



# LONG ISLAND LIGHTING COMPANY

SHOREHAM NUCLEAR POWER STATION

P.O. BOX 618, NORTH COUNTRY ROAD • WADING RIVER, N.Y. 11792

Direct Dial Number

SNRC-842

February 18, 1983

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

FSAR Chapter 13 Revisions  
Shoreham Nuclear Power Station - Unit 1  
Docket No. 50-322

Dear Mr. Denton:

In accordance with commitments made during a meeting with the Staff on January 28, 1983, enclosed herewith please find forty (40) copies of the planned corporate organizational structure which will be in effect at fuel load to provide for overall management and technical support for activities at the Shoreham Nuclear Power Station.

Please note that all revisions are identified with a bar in the right hand margin. These changes will be formally incorporated into FSAR Revision 29 scheduled for the near future.

If you require additional information or clarification, please do not hesitate to contact this office.

Very truly yours,

J. L. Smith  
Manager Special Projects  
Shoreham Nuclear Power Station  
CC/mc

Boo!

Attachments

cc: J. Higgins  
All Parties Listed in Attachment 1

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ATTACHMENT 1

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## CHAPTER 13

### CONDUCT OF OPERATIONS

#### 13.1 ORGANIZATIONAL STRUCTURE OF APPLICANT

##### 13.1.1 Corporate Organization

The Shoreham Nuclear Power Station (SNPS) is solely owned by the Long Island Lighting Company (LILCO), an investor-owned public utility incorporated in the State of New York. LILCO is responsible for the design, construction, and operation of the Shoreham Station.

LILCO has established an integrated organizational structure to provide for the overall management and technical support of the design, construction, licensing, startup, and operation of the Shoreham Nuclear Power Station.

Executive responsibility for the management of these functions is exercised through the Vice President-Nuclear. He reports to the Senior Vice President of T&D and Operations who is responsible to the President of the Company. The Vice President-Nuclear has delegated the authority for managing his nuclear responsibilities to the Managers of Shoreham Startup, Shoreham Construction and Engineering, Shoreham Station, Nuclear Operations Support, and Nuclear Engineering. Supplementary technical support is provided to these organizations under the direction of the Vice President-Nuclear by other LILCO departments and divisions through appropriately defined Nuclear Operations Corporate Policies.

As a minimum, the Vice President-Nuclear shall have a bachelors degree in science or an engineering field associated with power production and 10 years of experience associated with power plant design and operation, at least 5 years of which shall be nuclear power plant experience.

The qualifications and experience of the Vice President-Nuclear are presented in Appendix 13A.

The Vice President of Engineering has overall responsibility for corporate engineering services and quality assurance policy. He reports to the Senior Vice President of Engineering and Purchasing who is responsible to the President of the Company. The Vice President of Engineering has delegated the authority for managing the corporate nuclear quality assurance program to the Manager, Quality Assurance Department. On the Shoreham Station organization, the Operating Quality Assurance engineer is responsible to the Plant Manager as defined in Section 17.2.

Section 17.1 describes the Quality Assurance Program during design, construction, and preoperational testing. Section 17.2 describes the program in effect during operations.

The above corporate relationships are depicted on Fig. 13.1.1-1.

#### 13.1.1.1 LILCO Shoreham Project Organization

The Vice President-Nuclear has the overall responsibility for managing the Shoreham Project.

The Vice President-Nuclear has delegated the authority for managing the engineering, licensing, and construction aspects of the Company's nuclear program to the Manager, Shoreham Construction and Engineering.

The Manager, Shoreham Construction and Engineering, is responsible for the direction of matters related to project planning, project schedule, and coordination of all project communications. He has the responsibility to initiate appropriate procedures for engaging outside consultants to conduct and direct those functions in areas of engineering, construction, and licensing which he deems essential to fulfill the LILCO responsibility for the design and construction of a safe and reliable power station.

