William J. Cahill, Jr.
Vice President

Consolidated Edison Company of New York, Inc.
4 Irving Place, New York, N Y 10003
Telephone (212) 460-3819

July 30, 1979

Re: Indian Point Unit No. 2
Docket No. 50-247

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

Dear Mr. Denton:

Your June 29, 1979 letter requested information on the management and technical resources available to support our nuclear facilities in anticipating or precluding and in response to unusual events or accidents. This information is contained in the Attachment to this letter. In addition, the following information complements the material contained in the Attachment.

Consolidated Edison has a generating capacity of over 9,000,000 Kw. This capacity includes modern fossil fueled high pressure steam units, gas turbines, older low pressure steam units and a nuclear unit. Much of this capacity was designed and constructed by the Company which has maintained technical expertise in the design, construction, maintenance and operation of these facilities. The technical resources associated with the transmission and distribution of the output of this capacity complement the resources primarily assigned to generation. In all, the Company has more than 500 engineers and scientists. There are 27 engineers in the Nuclear Engineering Section with more than 200 man-years experience in the design, construction and operation of nuclear power plants who are assigned to work full time on Indian Point. There is an equivalent amount of full time manpower in the other engineering departments assigned to Indian Point projects. The remaining engineering-professional-technical personnel work in the power generation and transmission field and are available if needed to supplement emergency forces.

The Company has specialists in the following fields: metallurgy (10); chemists and chemical engineers (39); radiochemistry (11); health physics (22 including 3 outside consultants) and quality assurance (30).

Ample physical resources are available to support the technical resources. For example, the Company has a major shop facility with more than 1000 qualified machinists and related craftsmen (electricians, carpenters, boiler and turbine men, millwrights, insulators, welders, sheet metal and iron workers, and riggers) with a variety of portable and fixed tools available for Company wide use. This shop facility has on numerous occasions fabricated special equipment and tools for use at Indian Point.

The Company has 4800 vehicles ranging from heavy trucks to vans and cars.

The Company's service territory covers an area about 60 miles long and 10 miles wide. This concentration puts any point in the area within easy reach of the Company's resources.

Consolidated Edison's executive management has extensive engineering and technical experience in many fields including nuclear. For example the President, the Sr. Vice President of Construction, Engineering and Environmental Affairs, the Sr. Vice President Planning, the Sr. Vice President Coordinating the Nuclear Steam Generator Program, the Vice President Engineering, the Vice President Power Generation, and the Vice President Quality Assurance all have nuclear training or experience. Our executive officer nuclear experience totals more than 130 man-years. Our total technical management nuclear experience is estimated at 2200 man-years. Although the Company currently is operating one 873 MW modern nuclear unit (IP2), over the past 24 years its management and technical personnel have participated in the design, licensing, construction and operation of the three pressurized water reactors at the Indian Point site. Although we are largely self-sustaining in technical resources relating to IP2, we maintain a service contract with Westinghouse, the designer & constructor of IP2, and with a limited number of highly qualified outside consultants.

Please contact us if you have need of further information pertaining to this material

Very truly yours,

William J. Cahill, Jr.
Vice President

ATTACHMENT

MANAGEMENT AND TECHNICAL RESOURCES

Consolidated Edison Company of New York

July 1979

I. MANAGEMENT RESOURCES (OFFSITE)

A. Organization

Figure 1 depicts Consolidated Edison's corporate organization. Those management positions which might be involved in anticipating or precluding or responding to unusual events such as the Three Mile Island accident are discussed in more detail in Sections B and C.

CONSOLIDATED EDISON CO. OF NEW YORK, INC.

