



LONG ISLAND LIGHTING COMPANY

SHOREHAM NUCLEAR POWER STATION

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

JOHN D. LEONARD, JR.
VICE PRESIDENT - NUCLEAR OPERATIONS

November 12, 1984

SNRC-1101

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

Staff Queries Made During the Week Ending November 2, 1984
Regarding FSAR Chapter 13 - Conduct of Operations
Amendment No. 51 to License Application
Shoreham Nuclear Power Station - Unit 1
Docket No. 50-322

Dear Mr. Denton:

This letter will provide additional information as requested by NRC staff reviewers of FSAR Chapter 13, "Conduct of Operations", which was submitted as part of Amendment No. 51 to our License Application (FSAR Revision 33 of September, 1984).

In reference to the experience and qualifications of plant Watch Engineers, Shoreham is committed to ANSI N 19.1 (1971), as endorsed by Reg. Guide 1.8 as reissued in May, 1977. Resumes for the Watch Engineers assigned to the shift crews are appended to this letter as Attachment I. In all cases our designated Watch Engineers' qualifications meet or exceed these standards.

Attachment I to this letter also includes the requested resume for the Operating Engineer and revised resumes for the Operations Manager and the Outage/Modifications Manager.

The resumes for the Operations Manager and the Outage/Modifications Manager have been revised from those which were submitted in Revision 33 to correctly reflect their experience at operating BWRs.

The two corrected resumes and that submitted for the Operating Engineer will be incorporated into Revision 34 of the FSAR, which we plan to submit in November. With regard to an alternate for

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the Operating Engineer it is LILCO's intention that the Operations Manager would act in that capacity in his absence until such time that the Engineer/Operations fulfills the required qualifications.

In the matter of assignment of qualified Shift Technical Advisors (STAs) on shift, and available to the Watch Engineer during operating conditions 1, 2 and 3; an STA will be assigned and will be on shift as required by the Shoreham Technical Specifications (Final Draft) and as shown in Table 6.2.2-1 of that document. FSAR Chapter 13, §§ 13.1.3.19 and 13.1.3.20 (covering Watch Engineers and Watch Supervisors) will be modified in a future amendment to the FSAR, as necessary to clarify this STA commitment. (See Attachment II to this letter)

With respect to the query regarding Shoreham SRO and RO licensees, currently they are assigned as follows:

- ° Sixteen (16) SROs are assigned to shifts,
- ° Eleven (11) ROs are assigned to shifts,
- ° Eight (8) SROs are assigned to plant staff positions other than shift work.

Presently there are ten (10) candidates in training for RO licenses and two candidates in training for SRC licenses for backups to the existing staff. License examinations are scheduled for the week of February 17, 1985.

A revised version of FSAR Figure 13.1.2-2, Shoreham Nuclear Power Station Staff, Operations Division, is appended to this letter as Attachment III. This revision correctly shows the direct line of reporting of the Watch Engineers (each an SRO) to the Operating Engineer who is a licensed SRO. This revised figure reflects the organization as illustrated in the Final Draft of the Shoreham Technical Specifications and this revision of the figure will be in FSAR Chapter 13 in Revision 34, November, 1984.

In reference to the Staff's comments re FSAR, § 13.4.2 - Review and Audit - Test and Operation, the subsection will be modified to commit to ANSI N 18.7 (1976) rather than the 1972 version of that document. (See Attachment IV to this letter)

In connection with the query regarding definition of the area in which the Control Room SRO will perform his duties the following is submitted:

- ° Administrative procedures are in place which require either the Watch Engineer or the Watch Supervisor (licensed SRO's) to be in possession of the control room command function. The individual in possession of the control room command function is within the physical confines of the Control Room and normally within sight or audible range of the Operator "at the controls".
- ° FSAR Figure 13.5.1-2 illustrates and defines the Control Room area and the area where the Operator is "at the controls".

- ° Administrative Procedures require the Watch Engineer (SRO) or Watch Supervisor (SRO) and a licensed RO in the Control Room for operating conditions 1, 2, and 3.

In response to the query about the "minimum of 10 engineering personnel" designated to the Shoreham Plant by the Vice President, Engineering and Administration (as referenced in FSAR § 13.1.1.3), the present complement is as follows:

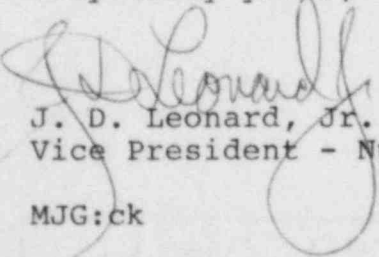
- ° Five (5) engineers assigned by the Manager, Power Engineering Department,
- ° Five (5) engineers assigned by the Manager, Electrical Engineering Department,
- ° Four (4) mechanical and/or electrical drafting personnel assigned by the Manager, Engineering Design and Mapping Department, and
- ° Five (5) technical personnel assigned full time by the Manager, Environmental Engineering Department.

In each case, of each of the above departments, the assigned personnel can draw on the further personnel and resources of their respective departments. The Office of Engineering and Administration has a total of eighty four (84) engineers and/or technicians who can be made available if necessary to assist those listed above.

In response to the query regarding the Reliability Group, Attachment V is a brief description of its functions and goals. This group, which is currently being staffed, will function at the direction of the Director, Quality Assurance, Safety & Compliance as shown in Figure 17.2.1-1 of the FSAR.

While we anticipate that you will find these responses acceptable, please do not hesitate to call my office or members of my staff should you require additional information or clarification regarding our reply.

Very truly yours,



J. D. Leonard, Jr.
Vice President - Nuclear Operations

MJG:ck

cc: R. Caruso
P. Eselgroth
C. Petrone

ATTACHMENT I
SNRC-1101

Resumes as follows:

- J. A. Scalice, Operating Manager
- J. A. Notaro, Outage/Modifications Manager
- H. T. Carter, Operating Engineer

- Six (6) Watch Engineers
 - Alexander M. Bodan
 - Robert P. Bonitch
 - Charles M. Hall
 - Michael D. Holland
 - Michael J. Howley
 - William J. Nazzaro, Jr.

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JOHN A. SCALICE
Operations Manager
Long Island Lighting Company

Assigned as Operations Manager in May, 1984. Responsible for the overall management of the Operations and Reactor Engineering section including, the generation of electrical power in compliance with the rules of the governing regulatory agencies and the monitoring of the various station parameters to maximize plant availability and performance.

Graduated from Polytechnic Institute of Brooklyn in 1970 with a Bachelor of Science degree in Mechanical Engineering. Received a Master of Science (Nuclear Engineering) degree at Polytechnic Institute of New York, 1979.

Completed the General Electric Boiling Water Reactor (BWR) Simulator Program in December 1979 and obtained a Senior Reactor Operator Certification. Completed Simulator refresher training in September 1981.

Obtained NRC Senior Reactor Operator License (SOP-4424) November 12, 1982.

