Q.P. FORM 18-1.2
DATE 8-4-81

Commonwealth Edison Company

QUALITY ASSURANCE MANUAL

AUDIT REPORT

Type Audit: [X] Program Audit [ ] Product Inspection Point

[ ] Records [ ] Special

To: D. L. Leone

Project LaSalle/Byron Visit Date March 7 - 11, 14, 15/83 Report Date 3/18/83

System Various Component Identification N/A

Material Description N/A

Vendor Sargent & Lundy Location Chicago, IL

Subcontractor N/A Location N/A

Contacts See Attachment "B"

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

Recommended Inspections: 6 mos 3 mos 1 mo

Other: Per Audit Schedule

Notes: Please respond as indicated herein.

Auditor T. R. Lommerfield Date 3/18/83

Reviewed G. F. Marcus Date 3/23/83

cc: ~~Manager of QA~~ 3-23-83
Exec. V.P. (Thomas)
Site Constr. Supt.
Site Quality Assurance/2
Project Manager(Wallace/Holyoak)
Project Engineering Mgr. (Deress/Shelton)
Manager of Projects
V.P. (Nuclear Operations)
Assistant V.P. (Stiede)
Station Nucl. Engr. Mgr.
R. J. Mazza - S & L
H. S. Taylor - S & L
V. I. Schlosser

Commonwealth Edison Company
Quality Assurance Department Audit
of
Sargent & Lundy Engineers
March 1983

I. Introduction

On March 7-11, 14 and 15, 1983, the Commonwealth Edison Company Quality Assurance Department conducted an audit of Sargent & Lundy Engineers in Chicago, Ill. The purpose of the audit was to determine if Sargent & Lundy was properly implementing their Quality Program and to evaluate the adequacy of design of the Byron and Braidwood Projects and LaSalle Unit Two with special emphasis on Byron Unit One and LaSalle Unit Two. The audit was conducted by the following personnel:

T. R. Sommerfield, Q.A. Superintendent, Lead Auditor
J. L. Woldridge, Q.A. Supervisor, Auditor
S. A. Altmayer, Q.A. Engineer, Auditor
M. A. Gorski, Q.A. Engineer, Auditor
P. J. Macuiba, Q.A. Engineer, Auditor
S. J. Reutcke, Q.A. Engineer, Auditor

An Entrance Meeting was held on March 7, 1983 and the audit commenced immediately afterwards. An Exit Meeting was held on March 11 with a supplemental meeting being held on March 15. Those persons in attendance at the Entrance and Exit Meetings as well as other personnel contacted during the audit are listed in Attachment B. Commonwealth Edison Company wishes to thank all personnel contacted for their cooperation during the audit.

II. Scope

The scope of the audit included the following areas:

1. Audits
2. Equipment Qualification
3. Design Criteria
4. Design Specifications
5. Calculation Review
6. Field Change Requests
7. Engineering Change Notices
8. Corrective Action Reports
9. Training
10. Procedure Control
11. As Built Drawing Reconciliation
12. Design Change Control
13. Whip Restraints
14. Topical Report
15. Follow-Up on CECo Open Audit

III. Deficiencies

The audit team identified five (5) findings and three (3) observations. In addition to these deficiencies, two (2) comments were noted which require further explanation. The details of these items are included in Attachment A.

IV. Summary and Assessment

In general, the audit team concluded that Sargent & Lundy is properly implementing their Quality Program. A total of approximately 260 manhours was expended by the audit team in performing an in depth analysis of the audit areas. The number of deficiencies identified when taking the length of the audit into account, was minimal. A detailed summary and assessment of each major area audited is as follows:

Administrative Activities

The areas reviewed during this portion of the audit were administrative controls and practices at the S&L Chicago office for both the LaSalle and Byron/Braidwood project groups.

