

WATERFORD 3 SES

INDEPENDENT SAFETY
ENGINEERING GROUP

ISEG SPECIAL REPORT

"ISEG REVIEW OF NRC CONCERNS"

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Approved by	<u>[Signature]</u> Nuclear Services Manager	Date	<u>9/29/83</u>

INTRODUCTION AND SUMMARY

ISEG performed reviews and evaluations as required on each of the five issues contained in the action plan. Additional Q.A. areas were reviewed that were not required by the action plan. These additional areas of review included two additional LP&L Q.A. systems status reviews, an evaluation of the American Bridge issue, and a walk down of four safety related systems. Details and conclusions are included in the content of the report.

Approximately 520 man-hours were expended in the preparation of this report.

ISEG found no significant deficiencies in LP&L's Q.A. program. The Q.A. program is functioning as intended, and LP&L is aware of all programmatic aspects.

I. Issue - Deficiencies in four systems turned over to LP&L.

A. Review

ISEG reviewed the following documentation:

- 1) USNRC letter 50-382/EA 82-109, Notice of Violation,
- 2) LP&L's reply (W3I83-0001) and summary report (W3I83-0115),
- 3) The Associated Audit Report for the Quality Assurance/Engineering Task Force Review of Installed Structures/Components (LP&L Audit Report W3S-83-3),
- 4) Related NRC inspection report 50-382/82-14,
- 5) LP&L Quality Procedure 19.1,
- 6) Related QA Site Audit Reports.

The results of LP&L QA status review concerning the sixty-seven (67) of eighty-five (85) safety related systems turned over to LP&L startup and the associated quality procedure were analyzed and reviewed.

ISEG reviewed the four safety related systems transferred to the plant staff before September 1, 1983 and an additional system transferred during September 1983. Additional procedures were reviewed as necessary.

ISEG also reviewed documentation associated with American Bridge Company Quality Assurance Task Force Review and subsequent actions.

B. Results

In response to the NRC Notice of Violation, LP&L developed a task force action plan for review of quality records and verification of installation for selected activities performed by contractors who performed safety related activities prior to June 1, 1982. Task Force Installation Verification (Quality Procedure 19.1) was written to implement the provisions of the action plan and to provide specific details for verification of the physical configuration of structures and components.

LP&L's summary report to the NRC stated that the adequacy of the areas examined was confirmed, and the physical verification indicated that as-built configurations conformed to design drawings and documents. The deficiencies identified were followed up by two re-audits by LP&L Construction QA. Three items remain open and are being pursued by QA. A third re-audit is anticipated within the next month to closeout these remaining open items.

ISEG reviewed the American Bridge audits and background. American Bridge (A-B) was one of the contractors selected for review in the Task Force Audit. LP&L started their task force review of A-B on February 7, 1983 and completed the audit on March 30, 1983.

The Task Force review was constrained due to the upcoming hot functional testing and a concurrent review by Ebasco Quality Assurance Installation Review Group (QAIRG). Non-Conformance Reports (NCR's) generated by Ebasco's review were utilized as an indication of problem areas. The Task Force Review centered primarily on a documentation review with a physical inspection on A490 high strength bolting used on the steam generator framing. The Task Force Audit did not pursue physical verification of American Bridge welding since welding problems were being noted and addressed by Ebasco.

The Ebasco QAIRG review brought to light problems with American Bridge concerning welding deficiencies in the Reactor Containment Building (Potentially Reportable Deficiency PRD 106 on 3/11/83) and the Reactor Auxiliary Building (PRD 111 on 3/29/83). PRD 106 was upgraded to a Significant Construction Deficiency (SCD 73) on 4/11/83. PRD 111 was upgraded to SCD 78 on 4/28/83. Both SCD's were incorporated into SCD 78 since it was the same contractor and problem.

The Task Force Audit Report related to American Bridge did not indicate the awareness of any welding deficiencies. The summary of the report on American Bridge stated "the physical walkdown of the selected area of review indicates that engineered drawings reflect the as-built configuration with a few exceptions being noted in audit findings." LP&L was aware of the possible welding deficiencies and had addressed the problem through normal channels. Since SCD 78 had been reported, LP&L felt that it would be unnecessary to restate this problem. Additionally, at the time the task force report was prepared, a determination had not been made as to the extent of the problem. Accordingly, this information was not reflected in LP&L's report to the NRC.

LP&L QA has determined that Ebasco has adequately responded to the Task Audit Findings and the A-B items will be addressed in the response to SCD 78.

Corrective actions included a comprehensive reinspection program that is complete. Rework which resulted from the inspection is almost complete and the welding portion is scheduled to be completed by mid-October. A response to SCD 78 is due to the NRC by 10/28/83.

ISEG, as a result of its review including audits, reaudits, and personnel interviews concludes that the A-B Problem has been adequately addressed and that the proper corrective actions have been instituted.

In conclusion, the actions associated with the implementation of the Task Force Audit Report appear to be in order and adequate.

The LP&L Construction QA system status review was performed on a system basis (67 of 85 systems). The activities of each contractor performing safety related work was examined. The LP&L QA status review consisted of a review of documentation and a system walkdown. At least 10% of the controlling documents for each contractor involved was reviewed. The LP&L QA physical installation inspections were random for each system. ISEG also performed a system walkdown on portions of four randomly selected safety related systems. The directions of the system turnover procedure and the applicable system drawings were used in performing these inspections. Specific items observed included the following:

- 1) correct weld numbers and location
- 2) correct hanger and support location and identification
- 3) general appearance of hangers and components (bolts, pins, orifice plates, etc.)
- 4) correct location of branch lines, valves, strainers, orifices, drains and vents
- 5) general configuration of the system per the drawings.

This additional review revealed no deficiencies.

Since the initial four systems' rejection by LP&L Construction QA, approximately thirteen systems have been rejected by QA. The deficiencies identified by QA involve documentation related problems and isolated minor hardware installation errors.

Four of seven systems transferred to the plant staff before September 1, 1983 have been audited by Operations QA. The following systems and number of findings were noted:

<u>System</u>	<u>Audit Date</u>	<u>No. of Findings</u>
2A-125 Volt DC Safety	Dec. 82	7
8A-208/120 Volt Safety	Jan. 83	2
69-Vibration & Loose	June 83	2
Parts Monitoring		
17-Seismic Monitoring	July 83	0

These findings involved minor documentation errors. The QA program procedures for audits and auditor training were written in compliance to requirements of the FSAR. These procedures were in place before the auditing practices were employed on safety system audits.

The QA auditing process included the following steps.

- 1) A selection of qualified auditors, lead auditor, and technical advisor took place.

- 2) A pre-audit meeting was held to determine the scope of the audit.
- 3) Check sheets were prepared to be used in performing the audit. These check sheets included requirements which have been committed by LP&L as listed in the FSAR, Reg. Guides, applicable ANSI Standards, Technical Specifications, and other documents.
- 4) The audit was performed and the findings were compiled.
- 5) A post audit meeting was held with personnel responsible for system transfer.
- 6) The audit report was finalized and issued.
- 7) The audit findings were tracked and closed out.

