SOUTHERN CALIFORNIA EDISON COMPANY

TOPICAL REPORT

QUALITY ASSURANCE PROGRAM

SCE-1-A

APPROVALS

Brian Katz

MANAGER OF NUCLEAR OVERSIGHT

VICE PRESIDENT, ENGINEERING AND TECHNICAL SERVICES

Amendment 16
July 1993

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LIST OF AMENDMENTS

Amendment No.	Amendment Date
Original	October 26, 1976
1	March 1977
2	May 1978
3	April 1980
4	April 1981 (Modified August 1981)
5	December 1981 (Modified March 1982 to incorporate Change Notices 1 through 3.)
6	April 1983
7	June 1984
8	July 1985
9	July 1986
10	July 1987
11	July 1988
12	July 1989
13	July 1990
14	July 1991
15	July 1992
16	July 1993

17.0 INTRODUCTION

This topical report was prepared in accordance with the Nuclear Regulatory Commission's (NRC) "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants" (NUREG-75/094, Regulatory Guide 1.70, Revision 2, September 1975). Guidance used in the preparation was obtained from the NRC's "Standard Review Plan" (NUREG-74/087, November 24, 1975).

The purpose of this report is to describe the Quality Assurance Program applicable to those Southern California Edison Company (SCE) nuclear generating stations which reference this topical report on their docket. Deviation from this program if required, will be described in the applicable SAR. | 14

Section 17.2 describes the operational phase quality assurance programs including Preoperational and Startup Tests. | 1-421.1

The program is applied to all activities affecting the Safety-Related functions of those structures, systems and components which prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public. It complies with the requirements, guides, and standards listed on Table 17.2-1, as appropriate, for the operational phases of nuclear generating stations. The program also applies to activities governed by the Station Technical Specifications and other activities licensed by the NRC. | 14

SCE as applicant, plant owner and operator, maintains full responsibility for the quality assurance program for all phases of nuclear generating station development and operations. Other organizations may be delegated the work of establishing and executing portions of the Quality Assurance Program. The quality assurance programs of these organizations and the scope of delegation are as described in the applicable Safety Analysis Report (SAR).

Changes to the SCE Quality Assurance Program will be incorporated into this topical report by amendment. Changes will be submitted to the NRC in accordance with the requirements of 10CFR50.54a.

17.0.1 DEFINITIONS

Following are definitions of terms used in this report. Additional terms not defined by this subsection are defined in ANSI N45.2.10, as endorsed by Regulatory Guide 1.74.

Architect-Engineer (A-E) - An organization contracted to design, construct and perform backfit modifications to a nuclear generating station.

Accept-As-Is - A disposition to accept a nonconforming item without further work as the deviation is judged not to negatively affect the as-designed quality or function of the item.

Administrative Authority - The responsibility of an individual to direct the work (excluding technical direction) of another individual or group including the responsibility for hiring, firing, salary review, and position assignment of an individual. See Technical Authority.

Auditor - An individual who performs any portion of an audit, including lead auditors, technical specialists and other such as management representatives and persons in training to become Lead Auditors.

Construction Material Tests - Physical and chemical testing of materials intended for construction use to verify conformance with material specifications.

Consultant - A person or organization retained under contract by SCE to provide expert advice, recommendations, or work.

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Design Disclosure Documents - Drawings, P&I diagrams, calculations, or specifications which define items and which are needed to translate engineering concepts into structures, systems and components.

Engineering Construction Project (ECP) - A major modification to an operating nuclear generating station.

Corporate Documentation Management (CDM) Centers - The locations where project documents including quality assurance records, are maintained in accordance with established documentation retention and control requirements.

Engineering Review Board (ERB) - Those cognizant individuals responsible for providing approvals of Accept-As-Is or repair dispositions of nonconformance reports.

Engineering Review Process - The procedure used to determine dispositions of nonconforming items.

Initial Startup Tests - Tests conducted after fuel loading and prior to commercial operation that confirm the design bases and demonstrate, where practical, that the plant is capable of withstanding the anticipated transients and postulated accidents.

In-Service Inspection - The planned and periodic nondestructive examinations performed on installed and/or operating structures, systems, and components, as required by Section XI of the ASME Boiler and Pressure Vessel Code.

In-Service Tests - Testing which is conducted to satisfy the requirements of Section XI of the ASME Boiler and Pressure Vessel code.

Modification Tests - Those tests performed during or after completion of a modification to demonstrate that the affected structure, system or component can perform its design function and that it is compatible with existing plant systems. Includes tests similar to those performed during the initial plant construction and startup.

Nuclear Fuel - Fuel assemblies including but not limited to the following items: fuel rods, poison rods (where applicable), spacer grids, control element assembly guide tubes, and end fittings.

Nuclear Utility Procurement Issues Committee (NUPIC) - An organization of Nuclear Utilities that performs audits of vendors for the nuclear industry and provides a forum to discuss nuclear procurement issues. 13

Nuclear Steam Supply System (NSSS) Supplier - An organization contracted to design and manufacture a nuclear steam supply system for a nuclear generating station.

Qualification - Required acts to select a source for providing items or services.

Preoperational Tests - Tests conducted to demonstrate the capability of items to meet safety-related performance requirements.

Procurement Documents - Contract documents including purchase orders, work assignments, memoranda of changes, and applicable design disclosures.

Project Direction - Direction or instructions concerned with project operations and defining when work is to be accomplished. Includes coordination and day-to-day direction of activities of project entities receiving technical direction from others.

Project Engineer - An assigned engineer who performs project liaison activities between the Project Management Organization from which project direction is received and the engineering organization from which t chnical direction is received.

Project Group Leader - An individual assigned within a discipline which is providing support to a project who is responsible to provide functional direction for that support.

Prototype Tests - Tests conducted in support of design activities to demonstrate the adequacy of the design to perform under the most adverse conditions.

Quality-Affecting Activities - Activities of people which either do or could influence quality of Safety-Related items or work, including designing, purchasing, constructing, fabricating, handling, shipping, storing, cleaning, preserving, erecting, installing, inspecting, testing, operating, maintaining, repairing, refueling, or modifying. Also includes activities required by Station Technical Specifications or otherwise licensed by the NRC.

Quality Assurance Functional Direction - Directions regarding quality assurance matters provided by the SCE Nuclear Oversight Division to other organizations which have been delegated the work of establishing and executing portions of the Quality Assurance Program. 13

Reference Standards - Standards (this is primary, secondary and working standards, where appropriate) used in a calibration program. These standards establish the basic accuracy limits for that program.

Reject - A disposition to remove a nonconforming item from use due to its unsuitability for the intended purpose.

Safety-Related - Applies to the prevention or mitigation of the consequences of postulated accidents that could cause undue risk to the health and safety of the public.

Shop Tests - Tests conducted at the source of fabrication to verify conformance with design requirements stipulated in design disclosure documents.

Station Orders - Procedures and/or instructions prepared by the station staff and approved by the Station Manager.

Station Tests - Tests to demonstrate that the work performed by the station staff or contractors is satisfactory and meets established requirements. Includes operability testing and In-service Testing. | 12

Stop Work - The authority to stop unsatisfactory work and control the further processing, delivery, or installation of nonconforming items. This does not include the authority to stop station power operations. | 12

Technical Authority - The authority to provide technical direction.

Technical Direction - Instructions and directions defining technical requirements for an activity.

Technical Specification - Appendix A (Safety) and Appendix B (Environmental) to the operating license of a station issued by the Nuclear Regulatory Commission.

Unreviewed Safety Question - A proposed change, test or experiment involves an Unreviewed Safety Question if: (1) the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the Safety Analysis Report (SAR) may be increased; or (2) the possibility for an accident or malfunction of a different type than any previously evaluated in the SAR may be created; or (3) the margin of safety as defined in the basis for any Technical Specification is reduced.

17.2 QUALITY ASSURANCE DURING THE OPERATIONS PHASE

17.2.1 ORGANIZATION

17.2.1.1 SCOPE

This subsection describes the SCE organizational structure and responsibilities for establishing and executing the Quality Assurance Program for SCE operational nuclear generating stations, in compliance with Regulatory Guides 1.8, 1.28 and 1.33 (reference Table 17.2-1). It includes a description of the interfaces with other organizations who may be delegated the work of establishing and executing portions of the Quality Assurance Program. The methods used for maintaining responsibility for delegated portions of the Quality Assurance Program are identified as well as the management measures that provide the independence of the SCE Quality Assurance Organization.

17.2.1.2 General Responsibilities

During the operational phase, the following departments within SCE are involved in quality-affecting activities:

Departments	Responsibilities
Nuclear Engineering, Safety and Licensing	Licensing, Nuclear Engineering, Nuclear Safety, Radiological Environmental Monitoring, Corporate Emergency Planning, Quality Assurance, Design and Construction, Preoperational and Start-up Testing, ECP Project Management. Procurement and Shipping of Nuclear Fuel, Spent Fuel Shipping Services, Special Nuclear Material Accountability
Nuclear Generation Site	Station Operation, Maintenance, Refueling, Testing, In-Service Inspection, Station Safety, Handling, Storage and Warehousing of Material and Equipment, Records Management, Packaging and Transportation of Radioactive Material, and Environmental Monitoring. 16 16
Procurement and Material Management	Procurement and Shipping of Material and Equipment (except nuclear fuel)
Employee, Technology & Management Services	Records Storage and Retrieval Maintenance and Technical Support and Equipment Repair and Calibration

Regulatory Policy and Affairs	Collection of Meteorological Data and Environmental Monitoring Support	15

The SCE organizational structure of departments involved with implementing the SCE Quality Assurance Program during the operational phase as well as departmental interfaces is presented on Figure 17.2.1 and Figure 17.2.1a.

In addition to the departmental responsibilities listed, Technical Specifications for operating nuclear generating stations describe the Safety-Related functions of the On-Site Review Committee (OSRC), Nuclear Safety Group (NSG), and Independent Safety Engineering Group (ISEG), a summary of these responsibilities is as follows:

Committee/Board/Group	Responsibility
OSRC	Advise the Station Manager on all matters related to safety.
NSG	Provide independent review and audit of designated activities in the area of safety.
ISEG	Provide onsite independent review of station activities and feedback of operating experience.

The organizational structure, administrative requirements, responsibilities and authorities specific to each committee/ group is described in the Technical Specification for the applicable station and in internal procedures.

The ultimate responsibility for operating, maintaining, repairing, inspecting, testing, refueling, and modifying operational nuclear generating stations rests with the Chairman of the Board. He assigns responsibilities to the various SCE organizations involved in nuclear generating station operations.

The Senior Vice President, Nuclear reports to the Chairman of the Board and is responsible for Nuclear Engineering, Safety and Licensing, and Nuclear Generation Site.

17.2.1.2 (continued)

A Senior Vice President reports to the President and is responsible for Employee, Technology and Management Services |15

The Senior Vice President, Nuclear has been delegated the responsibility for establishment and assurance of implementation of the SCE Quality Assurance Program in compliance with 10CFR50, Appendix B. and other applicable regulations and standards. He is authorized to request the cooperation of all officers and management personnel in support of this program.

SCE corporate management is involved with quality assurance matters on continuing basis by means of regular Officer Council meetings. Nuclear Oversight Division weekly progress reports are prepared for the Senior Vice President, Nuclear and are used, as appropriate, for discussion items at these meetings. These reports usually contain significant progress items, corrective action recommendations, and unresolved items. In addition, a quarterly report of information suitable for assessment of the status and adequacy of the SCE Quality Assurance Program is submitted to senior management by the Manager of Nuclear Oversight.

The Nuclear Control Boards (NCB), which includes corporate officers and upper management personnel, are additional means by which SCE corporate management is involved with quality assurance matters. As a member of the NCBs, the Senior Vice President, Nuclear apprises these boards of significant quality assurance matters related to station operations and modifications.

17.2.1.3 Nuclear Generation Site Department

The Nuclear Generation Site Department, under the Vice President, Nuclear Generation Site, is responsible for operation of nuclear powered generating facilities.

The Vice President, Nuclear Generation Site is responsible for the safe and reliable operation, maintenance, testing, refueling, and In-service Inspection of his assigned station and reports to the Senior Vice President, Nuclear

The Vice President, Nuclear Generation Site is responsible for the routine administration and implementation of the Quality Assurance Program at the station, including the following station organization functions, where appropriate:

17.2.1.3 (continued)

- o Review and approval of Design Disclosure Documents for station modifications.
- o Review and approval of Procurement Documents.
- o Review and approval of administrative and technical procedures.
- o Handling, Storage and Warehousing of Material and Equipment
- o Operation and Maintenance of plant systems and equipment
- o Conducting Performance Tests and In-Service Inspections and Evaluations.
- o Refueling
- o Review of station operations and surveillance requirements of the Technical Specifications.
- o Safety
- o Security
- o Training and examination of station personnel.
- o Storage and retention of quality assurance records and document/drawing control at the nuclear generation site.
- o Environmental Monitoring, Meteorological data collection and reviews of environmental impact for nuclear power plant activities. | 16

17.2.1.4 Nuclear Engineering, Safety and Licensing Department

The Nuclear Engineering, Safety and Licensing Department, under the Senior Vice President, Nuclear is responsible for nuclear engineering, safety and licensing, nuclear fuel, corporate emergency preparedness, engineering and initial plant construction including Preoperational and Start-up testing as well as engineering, construction and start-up testing associated with ECP development. Engineering responsibilities include design and drafting services, and supporting the projects in the various technical disciplines. Construction responsibilities include technical and administrative direction over project construction personnel and construction management, and Preoperational and Start-up testing.

The Senior Vice President, Nuclear is responsible for establishment and assurance of implementation of the SCE Quality Assurance Program in compliance with applicable regulations, codes, and standards, including those listed in Table 17.2-1. He is responsible for establishing quality assurance policies, goals and objectives and for assuring that these policies are followed and the goals and objectives are achieved.