A major emphasis of the audit was placed on the control and processing of the following documents: Field Change Requests, Engineering Change Notices, Corrective Action Reports, on-site contractor procedures and rebar hit reports. For each of these listed documents it appeared that adequate controls were in place for the LaSalle project group but problems were found in the Byron/Braidwood project group. Deficiencies were identified in the areas of FCR accountability, timeliness of FCR processing, FCR project instruction adherence, and CAR recording. These deficiencies are detailed in Attachment A.

Emphasis was also placed in the area of project personnel training. Lesson plans, training schedules, and examinations were found to be established and being utilized. Personnel rosters depicting required project instruction and procedure training were reviewed and found to be implemented. While reviewing the personnel training records a verification was made to ensure that no improper use of white-out or corrective tape existed. All corrections appeared to be performed acceptably.

The results of this portion of the audit indicate that S&L is adequately implementing their Quality Program. However weaknesses were identified in the area of document processing, particularly field change requests. It appears that more attention should be given to this area to assure accurate accountability and procedure adherence. In general, the administrative controls at S&L are adequate.

Design Criteria, Design Specification, Calculations

A sample of the LaSalle and Byron/Braidwood mechanical and structural design calculations were reviewed for the following aspects: purpose or objective, data and assumptions listed, all calculation steps recorded, and source reference of formulae or equations not in common engineering usage. It was found that hand calculations where easily reconstructed and that the internal review of calculations by S&L appeared to be particularly well handled. Also, the areas of supervisory training and handling of recognized problems through the use of punchlist and other methods appeared to be working well.

Sargent & Lundy appears to have weaknesses in the areas of design criteria and procurement document control for both the LaSalle and Byron/Braidwood Projects. Examples noted included the failure to properly implement the use and updating of design criteria, and a failure to demonstrate an effective program to assure that design data is properly transferred between design documents, such as failure to assure that procurement specifications contain the same design information as design specifications and/or design criteria. These deficiencies are listed in Attachment A.

Design Change Control - LaSalle

This portion of the audit centered on verifying that changes to design documents were controlled to ensure that as-built designs comply with the current design requirements.

Engineers and drafting personnel in the Mechanical, Structural, and Electrical areas were contacted and found to be knowledgeable of the requirements involving changes to design as stated in the project instructions.

Review of various FCR's, ECN's, and As-Built Memos indicated that design changes are being evaluated against the original design documents and for impact on other systems, components, units and safety. Also, it appeared that adequate interdiscipline evaluation of design changes is occurring. Control of design changes was in accordance with established procedures and were incorporated into revised design documents in a timely fashion.

Design Change Control - Byron/Braidwood

The area of design change control for the Byron and Braidwood Projects was reviewed to provide a follow-up and review additional objective evidence to assure the conclusions of the INPO evaluation performed in November, 1982 are still valid. During the audit, design change control was reviewed for the Mechanical, Electrical,

Design Change Control - Byron/Braidwood (cont'd.)

Structural and HVAC Divisions. Other than the deficiencies noted in the audit report, it appeared that adequate design change control measures were being exercised by Sargent & Lundy on the Byron/Braidwood Projects. Sources of possible design changes have been identified and sufficient procedures to handle these changes have been developed and implemented. Design changes reviewed were evaluated against design criteria consumate with the original design and were subject to the same review and control measures as the original design. This substantially supports the results of the INPO evaluation.

Whip Restraint Design

During the audit, an in depth review was conducted of the Sargent & Lundy whip restraint design for the Byron and Braidwood Projects. This review covered identification of high energy lines, break location postulation, calculation of pipe break forces, selection of energy absorbing elements, structural design of whip restraints, evaluation of pipe whip forces on the general building structure and reconciliation of whip restraint as-built information.