Completed the following additional training and qualification programs:

- a) BWR Design Orientation - General Electric Co.
- b) BWR Technology - General Electric Co.
- c) Comprehensive Assets Security - American Society of Industrial Security
- d) Research Reactor Training (RRT) (including the training criticals) Brookhaven National Laboratory Medical Research Reactor
- e) Station Nuclear Engineering - General Electric
- f) Concepts and Practices Computer Course - Honeywell
- g) Process Assembly Language (PAL) Programming Course for the HS4000 series computer - Honeywell

April, 1984

Four week field assignment to CP&L's Brunswick Steam Electric Plant in the Operations Group. Witnessed Plant evolution at high power levels and participated in daily management and planning activities.

July 1980 - September, 1980

Sixteen week field assignment to CP&L's Brunswick Steam Electric Plant in the Nuclear Engineering Group. Actively participated in Units 1 & 2 refueling outage and post refueling Start up Test

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Program. Successfully completed BSEP's qualification program for an on-shift Nuclear Engineer. Participated in reactor power maneuvers and issued reactivity change request to operators including rod movements and flow changes.

NOTE: During the two periods (April 1, 1984 and July, 1980 - September, 1980; participated in management activities of the Brunswick Steam Electric Plant while the plant operated above 20% power in the aggregate of more than eight (8) weeks.

1979 - May, 1984

Assigned to the position of Reactor Engineer at the Shoreham Nuclear Power Station in July, 1979. Responsible for the nuclear and thermal performance of the core. Assists in maintaining overall unit performance, and maintaining fuel inventory, refueling schedules, and refueling patterns. Supplies current nuclear and thermal information to the operating staff, including reactivity coefficients, control rod worths, and core power distributions and stability. Participates in the preparation of physics related programs. Responsible for the plant computers' software and their application.

1974 - 1979

Joined the Shoreham Nuclear Power Station Plant Organization in January 1974, and was assigned to the Shoreham Project as Assistant Project Engineer - Nuclear. Responsible for coordinating and monitoring the design, scheduling, procurement and construction activities related to all nuclear plant systems, including liquid and solid Radwaste, Reactor Building Standby Ventilation System, Primary Containment Atmospheric Control, Fuel Pool Cooling and Fuel Pool Cleanup.

Assigned to the LILCO Startup team in May 1975 as Nuclear Startup Engineer. Responsible for definition of System Turnover packages, initial phases of startup scheduling, preparation of system checkout and initial operation test procedures for all nuclear plant systems, and coordination of spare parts ordering program.

Assigned as Performance and Compliance Section Head at the Shoreham Nuclear Power Station in October 1975. Responsible for supervising the section activities which included: coordinating technical consultant activities for station software, reviewing preoperational test and test results for compliance to design parameters and regulatory requirements, and assisting the plant organization in technical related activities. Additional direct responsibilities included overseeing and coordinating the schedule of procedure writing by maintaining the computerized procedure index status report, witnessing preoperational tests, and writing of general plant administrative procedures.

SNPS-1 FSAR

Assigned as Site Security Supervisor at the Shoreham Nuclear Power Station in April 1977. Responsible for the planning, development and administration of the Station's Security Program. Detailed program activities include: administration and direction of the plant security force, maintaining electronic security devices, administration of the security force training program, formulation of security procedures and a continuing evaluation of their effectiveness and adequacy to satisfy company and NRC regulatory requirements, maintaining current working knowledge of industry and regulatory security practices and policies.

1970 - 1974

Employed by the Long Island Lighting Company as an Assistant, Associate and Plant Engineer in the Electric Production and Nuclear Projects Department. Held Supervisory position in Maintenance, Operations, and Instrumentation and Controls Section in a 350 MwE fossil fueled multi-unit power station. Particular responsibilities included: planning and supervising maintenance and major overhauls of all plant equipment including four (4) General Electric Co. Turbo-Generators and their associated oil, gas fired Boilers. Was also given full responsibility for engineering design and startup of several plant subsystems such as automatic minimum flow recirculation for four (4) Boiler feed pumps, and complete automation of the magnesium-oxide injection system.

While in the Instrument and Controls Section, was responsible for maintaining and testing all plant electric and pneumatic controls systems, Turbine Boiler performance tests and calculation and improvement of the station Heat Rate.

As Operations Supervisor, was responsible for the reliable, safe, and efficient operation of all plant equipment, personnel scheduling and training, coordination of equipment outages, and preparation of operating reports. Subsequently transferred to the Shoreham Plant Staff in January 1974.

Member, American Nuclear Society.

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JACK A. NOTARO
Outage and Modifications Manager
Long Island Lighting Company

Assigned as Outage and Modifications Manager in May 1984. Responsible for the implementation of design changes to plant systems or equipment as required by the regulatory agencies or for plant operational/reliability considerations. Specific duties include: supervision of the Planning and Scheduling, Modification Engineering and Outage Planning sections to maximize station availability and to optimize the size of the modification related work forces.

Graduated from City College of New York in 1970 with a Bachelors Degree in Mechanical Engineering. Received a Masters of Business Administration Degree in 1974 from Adelphi University.

Completed the General Electric Co. Boiling Water Reactor Simulator Program in July, 1976, and obtained certification as a Senior Reactor Operator.

Obtained NRC Senior Reactor Operator License #SOP-4419 for Shoreham November 1982.

Completed the following industry seminars and training programs:

- a) BWR Design Orientation - General Electric Co.
- b) BWR Technology - General Electric Co.
- c) Nuclear Power Plant Technology - General Physics Corp.
- d) BWR Observation Training - General Electric Co.
- e) Degraded Core Conditions - General Electric Co.
- f) Refueling Activities - General Electric Co.
- g) Radiation Protection - LILCO Evening Institute
- h) Basic Applied Health Physics - Brookhaven National Laboratory
- i) Vibration Analysis - IRD Mechanalysis, Inc.
- j) Statics, Strength of Materials & Dynamics - LILCO Evening Institute
- k) Management of Maintenance Storekeeping & Inventories - Management Dynamics Institute
- l) QA for the Nuclear Industry - Stat-A-Matrix and General Physics Corp.
- m) Inservice Inspection & QA During Operations - Southwest Research Institute
- n) Basic Radiography - Corvair Division of General Dynamics
- o) Magnetic Particle & Liquid Penetrant Testing - Magnaflux Corp.
- p) Basic Ultrasonics - Automation Industries
- q) Nuclear Power QA - Long Island Section of AQSC
- r) Inservice Inspection Symposium - Mirror Insulation
- s) Operations Quality Assurance - Stat-A-Matrix
- t) Reactor Research Training - Brookhaven National Laboratory

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1983 - 1984

Assigned as the Shoreham Chief Operating Engineer in April, 1983. Responsibilities include: the formulation and implementation of the training programs for all Station personnel; development and review of the Operations, Training and Security Sections of the Station Operating Manual; and the overall management of the Operations, Training and Security Sections of the Station.

1978 - 1983

Assigned as Operating Engineer of the Shoreham Nuclear Power Station in July, 1978. Responsible for the development and implementation of the Station's operational activities including the direction of day to day operation of the unit; startup, operation and shutdown of all station equipment; implementation of initial, requalification and replacement training programs for licensed and unlicensed operators; the development, review, and implementation of the Operations Section of the Station Operating Manual.