CORPORATE ORGANIZATION

JUNE 1, 1979

BOARD OF TRUSTEES

ADMINISTRATIVE ASSISTANT TO CHAIRMAN
MIRIAM V. MANNIX

CHAIRMAN OF THE BOARD AND CHIEF EXECUTIVE OFFICER
CHARLES F. LUCE

VICE PRESIDENT & EXECUTIVE ASSISTANT TO CHAIRMAN
JOYCE HERGENHAN

ADMINISTRATION
JOSEPH D. BLOCK
EXECUTIVE VICE PRESIDENT

LAW
WALTER A. MORRIS, JR.
GENERAL COUNSEL

LEGAL
TRAVIS F. EPES
BERNARD HULKOWER
SAMUEL LERNER
GARRETT E. AUSTIN
ASSISTANT GENERAL COUNSEL

FRANCIS B. CONRAD
LABOR RELATIONS COUNSEL

ERNEST J. WILLIAMS
GENERAL ATTORNEY
JOSEPH J. KLEM
SOLICITOR

ARCHIE M. BANKSTON
SECRETARY AND ASSISTANT GENERAL COUNSEL

PETER A. IRWIN
FRED J. RAMSAIER
ASSISTANT SECRETARY

AUDITING
THOMAS J. GALVIN
GENERAL AUDITOR

CORPORATE COMMUNICATIONS
JOYCE HERGENHAN
ACTING VICE PRESIDENT
COLLEEN A NEWMAN
ASSISTANT VICE PRESIDENT

GOVERNMENT AND COMMUNITY RELATIONS
EDWARD W. LIVINGSTON
VICE PRESIDENT

FINANCIAL
JOHN V. THORNTON
EXECUTIVE VICE PRESIDENT

RATE PROCEEDINGS
JOY TANNIAN
VICE PRESIDENT

TAXES
FREDERICK J. HUNZIKER, JR.
GENERAL TAX COUNSEL

GENERAL ACCOUNTING
CARL W. GREENE
CONTROLLER

RATE ENGINEERING
JOHN MONSEES
ASSISTANT VICE PRESIDENT

TREASURY AND INSURANCE
EDWARD J. CAREY
TREASURER
JOHN M. BELL
ASSISTANT TREASURER
ALFRED R. WASSLER
ASSISTANT TREASURER

PRESIDENT AND CHIEF OPERATING OFFICER
ARTHUR HAUSPURG

WILLIAM E. CALDWELL, JR.
SENIOR VICE PRESIDENT

JOSEPH T. KIRDAHY, JR.
ASSISTANT VICE PRESIDENT
ASSISTANT TO PRESIDENT

POWER GENERATION
EUGENE R. MC GRATH
VICE PRESIDENT

POWER GENERATION MAINTENANCE
ROBERT F. TULLY
ASSISTANT VICE PRESIDENT

CENTRAL SUBSTATION AND TECHNICAL SERVICES
SYSTEM OPERATION
ANTHONY N. TERRERI
VICE PRESIDENT

SYSTEM OPERATION
STEPHEN B. BRAM
ASSISTANT VICE PRESIDENT

PLANNING FUEL SUPPLY INTER-UTILITY AFFAIRS LOAD MANAGEMENT
BERTRAM SCHWARTZ
SENIOR VICE PRESIDENT

PLANNING
JOHN E. DEEGAN, JR.
VICE PRESIDENT

FUEL SUPPLY AND INTER-UTILITY AFFAIRS
BERTRAM D. MOLL
VICE PRESIDENT

LOAD MANAGEMENT PROGRAM

CONSTRUCTION ENGINEERING ENVIRONMENTAL AFFAIRS
CARROLL H. DUNN
SENIOR VICE PRESIDENT

CONSTRUCTION
SALVATORE FASCIANA
VICE PRESIDENT

ENGINEERING
PETER ZARAKAS
VICE PRESIDENT
JOHN D. O'TOOLE
ASSISTANT VICE PRESIDENT

ENVIRONMENTAL AFFAIRS
JOHN R. JANNARONE
VICE PRESIDENT

DIVISION OPERATIONS
MORRIS DANTZKER
EXECUTIVE VICE PRESIDENT

ELECTRIC DISTRIBUTION
RAYMOND E. KUNZMANN
ASSISTANT VICE PRESIDENT

CUSTOMER SERVICES
ROBERT B. STEVENS
ASSISTANT VICE PRESIDENT

ADMINISTRATION

CREDIT AND COLLECTION

BRONX DIVISION
MURRAY SELMAN
VICE PRESIDENT

BROOKLYN DIVISION
WARREN B. COBURN
VICE PRESIDENT

WESTCHESTER DIVISION
GEORGE J. DELANEY
VICE PRESIDENT
CONSTANTINE J. PAPAKRASAS
ASSISTANT VICE PRESIDENT

MANHATTAN DIVISION
