

SARGENT & LUNDY
ENGINEERS

NOTIFICATION OF REVISION
TO THE S&L
QUALITY ASSURANCE MANUAL

NOTIFICATION NO. 098
Topical Report
FOR SL-TR-1A (QA Program)
Section 01.00

DOCUMENT REVISED

Topical Report, SL-TR-1A (QA Program), Revision 7,
June 24, 1988, Section 01.00, Organization

EFFECTIVE DATE OF
REVISION 10/16/89

DESCRIPTION OF REVISION AND ACTION TO BE TAKEN

Figure 01.01-1, "Sargent & Lundy Organization Chart" (page 01-2) and Figure 01.01-2, "Typical Project Organization Chart" (page 01-4) are revised to reflect recent changes in Sargent & Lundy's organizational structure and in the Topical Report. Pages 01-2 and 01-4 in Revision 7 of the Topical Report are superseded by attached Figures 01.01-1 and 01.01-2 marked NOR-098.

Insert this page and the two attached figures into the Topical Report (QA Program) immediately after page 00-4. Do not delete existing pages 01-2 and 01-4.

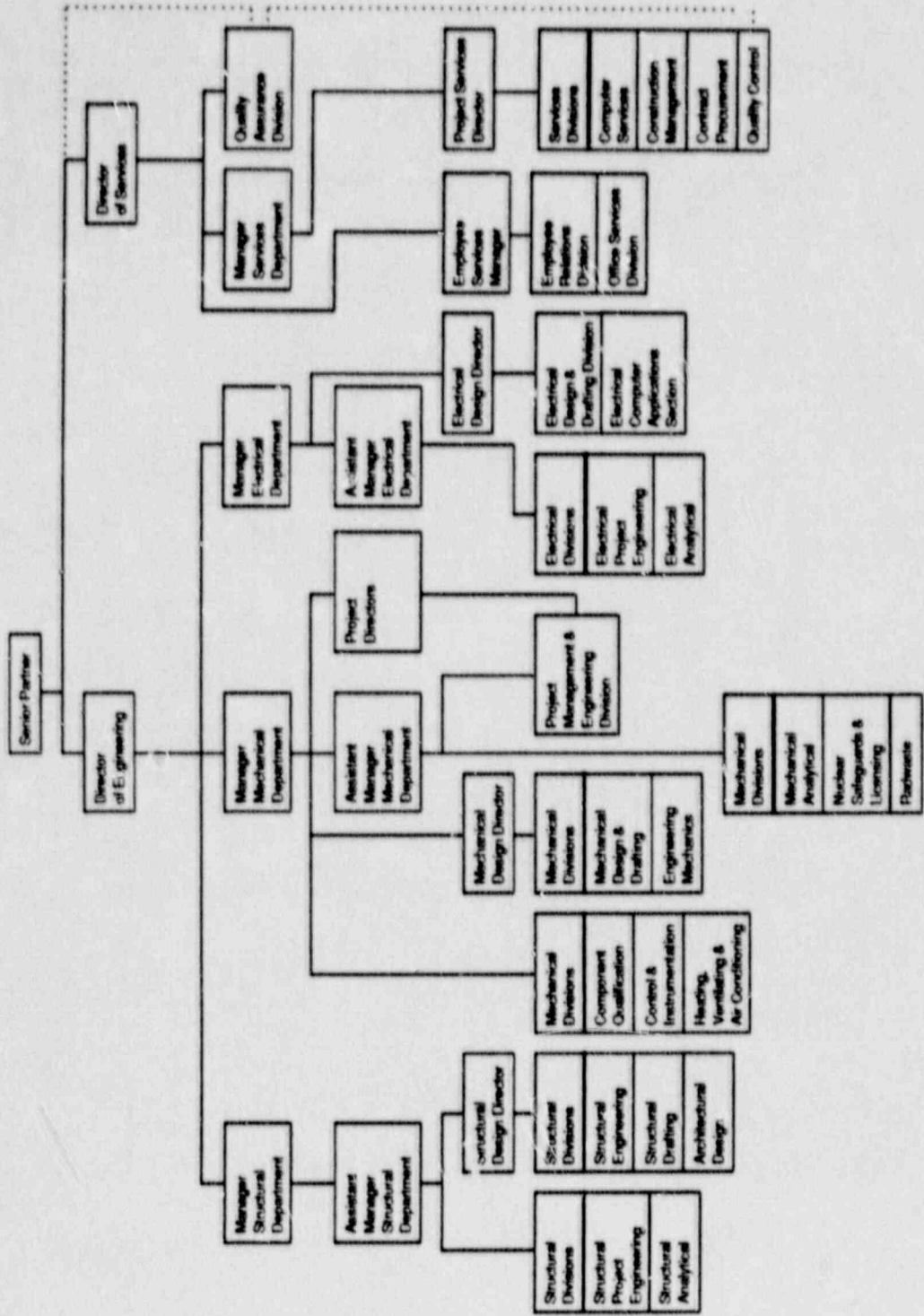
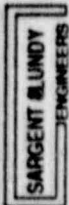
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Page 1 of 3

NOTE: INSERT THIS NOTIFICATION IN YOUR COPY OF THE S&L QUALITY ASSURANCE
MANUAL AFTER THE TAB DIVIDER OF THE AFFECTED DOCUMENT

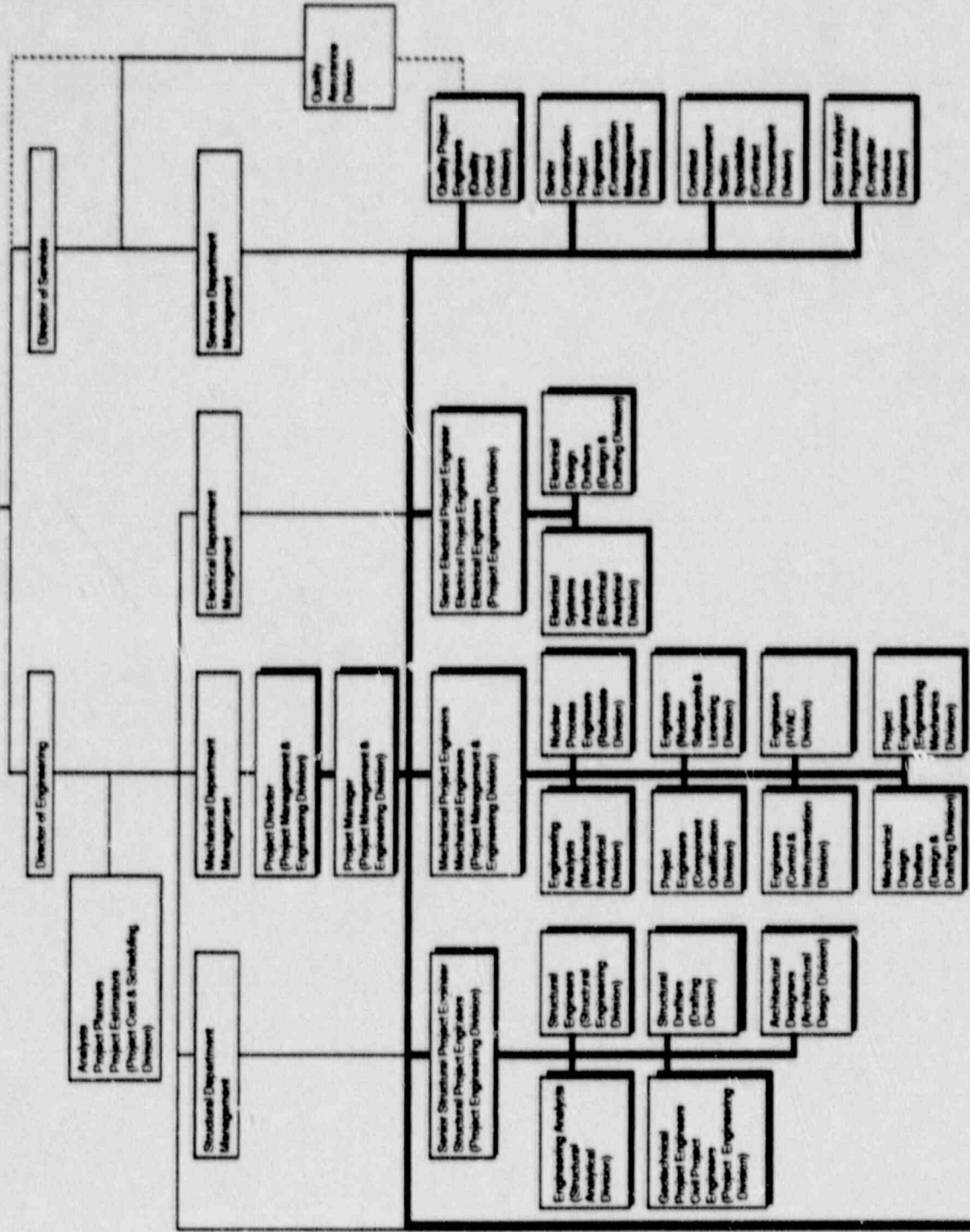
APPROVED BY: H. S. Taylor
HEAD, QUALITY ASSURANCE DIVISION

[Signature]
DIRECTOR of SERVICES



..... Programmatic
 Division of
 OA Activities

Figure 01.01-1
 Sargent & Lundy Organization Chart
 Page 2 of 3 of NOR-098



— Administration and/or Technical
 ■ Project Contribution
 Programmatic Element of QA Activities
 * As required

Site Organization

Figure 01.01-2
Typical Project Organization Chart
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SARGENT & LUNDY
ENGINEERS

NOTIFICATION OF REVISION
TO THE S&L
QUALITY ASSURANCE MANUAL

NOTIFICATION NO. 102
Topical Report (QA
Program) SL-TR-1A,
FOR Section 01.00

DOCUMENT REVISED

Topical Report SL-TR-1A, (Quality Assurance Program),
Revision 7, June 24, 1988, Section 01.00, Organization

EFFECTIVE DATE OF
REVISION 10/16/89

DESCRIPTION OF REVISION AND ACTION TO BE TAKEN

1. Figure 01.02-1, "Quality Assurance Division" (page 01-7) is revised to reflect recent changes in the Quality Assurance Division internal organization. Page 01-7 in Revision 7 of the Topical Report (QA Program) is superseded by attached Figure 01.02-1 marked NOR-102.
2. Delete the word "Training" from page 01-6, line 14, of the Topical Report and reword lines 13 through 15 to read, "The Quality Assurance Division is subdivided into Administrative, Auditing, Project Coordination and Training, and Records Sections."

Insert this page and the attached figure marked NOR-102 into the Topical Report (QA Program) immediately before page 01-1 and immediately after Notification No. 098. Do not delete existing pages 01-6 and 01-7.

Page 1 of 2

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APPROVED BY: A. S. Taylor
HEAD, QUALITY ASSURANCE DIVISION

[Signature]
DIRECTOR OF SERVICES

Quality Assurance Division

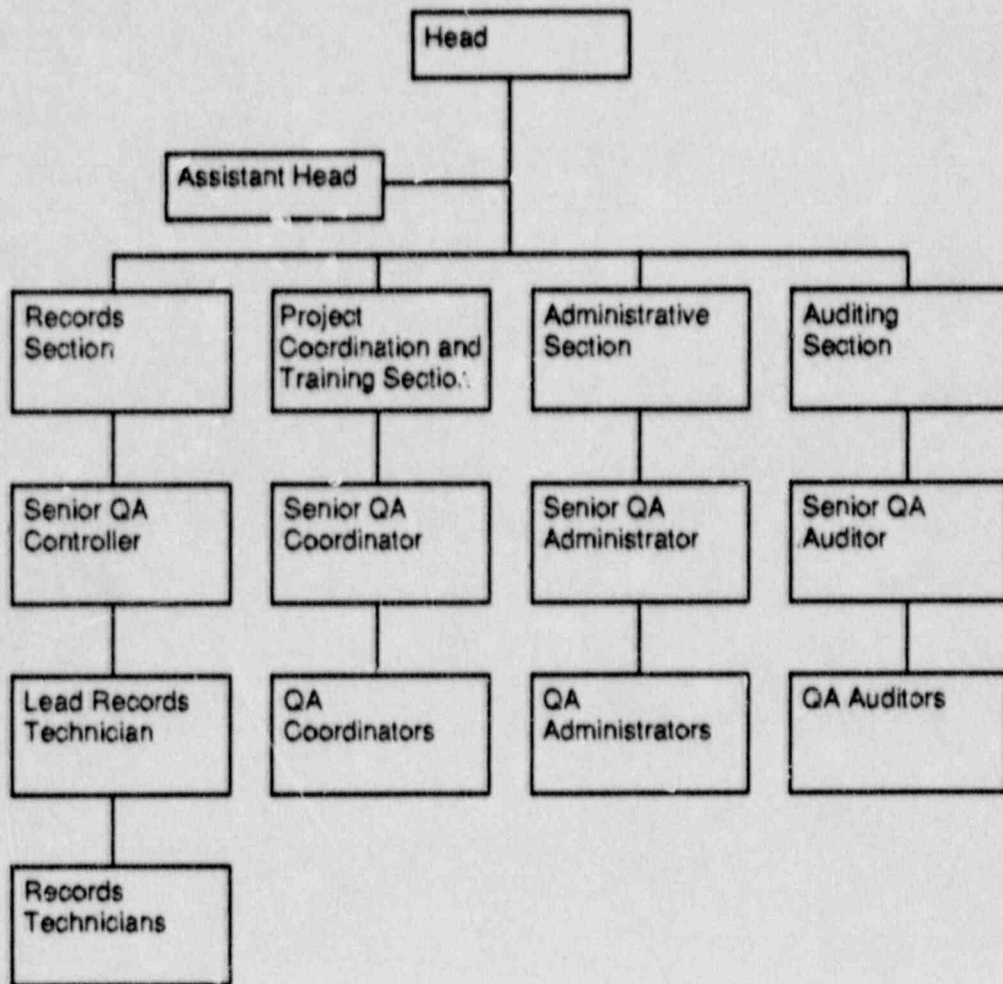


Figure 01.02-1
Quality Assurance Division
Page 2 of 2 of NOR-102

SARGENT & LUNDY
ENGINEERS

NOTIFICATION OF REVISION
TO THE S&L
QUALITY ASSURANCE MANUAL

NOTIFICATION NO. 100
Topical Report SL-TR-1A
FOR (QA Program)
Section 18.00

DOCUMENT REVISED

Topical Report SL-TR-1A (QA Program)
Revision 7, June 24, 1988, Section 18.00, Audits

EFFECTIVE DATE OF
REVISION 10/16/89

DESCRIPTION OF REVISION AND ACTION TO BE TAKEN

Add the following paragraph to page 18-2 of Topical Report SL-TR-1A (QA Program) immediately below line 19.