ISEG's review indicated that Waterford 3 Operations QA personnel performed audits with strict compliance to the approved auditing procedure. It is concluded that the number of deficiencies discovered has been decreasing as operations personnel gain experience in the system turnover process. This trend is further substantiated by a recent audit performed after September 1, 1983 which resulted in no findings.

In summary, other deficiencies have been identified during the course of construction by LP&L QA. Some of these deficiencies involve a breakdown in a QA program as defined in 10CFR50.55(e). However, ISEG does not consider that these deficiencies involve the same type of breakdown as those found by LP&L QA concerning the first four systems.

II. Issue - LP&L did not know whether its QA program was being implemented.

A. Review

ISEG reviewed approximately 1020 documents which included the following:

- 1) documentation associated with audits conducted by LP&L of CE, Ebasco, and other contractors from 1974 to 1977,
- 2) documentation associated with site audits during 1974-1977,
- 3) documentation associated with other audits the results of which were reported to LP&L 1974-1977.

The Torrey Pines Technology (TPT) Report was reviewed and in particular the conclusion regarding Task A of the report as it relates to quality assurance.

B. Results

The 1974-1977 audits and surveillances were examined for conformance to the in place programmatic requirements, the management of corrective action recommendations, the management of the auditing process, and the level of management involved in the auditing process. The audit and surveillance matrix included

as attachment II-1 displays the considerable amount of Quality Assurance documents within the time frame of interest.

The programmatic requirements from 1974 to 1977 are shown as attachment II-2. This group of commitments, approved by the Atomic Energy Commission, was commonly known as the "Green Book". LP&L included AEC Regulatory Guides (AEC position on ANSI standards) as a further commitment. Since the LP&L QA requirements encompassed those of all supplying organizations, corporate QA and field QA conducted a program audit to assure that supply organizations were aligned with the program requirements. The LP&L auditing process was carried out according to documented procedures and accepted standards. Requests for corrective action were from the executive (Vice President) level of LP&L management. This resulted in effective and timely reply to deficient areas identified in audits. Reaudit was performed in areas where the supply organization response to corrective action was deemed insufficient. As a check on internal QA effectiveness, joint audits of the LP&L QA program were conducted by other members of the Middle South System. Again, corrective actions were performed and transmittals were routed through appropriate levels of management.

LP&L delegated a portion of its auditing and surveillance responsibilities to Ebasco QA while maintaining overall authority of the program. It should be noted that during this time frame

Ebasco generated the majority of QA documents. When these were examined by ISEG certain questions and corrective actions were noted concerning Ebasco's QA activities.

- (1) During the time in question, Ebasco transmitted requests for corrective action from the QA Supervisor level. This met Ebasco's program requirements and was usually effective. It should be noted that after this time period Ebasco installed a manager of QA onsite primarily due to a request from LP&L.
- (2) For Ebasco surveillances during 1974 and for Ebasco site contractor audits during 1974 and 1975, Ebasco's program did not require distribution of the reports to LP&L if no findings were noted. During this period, LP&L's QA audits sampled Ebasco audits including those without findings. Since this time period, LP&L QA has received all Ebasco QA reports. This was a required corrective action.
- (3) Ebasco surveillances with findings were closed (i.e., acceptable corrective action performed) without supporting documentation during 1975. On the surveillance index, "Closed" was written and no explanation offered. LP&L QA corrected this situation in 1976 by requiring supporting documentation be available for "Closed" findings.

(4) Some Ebasco surveillance findings in 1976 for routine items (such as a tag missing from a piece of stored equipment) were not closed until 1980. Closure was accomplished by an LP&L audit of Ebasco QA activities. The LP&L QA program was able to go in and find minor Ebasco QA deficiencies that had been essentially forgotten, point them out, and correct them even though some time had passed. Our review indicates that this variation in the program did not have an adverse effect on quality.

A large area of auditing during the 1974-1975 time frame involved Ebasco corporate Quality Assurance. Areas investigated were NRC inspections of Ebasco corporate QA, Ebasco QA management Audits and Ebasco vendor audits. The corrective actions initiated by NRC inspections of Ebasco QA were answered under the direction of the Ebasco Vice President-Nuclear and were appropriately answered in a timely fashion.

In the area of management audits, Ebasco's internal check of its QA program effectiveness, actions on findings were adequately resolved on an upper management level and appropriate corrective actions were performed.

Ebasco corporate QA had a strong program of vendor auditing. Ebasco carried this out through the procedures generated out of its NRC approved QA Topical Report ETR-1001. Vendors who would not respond to corrective actions were informed that they would not appear on the approved vendor list.

Re-audit was conducted to assure that the corrective actions were performed and to assure vendor programs were being maintained.

Continuous monitoring of Ebasco site QA by LP&L and a strong Ebasco corporate QA program resulted in a positive improvement in Ebasco's site program.

In summary, LP&L's QA program has displayed sufficient oversight of supplier QA and no programmatic deficiencies have been noted. The auditing process has been properly carried out and brought to management's attention. LP&L QA has corrected itself and its suppliers when required, and it has met or exceeded the base line requirements of quality assurance.

Task A in the TPT report was a design procedure review to determine if the system design control processes used by Ebasco, Dravo, Bergen-Patterson, and Combustion Engineering (CE) were adequate.

TPT was to determine the portions of the Emergency Feedwater System (EFS) constructed by each organization, whether the proper design control procedures were in place, and whether these procedures complied to appropriate design requirements. The following method was employed to carry out this task:

- 1) A written procedure was developed to use in performing the task.
- 2) A design control process description for construction of the EFS was prepared.
- 3) A comparison was made of CE procedures used for Waterford 3 to those used for either the San Onofre or Palo Verde plants (which were previously reviewed by TPT).
- 4) Procedures and manuals used for EFS construction were obtained from CE, LP&L, Dravo, Bergen-Patterson, and Ebasco for evaluation.
- 5) Check sheets that included the requirements for procedure and manual content were developed. These check sheets were used during the review of each document.
- 6) EFS design work was evaluated for conformance to commitments in the PSAR as amended.
- 7) Design control procedures applicable in time periods other than the then current PSAR revision were reviewed for compliance to the then current PSAR commitments.

The efforts by TPT in accomplishing Task A fulfilled the objectives of the task and the method in performing the task was appropriate. No

potential findings were issued by TPT during the review performed on this task. Based on the review performed in Task A, it concluded that LP&L, Ebasco, CE, and Bergen-Patterson each had control procedures in place during the design of the Emergency Feedwater System which satisfied the commitments in the PSAR.

