is his opinion.

Q Does he also state that in his opinion the reinspection program "tells us a little about the capability and effectiveness of the selected inspectors, and thus those not selected, we should not try to make an argument from that standpoint"?

A Yes.

Q So on the basis of this letter, would you -- if I could rephrase that.

On the basis of this letter, is it your view that Mr. Hayes disagreed with the earlier statement that the NRC Staff believes that the results of the reinspection program provide adequate confidence in the capability of quality control inspectors whose work was not reinspected?

A Yes.

Q Apart from Mr. Forney and Mr. Hayes, were there any other members of the NRC Staff of whom you are aware, that disagreed with the testimony at answer A6, namely that the NRC Staff believes that the results of the reinspection program provide adequate confidence in the capability of quality control inspectors whose work was not reinspected?

A To my knowledge,no.

May I describe what we did with Mr. Hayes' letter

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when I received it?

.Q Please go ahead.

A We take any input like this very seriously when we get it. His opinions were discussed with people that were experts in the area of weld inspection, with people whom I also believe have more experience, even though we didn't use statistics, and being able to predict what you do not know from what you do know.

We took his letter and I think in all areas we evaluated it. We evaluated it with people who had expertise in the area and I wanted to find out if they had the same opinion. They did not.

We took other parts of this letter and developed an inspection plan to go out and try to confirm whether his concerns were valid or not valid.

Q Mr. Little, you just referred to people who you consulted with who could predict from what you do not know to what you know. Or, do I have that backwards. Let me rephrase it.

You referred to people who could predict from what you know to things that you do not know. Who are those people, please?

A Mr. Muffett, Mr. Danielson, Mr. Ward, myself -- I've had a lot of experience in the use of statistics.

Q But you are not a statistician, are you?

MR. LEWIS: That was asked and answered.

BY MR. LEARNER:

Q Are any of the other gentlemen you referred to statisticians?

A (Witness Little) No.

Q Did the Region III staff consult with the statisticians in evaluating the Reinspection Program?

A Not this program.

Q Would it have provided -- scratch that, let me move on.

Apart, though, from Mr. Hayes and Mr. Forney, were there any other NRC Staff people who disagreed with the conclusion at A6 of your testimony?

MR. LEWIS: I believe that was asked and he said he was not aware of any others.

BY MR. LEARNER:

Q You're not aware of any others?

A (Witness Little) No.

Q And with respect to your difference with Mr. Hayes on this point, would it have provided greater assurances of safety if your conclusion could have been supported by statistical analysis?

A Could have been?

Q Could have been.

A Yes.

Q Is it true that the NRC has used statisticians in evaluating other programs at other plants?

MR. GALLO: Objection. What programs?

MR. LEARNER: I will rephrase it.

BY MR. LEARNER:

Q Has the NRC used statisticians in evaluating reinspection programs at other plants?

MR. GALLO: Objection. You have to establish -- we're not talking about the same type of program here; we have no foundation for that question on the record. It does not exist.

Other reinspection programs that are reinspections for inspector qualifications, or other reinspections for another purpose?

MR. LEWIS: I would agree with that objection, Your Honor.

I think there has been discussion on this record about various purposes of different reinspection programs. If counsel has some particular program he wants to ask Mr. Little about, and whether or not statistics were used in that program, I think we'd have no objection.

JUDGE SMITH: I agree that the answer to the question is not going to educe much information of value, but I don't know how else he can even get to the comparison point.

So as a preliminary matter, I think he should be allowed to ask the question.

MR. LEARNER: Thank you, Judge.

WITNESS LITTLE: Would you repeat the question, please?

BY MR. LEARNER:

Q Isn't it true that the NRC has used statisticians in evaluating other reinspection programs at other plants?

MR. GALLO: Objection. That's back to the question I objected to previous to this one, to the one that was previously objected to. The same question two objections ago, which he rephrased and got us back to this one. The simple remedy is to ask him if he's familiar with any other reinspection program than what they covered. Then, isn't it true that they had statisticians.

Counsel knows that. I think he's attempting to instruct this witness --

JUDGE SMITH: No, he's not. No, he's not.

Has the NRC used statisticians in other reinspection programs?

WITNESS LITTLE: We have used them to evaluate the statistical principles behind the program.

May I elaborate on that?

JUDGE SMITH: I think either you do it now or you'll do it later.

BY MR. LEARNER:

Q Does that involve the use of expert statisticians?

A (Witness Little) Yes. And I would like to elaborate if I may.

JUDGE SMITH: Let him elaborate.

MR. LEARNER: I have a series of questions I'd like to go through, and I would be glad to go back and let him elaborate. I'm not trying to hold off his answers. I want to get back to Mr. Hayes.

MR. GALT: I'm going to object. You asked him counsel's question, the same question with the same vague implication to it --

JUDGE SMITH: Yes. We let you in the door here with a very vague question, and now we want an explanation of it.

MR. LEARNER: Fine.

JUDGE SMITH: But nevertheless, I don't think we have to have all this technical quarreling. Sooner or later, we're going to get precise answers, and I think we ought to get there the easiest way.

I will defer to you, counsel. You are cross examining and you can ask your questions your way.

MR. LEARNER: Thank you very much, Your Honor.

BY MR. LEARNER:

Q With respect to your discussions with Mr. Hayes,

you referred earlier to people who had more statistical experience than he did. Were those people the several gentlemen sitting at the table?

JUDGE SMITH: Well, now, I am sympathetic with Mr. Gallo's objection. If you're going to allow such a vague answer as I invited with my question to remain, and then follow on with specific unrelated cross examination, you're going to clutter up the record. So I sustain the objection.

BY MR. LEARNER:

Q Do you have anything further that you would like to answer in response to Judge Smith's question?

A (Witness Little) Yes. We have had statisticians evaluate similar reinspection programs. The response that we almost always get is yes, that you can use statistics to evaluate that program as long as you can divide the population up into homogenous groups, and then, that those homogenous groups can be randomly sampled.

The statistician does not tell you what acceptance criteria to select; that's up to the engineer. The statistician does not tell you how to divide that population up into homogenous groups; that is up to the engineer who is knowledgeable in that area.

I believe we felt like we knew the type of response we would get back from the statistician. The big

problem in statistically evaluating a program of this type lies in the areas that the engineer has to decide. Well, how can you divide this big population up into homogenous groups that are equal in importance? And such things as that. And the statistician does not tell you how to do that.

And those are the sort of things that we take into consideration whenwe decide whether statistics is the best approach to take or not. And we know when we go to the statistician that much of the responsibility comes right back to the engineer knowledgeable in the area, to determine whether he can do the things necessary so that the statistician then will say, well, okay, you can get good predictions from that.

Q Turning back to Mr. Hayes' letter, do I understand your testimony to be that yourself and other engineers who had some statistical experience sought to persuade Mr. Hayes that on a statistical basis it would be germane -- excuse me. That the Reinspection Program would be germane to other inspectors whose work was not re-evaluated?

MR. LEWIS: Counsel, you know I'm going to object to that. I don't think anybody stated that they sought to persuade anybody about anything.

JUDGE SMITH: That's the question.

MR. LEWIS: Well, I object. I thought he asked, was it your testimony that you and others in the staff

SYmgc20-1 sought to persuade?

Well, I guess he can answer it, did he do that.

WITNESS LITTLE: I hate to ask you to do this. Would you repeat the question again?

End20-SY.

SYmgc21-1

BY MR. LEARNER:

Q Is it your testimony, Mr. Little, that you and the other Staff members who you were referring to earlier sought to persuade Mr. Hayes that based on your statistical experience, the reinspection results were germane to other inspectors whose work was not reinspected?

A (Witness Little) Yes, to persuade in the sense of stating our position. We were not trying to twist his arm. We were stating what our position was and inviting him to argue his position.

Q And did you believe that your position was more weighty than that of Mr. Hayes, that you and the other gentlemen had, in your view, more statistical experience than Mr. Hayes?

A I -- yes.

Q Yes. And if an expert statistician came in and, in his view, said that you could not use the reinspection program results to tell people about inspectors whose work was not being reinspected, would that be more weighty than your view?

MR. GALLO: Objection.

MR. LEWIS: Objection.

MR. GALLO: I have refrained from objecting because we don't have the Hayes memorandum before us so that we can continue to follow Counsel's cross-examination. I

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thought he had departed from it.

I can't tell whether or not the last question is objectionable and misrepresents the memorandum or not, because I don't have it in front of me.

JUDGE SMITH: Are you talking about the Hayes memorandum?

MR. GALLO: The foundation for all these questions is the Hayes memorandum.

MR. LEARNER: I don't believe that's the foundation here. If I understand Mr. Little's testimony, he has testified that he and the others believe that they had more statistical experience, although they were not statistical experts, than Mr. Hayes, and therefore they thought their position was more weighty.

JUDGE SMITH: That question was not based upon the memorandum.

MR. LEARNER: No. It's based upon the conversations that he has referred to.

I am now asking whether Mr. Little would similarly defer to a statistical expert who reached an opposing view.

MR. LEWIS: Well, Your Honor, the objection that I have is based on the fact that I believe the premise for this question and one or two previous questions has been that Mr. Little stated that he and others with whom he consulted had more statistical knowledge or background, I

mgc21-3

forget what the next word was.