17.2.1.4 (continued)

The Senior Vice President, Nuclear is responsible for apprising the Management of the effectiveness of the Quality Assurance Program. He is involved in the disposition of nonconformances of unusual complexity, and acts upon trending studies that indicate quality problems of a possible generic nature submitted to him by the Manager of Nuclear Oversight. |14

The Senior Vice President, Nuclear through the Manager of Nuclear Oversight, exercises the Administrative Authority for the Nuclear Oversight Division. Direction for implementing the Quality Assurance Program is provided to individuals and groups by the Senior Vice President, Nuclear through the Manager of Nuclear Oversight. |14

The Manager of Nuclear Oversight, reports directly to the Senior Vice President, Nuclear, and has the responsibility for development, maintenance, and surveillance of the Quality Assurance Program as described in Quality Assurance manuals. These manuals are reviewed and approved by the Manager of Nuclear Oversight, and the Senior Vice President. Other organizations involved with Quality Assurance Program implementation, as described in Subsection 17.2.1, review and comment on the Quality Assurance manuals, particularly as they apply to their area of involvement. The Manager of Nuclear Oversight, is responsible for identifying any conditions adverse to quality and reporting them to the Senior Vice President, Nuclear and to the Nuclear Control Board (NCB) of which he is a member. In addition, the Manager of Nuclear Oversight, is responsible for surveillance of Quality-Affecting Activities and has the authority to Stop Work or delegate this authority, in writing, to other personnel. |14 |14

The minimum qualification requirements for the position of Manager of Nuclear Oversight, are as follows:

- Bachelor of Science Degree in one of the engineering disciplines from an accredited college or university.
- Ten years experience in design, fabrication, construction, testing, operation, or quality assurance related to the nuclear power field.
- Management and administrative ability demonstrated by experience and training.
- Extensive knowledge of regulatory requirements for nuclear generating stations.

The Nuclear Oversight Division, under the direction of the Manager of Nuclear Oversight, develops and administers the Quality Assurance Program for the operational phase of nuclear generating stations. It is comprised of engineers with expertise in the various disciplines required for performing quality assurance and quality control activities. This organization audits, inspects, or otherwise verifies that activities within the scope of the SCE Quality Assurance Program are correctly performed either by SCE or other organizations delegated the work. 16

The Nuclear Oversight Division has the authority and organizational freedom to:

- Identify quality problems.
- Initiate, recommend, or provide solutions through designated channels.
- Verify implementation of solutions.

Additional activities performed by Nuclear Oversight Division personnel during the operations phase are listed on Table 17.2-3.

A Site Quality Assurance Manager and Quality Assurance Supervisors are assigned to the operating nuclear generating station. They are responsible for directing and managing the activities of quality assurance personnel performing the activities described on Table 17.2-3.

A Site QC Manager and QC Supervisors are responsible for directing the activities of site QC personnel. QC personnel provide site inspection and surveillance of safety related items and activities and non-safety related items and activities when requested by Station or Project Management.

The Manager, Safety Engineering, is responsible to the Manager of Nuclear Oversight for ensuring the Nuclear Safety Group (NSG) and Independent Safety Engineering Group (ISEG) Supervisors and assigned NSG and ISEG personnel provide independent review of activities as defined in the station technical specifications.

Quality Assurance and Quality Control Managers and Supervisors have the responsibility and authority, delineated in writing, to stop unsatisfactory work and to control further processing, delivery, and installation of nonconforming items.

The Manager of Nuclear Regulatory Affairs reports to the Senior Vice President, Nuclear and provides licensing, corporate emergency planning, and corporate health physics and environmental support for nuclear generating facilities.

17.2.1.4 (continued)

The Manager of Nuclear Engineering and Construction reports to the Senior Vice President, Nuclear and provides the technical and quality aspects for nuclear engineering and design, site engineering support, procurement engineering, construction and retrofit management including preoperational and startup testing, design basis documentation, procurement and shipment of nuclear fuel, spent fuel shipping services and special nuclear material accountability. 15

The Manager Budgets and Administration reports to the Senior Vice President, Nuclear and Licensing and provides procedure training support and records management.

The Manager of Projects reporting to the Senior Vice President, Nuclear is assigned to manage the company resources required to plan, engineer, and construct plant modifications. In conjunction with other Nuclear Organization Divisions, the Manager of Projects, manages the capital and function budgets for plant modification work. 15

17.2.1.5 Power Production Department 15

The Power Production Department, under the direction of the Vice President Power Production is responsible for providing maintenance services and technical assistance mainly during periods of refueling operations and equipment repair and calibration when requested by the Project Manager or Station Manager. 15

The Division Chemical Staff assists generating stations with water chemistry control.

The Division Maintenance Organization, provides supervision and manpower capability for major overhauls and equipment repair.

17.2.1.6 Procurement and Material Department

The Procurement and Material Management Department, under the direction of a Senior Vice President is responsible for procurement of materials and equipment, except nuclear fuel, for nuclear generating stations.

The Manager of Procurement and Material Management reports to the Senior Vice President and is responsible for procurement of items and services (excluding nuclear fuel), material shipping, and for preparation, negotiations, and administration of procurement contracts.

17.2.1.7 Employee, Technology & Management Services

A Senior Vice President is in charge of Employee, Technology & Management Services. The Senior Vice President reports to the President.

The Manager of Real Properties and Administrative Services reports directly to the Senior Vice President and is responsible for the corporate records management program. Corporate Documentation Services operates the Corporate Records Center (CRC) at the Corporate offices which is responsible for storage and retrieval of nuclear records placed in their custody.

The Shop Services and Instrumentation Department, provides equipment repair and calibration for generating stations when requested by the Station Manager or Project Manager.

17.2.1.8 Regulatory Policy and Affairs

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17.2.1.9 Delegated Quality Assurance Work

SCE retains responsibility for the Quality Assurance Program described herein but may delegate quality assurance work to other organizations. Other organizations which may be delegated the work of establishing and executing portions of the Quality Assurance Program during the operational phase are as follows:

- Architect-Engineer (A-E,s).
- Nuclear Steam Supply System (NSSS) Supplier.
- Other suppliers contractors including consultants to SCE.

The quality assurance programs of these organizations and the scope of delegated work is as described in the applicable contract for the work performed. A typical interface organizational relationship between SCE and other organizations delegated quality assurance work is as shown on Figure 17.2-2.

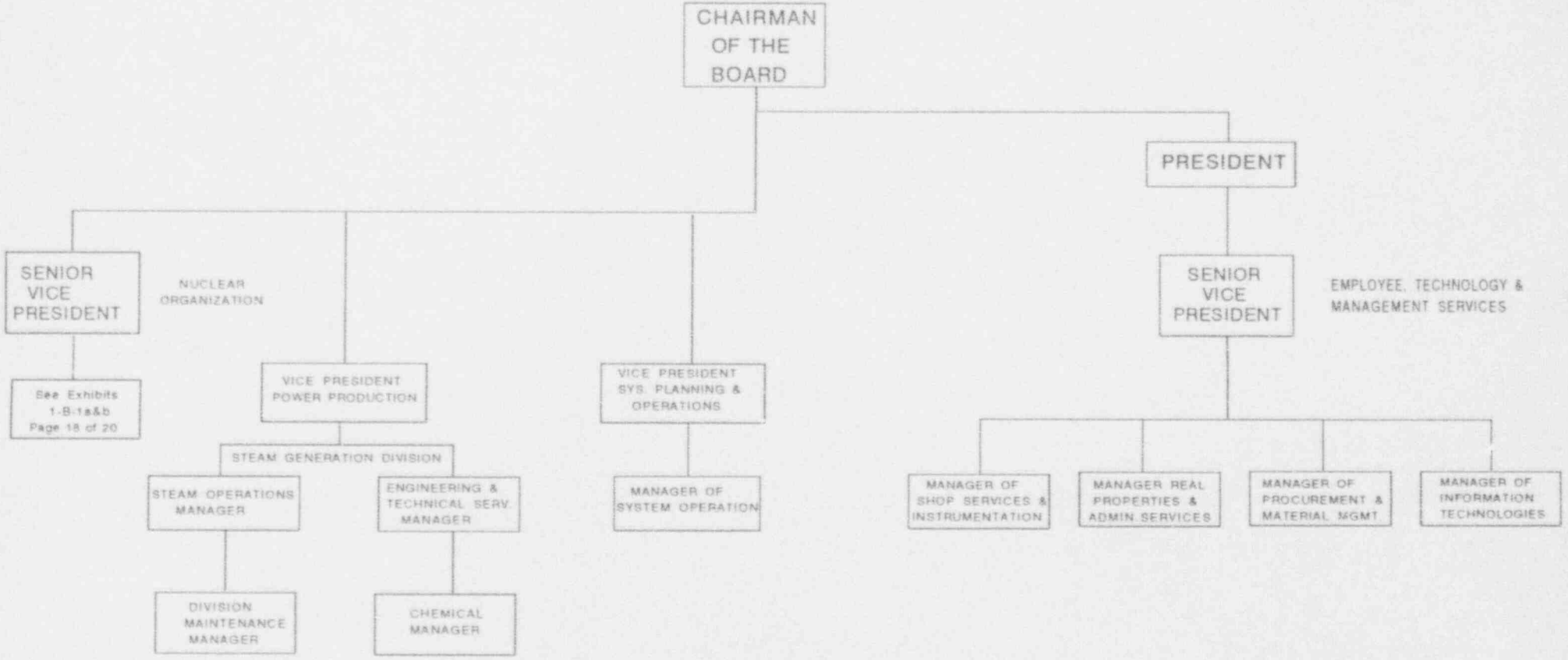
17.2.1.10 Interface for Delegated Quality Assurance Work

The SCE Manager of Nuclear Oversight, is responsible to communicate SCE quality assurance requirements directly with quality assurance managers of other organizations delegated the work of establishing and executing portions of the Quality Assurance Program. Compliance with SCE quality requirements and regulatory requirements is verified by means of review and approval of these organizations' quality assurance programs as described in Subsection 17.2.2 and by means of audits as described in Subsection 17.2.18.

17.2.1.10 (continued)

Management of other organizations delegated quality assurance work is required to implement a reporting system concerning the delegated quality assurance work they are performing and to regularly review the status and effectiveness of that part of the program they are executing. Further, management of these organizations is required to submit to SCE management reports concerning correction of quality problems identified during SCE surveillance of delegated work.

SOUTHERN CALIFORNIA EDISON
QUALITY PROGRAM
CORPORATE DEPARTMENTS



SCE QUALITY PROGRAM ORGANIZATION

Figure 17.2-1

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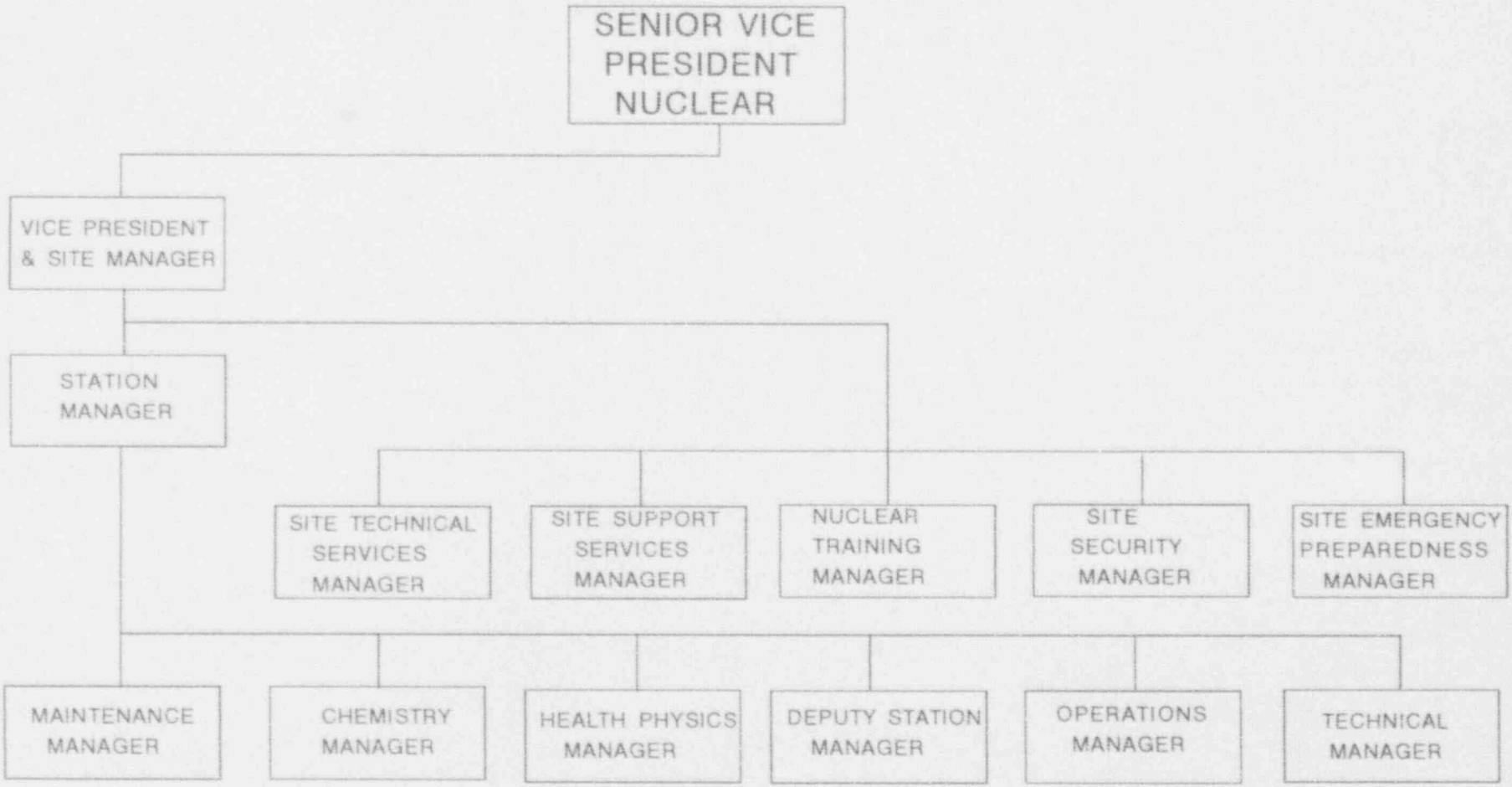
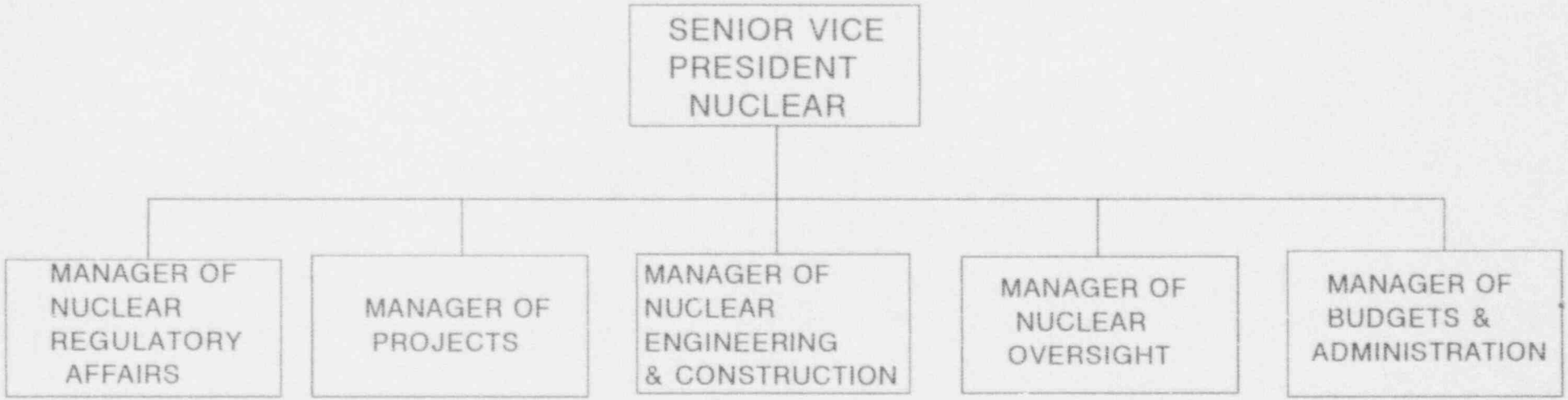
NUCLEAR ORGANIZATION