Other than the deficiencies noted in the audit report, it was observed that whip restraint design was being performed in accordance with requirements of Regualtory Guide 1.46 and Sargent & Lundy design procedures. There appears to be adequate interface between the various design divisions involved in the whip restraint design. Information supplied by Westinghouse for pipe breaks and pipe whips is being distributed to and is being reviewed by appropriate Sargent & Lundy divisions to support the overall plant design. It was noted that the procedure used by the Engineering Mechanics Division to calculate pipe break jet forces, EMD Technical Procedure #24 Rev. 4, did not agree with the information included in the Byron and Braidwood FSAR. This item was identified by Energy Incorporated (E.I.) as a result of their independent design evaluation and will be tracked as an item on the E.I. report. Other elements of the whip restraint design that were reviewed appeared to be done in accordance with the requirements of the Bryon and Braidwood FSAR. The analysis and testing of energy absorbing material (EAM) which is crushed at an angle to the principal axis was reviewed. Sargent & Lundy has identified the whip restraints which are subjected to signifiant angularity loading during operation and have described testing which can be done to provide additional data to determine angular loading capability. The need for these additional tests is currently being reviewed by S&L, CECo and the NRR. Progress in resolving this matter will be reviewed at a future date.

Structural Analysis

The structural final load check program for Byron Station was examined to verify that the S&L interfaces with NPS and Westinghouse were being effectively implemented. The as-built load data transmitted to S&L was reviewed and appeared to be both adequate and comprehensive. Sargent & Lundy appears to be continuously processing and analyzing this data in accordance with established procedures. It appears that Sargent & Lundy is adequately processing and controlling as-built load data supplied by NPS and Westinghouse.

Audits

A review was performed to determine if S&L internal audits cover the adequacy of design. In gerneral, it was identified that S & L's internal audits are developed to ensure that appropiate procedures and standards are being properly implemented rather than to ensure that appropriate design criteria and calculations are being utilized. However it was also identified that in 1982 special audits were conducted of the Byron/Braidwood and LaSalle Projects which covered the following areas:

1. Structural integrity with regards to damaged rebar resulting from coring and drilling.

2. Verification that electrical schematics are properly translated onto the wiring diagrams.

3. Verification that proper corrective action was being accomplished with regards to proper snubber placement.

It appears that S&L's Q.A. Division is moving in a positive direction with respect to performing technically oriented audits. However, in reviewing the 1983 audit schedule none of these types of audits were found to be included in the schedule. In order to satisfy the requirements of auditing design review, it is suggested that audits which specifically cover the adequacy of design be added to the schedule. See Attachment A.

In addition, it was also identified that technical evaluation procedures have currently been written by each of the engineering disciplines to confirm that design activities are performed in accordance with technical procedures. Once these procedures are put into use their effect should have positive results on engineering output.

Equipment Qualification

A review was performed to determine if the potential effects of seismic interaction between adjacent Class 1E cabinets has been considered for the LaSalle and Byron/Braidwood projects. As a result, it was determined that no specific analysis were performed for the adjacent panels located in the auxiliary equipment rooms for the three locations, although similar situations have been reviewed by S&L and no adverse effects resulted. It appears that additional justification should be provided to ensure that any Class 1E panel interaction will not result in adverse effects. See Attachment A for additional details.

Emphasis was also placed in verifying that S&L is processing and maintaining the environmental qualification packages of electrical equipment for LaSalle U-2 and Byron U-1. From the data reviewed, this area appears to be adequately administered and controlled.

Follow-Up on Previous Audit

This portion of the audit centered on verifying that the corrective action for Observation 1A of the June, 1982 CECo audit had been implemented. This observation was concerned with S&L not having adequate controls in place to assure that all concrete cylinder break test reports have been taken into account in the statistical analysis and evaluation of field concrete.

It was identified that S&L has developed a listing of those concrete sample numbers for which S&L has no reports. Both Byron and Braidwood sites have been requested to furnish the missing reports (approximately 370 missing for Byron; 82 missing for Braidwood). All reports currently being sent to S&L, from the sites, require receipt acknowledgement. It was also identified that S&L maintains a listing of all sample numbers not included (intentionally) in the computer statistical evaluation. Based upon the objective evidence reviewed this observation is closed.