I find that not to reflect what this said, as I recall what the witness said. I believe the witness spoke in terms of the use of statistics. Now I think that's an important distinction for this record, and the problem I'm having is that starting from the premise that Mr. Little was talking about people with statistical information, the follow-on question then is, well, what if you had had an expert statistician, then what would you have said?

Now I believe the premise is not a correct statement of what the witness' testimony has been.

MR. LEARNER: I believe that characterizes his testimony exactly as it was.

JUDGE SMITH: What is your view, Mr. Little? We don't normally go back to read the questions and answers.

End21-SY

T22 MM/mm1

WITNESS LITTLE: I was thinking about several other things.

BY MR. LEARNER:

Q Mr. Little, was the basis for your position that your views as to the ability to use reinspection results to apply to inspectors whose work was not reinspected, that you had more statistical experience than Mr. Hayes?

A (Witness Little) I think collectively, yes.

Q And is it true that none of those people collectively are statistical experts?

MR. GALLO: Objection.

WITNESS LITTLE: Yes.

MR. GALLO: I got that out before his answer. I object, and move to strike the last answer and reassert my previous objection.

The whole predicate for this line of questioning is the Hayes' memorandum.

JUDGE SMITH: No, it is not. I can't find any --

MR. GALLO: He just said prior to this question whether or not Mr. Little's statistical experience was greater than Mr. Hayes.

The previous line to that was based on how Mr. Little persuaded Mr. Hayes, or attempted to persuade Mr. Hayes to seek a different view than that expressed in the memorandum.

mm2

JUDGE SMITH: Yes.

MR. GALLO: The link, the chain to each of these questions is that same memorandum.

Again, I don't have a copy and I should have objected the first time it was asked. I ask that all of this questioning be held in abeyance until we can Xerox this document.

(Document handed to Counsel Gallo by Counsel Learner.)

JUDGE SMITH: I guess it is essential that we just take the time necessary.

MR. LEARNER: May I ask, your Honor, if we could use the copy I gave you to Xerox. It is a clean copy. This has no great secrets, but it is my copy.

JUDGE SMITH: Can you, without damage to your cross examination, go on to another line to fill in the time?

MR. LEARNER: I can, if Mr. Gallo has no objection.

MR. GALLO: So long as we don't have another one-copy memorandum.

BY MR. LEARNER:

Q MR. Little, referring you to page 3 of your testimony, in the bottom paragraph you refer to PTL as being an independent testing agency, that PTL inspectors could independently arrive at certain inspection results.

mm3t

What do you mean when you refer to "independent"?

A (Witness Little) First, may I say I don't think that is my testimony. I think answer 5 is Mr. Connaughton's.

Q Excuse me. Mr. Connaughton, could you answer that question please?

A (Witness Connaughton) Yes. What I mean is the Applicant directed PTL to perform overinspections. That is, repeat inspections of items that had been subject to reinspection in the program to determine whether or not the PTL inspectors would arrive at the same conclusions as those inspectors performing reinspection of those items.

Q What do you mean by the word "independent"?

A That the overinspections by PTL, the individuals at PTL were other than those performing the reinspections of the item.

Q Isn't it true that PTL was also performing reinspections?

A That is correct.

Q Isn't it also true that PTL performed original inspections?

A When PTL did these overinspections, they were performing overinspections of other work reinspected by other contractors.

The only way one could arrive -- provide any kind of independency, if PTL were to perform an overinspection

mm4

of their own reinspections, would be perhaps to supply another individual to do it.

But this statement should be qualified to mean that they perform these special overinspections of other contractors' reinspected work.

Q I don't mean to delve in too great a theory here, but what, in your view, constitutes independence of an inspector or a contractor?

A A person who is independent -- independence as it concerns inspectors is when an individual is evaluating work for which he was not directly responsible in the first place. That is, where he would not be directly or indirectly accountable for what he finds when he does his inspection. Therefore, he is unbiased.

Q So when Hatfield was conducting reinspections of Hatfield's work, Hatfield was not an independent contractor?

A As I stated, there was a certain amount of independence established in that individuals did not reinspect work that they had originally inspected. The individuals were not evaluating themselves. Therefore, they were not personally accountable for what they found when they performed their reinspections.

Q Let me turn back to my question.

Was Hatfield Company independent when it arranged to have reinspections conducted of work that was

mgc22-1

originally inspected by Hatfield Company employees?

A I believe so.

Q Why was that?

A Because again, there is no evidence to suggest that an individual employed by Hatfield and performing reinspections -- that is, evaluating the inspections previously performed by other individuals -- would be biased.

Q Was Commonwealth Edison independent when it designed its reinspection program?

A Yes. I believe they made the majority of the decisions with regard to program design and made the commitment to the NRC to implement the program, independent of contractor input. In other words, they formulated their commitments, and the only input contractors had was in helping them evaluate the feasibility of including certain items under the program.

Q With respect to Commonwealth Edison being -- is it your view that Commonwealth Edison being both the site operator and the designer of the reinspection program created independence?

MR. LEWIS: Objection. Your Honor, I believe this is rather far afield from the testimony of Mr. Connaughton that he is being questioned on, which is regarding the independence of PTL. I'm having trouble relating testimony about the independence of PTL as an independent testing

mgc22-2

agency to the question of whether or not the Licensee was independent, and I ask, "independent" from whom in designing the reinspection program?

I'm not sure what the premise is of questions about the independence of the Licensee.

JUDGE SMITH: It wasn't really a question. It was an observation he was making. It was a rhetorical question.

You know that Commonwealth Edison is not independent of itself. It's an absurdity that you're asking.

MR. LEARNER: I'm not sure I'm asking an absurdity, because I think Mr. Connaughton has testified that PTL, in effect, is independent of itself. I'm trying to get what he believes is independence.

MR. LEWIS: I would be cautious about concluding what the witness has, in effect, testified to.

JUDGE SMITH: Is the memo back yet?

MR. GALLO: No.

BY MR. LEARNER:

Q Mr. Connaughton, did you believe that Sargent & Lundy was conducting independent third-party reviews?

A (Witness Connaughton) I'm sorry. Was there a ruling on that?

JUDGE SMITH: Sustained.

mgc22-3

BY MR. LEARNER:

Q Did you hear my question?

A (Witness Connaughton) Would you please repeat it?

Q Did you believe that Sargent & Lundy was conducting independent third-party reviews?

MR. GALLO: I'm going to object to that question. Beyond the scope of his direct testimony. Mr. Muffett talks about Sargent & Lundy reviews.

MR. LEARNER: I will address the question to whichever member of the panel feels competent to answer.

MR. LEWIS: I'll object, too. If you previously considered the question about the independence of Commonwealth Edison to be a rhetorical question, it seems to me the same comment would apply to Sargent & Lundy. Independent from whom? And what does it have to do with the comment here about PTL as an independent testing agency?

JUDGE SMITH: He's testing the witness' concept of independence by asking him his view of what are the examples.

MR. LEWIS: I would request, Your Honor, that in each instance he specify independent from whom.

JUDGE SMITH: I would like to have a better request, that you get to your point a little bit more directly. Why don't you say, in view of this, Mr. Connaughton, in view of that, Mr. Connaughton, in view of the other thing,

mgc22-4

do you still believe that PTL is an independent testing agency?

BY MR. LEARNER:

Q Mr. Connaughton, in view of the fact that PTL both conducted initial inspections, reinspections, and then overinspections, did you view PTL as an independent testing agency?

MR. LEWIS: Objection. The testimony previously pointed out that those were separate matters. I believe the questioner is saying, in view of the fact that the PTL conducted initial inspections, reinspections, and overinspections of the same item -- now if I'm wrong, and you're not asking him of the same item, then --

MR. LEARNER: Your Honor, at this point, I'd like to object. I think these objections at this point are designed more to distract --

JUDGE SMITH: No, they're not. No one is doing that, and I would admonish all counsel that they should not make allegations of motives of other counsel unless there is a basis for it, and even then, be very restrained.

BY MR. LEARNER:

Q Mr. Connaughton, did PTL conduct original inspections?

A (Witness Connaughton) That is correct.

Q Was PTL also a company responsible for conducting

mgc22-5

reinspections?

A That is correct.

Q Was PTL also a company responsible for conducting overinspections?

A That is correct.

Q In your view, was PTL conducting independent reinspections?

A Yes. And I think to clarify my responses to this whole line of questioning on independence, I would like to say that I would adopt the language used in 10 CFR 50, Appendix B, the criterion on inspection, which requires that there be a program of inspection conducted by other than those who are directly responsible for the activity being inspected. And whether you are talking about an original inspection, in that case independence would be having it inspected by someone other than the individual performing the work activity.

In the case of a reinspection, I would adopt that very same definition and say, inspected by other than that individual or reinspected by other than that individual performing the original inspection.

And I believe that kind of -- that concept has been adopted and adhered to with respect to PTL and Sargent & Lundy overinspections and third-party reviews.

Q Are you familiar with circumstances at other

mgc22-6

plants in which reinspections have been conducted by companies that have had no prior involvement at the plant?

End22MM

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A None in particular comes to mind. I am aware that that has been done at other sites, that outside parties have come in to perform independent reviews of activities at those sites. None specifically come to mind.

Q I will address this, I think, to Mr. Little, as having the most expertise on the panel.

Are you aware of any outside party, a party not involved previously at the plant, the Byron plant, that was involved in exercising engineering judgment on the validity of the reinspection program?

A (Witness Little) I am not aware of any doing this type of reinspection.