"Under special circumstances the Head, Quality Assurance Division, may grant postponements of audits as specified in General Quality Assurance Procedures."

Place this NOR in the Topical Report (QA Program) immediately before page 18-1. Do not delete existing page 18-2.

FORM GO-2.01.1 REV. 6

NOTE: INSERT THIS NOTIFICATION IN YOUR COPY OF THE S&L QUALITY ASSURANCE MANUAL AFTER THE TAB DIVIDER OF THE AFFECTED DOCUMENT

APPROVED BY:

H. S. Taylor
HEAD, QUALITY ASSURANCE DIVISION

[Signature]
DIRECTOR OF SERVICES

Quality Assurance Program

Topical Report

SL-TR-1A
Revision 7
June 24, 1968



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66pp.

Reference is made to written agreements now existing or hereafter entered into between Sargent & Lundy and Owner for a description of all obligations and warranties of Sargent & Lundy to Owner with respect to all professional engineering which may be done by Sargent & Lundy for Owner. Nothing in this report shall broaden or be construed to broaden the scope of any such obligations or warranties of Sargent & Lundy to Owner.

SARGENT & LUNDY
QUALITY ASSURANCE PROGRAM
TOPICAL REPORT
SL-TR-1A

APPROVED BY: *H. S. Taylor*
H. S. TAYLOR
HEAD, QUALITY ASSURANCE DIVISION

G. C. Kuhlman
G. C. KUHLMAN
DIRECTOR OF SERVICES

REVISION 7

DATE June 21, 1988



ABSTRACT

The Sargent & Lundy Topical Report on Quality Assurance for safety-related structures, systems and components is identified as SL-TR-1A. Management commitments and policies on quality assurance are stated in this report. Quality assurance requirements are established for the design and procurement activities of a nuclear power plant.

This report has been prepared in accordance with the guidance and requirements of Regulatory Guide 1.70.6, Additional Information, Quality Assurance During Design and Construction, and other Regulatory Guides listed in the Introduction. The criteria in 10CFR50 Appendix B, Quality Assurance Criteria for Nuclear Power Plants have been individually addressed as each will or may be applicable on a specific project.

The Topical Report is suitable for use as the Sargent & Lundy portion of Chapter 17 of a PSAR and as the Quality Assurance Program in the S&L Quality Assurance Manual.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555
APR 12 1988

Sargent & Lundy Engineers
ATTN: Mr. H. S. Taylor, Head
Quality Assurance Division
55 East Monroe Street
Chicago, Illinois 60603

Dear Mr. Taylor:

SUBJECT: NRC ACCEPTANCE OF REVISION TO QA TOPICAL REPORT SL-TR-1A

Your letter of March 31, 1988 acceptably responds to the questions we asked and comments we made concerning the proposed Revision 7 to the Sargent & Lundy Engineers' topical report SL-TR-1A, "Quality Assurance Program." This revision updates the topical report to reflect the current Sargent & Lundy Engineers' organization and quality assurance (QA) program. Based on our evaluation of the proposed changes described in Revision 7, we find that the revised topical report continues to meet the criteria of Appendix B to 10 CFR Part 50 and is therefore acceptable.

In accordance with 10 CFR 50.55(f)(3), please submit future changes to SL-TR-1A to the Nuclear Regulatory Commission's Document Control Desk, Washington, DC 20555.

Please include this letter in Revision 7 to the topical report and forward a copy of the amendment to the NRC. Your submittal should point out the changes by use of a black bar in the margin where a change is made, and the revision number should be adjacent to the bar. Should you have any questions regarding our review or if we can provide assistance, please contact Jack Spraul at 301/492-1021.

Sincerely,

A handwritten signature in cursive script that reads "Seymour H. Weiss".

Seymour H. Weiss, Chief
Quality Assurance Branch
Division of Licensee Performance
and Quality Evaluation
Office of Nuclear Reactor Regulation

8804250092

SARGENT & LUNDY
ENGINEERS

FOUNDED 1891

55 EAST MONROE STREET

CHICAGO, ILLINOIS 60603

(312) 269-2000

SL-TR-1A

Revision 7

W. A. CHITTENDEN
SENIOR PARTNER
312-269-3765

STATEMENT OF POLICY

The Quality Assurance Program and Procedures described herein provide control of S&L design and procurement activities which affect the quality of safety-related nuclear power plant structures, systems, and components. In the area of quality and quality assurance, it is S&L policy that designs be in accordance with applicable quality assurance requirements and that procurement specifications require that materials, equipment or services furnished meet or exceed the design criteria.

Controlled copies of the Quality Assurance Program and Procedures are assigned and issued by the Quality Assurance Division to S&L personnel responsible for implementation of the program. Revisions to program and procedures will be distributed by the Quality Assurance Division to holders of controlled copies. Each holder of the Quality Assurance Program and Procedures shall be responsible for maintaining these documents.

S&L personnel assigned to a nuclear power plant project are required to become familiar with the policies and provisions of the Quality Assurance Program and Procedures. Compliance with the Quality Assurance Program is mandatory for S&L personnel directly or indirectly associated with implementation.

In the event of conflict between the requirements of the S&L Quality Assurance Program and other procedural documents, the S&L Quality Assurance Program shall take precedence.



W. A. Chittenden
SENIOR PARTNER

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01 00.00 INTRODUCTION

02

03 The Sargent & Lundy (S&L), Quality Assurance Program for nuclear projects
04 was established by management policy and is employed where the struc-
05 tures, systems and/or components are classified as important to safety
06 insofar as they prevent or mitigate the consequences of postulated accidents
07 that could cause undue risk to the health and safety of the public.
08 Structures, systems and components controlled by the Quality Assurance
09 Program are identified in Section 3.2 of the SAR.

10

11 To implement the program, general quality assurance procedures have been
12 prepared. Both the Quality Assurance Program and the general quality
13 assurance procedures are parts of the S&L Quality Assurance Manual.
14 Revisions to the Quality Assurance Manual will be made, in accordance with
15 a quality assurance procedure, for any of the following reasons:

16

- 17 a. the Manual may be incomplete, unclear or incorrect
- 18
- 19 b. the resolution of a nonconformance may require change to some portion
20 of the Quality Assurance Manual
- 21
- 22 c. the personnel implementing or auditing the Manual determine that the
23 program and/or procedures do not effectively control a work function
- 24
- 25 d. the standards, codes, regulatory requirements or organization may be
26 changed.

27

28 S&L policy makes compliance with the S&L Quality Assurance Manual
29 mandatory for all S&L personnel performing activities relating to safety.

30

31 | For limited scope projects, such as modification work for operating plants,
32 | 7 | implementation of various elements of this Quality Assurance Program will
33 | | depend on S&L's assigned responsibilities on the project.

34

01 7 | The S&L Quality Assurance Program, as represented herein complies with
02 | (1) Nuclear Regulatory Commission Regulation 10CFR Part 50, Appendix B,
03 | Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing
04 | Plants, and (2) Quality Assurance Articles, Section III, Divisions 1 and 2,
05 | Nuclear Power Plant Components, ASME Boiler and Pressure Vessel Code,
06 | as applicable. S&L is committed to meeting and implementing the
07 | applicable provisions of the following requirements except as indicated
08 | 7 | below and/or as these provisions may be modified by a commitment in an
09 | applicable SAR:
10 |

- 11 a. Regulatory Guide 1.8, September, 1975 -Personnel Selection and
12 | Training; (ANSI/ANS 3.1 - Selection and Training of Nuclear Power
13 | Plant Personnel).
14 |
15 b. Regulatory Guide 1.26, February, 1976 -Quality Group Classifications
16 | and Standards for Water-, Steam-, and Radioactive-Waste-Containing
17 | Components of Nuclear Power Plants.
18 |
19 c. Regulatory Guide 1.28, February, 1979 -Quality Assurance Program
20 | Requirements (Design and Construction); (ANSI/ASME N45.2 -Quality
21 | Assurance Program Requirements for Nuclear Facilities).
22 |
23 d. Regulatory Guide 1.29, September 1978 -Seismic Design Classification.
24 |
25 e. Regulatory Guide 1.58, September 1980 -Qualification of Nuclear
26 | 7 | Power Plant Inspection, Examination, and Testing Personnel;
27 | (ANSI/ASME N45.2.6 -Qualifications of Inspection, Examination, and
28 | Testing Personnel for Nuclear Power Plants).
29 |
30 f. Regulatory Guide 1.64, Revision 2, June 1976 - Quality Assurance
31 | 7 | Requirements for the Design of Nuclear Power Plants; (ANSI N45.2.11 -
32 | Quality Assurance Requirements for the Design of Nuclear Power
33 | Plants). S&L takes exception to Regulatory Position 2 regarding design
34 | verification reviews, refer to S&L position in Section 03.04.

- 01
02 g. Regulatory Guide 1.74, February 1974 - Quality Assurance Terms and
03 Definitions; (ANSI N45.2.10 - Quality Assurance Terms and Definitions).
04
05 h. Regulatory Guide 1.88, Revision 2, October 1976 - Collection, Storage,
06 and Maintenance of Nuclear Power Plant Quality Assurance Records;
07 (ANSI N45.2.9 - Requirements for Collection, Storage, and Maintenance
08 of Quality Assurance Records for Nuclear Power Plants). S&L takes
09 exception to the 4 hour minimum fire rating requirement for a single
10 record storage facility. Instead, S&L will provide at:
11
12 (a) 2 hour fire rated vault meeting NFPA 232-1975, or
13 (b) 2 hour fire rated class B file containers meeting the
14 requirements of NFPA 232-1975, or
15 (c) 2 hour fire rated file room meeting the requirements of NFPA
16 232-1975 with the following additional provisions:
17
18 (1) early warning fire detection and automatic fire suppression
19 capability with electronic supervision at a constantly
20 attended central station;
21 (2) records storage in fully enclosed metal cabinets;
22 (3) adequate access and aisle ways;
23 (4) prohibition in the room of work not directly associated with
24 record storage or retrieval;
25 (5) prohibition in the room of smoking, eating, or drinking;
26 (6) 2 hour fire rated dampers or doors in all boundary
27 penetrations.
28
29 i. Regulatory Guide 1.123, July 1977 - Quality Assurance Requirements
30 for Control of Procurement of Items and Services for Nuclear Power
31 Plants; (ANSI N45.2.13 - Quality Assurance Requirements for Control
32 of Procurement of Items and Services for Nuclear Power Plants).
33
34

- 01 j. Regulatory Guide 1.144, September 1980 - Auditing of Quality
02 Assurance Programs for Nuclear Power Plants; (ANSI/ASME N45.2.12 -
03 Requirements for Auditing of Quality Assurance Programs for Nuclear
04 Power Plants).
05
- 06 k. Regulatory Guide 1.146, August 1980 - Qualification of Quality Assur-
07 ance Program Audit Personnel for Nuclear Power Plants; (ANSI/ASME
08 N45.2.23 - Qualification of Quality Assurance Program Audit Personnel
09 for Nuclear Power Plants).
10

11 The Topical Report is reviewed annually for continuing conformance to
12 regulatory requirements and industry codes and standards. Changes in the
13 Topical Report are reviewed by the Nuclear Regulatory Commission prior to
14 issue and implementation.
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01 **01.00** **ORGANIZATION**

02

03 01.01 S&L organizational structure and functional responsibility assignments are
04 based on the recognition of quality assurance as an interdisciplinary process
05 with quality related activities being performed by individuals at all levels.
06 The responsibilities of persons implementing quality related requirements
07 are established, assigned and documented. Assignments are such that:

08

09 a. attainment of quality objectives is accomplished by individuals assigned
10 responsibility for specifying quality or performing work to quality
11 assurance procedures

12

13 b. verification of conformance to established quality requirements is
14 accomplished by project personnel who are independent of those re-
15 sponsible for establishing or performing the activity

16

17 c. personnel performing key quality assurance functions have direct access
18 to management.