V. Remarks

A written response to the findings, observations and comments in this report is requested by April 18, 1983. The response should describe the corrective action, preventive measures and expected date of completion. The response should be directed to Mr. G. F. Marcus, Director of Quality Assurance, with a copy to Mr. W. J. Shewski, Manager of Quality Assurance.

COMMONWEALTH EDISON QUALITY ASSURANCE
AUDIT OF
SARGENT & LUNDY

Attachment A

Finding #1:

Contrary to 10CFR50 Appendix B, Criterion V and S&L Q.A. procedure GQ 3.16, a project instruction has not been issued for the review of system functional descriptions on the Byron/Braidwood projects.

Discussion:

10CFR50 Appendix B, Criterion V states in part "Activities affecting quality shall be prescribed by documented instructions, procedures or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures or drawings."

Sargent & Lundy Q.A. procedure GQ 3.16 Section 3.A.1 states in part "The Project Manager shall issue a Project Instruction (see Q.A. procedure GQ-5.01) specifying the format and outline of system functional descriptions and shall issue a system functional description status report (see Q.A. procedure GQ-3.12) that assigns the responsibility for and schedules their preparation."

Contrary to the above requirements, no project instruction has been developed or implemented for the review of system functional descriptions on the Byron/Braidwood project. The S&L HVAC Division has been issuing system functional descriptions for the BY/BR Project.

A list of those functional descriptions reviewed is listed below:

FD-VA-01-BB Rev. 1
FD-VA-01-BB Rev. 2
FD-VC-01-BB Rev. D
FD-VD-01-BB Rev. E

It was noted that a system had been set up by the HVAC Division for the interdiscipline review of HVAC system functional description.

Finding #2:

Contrary to 10CFR50 Appendix B, Criterion III and S&L Q.A. Topical Report SL-TR-1A, calculations for certain electrical conduit supports did not verify the details shown on the drawings. Also, a discrepancy was discovered in the end connection capacity for the analysis of a beam subject to direct pipe whip impact. The errors or omissions in these calculations were not found during the S&L calculation review.

Discussion:

10CFR50 Appendix B Criterion III states in part, "Measures shall be established to assure that applicable regulatory requirements and the design basis as specified in the license application, for those structures, systems and components to which this appendix applies are correctly translated into specifications, drawings, procedures and instructions. ... Measures shall be established for the selection and review for suitability of application of materials, parts, equipment and processes that are essential to the safety related functions of structures, systems and components. ... The design control measures shall provide for the verification or checking of the adequacy of design, such as by the performance of design review, by the use of alternate or simplified calculational methods or by the performance of a suitable testing program."

S&L Q.A. Topical Report SL-TR-1A Rev. 5 Section 3 states in part "Selection of parts, materials and components, for suitability of application is made after adequate reviews have been performed. ... During design, controls and reviews are applied for such aspects as thermal, stress, radiation, hydraulic and accident analysis; ... Verification of design is accomplished by performing design reviews, alternate calculations or a qualification testing program."

Contrary to the above requirements, the following items were observed:

Part A - The Structural Division's calculation for conduit support detail TS-5 (calc. #12.3.2.23) on electrical drawing 6/20 E-0-3393 sheet R Rev. K did not consider the eccentricity of the applied load due to the width of the tube steel (this could vary from 2" to 12" per the TS-5 detail). This calculation employed the worst case vertical acceleration factor (5.75 G) and a horizontal acceleration factor of 2.75 G from area 2. The calculation did not include or otherwise reconcile higher horizontal acceleration factors of 2.9 or 4.75 G that could be found in areas 3 or 4 respectively. The calculation had been reviewed and approved.

Part B - The Structural Division's calculation for conduit support detail WCP-1 (calc. #12.3.1.4) on electrical drawing 6/20 E-0-3393 sheet A Rev. W omitted one horizontal force component when taking the square root of the sum of the squares force summation. It was noted that this error would not effect the integrity of the support. The calculation had been reviewed and approved.