The Manager, Shoreham Construction and Engineering, reports directly to the Vice President-Nuclear.

Reporting to the Shoreham Construction and Engineering Manager are:

1. Construction Management
2. Project Engineering
3. Project Licensing

The Vice President-Nuclear has delegated the authority for management of preoperational and initial start-up testing to the Startup Manager. The Startup Manager is responsible for assuring that appropriate procedures described in Chapter 14 are carried out in an efficient, careful, and accurate manner.

The Startup Manager reports directly to the Vice President-Nuclear. Reporting to the Startup Manager are the lead engineers of the various startup disciplines as well as the Stone & Webster Engineering Corporation lead advisory engineer and the GE Operations Manager.

Figure 13.1.1-2 describes the Shoreham Project Organization. The qualifications and experience of the key Shoreham Project personnel are presented in Appendix 13A.

To support these managers staff in arriving at the technical and licensing decisions required for the proper execution of the



Shoreham Project, they have at their disposal the technical expertise of the other nuclear organizations reporting to the Vice President-Nuclear and other LILCO departments and divisions, as required. Engineers and technical personnel from various departments have been assigned to assist the Construction and Engineering and the startup organizations as requirements dictate. Direction and coordination of the efforts of these supplementary personnel is the responsibility of the Startup Manager or the Manager, Shoreham Construction and Engineering, or their subordinates.

Following fuel loading, the technical and engineering expertise gained by Shoreham Project personnel during the design, construction, licensing, and preoperating testing of the unit will be utilized to support the operation of the plant. In this manner, the overall qualifications of the nuclear organization will be enhanced by the integration of this experience.

The Manager, Nuclear Engineering provides supplementary support personnel to the Shoreham Project that are trained in nuclear engineering, licensing, radiation protection engineering, nuclear instrumentation, materials engineering, nuclear fuel design, reactor core analysis, and safety analysis. In addition, he has the responsibility to initiate appropriate procedures for engaging consultants and specialists in specific areas of engineering or science to supplement the capabilities of the Nuclear Engineering Department. This is described in Section 13.1.1.3.

#### 13.1.1.2 Interrelationships with Contractors and Suppliers and LILCO Shoreham Project Organization

The Manager, Shoreham Construction and Engineering, is responsible for coordinating and approving plant engineering, design and construction associated with power production systems, structures, and equipment.

Stone & Webster Engineering Corporation (SWEC) as the architect-engineer is responsible for the preparation of design concepts, design details, specifications, and drawings in these areas. Final acceptance by LILCO under the direction of the Manager, Shoreham Construction and Engineering, is required.

The General Electric Company (GE), as supplier of the nuclear steam supply system, submits drawings and specifications to SWEC for interface which are subject to final acceptance by LILCO under the direction of the Manager, Shoreham Construction and Engineering.

The Vice President-Nuclear may request design, engineering, and construction support from other LILCO departments and divisions for special projects and studies such as administrative, warehouse, and emergency preparedness facilities. Responsibility

for the coordination of this support will be established by the Vice President - Nuclear.

Construction of the plant is the responsibility of the Manager, Shoreham Construction and Engineering through the construction management organization, UNICO. UNICO is an organization comprised of LILCO and SWEC personnel. Onsite construction activities are under the direct supervision of these personnel.

Preoperational and initial start-up testing is the responsibility of the Startup Manager. He is supported in this area by LILCO test engineers and additional technical assistance supplied by other LILCO departments, SWEC, and GE.

The responsibility of ensuring that equipment suppliers and contractors conform to approved specifications is delegated to SWEC, although all equipment is procured by LILCO. Conformance is verified through implementation of the quality assurance program described in Section 17.1.

Further information on the corporate organizations and responsibilities of SWEC and of GE are contained in Section 1.4.