NUCLEAR GENERATION SITE



NUCLEAR ORGANIZATION

NUCLEAR ENGINEERING, SAFETY AND LICENSING



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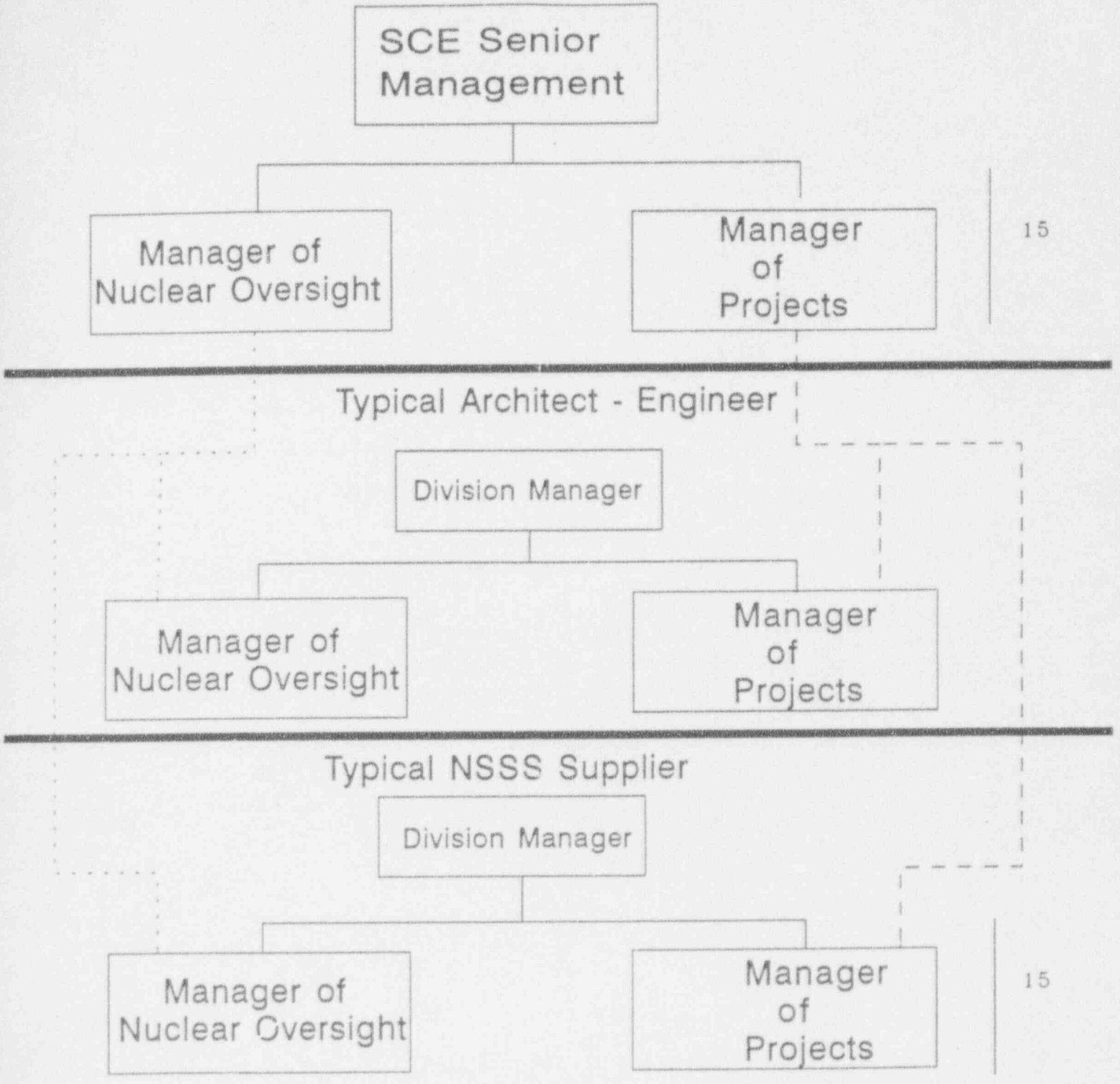

Legend

—— Technical/administrative Authority

— — Project Direction

· · · Q. A. Functional Direction

SCE QUALITY PROGRAM
TYPICAL INTERFACE ORGANIZATION
PREOPERATIONAL AND INITIAL
STARTUP TESTING AND
OPERATIONAL ECP ACTIVITIES

FIGURE 17.2-2

17.2.2 QUALITY ASSURANCE PROGRAM

17.2.2.1 Scope

This subsection describes the SCE Quality Assurance Program established and implemented for the operations phase of nuclear generating stations, including Preoperational and Initial Startup Testing, operation, maintenance, refueling, In-Service Inspection, and modification projects in compliance with Regulatory Guide 1.8, 1.28 and 1.33 (reference Table 17.2-1).

17.2.2.2 Quality Assurance Program

The basic policies, goals, and objectives for quality assurance are that SCE personnel have full responsibility to assure that nuclear generating stations are designed, constructed, tested and operated in a manner to protect the health and safety of the public. In this regard, SCE has committed its Quality Assurance Program for the operational phase to be in compliance with the provisions of 10CFR50, Appendix B, and the regulatory guides and standards listed on Table 17.2-1.

The SCE Quality Assurance Program described herein is applied to all activities affecting the Safety-Related function of those structures, systems, and components which prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public. A listing of items designated Safety-Related is included in the FSAR for the applicable nuclear generating station. The list for each station is maintained and revised in accordance with written procedures as necessary to reflect changes resulting from the finalization or modification of station design. The Quality Assurance Program also applies to activities governed by the Station Technical Specifications and other activities licensed by the NRC.

In addition, expendable or consumable items necessary for the functional performance of Safety-Related structures, systems and components are subjected to quality assurance requirements as specified in written procedures. These procedures include provisions for review and control in accordance with industry standards and specifications and the Safety-Related function of the expendable or consumable items. 1-421.3

This program includes Safety-Related activities associated with Preoperational and Initial Startup Testing and continues throughout the life of the nuclear generating station. The program is periodically reviewed by the Nuclear Oversight Division during the operational phase. Revisions are made in a controlled fashion, as necessary, to reflect changes in the program which may be required to improve its efficiency or increase its effectiveness. 13

17.2.2.2 (continued)

The Senior Vice President, Nuclear, is responsible for establishing SCE quality assurance policies, goals, and objectives. These policies, goals, and objectives are defined in corporate jurisdiction statements, organization plans, and quality assurance manuals and procedures. These documents transmit the SCE quality assurance philosophy and requirements to all levels of management, groups, and individuals involved with program implementation. Training programs, personnel certifications, meetings, review of working documents, programs and manuals, and management directives, are some of the methods utilized to assure that these policies, goals, and objectives are properly understood and complied with. |14

The Manager of Nuclear Oversight, is responsible for establishing and maintaining quality assurance manuals in compliance with applicable regulations, codes, and standards as listed on Table 17.2-1, and topical report or FSAR commitments. These manuals are developed by the Nuclear Oversight Division from established quality assurance policies, goals, and objectives, which are mandatory requirements. Controlled distribution of quality assurance manuals is maintained by the Nuclear Oversight Division.

Disputes arising between departments or organizations on any quality assurance matter that cannot be resolved will be referred to the Senior Vice President, Nuclear, or, if necessary, to the Chairman of the Board for resolution. |14

Written and approved procedures, instructions, and revisions thereto, necessary to activate the Quality Assurance Program, originate from departments and organizations within SCE that have jurisdictional responsibility for performing specific tasks. All procedures that support the SCE Quality Assurance Program are reviewed and approved by responsible supervision and management of the originating organization. Station procedures are reviewed by the Nuclear Oversight Division and reviewed and approved by the Station Manager or designated representative. Promulgation and control of the procedures and instructions developed pursuant to the Quality Assurance Program are maintained by the originating organization.

All procedures, except station procedures, are included in Quality Assurance Reference Procedure Manuals maintained by the respective organizations. Station procedures are controlled by the Station Manager and maintained in the SONGS CDM center. Table 17.2-2 presents a list of these manuals and a summary of their contents. By means of inspections and audits, Nuclear Oversight Division personnel verify that these procedures are followed.

Indoctrination and training programs are established within SCE by those organizations performing Quality-Affecting Activities. These programs are implemented by appropriate training plans and procedures which describe the scope and objectives. The Nuclear Oversight Division provides assistance in the development and implementation of these programs, as requested, and performs periodic audits to assure effective implementation. | 13

The indoctrination and training programs are established to assure that personnel responsible for performing Quality-Affecting Activities are:

- Instructed as to the purpose, scope, and method of implementation of the quality assurance manuals, procedures and instructions.
- Trained and qualified in the principles and techniques of the activity being performed.
- Retrained, reexamined, and/or recertified, as necessary, to maintain proficiency.

The indoctrination and training programs include, as appropriate, the following types of training:

- Audit techniques.
- Nondestructive testing.
- Specialized technical subjects.
- NRC regulations and guides, and codes and standards.
- Intra- and interdepartmental presentations regarding quality assurance activities and requirements.
- Presentations on the proper use of procedures and instructions affecting quality assurance activities.

A record of each training session is prepared and maintained which identifies the content, attendees, and the date training was conducted.

During the design and construction phase, project review meetings are held regularly to assess the design and construction status and provide an interface between the

responsible SCE departments and organizations. Schedules are maintained throughout this phase, and as the design and construction progresses, plans are made by the Nuclear Generation Site Department and Nuclear Engineering, Safety and Licensing Department for Preoperational Testing and Initial Start-up Testing. These plans are reviewed by the Nuclear Oversight Division to assure that the test program is developed and controlled in accordance with the SCE Quality Assurance Program. The Nuclear Generation Site Department and Nuclear Engineering, Safety and Licensing Department as well as representatives of the A-E and NSSS Supplier, participate in the planning and scheduling for transfer of the nuclear generating station from the design and construction phase to the operations phase. Prior to actual turnover, written procedures are developed by these organizations for the control of the transfer of all portions of the nuclear generating station, including associated documentation. The SCE Nuclear Oversight Division verifies that these procedures are developed and followed by means of inspection surveillance and audits to assure that Quality-Affecting Activities are performed with specified equipment under suitable environmental conditions, and that required prerequisites have been satisfied prior to performing these activities. The SCE Quality Assurance Program for the operations phase of nuclear generating stations is described in detail in subsequent subsections of this topical report. The descriptions follow the criteria presented in 10CFR50, Appendix B.

The Senior Vice President, Nuclear, through use of independent consultants, periodically assesses the scope, implementation, and effectiveness of the program to assure that it is meaningful and effectively complies with 10CFR50, Appendix B, criteria. Such an assessment is made within one year following issuance of the NRC operating license, and at intervals not exceeding three years, utilizing qualified individuals and firms. They result in written reports submitted to the Senior Vice President, Nuclear which are reviewed by the Nuclear Control Board. These reports may be referred to the appropriate departments, for response to any findings or recommendations. For shorter projects, involving plant modifications; such an assessment may or may not be made at the discretion of the Senior Vice President, Nuclear. |14 |14 |14

17.2.2.2.1 Engineering Construction Projects (ECP's)

Quality-related work delegated to other organizations (A-E or contractors to SCE) for ECP's must comply with applicable provisions of 10CFR50, Appendix B. Additionally, these programs must comply with the Regulatory Guide and ANSI standards listed in Table 17.2-1 or acceptable alternatives must be described. These quality assurance programs must be reviewed and approved by the SCE Nuclear Oversight Division. Regular planned audits of these quality assurance programs are conducted by the SCE Nuclear Oversight Division as well as inspection surveillance of work performed at the station to assure continued compliance with applicable regulatory requirements. 13

17.2.3 DESIGN CONTROL

17.2.3.1 Scope

This subsection describes the measure utilized by SCE to plan and control design activities associated with initial startup programs, changes or modifications to station systems, and Engineering Construction Project (ECP) modifications in compliance with Regulatory Guide 1.64 (reference Table 17.2-1).

17.2.3.2 Design Control

Design activities associated with nuclear generating station changes or modifications may be performed by SCE, and A-E or other qualified contractors. The decision to perform the design activity in-house or contract out is based on the scope and complexity of the change or modification, available engineering manpower, and other considerations.