Discussion: (cont'd.)

Part C - During the review of the Structural Division calculation for the pipe whip impact loading of Beam B-19 in the Byron Unit 1 Containment (Calc. #6.6.13.3 pg. 22), the following items were noted. The plastic force calculated for beam B-19 was 3890 KIP. This is the force that was used to calculate the plastic energy absorbing capacity of the beam. The beam end connection capacity was determined to be 3349 KIP (both connections). This represents an apparent 16% overstress in the end connections of B-19 during pipe whip impact. This value is in excess of the 10% overstress allowed in S&L Procedure SDS-E1.0 Rev. 1 for structural steel as-built evaluation. No justification was made for this overstress condition in the body of the calculation.

Finding #3:

Contrary to 10CFR50 Appendix B Criterion XVII & S&L Q.A. procedure GQ 3.08, the Sargent & Lundy Engineering Mechanics Divisions (EMD) has not properly documented the calculations of pipe rupture jet forces.

Discussion:

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

S&L Q.A. procedure QG 3.08 Section 3.B.1 states in part, "The preparer shall prepare the calculation per the design input data. ... Calculations shall be legibly and logically composed, permitting easy reconstruction at any time."

Contrary to the above requirements, calculations performed by the S&L Engineering Mechanics Division for the jet forces resulting from postulated pipe ruptures were not properly documented. The pipe rupture jet data for the following items was reviewed:

EMD Calc. 007912 Sub System 1RC03 breaks B-1-2, B-2-2, B-2-1
EMD Calc. 006521 Sub System 1MS01 breaks M-16A-2-1, M-35A-4

During the review of this data is was noted that only the input information (pipe size, operating pressure, operating temperature etc.) and output information (blowdown forces, impulse forces, time of impulse etc.) were included in the EMD packages. Upon questioning cognizant EMD personnel, it was determined that the actual calculations performed were not retained. It was noted that for the items

Discussion: (cont'd.)

reviewed, it was possible to reconstruct the calculations performed, and it appeared that the calculations were performed in accordance with EMD Technical Procedure (TP) #24 Rev. 4. Although the calculations appeared to follow the EMD procedure, based on the design output, the calculations were not properly documented.

Finding #4:

Part A - Contrary to S&L's Topical Report SL-TR-1A, which requires preparation and use of design criteria, Q.A. procedure GQ 3.04, which gives requirements for preparation and timeliness, and Project Instruction PI-LS-01, S&L has failed to properly implement and follow through with the requirements for design criteria.

Discussion:

Specifically, work was terminated on most design criteria for the LaSalle County Project in 1976, and some design criteria have not been initiated or revised as required after that date. In lieu of design criteria, other documents such as the SAR, system descriptions, logic diagrams, schematics, and functional descriptions may have been used as the basis for on going design.

In addition the Byron/Braidwood project group has not revised design criteria to reflect changed requirements. The Process Sampling design criteria, for example, has not been revised since 1976, even though the plant design was modified to meet requirements resulting from Three Mile Island.

Part B - Contrary to 10CFR50 Appendix B, Criterion IV, Sargent & Lundy has failed to assure that design bases and other requirements are correctly included or referenced in the procurement documents.

Discussion:

Specifically, conflicts were noted between the certified design specifications required by Section III, NA-3250, and the procurement specifications. Examples of this deficiency include different revisions of piping tables being listed in the piping procurement specifications than in the design specification for the LaSalle project, and different test pressures listed in the piping installation specification than in the design specification for the Byron/Braidwood project.

Discussion: (cont'd.)

It was noted that Q.A. procedure GQ 4.01 contains no provision that specific design documents, such as design criteria or design specifications, must be used as input to procurement specifications; there is also no provision that reviews of other affected documents must be made when design documents are revised.

Finding #5:

"Contrary to 10CFR50 Appendix B, Criteria III and VI, measures have not been established to adequately control changes to design documents nor are measures in place to control design interfaces and coordination among participating design organizations.