RAYMOND J. Mc CANN
VICE PRESIDENT
ROBERT F. CRANE
ASSISTANT VICE PRESIDENT

STATEN ISLAND DIVISION
LEONARD D. MURPHY
VICE PRESIDENT

QUEENS DIVISION
JOHN F. BURGESS
VICE PRESIDENT

GAS OPERATIONS
GEORGE W. LOWELL
VICE PRESIDENT

SYSTEMS AND INFORMATION PROCESSING
JOSEPH B. SANSONE
VICE PRESIDENT

CENTRAL SERVICES
CHARLES F. SOUTAR
VICE PRESIDENT

PURCHASING
VINCENT J. BRADY
VICE PRESIDENT

TRANSPORTATION AND STORES
DAVID G. BOSLAND
ASSISTANT VICE PRESIDENT

INDUSTRIAL ENGINEERING
REAL ESTATE

EMPLOYEE RELATIONS
AARON S. SADOVE
SENIOR VICE PRESIDENT

PERSONNEL
DONALD L. MILLER
VICE PRESIDENT

EQUAL EMPLOYMENT OPPORTUNITY AFFAIRS
HUMAN RESOURCES PLANNING AND DEVELOPMENT
PERSONNEL ADMINISTRATION

MEDICAL
THOMAS J. DOYLE, M.D.
ASSISTANT VICE PRESIDENT

INDUSTRIAL RELATIONS
COMPENSATION, BENEFITS & ORGANIZATION PLANNING
OFFICE SERVICES
SECURITY
BUILDING SERVICES
SAFETY SERVICES
MUTUAL AID

QUALITY ASSURANCE, RELIABILITY & SPECIAL ASSISTANT NUCLEAR LICENSING
WILLIAM J. CAMILL, JR.
VICE PRESIDENT

RESEARCH & DEVELOPMENT
ROBERT A. BELL
ASSISTANT VICE PRESIDENT

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APPROVED BY: Charles F. Luce JUNE 1, 1979

FIGURE 1

B. Functional Responsibility

The functions, responsiblities and authority associated with those positions which might be used to anticipate and preclude or respond to unusual events such as a Three Mile Island incident are listed below.

President and Chief Operating Officer

In conjunction with the chairman, directs and coordinates all Company operations and functions so as to achieve planned objectives as to Company sales, profits and growth.

Vice President-Power Generation

Provide guidance and direction to all Power Supply facilities to achieve maximum customer service reliability and employee safety at minimum company cost and with minimum environmental impact. Member of the Company's Nuclear Facilities Safety Committee.

Sr. Vice President-Planning, Fuel Supply, Inter-Utility Affairs and Load Management

Provide guidance and direction to the Planning, Fuel Supply, Inter-Utility Affairs and Load Management Operations consistant with corporate policies so as to insure the planned development of electric power as required; provides for the economic procurement of fuel and assures reliability of supply and to provide for a Load Management Program to reduce system and local peaks.

Sr. Vice President-Construction, Engineering & Environmental Affairs

Provide guidance and direction to the Vice Presidents of Construction, Engineering, and Environmental Affairs and to insure coordination between them in carrying out their contribution toward overall corporate goals.