The SCE Quality Assurance Program includes procedures for establishing and maintaining design control throughout the operational phase of nuclear generating stations. Internal and external design interface control procedures are established which include the review, approval, release, distribution, and revision of documents involving design interfaces with participating design organizations.

Non-ECP design work associated with system changes or modifications at nuclear generating stations is planned and performed by the Nuclear Generation Site Department with support from other SCE organizations or contracted organizations. In either case, changes or modifications to plant systems or equipment require written approval of the Station Manager or designated representative. If the Nuclear Safety Group determines that the change or modification involves an Unreviewed Safety Question, approval of the NRC is solicited. 7

Documentation to be reviewed for this design work includes the necessary calculations and/or analysis, design criteria specifications, drawings, procedures, and instructions to permit a comprehensive review. Deviations from original design standards are reviewed to ensure that the designated quality requirements remain in the design. These reviews are required to provide justification for any differences that may exist between the FSAR, Technical Specifications, and the proposed change or modifications.

17.2.3.2 (continued)

Review and approval of SCE-prepared design documents, are performed, per established quality assurance procedures, by individuals other than the original designer and the designer's immediate supervisor. These procedures describe the positions responsible for design reviews and other design verification activities and identify their authority and responsibilities.

Documentation reflecting a design change is required to be reviewed and approved by the same groups cognizant in the discipline affected by the change which reviewed and approved the original documentation unless alternative design groups are designated by the Station Manager. Alternative design groups shall have access to background information, shall be competent in the specific area of design interest, and shall understand the requirements and intent of the original design.

During the review of the design process, if it becomes evident that the process is not meeting program requirements, Nuclear Oversight shall take appropriate actions in accordance with section 17.2.16, corrective action, or in-line reviews, as appropriate. 13

Internal procedures describe design review interfaces and review and documentation requirements to assure that the design documentation complies with licensing commitments and contains the following, where applicable:

- Sufficient identification of regulatory requirements and the documents' agreement with these requirements.
- Sufficient identification of the item's functions and incorporation of design bases.
- Adequate delineation of values controlling the item's critical design parameters.
- Sufficient identification of quality standards, test and inspection criteria.
- Specification of appropriate acceptance criteria for tests and inspections.
- Inspectability of item's critical design parameters.
- Suitability for service, including technical evaluation for standard commercial (off the shelf) or previously approved items.
- Inclusion of performance characteristics.
- Accessibility to maintain, repair or inspect the pertinent item while in service.
- Design interfaces have been adequately established and supporting calculations have been checked.

17.2.3.2 (continued)

Design controls are applied by SCE, A-E's or contractors, as applicable, to such disciplines as reactor physics, seismic, stress, thermal, hydraulic, radiation, and accident analyses. Consultants may be utilized to review and verify the design of certain items.

Where design verification cannot be adequately accomplished by the design review process, alternate calculations or qualification testing is employed. These alternate methods of design verification are required to be defined in design documentation.

Records of design reviews, and associated design documents are required by internal written procedures to be maintained in the SONGS CDM Center.

The SCE Nuclear Oversight Division is responsible for performing periodic audits, as described in Subsection 17.2.18, of SCE departments, A-E's, and other contractors to verify effective implementation of design control requirements. These audits include verification that appropriate design review records are maintained and deviations from quality standards are controlled.

17.2.3.2.1 Engineering Construction Projects (ECPs)

For ECPs, the following measures are applied in addition to those defined in 17.2.3.2.

Design work associated with ECP's at nuclear generating stations is performed by the Nuclear Engineering, Safety and Licensing Department and Nuclear Generation Site Department or contracted. In either case, a Project Manager is assigned overall responsibility for management and control of the ECP's, including design interfaces. The Nuclear Oversight Division performs, or delegates to qualified contractors, the pertinent quality assurance activities.

The Project Engineer is responsible for assuring that ECP design documentation, and changes thereto, are distributed by SONGS CDM Center to responsible individuals with established review request forms in a timely manner. He is also responsible for assuring that errors and deficiencies noted in the review comments are corrected or otherwise resolved.

Safety-Related design documentation and changes thereto prepared by an A-E or contractor for ECP's are controlled in accordance with their SCE-approved quality assurance programs. In addition, selected documents are required by written procedures to be submitted to SCE for design review and approval. This review is performed by cognizant Nuclear Generation Site and Nuclear Engineering, Safety and Licensing Departments in accordance with internal written procedures similar to those for SCE-prepared documentation. | 14

17.2.3.2.1 (continued)

The Station Manager or designated representative reviews and approves ECP design changes when the planned modification interfaces with plant systems. 5

17.2.4 PROCUREMENT DOCUMENT CONTROL

17.2.4.1 Scope

This subsection describes the measures utilized by SCE to control documentation associated with procurement of items and services in compliance with Regulatory Guide 1.123 (reference Table 17.2-1).

17.2.4.2 Procurement Document Control

Procurement Documents defining the technical requirements for system changes or modifications at nuclear generating stations are prepared by responsible engineers within cognizant SCE engineering organizations. The Procurement Division of the SCE Procurement and Material Management Department is responsible for contract negotiations and the issuance of purchase orders, except for Nuclear Fuel. Procurement Documents for Nuclear Fuel and spent fuel shipping services are prepared and controlled by the SCE Nuclear Engineering, Safety and Licensing Department. The Nuclear Oversight Division reviews Procurement Documents to assure they contain appropriate quality assurance requirements. |14 |14

For procurement of items and services by SCE, a multilevel procurement system is established. This system controls the following areas:

a) Extent of procurement document requirements necessary for procurement of items and services.

b) Level of review and approval of procurement document by cognizant engineering and quality assurance personnel. |14

c) Degree of qualification of the supplier from a quality assurance aspect.

d) Method of product acceptance.

17.2.4.2 (continued)

The procurement system assures that the appropriate technical and quality requirements are specified for procurement of items and services considering the safety related function, complexity of design and manufacturing, degree of inspectability and testability upon receipt and other factors which affect product quality.

Written procedures are established which define the sequential activities necessary for preparation, review, approval, and control of Procurement Documents, both offsite and onsite. These procedures identify the responsible organizations and function of individuals performing the Procurement Document control activities. These procedures are maintained in station files and in manuals as listed on Table 17.2-2.

Procurement Documents, and revisions thereto, are reviewed by responsible engineers to verify that they contain or reference technical requirements appropriate to the item or service to be procured, including: 14

- Regulatory requirements, codes, and industry standards.
- Component and material identification requirements.
- Design requirements, including drawings and specifications.
- Test and inspection requirements.
- Special process instructions.
- Handling, storage, and shipping instructions.

17.2.4.2 (continued)

- o Documentation to be prepared, maintained, and submitted to SCE for review and approval.

- o Records to be retained, controlled, and maintained by the supplier and those to be delivered to SCE prior to use or installation of the item.

Responsible engineers review Procurement Documents to assure the adequacy of quality requirements. This review includes, but is not limited to, verification of the following as appropriate to the item or service being procured: |14

- o Appropriate quality requirements are correctly stated and include applicable 10CFR50, Appendix B, requirements.

- o Quality requirements can be inspected and controlled.

- o Adequate acceptance and rejection criteria are specified.

- o Provisions are included for documenting and controlling deviations from the Procurement Document.

- o Provisions are included for the right of access by the purchaser to the supplier's facilities and records for source inspection and audit.

Procurement Documents prepared by SCE identify the applicable 10CFR50, Appendix B, requirements, regulatory guides, codes, and standards, which must be complied with and described in suppliers' quality assurance programs. These programs are reviewed by the Nuclear Oversight Division.

The control measures described herein apply to original items as well as spare or replacement parts, and to changes to Procurement Documents. The review and approval of Procurement Documents is documented prior to release and is available for verification. |14

17.2.4.2.1 Engineering Construction Projects (ECP's)

Procurement Documents associated with ECP's may be prepared by SCE, an A-E, or other qualified contractors. Determination of responsibility for Procurement Document preparation is made by the SCE Project Manager responsible for the ECP.

17.2.4.2.1 (continued)

SCE, A-E's and other qualified contractors are required to maintain records of the review and approval of Procurement Documents. The SCE Nuclear Oversight Division is responsible for performing periodic audits as described in Subsection 17.2.18, of these participating organizations to verify that Procurement Documents have been prepared, reviewed, approved, controlled, and maintained in accordance with SCE Quality Assurance Program requirements. Internal audits are also required by the A-E's and other qualified contractors' quality assurance organizations to verify that these activities have been correctly performed in their organizations and in the organizations of their suppliers, as appropriate. | 13 | 2-421.14

Contracts with A-E's and other qualified contractors for items and services required to support ECP's include the requirement for control of Procurement Documentation as part of their quality assurance program requirements. The SCE Project Manager is responsible for preparation and control of these contracts. The Procurement Division controls contract negotiations and issuance.

17.2.5 INSTRUCTIONS, PROCEDURES, AND DRAWINGS

17.2.5.1 Scope

This subsection describes the measures utilized by SCE to assure that activities affecting quality are prescribed by, and accomplished in accordance with appropriate instructions, procedures, and drawings.

17.2.5.2 Instructions, Procedures, and Drawings

The SCE Quality Assurance Program includes provisions which require that work be accomplished in accordance with documented instructions, procedures, and drawings.

Instructions, procedures, and drawings are prepared, reviewed, approved, and controlled by individuals and organizations which implement Quality-Affecting Activities. These documents specify the requirements and/or methods to be utilized for compliance with the SCE Quality Assurance Program. They include appropriate qualitative and quantitative acceptance criteria, as applicable, to determine that designated activities are accomplished in a satisfactory manner.

Instructions, procedures, and specifications prepared by station personnel for control of design are reviewed and approved by the Station Manager or designated representative.

The Nuclear Oversight Division reviews and approves prior to issuance quality assurance programmatic procedures and procedures which define inspection/nondestructive examination requirements. In addition, other quality affecting procedures are subject to review by the Nuclear Oversight Division at its discretion. Appropriate surveillances, audits and assessments will be conducted by the Nuclear Oversight Division to assure that quality affecting instructions, procedures, drawings, and specifications comply with the quality assurance program requirements. Maintenance, modification and inspection procedures and work order documentation are reviewed by the Nuclear Oversight Division to determine: (1) the need for inspection, identification of inspection personnel and documentation of inspection results; and (2) that the inspection requirements, methods, and acceptance criteria are identified. 14

14

Changes to approved instructions, procedures, specifications, and drawings are reviewed and approved in the same manner as original documents.

The SCE Nuclear Oversight Division verifies by means of audits, as described in Subsection 17.2.18, that instructions, procedures, and drawings required for performing Safety-Related activities are controlled in compliance with established program commitments.

17.2.5.2.1 Engineering Construction Projects (ECP's)

Activities related to ECP design, procurement, construction, and testing are controlled by the use of approved instruction, procedures, and drawings. The Project Engineer ensures that these documents are reviewed by responsible SCE organizations. Procedures developed by SCE are approved by the originating organization and by the SCE Nuclear Oversight Division in accordance with written procedures. |13

Programmatic procedures developed by contractors to implement their quality assurance programs are approved by the Nuclear Oversight Supervisor or by qualified organizations to whom this work may be delegated. Working level procedures and instructions which are developed at the jobsite for ECP's are reviewed and approved by the SCE Site Construction Engineer and the Station Manager or designated representative consistent with the requirements of the Technical Specifications. |13

17.2.6 DOCUMENT CONTROL

17.2.6.1 Scope

This subsection describes the measure utilized by SCE to control the preparation, review, approval, issuance, and distribution of documents affecting quality.

17.2.6.2 Document Control

Documentation control, as described herein, applies to the following documents, and changes thereto, as a minimum:

- Design calculations
- Design specifications. | 5
- Design criteria
- Design, manufacturing, construction, and installation drawings.
- Procurement Documents.
- Quality Assurance topical report and manuals. | 1-421.9
- Manufacturing, inspection, and testing instructions.
- Final Safety Analysis Report (FSAR) and referenced topical reports. | 1-421.9
- Technical Specifications.
- Test procedures, test instructions, and test results.
- Operating, maintenance and modification procedures and instructions.
- Design change requests and notices.
- Nonconformance Reports.
- Corrective Action Requests.
- Audit Reports.

These documents, including changes thereto, are prepared, reviewed, approved, issued, and controlled in accordance with approved written procedures. Procedures are maintained in Station files by CDM and in manuals as listed on Table 17.2-2. These procedures provide instructions to assure that documents, including changes thereto, are adequately checked, approved, | 5

and released by authorized personnel in a timely manner, and that the documents are transmitted and available at appropriate locations prior to commencement of activities requiring use of the document. Personnel or groups authorized to check, approve, and release documents are identified in quality assurance manuals and procedures for the applicable station. |1-421.9

Changes to instructions, procedures, drawings, and other documents are approved prior to implementation of the change. Changes to documents can be requested by any reviewing or using organization or individual. Such requested changes, however, are subjected to the review and approval as by the same groups cognizant in the discipline affected by the change, unless this work has been delegated to another organization.

Temporary changes to station procedures can be made if the intent of the original procedure is not altered and the change is made according to the requirements of the Administrative Controls section of the applicable Technical Specification. Temporary changes to Prerequisite, Preoperational, and Initial Startup Test procedures can also be made in accordance with the applicable Startup and Test Manual providing the intent of the procedures is not altered.

Design information transmitted from one organizational unit to another, including to organizations delegated design work, is documented and controlled by written approved procedures. These procedures require that design information transmittals identify the status of the design information or document provided and, where necessary, identification of incomplete item which require further evaluation, review or approval.

A file of approved documents is prepared and maintained by CDM for station operations, maintenance, modifications, and testing activities. These documents are updated and copies distributed to designated responsible persons to preclude the use of obsolete or superseded documents.