III. Issue - LP&L did not take appropriate action on independent QA consultants report.

A. Review

The 1979 Management Analysis Company (MAC) report, recommendations, corrective actions taken since the report was issued, and associated documentation were reviewed. Appropriate personnel were also interviewed. The purpose of the 1979 MAC study which involved 30 mandays of work was to recommend, advise, and report areas of construction monitoring and supervision that LP&L staff members should be devoting time to at that time and in the future.

B. Results

The 1979 MAC report is included as attachment III-1.

The following are MAC recommendations followed by the LP&L response or action as found by this review.

1. LP&L should acquire additional manpower in the QA area in order to:
 - a. audit critical activities such as cable pulling, welding, hanger/snubber work, etc.

- b. provide more coverage in the field
- c. ensure that contractor QA records are in auditable and "buyable" order.

Response: LP&L has increased its authorized QA staffing from a level of 10 at the time of the MAC report to the present level of 28. LP&L QA also has 16 contract employees currently on its staff.

Since the MAC report was issued LP&L has conducted 115 audits and 105 surveillances (as of 8/1/83) of site contractors (including EBASCO) including the following critical activities identified in the report.

	<u>Audits</u>	<u>Surveillances</u>
Cable/Cable Pulling	7	9
Welding	7	2
Piping/Hanger/Snubber Installation	2	20
QA Records	8	-

LP&L has established a surveillance group within Ebasco to follow in-process work.

LP&L QA reviews in detail approximately 10% of the turnover documentation.

LP&L has set up a task force to provide a limited scope audit of contractor activities prior to the normal turnover status review cycle. This audit has been geared as much as possible to the physical verification of equipment in accordance with design drawings.

2. LP&L should authorize Ebasco to make routine purchases within a certain limit or obtain additional personnel to assist the Project Coordination group.

Response: In accordance with project procedures in existence during the MAC study period, Ebasco was already authorized to purchase permanent plant items for ongoing construction activities. The LP&L project coordinator group continued to authorize all Ebasco purchases for temporary items (i.e., office furniture, test equipment, supplies, etc.). The Project Coordination Group staff was increased to assist in these approvals.

3. LP&L should add contract administration expertise to the Project Coordination group.
 - a. Reduce contract administration work being done by the engineers in this group.

Response: LP&L has provided additional cost control/contract administration personnel.

4. LP&L Project Coordination and QA groups should stagger their workday schedule to:

- a. Enhance the construction monitoring credibility and visibility of LP&L.
- b. Insure continuity of work accomplishment.

Response: LP&L considers that staggering the workday would not significantly enhance either the quality or quantity of work accomplished.

5. LP&L should evaluate the manpower need in Ebasco's Contract Administration and Planning Scheduling Sections.

Response: LP&L monitors the Ebasco site organization and evaluates each Ebasco request for additional manpower. LP&L established procedures to require LP&L approval for all personnel additions for Ebasco.

6. LP&L should ascertain if Ebasco code can be used on future projects.

Response: The planning and scheduling computer code was developed by Ebasco for the Waterford 3 startup program and was utilized from 1978 to 1981. In 1981, LP&L made the decision to abandon the Ebasco program in favor of the Middle South Services

Project 2 system which is currently in use. The Project 2 system will also be used in outage planning and scheduling once the startup program is completed.

7. LP&L should gain a better understanding of Ebasco's work which reflects project performance in the area of planning, scheduling, productivity, performance, percent complete, variance, etc.

Response: LP&L has added additional personnel and has improved its understanding of Ebasco's production work.

- 8-9. LP&L should have a comprehensive understanding of the positions and strategy taken by Ebasco and contractors and the inputs utilized to develop these. LP&L should closely monitor Ebasco and contractors in design changes, resolutions of interference, and verification of total plant design completion.

Response: LP&L has increased its Waterford 3 project staff. LP&L has located much of the additional engineering manpower at the Waterford 3 site to ensure a proper understanding of the positions and strategies of Ebasco and to increase LP&L involvement in engineering decisions. Additional LP&L manpower has been devoted to reviewing the as-built system and to verify the total plant design completion.

10. LP&L should authorize all personnel additions for Ebasco, particularly for Ebasco Site Support Engineering.

Response: LP&L has established procedures requiring LP&L approval for all personnel additions for Ebasco.

- 11-12. An LP&L electrical engineer should become totally immersed in cabling and cable pulling. Cable pulling should be monitored by LP&L whenever it is in progress.

Response: LP&L does not concur with the MAC recommendation. Ebasco and LP&L audit and monitor subcontractors involved in cable pulling, and LP&L audits Ebasco's QA cable pulling program.

- 13-14. LP&L should ascertain the reason for pipe and pipe associated delays and lay the basis for legal delay-of-project completion claims.

Response: The MAC report did not specifically identify pipes awaiting work. An effort to identify the items prompting MAC's recommendations was unsuccessful. LP&L is continuing its efforts to determine the reason for construction delays and to institute delay claims where appropriate.

15. LP&L QA and Project Coordination should monitor and LP&L Engineering should resolve problems associated with:

- a. Mechanical installation - hangers, snubbers, embed, Class 1 piping, etc.
- b. Welding

- c. Tying onto existing rebar
- d. Cable pulling

Response: As reported in the responses to recommendations 1, 8 and 9, LP&L has increased its support staff at the Waterford site. The regular audits and surveillances continue to be conducted by LP&L and engineering involvement has been increased.

16. LP&L should evaluate spare parts status.

Response: LP&L is continuing to monitor and audit spare parts procurement. LP&L contracted with Stone and Webster Engineering Corporation and with Burns and Roe to assist in the evaluation and management of the spare parts program.

17. It would be beneficial for LP&L Project Coordination and LP&L QA to maintain physical separation at the site.

Response: The various groups are stationed at several different locations where they can best perform their function.

18. LP&L should strive to have more of the permanent Waterford 3 staff actively participating in startup.

Response: LP&L instituted an aggressive program to actively involve permanent Waterford 3 personnel in startup functions, e.g. hot functional tests, system turnover, etc.

19. LP&L should confirm that a reasonable return is being realized for the dollars being spent for startup consultants.

Response: LP&L continuously reviews utilization and cost of consultants.

- 20-21. The LP&L Waterford 3 Project Manager should consider establishing an office at the site and should become more conversant with problems from a participation-in-site-activities standpoint. The LP&L Waterford 3 Project Manager should have a higher level of approval authority and should be provided the authority to approve expenditures that have been budgeted to that of the cognizant executive.

Response: The Waterford 3 project staff has been extensively reorganized several times since the 1979 MAC report. At present, the Senior Vice-President-Nuclear Operations is located on site resulting in Senior Managers becoming more conversant with problems from a participation-in-site-activities standpoint. He has appropriate fiscal authority.

22. Participation in public relations activities by the Waterford 3 Project Manager and Engineering Manager should be reduced.

Response: Senior Nuclear Managers do not routinely participate in public relations activities.