#### 13.1.1.2A Corporate Organization at Fuel Load

LILCO has established an integrated organizational structure at fuel load to provide for the overall management and technical support for all activities at the Shoreham Nuclear Power Station. These activities include but are not limited to modifications, licensing, and operation of the plant.

The organizational structure at fuel load as depicted in Figure 13.1.1.2A maintains all the corporate relationships and responsibilities identified in Paragraph 13.1.1, Corporate Organization, and Figure 13.1.1.-1, Direction of Executive Responsibilities, with the following exception:

The Engineering function which had been the responsibility of the Manager, Shoreham Construction and Engineering has been transferred to the Manager, Nuclear Engineering under the category of Nuclear Projects as depicted in Figure 13.1.1-3.

#### 13.1.1.3 LILCO Technical Support for Shoreham Operations

In addition to the technical and administrative support available as part of the Shoreham Plant staff, technical and administrative support for operation will be provided by the Manager, Nuclear Engineering, the Manager, Nuclear Operations Support, and the Vice President-Engineering and their respective organizations. As shown on Figure 13.1.1.-2A, the Manager, Nuclear Engineering and the Manager, Nuclear Operations Support report directly to the Vice President-Nuclear. The objective of this supplementary support is to assure that LILCO has the resources to discharge its responsibility for the safe operation of Shoreham Station and to have available a nucleus of personnel to provide timely technical support of the plant staff in the event of an emergency. An advisor to the Vice President-Nuclear, with substantial BWR power plant operating and management experience, will be in place prior to fuel load and for a year following or until the Vice President and his staff have accrued sufficient experience.

As shown on Figure 13.1.1.-3, the Manager, Nuclear Engineering is supported by four divisions, i.e., Nuclear Systems Engineering, Nuclear Projects, Nuclear Licensing, and Nuclear Fuel. These four divisions will have as many staff specialists as required to support initial fuel loading and the staff operation of the plant. The qualifications and experience of the key Nuclear Engineering personnel are presented in Appendix 13A. Technical design and evaluation expertise will be available in the areas of nuclear instrumentation, nuclear materials engineering, nuclear mechanical engineering, plant modifications, radiation protection and shielding, licensing, NRC compliance, reactor physics, transient analysis, accident analysis, and nuclear fuel management.

In order to ensure a continuing level of engineering support, QA, and design control, an interim Management Control Program for Station Modification will be implemented prior to fuel load and cover the period through approximately the first refueling. This program will be implemented in accordance with approved administrative procedures.

The qualified Architect/Engineer of record for the plant construction will be retained under this program to supply the necessary effort to maintain the safety and operability of the plant under existing, modified, or new, approved procedures.

The Manager, Nuclear Operations Support will have the responsibility for coordination, implementation, and direction of appropriate technical and administrative support functions carried out jointly by the Nuclear Operations Support and Nuclear Engineering organizations (i.e., "Engineer-in-Charge" as described in ANS 3.1 draft revision dated 12/6/79). He is responsible directly to the Vice President-Nuclear for the development and administration of corporate policies and procedures required for the management of the nuclear organization and the monitoring of its performance.



As shown on Figure 13.1.1-4, the Manager, Nuclear Operations Support is supported by three divisions; i.e., Nuclear Compliance and Safety, Nuclear Services, and Nuclear Records Management. These three divisions will have as many staff specialists as required to support initial fuel loading and the staff operation of the plant. The qualifications and experience of key Nuclear Operations Support personnel are presented in Appendix 13A. Nuclear Operations Support personnel will provide operation, maintenance, technical, and administrative expertise for supplementary support functions such as coordination of regulatory activities, long-range outage planning, initiation and evaluation of major projects, cost control, records management and other long-term planning activities. The Nuclear Operations Support organization will be structured to accommodate future tasks which will also require supplemental support.