Documents comprising instructions, procedures, specifications, and drawings prepared by outside contractors for refueling, Inservice Inspection and other station activities are reviewed and approved by the Station Manager or designated representative. These documents are also reviewed by the Nuclear Oversight Division. |13

17.2.6.2.1 Engineering Construction Projects (ECP's)

Each issuing organization prepares or delegates the preparation of a master list that identifies the latest revision number of instructions, procedures, specifications, drawings, and Procurement Documents for ECP's. These documents are updated and copies distributed to designated responsible persons to preclude the use of obsolete or superseded documents. Where a group or organization which originally was responsible for approving a particular document is no longer responsible, the group or organization responsible to approve changes to the document shall be designated and determined to be qualified by the SCE Project Manager. | 1-421.8

An SCE Project Engineer is responsible for assuring that selected portions of contractor-prepared ECP documentation is reviewed and approved by cognizant SCE engineering organizations in accordance with Subsection 17.2.3.2.1. Contractors are required to control the preparation and issuance of documents in substantially the same manner as SCE. The SCE Nuclear Oversight Division periodically audits the document control systems of all participating organizations, as described in Subsection 17.2.18, to verify compliance with established requirements. | 13

17.2.7 CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

17.2.7.1 Scope

This subsection describes the measures utilized by SCE to control the procurement of material, equipment, and services purchased directly or through contractors and subcontractors in compliance with applicable codes and standards.

17.2.7.2 Control of Purchased Material, Equipment and Services

Prior to award of purchase order or contract, suppliers to SCE are subject to technical, and quality assurance evaluations by qualified SCE Engineering and Quality Assurance personnel. Quality Assurance evaluations of suppliers are not required when quality can adequately be determined by receipt inspection or other acceptance methods. Quality Assurance evaluation may be accomplished by at least one of the following methods: | 16 | 16

- Review of objective evidence establishing suppliers' capability to comply with the 10CFR50, Appendix B, criteria applicable to the type of material, equipment, or service to be procured.
- Review/evaluation of the suppliers history of providing similar products which perform satisfactorily in use. | 16
- Review/evaluation for applicability/acceptability of audit/evaluation records generated by utilities/ licensees, contractors or consultants which are acting for SCE. | 16
- Survey of suppliers' facilities and quality assurance programs to determine suppliers' capability to supply a product or service which meets the design, manufacturing, and quality requirements.

Audits/surveys are scheduled of suppliers as described in Subsection 17.2.18. Results of these evaluations and surveys are documented and forwarded to the Procurement and Material Management Department and to the CDM Center. | 1-421.10 | 16

Source verification of suppliers, when required, is performed during fabrication, inspection, testing, and shipment. This activity is planned and performed in accordance with written procedures to assure compliance to purchase order requirements. These procedures provide for the following: | 16

17.2.7.2 (continued)

- Instructions that specify the characteristics or processes to be witnessed, inspected, or verified, and accepted; the method of verification, the extent of documentation required, and those responsible for implementing the instructions. |16

- That suppliers comply with all appropriate quality requirements established, as described in Subsection 17.2.4. |16

- Source verification is performed based on considerations described above and results of previous audits.

Receiving inspection of material, components, and equipment, as further described in Subsection 17.2.10, is performed in accordance with written procedures to assure that: |16

- Items are properly identified and correspond with the receiving documentation. |16

- Items and acceptance records are judged acceptable in accordance with predetermined inspection instructions prior to installation and use. |16

- Inspection records or certificates of conformance are available at the station prior to installation and use. |16

- Items are identified as to their inspection status prior to forwarding them to a controlled storage area or releasing them for installation or further use. |16

17.2.7.2 (continued)

- o Nonconforming items are segregated, controlled, and clearly identified until proper disposition is made.

The responsibility for receiving inspection rests with Nuclear Oversight Division personnel. |16

Procurement specifications require suppliers to furnish the following records to SCE, as a minimum, with delivered items:

- o Certifications that specifically identify the purchased material and equipment, and the specific procurement requirements such as codes, standards, specifications, procedures, and drawings that are met by the items.

- o Certifications that identify procurement requirements that were not met, together with a description of those nonconformances dispositioned Accept-As-Is or repair or certifications that identify compliance to procurement document requirements.

Supplier's certificates are periodically evaluated by audits, inspections, or tests to assure that they are valid and accurate. |16

|16

Spare or replacement parts for structures, systems, and components are subject to controls at least equivalent to those used for the original equipment.

17.2.7.2.1 Engineering Construction Projects (ECP's)

Receiving inspection associated with an ECP is performed by SCE, A-E's or contractors in accordance with written procedures which are subject to review by the SCE Nuclear Oversight Division.

Material, equipment, and services purchased through A-E's and contractors for ECP's are controlled as specified in their quality assurance programs. These programs are reviewed and approved by the SCE Nuclear Oversight Division.

17.2.8 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

17.2.8.1 Scope

This subsection describes the measures utilized by SCE for identifying and controlling material, parts, and components.

17.2.8.2 Identification and Control of Materials, Parts and Components

Identification and control requirements for material, parts, and components, including partially fabricated assemblies, are specified in SCE Procurement Documents for the item to be purchased and in applicable design and construction specifications, drawings procedures and instructions for station activities. These requirements are established by cognizant SCE personnel and include the following: 12

- Items are identified by means which permit traceability to supporting documentation such as purchase orders, manufacturing and installation/construction records, and quality assurance records and documentation.

- If required by codes, standards, or specifications, materials are traceable to records of heat, batch or lot number.

- Method and location of identification are controlled to assure the function, fit and quality of the item are not impaired.

- Verification of correct identification of material, parts, and components is accomplished and documented prior to release for fabrication, assembly, shipment, construction or installation and the record of verification is maintained for the period provided in the governing procurement document, specification, drawing, procedure or instruction. 12

17.2.8.2.1 Engineering Construction Projects (ECP's)

Materials, parts, and components for ECP's purchased through A-E's and contractors are identified and controlled as specified in their quality assurance programs described in the applicable contract for the work performed.

SCE maintains responsibility for control of materials, parts, and components at a station but may delegate the work to A-E's or contractor's quality assurance organizations for ECP's. Written procedures for control of materials, parts, and components are prepared by SCE, A-E's or contractors and are

subject to the review of the SCE Nuclear Oversight Division as described in Subsection 17.2.5. Procedures require that materials, parts, and components delivered to a station or jobsite are quarantined until a determination is made that such items are properly identified, the required documentation is available, and the items are acceptable for use. The procedures also require control and identification during the construction and installation process and recording of identification in pertinent documentation to establish traceability to supporting records of material, parts and components acceptance. This documentation is filed in the CDM Center as described in Subsection 17.2.17. | 13

17.2.9 CONTROL OF SPECIAL PROCESSES

17.2.9.1 Scope

This subsection describes the measures utilized by SCE to control special processes, such as welding, heat treating, cleaning, and nondestructive testing in compliance with Regulatory Guides 1.37, 1.39 and 1.54 (reference Table 17.2-1).

17.2.9.2 Control of Special Processes

SCE engineers and technicians performing special processes associated with Safety-Related items are trained, examined, and qualified in accordance with applicable codes, standards, specifications, and other supplementary requirements as applicable. Procedures and equipment utilized in performing these processes are similarly qualified. The Nuclear Oversight Division assures that special processes utilized to modify or examine existing systems or components are performed by qualified personnel utilizing qualified procedures and equipment as specified by Procurement Document or other applicable code or standard. 13

Inspection records associated with special processes include verification that the activity was performed utilizing qualified personnel, procedures, and equipment. These records, as well as current qualification records of personnel, equipment, and procedures are filed and maintained in the CDM Center.

17.2.9.2.1 Engineering Construction Projects (ECP's)

Special process procedures, equipment, and associated personnel certifications of A-E's and contractors associated with ECP's are reviewed and approved by their respective quality assurance organizations and are reviewed and subject to the approval of the SCE Nuclear Oversight Division. A-E's, contractors, and SCE suppliers are periodically audited by the SCE Nuclear Oversight Division, as further described in Subsection 17.2.18, to assure continuing compliance with special process controls of the applicable contract document or procurement specification. 13

17.2.10 INSPECTION

17.2.10.1 Scope

This subsection describes the measure utilized by SCE to control the inspection of activities affecting quality in compliance with Regulatory Guides 1.30, 1.58, 1.94, and 1.123 (reference Table 17.2-1). 5

17.2.10.2 Inspection

The SCE Quality Assurance Program requires that activities affecting quality be inspected by individuals other than those that performed the activity being inspected. Inspection of these activities is performed for these items in accordance with written and approved procedures and inspection plans. Maintenance and modification procedures are reviewed by qualified personnel knowledgeable in quality assurance to determine the need for inspection, identification of inspection personnel, and inspection results documentation.

Approved inspection procedures, instructions, and checklists are provided to perform the inspections and they contain, but are not limited to, the following:

- Identification of characteristics and activities to be inspected.
- Identification of the individuals or group(s) responsible and qualified to perform the inspection operation.
- Acceptance and rejection criteria, both qualitative and quantitative.
- Description of the inspection method.
- Recording evidence of completing and verifying a manufacturing, inspection or test operation.
- Recording inspector or data recorder and the results of the inspection operation.

Activities affecting safe operation of the station are inspected in accordance with Technical Specifications. Specification requirements are incorporated into procedures or Station Orders that detail the specific steps necessary to perform the required inspection. Qualified personnel conduct inspection activities in support of the overall inspection program.

The Nuclear Oversight Division reviews and audits all documents associated with repair of Safety-Related items and performs inspections and surveillance to verify that appropriate quality assurance requirements are applied and met. |13

Nuclear Oversight Division personnel perform receiving inspection on material and equipment. This inspection provides assurance that the material and equipment received for installation and use conforms to the Procurement Document requirements. Consistent with the function of the material or equipment, it may be necessary to perform source inspection at contractors' or suppliers' facilities. The need for source inspection is determined by the SCE Nuclear Oversight Division or other organizations delegated quality assurance work and is based on the following criteria: |13

- The significance of the activity to the functions of the item.
- Audit results, results of inspections or tests, lack of previous experience with the contractor or supplier, or indications from other areas that source inspection would be prudent.

The Nuclear Oversight Division periodically audits the inspection activities of SCE or other organizations performing inspection work. These audits verify that: |13

- Inspection procedures or instructions are developed with necessary drawings and specifications prior to performing inspection operations.
- Inspectors are qualified in accordance with appropriate codes, standards, and training programs and their qualifications are documented and maintained current.
- Modifications, repairs, and replacements are inspected in accordance with the original design and inspection requirements or acceptable alternatives.
- Inspection operations are performed and documented in compliance with the appropriate quality assurance manuals and inspection records are forwarded to the CDM Center.

17.2.10.2 (continued)

Mandatory inspection hold points for witness are specified in Procurement Documents if established at the time of approval of such documents. If established during the review of contractors or suppliers procedures or plans for manufacturing, examination, test or inspection, these witness and hold points are designated in correspondence from SCE, usually in the contract documents requiring conformance from a supplier or contractor.

Procurement Documents include the requirement that modifications, repairs, and replacements are inspected in accordance with the original design and inspection requirements or acceptable alternatives. In addition, these documents contain provisions for indirect control for monitoring processing methods, equipment, and personnel where direct inspection is not possible. Contractors are required to qualify their inspectors in accordance with appropriate codes, standards, and training programs, and to maintain current records of these certifications.

17.2.10.2.1 Engineering Construction Projects (ECP's)

For inspections associated with ECP's at the station, the SCE Nuclear Oversight Division has the responsibility for all inspections, inspection procedures, implementation of inspection plans, and documentation of inspection findings. These inspections and associated work may be delegated to A-E's or other contractors quality control inspection organizations provided they can demonstrate sufficient qualifications and independence from the individuals performing the activities being inspected. |13

17.2.11 TEST CONTROL

17.2.11.1 Scope

This subsection describes the measures utilized by SCE to control testing activities in compliance with Regulatory Guides 1.8, 1.30, 1.58, 1.94 and 1.116 (reference Table 17.2-1).

17.2.11.2 Test Control-General requirements

All testing conducted in support of station operations or modification programs is documented, and accomplished in accordance with approved test program procedures.

Test program procedures and instructions described herein incorporate or reference:

- o Applicable Regulatory Guides and SAR Commitments.
- o Applicable codes and standards
- o The requirements and acceptance limits contained in applicable design and Procurement Documents.
- o Existing station procedural requirements
- o Instructions for performing the test.
- o Test prerequisites that may include, but are not limited to, the following provisions: 12

a) Calibrated instrumentation.

b) Adequate and appropriate equipment.

c) Pretest walkdown and briefing

d) Completeness of item to be tested.

e) Suitable and, if required, controlled environmental conditions.

f) Mandatory hold points established by designated organizations for inspection or witness activities

g) Acceptance and rejection criteria, either qualitative or quantitative.

h) Methods for documenting, recording, evaluating and approving the test data results.

Provisions for personnel training, data collection and storage are contained in other internal SCE documentation.

17.2.11.2 (continued)

Tests are conducted in accordance with approved procedures and the results evaluated to determine compliance with established acceptance criteria. Records of tests performed at the station and supplier test records as required to be submitted by procurement documents are forwarded to the CDM Center and are available for audit by the Nuclear Oversight Division. |13

The test program shall require that modifications, repairs and replacements of items be tested, using the same criteria as the original items. If alternatives are required, they must be reviewed and approved by the same organization that established the original requirements or by alternate organizations which have been provided sufficient background information.

17.2.11.3 Prototype, Shop and Construction Material Tests

Procedures for Prototype and Shop tests are normally prepared by the organizations conducting the test; however, SCE, A-E's, or contractors may prepare these procedures where they have design or procurement responsibility. These procedures require appropriate preparing organization, Nuclear Oversight Division and associated engineering organization review and approval prior to test implementation. Test results are documented, evaluated, and acceptance status verified by qualified individuals within the organization performing the test, and witnessed, as appropriate, by an inspector designated by the procuring organization. |13

Construction material test procedures are prepared by the SCE Nuclear Oversight Division or contractor based on established engineering criteria. Tests are performed and results documented in accordance with these procedures by SCE Nuclear Oversight Division or the Contractor. Deviations from engineering criteria are evaluated by the responsible engineering organization. |13

17.2.11.4 Initial Plant Tests

For initial plant startup, construction and component tests are conducted in compliance with test procedures normally prepared by A-E and the testing contractors performing the tests. The A-E is responsible for approval of the test procedures and for the review and evaluation of test results. The Nuclear Engineering, Safety and Licensing and Nuclear Generation Site Departments are responsible for management of the test program.