June 1981 - August 1981

Assigned to the Operations Section of the Millstone Nuclear Power Station. The scope of this assignment included power operation training at greater than 20% power. The assignment encompassed three months of actual hands-on experience in a two-month calendar period.

Participated in weekly and monthly routine BOP and NSSS system surveillance testing. Participated in high risk I&C Operations equipment and system surveillance testing. Witnessed TIP traces and conducted heat balances, core flow calculations were conducted with and without main computer available. Participated in power downs from 100% power to complete control rod repositioning and repairs to main condenser cross-over valving. Assisted in maintaining power at less than 25%, as required by Tech Specs, as a result of main computer problems. Witnessed implementation of emergency notification procedures.

Manipulated controls for power downs, return to power, Tech Spec LCO's, control rod repositioning, and stuck control rod surveillance testing. Witnessed and participated in half scram and full scram recoveries, subsequent investigations, evaluations and notifications.

In addition to the above, attended daily Plant Manager's Unit and Unit Superintendent's meetings, Operations Department meetings, Plant Operations Review Committee meetings, shift staffing, planning and scheduling evaluations.

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March 1981 - May 1981

Assigned to the Operations Section of the Millstone Nuclear Power Station for the completion of the Unit 1 refueling outage. The scope of this assignment included refueling, cold shutdown to greater than 20% power, and greater than 20% power to cold shutdown. The assignment encompassed three months of actual hands-on experience in a two-month calendar period.

Participated in all significant pre and post refueling outage surveillance testing and inspections. Actively took part in refuel bridge operations including control rod removal and replacement, channeled and dechanneled fuel movements, core inspections and verifications, dropped fuel bundle evaluations and recovery. Assisted in the evaluations and calibrations resulting from abnormal nuclear instrumentation indications. Participated in integrated leak rate testing, primary system hydrostatic pressure testing and drywell inspections, assessed system status and return to normal. Conducted portions of pre-criticality testing including control rod functional, subcritical checks and friction testing. Actively took part in returning the unit to survive from cold shutdown to greater than 20% power including manipulation of controls during plant heat-up.

In addition to the above, participated in daily outage coordination meetings, Operation Department staff meetings, Plant Operations Review Committee meetings, shift staffing and scheduling evaluations.

April 1979 - May 1979

Completed the 160-hour General Electric Company Observation Training Program at Commonwealth Edison Company's Dresden Nuclear Power Station. Modification of the standard observation training program was effected in this instance including direct assignment to Dresden Operations and Clearance for unescorted access.

Dresden Unit 2 was returning from a refueling outage and Unit 3 was returning from a forced outage to replace the main transformer during this training assignment.

On Unit 2, observed significant pre and post refueling outage surveillance testing. Witnessed integrated leak rate testing. Participated in the primary system hydrostatic pressure test and drywell inspections. Observed preparations for an accomplishment of approach to criticality, plant heat-up, transfer to run, placing the main turbine in service and power operation. Witnessed half and full scram recoveries. Manipulated controls to reduce power from 700MW to 200MW in preparation for stator cooling system filter replacement.

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August 1978

Assigned to the Vermont Yankee Nuclear Power Station to observe startup of the unit following a refueling outage. Witnessed the completion of the integrated leak rate test. Witnessed the primary system hydrostatic pressure test and took part in the drywell inspection. Observed preparations for and accomplishment of approach to criticality, plant heat-up and transfer to run. Witnessed half scram recovery during plant heat-up.

March 1973 - July 1978

Assigned to the Shoreham Nuclear Power Station in the Quality Assurance Section and subsequently promoted to Station Operating Quality Assurance Engineer responsible for the Section in July 1974.

Responsibility included initial development of the operational quality assurance program. Responsible for all aspects associated with its implementation at the station including reviews, audits, surveillance, inspections, selection and training of personnel, development of procedures and instructions, and the utilization of consultants and contractors. Additional responsibilities included licensing and inspection activities associated with the U.S. Nuclear Regulatory Commission and interfacing with external and internal organizations required to implement the operational quality assurance program.

1970 - 1972

Assigned to the Maintenance Section in the Northport Power Station. Assigned duties included assisting in outages of both a scheduled and forced nature as well as maintaining plant equipment and systems, and completing special projects.

Member of the American Society for Quality Control. Member, Edison Electric Institute - Quality Assurance Task Force (EEI-QATF) and the EEI-QATF Operations Subcommittee.

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Harry T. Carter
Operating Engineer, Shoreham Nuclear Power Station
Long Island Lighting Company

Assigned as Operating Engineer at Shoreham Nuclear Power Station in August, 1984. The Operating Engineer is responsible for directing day to day operation of the unit. This includes startup, operation and shutdown of all station equipment in accordance with approved operating procedures, station technical specifications and applicable regulatory requirements. In addition, the Operating Engineer also ensures preparation of operating records including records for reactor trips, equipment tests and other important station parameters and provides assistance to the training department in the form of subject matter and curriculum in the maintenance and implementation of the station operator license training and requalification training program.

Graduated from New York State Maritime College in 1964 with a Bachelor of Marine Engineering Degree and a 3rd Assistant Engineer Steam and Diesel license, U.S. Coast Guard.

Completed the following commercial industry seminars and training programs:

- (a) BWR Technology - General Electric Company
- (b) Fire Fighting Training - Suffolk County Fire Department.
- (c) American Management Association Supervisory Management Course.

Obtained NRC Senior Reactor Operator License (SOP-4503) January 13, 1983

February 1979 - August, 1984

Assigned to the Operations Section of Shoreham Nuclear Power Station as Assistant Operating Engineer. License Training during this time period included a five week General Electric BWR Technology course and a three month General Electric Simulator course in Morris, Ill, also, was assigned to the Operations Section of the E.I. Hatch Nuclear Power Station. While at that plant, a Cold Startup of Unit 1, a Hot Startup of Unit 1 and a Shutdown and Cooldown of Unit I to 150° F was performed. Also, various Surveillance Testing was performed on Unit I which required down powers and control rod repositioning. On Unit 2, a recovery from a refueling outage was performed. This included torquing of Unit II head bolts, primary system hydrostatic pressure testing, valve lineups and various surveillance tests.

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Projects during this time period included the following:

- (a) Acting for the Operating Engineer in his absence in directing the operating section in the day to day operation of the unit.
- (b) Participation in the Control Room Human Factors audit of the Shoreham Nuclear Power Station Control Room.
- (c) Member of the BWR Owners Group on Emergency Procedure Guidelines.
- (d) Writing surveillance procedures to insure station compliance with Technical Specifications.
- (e) Coordination of the Integrated Electrical Test with plant staff, startup, and system operations.