19

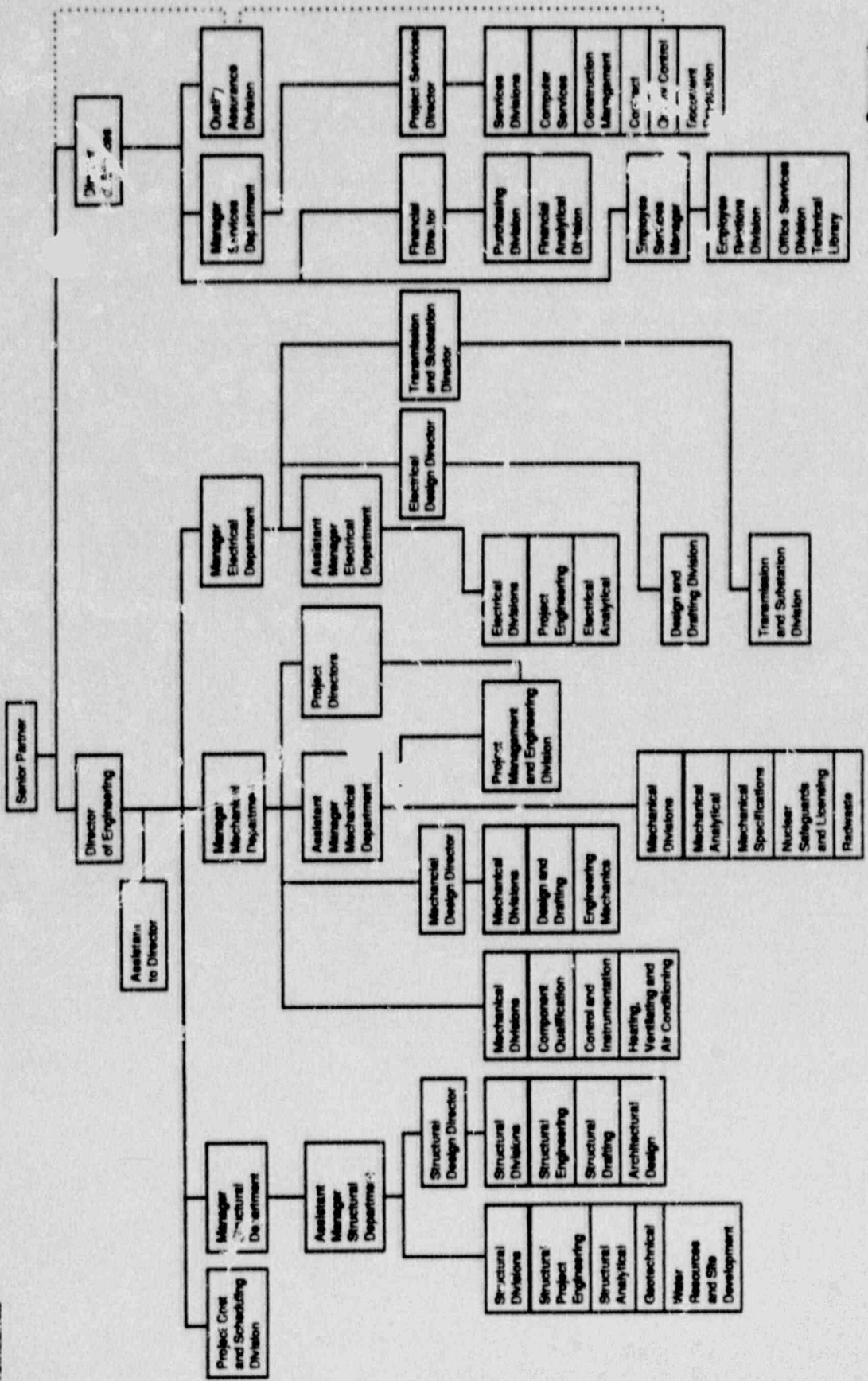
20 S&L organizational structure is shown in Figure 01.01-1, S&L Organization
21 Chart. This chart shows only those elements of the organizational structure
22 7 | which may be involved in quality related activities and does not therefore
23 show the entire organizational structure. The Director of Engineering
24 exercises administrative control over the Managers of the Mechanical,
25 Electrical and Structural Departments. The Director of Engineering reports
26 to the Senior Partner on design work performed by S&L.

27

28 7 | The Director of Services reports to the Senior Partner and exercises admin-
29 istrative control over the Manager, Services Department and Head, Quality
30 Assurance Division.

31

32 The Manager, Services Department exercises administrative control over
33 Project Services, which includes the Quality Control and Construction
34 Management Divisions as well as other support divisions.



..... Programmatic Direction of OA Activities

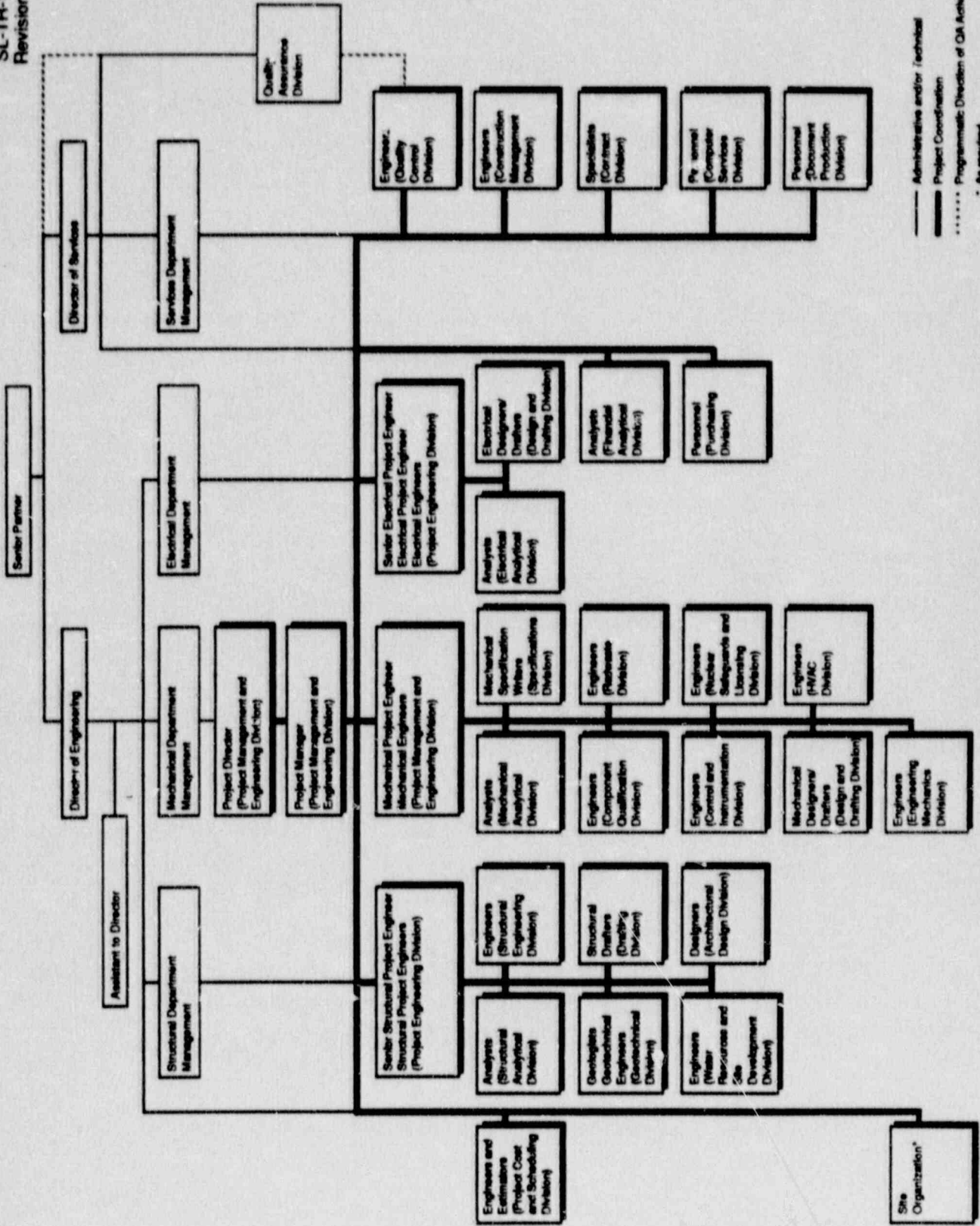
Figure 01 01-1
Sargent & Lundy Organization Chart
01-2

01 The Engineering Departments and the appropriate support services divisions
02 in the Services Department provide the design engineering and procurement
03 on nuclear projects. The Department Managers are responsible for
04 establishing methods and techniques for achieving technical objectives and
05 for the technical adequacy and acceptability of the S&L design work within
06 their respective disciplines.

07
08 Each Department is responsible for establishing departmental standards and
09 implementing procedures to control quality related activities. These
10 standards and procedures are reviewed for conformance to the Program
11 requirements by the Quality Assurance Division.

12
13 A project organization is established for each nuclear power project in
14 which S&L has essentially all the engineering responsibility and for nuclear
15 services projects (or tasks) for units under construction or in operation
16 which may have been engineered by others. The size and composition of the
17 project organization is dependent on the project responsibilities as
18 delineated by the project scope of work. Since S&L serves a wide variety of
19 clients with different service requirements, different project organizations
20 may be established to best accommodate the scope of work. For each
21 project the project organization is comprised of qualified individuals from
22 appropriate S&L divisions. A typical project organization, in which S&L has
23 essentially all the engineering responsibility, and its relationship to the S&L
24 organization is shown in Figure 01.01-2, Typical Project Organization Chart.
25 In cases where an onsite design engineering and/or nuclear services projects
26 organization is required and falls under the cognizance of the QA Program,
27 organizational charts are prepared showing the lines of responsibility.
28 Delegation of authority passes from the Manager, Mechanical Department
29 and Project Director through the Project Manager to project engineers from
30 each department assigned project tasks.

31
32 Departmental Project Engineers are assisted by engineers assigned to them
33 for the project and by support divisions that supply expertise in specialized
34



— Administrative and/or Technical
 — Project Coordination
 Programmatic Direction of O&M Activities
 * As required

Figure 01.01-2
Typical Project Organization Chart
01-4

01 areas. The responsibility for implementation of the S&L Quality Assurance
02 Program on a project is assigned to the Project Manager. The project team
03 provides the S&L interface with the Client and major contractors and
04 establishes the technical requirements on the project to assure compliance
05 with applicable codes, standards and regulations. In project matters the
06 project engineers report to the Project Manager who reports to the Project
07 Director who represents S&L management on the project.

08
09 Interfacing relationships and lines of communication among S&L, Client,
10 vendors, and major contractors on a project are established by and/or
11 described in documents such as, but not limited to: the scope of work,
12 procurement specifications, project instructions, quality assurance pro-
13 cedures and quality control procedures. Internal interfaces within S&L are
14 7 | established in company standards and procedures, project instructions,
15 quality assurance procedures and quality control procedures.

16
17 The Senior Partner establishes quality assurance policy and objectives. The
18 Senior Partner has authorized the Director of Services to establish and
19 maintain an effective Quality Assurance Program. The Director of Services
20 has delegated to the Head, Quality Assurance Division, responsibility for
21 providing and maintaining a Quality Assurance Program, providing pro-
22 grammatic policy and direction on quality assurance, and for coordinating
23 and verifying its implementation among projects.

24
25 01.02 In accordance with policies and objectives established by the Senior Partner,
26 the Director of Services has delegated responsibility for the performance of
27 quality assurance functions to the Head, Quality Assurance Division. The
28 Head, Quality Assurance Division is totally dedicated to carrying out the
29 Quality Assurance Program and therefore has no other duties or
30 responsibilities unrelated to QA that would prevent his full attention to QA
31 matters. The Quality Assurance Division as indicated in Figure 01.01-2,
32 S&L Typical Project Organization Chart, is independent of any S&L project
33 organization. The Head, Quality Assurance Division has the authority and
34

01 organizational freedom to identify quality problems within S&L, recommend
02 or provide solutions and verify their implementation, and to stop
03 unsatisfactory work or otherwise control further processing of a
04 nonconforming item until the proper disposition of the unsatisfactory
05 condition has been resolved. S&L personnel are required to bring to the
06 attention of the Head, Quality Assurance Division conditions which may
07 merit stop-work consideration. The Head, Quality Assurance Division
08 provides expertise as applicable to quality assurance in ANSI Standards,
09 Regulatory Guides and Quality Assurance Articles, ASME Section III,
10 Nuclear Power Plant Components.