Q Are you familiar with any outside parties having been involved in reinspection programs at other plants in Region III?

A Yes.

Q Which plants, please?

A What I am referring to are the independent design reviews that have been done at several plants. Byron is one of them.

Q Tell me which other plants, please.

A Fermi has recently -- has had an independent review. It seems like there are others, but my mind goes blank.

Q Did Clinton have such an independent review?

mgc23-2

A Yes.

Q And in the case of Clinton, are you aware of what company conducted that independent review?

MR. GALLO: Objection. At this point, the line is irrelevant. It's established that there have been independent reviews. He's now delving into apparently the merits of the review at Clinton.

MR. LEARNER: If I can have this one question, I'll turn right back, I think.

JUDGE SMITH: All right. You may answer.

WITNESS LITTLE: I am not sure who the company is.

BY MR. LEARNER:

Q Do you know if that company is one of the companies who was involved otherwise in construction at the plant?

A (Witness Little) No. Since I'm not sure who the company is, no.

JUDGE SMITH: Are you talking about an independent design review?

WITNESS LITTLE: I started out talking about independent design reviews. I think there were other independent types of inspections.

BY MR. LEARNER:

Q And to the best of your knowledge, at Fermi or Clinton, would those independent inspections be conducted

mgc23-3

by companies that were not involved in the plant construction?

MR. GALLO: Objection. I think Counsel misstated. He included Clinton in his question. I think we've already established that Mr. Little doesn't know about Clinton.

JUDGE SMITH: Overruled.

WITNESS LITTLE: Would you repeat your question again?

BY MR. LEARNER:

Q To the best of your knowledge, were the parties conducting independent inspections or design reviews at Fermi and Clinton companies that were not involved in plant construction?

A (Witness Little) To the best of my knowledge, all of the independent design reviews have been done by independent companies. Clinton has a similar reinspection program that is in process there. My memory fails me as to who is doing it.

Q And when you say "independent companies," do you mean a company that is not involved in the plant construction?

A The independent design reviews, they would be companies who were not involved in the original design.

Q Thank you.

MR. LEARNER: I believe we've come partly around the circle, and we have Mr. Hayes' letter back, if I can go

mgc23-4

briefly back to that issue.

JUDGE SMITH: Do you recall where we were?

MR. LEARNER: If I could restate where I believe we were, and, Mr. Little, why don't you correct me if I'm wrong?

BY MR. LEARNER:

Q Is it fair to say, Mr. Little, that you have testified that you and the other gentlemen at the table had more statistical experience than Mr. Hayes, and therefore you believe that his view that the reinspection program results would not be germane to other inspectors whose work was not reinspected was incorrect?

A (Witness Little) Are you asking me if I agreed with his opinion?

Q No. I am asking you, was it your opinion that Mr. Hayes' view was incorrect?

A In my opinion, the very fact that the reinspection program evaluated the reinspection of -- I think it was 179,000 safety-related elements and in a very large percentage of those cases, the inspectors did make the right call, that, in my opinion, yes, we can infer as to the capabilities of the original inspectors.

Q And is the basis for that opinion your view that you and the gentlemen at the table have more statistical experience than Mr. Hayes?

mgc23-5

A Partly. May I qualify that?

This conclusion was reviewed and evaluated by everyone on the Staff who had anything to do with it. Mr. Hayes included.

The other divisions in the office, the Division of Reactor Projects, that was reviewed all the way up through the Regional Director, and it was, by a very large majority -- their opinion was that we could infer that the original inspectors -- that the program results did infer that these people had adequate capability.

Q And when you refer to that large majority, are you stating that Mr. Forney and Mr. Hayes disagreed with that view?

A Mr. Hayes, as he states in his memo, yes, at that time he did disagree with that, and --

Q And did you testify earlier that Mr. Forney also disagreed with that view?

MR. GALLO: Objection. I don't believe the witness had an opportunity to complete his last answer. As a matter of fact, he was cut off right at the word "and."

JUDGE SMITH: Is that correct?

WITNESS LITTLE: Yes.

JUDGE SMITH: What is your answer?

WITNESS LITTLE: After Mr. Hayes wrote his letter, let's say we had discussions in arriving at the

mgc23-6

conclusions stated in my testimony. This has been discussed in detail with Mr. Hayes, and he states that he agrees with the conclusions that we reached.

If I may express what I think his concern was, he was concerned that we could not say with absolute assurance. When we state that we think we have adequate assurance that the program does say something very meaningful about the capability of the reinspectors, in my opinion, he agreed with us.

BY MR. LEARNER:

Q Did you earlier testify that the basis for your position that the reinspection program results could be applied to inspectors whose work was not reinspected was your statistical experience?

A (Witness Little) I think when an engineer thinks, when he makes a decision, yes, I think a knowledge of statistics enters into that decision. I did not rely on statistics to arrive at that conclusion.

Q You didn't rely on statistics at all?

A No.

End 23MM

T24 MM/mm

Q Mr. Little, didn't you earlier testify that you gave more weight to your views over Mr. Hayes' because you had more statistical experience than Mr. Hayes?

A No.

Q And that is not your view as you sit here today, at this minute?

MR. LEWIS: What is not his view?

I'm sorry, I lost the train. It is not his view that he has more statistical experience, is that the question?

MR. LEARNER: Yes.

WITNESS LITTLE: I have no basis for making that determination. I know what I have done. I do not know in detail what he has done.

BY MR.LEARNER:

Q Later in your testimony, I believe at page 4, you assume that there is -- there were no hardware deficiencies existing when the reinspection program was formulated.

How did you reach that assumption?

A (Witness Little) By talking to the inspectors that were involved in the original construction assessment team inspection. This is one of the things we were very interested in following their inspection. It is documented in the report 8205.

They did not describe any significant hardware

mm2± deficiencies in that inspection. And, in talking to inspectors who have inspected Byron since the beginning of construction and asking them for their opinion and their view as to whether there is any indication that there are significant numbers of hardware deficiencies out there.

Again, it was the collective judgment of the inspectors who have inspected the Byron Station.

Q Do you know how many nonconformance reports there have been at Byron?

A No.

Q Do you know how many nonconformance reports there have been at Byron since September of 1982?

A No.

Q Would the number of nonconformance reports at Bryon affect your judgment whether there were likely to have been hardware deficiencies when the reinspection program was formulated?

A May I amplify on my previous two "nos"?

Q Please do.

A I don't know the numbers of nonconformances. Since January of 1982, I have reviewed every inspection report by the piping, mechanical, electrical, civil, fire protection and possibly some others, who have inspected at the Byron Station. So, I think I have a very good feel for Byron's performance in this area. But, I can't quote

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you numbers.

Q Has there been structural steel reworking problems at Byron?

MR. GALLO: Objection. Irrelevant.

JUDGE SMITH: What is the relevance?

MR. LEARNER: The relevance is I think that in looking at the program design, he has made a certain number of assumptions.

One of the assumptions he has made in making the inference to work quality, is that at the very beginning there were no hardware problems at Byron.

He has also seemed to have made the assumption with respect to inspector capability.

MR. LEWIS: Mr. Chairman, I hate to sound like I am raising semantic questions, but I don't know where the word "assumption" came from. I don't see it in the portion of the witness' testimony he is being questioned on.

Now Mr. Learner asked him about an assumption and he is referring him to, I believe, page 4 of his testimony which talks about "we" meaning Region III "had no reason to believe that significant hardware deficiencies existed."

JUDGE SMITH: How does that differ from an assumption as it is used?

MR. LEWIS: My understanding, if you are asking me, that when inspectors or a supervisor of inspection says

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we have no reason to believe that significant hardware deficiencies existed, he is referring to a lot of inspection results that he has reviewed. And I believe that is what Mr. Little just testified to.

I believe that is quite a bit different from an assumption.

JUDGE SMITH: All right.

So, do you have an objection?

MR. LEWIS: I have an objection to the use of the term "assumption" as characterizing what the Staff's testimony is at this point.

MR. LEARNER: I didn't use the term "assumption" in my pending question. I used that, I think, about three questions ago.

I think the witness is perfectly capable of answering it and answered the question.

The pending question now has nothing to do with the term "assumption."

JUDGE SMITH: It has nothing to do with the material. Assumption. I don't see how good the relevance is.

MR. LEARNER: Excuse me. I misspoke. It has to do with assumption. It is not using the term assumption.

My questions right now are directed towards the conclusion that is reached by the Staff and some assumptions that they seem to have made in reaching that

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conclusion.

And I think it is fair enough at this point in the question I have asked, to probe into whether the statements they have made here about no reason to believe hardware deficiencies existed, are valid.

JUDGE SMITH: Would you be satisfied, Mr. Lewis, if he uses the word "consideration" rather than "assumption" since that is the language that the witness uses?

MR. LEWIS: I would have to hear it in context.

JUDGE SMITH: Can you use the word "consideration" in your question?

MR. LEARNER: I think I can frame the question to use the word "consideration."

BY MR. LEARNER:

Q Mr. Little, in reaching your consideration that the NRC Staff had no reason to believe that significant hardware deficiencies existed at Byron, did you take into account the structural steel reworking at Byron?

A (Witness Little) Yes.

And may I say we did not believe that significant hardware deficiencies were undetected. The fact that they found problems in an area and reworked them, that we were aware of, that this had occurred in different areas.

Q Was the structural steel reworking problem that

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you referred to discovered through the inspection program?