February 1971 - February 1979

Employed by the Knolls Atomic Power Laboratory (KAPL) Division of the General Electric Company, Schenectady, New York. Assigned to the D1G Naval Nuclear Prototype in 1971 and qualified as engineering Officer of the Watch (EOW). Participated in a partial refueling and post refueling test program while at the prototype. Assigned to the MARF prototype in 1973 while is was under construction and qualified as Shift Test Engineer. Duties included Hydrostatic testing and flushing of systems, initial startup and performance of acceptance tests. Assigned to the SIC Naval Nuclear Prototype in 1974. Qualified Engineering Officer of the Watch and Shift Supervisor, participated in a refueling outage and a post refueling test program during this time period. During employment at KAPL, participated in the operations and activities of an operating nuclear power plant during periods in excess of one year at powers above 20%, in routine refueling outages, in preoperational testing of a plant, and in post refueling plant startups.

September, 1967 to February 1971

Employed by Grumman Aerospace Corp., Bethpage, New York. Assigned as a Test Engineer on the Lunar Module program and tested the main propulsion systems of both the ascent and descent stages of the Lunar Modules which landed on the moon. This included performing following duties this time period:

- (1) Writing test procedures
- (2) Hydrostatic testing of the propellant and helium tanks
- (3) Leak Checking of all mechanical fittings on the main propulsion system.

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- (4) Testing the supercritical helium tank in which liquid helium at -452 degrees F was loaded into the tank subsequently pressurized to 35 psig with helium gas at -450° F.

June 1964 to September 1967

Employed by Grace Lines Inc., North River, New York. Held a Second Assistant Engineers License Steam, Third Assistant Engineers License Diesel, U.S. Coast Guard. Duties included on watch operation of marine propulsion plants and underway repairs to marine machinery. These propulsion plants included a Victory Ship taken out of storage and a new automated freighter. On board equipment on the new freighter included bridge propulsion control, refrigerated cargo holds, 3 steam driven AC generators, automatic switch gear, automatic firing of boilers, remote starting of steam driven feed pumps and the typical lube oil systems, condensate, main steam and feed water systems needed to operate a marine propulsion plant.

ROBERT P. BONITCH
Watch Engineer
Long Island Lighting Company

The Watch Engineer reports to the Operating Engineer and has overall responsibility for the safe and efficient operation of the Shoreham Nuclear Power Station during the assigned shift. The Watch Engineer is licensed by the Nuclear Regulatory Commission to carry out responsibilities and must continually evaluate and assure that such operations satisfy all normal, regulatory and station licensing requirements. By law, he must direct operations to assure that the health and safety of plant personnel as well as the general public are not adversely affected. The Watch Engineer is responsible for acting as the Emergency Director (Plant Manager) in accordance with the Station Emergency Implementation procedure until he is relieved by the Plant Manager or designated alternate.

Received Senior Reactor Operator License number S.O.P. 4545 on March 16, 1983 for the Shoreham Nuclear Power Station Unit No. 1, Facility Docket No. 50-322.

Assigned to Oyster Creek Nuclear Power Station for periods totaling in excess of six (6) weeks between March 15, 1981 and April 25, 1981. Was involved continuously at operations above 20% power for six weeks shut down from above 20% power to cold shutdown, and startup to 20% power following a refueling outage.

Completed the following education, training programs and industrial seminars:

1962	Graduated Aviation High School
1963-64	Nassau Community College
1964-65	Farmingdale State Agricultural and Technical Institute
1972-74	Suffolk Community College
1974	General Physics Academic Refresher
1975	NUS Co. - BWR Technology
1975	SNPS - Research Reactor Training @ BNL
1975	SNPS Gen. Training
1975	GE Co. - BWR Technology
1976	GE Co. - BWR Simulator SRO Cert.
1976	GE Co. - BWR Operations Observation - Millstone plant, four (4) weeks
1978	SNPS - Fire Fighting School
1978	SNPS - On-Site Training I
1979	SNPS - Fire Fighting Retraining
1979	LILCO - Safety Course for 1st Line Supervisor
1979	SUNY at Stony Brook - Supervisory Development in Industrial Safety

1980 SNPS - On-Site Training II
1980 GE Co. BWR Refresher Training
1981 Observation Training at Oyster Creek Nuclear
Power Station
1981 Communication Workshop
1981 Refresher Training at BWR Training Simulator,
Limerick, PA.
1982 G.E. Degraded Core
1983 University of State of N.Y Vocational Extension-Fire
Fighting
1983 G.E. - Refueling Activities at San Jose, CA.

General Industrial Record:

April 1975 to Present

Assigned to the Shoreham Station as Nuclear Station Operator.
Assigned as tagging coordinator for the startup group, from
January 1978 thru September 1978.
Promoted to Watch Engineer in February 1978

1965 to 1975

Worked at the E.F. Barrett Generating Station. My job ratings
were from Utility Man to Control Operator and my duties ranged
from minor mechanical maintenance jobs to both normal and
abnormal plant operations.

1962 to 1965

Employed by Republic Aviation Corporation as an Electrician.

CHARLES M. HALL
Watch Engineer
Long Island Lighting Company

The Watch Engineer reports to the Operating Engineer and has overall responsibility for the safe and efficient operation of the Shoreham Nuclear Power Station during the assigned shift. The Watch Engineer is licensed by the Nuclear Regulatory Commission to carry out responsibilities and must continually evaluate and assure that such operations satisfy all normal, regulatory and station licensing requirements. By law, he must direct operations to assure that the health and safety of plant personnel as well as the general public are not adversely effected. The Watch Engineer is responsible for acting as the Emergency Director (Plant Manager) in accordance with the Station Emergency Implementing procedure until he is relieved by the Plant Manager or designated alternate.

Received Senior Reactor Operator License number S.O.P. 4427 on November 12, 1982 for the Shoreham Nuclear Power Station unit No. 1, Facility Docket No. 50-322.

Assigned to Vermont Yankee Nuclear Power Station (BWR) for periods totaling in excess of six (6) weeks in November and December 1981 and January 1982. Was involved variously at operations above 20% power, shut down from above 20% power to cold shutdown, and startup to 20% power following refueling outage.

Completed the following education, industry seminars and training programs:

Graduated High School in June 1958

US Naval Service - Jan. 1959 - July 1966:

- 1959 Electricians Mate Class "A" School at Great Lakes, Illinois. Studies in basic electrical theory and trouble shooting of electrical circuits.
- 1961 Nuclear Power School at Bainbridge, Maryland
- 1962 Submarine Reactor Prototype at Windsor, Connecticut. Submarine School at New London, Connecticut.
- 1963- 1966

Assigned USS Thomas A. Edison, SSB(N) 610 as E. Division leading Petty Officer and Nuclear Propulsion Watch Stander.

1975 Nuclear Power Plant Technology given by NUS. Completed SNPS General Training Program.

- 1976 G.E. BWR Technology, G.E. Simulator Program. Completed four (4) weeks observation training at Millstone Nuclear Power Station.
- 1978 Suffolk County Fire Fighting School.
- 1979 On Site Training I
- 1980 Management Workshop
- 1982 Degraded Core Course given by G.E. Fire Protection given by P.L.C. Refueling Floor Operations at San Jose, given by G.E. Firematics given by Suffolk County
- 1983 Fire Brigade Leadership given by P.L.C. Communication and Leadership given by M.A.C.