11
12 The organization chart of the Quality Assurance Division is shown in Figure
13 01.02-1, Quality Assurance Division. The Quality Assurance Division is
14 subdivided into Administrative, Training, Auditing, Project Coordination,
15 and Records Sections. The responsibilities and functions of the Head,
16 Quality Assurance Division which are delegated to these subdivisions for
17 implementation in accordance with quality assurance procedures include,
18 but are not limited to:

- 19
- 20 a. developing for management approval by the Director of Services
21 general quality assurance procedures necessary for implementation of
22 the program
 - 23
 - 24 b. recommending to the Director of Services desirable changes in the
25 Quality Assurance Program
 - 26
 - 27 c. reviewing procedures, administrative standards and instructions pre-
28 7 | pared by departments, divisions, project organizations, and the Director
29 of Engineering for conformance to Quality Assurance Program and
30 procedure requirements
 - 31
 - 32 d. reviewing and approving by signature Quality Control Procedures for
33 conformance to Quality Assurance Program and procedure requirements
 - 34

Quality Assurance Division

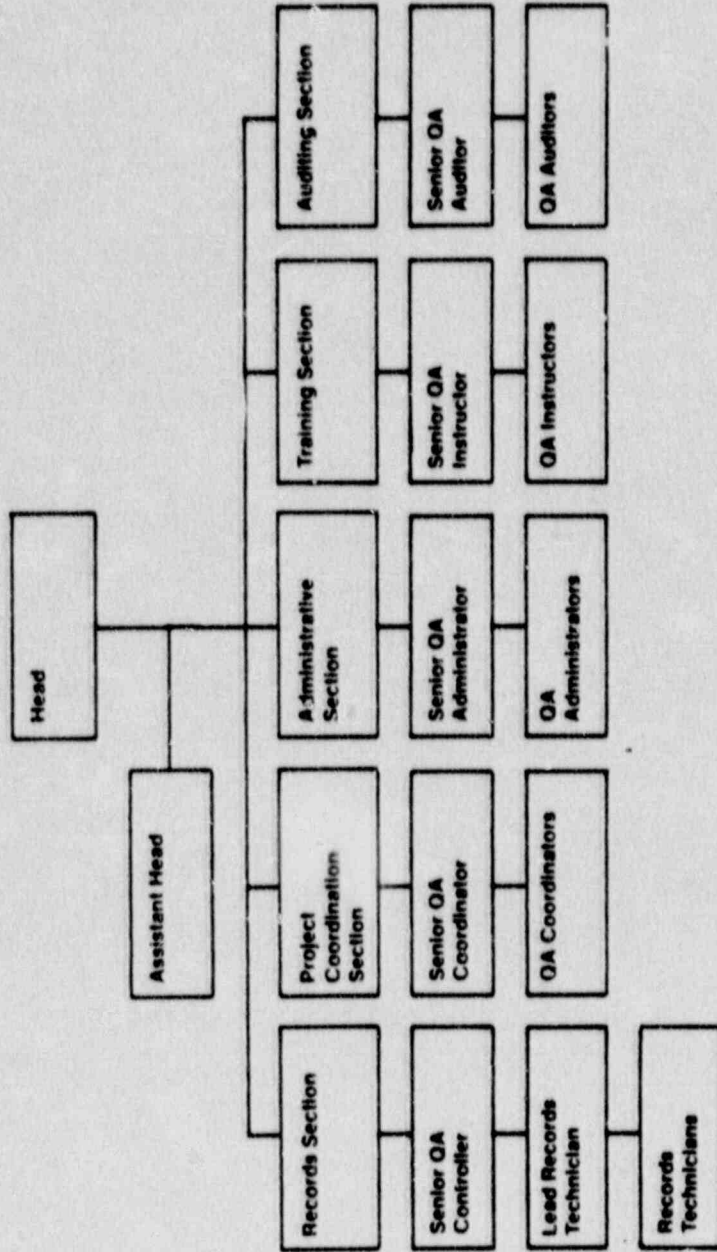


Figure 01.02-1
Quality Assurance Division
01-7

- 01 e. reviewing and reporting on Client's quality assurance requirements
- 02
- 03 f. interfacing with Clients and the Nuclear Regulatory Commission on
- 04 audits and quality assurance matters
- 05
- 06 g. interfacing with project organizations and relevant divisions to assist in
- 07 the implementation of quality assurance requirements on a project
- 08
- 09 h. training and instructing S&L personnel performing quality related
- 10 activities in the implementation of the S&L Quality Assurance Program
- 11 and procedures
- 12
- 13 i. maintaining and controlling the distribution of the S&L Quality As-
- 14 surance Manual and revisions
- 15
- 16 j. developing and conducting audits on design, procurement and activities
- 17 of S&L personnel assigned to the field
- 18
- 19 k. reviewing, evaluating and reporting on S&L technical services consul-
- 20 tants' and design subcontractors' quality assurance programs and/or
- 21 procedures
- 22
- 23 l. auditing performance of S&L technical services consultants and design
- 24 subcontractors
- 25
- 26 m. providing quality assurance input in S&L specifications for technical
- 27 services by consultants and design subcontractors
- 28
- 29 n. establishing and maintaining a quality assurance records storage and re-
- 30 trieval system
- 31
- 32 o. presiding at and documenting meetings of the Quality Assurance
- 33 Coordinating Committee.
- 34

01 p. providing direct quality assurance services to Clients including
02 preparation of QA programs and procedures, auditing of the Client's
03 organization and its vendors, training of Client personnel in quality
04 assurance activities, and assisting Clients in establishing a QA records
05 system

06
07 q. furnishing qualified personnel to Clients for assistance in quality
08 related activities.

09
10 Where portions of engineering investigations and design work such as soil
11 borings, laboratory testing or hydrology assessments are performed by
12 consultants or design subcontractors, requirements are established to assure
13 that these subcontractors and technical service consultants have a quality
14 assurance program and/or procedures conforming to applicable portions of
15 10CFR Part 50, Appendix B and ANSI/ASME N45.2. Their programs and
16 procedures are reviewed by the Quality Assurance Division for compliance
17 with these requirements and concurred with prior to initiation of quality
18 related activities.

19
20 Periodic audits are made by S&L to verify implementation of a subcontractor's
21 or technical service consultant's quality assurance program and/or
22 procedures and compliance with their quality assurance program is monitored.
23

24
25 The Quality Assurance Coordinating Committee consists of representatives
26 of the Quality Assurance Division and representatives of the departments
27 appointed by the Department Managers. The Head, Quality Assurance
28 Division is committee chairman. The meetings of the Quality Assurance
29 Coordinating Committee are documented. The Quality Assurance Coordinating
30 Committee addresses the following objectives:

31
32 a. providing interfacing evaluation of quality assurance requirements
33 proposed by industry and regulatory agencies; and
34

01 b. obtaining intra-departmental consensus to proposed General Quality
02 Assurance Procedures and revisions.

03

04 The responsibilities of the departmental representatives to the Quality
05 Assurance Coordinating Committee include:

06

07 a. reviewing, resolving and coordinating departmental comments on the
08 quality assurance program and procedures, including revisions thereto,
09 and providing a departmental consensus to the Head, Quality Assurance
10 Division; and

11

12 b. providing Department/Quality Assurance Division interfacing relative
13 to quality assurance problems.

14

15 The Head, Quality Control Division reports to the Project Services Director.
16 The organization of the Quality Control Division is shown in Figure 01.02-2,
17 7 | Quality Control Division. A Quality Project Engineer is assigned to a
18 project by the Head, Quality Control Division to coordinate Quality Control
19 Division activities on that project.

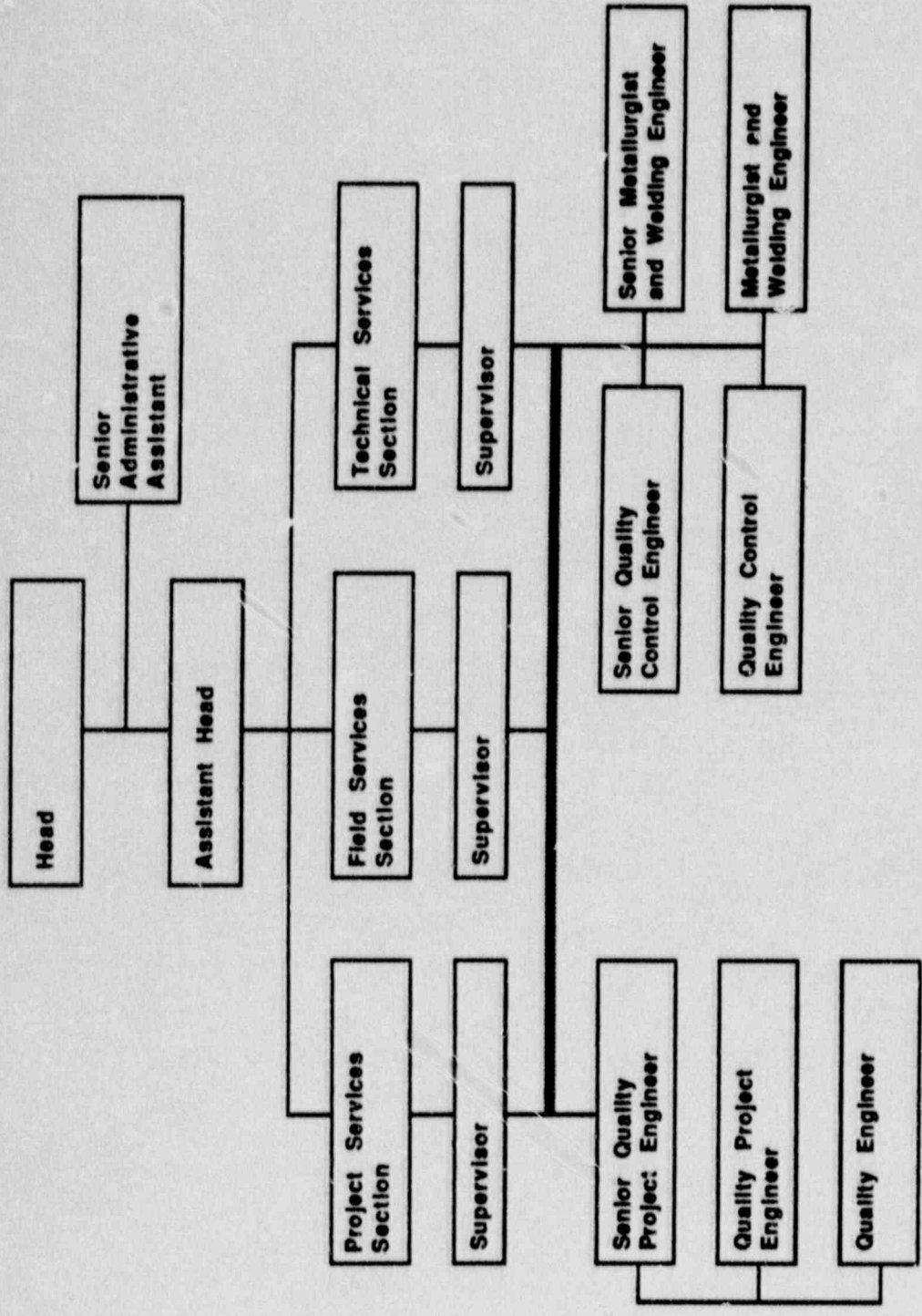
20

21 The Quality Control Division performs quality assurance functions relating
22 to vendors of equipment and services, except those relating to technical
23 services consultants. Quality Control Division procedures for performing
24 quality activities are approved by the Head, Quality Control Division,
25 reviewed and approved by the Head, Quality Assurance Division and
26 authorized by the Project Services Director. The issuance of the procedures
27 is controlled by documented distribution.

28

29 The Quality Control Division has the added responsibility to provide a
30 project with specialized services in metallurgy, nondestructive examination,
31 materials selection and welding as requested. The Head, Quality Control
32 Division is responsible for evaluation of bidder's exceptions for conformance
33 to procurement specification quality assurance/quality control require-
34 ments, when required.

Quality Control Division



Field Services Section personnel are assigned as-needed from the Project Services Section and/or the Technical Services Section. The personnel retain the same title but report to the Field Services Section Supervisor.

Figure 01.02-2
Quality Control Division
01-11

01 When responsible for procurement S&L delegates, or a Client may delegate
02 to the Head, Quality Control Division authority to identify vendor quality
03 control problems and to stop unsatisfactory work or otherwise control
04 further processing of an item by a vendor.

05
06 When S&L is responsible for procurement or is requested by the Client in an
07 agreed to scope of activities which identifies the applicable regulatory
08 requirements, codes, and standards; the Quality Control Division provides
09 any or all of the following services:

10

11 a. surveillance of vendors

12

13 b. review of vendor special processes procedures such as but not limited
14 to: nondestructive examination, heat treatment, bending, welding,
15 cleaning

16

17

18 c. review of vendor quality assurance program

19

20 d. audit of vendors compliance to their approved quality assurance pro-
21 grams

22

23 e. review of vendor documentation including supplier certificate of con-
24 formance.

25

26 These services are performed by qualified personnel in accordance with
27 documented procedures and/or checklists.

28

29 The qualifications of the Head, Quality Assurance Division, and the Head,
30 Quality Control Division, are established by S&L Position Descriptions and
31 exceed the requirements described in Section 4.4.5 of ANSI/ANS - 3.1 -1978,
32 "Selection and Training of Nuclear Power Plant Personnel," as endorsed by
33 Regulatory Guide 1.8.

34

01 **02.00** **QUALITY ASSURANCE PROGRAM**

02

03 02.01 This Quality Assurance Program has been established in accordance with the
04 requirements of 10CFR Part 50, Appendix B. During the preparation of the
05 Program and the General Quality Assurance Procedures, steps were taken to
06 verify that the S&L Quality Assurance Program responded to each of the
07 applicable criteria of 10CFR Part 50, Appendix B, Quality Assurance
08 Criteria for Nuclear Power Plants; the requirements of the applicable
09 7 | Regulatory Guides and ANSI/ASME Standards referenced in Section 00,
10 Introduction of the Topical Report; and the Quality Assurance Articles,
11 ASME Section III, Nuclear Power Plant Components. NRC Regulatory
12 Guides are reviewed for suitability and used as appropriate for S&L
13 activities.

14

15 Those responsible for defining the content of the Quality Assurance Program
16 are the Senior Partner; Director of Services; and Head, Quality Assurance
17 Division. The Head, Quality Assurance Division is responsible for Quality
18 Assurance Division approval of the Quality Assurance Program and imple-
19 menting procedures. The Director of Services provides management ap-
20 proval of the Quality Assurance Program and General Quality Assurance
21 Procedures.

22

23 The Quality Assurance Manual is made available to personnel responsible for
24 quality related work through controlled and documented distribution of the
25 Quality Assurance Manual in accordance with a quality assurance procedure.
26 The procedure requires recipients of the Quality Assurance Manual to
27 acknowledge receipt of the Quality Assurance Manual and revisions.

28

29 To implement the Quality Assurance Program and comply with the General
30 Quality Assurance Procedures, the Director of Engineering, and Department
31 7 | Managers have established standards and procedures for the control of
32 quality related activities. Specific implementing procedures are established
33 by each division to control its activities in compliance with the
34 requirements of the Program.

01 S&L policy, as established by the Senior Partner, makes compliance with the
02 S&L Quality Assurance Manual mandatory for all S&L personnel performing
03 quality related activities.

04

05 02.02 Safety related structures, systems and components for a project are
06 identified; and design and procurement activities thereof are controlled by
07 the S&L Quality Assurance Program and the implementing procedures.