Discussion:

This is highlighted in the following three parts:

Part A - No mechanism is in effect to assure FCR's issued by CECo but not received by S&L are sought out. A list of applicable FCR's effecting Braidwood was generated 3-1-83 but as of this date no action to obtain these FCR's has been taken. No such list exists for Byron. Further, the last formal correspondence from S&L requesting missing FCR's was November 1978 and March 1981 respectively.

Part B - No mechanism exists to assure timely review and issuance of FCR's returned to S&L for correction or clarification. As of 3-1-83, 387 FCR's are in-house at S&L, all of which were received by them prior to 1-1-83. Seventy four of these are open 8 months.

Part C - Contrary to PI-BB-13 no evidence was observed to ensure that 6.1 Forms were filled out for the following Byron FCRs in which advance verbal concurrence was granted: FCR #50609, 50619, 50998, 52370, and 51524. In each of these cases it was verified that the personnel giving the verbal concurrence was a Chicago Office employee.

Observation #1:

Contrary to S&L Q.A. procedure GQ 16.01, paragraph 3.0, part A.7, the Senior Q.A. Auditor has not adequately maintained a record of Corrective Action Reports issued.

Discussion:

In reviewing the CAR record it was determined that in the majority of cases, the log data sheets were incompletely filled out, specifically, issuance dates were not being noted. It should be noted that a second, uncontrolled log was reviewed which did indicate dates; however, this second log was not up to date with regards to CAR numbers issued.

Observation #2:

The following high energy lines have not been properly identified on drawing 3.6-2 in the BY/BR FSAR Section 3.6:

1FW82BA-3"
1FW82BB-3"
1FW82BC-3"
1FW82BD-3"

A review of the following documents indicated that these lines were properly analyzed as high energy lines.

EMD #035386 - List of high energy sub-systems
EMD #033272 - Stress Report for sub-system FW18

At this time figure 3.6-2 in the BY/BR FSAR is incorrect. A check must be made to determine if other errors of this nature exist in similar FSAR high energy piping drawings and that all high energy lines have been properly analyzed.

Observation #3:

Contrary to 10CFR50, Criteria 18 which states that "A comprehensive system of planned and periodic audits shall be carried out to verify compliance with all aspects of the Q.A. program and to determine the effectiveness of the program." S&L has not scheduled audits for 1983 which cover the adequacy of design review.

Discussion:

A review of S&L's 1982 audit schedule inidicated that audits were conducted in the following areas:

1. Structural integrity with regards to damaged rebar.
2. Verification that electrical schematics are properly translated onto wiring diagrams.
3. Verification of corrective measures with regard to snubber placement.

Discussion: (cont'd.)

However, in reviewing the 1983 audit schedule none of the above type of audits were found to be scheduled.

Comment #1:

A review was made of the 1982 audits to determine if selected standards, procedures and instructions listed in the audit schedule were in fact being audited. As a result it was identified that some of these selected documents were not specifically called out in the audit reports. After review of the audits objective evidence it was determined that the content of these procedures were covered although indirectly. It is recommended that S&L reconcile the audit schedule and the audit reports.

Comment #2:

A review was performed to determine if the potential effects of seismic interaction between adjacent Class 1E cabinets have been considered. In reviewing the general arrangement drawings for the auxiliary equipment rooms for the Byron/Braidwood and LaSalle projects it was identified that electrical panels supplied by various manufacturers were physically located adjacent to one another. Conversation with personnel from the Component Qualification Division and the Project Management Division indicated that although no specific analysis were performed for these panels, other similar situations have been reviewed and no adverse effects resulted. Consequently, it was PMD's position that no additional ana sis would be required.

However, in light of the recently reported potential 10CFR50.55e identified by Consumer's Power, for a similar situation at the Midland Plant, S&L should supply documented justification/analysis to ensure that any Class 1E panel [illegible] action does not result in any adverse conditions.