The Manager Nuclear Operations Support position will correspond to the responsibilities and qualifications of the "Engineer-in-Charge" as described for guidance in ANS 3.1 draft revision dated 12/6/79. He will have a minimum of a Bachelor's degree in Engineering or the Physical Sciences and have a minimum of 6 years of professional level experience in nuclear services, nuclear plant operation, or nuclear engineering. A maximum of 2 years of the 6 years of professional experience may be fulfilled by related technical or graduate academic training.

The Nuclear Operations Support supervisors responsible for the Nuclear Compliance and Safety Division and the Nuclear Services Division will have a minimum of a Bachelor's degree in an academic field associated with electric power production or the physical sciences related to electrical energy generation, and 6 years of experience in power plant operation and/or design.

To further supplement the technical support of the nuclear organizations, the Vice President-Engineering shall designate, prior to fuel load, a minimum of 10 engineering personnel, assigned to the Corporate Engineering Office, for nuclear support. The first priority for these engineering personnel will be to respond to the needs of the Shoreham Plant as required.

### 13.1.2 Operation Organization

#### 13.1.2.1 Station Organization

The Shoreham Nuclear Power Station organization, as shown on Figs. 13.1.2.-1 through 3, will consist of a minimum of 165 full-time employees functioning in one of 11 main sections reporting through their respective Section Heads to one of three divisions headed by either the Chief Operating Engineer, Chief Technical Engineer, or Technical Support Manager who report to the Plant Manager. The Operational Quality Assurance Section reports to the Plant Manager through the Operating Quality Assurance Engineer, as described in Section 17.2



The Operations Section of the station will include a minimum of 32 supervisors and operators, and will be responsible for operation of the station. The station will have a Watch Engineer directing the operations of each shift through the Watch Supervisor, Nuclear Station Operator, and Nuclear Assistant Station Operator. The Watch Engineer will report to the Operating Engineer.

To supplement the operating experience of the operations staff, one additional person with substantive previous BWR operating experience will be retained as an on-site advisor to the Chief Operating Engineer or Plant Manager for a period of at least one year commencing six months prior to fuel load and extending through operation at 100 percent power.

The Maintenance Section of the station will have a minimum of 26 men experienced in mechanical and electrical maintenance of large steam-electric generating stations. The force will be supervised by the Maintenance Foreman who in turn reports to the Maintenance Engineer. This number of maintenance personnel will be adequate for normal maintenance, but will be supplemented by additional competent maintenance personnel from other LILCO power stations or organizations, or outside contractors, as may be required.

The technical sections will consist of a Chief Technical Engineer, with a minimum of 39 engineers and technicians who will function in the areas of instrumentation and control, reactor physics, conventional chemistry, radiological protection, fuel management, plus overall reactor coolant system and station performance.

The technical support staff will consist of a Technical Support Manager with a minimum staff of 8 engineering and technical personnel who will function in the areas of NRC compliance, modification coordination, inservice inspection coordination, document review, and nonroutine testing.