08

09 02.03 The S&L Quality Assurance Program will be in effect prior to initiation of
10 activities affected by the program. Implementing procedures are
11 established prior to starting an activity affecting quality.

12

13 S&L Standards and Procedures provide for the documentation and
14 dissemination of management policies and practices for the control of
15 activities affecting the quality of nuclear safety-related structures, systems
16 and components. Each level of management generates standards and/or
17 procedures covering its areas of responsibility. These standards/procedures
18 establish design, performance, fabrication, installation or operation require-
19 ments for a system, structure or component; or establish methods for
20 controlling activities within a department or division. Such
21 standards/procedures are applied to the work performed by the personnel
22 within the related department or division.

23

24 The mandatory requirements for nuclear quality related activities are
25 delineated in the standards/procedures. When a deviation from such
26 requirements is necessary, appropriate review and approval of the proposed
27 deviation is required and is documented.

28

29 02.04 S&L quality related activities meet the requirements of the Client, S&L,
30 applicable codes, standards and regulatory agencies. This work is performed
31 in accordance with policies stated in this Quality Assurance Program which
32 satisfies the requirements of 10CFR Part 50, Appendix B. Table 02.04-1,
33 List of General Quality Assurance Procedures, identifies each procedure
34 with the applicable criterion of 10CFR Part 50, Appendix B.

LIST OF GENERAL QUALITY ASSURANCE PROCEDURES

PROCEDURE NUMBER	PROCEDURE TITLE	ICP/PSO	APPENDIX B		REFERENCE CRITERIA	
			PRIMARY CRITERION		SECONDARY CRITERION	
00-1.01	S&L Organization Manual	I	Organization	II	QA Program	
00-1.02	Project Organization Structure	I	Organization	II	QA Program	
00-1.03	S&L Position Descriptions	I	Organization	XVII	QA Records	
00-1.04	Employee Experience Records and Qualification Statements	I	Organization	XVII	QA Records	
00-2.01	S&L Quality Assurance Manual	II	QA Program	I	Organization	
00-2.02	Distribution and Control of the S&L Quality Assurance Manual	II	QA Program		Organization	
00-2.03	Review of Client Quality Assurance Program Requirements	I	QA Program	I	Organization	
00-2.04	Indoctrination and Training in the S&L Quality Assurance Manual	II	QA Program	I	Organization	
00-2.05	Departmental Training	II	QA Program	--	--	
00-2.06	Management Review of the S&L Quality Assurance Program and Procedures	II	QA Program	XVII	Audits	
00-2.07	Project Instruction Training	II	QA Program	V	Instructions, Procedures and Drawings	
00-3.01	Control of Regulations, Guides, Codes and Standards	III	Design Control	IV	Procurement Document Control	
00-3.02	Project Scope of Work	III	Design Control	VI	Document Control	
00-3.03	Classification Criteria	III	Design Control	II	QA Program	
00-3.04	Design Criteria	III	Design Control	V	Instructions, Procedures and Drawings	
00-3.05	Safety Analysis Reports (PSAR's and TSAR's)	III	Design Control	V	Instructions, Procedures and Drawings	
				VI	Document Control	
00-3.06	Sargent & Lundy Standards and/or Procedures	III	Design Control	VI	Document Control	
00-3.07	Sargent & Lundy Drawings	III	Design Control	V	Instructions, Procedures and Drawings	
				VI	Document Control	
00-3.08	Design Calculations	III	Design Control	VI	Document Control	
00-3.09	Foreign Design Documents	III	Design Control	VII	Control of Purchased Material, Equipment and Services	
00-3.10	System and Structural Design Reviews	III	Design Control	V	Document Control	
00-3.11	Engineering Reports	III	Design Control	V	Document Control	
00-3.12	Project Status Reports	III	Design Control	I	Document Control	
00-3.13	Engineering Change Notices	III	Design Control	VI	Document Control	
00-3.14	(Deleted)					
00-3.15	Approved Procedural Deviations	III	Design Control	VI	Document Control	
00-3.16	System Functional Descriptions	III	Design Control	VI	Document Control	
00-3.17	Design Information Transmittal	III	Design Control	VI	Document Control	
00-4.01	Procurement Specifications	IV	Procurement Document Control	III	Design Control	
00-4.02	Proposal Evaluation and Recommendation	IV	Procurement Document Control	VII	Control of Purchased Material, Equipment and Services	
00-5.01	Project Instructions	V	Instructions, Procedures and Drawings	II	QA Program	
00-6.01	Project Distribution List and Project File Indexes	VI	Document Control	--	--	
00-11.01	Preoperational and Startup Test Procedures	XI	Test Control	V	Instructions, Procedures and Drawings	
00-16.01	Corrective Action Reports	XVI	Corrective Action	I	Organization	
00-16.02	Significant Conditions Adverse to Quality and Stop-Work Orders	XVI	Corrective Action	I	Organization	
00-16.03	Design Errors and Deficiencies	III	Design Control	XVI	Corrective Action	
00-17.01	Submittal Schedule for Quality Assurance Records	XVII	Quality Assurance Records	V	Instructions, Procedures and Drawings	
00-17.02	Quality Assurance Records Control System	XVII	Quality Assurance Records	V	Instructions, Procedures and Drawings	
00-18.01	Internal Audits	XVIII	Audits	I	Organization	
00-18.02	Qualifications of Auditors	XVIII	Audits	I	Organization	
00-18.03	External Audits of Technical Service Consultants	XVIII	Audits	IV	Procurement Document Control	

01 02.05 The development and use of computer programs for quality related
02 activities are controlled by the Quality Assurance Program. All computer
03 programs are verified within the assumptions and limitations stated in the
04 program documentation, for correctness of theory and validity of results. A
05 variety of typical problems is used in the testing process. Results are
06 checked against known solutions, solutions obtained from other computer
07 programs, or hand calculations.

08
09 Procedures require all computer programs used for engineering design or
10 analysis applications to be uniquely identified, validated and listed in the
11 S&L Computer Software Library. After they are so validated and listed, the
12 program files are placed under controls that will not permit them to be
13 changed without authorization. Only this set of controlled program files
14 may be accessed for computer processing. Temporary changes to listed
15 programs may be authorized in special circumstances. However, all such
16 changes are required to be validated and documented.

17
18 02.06 To assure that appropriate skills are utilized in the performance of quality
19 related activities, position descriptions and experience records have been
20 prepared. The position descriptions include minimum educational and
21 experience requirements for each position. Experience records are used to
22 verify qualification of persons in quality related positions.

23
24 The Quality Assurance Program provides for indoctrination and training of
25 personnel performing activities affecting quality as necessary to provide as-
26 surance that appropriate proficiency in the application of the Quality
27 Assurance Program and implementing quality assurance procedures is
28 achieved and maintained. This training is accomplished in accordance with
29 appropriate procedures approved by the Head, Quality Assurance Division.

30 7 | Training in appropriate S&L administrative and technical standards and
31 | procedures is provided within the departments or divisions, as applicable, for
32 | personnel performing quality related tasks. The Department Managers or
33 | Division Heads establish the training scope and designate who is to be
34 7 | trained.

01 Quality assurance procedures provide, as applicable, for training of project
02 personnel in project instructions controlling quality related activities.

03
04 Training activities are documented. Documentation of the personnel
05 7 receiving training and identification of the standards and procedures in
06 which they were trained will be retained as a programmatic nonpermanent
07 QA record for a period of three years. Other supporting training material
08 documentation such as course/lesson plans, examinations, attendance sheets,
09 etc., will be retained in the Department/Division or project files for a
10 period of three years from the date of training completion.

11
12 02.07 Differences of opinion between Quality Assurance Division and Engineering
13 or Services Department personnel are resolved by the Director of Services
14 and the Director of Engineering. If resolution cannot be effected by the
15 Director of Services and the Director of Engineering, they request
16 resolution by the Senior Partner. Resolution is documented.

17
18 02.08 At least once each year S&L management assesses the status, adequacy,
19 implementation and effectiveness of the Quality Assurance Program. This
20 assessment includes:

21
22 a. an annual report by the Quality Assurance Division on the effectivity of
23 the S&L Quality Assurance Program and procedures.

24
25 This report is based on the findings provided and assessments made
26 during project and divisional audits

27
28 b. an annual management audit of the Quality Assurance Division initiated
29 by the Director of Services. Personnel performing these audits have no
30 direct responsibility for the activities which they are auditing

31
32 c. a management report on the status and adequacy of the S&L Quality
33 Assurance Program and procedures based on the effectivity report
34 prepared by the Quality Assurance Division and the management audit

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of the Quality Assurance Division. This report is approved by the Director of Services and distributed to responsible management for action, as required.

01 **03.00** **DESIGN CONTROL**

02
03 03.01 The design of structures, systems and components is planned and controlled
04 7 | by Company Standards and Procedures, Project Instructions, and Quality
05 Assurance Procedures. Design processes are prescribed, accomplished and
06 documented in accordance with procedures which establish the
07 responsibilities and interfaces of each organizational unit that has an
08 assigned design function. Organization responsibilities are described for
09 preparing, reviewing and approving design documents such as design criteria,
10 drawings, calculations, computer programs, procurement specifications and
11 procedures. Included are measures to assure that:

- 12
13 a. design criteria are prepared for structures, systems and components,
14 which identify the applicable design bases (including commitments of
15 the SAR), regulatory requirements, codes and standards. The adequacy
16 with which the design criteria are translated into specifications,
17 drawings and instructions is determined by system and structure design
18 reviews, when appropriate, and performed in accordance with quality
19 assurance procedures
- 20
21 b. responsibility is assigned for inclusion in the design documents of
22 appropriate quality requirements and standards
- 23
24 c. deviations, including the reasons thereof, from quality requirements and
25 standards as well as design changes are identified, approved and
26 documented. Design change control is at the same level as applied to
27 the original design.

28
29 03.02 Safety related structures, systems and components are classified in accor-
30 dance with procedures. The classification is established as a design basis
31 document for the preliminary safety analysis report. Selection of parts,
32 materials and components, for suitability of application is made after
33 adequate reviews have been performed. Catalogue items when included in
34 S&L design are reviewed for suitability of application by the appropriate

01 engineering division. Reviews of these items may include any or all of the
02 following: historical performance data and records, valid industry standards
03 and specifications, prototype testing programs and design reviews.

04

05 03.03 During design, controls and reviews are applied for such aspects as thermal,
06 stress, radiation, hydraulic and accident analysis; compatibility of materials;
07 accessibility for in-service inspection; maintenance and repair; and speci-
08 fying functional criteria in accordance with design and quality assurance
09 procedures. When appropriate, acceptance/rejection criteria are included in
10 design documents.

11

12 03.04 Verification of design is accomplished by performing design reviews, alter-
13 nate calculations, or a qualification testing program. When a test program
14 is used to verify the adequacy of a design feature by suitable qualification
15 testing of a prototype, the conditions, when possible, will extend to the most
16 adverse design conditions. The extent of the verification is to be consistent
17 with the importance of the design activity to plant safety, complexity of
18 design, degree of standardization, state of the art and similarity with
19 previously proven design.

20

21 Departmental standards and quality assurance procedures provide guidance
22 and specify methods for performing design verification. Design verification
23 reviews are performed by qualified personnel or group(s) other than those
24 who performed the original design. This verification may be performed by
25 7 the preparer's Supervisor, provided the Supervisor did not specify a singular
26 design approach or rule out certain design considerations and did not
27 establish the design inputs used in the design or, provided the Supervisor is
28 the only individual in the organization competent to perform the
29 verification. After satisfactory resolution of the reviewer's comments, the
30 document is approved and becomes a record of design verification and is
31 subject to audit. The appropriate engineering division responsible for the
32 review assures that:

33

34 a. design characteristics can be controlled, inspected and tested

01 b. inspection and test criteria are identified.

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In addition to the design reviews made prior to the issue for use of individual design documents, broader system and structure design reviews are performed for complete plant design projects prior to initial fuel loading. These broader reviews are performed after the design documents have been adequately developed. For limited scope projects, such as design modification work for operating plants, in addition to the design reviews of individual documents the broader system and structure reviews or other methods of design verification may be performed, when applicable to the project scope of work. During the system and structure design reviews, design documents are reviewed against requirements of the applicable design criteria and/or other supporting documents in accordance with procedures established by the engineering department conducting the reviews. Responsibility to initiate and to follow through on any required changes is assigned to appropriate project personnel.

Technical inadequacies in S&L design documents detected during review or when distributed for interface comment are controlled and corrected through resolution of comments in accordance with procedures. Comment and resolution of comment are documented and retained for a period of one year or until the document is revised. Comment and resolution of comment on a prior issue are not retained if a subsequent revision to a design document is approved for use before the expiration of the one year retention period of the earlier issue.

Procurement specifications indicate those drawings and other design documents to be submitted by contractors or vendors to S&L for review. A status list identifying design documents submitted by contractors or vendors for which an S&L review is required is prepared and maintained. The vendor's or contractor's design documents are reviewed by the appropriate engineering division in accordance with quality assurance procedures for conformance to specifications and for compatibility with interfacing equipment, structures, systems, etc.

7

01 03.05 The Project Manager is responsible for project coordination within S&L.
02 The inter-relationships among the principal participating project design
03 groups are shown in Figure 01.01-2, Typical Project Organization Chart.
04 7 Interfacing activities among participating project team members within S&L
05 are identified and controlled by means of quality assurance procedures.
06 These procedures provide for the preparation of design documents by
07 qualified individuals and design verification by individuals who are
08 independent of the preparer within the appropriate engineering division.
09 Also, the procedures provide for the following:

10

11 a. reviewing documents for accuracy and technical adequacy prior to
12 release

13

14 b. approving documents, by authorized personnel, for use

15

16 c. distributing documents to their intended points of use

17

18 d. determining that the correct revision of these documents is being used

19

20 e. requiring systems for identification of quality assurance records and a
21 control system to clearly indicate their applicability, accountability,
22 and status

23

24 f. subjecting significant changes to documents to the same degree of
25 control as the original

26

27 g. establishing retention periods for quality assurance records and a
28 mechanism for their transmittal to the Client, if required.