Specific panels observed were as follows:

Byron/Braidwood		LaSalle
1PA50J	1PA13J	2H13-P644
1PA33J	1PA15J	2PA15J
1PA09J	1PA24J	
	1PA11J	

S&L G.O. Audit
March, 1983

Attachment B

Entrance Meeting - March 7, 1983

	Name	Title	Company
1.	A. Morcos	Asst. Head, Q.A. Division	S&L
2.	M. A. Gorski	Q.A. Engineer	CECo
3.	T. R. Sommerfield	Q.A. Superintendent -	CECo
4.	Paul J. Macuiba	Q.A. Engineer	CECo
5.	R. F. Farman	Principal Engineer	Energy Inc.
6.	C. H. VanBlaricum	Member Tech Staff	Energy Inc.
7.	R. J. Harris	Director Constulting Engineer	Energy Inc.
8.	J. D. Bigbee	Member Tech Staff	Energy Inc.
9.	R. M. Schiavoni	Sr. Elect, Proj. Engr-LaSalle	S&L
10.	L. P. Dolder	Q.A. Coordinator	S&L
11.	R. H. Pollock	Mech. Proj. Eng. LSCS	S&L
12.	B. R. Shelton	Proj. Eng. Mgr. - LSCS	CECo
13.	A. K. Singh	Asst. Div. Head, SAD	S&L
14.	R. J. Netzel	Sr. Struct. Proj. Eng.	S&L
15.	W. C. Cleff	Project Manager	S&L
16.	L. M. Gordon	Q.A. Coordinator	S&L
17.	R. Rabin	Sr. Q.A. Coordinator	S&L
18.	G. A. Chauvin	Proj. Services Director	S&L
19.	A. J. Skale	Q.A. Coordinator	S&L
20.	A. E. Meligi	Head, CQD	S&L
21.	S. A. Altmayer	Q.A. Engineer	CECo
22.	R. N. Curran	Principal E.E.	Engery Inc.
23.	E. L. Leone	Project Director	S&L
24.	B. G. Treece	Sen. Elec. P. Engr. B/B	S&L
25.	S. J. Reutcke	Q.A. Engineer - LaSalle	CECo
26.	J. Larid Woldridge	Q.A. Supervisor	CECo
27.	R. J. Mazza	Proj. Dir. LSCS	S&L
28.	W. A. Chittenden	Dir. of Engr.	S&L
29.	J. P. Brynildssen	Proj. Engineering	CECo
30.	E. R. Weaver	Sr. Str. Proj. Engr.	S&L
31.	L. R. Stensland	Elec. Design Dir.	S&L
32.	Jack Bitel	Q.A. CECo	CECo
33.	P. E. Hull	Q.A. Coordinator - SNED	CECo
34.	G. H. DeBoo	EMD Proj. Engr.	S&L
35.	G. F. Marcus	Director of Q.A.	CECo
36.	W. J. Shewski	Manager of Q.A.	CECo
37.	H. S. Taylor	Head, Q.A. Division	S&L