It was found as a result of this review that LP&L has taken appropriate corrective actions concerning MAC's recommendations. It should be noted that the MAC report dealt minimally with QA issues. These were addressed by LP&L.

IV. Issue - Errors in design assumptions by Ebasco.

A. Review

Harstead Engineering Associates (HEA) is providing an independent review of the design adequacy of the basemat. To date, LP&L has received HEA Report No. 8304-1 "Waterford III SES Analysis of Cracks and Water Seepage in Foundation Mat". This report was reviewed for information. This initial report dealt with concrete cracks and water seepage problems. An additional Harstead report will cover the design adequacy of the basemat.

B. Results

A copy of the Harstead report is included as attachment IV-1. This report concludes that no evidence was found of any process which has been or could be detrimental to the structural integrity of the foundation mat. Results concerning the design adequacy of the foundation mat is due to be issued by HEA on October 15, 1983.

LP&L will develop a program to implement the recommendation noted in Sections 8.4 and 10.1 of the initial report.

V. Issue - LP&L 1974 Audit of CE found that CE was not in compliance with LP&L's "new" QA program requirements. Ebasco 1976 audit of CE identified problems with CE compliance with LP&L's "new" QA requirements for records.

A. Review

ISEG reviewed documentation associated with the LP&L 1974 audit and the Ebasco 1976 audit of CE for programmatic requirements. ISEG also reviewed the LP&L/CE contractual dispute as it relates to Quality Assurance and the Gambit articles. Approximately seventy-five (75) documents were reviewed.

B. Results

Copies of the 1974 and 1976 audits of CE described above are attachments V-1 and V-2 respectively.

The LP&L 1974 audit findings were addressed by CE and the findings were closed by a re-audit on December 1, 1975. The Ebasco 1976 audit findings concerned CE Chattanooga storage facility for QA records. Our review indicates that CE replied to the 1976 findings on April 12, 1977. The 1976 findings, however, were not formally re-audited at a later date by Ebasco. LP&L conducted an audit of CE's Chattanooga facility during May 5-7, 1981 for collection, storage and maintenance of QA records and had no findings.

Also, during the week of September 26-30, 1983, LP&L QA conducted an audit of the CE Chattanooga facility. This included a re-audit of the types of findings identified in the December 1976 audit, an audit of the physical condition of LP&L's records, and an overall audit of the records management system. LP&L QA considers the CE Chattanooga records management system and the present physical condition of the LP&L records to be satisfactory.

The CE Quality Assurance Manual was updated from the requirements of 10CFR50 Appendix B in 1974 to include recommendations of Revision 0 and Revision 1 of the Atomic Energy Commission WASH-1283 "Gray Book" and American National Standards Institute (ANSI) standards. Since the time that LP&L committed in 1974 to implement the Regulatory Guides and ANSI Standards listed in PSAR Amendment 44, sixteen (16) QA audits of CE have been performed by LP&L/Ebasco for compliance. It is through these audits that LP&L/Ebasco ensured that the QA program covered LP&L PSAR commitments and was implemented by CE.

A letter from CE to Ebasco dated November 10, 1976 states that CE followed 10CFR50 Appendix B, ANSI 45.2-1971, and the "Gray Book" Revision 0 and Revision 1 for Waterford 3 equipment. Also in a May 31, 1977 CE to Ebasco letter, CE states that it has proceeded in good faith to perform the engineering, purchase and manufacture of equipment for Waterford 3 in accordance with

quality requirements in excess of those in the contract, as LP&L had committed to these increased requirements in the PSAR.

In conclusion, the CE QA program met LP&L PSAR (Amendment 44) commitments and there are no program deficiencies as a result of this review. The question was not QA program implementation, but financial responsibility for that program. It was a case of contract "hardball" as CE believed the increased QA costs were not covered under the contract and LP&L believed that they were. This question was resolved in 1978 by a formal change to the contract with CE.

SUMMARY OF WATERFORD SES UNIT 3
AUDITS AND SURVEILLANCES

	Y	E	A	R	W-3	NY	CE	NY	INTERNAL	VENDOR	OTHER	AUDIT	SURV	AUDIT	SURV	AUDITS	AUDIT	SURV	LP&L	EBASCO	T
	INSPECTIONS	DF		EBASCO	NY	CE	NY	INTERNAL	VENDOR	OTHER	AUDIT	SURV	AUDIT	SURV	AUDITS	AUDIT	SURV	LP&L	EBASCO		
1971	1					2	1														4
1972	3					4	4								5			1			17
1973	6					3	5								19			2			35
1974	4					3	3				3				19			2			34
1975	10		2	1	1	2	5	6		53	11	58	14	18				2			182
1976	11		3	3	3	3	2	2	2	56	44	163	16	7				2			304
1977	14		3	1	2	2	1	0	1	44	34	260	40	89				2	1		492
1978	16		2	2	3	3	3	0	3	32	35	285	105	62				1	1		550
1979	17		4	1	2	4	4	3	2	35	44	393	108	40				2	1		657
1980	36		3	1	1	2	2	1	2	35	17	226	104	49				1	2		510
1981	32		3	1	1	3	3	3	2	30	16	183	62	73				1	1		411
1982	30		1	1	1	3	12	1	1	32	50	235	232	15	8			1	1		621
1983	19		0	0	1	1	7	1	1	2	10	116	98	39	26	56	0	1			378
TOTAL	199		21	23	29	24	34	14	14	322	261	1921	779	433	34	56	17	8			4193

ATTACHMENT II-1

QA COMMITMENTS

Regulatory Guide 1.37 3-16-73
Regulatory Guide 1.38 3-16-73
Regulatory Guide 1.39 3-16-73
Regulatory Guide 1.54 6-73
Regulatory Guide 1.58 8-73
Regulatory Guide 1.74 2-74

OUTLINE OF QA GUIDANCE RELATED TO THE CONSTRUCTION PHASE (COMMITMENT)

Appendix "B" to 10CFR50

Section 50.55a of 10CFR50

Safety Guide 28 6-7-72

Safety Guide 30 8-11-72

ANSI N45.2.5, Draft 3, R1, 1-74

ANSI N45.2.6, 1-25-73

ANSI N45.2.8, Draft 3, R3, 4-74

ANSI N45.2.9, Draft 11, Rev. 0, 1-17-73

ANSI N45.2.9, Draft 15*, Rev. 0, 4-3-74 *7 chf*

*(Not Committed to Draft 15)

ANSI N45.2.12, Draft 3, Rev. 4, 2-22-74

ANSI N45.2.13, Draft 2, Rev. 4, 4-74

Regulatory Guide 1.70.xx, Draft 2, 4-25-74

Comments and Guidance (N45.2.5 and N45.2.13)

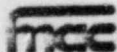
ANSI N101.2, 5-30-72

ANSI N101.4, 11-28-72

ANSI N45.2.1, 2-26-73

ANSI N45.2.3, 3-15-73

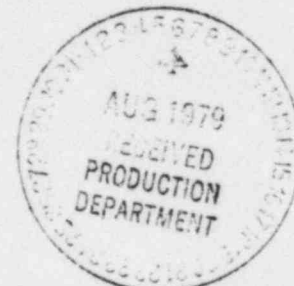
ATTACHMENT II-2



Management Analysis Company
11100 Roselle St., San Diego, CA 92121
714/452-1391

July 31, 1979

MAC-GNB-1327



Mr. Don Aswell
Louisiana Power & Light
142 Delaronde
New Orleans, LA

Dear Don:

Enclosed is the draft report of MAC's study of LP&L's construction monitoring activities of the LP&L Waterford 3 project.