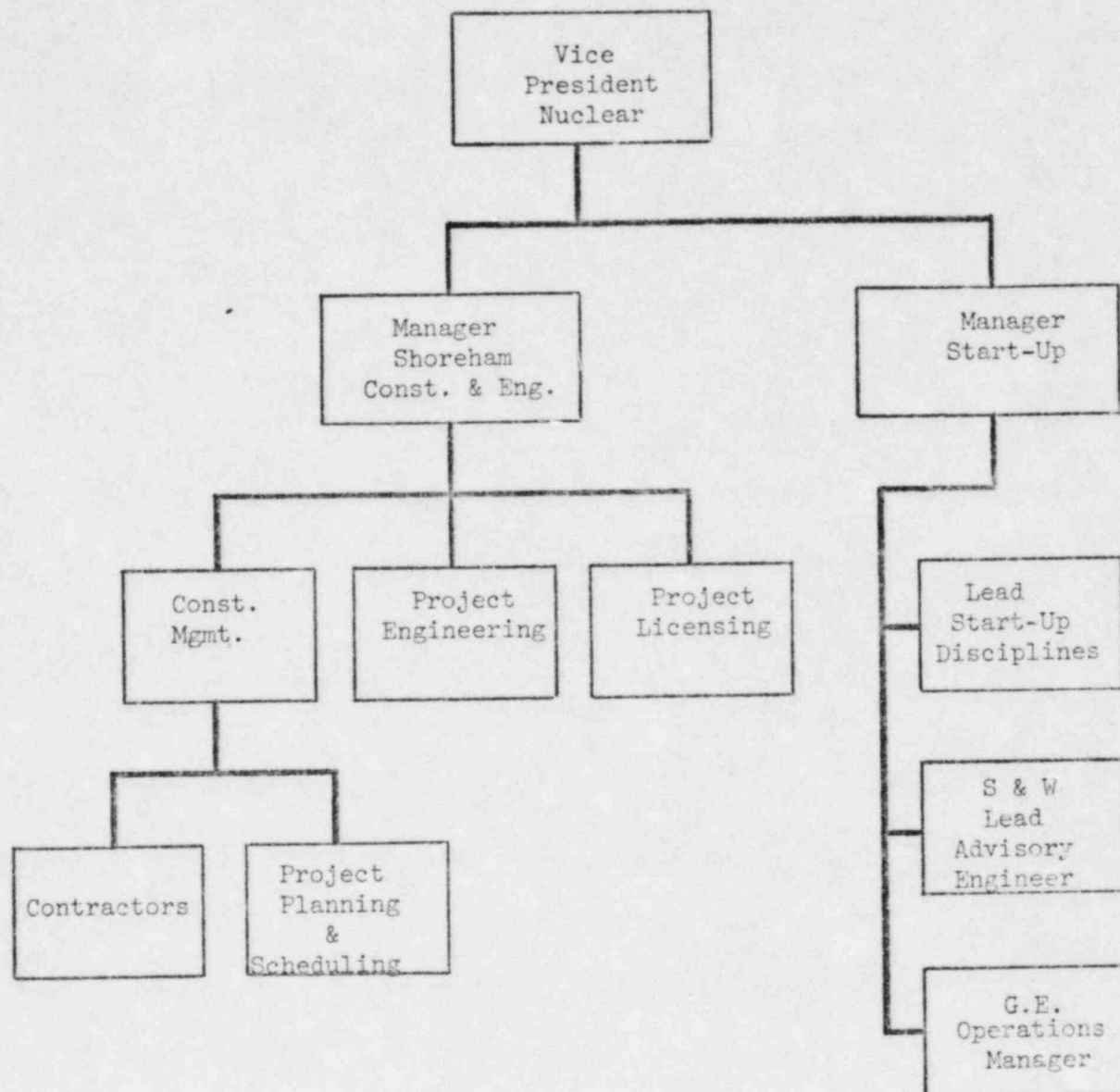


FIGURE 13.1.1-2  
SHOREHAM PROJECT ORGANIZATION  
SHOREHAM NUCLEAR POWER STATION-UNIT 1  
FINAL SAFETY ANALYSIS REPORT