General Industrial Record:

- May 1975 to Present: Employed by Long Island Lighting Company as Watch Engineer.
- Sept. 1967 to May 1975: Self-employed, electrical contractor licensed in Suffolk County and owner of Vacuum Cleaner Repair Shop in Southold, New York.
- Sept. 1966 to Sept. 1967: Brookhaven National Laboratory Assigned to Reactor Instrument Group. Duties required a knowledge of all reactor instrumentation and its repair and maintenance. On rotating basis was in charge of reactor start-up instrumentation and various line-up procedures to ensure safe start-up of the reactor.

Society Membership: International Association of Electrical Inspectors.

Licenses: Suffolk County Master Electrician.

ALEXANDER M. BODAN

Watch Engineer

Long Island Lighting Company

The Watch Engineer reports to the Operating Engineer and has overall responsibility for the safe and efficient operation of the Shoreham Nuclear Power Station during the assigned shift. The Watch Engineer is licensed by the Nuclear Regulatory Commission to carry out responsibilities and must continually evaluate and assure that such operations satisfy all normal, regulatory and station licensing requirements. By law, he must direct operations to assure that the health and safety of plant personnel as well as the general public are not adversely effected. The Watch Engineer is responsible for acting as the Emergency Director (Plant Manager) in accordance with the Station Emergency Implementing procedure until he is relieved by the Plant Manager or designated alternate.

Received Senior Reactor Operator License number S.O.P. 4423 on November 12, 1982 for the Shoreham Nuclear Power Station Unit. No. 1, Facility Docket NO. 50-322.

Assigned to EI Hatch Nuclear Power Station, Georgia Power Co. Two Unit BWR from January 18 to March 6, 1981. Was involved in six (6) weeks operation at substantially above 20% power, startup from subcritical, shutdown from above 20% power to cold shutdown, and startup preparations following refueling.

Completed the following education, industry seminars and training programs:

- a) 1955 Graduated from Woodmere High School
- b) 1969 IBEW course, Industrial Atomic Energy Uses, Hazards and Controls
- c) 1973 Bell and Howell Home Entertainment Electronics home study course from DeVry Institute
- d) 1974 General Physics Academic refresher course for Utility Personnel
General Physics Practical Nuclear Power Plant Technology
Intermediate Algebra at Suffolk County Community College
- e) 1975 Pre-Calculus and English at Suffolk County Community College
Nuclear Power Plant Technology given by NUS
Research Reactor Training at BNL
General Electric BWR Technology

- f) 1976 General Electric BWR Simulator Training Program -
obtained Senior Reactor Operator's Certification
General Electric BWR Observation Training Program at
Millstone Nuclear Power Station
- g) 1977 Intro Computing at Suffolk County Community College
- h) 1979 SNPS on-site training
SNPS Fire Fighting Training
Supervisory Development Industrial Safety at SUNY
Stony Brook
- i) 1980 LILCO First Level Supervisory Workshop
LILCO Situational Leadership
- j) 1982 General Electric Degraded Core
- k) 1983 University of State of N.Y. Vocational Extension -
Fire Fighting
General Electric Refueling Floor Activities at San
Jose, California

General Industrial Records:

Employed by the Long Island Lighting Company since 12/30/57 in
the following capacities:

- 9/19/77 - 8/1/78 Temporarily assigned to the Construction
Department (UNICO) at Shoreham Nuclear Power
Station as a Construction Coordinator to
coordinate the installation of assigned piping
systems.
- 6/3/74 - 9/19/77 Assigned as a Watch Engineer on the Shoreham
Nuclear Power Station staff with respon-
sibility for the formulation of assigned
sections of the FSAR, Station Operating
Procedures, lesson plans for on-site training
and the review of various system descriptions
and procedures.
- 2/1/74 - 6/3/74 Watch Engineer on the Shoreham Nuclear Power
Station staff temporarily assigned to the
Northport Power Station to cover relief
watches and vacations for the Watch Engineers.
Job duties consisted of the supervision of six
operators and the responsibility for the safe
and efficient operation of three 375 mw fossil
units. Was assigned the responsibility for a
portion of the training of five new Assistant
Control Operators.

3/1/67 - 2/1/74 Progressed through all operating job classifications at LILCO's Northport Power Station. Completed all operator training programs and took part in the initial startup activities and operations of three 375 mw fossil units as follows:

5/20/73 - 2/1/74 - Control Operator A with the responsibility of the Control Room Command Function for two 375 mw units.

3/19/72 - 5/20/73 - Control Operator B with the responsibility of the Control Room Operation for one 375 unit.

11/30/69 - 3/19/72 - Relief Operator B with the responsibility of field duties for two 375 mw units and the Control Room Operation for one 375 unit.

3/01/67 - 11/30/69 - Assistant Control Operator with the responsibility of field duties for two 375 mw units.

12/30/57 - 3/1/67 Employed at LILCO's Port Jefferson Power Station in the capacity of skilled laborer and Utility Operator. Completed Utility Operator training program and took part in the initial startup activities of one 175 mw fossil unit and the operation of two 50 mw fossil units and two 175 mw fossil units.

MICHAEL D. HOLLAND
Watch Engineer
Long Island Lighting Company

The Watch Engineer reports to the Operating Engineer and has overall responsibility for the safe and efficient operation of the Shoreham Nuclear Power Station during the assigned shift. The Watch Engineer is licensed by the Nuclear Regulatory Commission to carry out responsibilities and must continually evaluate and assure that such operations satisfy all normal, regulatory and station licensing requirements. By law, he must direct operations to assure that the health and safety of plant personnel as well as the general public are not adversely effected. The Watch Engineer is responsible for acting as the Emergency Director (Plant Manager) in accordance with the Station Emergency Implementing procedure until he is relieved by the Plant Manager or designated alternate.

Graduated from Suffolk Community College in 1981 with an Associates Degree in Engineering Science.

Received an NRC Senior Reactor Operator (SRO) License number S.O.P. 4543 for the Shoreham Power Station Unit No. 1 in 1983.

Assigned to Peach Bottom Nuclear Power Station, Philadelphia Electric Co. Two Unit BWR from January 18, 1982 to March 30, 1982. Was involved continuously for at least six (6) weeks operations substantially above 20% power, start up from subcritical, shut down from above 20% power to cold shutdown, and startup preparations following a refueling.

Completed the following seminars and training programs:

- a) Introduction to Nuclear Power - NUS Corp.
- b) Brookhaven National Laboratory Research Reactor Operation and Health Physics Programs.
- c) Boiling Water Reactor Technology - G.E. Co.
- d) Boiling Water Reactor Simulator - G.E. Co.
- e) Shoreham Operator Training - LILCO
- f) Mitigating Core Damage - G.E. Co.
- g) Fire Brigade Leadership - Professional Loss Control, Inc.
- h) Fire Fighters School of Instruction - Suffolk County Fire School
- i) Supervisory Workshops - LILCO
- j) Management Communication and Leadership - LILCO
- k) Completed four weeks of observation training at Millstone.