Vice President-Engineering

Manage, control and coordinate the Company's engineering functions associated with fossil and nuclear fueled electric and steam generating stations, substation and transmission facilities as well as the buildings and structures associated with these stations. To provide guidance and direction to the Assistant Vice President, Engineering, the Chief Electrical Engineer and the Chief General Engineer and to insure coordination between them in carrying out their contribution toward overall corporate goals.

Vice President-Construction

Plan, direct and manage the major construction projects, as well as transmission maintenance, for the Company, assuring optimum utilization of resources in the execution of quality and timely construction.

Vice President-Central Services

Provide direction and coordination to the Transportation and Stores, Purchasing and Industrial Engineering departments consistant with corporate policies.

Senior Vice President-Employer Relations

Provide for the development and maintenance of a personnel program to provide the most effective utilization of Human Resources. To provide direction and coordination, consistent with Company policies and procedures to the following functions: employment and placement, labor relations, salary and wage administration, training, safety, benefits, equal employment activity, health service, organization planning, management development, personnel research, office services, security and building services, in order to provide for an effective work force. Maintains sound union relations and insures an equal employment opportunity program through an Affirmative Action program.

Vice President-Quality Assurance, Reliability and Special Assistant Nuclear licensing

Reports to President as special assistant in nuclear licensing matters. Chairman of the Company's Nuclear Facilites Safety Committee. In charge of corporate Quality Assurance function, research and development, Reliability Engineering and Computer Applications Engineering.

Assistant Vice President-Engineering

Under broad direction of Vice President, manages, controls and coordinates the Company's Mechanical, Electrical, Civil and Nuclear engineering functions and undertakes such other special assignments as may be required by the Vice President-Engineering. Vice-Chairman of the Company's Nuclear Facilities Safety Committee.

Assistant Vice President-Chief Medical Officer

Under broad general guidance recommends and develops policies, plans and programs for operation of the Medical Department including the comprehensive medical care program of the Mutual Adi Society and the occupational health services of the Consolidated Edison Company consistent with economic considerations.

Implements an effective medical care delivery system by quality control and cost analysis procedures.

Directs the nuclear medical program under NRC regulations.

Senior Vice President Coordinating the Steam Generator Program

Chairman of the Steam Generators Owners Group, a twenty-two member international organization of utilities, formed to deal with problems with steam generators. Reports directly to the President on this matters.

C. EDUCATIONAL BACKGROUND AND EXPERIENCE

POSITION	EDUCATION	EXPERIENCE (YRS.)
President and Chief Operating Officer	B.S. Elect. Engrg. M.S. Elect. Engrg. PE Lic. NY State Training at Oak Ridge School of Reactor Technology, and Univ. of Michigan/Adelphi (Managerial Courses)	30+ years in the power industry; Has held executive positions for past 11 years; vice president and director of ESPRI; Member of National Academy of Engineering; Fellow IEEE; Director EPRI; Visiting Committee of MIT; Columbia Engineers Council.
Sr. Vice President-Planning, Fuel Supply Inter-Utility Affairs and Load Management	B.S. Administration Engrg.; Master's Degree in Industrial Management	11 years with Con Edison; 3 years Assist. to President of Nuclear Materials and Equipment Corp; 12 years with AEC (Chief of Chemical Processing Branch, Division of Production).
Sr. Vice President-Construction Engineering and Environmental Affairs	B.S. Mech. Engrg. M.S. Civil Engrg. PE Lic. Texas and District of Columbia	35 years in U.S. Army Retired as LT. General assignments related to construction, engineering and environmental development. Last assignment Director, Nuclear Defence Agency (2 years)
Sr. Vice President-Employee Relations	Attended Univ. of Maryland.	Served in personnel, administrative and manpower planning positions with US Army. Retired with rank of colonel (25 years of service); Held various company executive management positions for past 10 years.