Preoperational and Initial Startup Tests are also conducted in accordance with a Startup and Test Manual for the applicable station. This manual is the responsibility of the Nuclear Engineering, Safety and Licensing Department. It contains descriptions of organization's functions, authority, responsibility, and the policies and procedures for the conduct of Preoperational and Initial Startup Test programs. The technical portions of these programs, including quality assurance requirements, are contained in test procedures prepared by SCE, A-E's, NSSS Suppliers, and other major contractors. These procedures are approved by representatives from the responsible

17.2.11.4 (continued)

engineering, test and operating organizations. Evaluation and approval of test results is the responsibility of these organizations also.

The Nuclear Construction Group is responsible for implementation of the initial Startup Test program in accordance with SCE Quality Assurance Program requirements. Procedures required for implementation of this program are reviewed and approved by the Nuclear Oversight Division as defined in Subsection 17.2.5. |13

17.2.11.5 Station Tests

Station Tests performed subsequent to operational status are accomplished by the Station Staff in accordance with approved written procedures prepared by or under the direction of the Nuclear Generation Site Department. As a minimum, test results are reviewed, evaluated, and approved by the Cognizant Supervisor prior to declaring the equipment/system operable. Where test results are not acceptable,the test organization is responsible for evaluation of the test and/or results. In addition, out of tolerance as-found conditions in Technical Specification instrumentation, computers, radiation monitors and adjustable relays shall be reported to Site Support Services (formerly Operations and Maintenance Support OMS) who will trend and evaluate this data in accordance with written criteria approved by Station Technical. Indications of too large and/or too frequent deviations as defined by this written criteria shall be reported by SSS by use of a Nonconformance Report to Station Technical for disposition. The Nuclear Oversight Division performs periodic audits of these test results. |13

17.2.11.6 Modification Tests

Modification Tests are the responsibility of the implementing organization Manager. The implementing organization is responsible for development of required procedures with technical assistance provided by the responsible engineering organization. Procedures developed for the final operational test phase are reviewed and approved by the Station Manager or designated representative. Test results are evaluated by the responsible test organization. Deviations of documented test results beyond specified acceptance limits shall be dispositioned by the responsible engineering organization prior to declaring the equipment/system operable. Nuclear Oversight Division personnel are responsible for providing inspection surveillance throughout the testing program. |13

17.2.12.2.1 (continued)

- Individuals authorized to calibrate.
- Method for identification, control and distribution of calibration data, and records.
- Method to assure M&TE used in calibrations have acceptable ranges, precision and accuracy.
- Provisions for evaluating the components found out of tolerance or where functional tests are found unsatisfactory, including procedures to address the possible safety significance of the situation (i.e., possible instances of out of specification conditions or periods of time where limiting conditions for operation were exceeded), and the potential need for remedial action.
- Provisions to ensure that permanent plant equipment when used to provide acceptance criteria for quality affecting activities is within its tolerance requirements.
- A means of determining which equipment shall be included (and excluded) from the calibration control program.

Measuring and test equipment (M&TE) used for the calibration of permanently installed plant equipment which perform safety related functions shall be calibrated to recognized national standards or, if nonexistent, the basis for calibration shall be documented.

The responsible organization manager reviews and approves calibration procedures required to support operation, maintenance, repair, modification, refueling, and in-service inspection activities. The SCE Nuclear Oversight Division reviews calibration programs, including those prepared by designated contractors and performs periodic audits to verify conformance with established calibration program requirements. | 13

17.2.12.2.2

A program shall be established for the calibration and control of measuring and test equipment (M&TE) that is used to calibrate permanently-installed plant equipment which perform safety-related functions or is otherwise governed by the Quality Assurance Program. This program shall contain the following minimum requirements:

- Method of identifying M&TE (i.e. serial no., model no., manufacturer, description).

17.2.12 CALIBRATION PROGRAM

10

17.2.12.1 Scope

This subsection describes the measures utilized by SCE to control the calibration program used in activities affecting quality.

17.2.12.2 Calibration Control Program

For pre-operational and startup testing, SCE startup engineering personnel are responsible for control of the calibration program; whereas the station maintenance manager or designee is responsible for this activity during operation, maintenance repairs, modification, refueling and in-service inspection of the station.

Responsible organizations or individuals, as appropriate, shall develop the calibration program. This program shall include:

- Calibration of permanent plant equipment.
- Calibration and control of measuring and test equipment (M&TE).
- Calibration and control of reference standards.

17.2.12.2.1

A program for the calibration and control of permanent plant equipment shall be established to assure compliance with Technical Specification requirements and other requirements appropriate to the equipment. This program shall include the following minimum requirements:

- Method of identification of plant equipment for traceability to calibration test data and the recalibration due date.
- A list of governing regulations, codes, and standards applicable to calibration.
- A method for determining the calibration interval based on required accuracy, purpose, degree of usage, stability characteristics and other conditions affecting the application.
- A system for identifying equipment whose designated period of legitimate use prior to recalibration has expired.
- Calibration procedures, including techniques and methods for adjustment of equipment.

17.2.12.2.2 (continued)

calibration program. The SCE Nuclear Oversight Division reviews the M&TE calibration program, including those prepared by designated contractors, and performs periodic audits to verify conformance with established calibration program requirements. |13

A program for the calibration and control of Metrology reference standards shall be established. This program shall include:

- A list of governing regulations, codes and standards applicable to calibration.
- Method of identification of equipment for traceability to the calibration test data and the recalibration due date.
- Calibration intervals based on the required accuracy, purpose, degree of usage, stability characteristics and other conditions affecting the application.
- A system for identifying equipment whose designated period of legitimate use prior to recalibration has expired.
- Calibration procedures including techniques and methods for adjustment of equipment.
- Provisions for recording the as-found condition of the equipment being calibrated.
- A method for identifying all M&TE that has been calibrated with out-of-tolerance standards.
- Method for identification, control, distribution, and retention of calibration data and records.
- A means of determining which devices shall be included (and excluded) from the calibration control program.

Reference standards are traceable to nationally recognized standards, or if nonexistent, the calibration program includes provisions for documenting the basis for calibration. The complete status of all equipment controlled by the calibration program is recorded and maintained by the organization responsible for the calibration program.

Reference standards used for calibration of lower echelon standards shall have acceptable calibration ranges, precisions

and an equal or better accuracy than that of the standard under test, wherever possible, without degrading the measurement accuracy.

The responsible organization manager reviews and approves calibration procedures required to implement the reference standard calibration program. The SCE Nuclear Oversight Division reviews the reference standard calibration program, including those prepared by designated contractors, and performs periodic audits to verify conformance with established calibration program requirements. 13

17.2.13 HANDLING, STORAGE, AND SHIPPING

17.2.13.1 Scope

This subsection describes the measures utilized by SCE to control handling, storage, shipping, packaging, preservation, and cleaning activities in compliance with Regulatory Guide 1.38 (reference Table 17.2.1).

17.2.13.2 Handling, Storage, and Shipping

Cognizant Station Supervisors are responsible for defining handling, storage, shipping, packaging, preservation, and cleaning requirements for items delivered to the station. These requirements are implemented at the Station by Nuclear Generation Site Department warehouse personnel for as long as the items are in storage at the warehouse and by the cognizant Station personnel when the items have been issued for installation. Special nuclear material is received, stored and shipped in accordance with Nuclear Generation Site Department procedures. The Nuclear Oversight Division verifies, by means of periodic audits, that these activities are performed in compliance with applicable procedures. |13

17.2.13.2.1 Engineering Construction Projects (ECP's)

The SCE Project Engineer is responsible for defining, handling, storage, packaging, shipping, preservation, and cleaning requirements for items delivered to a station for ECP's. These requirements are implemented at the Station by Nuclear Generation Site Department warehouse personnel for as long as the items are in storage at the warehouse and by cognizant Construction Organization personnel when the items have been issued or released from the warehouse for storage or installation. The work associated with these activities may be delegated to A-E's or contractors; however, in all cases, the work is performed in accordance with approved written procedures by individuals qualified to perform these activities.

Special instructions, procedures, or drawings necessary to define handling, storage, shipping, packaging, preservation, and cleaning methods and requirements for ECP's are prepared in accordance with design and specification requirements by SCE, A-E's or contractors, as appropriate. These procedures are reviewed and approved by the originator's quality assurance organization. A-E's and contractor's procedures are subject to review by SCE. The SCE Nuclear Oversight Division conducts periodic audits of these organizations to assure proper implementation of these procedures. |13

SCE, A-E's and contractor's, as delegated, define handling, storage, packaging, preservation, and cleaning requirements in procurement specifications. Compliance with these requirements is verified by means of periodic audits conducted by their respective Nuclear Oversight and quality assurance organizations. |13

17.2.14 INSPECTION, TEST, AND OPERATING STATUS

17.2.14.1 Scope

This subsection describes the measures utilized by SCE to indicate the status of inspections and test and the associated clearance procedures.

17.2.14.2 Inspection, Test, and Operating Status

The methods used to indicate the status of inspections and tests and for the control of status indicators are described by written procedures. These procedures are prepared and implemented by cognizant SCE organizations performing the inspections and tests. Periodic audits are conducted by the Nuclear Oversight Division to assure proper implementation of these procedures. |13

Inspection data sheets are developed, as described in Subsection 17.2.10, to describe the inspection plan and inspection status for each item during the inspection phase. A sign-off by a cognizant inspector is required upon satisfactory completion of each inspection step which provides the record of inspection or test results.

A system of marking with stamps or tags is used to identify the status of material, equipment, work, testing, and operations. This marking system identifies the inspection status and tests performed on individual items. Markings also indicate the status of nonconforming, inoperative, or malfunctioning structures, systems, or components to prevent inadvertent use. The system for control or nonconforming items is described in Subsection 17.2.15.

A Startup and Test Manual is used to establish requirements for clearances and tagging of structures, systems and components to prevent inadvertent use during Prerequisite, Preoperational and Initial Startup Testing. These manuals are independently reviewed by qualified individuals, as designated by approved procedures.

Appropriate procedures also establish requirements for clearances and tagging of structures, systems, and components to prevent inadvertent use during station operations. These procedures may be independently reviewed by qualified individuals if designated by the Station Manager.

When inspections or tests are required by design documents for a design change, results of these inspections or tests are documented in appropriate records and logs.

17.2.14.2 (continued)

Bypassing or waiving these required inspections, tests, and other critical operations is controlled by written documents that require that justification and approval of the action be documented. The Quality Control Supervisor approves such waivers for inspections related to Safety-Related items.

17.2.14.2.1 Engineering Construction Projects (ECP's)

Written procedures describing the methods used for the control of status indicators for ECP's may be prepared and implemented by A-E's or contractors delegated the work of performing the inspections and tests. The SCE Nuclear Oversight Division conducts periodic audits of participating organizations' activities to assure proper implementation of these procedures. |13

SCE, A-E's or contractors, as appropriate, define requirements for controlling the status of inspections and tests to suppliers in Procurement Documents. Compliance with these requirements is verified by means of periodic audits conducted by their respective Nuclear Oversight and quality assurance organizations. |13

17.2.15 NONCONFORMING MATERIALS, PARTS OR COMPONENTS

17.2.15.1 Scope

This subsection describes the measures utilized by SCE to control materials, parts, or components that do not conform to established requirements.

17.2.15.2 Nonconforming Materials, Parts or Components

The measures used to control nonconforming Safety-Related items are described by written procedures. These procedures are prepared and implemented by cognizant SCE organizations delegated the work of controlling nonconformances. The SCE Nuclear Oversight Division conducts periodic audits to assure proper implementation of these procedures and effectiveness of the nonconformance controls. 13

Deviations pertaining to a characteristic of a material, component, system or structure, from those specified in the design documents are treated as nonconformances. Procedures for processing and controlling nonconforming items contain the following requirements:

- Measures to identify the nonconforming item including criteria for when to issue a Nonconformance Report (NCR).
- Measures to document the nonconforming item, including cause and corrective action.
- Measures to segregate the nonconforming item from acceptable items, where possible.
- Method to review and disposition the nonconforming item, including approval authority.
- Method of notification to the affected organizations.
- Method for evaluating deviations to determine if reportable under the requirements of 10CFR50.55(e), 10CFR21, 10CFR50.72, 10CFR50.73 or the Technical Specifications.

17.2.15.2.1 Station and Engineering and Construction Project (ECP) Activities

When a nonconforming item is discovered at the Station, an NCR and/or a work order document, as appropriate, will be generated by SCE personnel in accordance with procedural requirements. Rework/reject dispositions for plant equipment will normally be controlled by the work order document process.

Nonconformance documentation contains the item's identification, description of the nonconformance, dispositioning activities,

inspection requirements, approval signatures, and the organizations notified of the nonconformance. Cause and corrective action are also documented. An SCE nonconformance reporting log/system is maintained and indicates the status of each nonconforming item.

Nonconforming items are segregated from acceptable items, where possible, and maintained in a controlled area until properly dispositioned. Nonconforming items discovered in installed items are evaluated to determine their operability as defined by the Technical Specifications and use is controlled until final disposition of the nonconformance and associated disposition implementation.

Stamps or tags are utilized to identify the nonconformance as described in Subsection 17.2.14. Nonconforming items may be dispositioned Accept-As-Is, repair, rework, or reject.

An Engineering Review Process (ERP) is utilized to provide approval of dispositions associated with nonconforming items. For the dispositioning of nonconformances, the following approvals are required:

Repair or Accept-As-Is Dispositions

NOD Supervisor or designee

Cognizant Station Functional Manager (Technical, Maintenance, Operations, Health Physics, etc.) or designee or Nuclear Engineering & Construction, Engineering Manager/Supervisor or designee.

Manager, Technical (or designee), or Manager, Nuclear Engineering Design Organization (or designee), separate from the CSFM or NE&C cognizant approval, providing management approval of the disposition. 16

Reject or Rework Dispositions

NOD Supervisor or designee

Cognizant Station Functional Manager (Technical, Maintenance, Operations, Health Physics, etc.) or designee or Nuclear Engineering & Construction, Engineering Manager/Supervisor or designee.