MAC recognizes the difficulty in providing or maintaining appropriately qualified nuclear power plant construction and startup personnel. However, the provision of this expertise now will save future LP&L Waterford 3 construction dollars far and above the current costs of such expertise. An electrical engineer dedicated to cable pulling should be added to site staff.

MAC feels that presence in the field really saves the owner's dollars in the long run. MAC feels it is mandatory for LP&L to develop a better understanding of the numbers and inputs generated by Ebasco which impacts and reflects in the areas of planning, scheduling, productivity, performance, and percent completion variance. LP&L needs to assure it is getting maximum return for minimum dollars spent - assurance of this is possible by providing planning/scheduling/controls expertise.

LP&L should closely monitor:

- Mechanical installation concentrating on hangers, snubbers, embeds and Class I piping installations.
- Welding, especially of Class I installations.
- Tying into existing rebar.
- Cable pulling.

Please contact me or Ron Stinson for discussion or clarification of items herein.

Best regards,

A handwritten signature in cursive script, reading 'George N. Brown'.

George N. Brown

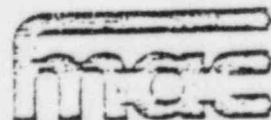
GNB:kr
enclosure

LOUISIANA POWER & LIGHT - WATERFORD 3
CONSTRUCTION MONITORING

CONFIDENTIAL DRAFT

This is final report.

July 31, 1979



MANAGEMENT ANALYSIS COMPANY
11100 ROSELLE STREET
SAN DIEGO, CALIFORNIA 92121

INTRODUCTION

Louisiana Power & Light Company (LP&L) retained Management Analysis Company (MAC) to perform a thirty-day study of LP&L's monitoring of construction of their Waterford 3 Nuclear Plant. The purpose of the study was to recommend, advise, and report areas of construction monitoring and supervision that LP&L staff members should be devoting time to now and in the future.

In accomplishing this study, MAC met with and interviewed LP&L Waterford 3 construction personnel to discuss and assess their duties in relation to work being done, work to be done, schedule, manloading, organization and other related areas, and to evaluate the current state of construction of the Waterford 3 Project. Attachment 1 lists LP&L site personnel interviewed and Attachment 2 lists EBASCO and Contractor personnel with whom brief discussions were held. These brief discussions occurred when personnel were encountered in the halls, in meeting rooms and during site inspections - however, no formal meetings or interviews were held per LP&L instructions attendant to this study.

MAC attended daily and weekly site meetings routinely held among LP&L, EBASCO and contractor personnel and made inspections and tours of the site to observe activities in process and view construction completed to date.

After careful analysis, assessment and review of these discussions, interviews, meetings and site inspections and tours and factoring MAC's experience with other nuclear construction projects into the LP&L Waterford 3 Project, MAC hereby submits the following observations and recommendations.

OBSERVATIONS & RECOMMENDATIONS

1. In MAC's opinion, as an aftermath of Three Mile Island, the NRC will significantly increase the owner technical staffing requirements prior to issuance of any new operating licenses. As indicated in MAC's diagnostic two years ago, LP&L has an extremely lean technical staff. LP&L is monitoring the construction of the Waterford 3 Nuclear Project with four engineers and one technician.

MAC is not aware of any other nuclear project in this country wherein construction is being monitored by few as owner individuals. The personnel comprising the Project Coordination and QA groups for LP&L at the Waterford 3 site are hardworking, dedicated and loyal individuals. In spite of these traits, these personnel cannot, in MAC's opinion, adequately cover those facets of construction monitoring that should be covered to ensure LP&L is receiving appropriate performance for the dollars being expended. Further LP&L is missing an opportunity to have key technical personnel become familiar with the physical plant.

The individuals in the Project Coordination group and the QA group work closely with each other, cooperate with each other and essentially look out for each other. The QA group overall is strong in MAC's opinion, but few in number, and it appears by and large to be doing a satisfactory job in the areas it is able to effectively cover. Since the work the QA group is now doing should be increased, it is MAC's recommendation that additional manpower be obtained. LP&L should monitor, audit and watch all of the critical activities such as cable pulling, welding, hanger/snubber work, etc., as they are accomplished at the site. The additional personnel could be technicians or junior engineers. They would work with the QA electrical, mechanical and I&C engineers, thereby permitting more coverage in the field and, of course, providing additional manpower for covering the around-the-clock work that lies ahead. Additional QA manpower should be applied to ensure Contractor QA records are in auditable and buyable order.

2. The engineers of the Project Coordination group spend most of their time paper processing and attending meetings. They desire to spend more time in the field, but they cannot. If LP&L desires to effectively monitor and control the cost of construction of Waterford 3, and develop technical physical plant expertise, then the paperwork and meetings must be reduced and additional technical manpower must be added.

MAC recommends LP&L authorize EBASCO to make routine purchases within a certain limit (\$5,000?); however, if LP&L desires to continue reviewing and signing all purchase orders, then additional manpower should be obtained. Specifically, one non-technical individual could process routine administrative purchase orders.

Similarly, MAC recommends LP&L add contract administration expertise in the form of one individual to work with all the engineers in the Project Coordination group, thereby reducing the "formal" contract administration work currently being done by the Project Coordination engineers. The engineers have to be involved in this work, but they should not be "contract administrators" to the extent of being so occupied in the office that problems in the field are not recognized and corrected (or halted) before they reach costly magnitudes. The engineers' involvement with this contract administration work should center around verifying the field situation or "status" and not researching contract history. LP&L, in some instances, is incurring more cost because hold ups in the field are occurring when paper has not been processed by either LP&L or EBASCO. The field must receive answers to their valid inquiries and questions on a more timely basis - hours and days rather than days and weeks.