S&L G.O. Audit
March, 1983

Attachment B

Exit Meeting - March 11, 1983

	Name	Title	Company
1.	Bob Harris	Director-Consulting Engr.	Energy Inc.
2.	Dick Farman	Principal Engineer	Energy Inc.
3.	Clint VanBlaricum	Consulting Engineer	Energy Inc.
4.	T. R. Sommerfield	Q.A. Superintendent	CECo
5.	J. L. Woldridge	Q.A. Supervisor	CECo
6.	Paul J. Macuiba	Q.A. Engineer	CECo
7.	Stephen Reutcke	Q.A. Engineer	CECo
8.	M. A. Gorski	Q.A. Engineer	CECo
9.	S. A. Altmayer	Q.A. Engineer	CECo
10.	A. Morcos	Asst. Head, Q.A. Division	S&L
11.	H. S. Taylor	Head, Q.A. Division	S&L
12.	G. F. Marcus	Director of Q.A. (Engr/Constr)	CECo
13.	R. N. Curran	Engineer Consult. Div.	Energy Inc.
14.	J. D. Bigbee	Eng. Plant Services Div.	Energy Inc.
15.	T. D. Hottle	Mech. Proj. Eng.	S&L
16.	W. C. Cleff	Project Manager	S&L
17.	B. G. Treece	Sr. Elect. Project Engr.	S&L
18.	L. R. Stensland	Elect. Design Dir.	S&L
19.	D. L. Leone	Project Director	S&L
20.	E. B. Branch	Mech. Design Dir.	S&L
21.	G. T. Kitz	Head, EMD	S&L
22.	B. Tatosian	Proj. Eng. B/B EMD	S&L
23.	R. M. Schiavoni	Sr. Elect. Proj. Engr.	S&L
24.	A. E. Meligi	Head, Component Qualif. Div.	S&L
25.	L. E. Achmann	Dir. of Services	S&L
26.	W. A. Chittenden	Dir. of Engr.	S&L
27.	W. G. Hegener	Asst. Dir. of Engr.	S&L
28.	W. B. Parchal	HVAC Supervisor	S&L
29.	L. P. Dolder	Q.A. Coordinator	S&L
30.	R. Rabin	Sr. Q.A. Coordinator	S&L
31.	J. M. McLaughlin	Mgr. Str. Dept.	S&L
32.	R. H. Pollock	Mech. Proj. Eng. (LSCS)	S&L
33.	B. R. Pardvan	Mech. Proj. Eng. (LSCS)	S&L
34.	E. R. Weaver	Sr. Struct. Proj. Engr.	S&L
35.	T. E. Watts	Project Engr. (LSCS)	CECo
36.	R. J. Mazza	Proj. Director (LSCS)	S&L
37.	C. M. Chiappetta	Asst. Mgr. Elect. Dept.	S&L
38.	J. S. Bitel	Dir. Q.A. Const. Engr.	CECo
39.	W. J. Shewski	Manager Q.A.	CECo

(0032Q/0047q)

S&L G.O. Audit
March, 1983

Attachment B

Exit Meeting - March 15, 1983

	Name	Title	Company
1.	G. F. Marcus	Dir. of Qual. Assur.	CECo
2.	M. A. Gorski	Q.A. Engineer	CECo
3.	T. R. Sommerfield	Q.A. Superintendent	CECo
4.	K. J. Green	Mech. Project Engr.	S&L
5.	L. P. Dolder	Q.A. Coordinator	S&L
6.	A. Morcos	Asst. Head, Q.A. Division	S&L
7.	R. T. Netzel	Sr. Struct. Proj. Engr.	S&L
8.	H. S. Taylor	Head, Q.A. Division	S&L

S&L G.O. Audit
March, 1983

Attachment B

Personnel Contacted During the Audit

G. Horb
D. Patel
F. Aghakhan
K. J. Green
J. Gray
A. K. Singh
T. Ryan
R. Martin
Ç. Adlon
J. Sinnapin
G. Willman
J. Matz
D. Patel
P. DeBlake
J. Kelnowski
T. Hottle
T. Seredynski
R. Florian
D. Haan
D. Roth
M. Banogon
C. Riebel
R. Radowski
R. Pollack
S. Kazmi
R. Shiavioni
A. Neltz
C. Lim
T. Eisenbart
R. Rakowski
E. J. Florence
R. W. Hooks
B. Tatosian
J. Diebolt
J. Riske
H. S. Taylor
J. Regan
P. Raagja
W. Cleff
V. Voigt
F. Kosik
G. Wilman
E. Kurtz
B. Treece
G. Sensmeier
R. Rabin
R. Mazza
E. R. Weaver
S. Jean
V. Gilautra
M. Cambie
R. Netzel
V. Rekalitis
R. Naik
G. Smolock

(0032Q/0047q)