A I don't recall.

Q Are you aware of the HVAC problems that they had at Byron?

MR. LEWIS: Would you please be more specific. Objection.

JUDGE SMITH: Sustained.

MR. LEWIS: The HVAC problems?

MR. LEARNER: HVAC, heating, ventilation and air conditioning.

MR. LEWIS: I know what the term means.

But I would like counsel to be a little more specific than to refer generally to the HVAC problems at Byron.

BY MR. LEARNER:

Q Mr. Little, are you familiar with some HVAC reworkings that had been accomplished at Byron recently?

A (Witness Little) Yes.

Q Are those reworkings still underway?

A Yes.

Q And those reworkings, was the necessity for those reworkings a result of information that was discovered during the inspection program?

MR. GALLO: Objection. Reinspection program, is that what we are talking about?

mm7

MR. LEARNER: I said inspection program.

MR. GALLO: All right. Then I will object, the question is vague.

I don't know what inspection program you are talking to. The question has no probative value in its present form and should not be allowed.

end T23
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JUDGE SMITH: I'm not looking at your cross-examination plan, but what your're going to do is challenge his consideration by trying to demonstrate that it's an invalid consideration?

MR. LEARNER: That's correct.

JUDGE SMITH: And you are going to go through what you perceive to be hardware deficiencies?

MR. LEARNER: That's correct.

JUDGE SMITH: And I think we had better address it head-on rather than question by question, whether you are going to have that kind of litigation here, and I want to hear arguments on it.

MR. LEARNER: I will make my argument very briefly. The Staff has concluded that on the basis of the reinspection program, that first of all work quality was adequate, and secondly that there was not a reason to reinspect those inspectors whose work was not originally reinspected.

As the basis for that, they make two assumptions or considerations, or they make several of them. One of the considerations they make is that they have no reason to believe that hardware deficiencies existed at Byron. I think it's legitimate, at this point, to question whether that consideration that Mr. Little and the Staff made was valid. If that consideration is invalid, then perhaps some

mqc24B-2

of their considerations or assumptions with respect to the sampling methodology or with respect to the buddy system are not valid. Then their conclusion is suspect.

JUDGE SMITH: What do you think, Mr. Lewis?

MR. LEWIS: First of all, as I pointed out before, I will not accept the characterization of these various things, these assumptions. Right now, we are only talking about the one about significant hardware deficiencies, and that's been clarified to be considerations. I will worry about the other ones when they come up.

But I think there must be a more productive way to go about it than to go through each of the engineering disciplines which fall under Mr. Little's branch, of which there are a number. He ticked off before that he had reviewed inspection reports, and then he named a whole series of engineering disciplines under his responsibility. There must be a more direct question that can be asked of the witness as to whether or not he is aware of any enginering areas within his cognizance where there were significant -- what he views as significant hardware deficiencies.

I believe that more direct question would be the one --

MR. LEARNER: Well, he has testified in the testimony here, Mr. Lewis, that there are not significant,

mgc24B-3

in his view, hardware deficiencies. I believe I am entitled to probe with respect to things that Intervenors believe are hardware deficiencies, why Mr. Little and the other members of the panel reached a contrary judgment.

MR. LEWIS: You are not, in your examination, focusing him on a judgment as to each of these points, as to whether or not there were significant deficiencies or not.

If the Intervenors have some information which leads them to believe that in a particular area of engineering -- of concern with respect to Byron, there were significant deficiencies, hardware deficiencies, then I think that is what they should ask, and ask the witness whether he agrees with their belief that those were significant hardware deficiencies.

I haven't heard him ask that question with respect to structural steel rework or with respect to HVAC. He said there were reworkings, I think he called them, HVAC problems.

I don't know that that focuses the issue very well for determining whether or not there were significant hardware deficiencies.

MR. GALLO: May I be heard briefly?

JUDGE SMITH: Yes, Mr. Gallo.

MR. GALLO: Judge Smith, the problem I'm having

mgc24B-4

is -- really goes to the scope of the number of alleged hardware problems that Counsel may posit to the panel. If I read Mr. Little's testimony on page 4, it seems to me that he is indicating in the first paragraph in Answer 6 that the question at hand was whether or not significant safety-related hardware deficiencies had been overlooked by the inspectors who were subject to reinspection. That's a defined group of contractors.

If I follow his train of reasoning into the next paragraph, I interpret his statement, "Considering that we had no reason to believe that significant hardware deficiencies existed, " et cetera, to mean for contractors who were subject to the reinspection program.

Therefore, it seems to me that any suggestions of hardware deficiencies have to be within the framework of the eight contractors who were the subject of the reinspection program. And for that reason, I objected to certain of his questions as being irrelevant, like structural steel, like the HVAC issue.

JUDGE SMITH: Does the Staff's testimony follow the Sargent & Lundy testimony in the idea that you can infer from the eight that were inspected that the quality of those which could not be inspected was satisfactory? I don't know if they have that in there or not.

MR. GALLO: Well, perhaps it does, Your Honor,

mgc24B-5

but this particular statement we are focusing on starts out with a primary assumption or consideration by Mr. Little that they had no reason to believe that significant hardware deficiencies existed. And that is what is being tested by the cross-examiner, not any inference.

JUDGE SMITH: Yes. They're talking about the sampling, the concept of the sampling methodology at its very beginning. And that aspect of your objection isn't valid.

I'm concerned that we are going to have a large list of perceived construction hardware deficiencies that you are just going to throw at the panel and do nothing with. I can't see what your approach is, what your plan is.

MR. LEARNER: I will try to keep it brief. The difficulty I have, Judge, is the way Question No. 6 is phrases; it's extremely broad. The question that is asked and Mr. Little answers is whether the methodology provides not only adequate confidence in the capability of Hatfield, Hunter and PTL inspectors who were not reinspected, but also in the overall quality of the work of the contractors.

Question No. 6 is an open door.

JUDGE SMITH: Right. What are you doing? You have picked up a structural reworking, threw it at the panel, you did nothing with it. Now you go to the HVAC. I don't know where we stand on the HVAC.

mgc24B-6

MR. LEARNER: I intend to do something with it. What I intend to do is at least pin down with respect to the considerations or assumptions that Mr. Little has made what was part of that and what wasn't.

JUDGE SMITH: Yes. But it all in turn, then, is predicated upon your perception that each of those demonstrates hardware deficiencies, and I don't know if this panel will agree with you.

MR. LEARNER: I'm going to ask them if they're going to demonstrate hardware deficiencies.

JUDGE SMITH: All right.

MR. LEARNER: I realize the expansiveness of where I'm going. The difficulty is the expansiveness of the question.

JUDGE SMITH: Well, proceed.

BY MR. LEARNER:

Q Mr. Little, with respect to the structural steel issues that we identified earlier, did the reworkings of the structural steel at Byron give rise, in your view, to a significant hardware deficiency?

A (Witness Little) Yes.

Q Was that yes?

A Yes.

Q And did the HVAC reworkings at Byron give rise to a significant hardware deficiency?

mgc24B-7

A Yes.

Q Were there any other reworkings in particular at Byron that you viewed as leading to significant hardware deficiencies?

A The very fact that there is reworking indicates, yes, that there have been significant hardware deficiencises. My statement in response to Question 6 is specifically directed toward those companies that ended up in the reinspection program. Reliance Sheetmetal, their work was already being 100 percent reinspected, so they are not in the reinspection program.

In my answer here, I am saying that for those contractors that are in the reinspection program, we did not think that we had evidence to indicate that there were significant hardware deficiencies existing out there at the plant at that time.

Q Did you primarily base your conclusion regarding work quality on the number of items that had been reinspected?

A No. And I will be glad to amplify on that, if you would like.

Q Do you know what percentage of the total work was reinspected?

A As I recall, about -- I remember 15 inspector months of inspection effort was covered in the reinspection program, but I wouldn't swear to the accuracy of that.

mgc24B-8

Q Isn't it true that approximately 180,000 items were reinspected?

A Right.

Q And do you now what percentage of the total number of items that 180,000 represented?

A No.

Q Do you know what percentage of the accessible and recreatable items were reinspected?

A No.

Q Do you know what percentage of the total items were inaccessible or non-recreatable?

A I know that on Hatfield and Hunter, as far as the visual weld inspections, as I recall it was less than ten percent, ten percent or less of the Hatfield visual weld inspections were inaccessible.

Q But overall, with relation to the total number of items, do you know what percentage were inaccessible or non-recreatable?

A I do not know a percentage. I believe that you can just look at the work that Hatfield does, and my opinion is that there would be a small total percentage of that work that is inaccessible at this time.

Q But you don't know the particular percentage?

A I do not know a definite figure.

Q Do you know what percentage of the attributes

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that were the most safety-significant were not reinspected?

MR. LEWIS: Objection. I think the premise of that would have to be that the witness has made a categorization of attributes along the lines of safety significance.

MR. LEARNER: Fair enough. I will lay a foundation.

BY MR. LEARNER:

Q Mr. Little, in your view, which attributes were the most safety-significant?

MR. GALLO: Objection. Are you talking Hatfield or Hunter or others? The question is vague in its present form.

I guess, Your Honor, it would be helpful if the record was clarified at this point to indicate -- if Counsel would indicate that his questions are really in the context of Hunter and Hatfield, so that every time he forgets Hunter and Hatfield, we don't have to have this little colloquy.