29

30 The Quality Assurance Division is responsible for filing of quality assurance
31 records in an orderly manner in a facility that provides controlled access
32 and protection against fire, flood, tornadoes, vermin and decay in
33 accordance with quality assurance procedures.

34

01 Interactions between S&L and outside organizations which provide designs,
02 specifications, data and/or technical direction are defined as external
03 interfaces. The identification of external interfaces is described in docu-
04 ments such as scope of work, procurement specifications and general quality
05 assurance procedures.

06
07 Quality assurance procedures provide for control, collection, storage, han-
08 dling, maintenance and retrieval of the following documents, and revisions
09 thereto:

- 10 a. Quality Assurance Manual
- 11
- 12 b. S&L Standards and implementing procedures
- 13
- 14 c. Project Instructions
- 15
- 16 d. quality assurance records
- 17
- 18 e. design documents.

19 The S&L Quality Assurance Program is supplemented by procedures covering
20 requirements for distribution of design documents. Subsequent issues of
21 specific documents or drawings follow the same distribution requirements as
22 the original. Status lists are prepared, approved and distributed in accor-
23 dance with documented procedures to prevent inadvertent use of obsolete
24 documents.

25 03.06 The design change control procedure requires documentation of the change
26 and approval by the cognizant project engineer. The cognizant project
27 engineer is charged with the responsibility for defining all other design
28 documents affected by the change, and for resolving and coordinating
29 changes with other project engineers whose design is affected. Design
30 changes affecting external interfaces are identified and reviewed with the
31 affected external organization(s) and documented in accordance with es-
32 tablished procedures.

33
34

01 Design changes identified by field organizations are generally the result of
02 unexpected construction conditions. The field organization generates a
03 document which identifies the conditions and may propose a method of
04 correction. S&L engineering and design personnel are responsible for review
05 of safety related design changes. When a proposed design change or a
06 method of correcting a design problem does not comply with approved
07 design basis documents, it is the responsibility of S&L to provide an
08 alternate solution to the problem. Approved design changes will then be
09 7 | incorporated, where appropriate, into the affected design documents.
10

11 Advance approval of field design changes may be authorized by responsible
12 S&L field personnel when the timing cannot be met for conducting a full
13 7 | review of the design changes. In such cases, the full review of the design
14 changes is conducted at the time the affected design documents are
15 approved and issued for use, "and prior to the start of fuel loading for a
16 plant under construction or prior to relying upon the component, system or
17 structure to perform its function for an operating plant." The authorization
18 and issuance of advanced approval of field design changes is controlled in
19 documented procedures.
20

21 03.07 The extent to which the Quality Assurance Program applies to a replicate
22 plant in both technical and quality related aspects is as follows:
23

24 a. for those portions of the plant that are replicated, Quality Assurance
25 Program functions of review and approval on design and procurement
26 documents are not required. However, these design and procurement
27 documents are verified by the appropriate engineering division(s) as to
28 suitability for the replicate plant
29

30 b. design changes, new design features or modifications to the replicate
31 plant are subject to review and approval in accordance with the Quality
32 Assurance Program. Nonreplicate changes to procurement documents
33 require review and approval including quality assurance/quality control
34 review

01 c. whenever the materials or component vendor is other than the original
02 vendor for those portions of the plant that are replicate, the Quality
03 Assurance Program functions of vendor selection and approval are
04 applicable.
05

06 03.08 Control of quality related activities between S&L and Client during the
07 7 | phase out of design and procurement is in accordance with the Quality
08 Assurance Program and implementing quality assurance procedures.
09 Transfer of applicable manuals, records and documents is in accordance with
10 procedures and shall be auditable.
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01 **04.00** **PROCUREMENT DOCUMENT CONTROL**

02

03 04.01 Procedures are established to verify that applicable regulatory require-
04 ments, design bases and other requirements necessary to assure quality are
05 included or referenced in S&L originated documents for procurement of
06 equipment, materials, components and services. The following information
07 and requirements are included in procurement specifications as appropriate:

08

09 a. applicable regulatory, standard and code requirements; drawings and
10 standard specifications

11

12 b. test and inspection requirements

13

14 c. acceptance/rejection criteria

15

16 d. requirements for fabrication and special processes, such as, cleaning,
17 packaging, handling, shipping and normal or extended field storage

18

19 e. requirements for vendor quality assurance program identification of
20 quality requirements including reference to 10CFR Part 50, Appendix
21 7 | B, ANSI/ASME N45.2, and ASME Section III

22

23 f. documentation requirements - vendor will prepare and submit docu-
24 mentation that identifies the purchased material or equipment and the
25 code, standard or specification met by the item(s). The vendor will
26 submit to the Client or S&L, when S&L is responsible for procurement,
27 drawings, specifications, procedures, sub-tier procurement documents,
28 inspection and test records, personnel and procedure qualifications,
29 chemical and physical property test results for materials, and certi-
30 ficates of compliance, as applicable, for review and/or comment

31

32 g. records control - identification of quality assurance records to be
33 controlled, maintained, retained and/or delivered to the construction
34 site prior to use or installation

- 01 h. source surveillance and audit - provisions for access to vendor and his
02 subcontractors' facilities and records for source surveillance and/or
03 audit by purchaser or authorized representative
04
- 05 i. lower-tier procurements - extension by the contractor of applicable
06 requirements to lower-tier contractors and vendors, including access by
07 the purchaser or his designated representative, to facilities, procedures,
08 and records
09
- 10 j. nonconformances - provisions for the vendor to submit
11 nonconformances together with their recommended disposition ("use -as
12 is," rework or repair) to S&L for review and recommendation of
13 disposition to the Client
14
- 15 k. establishment of hold or witness points in conjunction with the pur-
16 chaser and vendor.
17

18 04.02 The S&L Quality Assurance Program requires that procurement documents
19 are prepared, reviewed and approved by the appropriate disciplines; and
20 7 | issued by the Contract or Purchasing Division, as applicable, in a sequence
21 of steps prescribed in accordance with quality assurance procedures prior to
22 their release for fabrication, construction or installation of equipment or
23 services. Revisions are made following the same sequence as for the
24 original document. Control is maintained through the regular issuance of a
25 Procurement Specification Status Report. Procurement documents used for
26 bid contain necessary quality assurance/quality control requirements. These
27 procedures also require that all safety-related references in the
28 procurement document are current and correct.
29

30 The following reviews of procurement specifications are required to be
31 accomplished and documented:
32

- 33 a. examination by the responsible specification preparer for format,
34 standards, editing and uniformity

- 01 b. review by a qualified engineer (independent of the preparer of the
02 procurement specification) for technical adequacy, correct use of
03 design bases, applicable regulatory requirements and adequate accep-
04 tance/rejection criteria, as applicable
05
06 c. review for compatibility by an engineer of each interfacing discipline
07
08 d. review by qualified personnel from the appropriate QA or QC division
09 to determine that quality requirements are adequately and correctly
10 stated, inspectable and controllable; and that records to be retained,
11 controlled and maintained are identified
12
13 7 | e. review by the assigned Quality Project Engineer, of the procurement
14 documents for vendors of purchased materials, equipment and services
15 (except for technical service consultants) to determine that quality
16 requirements are adequately stated, inspectable and controllable; and
17 that records to be retained, controlled and maintained by the supplier
18 and those to be delivered to the purchaser prior to use or installation of
19 the hardware are identified
20
21 f. review by the assigned Quality Assurance Coordinator of the
22 procurement documents of technical service consultants retained by
23 S&L to determine that quality requirements are adequately stated,
24 inspectable and controllable; and that records to be retained, controlled
25 and maintained by the supplier and those to be delivered to the
26 purchaser prior to use are identified
27
28 g. review by Client, as required.

29
30 A change and/or revision to a procurement document is subject to the same
31 level of review and approval as the original document.
32

33 04.03 Procurement specifications require vendors to have and implement a quality
34 assurance program for purchased materials, equipment and services to an

01 extent consistent with their importance to safety. Concurrence by qualified
02 S&L personnel with vendor quality assurance programs is required prior to
03 initiation of quality related activities, when S&L is responsible for
04 procurement or upon request by a Client.

05
06 Vendors are evaluated in accordance with quality assurance procedures prior
07 to contract award to assure that technical and quality assurance require-
08 ments of the procurement specification can be met.

09
10 If spare or replacement parts are purchased, such purchases will be based on
11 either an existing, prepared, reviewed and approved specification or a new
12 specification prepared, reviewed and approved in accordance with quality
13 assurance procedures. If a new specification is used, the replacement items
14 will be subject to controls equivalent to those used for the original
15 equipment.

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01 05.00 INSTRUCTIONS, PROCEDURES AND DRAWINGS

02

03 05.01 Activities affecting quality such as design, procurement, auditing and field
04 services are prescribed in documented procedures which clearly assign
05 responsibilities and describe the required sequence of actions in the
06 preparation, review, approval, revision and control of documents. The
07 quality assurance procedures require that interfacing divisions review and
08 comment on changes.

09

10 05.02 Applicable government regulations and industry codes and standards de-
11 veloped by NRC, ASTM, ACI, ASME, ANSI, IEEE and other recognized
12 organizations, are specified where applicable. These codes, standards, etc.,
13 incorporate both qualitative and quantitative acceptance criteria and are
14 identified and referenced in design criteria, analyses, specifications, and
15 other engineering documents.

16

17 Where necessary, design instructions, procedures, and drawings indicate the
18 required sequential order of activities. Quantitative criteria, such as
19 standard practices for dimensioning, identification and selection of tol-
20 erances, and qualitative criteria, such as comparative workmanship samples
21 and visual standards, are specified in the appropriate documents as criteria
22 for determining quality compliance.

23

24 In accordance with quality assurance procedures, project instructions are
25 prepared to provide for the following:

26

a. Client requirements not addressed in a quality assurance procedure

27

28 b. clarification and/or additional information for use with a quality
29 assurance procedure

30

31 c. alternative methods to approved quality assurance procedures for
32 addressing programmatic requirements.

33

34 A Project Instruction shall not conflict with the Quality Assurance Program.

01 **06.00** **DOCUMENT CONTROL**

02

03 06.01 Procedures and practices are established to control the issuance of design
04 documents, instructions, and procedures, including changes thereto, which
05 prescribe activities affecting quality.

06

07 The Quality Assurance Program and implementing procedures include
08 measures which provide assurance that documents, including changes, are
09 reviewed for adequacy and inclusion of quality requirements, and approved
10 for release by authorized personnel and distributed for use at the location
11 where the prescribed activity is performed. The groups and/or individuals
12 responsible for these activities are identified.

13

14 Those participating in an activity are made aware of and use proper and
15 current instructions, procedures, drawings, specifications, codes and stan-
16 dards for performing the activity. Participating organizations have pro-
17 cedures for control of these documents and changes thereto, to preclude the
18 possibility of use of outdated or inappropriate documents. Master lists are
19 distributed on a regular basis so that recipients can verify that they are
20 working with current issue of drawings and specifications. Master lists of
21 other activities are provided on a timely basis.

22

23 06.02 Document control measures provide for:

24

25 a. reviewing documents and their revisions for adequacy and inclusion of
26 quality requirements prior to release for use

27

28 b. identifying individuals or organizations responsible for preparing, re-
29 viewing, approving, and issuing documents and revisions thereto

30

31 c. identifying and maintaining current the proper documents and their
32 status, e.g., "preliminary," "approved for construction," "approved for
33 bids," etc., as appropriate

34

- 01 d. coordinating and controlling interface documents
02
03 e. assuring availability of documents at the onset of work for which they
04 are needed
05
06 f. establishing current and updated document distribution lists
07
08 g. obsoleting, recalling, or in some manner identifying documents not
09 intended for current use.
10

11 Changes to documents are reviewed and approved with a degree of control
12 commensurate with the original document, by the same organizations that
13 performed the original review and approval unless other qualified organiza-
14 tions are specifically designated by S&L management. However,
15 nontechnical editorial changes to design documents may not require that the
16 revised document receive the same review and approval as the original
17 document. In such cases, these types of changes and the person who can
18 authorize such a decision shall be delineated in the procedure controlling
19 issuance of the document. Reviewers have access to pertinent background
20 information upon which to base the review, and have an adequate
21 understanding of the requirements and intent of the original document.
22

23 The S&L Quality Assurance Program and implementing procedures require
24 that approved changes be reviewed for applicability to related instructions,
25 procedures, drawings, and other appropriate documents, and that those
26 affected documents be changed through controls consistent with the original
27 issue. Approved changes are required to be traceable as well as imple-
28 mented by all organizations involved.
29

30 06.03 Procedures, instructions, manuals and design documents are included in the
31 S&L documentation system. Typical quality related document types and the
32 groups responsible for these documents are as follows:
33
34

- 01 Quality Assurance Division
- 02
- 03 a. quality assurance program and revisions
- 04
- 05 b. quality assurance procedures and revisions
- 06
- 07 c. position descriptions
- 08
- 09 d. personnel experience records
- 10
- 11 e. training plans, schedules and results
- 12
- 13 f. training records for project personnel in quality assurance requirements
- 14
- 15 g. auditor training records
- 16
- 17 h. audit schedules
- 18
- 19 i. audit reports (including checklists)
- 20
- 21 j. corrective action reports including close-out of items
- 22
- 23 k. responses to NRC and Client audit reports
- 24
- 25 l. NRC audit reports
- 26
- 27 m. reports on technical service consultant and design subcontractor eval-
28 uations and audits
- 29
- 30 n. review and report of Client quality assurance requirements.
- 31
- 32
- 33
- 34

01 Quality Control Division

02

03 a. quality control procedures for S&L review of vendor's quality assurance
04 program

05

06 b. quality control procedures for S&L review of vendor's quality control
07 procedures

08

09 c. quality control procedures for training of auditors

10

11 d. quality control procedures for conducting preaward and postaward
12 audits of vendors, when requested by Client

13

14 e. quality control procedures for performing various quality control activ-
15 ities, i.e., vendor surveillance, review of vendor test and inspection
16 documentation, when requested by a Client

17

18 f. quality control procedures for certification of nondestructive examin-
19 ation personnel

20

21 g. position descriptions

22

23 h. personnel experience records

24

25 i. reports of audits, inspections and surveillances, as applicable.