1981 - 1982

Watch Supervisor. Report to Watch Engineer. Supervise the operating crews. Act as Fire Brigade Leader. Review, approve and coordinate maintenance, operations and technician work requests and surveillance evolutions. Review completed surveillances to ensure compliance with Technical Specifications. Develop new and revise existing station procedures. Provide timely training of the on-shift crew.

1975 - 1981

Assistant Nuclear Station Operator. Operated all station equipment from both local field controls and the Main Control Room. Performed system lineups and surveillances. Removed systems and components from service for maintenance and repair. Developed operating procedures and operator training lesson plans.

1974 - 1975

Assistant Station Operator, Glenwood Power Station. Operated the station's boilers, turbines, and switchgear. Performed station startups and shutdowns. Removed systems and components from service for maintenance and repair.

1969 - 1974

U.S. Navy Machinist's Mate Second Class (E-5). Qualified on all main engine room watches including Engineering Officer of the Watch (EOOW) on 600 psig class destroyers.

Michael J. Howley

Watch Engineer

Long Island Lighting Company

The Watch Engineer reports to the Operating Engineer and has overall responsibility for the safe and efficient operation of the Shoreham Nuclear Power Station during the assigned shift. The Watch Engineer is licensed the Nuclear Regulatory Commission to carry out responsibilities and must continually evaluate and assure that such operations satisfy all normal, regulatory and station licensing requirements. By law, he must direct operations to assure that the health and safety of plant personnel as well as the general public are not adversely effected. The Watch Engineer is responsible for acting as the Emergency Director (Plant Manager) in accordance with the Station Emergency Implementing procedure until he is relieved by the Plant Manager or designated alternate.

U.S. Naval Nuclear Power Experience - See below on second page.

Received Senior Reactor Operator License number S.O.P. 4429 on November 12, 1982 for the Shoreham Nuclear Power Station Unit No. 1.

Completed the following education, industry seminars and training programs:

- 1955 - Graduated Brooklyn Technical H.S.
- 1959 - USN Nuclear Power Training Program
- 1975 - Academic refresher course for Utility Personnel given by General Physics
Nuclear Power Plant Technology given by NUS
SNPS General training courses
- 1976 - BWR Technology Program by GE
BWR Simulator Training Program by GE
SRO Certified
Completed four week BWR Observation training at Dresden
Onsite Training I & II
Brookhaven National Lab Health Physics Program
- 1979 - LILCO Onsite Training I & II
- 1980 - BWR refresher training by GE
- 1982 - Mitigating Core Damage by GE
Fire Protection & Fire Brigade Leadership by PLC
Refueling Floor Operations at San Jose by GE
Firematics by Suffolk County
- 1983 - Communication & Leadership by MAC

General Industrial & Military Record

Employed by Long Island Lighting Company August 1975 to Present

Assigned as Watch Engineer, Shoreham Nuclear Power Station. Present job duties include day to day operation of the plant while under construction. Will ultimately be responsible for the direct supervision of the safe, efficient operation of the Shoreham Nuclear Power Station.

- 5/82 - 5/84 Watch Supervisor. Report to Watch Engineer. Supervise the operating crews. Act as Fire Brigade Leader. Review, approve and coordinate maintenance, operations and technician work requests and surveillance evolutions. Review completed surveillances to ensure compliance with Technical Specifications. Develop new and revise existing station procedures. Provide timely training of the on-shift crew.
- 7/75 - 5/82 Assigned to Shoreham Nuclear Power Station a a Nuclear Station Operator, Lead man in Contrc Room. Responsible for maintaining logs and knowledge of plant systems status. Responsible for the manipulation of controls during routine and emergency operations and to assign operational personnel where needed.
- 1963 - 1975 Brookhaven National Lab - qualified Reactor Operator on the Brookhaven Graphite Reactor and High flux Beam Reactor
- 1955 - 1963 Entered US Naval Service.
- 1955 - 1963 U.S. Navy.
- 1956 - 1959 Assigned to USS Salmon SSR 573 commissioning crew involved in startup and operation of all electrical and main propulsion systems.
- 1959 - 1960 U.S.N. Nuclear Power Sub School, New London, Conn. U.S.N. S3G Reactor Prototype, West Milton, N.Y. Qualified on all watch station-Reactor Plant, Electric Plant and Steam Plant-Operator Certificate #287.
- 1960 - 1963 Assigned USS Scorpion SSN 589 commissioning crew. Participated in initial fuel load, startup and operation of S5W Reactor. Qualified on all engineering space watch stations. Leading petty officer in charge of main power gang.

William J. Nazzaro, Jr.
Watch Engineer
Long Island Lighting Company

The Watch Engineer reports to the Operating Engineer and has overall responsibility for the safe and efficient operation of the Shoreham Nuclear Power Station during the assigned shift. The Watch Engineer is licensed by the Nuclear Regulatory Commission to carry out responsibilities and must continually evaluate and assure that such operations satisfy all normal, regulatory and station licensing requirements. By law, he must direct operations to assure that the health and safety of plant personnel as well as the general public are not adversely effected. The Watch Engineer is responsible for acting as the Emergency Director (Plant Manager) in accordance with the Station Emergency Implementing procedure until he is relieved by the Plant Manager or designated alternate.

Received Senior Reactor Operator License number S.O.P. 4427 on November 12, 1982 for the Shoreham Nuclear Power Station unit No. 1, Facility Docket No. 50-322.

Assigned to Peach Bottom Nuclear Power Station, Philadelphia Electric Co. Two unit BWR from July 18, 1981 to September 11, 1981. Was involved variously at six (6) weeks operations substantially above 20% power, startup from subcritical, shutdown from above 20% power to cold shutdown, and startup preparations following refueling.

Completed the following education, industry seminars and training programs:

- 1965 Graduated Aviation High School
- 1969 Attended New York Institute of Technology
- 1975 Academic Refresher Course for Utility Personnel Given by General Physics
- Nuclear Power Plant Technology Given by N.U.S.
- SNPS General Training Courses
- 1976 BWR Technology Program Given by G.E.
- BWR Simulation Training Program Given by G.E. S.R.O. Certified
- BWR Observation Course Given by G.E.
- 1979 On-site Training I and II

- 1980 BWR Refresher Training Given by G.E.
- 1982 Degraded Core Course given by G.E.
Fire Protection give by P.L.C.
Refuel Floor Operation at San Jose, given by G.E.
Firematics given by Suffolk County
- 1983 Fire Brigade Leadership given by P.L.C.
Communication and Leadership given by M.A.C.

GENERAL INDUSTRIAL RECORD

Employed by the Long Island Lighting Company since
June 1, 1970.

December 1980 - Present

Assigned as Watch Engineer, Shoreham Nuclear Power Station.
Present job duties include day to day operation of the plant
while under construction. Will ultimately be responsible for the
direct supervision of the safe, efficient operation of the
Shoreham Nuclear Power Station.