BY MR. LEARNER:

Q With respect to the Hunter, Hatfield and PTL attributes, which ones did you consider to be the most safety-significant?

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A There is such a large variety of significance out there. If you could give me a list of some, I could tell you which ones I would think are more important than others.

Q I think I can cut through some of this. Within rough parameters, do you have any idea -- let me rephrase it.

Do you have a general sense of your own views as to which attributes of Hunter, Hatfield and PTL were the most safety significant?

MR. LEWIS: Objection. I think that the witness has already stated he cannot give you a general sense. Why don't you ask him could he give you a general sense.

MR. LEARNER: I have asked him that.

MR. LEWIS: All right, answer that question.

WITNESS LITTLE: Let me say that generally speaking, the types of attributes that were inspected in the Reinspection Program are not those which are -- I would consider as most critical from a safety significance standpoint. And I'll be glad to elaborate there if you would like.

BY MR. LEARNER:

Q Of those that you generally viewed as most critical from a safety standpoint, are you familiar with the percentages that were reinspected?

A I have no way of coming up with a percentage for something like that.

Q If I could turn now to the general area of questions referring to the "buddy system," are you familiar with the term "buddy system"?

A Yes.

Q What does it mean to you, please?

A To me, it means that a person would take care of his buddy when he is out inspecting, and make sure that he doesn't do anything that shows him in a bad light.

Q Is one element of that the reinspector would have known the name of somebody who has already conducted an inspection?

A Yes.

Q And is another element of that that the reinspector would know the results of his buddy's prior inspection?

A I think except for the as-built dimensions, the knowledge he could have had of the results is immaterial.

Q I don't think you have answered my question. Let me state it again. Is one aspect of the buddy system that you're referring to whether a reinspector would have known the results obtained by the original inspector?

A That can be a factor, yes.

Q And is this knowing the name of the original inspector, or the results that the original inspector found, the linchpin of what is referred to as the buddy system?

A I don't know what a linchpin is.

Q Are those the most significant elements of what you call the buddy system?

A Not to me, no.

Q What are the most significant elements?

A I think the most significant elements are the individual's integrity when he goes out to do a job. He is not going to jeopardize his integrity for something that really makes little difference.

Q Were you concerned that a buddy system not be present in the reinspection of the original inspectors at Byron?

A Yes.

Q And were two significant elements of whether that buddy system existed or did not exist those of whether the reinspector knew the name and results of the original inspector?

A It has some significance.

Q At the very beginning of this afternoon, you changed your testimony with respect to your knowledge of the buddy system. Is that true?

A Not of the knowledge of the buddy system, no.

Q When was the first time you became aware that reinspectors at Byron generally knew the names of the original inspector?

A I would say sometime in the last month.

Q When was your testimony written?

A My testimony was written in June. I don't recall the exact dates, I wrote so many versions of it.

Q And similarly, when did you become first aware that reinspectors in many cases knew the results that the original inspector had obtained at Byron?

A As far as the date, I don't recall. I can tell you the instance it was brought to my attention. As I recall, it was in Mr. Tuetken's deposition, or in Mr. Del George's deposition that the inspectors didn't know whose work they were reinspecting.

Q And that was the first day that you became aware of the fact that the reinspector often knew the name and results of the original inspector at Byron?

A That is the first instance.

Q In the context of conducting a reinspection program, would you go to an outside, independent company that had not been involved in plant construction if you were concerned with the existence of the buddy system?

A No.

Q Why not?

A Because I would want someone who had had experience in construction.

Q Aren't there plenty of companies in the United States who did not participate in the Byron plant construction

that could have conducted the reinspection?

A Yes.

Q Wouldn't they have posed less problem with the buddy system if they had brought in outside reinspectors?

MR. GALLO: Objection. It has not been established that there was a problem with the buddy system. We've talked about the Byron Reinspection Program. That is the unstated premise of Mr. Learner's questions.

JUDGE SMITH: He is correct.

MR. LEARNER: Let me rephrase it.

BY MR. LEARNER:

Q Did you believe that Edison -- do you believe that Edison took effective measures to prevent the buddy system from operating in the Reinspection Program?

A (Witness Little) Yes.

Q And would the absence of the reinspectors having known the names and results of the original inspectors have led to greater assurances that a buddy system was not present?

A No. In this case, I don't think it would have had a material effect.

Q Why not?

A For Hatfield, Hunter and PTL, I think, first of all, between 50 and 60 percent of the inspectors involved in the original inspections were no longer on the site. So at least a large number of the inspectors -- if the reinspector

knew the name, that would have meant nothing to him. The chances of him knowing who that individual was were certainly diminished, since a large number of them were no longer there.

Q Do you have any --

MR. LEWIS: I'm sorry, he said he had several, and he was proceeding with the rest of his answer.

BY MR. LEARNER:

Q Please continue

A (Witness Little) I guess for me -- and I would like to say the greatest confidence I have that the buddy system was not in effect is the inspections done by my own inspectors.

They spent a considerable time looking at the disposition of inspection results. If a buddy system was in existence, I would expect to see some instances in the grey areas where they were deciding in favor of the original inspector.

We found none of those, and our inspectors looked at a large number of welds, a large number of other attributes, and I would say that is my greatest confidence that the buddy system was not in effect.

Q What number of attributes did your own inspectors look at at the Byron plant?

A We looked at visual weld inspections; we looked at terminations, we looked at the conduit installations,

cable tray support inspections. To my knowledge, we looked at all of them listed in the Reinspection Program. I don't know if I can list them all by memory right now.

Q Do you have any idea of how many items of those you looked at?

A In the areas that we were most concerned about -- and that was the visual weld inspections because they were subjective, and at least a critical weld if there are any out there whose failure would result in the failure of a support. Those are -- I think everyone is agreeable that those are the most difficult to do.

Our inspector, in detail looked at 800 welds and the inspection results of those 800 welds. Beyond that, he looked at hundreds, possibly thousands in addition to that. He is here, so I will let him testify to that.

But I think in the areas that we were most concerned about, especially the visual weld inspections, I believe we looked at a significant group of weld and weld inspection results.

We also looked at those welds that had not been rejected.

Q And how many of those welds did you look at, please?

A I will have to defer to my inspector.

Q Mr. Ward, do you have an answer to that question?

A (Witness Ward) I don't know the exact number, but these are documented in various reports.

Q You gentlemen may have to help me in terms of who exactly testified to this point. Do I recall correctly that there were 26,000 Hatfield welds that were reinspected?

A I don't know the exact number myself.

Q I direct your attention to page 6 of the testimony. I believe it is your answer, Mr. Little. Do you recall there being about 36,000 welds total, reinspected between Hatfield, Hunter and PTL?

A (Witness Little) I will take your word for it that you have added those numbers up and it's right. It looks like 35, 36 thousand.

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Q And, Mr. Love -- I mean Mr. Ward, directing your attention to the top of page 18, you refer to having visually examined 330 welds of those 36,000, correct?

A (Witness Love) I'm sorry, I think you are talking about Mr. Ward's testimony.

Q Mr. Ward's testimony.

A (Witness Ward) Yes, sir.

Q Of those 36,000 welds, is it correct that your testimony n the top of page 18 is that you examined about 330 of them?

A Yes, sir. That's what I say.

Q That 330 would be about 1 percent of the sample of 36,000 welds?

A I don't know. I suppose.

MR. LEARNER: Sort of moving on to another set of questions. If the Board would like to take a break, this would be a good time in terms of my questions. Or, I could move on. Whatever the preferences of the Board and the witnesses are.

JUDGE SMITH: We will take a ten-minute break.

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(Recess)

JUDGE SMITH: Are you ready to proceed, Mr. Learner?

MR. LEARNER: Thank you.

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BY MR. LEARNER:

Q Mr. Little, earlier you mentioned that with respect to the as-built dimension, the information on results had not been provided to the reinspector.

Do you know why?

A (Witness Little) Well, to me it is for a very practical reason. If they go out and measure that a piece of equipment is ten feet from a certain point, you want to determine if that original inspector is right. And so the reinspector really should not know the precise measurements that were made in the original inspection.

Q And did the NRC require Edison to delete the original inspector's results from the document that were provided to the reinspector for this attribute?

A Yes.

Q Did the NRC direct Edison to require the contractors to delete the inspector's name, or results, from any other documentation or any other attributes?

A To my knowledge, no.

JUDGE SMITH: Why did you ask that question in that fashion? We are talking about the as-built data. Then your question comes along where you put the inspector's name in there.

MR. LEARNER: Because if I understand the interpretation that was issued on the as-built -- perhaps

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I should have said names or results in my second question. I meant it that way.

JUDGE SMITH: Why do you stick in considerations of names in that question anyway?

MR. LEARNER: I will break the question.

JUDGE SMITH: I am just asking why?

MR. LEARNER: I would regard the communication of the original inspector's names to a reinspector as being another element that could lead to the buddy system bias.

JUDGE SMITH: I understand that.

MR. LEARNER: From what I understand in the case of as-built dimensions, the NRC was sufficiently concerned with the potential of buddy system bias --

JUDGE SMITH: You don't understand my question.

The question evolved this way: Did the NRC require them to delete the as-built information, as-built data? Yes.

Then your next question is: Did the NRC require them to delete the inspector's name or as-built data?

And, how did you finish?

MR. LEARNER: Excuse me, I said inspector's name or results for any other attirubte.