26

27 Engineering Divisions

28

29 a. scope of work

30

31 b. project organization record

32

33 c. position descriptions

34

- 01 d. personnel experience records
- 02
- 03 e. safety classification
- 04
- 05 f. project instructions
- 06
- 07 g. standard design documents
- 08
- 09 h. design criteria
- 10
- 11 i. design calculations
- 12
- 13 j. design drawings (including drawings prepared by S&L to reflect as-built
- 14 conditions)
- 15
- 16 k. engineering and design reports
- 17
- 18 l. procurement specifications and documents
- 19
- 20 m. status reports
- 21
- 22 n. responses to design change requests
- 23
- 24 o. system functional descriptions
- 25
- 26 7 |
- 27
- 28 p. lists such as Equipment, Cable Tabulation, and Instrument List, etc.
- 29
- 30 7 | Prior to issuance, design documents are reviewed and approved by the
- 31 appropriate division. These documents are filed and available for audit.
- 32
- 33
- 34

01 07.00 CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

02

03 07.01 Implementing procedures to the S&L Quality Assurance Program establish
04 measures to assure that purchased items and services are clearly and
05 adequately specified in procurement documents and are supplied by vendors,
06 contractors, or technical service consultants who are capable of producing
07 items and furnishing services, whether purchased directly or through
08 subcontractors, which conform to procurement document requirements.
09 These procedures include provisions for vendor, contractor and/or technical
10 service consultant evaluation, review of procurement requirements, and
11 surveillance of the vendor, contractor or technical service consultant, as
12 appropriate, when S&L is responsible for the procurement or requested by
13 the Client.

14

15 Results of evaluations performed on vendor, contractor, or technical service
16 consultants prior to contract award are documented, filed, and available for
17 audit.

18

19 Evaluation of procurement sources is performed by S&L engineering, con-
20 tract, quality control and quality assurance personnel, as appropriate.
21 Recommendation of procurement sources is based on these evaluations. The
22 evaluations cover review of capabilities and facilities for technical, manu-
23 facturing, erecting, installing, financial, and quality performance, and
24 include any or all of the following as appropriate:

25

26 a. historical performance data, particularly in product quality and on-time
27 performance

28

29 b. review and comment on vendor, contractor or technical service con-
30 sultant quality assurance program and procedures

31

32 c. source audits to verify vendor, contractor or technical service con-
33 sultant implementation of his quality assurance program, as required

34

01 d. source qualification programs.

02

03 The quality assurance program(s) of potential vendors, contractors or
04 technical service consultants are evaluated to determine compliance with
05 7 | the applicable criteria of 10CFR Part 50, Appendix B, ANSI/ASME N45.2
06 and applicable Regulatory Guides, ASME Section III, Divisions 1 and 2, and
07 other ANSI Standards. The evaluation and concurrence by S&L is
08 accomplished prior to an award by S&L or submittal of the recommendation
09 letter to the Client, as applicable and thereby precedes initiation of quality
10 related activities. Proposals from bidders are reviewed by S&L in
11 accordance with approved quality assurance procedures by the appropriate
12 divisions, and the Quality Assurance Division for technical consultants or
13 the Quality Control Division for vendors other than technical consultants.
14 The evaluation of proposals includes review for bidder capability to meet
15 Quality Assurance Program requirements in procurement specifications.

16

17 S&L may recommend to the Client that an audit be performed prior to
18 award of purchase order or contract to evaluate current implementation of
19 the vendor, contractor, or technical service consultant quality assurance
20 program. Preaward meetings with vendors, contractors, or technical service
21 consultants to resolve any questions are held prior to any recommendation
22 for purchase when required.

23

24 7 | The S&L Quality Assurance and/or Quality Control personnel performs
25 surveillances/audits in the facilities of the contractor, subcontractor,
26 vendor, technical service consultant or supplier furnishing materials, parts,
27 components or services for the project to assure supplier compliance with
28 quality requirements when requested by the Client or when S&L is
29 responsible for the procurement. The surveillances/audits are performed by
30 qualified personnel in accordance with documented procedures that specify
31 the characteristics or processes to be witnessed, inspected or verified, and
32 accepted; the method of surveillance and documentation required, and those
33 responsible for implementation of the procedure.

34

01 When S&L is responsible for procurement or when S&L is requested by the
02 Client, S&L assures that procurement specifications require the successful
03 bidder to submit the following, as applicable, to S&L for review:

- 04
- 05 a. special process procedures such as but not limited to: welding, heat
06 treating, nondestructive examination
 - 07
 - 08 b. recommended vendor or contractor inspection point program
 - 09
 - 10 c. appropriate documentation as established by applicable codes,
11 standards, regulations, and procurement documents
 - 12
 - 13 d. notices of nonconformances and deviations
 - 14
 - 15 e. test procedures in accordance with applicable codes and standards.

16

17 Surveillance by S&L, when requested by the Client or when S&L is
18 responsible for procurement, may include such activities as preparation of
19 inspection point programs, vendor procedure review, surveillance of in-
20 process manufacturing, testing activities, review of documentation, and an
21 inspection prior to release for shipment. These measures are established to
22 evaluate the effectiveness of control of quality by vendors.

23

24 The S&L Quality Control Division, when S&L is responsible for procurement
25 or upon request by a Client, is assigned typical responsibilities as follows for
26 vendor surveillance:

- 27
- 28 a. witness tests, inspections, and nondestructive examinations and audit of
29 the various special process operations
 - 30
 - 31 b. surveillance and audit of heat treatment, welding, cleaning, preserving,
32 packing, packaging and shipping activities
 - 33
 - 34 c. audit vendor conformance with established procedures, such as:

- 01 1. use of S&L accepted drawings and procedures
02
03 2. use of acceptable product and process quality planning
04
05 3. document change control
06
07 4. material identification and traceability control
08
09 5. control and calibration of measuring equipment
10
11 6. control of major repair welding
12
13 d. review completed product checklists and release tags prior to release of
14 equipment for shipment directly to the site, as appropriate.
15

16 The following steps are exercised by S&L personnel during vendor surveil-
17 lances, as requested by the Client or when S&L is responsible for procure-
18 ment:

- 19
20 a. review of vendor documentation during fabrication, testing and final
21 inspection stages
22
23 b. review of documentation to be shipped to the construction site. This
24 documentation includes: material test reports, inspection and test
25 reports, radiographs, and applicable code data reports.
26

27 07.02 The frequency and extent of the surveillances, when requested by the Client
28 7 | or when S&L is responsible for procurement, are consistent with the relative
29 | importance, complexity, and quantity of the item or service being furnished.
30 The measures to evaluate the effectiveness of the control of vendor quality
31 are described above. The surveillances are in accordance with an inspection
32 point program, prepared by S&L and reviewed and approved by the Client.
33 The inspection point programs include manufacturing, construction and/or
34 testing activities to be witnessed, quality assurance/quality

01 control activity to be confirmed by surveillance, and the review of the
02 required documentation.
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01 **08.00** **IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND**
02 **COMPONENTS**

03
04 08.01 7 | S&L does not engage in direct activities which require a quality assurance
05 program for identification and control of materials, parts, and components.
06 Requirements are established in procurement specifications for a system of
07 identification and control of materials, parts, and components so that, if
08 required, traceability from procurement, through installation, to end use, is
09 assured. S&L departmental standards provide for identification require-
10 ments during generation of drawings and specifications. Measures are
11 established to ensure that the use of incorrect or defective items is avoided.
12 7 | Identification and control of materials, parts, and components are primarily
13 a function of the various fabricators, constructors and material suppliers.
14 Vendor quality assurance programs address the requirement that location
15 and method of identification shall not degrade the item.

16
17 When S&L is responsible for procurement or upon request by a Client, S&L
18 provides for audits and surveillances of these activities in the facilities of
19 other contractors, subcontractors, vendors and suppliers. The audits and
20 7 | surveillances are conducted by the Quality Assurance Division and/or
21 Quality Control Division and members of the appropriate engineering
22 division. These audits and surveillances are by qualified personnel. Their
23 work is assigned, performed, reported, and reviewed in accordance with
24 documented procedures.

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01 **09.00** **CONTROL OF SPECIAL PROCESSES**

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03 09.01 S&L does not engage in direct activities which require a quality assurance
04 program for control of special processes. Control of special processes is the
05 function of the various vendors and contractors. However, when S&L is
06 responsible for procurement or upon request by a Client, S&L provides for
07 the review and surveillance of special processes procedures and special
08 processes performance of contractors, subcontractors, vendors, and
09 suppliers engaged in fabricating and furnishing equipment, components, and
10 systems. This is done by qualified S&L personnel in the Quality Control
11 Division whose work is assigned, performed, reported, and reviewed in
12 accordance with documented procedures. S&L personnel who review and
13 provide surveillance on special processes are qualified in accordance with
14 applicable codes, standards, and S&L training programs. Qualifications and
15 certifications are documented, filed, kept current and are auditable.

16
17 Requirements are established in procurement specifications to assure that
18 special processes such as welding, heat treating, cleaning, and
19 nondestructive examination are performed under adequate controls and that
20 procedures governing these processes are established in accordance with
21 applicable codes and specifications. Surveillances permit direct observation
22 of special processes, thereby checking adherence to vendor procedures.
23 Included during these surveillances is verification of the qualifications and
24 certificates of inspectors and operators. Adequacy is determined for the
25 storage, maintenance, and retrievability of qualification records of
26 processing procedures and certification of personnel.

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01 10.00 INSPECTION

02

03 10.01 S&L does not engage in direct activities which require a quality assurance
04 program for inspection. When S&L is responsible for procurement or
05 requested by the Client, S&L will provide scheduled surveillance by the
06 Quality Control Division, and where applicable an engineer from an appro-
07 priate division, of inspection activities in the facilities of contractors,
08 subcontractors, vendors and suppliers engaged in fabricating and furnishing
09 systems and equipment for the project, as set forth in Section 07.00, Control
10 of Purchased Material, Equipment and Services.

11

12 7 | In addition, S&L will conduct scheduled audits of suppliers and their
13 subcontractors in accordance with documented procedures, when S&L is
14 responsible for procurement or is requested by the Client. S&L personnel
15 who witness and provide surveillance of inspection activities are qualified in
16 accordance with applicable codes, standards and S&L training programs.
17 The qualifications and certifications are documented, filed, kept current and
18 are auditable. These audits will verify the application of approved
19 procedures for inspections and acceptability of the equipment.

20

21 10.02 7 | Results of such surveillances and audits of inspection activities will be
22 reported to the Client for review and to verify that hold points identified by
23 the inspection point program have been witnessed.

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01 11.00 TEST CONTROL

02

03 11.01 S&L does not engage in direct activities which require a quality assurance
04 program for control of tests. As the designer of many of the systems in the
05 station, S&L does identify and specify test parameters for certain systems
06 and components.

07

08 7 | The division with assigned responsibility prepares preoperational and startup
09 testing procedures for S&L designed systems, if requested by the Client.
10 Preoperational and startup testing procedures are prepared and reviewed in
11 accordance with standards, procedures or instructions that require inclusion
12 of the following quality assurance requirements, as applicable:

13

14 a. requirements and acceptance limits contained in applicable design and
15 procurement documents

16

17 b. instructions for performing the test

18

19 c. test prerequisites including:

20

21 1. calibrated instrumentation

22

23 2. adequate and appropriate equipment

24

25 3. trained, qualified, licensed or certified personnel

26

27 4. completeness of item to be tested

28

29 5. suitable and controlled environmental conditions

30

31 6. provisions for data collection and storage

32

33 d. mandatory witness points by owner, contractor or inspector

34

01 e. acceptance and rejection criteria

02

03 f. methods for documenting or recording test data and results.

04

05 Reviews on preoperational and startup testing procedures are performed, in
06 accordance with Quality Assurance Procedures supplemented by Divisional
07 Procedures, by personnel assigned in accordance with Section 03.00, Design
08 Control of this document. Reviewers shall have received training and
09 indoctrination from the Quality Assurance Division on the inclusion of
10 quality assurance requirements into preoperational and startup testing
11 procedures. The training and indoctrination shall be documented, filed, and
12 auditable.

13

14 When requested to review a test procedure prepared by others, S&L assures
15 that the above items are included.

16

17 11.02 S&L quality assurance procedures on the preparation, review, and approval
18 of procurement specifications provide for the inclusion of acceptance limits
19 and requirements for special test environment or conditions in the written
20 test procedures submitted by vendors. The S&L Quality Control Division
21 reviews the test procedures provided by vendors to assure that requirements
22 and acceptance limits specified in S&L design documents have been
23 incorporated. S&L provides similar technical input and review of test
24 procedures prepared by the Client.