3. A more prompt starting of the work day in high gear and with full vigor would be of benefit. This also would enhance the construction monitoring credibility and visibility of LP&L in the eyes of EBASCO. If individuals of the LP&L Project Coordination and QA groups could stagger their schedule so that consistent arrival, overlapping graveyard and day shift, and days and swing shift occurred, then LP&L could more ably help instill continuity of work accomplishment from shift-to-shift in addition to sparking more credibility and visibility.
4. An EBASCO staffing evaluation was not made; however, it appears that the EBASCO Planning and Scheduling Department is heavy with people as well may be EBASCO Contract Administration Department. LP&L has paid EBASCO a significant amount of money to develop a planning and scheduling computer code. LP&L should take steps to assure maximum return from EBASCO usage of this code. Hopefully, LP&L has the rights to the code and can utilize it for future projects. LP&L should verify the number of personnel in planning/ scheduling/control and contract administration are really required, and make any necessary adjustments.
5. It would be very worthwhile, and in MAC's opinion certainly mandatory, to develop a better understanding of the numbers and inputs generated by

EBASCO which reflect project performance in the areas of planning, scheduling, productivity, performance percent complete, variance, etc. These are the significant data used to justify changes (usually increases) in organization, manpower, additional shifts of work, overtime, etc. All of these, of course, directly affect cost. MAC recommends LP&L provide a planning, scheduling and controls sort of individual to work in the Project Coordination group to become intimately conversant with EBASCO planning, scheduling, and cost control tracking, evaluation and projections. This will provide LP&L the necessary information to assist in making critical decisions. This individual could also lend insight into the applicability of staffing in these areas as suggested in 4. The existing LP&L Project Coordination and QA personnel do not have this sort of expertise (nor do they claim to have it). It is MAC's opinion that LP&L should have the expertise to fully understand the origin, logic, and rationale of project control information.

6. It is beneficial to LP&L at this time that EBASCO has been able to staff with several very competent individuals who by their nature will attempt to serve the owner's interest while still serving EBASCO's interests, while accomplishing the work. However, there are potential conflicts of corporate interests, and LP&L is paying the total bill. Hence, in MAC's opinion, the need is paramount for a comprehensive understanding of positions and strategy taken by EBASCO and Contractors and the inputs utilized to develop these.

LP&L should also be exercising influence to keep the competent EBASCO people now on Waterford 3, and should lose no opportunity to encourage EBASCO to provide more of the same. However, LP&L should be exercising approval authorizations for EBASCO additions to the EBASCO-Waterford 3 staff, especially in the case of ESSE, which will be increasing its staff to a rather large size unless appropriately controlled.

Waterford 3 is rapidly approaching the stage where construction will be moving from bulk installation to system control. This is the ideal time to have LP&L engineering become more involved in the physical plant. In light of Three Mile Island, it will be imperative the owner demonstrate technical

competence over the physical plant. The presence or participation of LP&L Engineering in all site engineering matters should be increased. LP&L Engineering should be closely monitoring EBASCO and Contractors in design changes, resolution of interferences, and verification of total plant design completion so that construction is not held up because of the lack of it. LP&L Engineering should be participating in verification of EBASCO/ Contractor engineering inputs in the areas of planning, scheduling, and control on a spot-check or greater basis, as appropriate. MAC suggests that a very competent LP&L electrical engineer become totally immersed in cables and cable pulling. Such an individual could have caught and prevented some of the existing cable pulling problems. The sooner LP&L supplies such an individual to "drive" EBASCO and the electrical contractor, the better for LP&L in the long run. With the amount of electrical conduit and cable trays installed in the plant, cable pulling should be proceeding as rapidly as possible. Along with resolving the problems associated with cables already pulled, the previously mentioned LP&L electrical engineer, dedicated to cables, could help insure that future pulls are satisfactorily accomplished. MAC also feels cable pulling should be covered by LP&L whenever it is in process. This coverage could be accomplished by QA technicians or a combination of technicians and engineers.

Cable pulling could become the significant item delaying startup, and it is evident that an additional driving force and monitoring activity is appropriate to push the work and prevent critical delays. EBASCO and the contractor need to be driven and forced to correctly do the work.

2. In some areas of the plant pipes have been in "stubbed-out" condition for some time awaiting either manpower, materials, hanger installation, or other activity. Likewise, several slabs have cured and are awaiting continuing work. LP&L Project Coordination should ascertain the reason for the delay and make certain EBASCO is not inadvertently holding or refraining from work on these. LP&L Engineering should determine if Dravo or EBASCO Engineering is responsible for the lack of pipe and pipe-associated materials, and lay the bases for legal delay-of-project-completion claims that should not be to the account of LP&L.

LP&L QA and Project Coordination should closely monitor and LP&L Engineering should assure resolution of problems associated with the following:

- Mechanical installation, concentrating on hangers, snubbers, embeds and Class I piping installations.
- Welding, especially of Class I installations.
- Tying into existing rebar
- Cable pulling (as previously mentioned, an electrical engineer is recommended to be dedicated to this effort.)

10. NRC site relations appear to be very good, stemming primarily from the credibility which LP&L Site QA has achieved. This credibility will start to erode, however, unless EBASCO and Contractor QA/QC records are placed in auditable, "buyable" order so that NRC audits of same are successfully accomplished. LP&L QA must "drive" this effort with emphasis upon EBASCO vendor quality assurance activities and EBASCO/Contractor site records.

11. It would be beneficial for LP&L Project Coordination and LP&L QA to maintain physical separation at the site.

12. LP&L should evaluate and ascertain that spare parts are being properly purchased in quantity and quality and that proper certifications and traceability exist.

13. LP&L should strive to have more of the permanent Waterford 3 staff actively participating in startup as is possible. Further, LP&L should confirm that a reasonable return is being realized for the dollars being spent for startup consultants.

14. The LP&L Waterford 3 Project Manager should consider establishing an office at the site and should become more conversant with problems from a participation-in-site-activities standpoint. The Project Manager should also have higher level of approval authority and he should be provided the authority

to approve expenditures that have been budgeted equal to that of the cognizant executive.

5. Participation in public relations activities by the Waterford 3 Project Manager and Engineering Manager have been beneficial. However, continued participation should be decreased so that more time can be spent in their titled work.

ATTACHMENT I

LP&L site personnel interviewed

1. LP&L Project Coordination

Cesir Decareaux	Manager
Paul Jackson	Electrical
Bob Gautreau	Mechanical

2. LP&L Quality Assurance

Tom Gerretts	Manager
Ben Brown	Mechanical
Jim Woods	Electrical
Cliff Chatelain	I&C
Barry Toups	Technician

3. LP&L Startup

Tom Armington	Manager
---------------	---------

ATTACHMENT II

Site personnel with whom brief discussions were held. These personnel were encountered in the halls, in meeting rooms, and during site inspections. No formal meetings or interviews were held.