Nonconforming items may be authorized for conditional use prior to implementation of the final NCR disposition providing the following conditions have been met:

- The NCR describes the conditional use.

17.2.15.2.1 (continued)

- Use of the item is controlled such that the safety functions of the system are not adversely affected.
- Identification and traceability of the item is maintained.
- The authorization is approved by the same ERP members required for the disposition approval.

When the nonconformance disposition specifies a rework or repair, these actions are accomplished in accordance with approved procedures, drawings and instructions. SCE Nuclear Oversight Division organization personnel verify acceptability of rework and repair dispositioned nonconforming items by reinspection according to methods initially used. When reinspection methods differ from those initially used, methods at least equal to the original inspection are employed. The responsible work organization manager is responsible for assuring that rework and repair activities are accomplished in accordance with approved procedures, drawings, and instructions. Items are designated as nonconforming and are so identified until rework or repair and the required inspections are satisfactorily performed.

Rejected or scraped items are promptly removed from the station work areas. The status of these items is displayed by appropriate documentation. Nuclear Oversight Division personnel verify the proper disposition of these items.

The SCE design organization responsible for the affected design document reviews and approves Accept-As-Is and Repair dispositions for design impact.

For an approved disposition, the responsible design organization must issue a written justification for the deviation from the design document or revise the design document in accordance with applicable requirements.

When the participants in the Engineering Review Process cannot agree, the final disposition is made by the Manager of Nuclear Oversight. Significant nonconformances of unusual complexity or involvement are submitted to the Senior Vice President, Nuclear for resolution.

NCRs are maintained in an electronic format. The electronic records shall be maintained in two separate remote locations. A formal process is established to produce an NCR record that is legible, accurate and complete during the record retention period, life of the plant. Work order documentation and associated inspection records are forwarded to the SONGS CDM Center for retention purposes. Nonconformance data are analyzed by the SCE Nuclear Oversight Division to establish quality trends. The results of these analyses are reviewed by the Manager of Nuclear Oversight, for possible corrective action 16

17.2.15.2.1 (continued)

and referred to the Senior Vice President, Nuclear when a potentially serious condition is indicated. Deficiencies identified by 10CFR50.55(e) or 10CFR21 are reported to the NRC prior to issuance of the operating license by the NRC. Thereafter, deficiencies are reported to the NRC in accordance with Technical Specification requirements, 10CFR21, 10CFR50.72 or 10CFR50.73. |14

17.2.15.2.2 Contractor and Supplier Activities

Nonconformances in onsite contractor work are controlled by SCE in accordance with Paragraph 17.2.15.2.1.

Nonconformances dispositioned Accept-As-Is or repair by off-site suppliers must be made part of the inspection records and forwarded to the responsible engineering organization for review and assessment. The responsible SCE engineering organization approves these dispositions for SCE procured items.

Conditions adverse to quality discovered by SCE personnel at a jobsite, contractor's manufacturing facility or design office, or supplier's manufacturing facility, are processed as described in Subsection 17.2.16.

17.2.16 CORRECTIVE ACTION

17.2.16.1 Scope

This subsection describes the measures utilized by SCE to assure that corrective action is promptly identified and implemented when conditions adverse to quality are determined to exist.

17.2.16.2 Corrective Action

As described in Subsection 17.2.15, nonconformance and corrective action associated with material, parts, or components are controlled at a jobsite by the nonconformance reporting system. Additionally, a system for initiating corrective action associated with conditions adverse to quality is controlled by the SCE Nuclear Oversight Division by means of written procedures. This system implements corrective action system forms to document conditions adverse to quality discovered by SCE personnel at the SCE Corporate Offices or jobsite, at A-E's design offices, and at NSSS Suppliers and other suppliers' facilities. This corrective action documentation is also used for hardware problems discovered at NSSS Supplier or other suppliers' facilities. Procurement specifications may specify the requirement for SCE approval of nonconforming hardware disposition if discovered by SCE at a supplier's facility. |13 |13

The corrective action documentation provides for item or system identification, description of the adverse condition, cause of the condition, corrective action to resolve problem, and the corrective action to prevent recurrence as appropriate to the problems identified.

Corrective action documentation is promptly initiated with a request for corrective action directed to the responsible organization as a result of review, inspection, audit or surveillance activities.

The responsible organization to which corrective action documentation is directed determines the cause of the adverse condition, the action taken to resolve the problem, and the action to be taken to prevent recurrence as appropriate to the problems identified. They also provide dates for implementation of the corrective action where appropriate. The corrective action documentation is returned to the responsible SCE Nuclear Oversight Division Supervisor for review and concurrence. Revised corrective action documentation is requested if corrective action proposed is unacceptable. Follow-up reviews, inspections, audits, or surveillance are performed by SCE personnel to verify corrective action implementation. Significant conditions adverse to quality, |13

the cause of the conditions and the corrective action taken to prevent recurrence are identified by the responsible organization and reported to cognizant levels of management for review and assessment.

Trending studies may be performed on corrective action data by the SCE Nuclear Oversight Division as directed by the Senior Vice President, Nuclear, or the Manager of Nuclear Oversight. Results of trending studies are documented and retained on file in the CDM Center. The Senior Vice President issues directives for corrective action resulting from trending studies, as necessary and assures appropriate management involvement in correcting significant conditions adverse to quality. | 14

In addition to the corrective action system controlled by the SCE Nuclear Oversight Division, other corrective action systems may exist within other SCE organizations which provide a means for identification of the deficiency; documentation of corrective action to resolve the issue and corrective action to preclude recurrence; a means to track the status of the deficiency; and a means to assure followup and closeout of the corrective action. When these optional systems exist, they shall be defined by written and approved procedures which contain program elements and administrative controls which are compatible with the SCE Quality Assurance Program. These systems are periodically audited by the SCE Nuclear Oversight Division to determine effectiveness of implementation.

A-E's, NSSS Suppliers, and other suppliers are required by contract or procurement specification to implement a corrective action system equivalent to that described herein for their scope of work, including appropriate management involvement in the review and assessment of significant conditions adverse to quality.

17.2.17 QUALITY ASSURANCE RECORDS

17.2.17.1 Scope

This subsection describes the measures utilized by SCE to assure that required design documents and quality assurance records are properly stored, maintained, retained, and retrievable to provide objective evidence of activities affecting quality in compliance with Regulatory Guide 1.88 (reference Table 17.2-1).

17.2.17.2 Quality Assurance Records

Corporate Documentation Management Centers (CDMC) are established at predetermined locations for storage, indexing, maintenance, and retention of quality assurance records. CDM Centers are established and maintained by representatives of Administrative Services and Budget and Administration in accordance with the Quality Assurance Program. Documents established as quality assurance records which are released for scheduled retention may be retained by designated organizations other than CDMC. Quality assurance records so retained shall be stored, maintained and controlled as required by Regulatory Guide 1.88. The Nuclear Oversight Division assures that the requirements for documentation imposed by SCE and regulatory agencies are identified in a documentation list(s) and implemented through written procedures. 13 13

Quality assurance records to be stored and maintained include, but are not limited to, the following:

- Records required by the station Technical Specifications
- Operating logs
- Principal maintenance and modification activities
- Abnormal occurrence reports
- Results of reviews, inspections, tests, audits, and material analyses
- Records of monitoring of work performance
- Minutes of On-Site Review Committee meetings and Nuclear Safety Group reports
- Qualifications (certifications) of personnel, procedures, and equipment

- Specifications and drawings, including as-built drawings and stress reports or calculations
- Procurement Documents and purchasing records
- Calibration manuals, procedures, and reports
- Nonconformance and Corrective Action Reports
- Inspection and test records which contain, as a minimum, the following:
  a) A description of the type of observation
  b) Evidence of completion and verification of manufacturing, inspection or test operations
  c) Date and location of inspections or tests
  d) Information related to conditions adverse to quality
  e) Inspector or data recorder identification
  f) Evidence as to the acceptability of results

Access to quality assurance records in the CDM Centers is controlled by CDMC personnel and in other organizations by the designated organization personnel. Access control is audited by the Nuclear Oversight Division. Access to and retrieval of quality assurance records which are being maintained within scheduled retention is based on a need to know and is controlled by written procedures. |13

Requirements and responsibilities for record transmittals, retention, and maintenance subsequent to completion of work are consistent with applicable codes, standards, Procurement Documents, and the station Technical Specifications. The review, identification, indexing, categorizing and filing of design documents and quality assurance records is accomplished in accordance with written procedures. These procedures include provision for ready identification and retrievability of stored documents.

Documents released for scheduled retention by the responsible organization are protected against deterioration or destruction from fire, flooding, theft, and environmental conditions such as temperature and humidity.

17.2.18 AUDITS

17.2.18.1 Scope

This subsection describes the measures utilized by SCE to verify compliance with, and overall effectiveness of the SCE Quality Assurance Program by means of a system of planned and periodic audits in compliance with Regulatory Guide 1.144 and 1.146 (reference Table 17.2-1).

17.2.18.2 Audits

The SCE Quality Assurance Program requires a comprehensive system of planned and periodic audits to verify the effectiveness of the program, and evaluate compliance with applicable 10CFR50, Appendix B, criteria. Quality Assurance audits are planned and performed in accordance with written procedures by Quality Assurance Engineers trained in audit techniques, or other SCE engineers or inspectors as designated by the Manager of Nuclear Oversight. Individuals performing audits do not have responsibilities in the areas to be audited. |13

Quality Assurance audits provide an objective evaluation of quality-related practices, procedures, and instructions, and the effectiveness of implementation of policy directives. Audits include the evaluation of work areas, activities, processes, items, and the review of documents and records.

The Nuclear Oversight Supervisors are responsible for assuring that sufficient audits are performed in those areas where the requirements of 10CFR50, Appendix B, are being implemented. These areas include, as a minimum, those Safety-Related activities associated with: |13

- Operation, maintenance and modification.
- Preparation, review, approval, and control of designs, specifications, Procurement Documents, instructions, procedures, and drawings.
- Receiving and plant inspections.
- Indoctrination and training programs.
- Implementation of operating and test procedures and instructions.
- Calibration of measuring and test equipment.

The Nuclear Oversight Division performs a formal, annual, and independent audit of station activities. The Nuclear Safety |13

Group's review of actions employed by the On-Site Review Committee provides a continuing surveillance of station activities. The work and documents of the On-Site Review Committee (OSRC) and Nuclear Safety Group are audited by the SCE Nuclear Oversight Division for correctness and verification of conformance with quality requirements. |13

The following types of audits are performed to assure that quality assurance procedures and activities are meaningful and comply with SCE Quality Assurance Program requirements:

- Internal audits conducted by SCE, A-E's and contractors quality assurance organizations.

- External audits by the SCE Nuclear Oversight Division on A-E's, contractors, and other suppliers. |13

- External audits by utilities/licensees which are members of organizations such as the Nuclear Procurement Issues Committee (NUPIC), or Contractors/Consultants which are acting for SCE. Whenever these audits are utilized by SCE to satisfy SCE audit requirements, the results of the audits are reviewed/evaluated by SCE Nuclear Oversight to ensure applicability/acceptability. |13

Each supplier's quality assurance program acceptability is determined initially prior to work commencement. This determination is made in accordance with subsection 17.2.7.2. |2-421.15 |13

If acceptable, the supplier is placed on the approved supplier list.

Audits are scheduled based upon the status of work progress, importance to safety of the activities being performed and prior experience with the organization being audited.

Audits schedules are prepared compatible to the progress of the work. These schedules provide for coverage of applicable 10CFR50, Appendix B criteria implementation.

A formal evaluation of suppliers performing continuing work is performed each year. This evaluation determines for which suppliers a reaudit is required during the upcoming year. This valuation considers pertinent factors such as the results of other audits, history of performance of product and/or purchased service and effectiveness of implementation of the supplier's quality assurance program. 2-421.15

In addition, the complexity of the component concerned and the degree of quality and process control required during manufacturing are considered.

2-421.15

This evaluation is documented and approved by the Manager, of Nuclear Oversight and placed in supplier quality history files.

Regardless of the results of the evaluation, the suppliers performing continuing work are subjected to an initial audit and are reaudited every three years. Audits of suppliers performing limited duration assignments are conducted at least once during the life of the contract. If at the time of the pre-award survey, the supplier is already implementing the same quality assurance program for other customers that he proposes to use on the auditing part's contract, then the pre-award survey may serve as the first triennial audit.

The audit requirement shall not apply to standard off-the-shelf items and bulk commodities where required quality can adequately be determined by receipt inspection of post-installation checkout or test.

Results of audits conducted by the SCE Nuclear Oversight Division are reviewed with the management of the organization audited during exit interviews and are documented in formal audit reports to management. Responsible management in the areas audited implement the necessary actions required to correct deficiencies. These actions are documented and retained as part of the total audit record. Reaudits are conducted of deficient areas to verify proper implementation of correct actions.

Audit data are summarized and analyzed by the SCE Nuclear Oversight Division and reported to the Manager of Nuclear Oversight and the Senior Vice President, Nuclear, on a regular basis. These reports indicate quality trends and the effectiveness of the SCE Quality Assurance Program. The Senior Vice President issues directives for corrective action resulting from these reports, as necessary, and assures appropriate management involvement in correcting significant conditions adverse to quality. 14

17.2.19 QUALITY ASSURANCE PROGRAM FOR FIRE PROTECTION PROGRAM

The Quality Assurance Program for the fire protection program during the operational phase is designed to conform with applicable requirements of Branch Technical Position APCSB 9.5-1 (5-1-76) Position B.7 and Appendix A (8-23-76) Position C for fire protection program systems and components. The fire protection program consists of components, procedures, and personnel utilized in carrying out all activities of fire protection including such things as fire prevention, detection, annunciation, control, confinement, suppression, extinguishment, administrative procedures, inspection, testing, maintenance, and training.

17.2.19.1 Organization

The organizational structure and responsibilities for establishing and executing the Quality Assurance Program for the fire protection program are generally described in subsection

17.2.19.1.1. Specific responsibilities are applied to the fire protection program are delineated below:

The Station Manager is responsible for the fire protection program controls at the Station and the interface controls between the Station and Engineering and Construction Projects (ECP) construction and startup activities.