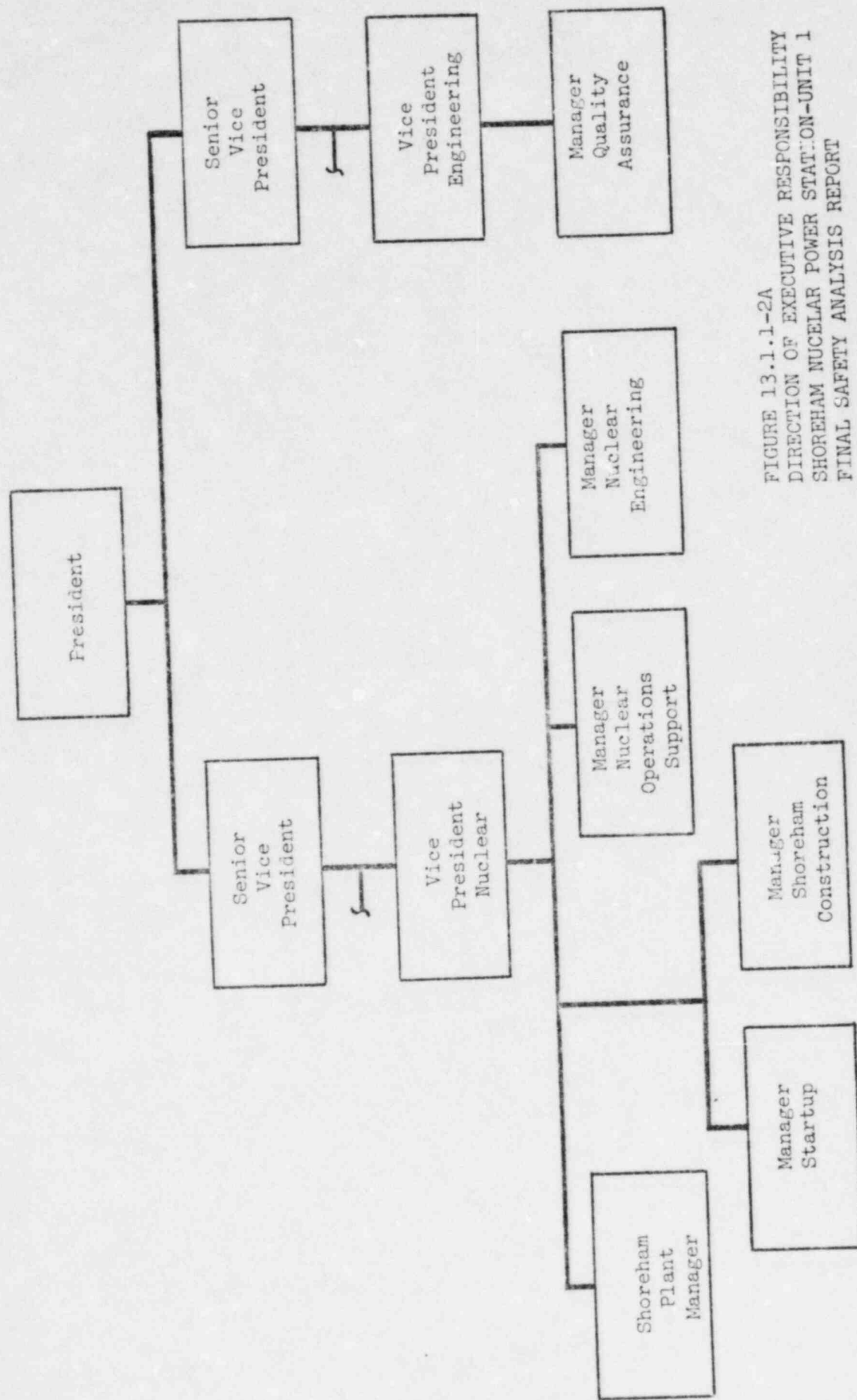


FIGURE 13.1.1-2A  
DIRECTION OF EXECUTIVE RESPONSIBILITY  
SHOREHAM NUCLEAR POWER STATION-UNIT 1  
FINAL SAFETY ANALYSIS REPORT