August 1975 to December 1980

Assigned to Shoreham Nuclear Power Station as a Nuclear Station
Operator, Lead man in Control Room. Responsible for maintaining
logs and knowledge of plant systems status. Responsible for the
manipulation of controls during routine and emergency operations
and to assign operational personnel where needed.

Assigned temporarily to UNICO Construction as a Construction
Piping Coordinator in the yard area of the Shoreham Nuclear Power
Station. Responsible for overseeing the construction and
successful completion of assigned systems.

A portion of this assignment was spent in the Large Bore Hanger
Group. Responsibilities were to oversee the start of
construction, to the final acceptance by Field Quality Control of
the Large Bore Hangers on assigned systems.

June, 1970 - August, 1975

Work up through the ranks to Control Operator "A" at the Far
Rockaway Power Station. Participated in the many Startups &
Shutdowns of this 100MW Peaking Station, from both the Control
Room and the field. Thoroughly familiar with the problems and
limits of Starting-Up and Shutting-Down large steam turbines.
Familiar with all Operational Tests which are done on steam
turbines. Participated during abnormal operations of plant and
system, such as loss of fire, loss of water level, inadvertent
tripping of Main Steam Stop Valve, Under Frequency operation,

running separated from the System and Emergency Shutdowns due to boiler tube leaks.

1969 - 1970

Employed by General Instrument Corporation (I.C. Division) Hicksville. Worked as a Quality Control Supervisor responsible for Final Quality Control Acceptance and Customer Returns.

1967 - 1969

Employed by Frequency Electronics Inc., New Hyde Park. Worked as a Quality Control Inspector responsible for Quality Control Acceptance on Incoming Electrical components.

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startup, operation, maintenance or technical services. He shall have a 4 year degree in engineering or a related scientific field or 6 years of power plant experience of which 2 years shall be in a nuclear power plant.

13.1.3.16 Outage Planning Engineer

The Outage Planning Engineer will have a minimum of 4 years experience in a responsible engineering position of which at least 1 year will be in nuclear power station design, construction, startup, operation, maintenance, or technical services. He shall have a 4 year degree in engineering or a related scientific field.

13.1.3.17 Nuclear Engineer

The Nuclear Engineer will have a bachelors degree in engineering or a related science and 2 years professional level experience of which 1 year will be nuclear power plant experience. Six months experience will be onsite.

13.1.3.18 Engineers

Engineers shall have a bachelors degree in engineering or the physical sciences, or a high school diploma and 4 years experience in a responsible technical position.

The Engineer who reports to the Operating Engineer and acts as his alternate shall possess the experience qualifications required by ANSI 18.1-1971 for the Operations Manager.

13.1.3.19 Watch Engineer

Watch Engineers shall have a high school diploma or equivalent. Either they shall have the equivalent of 60 credits (900 classroom hours) in mathematics, reactor physics, chemistry, materials, reactor thermodynamics, fluid mechanics, heat transfer, electrical and reactor control theory; or the equivalent college level education or training as may be deemed appropriate based upon a task analysis for the position (guidance developed by INPO will be utilized for this task analysis); or a Shift Technical Advisor shall be available during his shift during operational conditions 1, 2, or 3. They shall have a minimum of 4 years power plant experience of which a minimum of 2 years will be nuclear power plant operations or maintenance experience. During this 2 years of nuclear power plant experience, these individuals shall participate in reactor operator activities at an operating nuclear power plant during the following periods.

1. Six weeks operation above 20 percent power.
2. Startup from subcritical to 20 percent power.

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3. Shutdown from above 20 percent power to cold (212° F) and subcritical.
4. Startup preparations following a refueling outage.

Watch Engineers shall hold a Senior Reactor Operators License.

13.1.3.20 Watch Supervisors

Watch Supervisors shall have a high school diploma or equivalent. Either they shall have the equivalent of 30 credits (450 classroom hours) in mathematics, reactor physics, chemistry, materials, reactor thermodynamics, fluid mechanics, heat transfer, electrical and reactor control theory; or the equivalent college level education or training as may be deemed appropriate based upon a task analysis for the position (guidance developed by INPO will be utilized for this task analysis); or a fully qualified Watch Engineer or Shift Technical Advisor shall be available during his shift. He shall have a minimum of 3 years power plant experience of which 2 years shall be nuclear power plant experience. During the two years, the individual shall participate in reactor operator activities at an operating nuclear power plant during 6 weeks operation above 20 percent power. He shall hold a Senior Reactor Operators License.

13.1.3.21 Nuclear Station Operators (NSO)

Nuclear Station Operators will have a high school diploma or equivalent. They shall have a minimum of 3 years of power plant experience of which a minimum of 1 year shall be nuclear power plant experience. This one year of nuclear power plant experience shall include 6 months of plant operational duties at the power plant. NSOs shall hold a Reactor Operators License.

13.1.3.22 Nuclear Assistant Station Operators (NASO)

Nuclear Assistant Station Operators will have at least the requirements for a Licensed Reactor Operator given in ANSI N18.1-1971. That is, they will have a high school diploma or equivalent and shall have a minimum of 2 years of power plant experience of which a minimum of 1 year will be nuclear power plant experience. NASOs shall hold a Reactor Operators License.

13.1.3.23 Equipment Operators

The Equipment Operators will have a high school diploma or equivalent. Equipment Operators whose actions could effect the quality of structures, systems, and components important to safety will have 1 year of power plant experience.