I'll leave the names out.

JUDGE SMITH: I'm asking why you put the names in there to begin with. I'm trying to figure out what is --

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MR. LEARNER: I will break the question down. I was simply compounding a question. Perhaps I misspoke.

BY MR. LEARNER:

Q Did the NRC direct Edison to require the contractors to delete the original inspectors' results from documents provided to any of the reinspectors for any other attributes?

A (Witness Little) No. And the reason being I think the fact that a weld was out there meant that it had been accepted, so the reinspector going out to reinspect that weld, he would know that it had been inspected and accepted in the original inspection.

You can say the same thing for cable terminations. The fact that they were there, the reinspector would know that they had been accepted in the original inspection.

So many, if not all of these, he would know the very fact that they existed would indicate that the original inspection results had been acceptable.

Q In some cases, would that documentation indicate the quantifiable results of the original inspection?

A In most cases as I understand it, it did not, such as a visual weld inspection. The results were that the weld was deficient or not deficient, and it didn't give the details as to why. But I am sure Mr. Ward can give more pertinent testimony in this area.

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Q Let me get to that later. That sort of gets to a different area.

Isn't it true that the reinspection program sampling methodology essentially provided for no third-party review of subjective attributes that had been accepted by the reinspector?

A Yes.

Q And would such a review have provided greater assurance of safety?

A No, we didn't think so.

Q Why not.

A Primarily based on the fact that we knew we were going to be inspecting, and we were going to look at the gray areas where the decisions were made in one way or another by our inspections.

We were going to try to get a good idea as to whether there were acceptable -- whether there were defective welds out there that were not identified in the reinspection program.

I think it was primarily thinking of the fact that we would be inspecting to verify that those sort of things did not happen.

Q Was it the NRC Staff or Edison which first proposed using the first three months of the inspector's performance for review?

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A I don't recall.

Q Do any of the other gentlemen on the panel recall who first proposed that program element?

A (Witness Muffett) I don't.

A (Witness Ward) I don't know.

A (Witness Love) No.

A (Witness Connaughton) I don't know.

Q What is the basis for your view, Mr. Little, that the first three months of the inspector's performance is the weakest?

A (Witness Little) If you are concerned about a man's initial capabilities and along the same line you would be concerned about the training that he had received in order to do his job, if that is your basic concern, well then you would expect that man if he had not been properly trained or if he did not have the capabilities to do the job that he was doing, you would expect him to make the most mistakes early during his tenure as an inspector.

Q Are you familiar with any other plans at which the reinspection program has focused on the first three months of inspector performance?

MR. LEWIS: Objection.

I think that we would have to be speaking about reinspection programs of inspectors in order for that to be a relevant question.

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MR. LEARNER: I'll be glad to qualify the question in that manner. That is helpful.

WITNESS LITTLE: Yes, I am aware of other reinspection programs.

BY MR. LEARNER:

Q Which plants?

A (Witness Little) The one I have a slight familiarity with is Clinton.

Q At Clinton are they conducting a reinspection of inspector performance?

A That was not the primary purpose. And I would say I don't have adequate knowledge to really answer these questions in detail.

Q So at Clinton you are not aware of whether they are focusing a reinspection program on the first three months of inspector performance?

A My recollection, Clinton is different in that there were hardware problems there.

Q I'm not sure you have answered my question. I don't mean to be repetitive. But, to the best of your knowledge at Clinton are they conducting a reinspection which is focusing on the first three months of inspector performance/

A No.

Q Are you aware of any other plants at which reinspections of inspector performance are being accomplished

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that are focusing on the first three months of inspector performance?

A I am not aware of any other nuclear plants.

Q Are you aware of any studies that suggest that the first three months of inspector performance is the weakest?

A I am aware of the fact that with over 20 years of experience supervising technicians and engineers that, yes, they do make a lot of mistakes early in their tenure.

I have a lot of experience along that line, but no formal studies as such.

Q Thank you.

JUDGE SMITH: In order for the Board's ability to follow along this theme that the Intervenors have that you are raising with the witnesses, just what is your point there, bearing in mind that the consideration initially was whether the inspectors were properly certified from the point of view of education, training and had on-the-job -- the requisite on-the-job training?

MR. LEARNER: I don't want to argue our case at length, but if I could comment for about 30 seconds.

JUDGE SMITH: I would just like to know what the point is, because we listen to it and it is helpful.

MR. LEARNER: We will be putting on an expert witness, Professor Kochhar, in what been referred to as

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human factors and analysis.

Mr. Kochhar will be testifying that based on the studies he has conducted and his general expert familiarity with the field, that inspector performance actually starts out stronger and gets weaker.

JUDGE SMITH: Yes, I expected that might be the point.

But, is he also going to address studies in which the question was the sufficiency of on-the-job training, or sufficiency of training in the first instance?

MR. LEARNER: His studies, I believe, will discuss training and the effects of that training.

JUDGE SMITH: Okay.

MR. LEARNER: In short, his testimony will be, I believe, that after training, inspectors are likely to perform at their strongest and that from his experience and his studies inspector performance goes downhill.

Therefore, the bias by focusing on the first three months of performance was not conservative and was otherwise directed.

JUDGE SMITH: All right.

MR. CASSEL: Judge, one additional point.

It is true that the program was designed to deal with the question of inspector qualification. And in that sense it might seem logical to focus on the first three

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months.

JUDGE SMITH: Yes.

MR. CASSEL: But after the fact Edison has attempted, and the Staff has apparently concurred in the effort, to use the program to predict -- to use Mr. Little's terms -- from the known to the unknown.

And in that light, if the question is whether you can infer anything about the other inspections from the first three months, Professor Kochhar's points are pretty directly relevant.

end 26MM

MR. LEARNER: I thank my co-counsel for the friendly assist.

BY MR. LEARNER:

Q Mr. Little, are you aware of the human factors studies that indicate that performance may be better at the beginning of a job because of the newness of the job and increased stimulation?

MR. GALLO: Objection. Lack of foundation.

JUDGE SMITH: Overruled.

MR. GALLO: For reconsideration, Your Honor, the only thing on this record that I can see is counsel's own statement that he's going to bring up a witness one day who is going to testify about some studies that he worked on. We don't know what studies they are, et cetera.

JUDGE SMITH: Overruled.

MR. LEARNER: A question is pending.

WITNESS LITTLE: I'm aware of the fact that there have been studies made which indicate that, you know, provided a person is properly trained, yes, he'll be more gung-ho when he starts out inspecting, and that may taper off.

I'm not aware of studies where you question the adequacy of the person's training that show that he starts out real good if he is not trained right, and then tapers off. I'm not aware of studies such as that.

BY MR. LEARNER:

Q In your view, would the Reinspection Program have provided greater confidence in the capabilities of the original inspectors if it had included a sampling of their performances in the middle of their job and at the end of their job, as well as in the first three months?

A In my view, it would not have given me greater confidence in their initial training and certification.

Q In terms of your earlier testimony that the results of the Reinspection Program can be used to validate the capabilities of inspectors whose work was not reinspected, would the Reinspection Program focus on the middle of job performance and the end of job performance, as well as the beginning of job performance -- would it increase your confidence in the program?

A Not to accomplish our objective.

Q If I could ask the same question with respect to work quality.

A Our conclusions, like I say, based on work quality were based on many things, including the Reinspection Program but not solely on the Reinspection Program.

Q And would you have had greater confidence in the work quality if the Reinspection had looked at the beginning, the middle and the end of job performance?

A Yes, but the Region did not think that was

necessary for the objectives of the program.

- Q I think these questions ought to be directed to Mr. Muffett. You referred in the testimony, Mr. Muffett, to Hatfield and Hunter attributes that were accessible and inaccessible as being familiar. Is that correct?

A (Witness Muffett) Yes, I believe so. If you could give me what page in the testimony.

Q I direct you to the transcript at page 23.

A Yes.

Q With respect to these Hunter and Hatfield attributes, were there any of the inaccessible attributes that in your judgment were not similar?

A That's a difficult question for me to answer. I'm not trying to be evasive. When I say similar here, these inspections, particularly the objective ones, are all very similar in that they require people to take measurements of things, using different instruments. And when a man measures something, it's fairly similar.

Now, to get into an exact attribute, I would believe that there would be attributes that were deemed inaccessible that were exactly the same as ones that were accessible.

Q And are there any particular attributes of that characterization that are most appropriate for your judgment?

A If I could refer to the reinspection report,

I think I could give you a better answer.

Q Do you have a copy of that?

A Yes.

Q Please do.

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WITNESS MUFFETT: Could I have the question again, now?

BY MR. LEARNER:

Q Earlier you referred to there being perhaps some attributes, Hunter and Hatfield attributes, to which the accessible or inaccessible were not similar. My question is if you could articulate for us, please, which ones you're referring to.

A (Witness Muffett) Is this both inaccessible and non-recreatable?

Q Yes.

A Well, one that comes to mind for Hatfield is receiving inspection. That was, I believe, classified as non-recreatable.

Q Any others that you would view as not being similar?

A I would like to expand on that. The reason that that has a slightly different nature is that's an inspection in a more controlled condition, in a warehouse, as opposed to being out in the plant. It has a different nature.

Q Are there any other attributes that you would similarly characterize as not being similar?

A I'd say the ones on Hunter and Hatfield -- I would say another one on Hunter is the mechanical joint torques.

Q Why is that dissimilar?