1. EBASCO

Bob Stampley
John Crnich
Bob Milhiser
John Wills
Larry Stinson
Bob Zaist
Bill Arden
Marty Soniker
Sam Kalat
Bill Hubrich

Project Manager
Site Manager
Project Superintendent
Construction Superintendent
Quality Assurance Manager
Area Superintendent
Area Superintendent
Construction Control Superintendent
Contract Administrator
ESSE Manager

2. Tompkins-Beckwith
Chuck Beatty
Bob Caudell

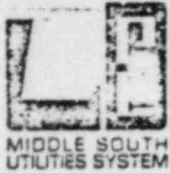
General Superintendent
Chief Engineer

3. J. A. Jones
Marty Woolery

Resident Engineer

4. EXXON
Jim Nickle

Manager, EXXON Site Group

**LOUISIANA**

POWER & LIGHT / 142 DELARONDE STREET • NEW ORLEANS, LOUISIANA 70174

July 29, 1974

LPL 3226

Q-3-A35.02.04

Mr. L. J. Weber
Ebasco Services, Inc.
Two Rector Street
New York, New York 10006

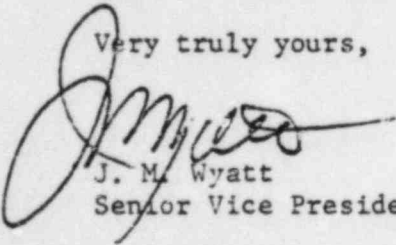
SUBJECT: WATERFORD SES UNIT NO. 3
AUDIT OF COMBUSTION ENGINEERING, INC.
WINDSOR, CONNECTICUT JULY 11 AND 12, 1974

Dear Mr. Weber:

Attached is the report of the subject audit. Two non-conformances were found within the scope of this audit.

Section No. 4 of the "Non-Conformance Reports" should be used by CE-Windsor for corrective action replies to LP&L. Response is requested within thirty days of their receipt of this letter.

Very truly yours,



J. M. Wyatt
Senior Vice President

JMW:REH:gmw

Attachments

cc: Ebasco (5), J. M. Brooks, L. M. Elliott, D. L. Aswell, L. V. Maurin,
A. E. Henderson, D. B. Lester, C. G. Chezem, M. Stevenson, H. W. Otilio,
P. V. Prasankumar, L. Biondolillo, F. X. Shaughnessy

LOUISIANA POWER & LIGHT COMPANY

WATERFORD SES UNIT 3

QUALITY ASSURANCE AUDIT REPORT

1. Report No. : 74-2
2. Date: July 11 and 12, 1974
3. Audit Performed At: Combustion Engineering, Inc.
4. Location: Windsor, Connecticut
5. Audit Performed By: A. E. Henderson and R. E. Hastings
6. Audit Scope:
 - a. Open items from previous audits
 - b. Implementation of CE's response to AEC 62 QA Questions as contained in Amendment 44 to PSAR.
 - c. Items on "Future Audit Items Summary" List
7. Persons Contacted During Audit:
 - a. Pre-Audit - A. L. Gaines - Project Manager
 - b. Audit - A. L. Gaines - Project Manager
R. M. Keller - Licensing
T. R. Swift - GSQA Supervisor
G. Requa - Design QA Manager
W. E. Medinger - Manager Group QA
J. C. Packard - GSQA
B. Kaplan - GSQA
 - c. Post-Audit - A. L. Gaines - Project Manager
R. M. Keller - Licensing
T. R. Swift - GSQA Supervisor
G. Requa - Design QA Manager
J. C. Packard - GSQA
B. Kaplan - GSQA
8. Summary of Audit Results:
 - a. General

CE personnel involved in this audit were cooperative and helpful.
 - b. Evaluation of QA Program based on elements audited

CE's QA activities at Windsor were generally found to be adequate. Two Non-Conformances were found.

9. Non-Conformances:

Number

74-2/1

74-2/2

10. Status of Previous Non-Conformances:

Number

Description

73-1/2

Not Audited - Remains Open

73-1/6

Procedure for Record Retention issued but has not been implemented - Remains Open

73-1/7

"Approved Sheet" included in Revision 3 of MPI-18.
Item Closed.

A. E. Henderson 7-30-74 A. E. Henderson 7-30-74 Impato 7/30/74
AUDIT TEAM LEADER DATE Q.A. MANAGER DATE MANAGEMENT DATE
M. L. H. H. 7-30-74
OBSERVER DATE

7/2/74

NON-CONFORMANCE REPORT

Date of Audit: July 12, 1974 Report No. 74-2
Company Audited: Combustion Engineering Non-Conformance No. 74-2/1
Location of Audit: Windsor, Connecticut Requirement: Q8, Amend 44; PSAR
Company Escort: A. Gaines Discussed with: Gaines, Requa, Swift, Packard, Keller, Kaplan and Medinger

The following Non-Conformance is brought to your attention for appropriate corrective action including action to prevent recurrence. Please indicate corrective action in the space provided below. In the event that corrective action cannot be completed within thirty days, include the scheduled date for completion of corrective action. Return this form to sender within ____ days.

2. Description of Observation:

1. Objective evidence lacking to show management direction in meeting the intent and guidance on AEC Regulatory Guides 1.30 (ANSI 45.2.4), 1.31, 1.37 (ANSI 45.2.1), and 1.38 (ANSI 45.2.2). 2. CE has not responded to commitment made in LW3-754-73.

3. Recommendation by Auditor:

Management should direct those responsible within CE to meet the intent and guidance of those mentioned Regulatory Guides and to document the implementation. Also response to commitments made in LW3-754-73.

Auditor(s) Signature: *A. E. Henderson* *R. E. Hastings* Date 7-12-74
Acknowledged by: Signed by A. L. Gaines Title: Project Manager Date 7-12-74

4. Corrective Action Reply:

Scheduled Date of Corrective Action: _____
Reply made by: _____ Title: _____ Date _____

5. Corrective Action Evaluated and Confirmed.

Closed by: _____ Date _____
(Signature)

NON-CONFORMANCE REPORT

7/9/74

Date of Audit: July 12, 1974 Report No. 74-2
Company Audited: Combustion Engineering Non-Conformance No. 74-2/2
Location of Audit: Windsor, Connecticut Requirement: Q7, Amend 44 PSAR
Company Escort: A. Gaines Discussed with: Keller

The following Non-Conformance is brought to your attention for appropriate corrective action including action to prevent recurrence. Please indicate corrective action in the space provided below. In the event that corrective action cannot be completed within thirty days, include the scheduled date for completion of corrective action. Return this form to sender within ____ days.

2. Description of Observation:

Observed procedure for preparing positions on Regulatory Guides. Evidence of methods to implement procedure are lacking.

3. Recommendation by Auditor:

Document implementation of procedure.