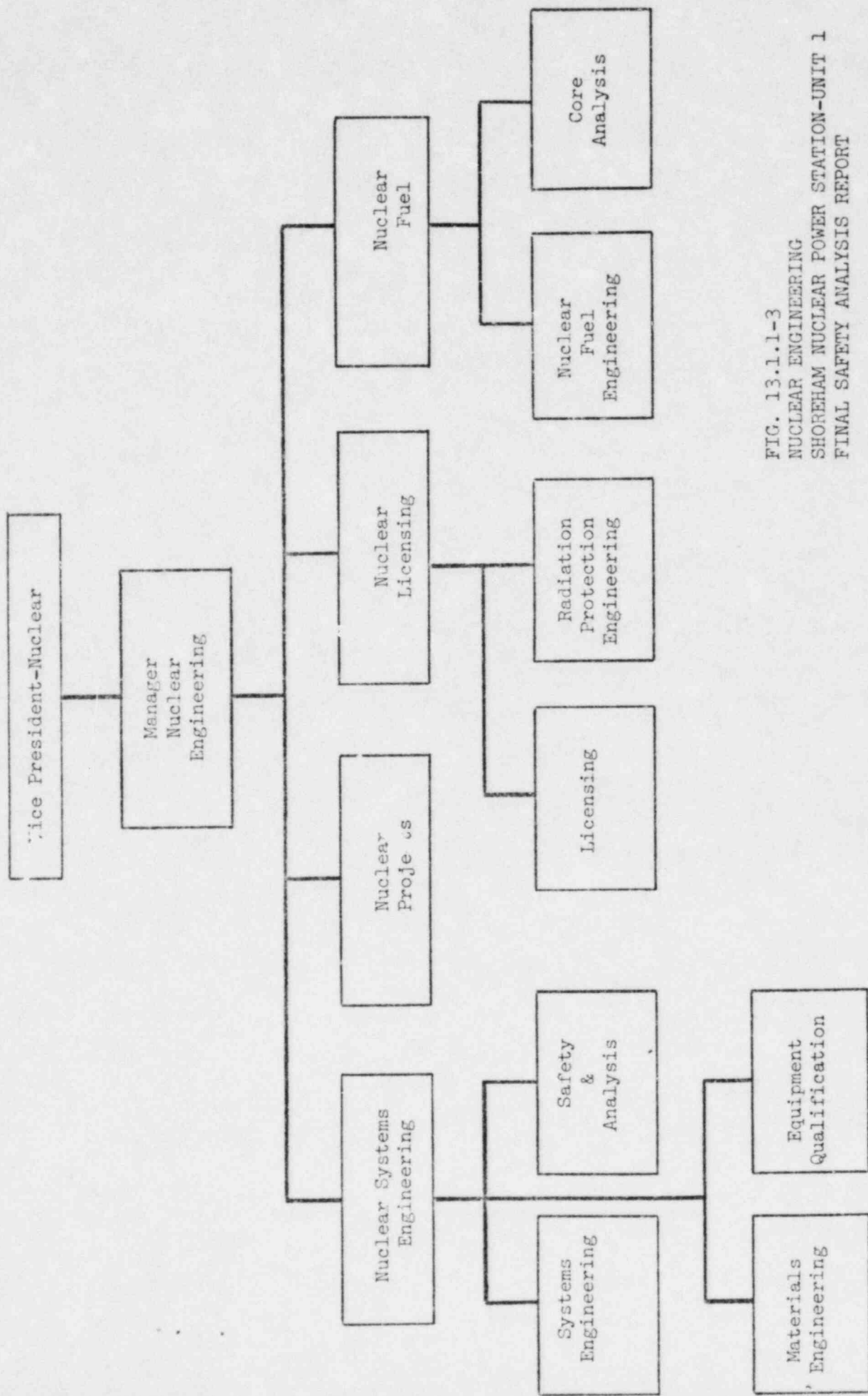


FIG. 13.1.1-3  
NUCLEAR ENGINEERING  
SHOREHAM NUCLEAR POWER STATION-UNIT 1  
FINAL SAFETY ANALYSIS REPORT