The Nuclear Oversight Supervisors are responsible for review, inspection, surveillance and audit of the Quality Assurance Program provisions.

The Project Manager for ECP's is responsible for coordination of activities between participating organizations and overall technical, schedule and economic management.

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The Manager Nuclear Engineering Design for ECP's is responsible for fire protection program engineering and design performed by SCE and for review of these activities when performed by contractors.

The Project Purchasing Agent is responsible for procurement of fire protection program materials, equipment, and services when purchased by SCE.

The Nuclear Construction Manager for ECP's is responsible for managing the installation and testing of the fire protection techniques during construction.

17.2.19.2 Quality Assurance Program

The Quality Assurance Program shall assure that the requirements for design, procurement, installation, testing and administrative controls for the fire protection program for

17.2.19.2 (continued)

safety-related items are satisfied. The fire protection systems and components that are included in fire protection program shall be identified by SCE Nuclear Engineering for planning of Quality Assurance Program activities. 8

Activities affecting the fire protection program shall be controlled by written procedures, prepared by participating organizations, that delineate the responsibilities and required actions for implementation of these activities. Measures shall be established within these procedures for special control over he use and storage of combustible materials and for the controlled application of processes involving ignition sources (i.e., welding, flame cutting).

Training and indoctrination of Station personnel in Quality Assurance Program requirements shall be provided in accordance with subsection 17.2.2. Training and indoctrination of construction personnel will be provided by the Project Construction Superintendent for fire protection during construction and startup activities for ECP's. This training shall include familiarization with (1) the location, use and application of fire fighting equipment, (2) planned actions and responsibilities of fire brigade team members and interfaces with offsite fire fighting agencies, and (3) maintenance and inspection requirements for fire protection systems. Similar training will be conducted by contractors during construction and startup activities for ECP's.

Management shall regularly review the quality assurance program status.

17.2.19.3 Design Control

For modifications to existing equipment, as far as practicable, and for ECP's, design control measures shall be provided consistent with the provisions of subsection 17.2.3 and this paragraph. These measures will provide a defense-in-depth to assure that design provisions are developed and reviewed to prevent or mitigate consequences of a postulated fire as it may affect the performance of safety-related items.

Design formulation and development will be guided by the establishment, during the design phase, of a fire hazard evaluation. The purpose of this evaluation shall be to provide a high level of confidence that no single credible fire could result in an unacceptable consequence by providing fire protection features and systems to maintain safety-related

17.2.19.3 (continued)

items functioning for the time period required for safe reactor shutdown and maintenance of the reactor in a safe shutdown condition. As a part of the design review measures stipulated above, the following areas as related to fire protection will be specifically reviewed when design documents are released by the associated design organization:

A. Safety-related systems are isolated from unacceptable fire hazards.

B. Redundant safety-related systems are not subject to damage from a single fire hazard.

C. Access is provided to and escape routes established from each fire area for fire fighting personnel and equipment.

D. Accessibility is provided for periodic inspection and maintenance of fire protection equipment.

E. Fire protection equipment is suitable for its intended application as applied to the various plant areas in which it will be required to function.

F. Inspection and testing acceptance criteria are established for fire protection equipment.

G. Compliance with appropriate codes, quality standards and regulatory requirements is specified as related to fire protection.

17.2.19.4 Procurement Document Control

Procurement document control measures shall be provided consistent with the provisions of subsection 17.2.4 and this paragraph. These measures shall assure that procurement specifications, purchase orders and associated documents for procurement of fire protection program material, equipment and services contain applicable regulatory requirements, design disclosure documentation, source inspection and audit provisions, codes and standards compliance, quality verification document submittal requirements, and appropriate quality assurance program provisions.

The specification of quality assurance program provisions for suppliers shall be based on the requirements of this Program. The Nuclear Oversight Division is responsible for performing periodic audits, as described in Subsection 17.2.18, to verify that applicable requirements are stipulated consistent with the nature and use of the procured material or service. |14

17.2.19.11 Inspection, Test and Operating Status

Inspection, test, and operating status of the fire protection equipment shall be in accordance with the provisions of subsection 17.2.14. 6

17.2.19.12 Nonconforming Materials, Parts and Components

Control of nonconforming fire protection material and equipment will be provided in accordance with the requirements of subsecion 17.2.15.

17.2.19.13 Corrective Action

Conditions adverse to maintaining the capability of the fire protection equipment to perform its intended function shall be identified, documented and corrected in accordance with the provisions of subsection 17.2.16.

17.2.19.14 Quality Assurance Records

Records which are sufficient to furnish evidence that the requirements of this Program are being met, shall be prepared and maintained in accordance with subsection 17.2.17 and this paragraph. These records include the following:

A. Design documents which form the basis for as-constructed conditions.

B. Documents for procurement which form the basis for manufacturing and inspection of items.

C. Inspection and test records evidencing the degree of compliance of as-constructed items with design and procurement document requirements.

D. Nonconformance and corrective action reports.

E. Audit reports.

17.2.19.15 Audits

Audits of the quality assurance program controls as applied to the fire protection program shall be performed in accordance with the provisions of subsection 17.2.18.

TABLE 17.2-1

SCE QUALITY ASSURANCE PROGRAM COMPLIANCE
TO GUIDES, REQUIREMENTS, AND STANDARDS

OPERATION

NOTE: Commitments made herein regarding compliance with specific issues of NRC Regulatory Guides and ANSI Standards may be modified in applicable FSAR's.

Guide, Requirement, or Standard	Compliance Status	Remarks	
10CFR50, Appendix B - Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants	Complies		
10CFR Part 55 - Operators Licenses	Complies		
Regulatory Guide 1.8 - Personnel Selection and Training (Revision 1, 9/75)	Complies	Endorses ANSI N18.1	1-421.13
Regulatory Guide 1.28 - Quality Assurance Program Requirements (Design and Construction) (Safety Guide 28, 6/7/72)	Complies	Endorses ANSI N45.2	
Regulatory Guide 1.30 - Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electrical Equipment (Safety Guide 30, 8/11/72)	Complies	Endorses ANSI N45.2.4	
Regulatory Guide 1.33 - Quality Assurance Program Requirements (Operation) (Revision 2, 2/78)	Complies	Endorses ANSI N18.7	
Regulatory Guide 1.37 - Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants (3/16/73)	Complies	Endorses ANSI N45.2.1	
Regulatory Guide 1.38 - Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants (Revision 2, 5/77)	Complies	Endorses ANSI N45.2.2	1-421.13

Table 17.2-1 (Continued)

Guide, Requirement, or Standard	Compliance Status	Remarks	
Regulatory Guide 1.39 - Housekeeping Requirements for Water-Cooled Nuclear Power Plants (Revision 2, 9/77)	Complies	Endorses ANSI N45.2.3	1-421.13
Regulatory Guide 1.54 - Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants (6/73)	Complies	Endorses ANSI N101.4	
Regulatory Guide 1.58 - Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel (Revision 1, 9/80)	Complies	Endorses ANSI N45.2.6	
Regulatory Guide 1.64 - Quality Assurance Requirements for the Design of Nuclear Power Plants (Revision 2, 6/76)	Complies	Endorses ANSI N45.2.11	1-421.13
Regulatory Guide 1.70 - Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants (Revision 2, 9/75)	Complies		
Regulatory Guides 1.74 - Quality Assurance Terms and Definitions (2/74)	Complies	Endorses ANSI N45.2.10	
Regulatory Guide 1.88 - Collection, Storage, and Maintenance of Nuclear Power Plant Records (Revision 2, 10/76)	Complies	Endorses ANSI N45.2.9	1-421.13

Table 17.2-1 (Continued)

Guide, Requirement, or Standard	Compliance Status	Remarks	
Regulatory Guide 1.94 - Quality Assurance Requirement for Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase of Nuclear Power Plants (Revision 1, 4/76)	Complies	Endorses ANSI N45.2.5	
Regulatory Guide 1.116 - Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems (6/76)	Complies	Endorses ANSI N45.2.8	1-421.13
Regulatory Guide 1.123 - Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants (Revision 1, 7/77)	Complies	Endorses ANSI N45.2.13	
Regulatory Guide 1.144 - Auditing of Quality Assurance Programs for Nuclear Power Plants (Revision 1, 9/80)	Complies	Endorses ANSI N45.2.12	
Regulatory Guide 1.146 - Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants (8/80)	Complies	Endorses ANSI N45.2.23	
Regulatory Guide 4.15 - Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment (Revision 1, 2/79)	Complies if invoked by facility operating license		6

TABLE 17.2-2

SOUTHERN CALIFORNIA EDISON COMPANY
QUALITY ASSURANCE PROGRAM IMPLEMENTING PROCEDURES

Implementing Procedure Documents	10CFR50 Appendix B Criteria 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Summary	
Quality Assurance Organization																				
Quality Assurance Manual (applicable project)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Quality Assurance manuals describe the SCE Quality Assurance program policies for all 10CFR50, Appendix B, criteria and provide appropriate general implementation procedures. The Reference Procedures Manual provides specific implementation procedures required by the Quality Assurance Organization to implement 10CFR50, Appendix B, criteria.	
Quality Assurance Reference Procedures Manual	x	x			x	x	x		x	x	x	x		x		x	x	x		|16
Nuclear Generation Site Department																				
Station Orders, Procedures, and Operating Instructions	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Station orders, procedures and operating instructions contain implementation procedures for 10CFR50, Appendix B, criteria.	
Nuclear Engineering, Safety & Licensing																				
Quality Assurance Reference Procedures Manual	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Emphasis of Department procedures is on preparation and control of drawings, specifications, and procedures, and procurement activities.	
Procurement and Materia 'nagement																				|16
Quality Assurance Reference Procedures Manual	x	x		x	x	x	x									x	x	x	Emphasis of Department Procedures is on control of purchase orders, contracts and vendor proposals and documentation.	

Table 17.2-2 (Continued)

Implementing Procedure Documents	10CFR50 Appendix B Criteria 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Summary	
Shop Services & Instrumentation																				16
Quality Assurance Reference Procedures Manual	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		Emphasis on metrology and repair of equipment.	16
Corporate Documentation Services																				16
Quality Assurance Reference Procedures Manual	x	x			x	x										x	x		Emphasis of Corporate Documentation Services procedures is on control, retention, and retrieval of documents.	

TABLE 17.2-3

NUCLEAR OVERSIGHT DIVISION ACTIVITIES OPERATION

The following are SCE Nuclear Oversight Division personnel activities during the design and construction of nuclear generating stations including the support of Engineering Construction Projects (ECP's):

1. Perform periodic audits to assure effective implementation of procurement document control requirements.

2. Prepare and maintain quality assurance manuals, procedures, and instructions. Maintain quality assurance chapters in FSAR's current, Topical Report, SCE-1-A. |16

3. Review and approve quality assurance programmatic procedures and instructions prepared by other internal organizations. |16

4. Evaluate potential supplier's quality assurance manuals.

5. Perform quality assurance preaward surveys of potential suppliers' facilities and quality assurance programs.

6. Perform inspection and surveillance at supplier's facilities.

7. Conduct internal surveillances, audits, and assessments of SCE organizations and external audits of A-E's or other contractors and suppliers to SCE. Followup to verify implementation of corrective action. |16

8. Initiate nonconformance reports, corrective action reports, and follow-up to assure proper implementation of corrective action.

9. Participate in and provide quality assurance training.

10. Provide written reports to management regarding status of quality assurance activities, corrective actions required, or unresolved problems.

11. Support the Corporate Documentation Management Centers to assure proper filing and retention of appropriate quality assurance documentation.

Table 17.2-3 (Continued)

12. Conduct internal audits of station operations. Followup to verify implementation of corrective action. |16

13. Provide support to the Onsite Review Committee (OSRC).

14. Provide quality assurance support during refueling and Inservice Inspection and audit these activities.

15. Perform inspection activities as required and assigned.

ENCLOSURE II

SUMMARY OF CHANGES INTRODUCED IN
TOPICAL REPORT SCE-1-A AMENDMENT 16
AS COMPARED WITH AMENDMENT 15

PAGE	CHANGE	INTRODUCED	REDUCTION IN COMMITMENTS
17-i	Editorial Change	Amendment 16	No
17-ii	Editorial Change	Amendment 16	No
17-iv	Adds additional Figures	Amendment 16 (Note A)	No
17-v	Adds Amendment to List	Amendment 16	No
17.2-1	Organizational Change	Amendment 16 (Note A)	No
17.2-4	Organizational Change	Amendment 16 (Note A)	No
17.2-6	Editorial Change	Amendment 16	No
17.2-7a	Organizational Change	Amendment 16 (Note A)	No
17.2-8a	Editorial Change	Amendment 16	No
17.2-8b	Editorial Change	Amendment 16	No
17.2-25	Clarification	Amendment 16 (Note B)	No
17.2-26	Clarification	Amendment 16 (Note B)	No
17.2-27	Clarification	Amendment 16 (Note B)	No
17.2-44	Clarification	Amendment 16 (Note C)	No
17.2-45 & 46	Use of Electronic Records	Change Notice 39	No
17.2-63	Editorial Change	Amendment 16 (Note D)	No
17.2-63A	Organizational Change	Amendment 16 (Note A)	No
17.2-64	Editorial and Clarification	Amendment 16 (Note E)	No
17.2-65	Clarification	Amendment 16 (Note E)	No

NOTES:

A. Amendment 16 incorporates the following:

- Separates previous organization chart into two charts for clarity.
- Organizational responsibility changes for environmental monitoring.
- Includes new titles.

B. The process for control of purchased materials and equipment was clarified to bring the terminology in line with current industry usage and to provide a more logical flow of the information.

C. The approval authority for dispositions of Nonconformance Reports (NCR) was clarified to include the flexibility of responsibility for approval for the Nuclear Engineering Design Organization and Station Technical, as appropriate.

D. Nuclear Oversight responsibilities in procurement and NCR activities are defined in Nuclear Organization procedures, thereby negating the need for separate procedures.

E. Flexibility was added to Items 7 and 12, of table 17.2-3, to allow for the use of more processes than audits to follow up on corrective actions.