Auditor(s) Signature: A. E. Henderson, Jr. R. E. Hastings Date 7-12-74
Acknowledged by: Signed by A. L. Gaines Title: Project Manager Date 7-12-74

4. Corrective Action Reply:

Scheduled Date of Corrective Action: _____

Reply made by: _____ Title: _____ Date _____

5. Corrective Action Evaluated and Confirmed.

Closed by: _____ Date _____
(Signature)

EBASCO SERVICES

INCORPORATED

UTILITY CONSULTANTS - ENGINEERS - CONSTRUCTORS

TWO RECTOR STREET
NEW YORK, N.Y. 10006

CABLE ADDRESS "EBASCO"

04
Q-3-A35.02.18
AUDIT 12/15-17/76March 3, 1977
LW3-402-77 ✓
File: 1-Q-2

Mr W D Mawhinney, Project Manager
Combustion Engineering, Incorporated
Nuclear Power Department
1000 Prospect Hill Road
Windsor, Connecticut 06095

Re: LOUISIANA POWER & LIGHT COMPANY
WATERFORD SES UNIT NO. 3
QUALITY ASSURANCE AUDIT
CE-CHATTANOOGA

Dear Mr Mawhinney:

Attached is a copy of the report on the subject audit. The report identifies several nonconformances as well as items of concern which the auditors found during their review of records and the records management system. As indicated in the last section of the report, we are requesting a written response to these items within thirty (30) days of receipt of the report.

If there are any questions, please contact D N Galligan (212) 785-6208.

Very truly yours,

RK Stampley/gjpm
R K Stampley
Project Manager

RKS/DNG:mn

cc: W D Mawhinney (2)
D I Aswell J O Booth (2)
L V Maurin W O LaPointe
A E Henderson
D B Lester
P V Prasankumar
Power Production Department-Nuclear (3) ✓
H W O'illio
T F Gerrets
C G Chezem
L E Shackford
W K Combs
R W Kammann
J M Brooks

FOR INFORMATION ONLY



On December 15 through 19, 1976 inclusive, Ebasco and Louisiana Power and Light Company conducted an audit at C.E. Chattanooga Mfg. facility. Certain records, pertaining to Waterford III Reactor Pressure Vessel, and (1) one Steam Generator together with other randomly selected items of equipment, were given an in-depth review and evaluation.

The main objectives of the audit were:

- 1) To ascertain the availability of certain records.
- 2) To assure the content and completeness of the records.
- 3) To assure that the records management system at C/E - Chattanooga was operational and met the intent of ANSI 45.2.9 and amendment #44 to the PSAR.

Audit Team Member - Mr. Ralph Hastings, Quality Assurance Engineer
Representing Louisiana Power and Light Company

Audit Team Leader - Mr. Edward J. Maloney - Principle Quality Assurance Engineer
Representing Ebasco Services Incorporated, N.Y.C.

* Part Time attendance or as required:

Representing C/E - Windsor, Conn (W) All other attendees representing Chattanooga.

Mr. John Solury - Contract, Q.A. (W)	* Mr. Robinson - Piping
Mr. Harry Milliken - Projects (W)	* Mr. Wally Reed - Chief Q.A. Chattanooga
* Mr. B J Bates - Audit Coordinator	* Mr. R.G. Kivett - Lead Q.A. Engineer
* Mr. Paul Kiefer - Q.E. Reactor Vessel	* Larry Hoenig - Design Engineering
* Mr. Jeff Andrews - Records Storage	* Don Diger - C.E. Rep at Chattanooga for LP&L Job.

Audit findings:

Non-Conformance to ANSI 45.2.9 and Combustion Engineering Procedure 17.3 Rev. C.

The auditors found inadequate implementation of requirements for record retention in the vault area, as listed below:

- a. There was no fire rating on the vault door.
- b. The environment in the vault was dusty.
- c. There was no current documented control of temperature and humidity.
(Corrective action has been taken on this item).
- d. The vault custodian was not using, nor was he aware of the latest revision of the procedure for records retention, procedure 17.3.
(He had Revision B when Revision C has been issued. He should also have reviewed Revision C.)

- e. In accordance with procedure 17.3, Revision C, the vault custodian needs to determine if he has the latest applicable manufacturer's recommendations for the storage of radiographs.
- f. There was no written procedure to detail the specifics as to who would have access to the documents in the vault; a control register for temporary withdrawal of documents and the periodic audit of the vault, its contents and control logs.

Recommendation

The auditors recommend that the vault custodian or other responsible individual examine the implementation of requirements for the retention of required records, and that appropriate action be taken to correct nonconformances, to record retention requirements.

Concerns

The definition of a concern as pertains to the audit is - an item that is not fully compliant with requirements and if not taken care of will become a non-conformance.

The following three concerns were identified during the audit:

- 1) A cover or signature approval sheet for the Quality Program Review known as 17-B, Rev. C was not available when documents were presented.
- 2) The review and approval cycle of the subject cover sheet did not bear the C.E. Quality Manager's signature.

Recommendation: It is the auditor's recommendation that an instruction or procedure be written to identify the sequential steps or flow mechanism required in the implementation of this procedure.

3) Observation or Concern (Instructions, procedures and drawings)

Those individuals who were contacted during the course of this audit could not show the auditors a procedure, letter or other document authorizing the use of the review form (review of procedures). The form allows the recipient to signify review and/or acceptance of a procedure log by not returning the form. That is, if the form is not returned within a specified time period, it indicates acceptance of the procedure. (The review/comments loop does not require a position response from the reviewer.)

- 4) The auditors noted that although the equipment has been completed and shipped to the site for some time, the associated records were not located in a centralized location, nor had any of the records been processed or stored in the vault. We were unable to establish an exact date, when the subject records would be processed and finally stored in the vault.

- a) Response requested as to storage environment of areas where records are being maintained in the interim period?
- b) Has the processing of records for storage been started at this point in time?
- c) What is the expected completion date for storage of the subject records?

Evaluation of Audits

The records and documentation for various items of equipment listed below which were randomly selected by the auditors and the subject documents reviewed to ascertain and assure that specific non-destructive examination and testing of operations and welding were accomplished, properly signed off and dated.

All of the drawings, inspection reports and other pertinent documents that were requested by the audit team were retrieved and made available for review during the audit. All documents that were checked were found to be complete and meeting their specified requirements.

All inspection, test or specially designated examination points listed on the travelers and on the reports of inspection were evidenced as having been accomplished by proper sign off and date.

A detailed list of those items that were selected, reviewed and verified as satisfactory is entitled attachment "A" to this report and will be retained by Ebasco Quality Assurance Engineering N.Y. Office

One exception to the above statement was a list of Qualified Welder Initials were copied from the Weld History Charts of the various items of equipment listed in this report. The auditors requested verification of the welder and procedure qualification which was not available prior to the end of the exit critique of the Audit.

A list of qualified welders has since been compiled and transmitted to the lead auditor. It has been reviewed and found satisfactory. It is the recommendation of the lead auditor that the list be cross referenced with the actual welder performance qualifications and procedure qualifications at the next visit to Combustion Engineering Chattanooga, by Louisiana Power and Light Quality Assurance Engineering.

Conclusions:

We are requesting a written response indicating "Corrective Action" taken or planned by C.E. to correct the nonconformances listed as items (a) through (f) inclusive. Your response is requested within thirty (30) calendar days of the date of this report.

We are further asking that C.E. give a written response to the four items of concern, indicating what remedial corrective action has been or will be taken in each of the areas of concern.