POSITION	EDUCATION	EXPERIENCE
Sr. Vice President Coordinating the Steam Generator Program	M.E. Degree PE Lic. NY State Unit 1 RO Lic. (1962-63) Member of IP1 Startup Crew	33 years power plant engineering; 25 years direct involvement in nuclear power plant operation
Vice President-Power Generation	B.S. Mech. Engrg.	16 years power plant experience; 3 years direct involvement in nuclear plant. Member of Company's Nuclear Facilities Safety Committee.
Vice President-Engineering	B.S. Elect. Engrg. M.S. Elect. Engrg.	32 years engineering and operations experience; 8 years nuclear related experience.
Vice President-Construction	B.S. Civil Engrg. M.S. Civil Engrg. PE Lic. NY State.	27 years experience in structural design and construction.
Vice President-Central Services	B.S. Civil Engrg. M.S. Civil Engrg.	17 years civil engrg. experience; 14 years nuclear related experience; 2 years in present position.
Vice President-Quality Assurance Reliability and Special Assistant Nuclear Licensing	B.S. Mech. Engrg.	30 years power plant engineering; 25 years direct involvement in nuclear plant design operation and construction. Chairman of Company's Nuclear Facilities Safety Committee.
Assist. Vice President-Engineering	M.E. Degree PE Lic. Connecticut	30 years direct nuclear experience. 30 years power plant experience. Vice-Chairman of Company's Nuclear Facilities Safety Committee.

POSITION	EDUCATION	EXPERIENCE
Assist. Vice President-Chief Medical Officer	Medical Degree; AEC Course on Medical Care and Treatment of Radiation Accidents (1968)	30 years; qualified both in internal and occupational medicine; Member ANS Committee on Medical Standards for Nuclear Power Operators; Held executive medical management positions for past 20 years.

II. TECHNICAL RESOURCES

A. Plant Staff

The Indian Point Station Management and Operations Staff is shown on Figure 2. There are approximately 315 people stationed at Indian Point. The functions of each plant position shown is presented below.

The educational background and work experience of all persons encompassed by the ANSI N18.1 categories of "Managers" and Professional-Technical" and graduate engineers assigned to the site are presented in Table II-I.