A It's a non-recreatable, and my memory is a little bit vague on this, but I know that a lot of the questions on bolt torques were their being non-recreatable.

Q Are there any others that are dissimilar besides those two?

A Nothing that comes to mind right now.

Q You mentioned with respect to PTL in your testimony that there is only -- I think you used the term -- a fair degree of similarity between accessible and inaccessible and recreatable and non-recreatable attributes. Which attributes are you referring to as dissimilarities?

A Well, the soils testing is a different technical field.

Q Any others?

A I would say concrete placement is somewhat different and deals with the different type of technology. That's all that comes to mind now. I'm not trying to shut the door on others.

Q Do I take it from your separation of the Hatfield and Hunter and the PTL similarities, that you regard the degree of similarity for PTL being a lesser degree?

A Yes.

Q So with respect to the soils testing and the concrete placement, the similarities between those

non-recreatable or inaccessible attributes -- excuse me. Those attributes are very different than accessible and recreatable attributes?

A I wouldn't categorize them as very different, but they are different.

Q Do you know what percentage of PTL's work was non-reinspectable?

A The number that comes to my mind is on the order of 50 percent, but I'm again, a little bit vague.

Q Do you know what percentage of PTL's work was audited by Edison?

A No.

Q Do you know what percentage of PTL's work was audited or inspected by the staff?

A No, I could not give you a percentage on that

Q You testified, I believe,at page 24 that the Staff had no reason to believe that inspectors would be less careful if they knew the work would be inaccessible and, therefore, not subject to reinspection. Am I correctly characterizing your view?

A I believe that's correct.

Q Is this based on any scientific studies that you're familiar with?

A That's based on a number of things. The first one is my discussions with Mr. Ward, Mr. Love and Mr. Little who

collectively have about 70 years' experience in the business, that they hadn't found this to be a fact. The other interesting facet of this is that the way a power plant is built, an inspector wouldn't know immediately if a thing was going to be inaccessible or non-recreatable. He might inspect a conduit that he knew was going to be in a wall, but he would have no idea when that wall was going to be built.

So that could actually be open to view for quite a sustained period of time. So the actual instance of someone doing a shoddy job because he knew tomorrow it would be poured in concrete was probably minimal.

Q And when you refer to your conversations, with due respect to the expertise of Mr. Ward and Mr. Love, did you consult with any outside experts on human factors analysis?

A No.

Q And did you make reference to any scientific studies on this point?

A No, I certainly did not.

Q Are any of the members of the panel aware of Mr. Hansel's testimony a few days ago regarding a contractor's repair of hardware, including welds, prior to the reinspection?

A I am.

Q Who would be the best person to ask that question?

A (Witness Little) It depends on the question. Pose the question.

MR. LEWIS: Do you mean prior to the reinspection or prior to the Sargent & Lundy evaluation?

BY MR. LEARNER:

Q Let's try prior to the Sargent & Lundy evaluation. Thank you.

A (Witness Muffett) I will try to answer that, but I might have to defer to Mr. Little.

Q Prior to Mr. Hansel's testimony, were you familiar with the fact that some of the contractors repaired their hardware prior to a third-party review by Sargent & Lundy?

MR. GALLO: Objection. I think the record ought to be clear that it was Mr. Tuetken's testimony that elicited this piece of information, and not Mr. Hansel's testimony.

MR. CASSEL: No, there was separate testimony from Mr. Hansel concerning the notes of this interview with Mr. Marcus, and contractors in some cases repairing hardware but not documenting it. That was a separate instance from the Tuetken testimony, which was on a different aspect.

JUDGE SMITH: Since the question is to establish time --

BY MR. LEARNER:

Q Prior to the commencement of these hearings last Monday, were any of the members of the panel aware that some of the contractors apparently were repairing hardware,

including welds, prior to the engineering evaluation by Sargent & Lundy?

A (Witness Muffett) Yes.

Q And did you also know that they were not documenting those repairs?

A I don't know what you mean by documenting.

Q Well, were they putting down on a piece of paper that was filed with Edison or the NRC that those repairs had been conducted?

A That would be outside the scope of my knowledge.

Q Was anybody at the NRC aware, through the submission of any documents, that those repairs had been conducted?

A I guess I don't understand the thrust of your question because they found a discrepant condition and repaired it, per their procedures.

Q Were those repairs conducted prior to the reinspection or after the reinspection?

A I would say that some of them -- that there were ones in both categories.

Q And the ones that were conducted prior to the reinspections would, therefore, not have been included in the Reinspection Program as discrepant welds; is that true?

A That's correct, if they were repaired.

Q And of the ones in the Reinspection Program -- in

other words, ones that were repaired after the reinspection -- isn't it also true that Sargent & Lundy would not have identified those welds as being discrepant?

MR. GALLO: Objection. It's not the record in this case at all. I don't understand. I mean, Sargent and Lundy -- the testimony in this case is that Sargenty and Lundy did not identify discrepant welds; they were handed discrepant welds for evaluation purposes.

I don't understand the question. It's convoluted and therefore objectionable on that basis.

JUDGE SMITH: I think they're reconsidering.

MR. LEARNER: If we could have a moment, please.

(Pause.)

end 28

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MR. LEARNER: Let me try the question this way. I think we could clarify some of Mr. Gallo's problems.

BY MR. LEARNER:

Q Are any members of the panel aware, prior to Mr. Hansel's testimony last week, that contractors involved in the reinspection program were repairing hardware without documentation?

MR. GALLO: I object.

MR. LEWIS: Is it your representation that that is what the record says?

MR. LEARNER: That's what we understand Mr. Hansel to have testified to.

MR. LEWIS: That's not what I understood.

MR. CASSEL: We have a copy of Mr. Hansel's notes here concerning his discussions with Mr. Marcus, of an exact quotation, and Mr. Hansel testified, "Well, my understanding was, it didn't happen very much."

JUDGE SMITH: I'm at a loss. I have no memory of that testimony, and that is the type of testimony that I think would have brought everybody to their feet, because that would be important testimony.

MR. CASSEL: Well, I guess probably didn't pause long enough on it, but let me check for a moment.

(Pause.)

MR. CASSEL: Judge, we will have to pull that from

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the transcript. I don't think we're going to finish will all the redirect and whatnot with this panel this afternoon, so we could do it in the morning.

JUDGE SMITH: Yes.

BY MR. LEARNER:

Q Let me just ask two more questions in this area and then ask the Board's instruction for whether we ought to proceed tonight or tomorrow morning. I'm prepared to do whatever the Board would prefer on that.

Are any membes of the panel aware that contractors were repairing hardware, subsequent to the time of reinspection but before Sargent & Lundy conducted its engineering evaluation?

A (Witness Muffett) Yes.

Q And was that repair documented, so that Sargent & Lundy would have known that it occurred?

A That really is kind of moot, and let me explain what I mean by that.

The Sargent & Lundy people took what described a discrepancy and did a calculation which basically showed that it had no design significance. Whether that was repaired after Sargent & Lundy had that paper really made no difference.

Q I may want to get into later whether it was moot or not. The question I would like to ask you is, was that repair documented to Sargent & Lundy?

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A I don't know.

Q Does any member of the panel know if Sargent & Lundy received that sort of documentation of a repair?

A (No response.)

Q Do I take it that the silence is a no?

A (Witness Ward) No.

A (Witness Muffett) No.

A (Witness Little) No.

A (Witness Love) No.

A (Witness Connaughton) No.

JUDGE SMITH: Wasn't that covered by the Sargent & Lundy panel?

MR. LEWIS: It was.

JUDGE SMITH: I don't understand why you're asking the third-party nonparticipants.

MR. LEARNER: That reason has to do with our understanding of the Hansel testimony. We will look at that this evening. I am prepared to go forward or defer until tomorrow morning, whatever the Board would prefer. Unless we go fairly late today, I would not be able to complete this afternoon.

JUDGE SMITH: Let's go to 5:30.

MR. LEARNER: I believe it's 5:30 right now -- oh, I'm sorry -- okay.

(The reporter notes the time as 5:20 p.m.)

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BY MR. LEARNER:

Q Mr. Connaughton, you testified earlier with respect to PTL and its overinspections. Were you aware that PTL supplied some inspectors to Hatfield?

A (Witness Connaughton) Yes. That's included in the testimony.

Q Were you also aware that PTL appears to have changed some of the results of its reinspections without informing the third-party reviewer?

MR. LEWIS: What are you referring to, Counsel? Would you direct his attention to what you are relying upon?

BY MR. LEARNER:

Q Mr. Connaughton, are you aware of any circumstance in which PTL changed the results of a reinspection without confirming that to the third-party reviewer?

A Yes. I understand that after the issuance of an interpretation by Commonwealth Edison, PTL performed a further review of welds that they had inspected following a third-party review and determined, for reasons other than the interpretation, that upon rereview, what previously they rejected and the third-party had concurred in was now acceptable.

The Applicant became aware of that through a quality assurance audit conducted during the program and admonished PTL, as well as other contractors, to be sure that

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whenever they conducted a review or changed a call after an initial third-party review, that they bring that item to the attention of the third party again for concurrence. And it's my understanding that compliance with that directive was achieved.

Q Prior to that audit that you referred to by the Applicant, are you aware of any provision in the program that PTL was operating under that would have permitted it to change a reinspection result without obtaining the concurrence of Sargent & Lundy?