25

26 11.03 S&L provides surveillance of testing by contractors, subcontractors, ven-
27 dors, and suppliers who fabricate and furnish equipment and systems, if
28 requested by the Client or when S&L is responsible for the procurement.

29

30 7 | Surveillance is performed by qualified S&L personnel. Work is assigned,
31 performed, reported, and reviewed in accordance with documented
32 procedures.

33

34

01 Surveillance by S&L on vendor tests includes verification of compliance to
02 procedural requirements including the generation of the required documen-
03 tation. Checks are made of completion of prerequisite conditions, such as
04 test conditions, test equipment, calibration status and data accumulation.
05 Results of tests are evaluated by S&L to confirm vendor acceptability of the
06 tests.

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01 **12.00 CONTROL OF MEASURING AND TEST EQUIPMENT**

02

03 12.01 S&L does not engage in direct activities which require a quality assurance
04 program for identification and control of measuring and test equipment.
05 Control of measuring and test equipment is the responsibility of the
06 7 | organizations performing inspection and test activities.

07

08 However, in the course of S&L's normal activities, the S&L Quality
09 Assurance Program provides for the control of measuring and test
10 equipment in two specific cases. The Quality Control Division provides for
11 the control, maintenance, and use of calibrated step wedge film strips in the
12 utilization of a densitometer when reviewing radiographic film. The Quality
13 Assurance Division requires that the temperature/humidity recorder in the
14 S&L Quality Assurance Records Facility be calibrated at established time
15 7 | intervals. These two activities are controlled in accordance with
16 documented procedures.

17

18 When S&L is responsible for procurement or when requested by the Client,
19 S&L provides for surveillance of these activities by the S&L Quality Control
20 Division in the facilities of other contractors, subcontractors, vendors, and
21 suppliers engaged in fabricating and furnishing materials, parts, and
22 components for the project. Surveillances are by qualified personnel whose
23 work is assigned, performed, reported, and reviewed in accordance with
24 documented procedures.

25

26 Surveillance activity includes checks to assure that inspection operations
27 are or have been performed with appropriate measuring and test equipment,
28 currently adjusted and calibrated against nationally recognized standards.
29 Where no national standards for equipment calibration exist, the
30 documentation for the basis of the calibration is audited.

31

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33

34

01 **13.00 HANDLING, STORAGE, AND SHIPPING**

02
03 13.01 S&L does not engage in direct activities which require a quality assurance
04 program for handling, storage, and shipping. Handling, storage, and shipping
05 is the responsibility of the various vendors and storage at the site is the
06 responsibility of the constructor. However, when requested by the Client
07 that S&L handle materials, parts and components which are to be tested by
08 a testing laboratory, the Project Manager shall ensure that the test samples
09 forwarded to S&L offices are controlled in accordance with departmental
10 procedures and/or project instructions.

11
12 When S&L is responsible for procurement or requested by the Client, S&L
13 provides for surveillance by the S&L Quality Control Division of these
14 activities in the facilities of contractors, subcontractors, vendors, and
15 suppliers engaged in fabricating and furnishing materials, parts, and
16 components for the project. Surveillances are by qualified personnel whose
17 work is assigned, performed, reported, and reviewed in accordance with
18 documented procedures.

19
20 Requirements established in procurement specifications include instructions
21 for packaging, handling, shipping, storage and protective environment.

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01 14.00 INSPECTION, TEST, AND OPERATING STATUS

02

03 14.01 S&L does not engage in direct activities which require a quality assurance
04 program for identification, inspection, test, and operating status. These
05 activities are under the scope of responsibility of the various fabricators,
06 constructors, vendors and Owner.

07

08 However, S&L will provide surveillance by the S&L Quality Control Division
09 when S&L is responsible for procurement or requested by the Client to
10 determine that the NSSS supplier and other vendors/subvendors have
11 implemented their quality assurance program for identification, inspection,
12 test and operating status. Surveillances are performed by qualified
13 personnel. Work is assigned, performed, reported and reviewed in
14 accordance with documented procedures.

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01 15.00 NONCONFORMING MATERIALS, PARTS OR COMPONENTS

02
03 15.01 S&L does not engage in direct activities which require a quality assurance
04 program for nonconforming materials, parts, or components. This is the
05 responsibility of fabricators, manufacturers, vendors, and the constructor.
06

07 However, requirements are established in procurement specifications that
08 vendors shall furnish documentation of any nonconformance. The S&L
09 Quality Control Division reviews vendor programs to assure that controls
10 are provided for nonconforming materials, parts or components at vendor
11 facilities, when requested by the Client or when S&L is responsible for
12 procurement.
13

14 The appropriate S&L engineering division reviews documented instances of
15 nonconforming parts and components where such nonconformances affect
16 the design, and the Project Manager provides the Client with a written
17 evaluation of such effects. Recommendations are made in accordance with
18 specification and design requirements.
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01 **16.00** **CORRECTIVE ACTION**

02
03 16.01 Procedures assigning responsibilities for identifying and promptly correcting
04 nonconformances are included in the Quality Assurance Manual. These
05 procedures require any person who detects an apparent nonconformance to
06 notify the Head, Quality Assurance Division by memorandum. The Head,
07 Quality Assurance Division reviews the apparent nonconformance and, if
08 necessary, instructs the Senior Quality Assurance Auditor to conduct an
09 investigation. If the Head, Quality Assurance Division or Senior Quality
10 Assurance Auditor determines that a nonconformance does not exist, the
11 initiator is so notified. If a nonconformance does exist, the Quality
12 Assurance Division Auditing Section initiates a corrective action report.
13 Nonconformances may be detected during audits, or during the design
14 process. The Project Manager and applicable Department Manager are
15 provided with reports of nonconformances in S&L work. The Head, Quality
16 Assurance Division, monitors reports of nonconformances and classifies
17 them. The procedures assign responsibility for verifying that a reported
18 nonconformance has been corrected. The implementation and effectiveness
19 of the corrective action is verified by follow-up audits. The corrective
20 action documentation is then completed.

21
22 If a nonconformance is determined to be a significant condition adverse to
23 quality, the Head, Quality Assurance Division reports the occurrence to the
24 Director of Services. The Head, Quality Assurance Division may stop or
25 otherwise control further processing of such deficiency or nonconformance
26 until disposition of the unsatisfactory condition has been resolved. The
27 appropriate Department Manager identifies the cause and takes the action
28 necessary to correct the condition and to preclude its recurrence. This is
29 verified by audit, and the corrective action documented.

30
31 When S&L detects a significant safety-related design nonconformance as
32 defined by NRC 10CFR50.55(e), it is reported to the Client without delay by
33 the Project Director.
34

01 17.00 QUALITY ASSURANCE RECORDS

02

03 17.01 Requirements are established in this Quality Assurance Program and imple-
04 menting procedures for generation, collection, compilation, storage, and
05 retrieval of documentation necessary to provide records of quality for S&L
06 design and procurement activities.

07

08 7 | Quality assurance procedures require retention of quality assurance records
09 such as, but not limited to: design input documents, project design
10 documents (classification criteria, design criteria, drawings, calculations,
11 specifications, standards), personnel qualification statements, audit reports
12 7 | and replies to audits, nonconformances and corrective action reports,
13 change control documents, deviations, design review reports, applicable
14 correspondence and meeting notes.

15

16 17.02 Procedures require that sufficient records be prepared as work is performed
17 to provide assurance of the quality of the activities performed, and that
18 such records be consistent with applicable codes, standards, and specifi-
19 7 | cations. The quality assurance records are identified and filed in a timely
20 and orderly manner to allow for access and retrievability. They are
21 carefully handled to maintain legibility and preserve the original quality of
22 the records to the maximum extent.

23

24 17.03 Procedures, consistent with regulatory requirements, have been prepared
25 and include the requisites for transmittal, retention, maintenance and
26 retrieval of records. Records are stored in a facility that provides
27 controlled access and protection against fire, flood, tornadoes,
28 condensation, vermin and decay and satisfy the requirements described in
29 Regulatory Guide 1.88. S&L takes exception to the 4 hr. minimum fire
30 rating requirement for a single record facility. Instead, S&L will provide for
31 7 | a:

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(a) 2 hour fire rated vault meeting NFPA 232-1975, or

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(b) 2 hour fire rated class 0 file containers meeting the requirements of NFPA 232-1975, or

(c) 2 hour fire rated file room meeting the requirements of NFPA 232-1975 with the following additional provisions:

7

- (1) early warning fire detection and automatic fire suppression capability with electronic supervision at a constantly attended central station;
- (2) records storage in fully enclosed metal cabinets;
- (3) adequate access and aisle ways;
- (4) prohibition in the room of work not directly associated with record storage or retrieval;
- (5) prohibition in the room of smoking, eating, or drinking;
- (6) 2 hour fire rated dampers or doors in all boundary penetrations.

17.04 Quality assurance records are maintained by S&L until a project is complete unless otherwise directed by the Client. At completion of the project, the Project Manager provides for the delivery of the quality assurance records to the Client in accordance with quality assurance procedures.

01 18.00 AUDITS

02

03 18.01 S&L utilizes a system of planned and periodic audits of activities, records
04 and facilities to verify compliance with and to assess effectiveness of all
05 aspects of the S&L Quality Assurance Program and the implementing
06 procedures. Organizations subject to audit by S&L include:

07

08 a. S&L departments, divisions and project groups

09

10 b. technical service consultants and design subcontractors performing
11 activities affecting quality

12

13 c. vendors - as requested by a Client.

14

15 Audits include evaluation of quality system practices and/or procedures and
16 the effectiveness of their implementation, monitoring work areas and
17 activities and reviewing pertinent documents and their control and main-
18 tenance.

19

20 18.02 Audits within S&L are carried out by the Quality Assurance Division in
21 accordance with the requirements of the Quality Assurance Manual. The
22 objectives of these audits are:

23

24 a. to verify that the policies, procedures, and instructions necessary for
25 implementation of the Quality Assurance Program are established in a
26 timely manner

27

28 b. to determine the degree of compliance with the Program and its
29 implementing procedures by personnel performing quality related
30 functions

31

32 c. to determine the degree of compliance on each project, with project
33 instructions, department standards, division procedures and other docu-
34 ments which provide guidance for the project

01 d. to assess the effectiveness of the Program and its implementing
02 procedures.

03
04 Audits are conducted by S&L personnel who have no direct responsibility in
05 the areas they audit. Auditors are required to possess the educational
06 training and experience qualifications for auditing as specified in imple-
07 menting procedures.

08
09 The Quality Assurance Program requires that support division's work and
10 7 | each complete scope nuclear project team's work be audited on applicable
11 elements of the Program, implementing quality assurance procedures,
12 project instructions, departmental standards and division procedures on the
13 basis of the safety importance of the activity being performed and at least
14 once each year. An audit schedule is prepared each year identifying the
15 audits to be performed and their scheduled dates.

16
17 For limited scope projects, such as modification work for operating plants,
18 7 | implementation of the auditing function is dependent on S&L's assigned
19 responsibilities on the project.

20
21 Audits are initiated early in the design and procurement phase. The areas
22 of:

- 23
- 24 a. preparation, review, approval and control of early procurements
- 25
- 26 b. indoctrination and training programs
- 27
- 28 c. interface control among the applicant, S&L and NSSS supplier
- 29

30 fall within the scope of the S&L audit program.

31
32 Audit reports are reviewed and approved by the Head, Quality Assurance
33 Division and distributed to the persons directly responsible for the areas or
34

01 7 functions audited; the Division Heads, Design Directors and Project Services
02 Director responsible for those areas or functions audited; the Managers of
03 the Mechanical, Electrical, Structural and Services Departments; the
04 Director of Engineering; the Director of Services; the Project Director and
05 Project Manager of the project audited.

06
07 18.03 7 External audits of vendors made at the request of a Client are performed by
08 the Quality Assurance Division and/or Quality Control Division. Audits of
09 technical service consultants and design subcontractors are performed by
10 the Quality Assurance Division. Engineers from involved divisions acting as
11 7 technical specialists may assist in the external audits.

12
13 18.04 Procedures for both internal and external audits provide for audit planning,
14 execution, evaluation of results, postaudit conference with supervision in
15 the audited area, and reporting. An audit plan is developed for each audit
16 which indicates the audit scope, the activities to be audited, the applicable
17 documents and requirements, the schedule, and the audit team. Audits are
18 performed in accordance with written procedures or checklists. The audit
19 checklist is intended for use as a guide and may be altered during an audit to
20 achieve the audit's objectives. Such changes must be documented and
21 become part of the audit record. A written report is required for each
22 audit. The report includes:

- 23
24 a. a statement of the audit scope
25
26 b. identification of the auditors and lead auditor
27
28 c. identification of persons and/or areas audited
29
30 d. description of each nonconformance
31
32 e. request to responsible personnel for reply on corrective action within a
33 stated period
34

01 f. an evaluation statement regarding the effectiveness of the program
02 elements that were audited, if appropriate

03

04 g. recommendations for improvement of the Program, as appropriate.

05

06 Followup, including reaudits, of deficient areas and nonconformances is
07 required in accordance with written procedures. Nonconforming areas are
08 reaudited as necessary to assure that effective corrective action has been
09 taken by the responsible management.

10

11 The management of the area audited responds within 30 days of receipt of
12 audit report indicating corrective action to be taken and the schedule for
13 completion. Extension of the 30 day requirement for responding to
14 nonconformances may be granted by the Head, Quality Assurance Division
15 under special circumstances. Reaudits are conducted on a timely basis, but
16 no longer than 60 days after scheduled completion of corrective action in
17 accordance with quality assurance procedures. Audit reports are filed and
18 available for audit.

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20 18.05 At least once each year, an audit of the Quality Assurance Division is
21 conducted by management personnel having no direct responsibility for the
22 activities being audited.

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