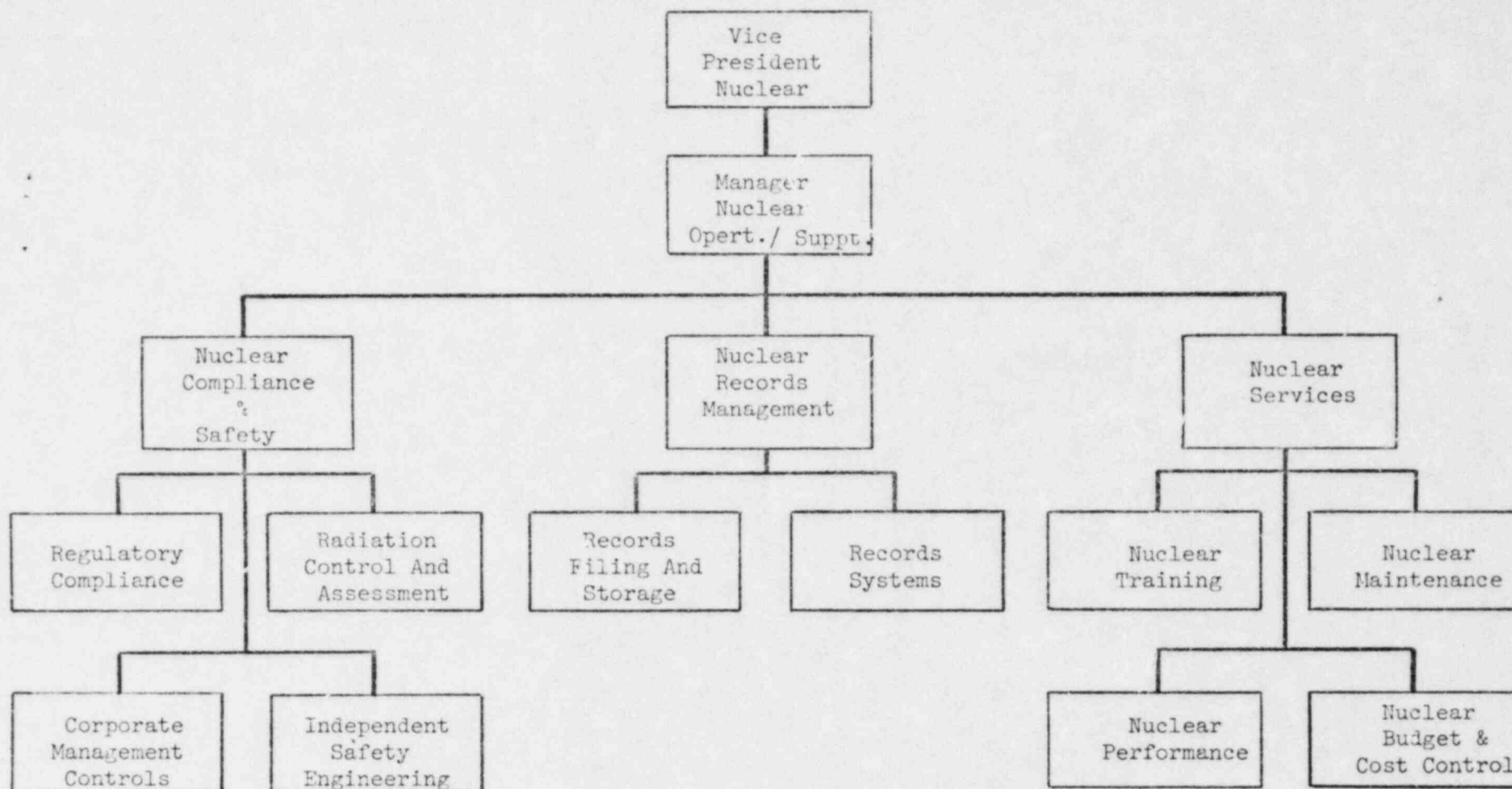


FIGURE 13.1.1-4  
NUCLEAR OPERATIONS SUPPORT  
SHOREHAM NUCLEAR POWER STATION-UNIT 1  
FINAL SAFETY ANALYSIS REPORT