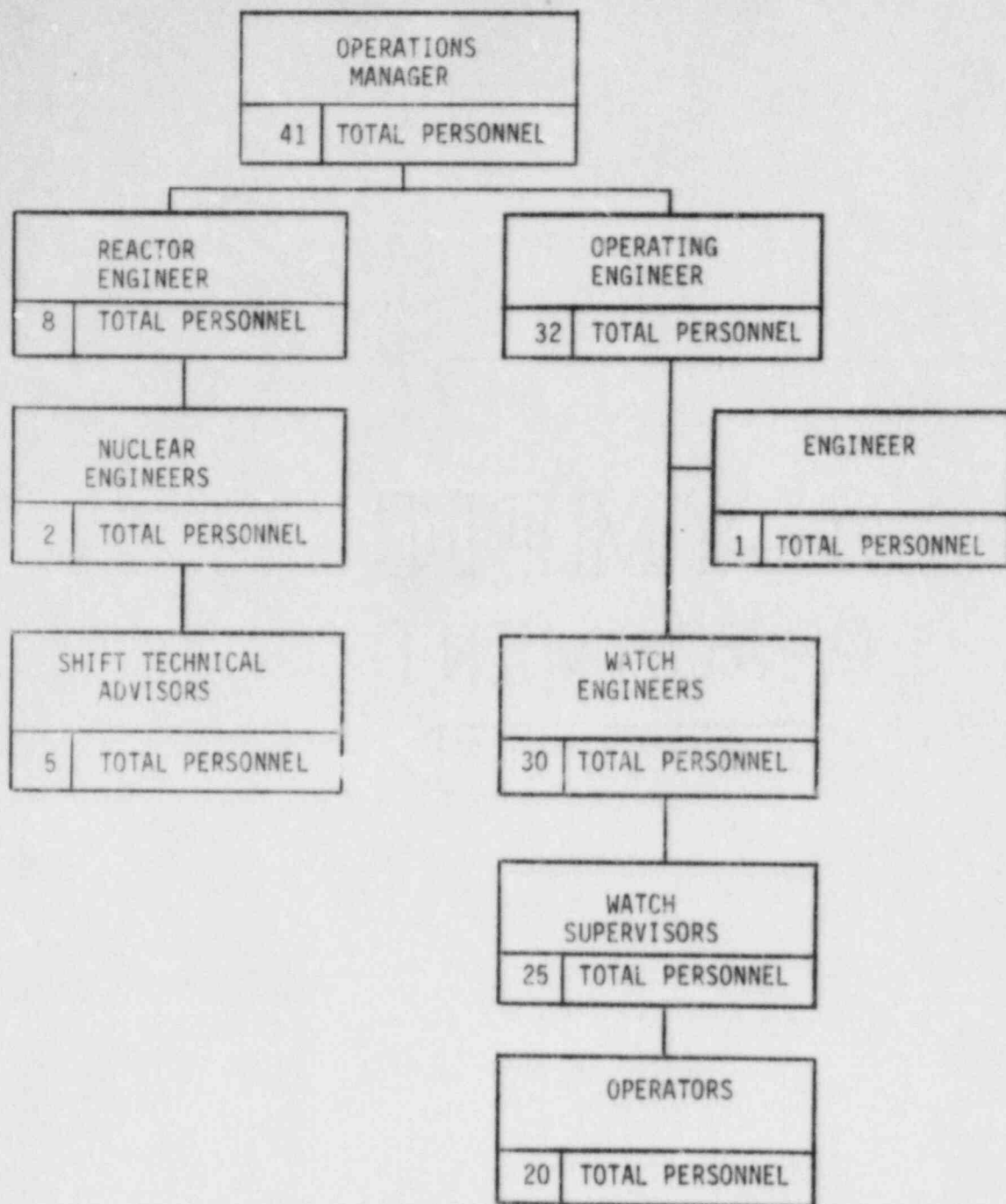


FIG. 13.1.2-2
 SHOREHAM NUCLEAR POWER STATION STAFF,
 OPERATIONS DIVISION
 SHOREHAM NUCLEAR POWER STATION - UNIT 1
 FINAL SAFETY ANALYSIS REPORT

REVISION 34, NOVEMBER 1984

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13.4 REVIEW AND AUDIT

A review and audit program, including in-plant and independent reviews, has been developed to: provide a system to ensure that plant design, construction, startup, and operation are consistent with company policy and rules, approved procedures, and license provisions; review important proposed plant changes, tests, experiments, and procedures; assure that unusual events are promptly investigated and corrected in a manner which reduces the probability of recurrence of such events; and to detect trends which may not be apparent to a day to day observer. For convenience of program administration, the review and audit program is divided into the construction phase and the operation phase.

13.4.1 Review and Audit - Construction

Review and audit during design and construction of the Shoreham Nuclear Power Station is a part of the Quality Assurance Program which is described in Section 17.1. This program does not utilize a formal review and audit committee, as such. Through a comprehensive system of planned audits, compliance with all aspects of the Quality Assurance Program are verified. Audits are performed on the design organizations, the construction site, and vendor facilities. The review and audit function during design and construction is fully described in Section 17.1.

13.4.2 Review and Audit - Test and Operation

Review and audit during the testing and operation of the Shoreham Plant is an integral part of the LILCO Quality Assurance Program. Provisions are established for a comprehensive system of planned and periodic audits to verify implementation of Quality Assurance Program requirements. These review and audit functions are fully described for the operational phase in Section 17.2, and for the transition phase from construction to operation, in Section 17.1D. In addition, LILCO will utilize a formal committee method for review and audit, functioning at two levels:

1. At the station operation level, the Review of Operation Committee (ROC)
2. At the corporate level, the Nuclear Review Board (NRB), which is independent of direct responsibility for plant operation.

Normally, the NRB's audit functions will be carried out by Quality Assurance personnel under the cognizance of the NRB and with NRB review of the findings.

The review and audit program has been established to assure that the operation of the plant is in conformance with established operating procedures, license provisions, and quality assurance

requirements, and to review and approve changes to station systems/equipment and procedures as described in the FSAR, or tests and experiments, which may not constitute an unreviewed nuclear safety question, as defined in 10 CFR, Part 50.59. All unreviewed safety questions and changes to the Technical Specifications will be reviewed by the NRB as described below. Review of nuclear safety related questions are made by the NRB as described below.

A continuing review is performed by the ROC to monitor plant operations, to plan future activities, and to screen subjects that might be of interest to the NRB.

Guidance in the development of the essential elements in LILCO's review and audit program for tests and operations was derived from the ANSI Standard N18.7, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants" (1976). Development of the LILCO Quality Assurance Audit program is described in Chapter 17.

13.4.2.1 Administration of Review of Operations Committee

The Review of Operations Committee (ROC) has been established and is presently functional. The ROC will provide a continuing review of plant operations to assist the Plant Manager or his designated alternate in keeping abreast of general plant operating conditions. The ROC serves to screen subjects of potential concern to the NRB and to perform preliminary investigations as requested by the NRB. It is not the purpose of the committee to relieve the Plant Manager of the responsibility for overall safety of plant operations or for the referral of appropriate matters to the NRB.

1. Written Charter

A written charter has been prepared covering such areas as group responsibility, subjects requiring review, reporting requirements, and organization.

The charter of the Review of Operations Committee reflects the consideration that their review responsibilities for station activities and all proposed changes or modifications to station systems or equipment is not limited to those designated safety related.

2. Membership

Membership of ROC is as follows:

- a. Operations Manager--Chairman and Member
- b. Maintenance Manager--Alternate Chairman and Member
- c. Plant Manager -- Alternate Chairman

LONG ISLAND LIGHTING COMPANY

OFFICE OF THE DIRECTOR, QUALITY ASSURANCE, SAFETY & COMPLIANCE

Functions and Goals of the Reliability Group

The Reliability Group is an independent organization reporting directly to the Director, Quality Assurance, Safety & Compliance.

The goals and functions of the Reliability Group are as follows:

- ° Ensure that reliability goals are established in conjunction with Nuclear Operation for nuclear plant systems and components to improve the plant reliability and ensure that programs for improvement in these goals are functional and operating.
- ° Ensure that these programs are continually monitored and evaluated relative to the nuclear plant and industry experience.
- ° Select and monitor plant performance indicators and develop recommendations for cost-effective programs to enhance equipment and plant reliability.
- ° Maintain a set of evaluation and computer software systems for tracking and cataloguing failure, outage, and repair data for nuclear plant components and systems and for monitoring and evaluating reliability experience and maintenance trends and problems.
- ° Assist in establishing and maintaining a data base that is consistent with or part of the systems developed above to provide administrative and operations support.
- ° Perform critical reviews of data reports taken from the data base to ensure they properly describe events, accurately reflect all contributing factors, and duly indicate relative importance.