A That was not the intent of the program, no. I don't believe the program specifically spelled out whether or not a contractor was allowed to rereview an item when new guidance was provided by Commonwealth Edison. It just didn't anticpate that.

However, since the calls -- the reversals that PTL made were from a reject to an accept status, the problem could be dealt with later. That is, since it went from an reject to an accept status, they didn't initiate corrective items to rework the items. So once a problem was identified by Commonwealth Edison, all the data that was necessary for Sargent & Lundy to properly concur in those recalls was available.

Q By changing the results from a reject to an acceptable status, in effect, PTL would have been improving

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artificially their program performance; is that correct?

MR. GALLO: Object to the term "artificial."

MR. LEWIS: Objection. I don't think there's any basis for an inference about artificially improving their inspection results. There is some foundation missing there.

MR. LEARNER: I'll be glad to rephrase it.

BY MR. LEARNER:

Q Mr. Connaughton, would the practical effect of PTL's having changed the reinspection results from a reject to an acceptance have been that -- that it would have improved the program performance?

A (Witness Connaughton) Yes. Without third-party concurrence, that would have been the net effect of the change in that direction.

Q Therefore it would have moved them further up the scale with respect to the 95/90 acceptance criteria?

A It would have.

Q Are you aware of the average total inspector score for PTL for visual weld inspections?

MR. LEWIS: I'm sorry. The average?

BY MR. LEARNER:

Q The average total score for PTL inspectors for the visual weld inspections.

A (Witness Connaughton) I don't have the number off the top of my head. I can get it from the report, if

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you would like.

Q Do you know if it was less than 90 percent for subjective attributes?

A It's my understanding that it was.

Q And if I understand, below 90 percent --

MR. GALLO: I didn't hear that last answer.

WITNESS CONNAUGHTON: I understood that the average for all visual weld inspectors was something less than or close to 90 percent.

BY MR. LEARNER:

Q And did this less than 90 percent figure, in effect, make PTL below the acceptance criteria?

MR. LEWIS: Objection. The acceptance criteria did not apply to PTL.

WITNESS CONNAUGHTON: That would have been my response. My response -- I'm sorry.

(Laughter.)

MR. LEARNER: I didn't even get the whole question out.

MR. CASSEL: The answer and the objection are the same. You can't go wrong on this one, Judge.

JUDGE SMITH: What is your point? Your point is that it applies to individuals?

MR. LEWIS: Correct.

JUDGE SMITH: Well, I think the answer should

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remain. It puts a period at the end of this line of questioning.

Knowing the answer now, do you persist in your objection?

MR. LEWIS: No. I guess it's in the record now.

BY MR. LEARNER:

Q Did the fact that PTL had an average total inspection score for the subjective attributes of below 90 percent in any way decrease your confidence in their ability to perform inspections accurately?

A (Witness Connaughton) Personally, no.

Q Did it decrease your confidence in their reliableness as an independent testing agency?

A No.

Q Did it decrease your confidence in their reliability to conduct overinspections?

A No.

Q If it had been 70 percent, would that have decreased your confidence in PTL?

A Somewhat, yes. You are bringing out the point that the difference between what they achieved collectively in the area of visual weld inspections and the criteria established for the program, in my mind, that margin is so narrow that I can't say one way or the other that it really altered my personal feeling as to the adequacy of PTL's

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inspections in this area or substantially lower, on the order of 70 percent, that would have given me pause and some concern, yes.

Q Did the fact that they had changed some of the reinspection results from reject to accept without getting the third-party concurrence decrease your confidence in their reliability as an independent testing agency?

JUDGE SMITH: Do we have evidence that more than one result was involved?

MR. CASSEL: Yes, Judge. The Shewski attachment indicates it's one inspection report that they were talking about more than one result.

MR. LEARNER: It's also referenced in the Staff testimony, but I can lay a foundation, if you'd like.

JUDGE SMITH: No. I recalled it as being a single incident. I didn't know what the quantity was.

End29SY

MR. LEWIS: I think, Your Honor, that the testimony on this subject should be that as set forth in the attachment to the Shewski affidavit -- the Shewski testimony, which does lay out what the issue was as identified in that article. And I think that would be the document that would characterize how extensive the problem was, more reliably than the question.

JUDGE SMITH: Proceed, Mr. Learner.

BY MR. LEARNER:

Q Mr. Connaughton, are you aware of how many items PTL changed from reject to accept without obtaining third-party concurrence?

A (Witness Connaughton) I can't recall specifically. It sticks in my mind that it was a relatively small number. As I stated, it was a result of a review of an interpretation.

Q To the best of your recollection, was it more than half a dozen?

A It seems to me it was on the order of half a dozen.

Q And did their changing -- their being PTL -- changing the result from reject to accept without obtaining third-party concurrence decrease your confidence at all in PTL's reliability as an independent testing agency?

A It's not clear to me that when it was identified that they had not received third party concurrence; that it

was anything more than perhaps a timing problem. I don't know what PTL's intent was, but it was obviously identified as a problem before PTL may have elected to get concurrence again from the third party.

But to answer your question, no.

Q Are you aware of any other changes regarding any of the other parties involved in the Byron plant in which reject characteristics were changed to accept?

MR. GALLO: Objection. Any other parties. They reference --

MR. LEARNER: I'll amend the question to refer to contractors.

WITNESS CONNAUGHTON: I believe Sargent and Lundy reversed a number of calls from reject to accept upon third-party review.

(Pause.)

BY MR. LEARNER:

Q Are you aware of any circumstances in which an Edison inspector changed any results of a reinspection not in accordance with the rules of the program?

MR. GALLO: Objection. We've had calls of the inspector -- one or the other. Either they're going to be called Sargent & Lundy inspectors or Edison inspectors. There were no Edison inspectors per se. The record is quite clear on that.

If we're talking about the Level III inspector who did the reinspection of the third-party inspection, that's a different matter.

BY MR. LEARNER:

Q I'd like to direct your attention to Enclosure 5 of the Staff's testimony -- I'm sorry, Enclosure 1. It's marked at the bottom of the page 37. It's marked page 37 at the bottom. At the top it starts, "There was also a telecon on November 10, 1983." Enclosure 1.

JUDGE SMITH: Did you say Enclosure 5?

MR. LEARNER: I'm sorry, Enclosure 1. This is page 37, at the bottom. The pages aren't labeled seriatim, so it's a little confusing.

BY MR. LEARNER:

Q It says at the top, "There was also a telecon on November 10th." Mr. Connaughton, would you please tell us, if you know, what the third paragraph is referring to on that page? The paragraph starts, "The report should be drafted..."

A (Witness Connaughton) Yes. You're asking me what does it mean? Am I familiar with what it means?

Q Yes, please.

A Yes. When the results of the Reinspection Program were partially submitted in a preliminary report, the final disposition for visual weld inspections as to the

acceptability of the items was based in part -- subject to the concurrence of a Commonwealth Edison Company Level III inspector who reviewed the items following the review by the Sargent & Lundy Level III.

There was a meeting prior to this November 10th meeting in which Commonwealth Edison had -- it's my understanding; I was not present at this meeting -- had proposed the use of an additional Level III to add confidence to the results in their view.

And they left that meeting -- or so I was told -- with the impression that Staff concurred in the use of the CECO Level III. And upon issuance of the preliminary report and our review in this meeting of November 10th we told them that they should look at the results without accounting for the CECO Level III review. And that was done in the final report.

Q Had that CECO Level III review been accomplished at a preliminary stage with respect to the reinspection results?

A I believe so.

Q And do you know what the effect of that review had been?

A With respect to any particular contractor?

Q With respect to Hunter, Hatfield and PTL, would the overall effect of that review have been to change certain

rejected items into accepted?

A That was the effect for all three contractors; in some instances the CECO Level III changed the status as determined by previous reviews from rejectable to acceptable.

Q And the effect of so doing would have been to increase the scores of the PTL, Hatfield and Hunter inspectors?

A That follows logically.

MR. LEARNER: I'm moving on to a different area now.

JUDGE SMITH: This would be a good time to adjourn for the night.

MR. LEARNER: Thank you.

JUDGE SMITH: We will meet at 9:00 a.m. in this room.

MR. GALLO: Judge, one matter. We have, I'm told, the interrogatory answer to Interrogatories 11(c) and 12(c) in typing. If Intervenors would like, we can deliver it to them this evening, or would tomorrow morning suffice?

MR. CASSEL: We are at the hotel across the street from yours, so if it's convenient to deliver it tonight, that would be fine. If not, then in the morning.

MR. GALLO: At the Ramada Inn?

MR. CASSEL: At the Ramada.

MR. LEWIS: We are there, too, lest you forget us.

MR. GALLO: Thank you.

JUDGE SMITH: We are adjourned.

(Whereupon, at 5:35 p.m., the hearing in the above-entitled matter was recessed, to reconvene at 9:00 a.m. the following day, Tuesday, July 31, 1984.)

CERTIFICATE OF PROCEEDINGS

This is to certify that the attached proceedings before the NRC COMMISSION

In the matter of: Commonwealth Edison Co., (Byron 1 and 2)

Date of Proceeding: Monday, July 30, 1984

Place of Proceeding: Rockford, Illinois

were held as herein appears, and that this is the original transcript for the file of the Commission.

Mimie Meltzer
Official Reporter - Typed

Official Reporter - Signature

Suzy Young
Official Reporter - Typed

Official Reporter - Signature