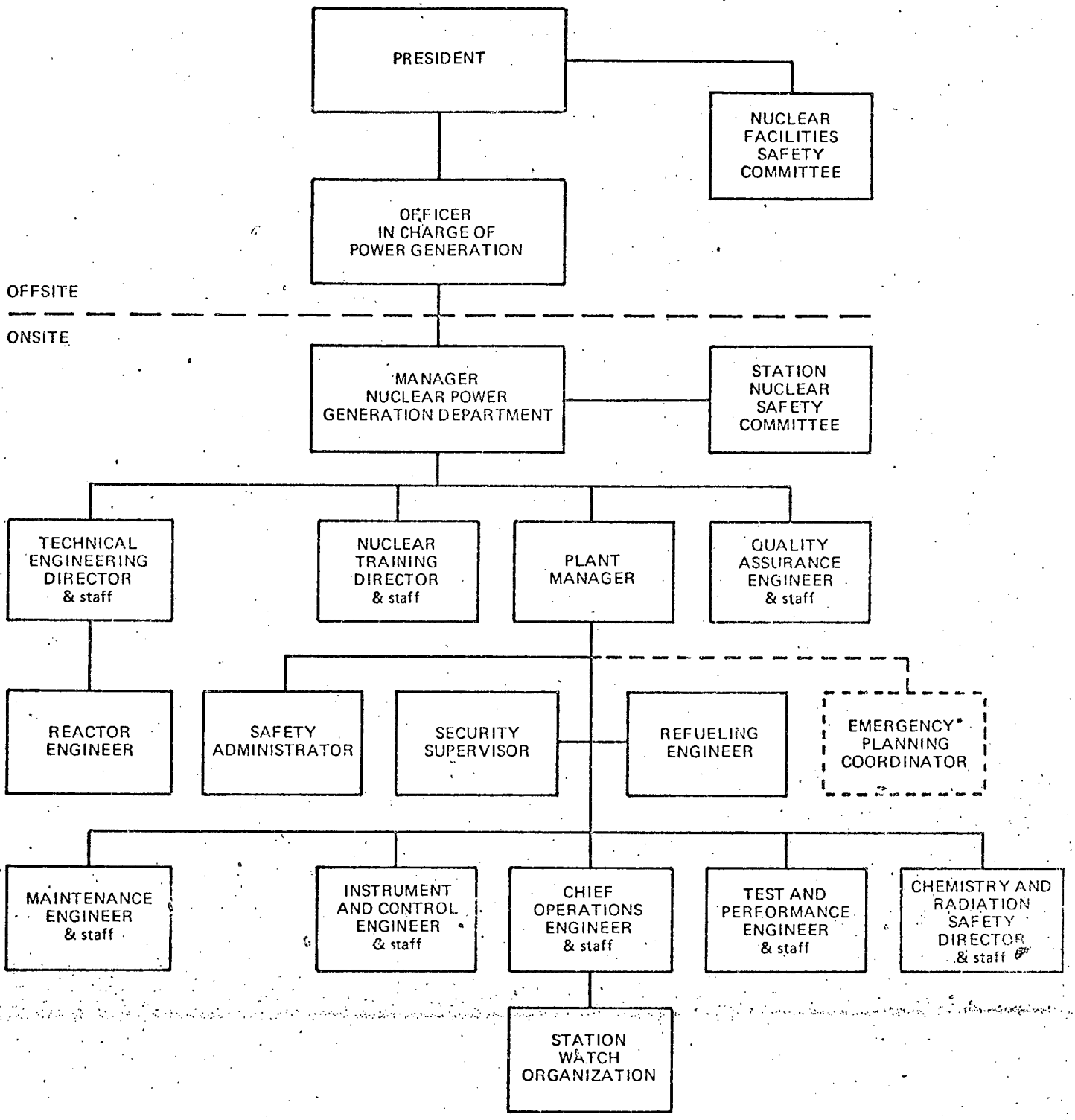


Figure 2 Indian Point Station Management and Operations Staff

*A member of the Chemistry and Radiation Safety Staff who reports directly to the Plant Manager on Emergency Planning Activities.

Plant Staff Functional Responsibilities

Manager-Nuclear Power Generation Department

Provide overall direction to activities relating to the nuclear facilities located at Indian Point Station. Coordinate their activities in their relations with the various support groups within the company, and those government agencies concerned with their operations. Coordinates onsite PASNY/Con Edison interfaces.

Technical Engineering Director

The Technical Engineering Director (TED) is responsible for liaison between the Nuclear Power Generation Department and the company's off site support groups and the Nuclear Regulatory Commission. The TED also provides advice and counsel to the various subsections relating to Technical Specification requirements, special operating or maintenance problems, and other matters involving the safe and efficient operation of the plant.

Nuclear Training Director

Provide for the formal and on the job training of all personnel in the Nuclear Power Generation Department to insure they meet all applicable licensing codes and requirements and are trained to provide safe, reliable and efficient plant operation.

Plant Manager

To provide managerial direction of the Indian Point Station activities, in order to provide reliable, efficient and economical generation of electricity. To coordinate the activities of subsections in their relations with the various support groups within the company, vendors, and government agencies. To operate and maintain the station in compliance with the rules and regulations of the company, civil authorities and the U.S. Nuclear Regulatory Commission.

Quality Assurance Engineer

Responsible for implementation of the Quality Assurance Program for operating nuclear power plants as it relates to maintenance activities. Assists in implementation of the "Program" in other areas in order to provide proper, efficient, reliable, adequate application to the station.

Reactor Engineer

Provides technicallly competent surveillance and support in all matters relating to nuclear reactor operation in order to assure efficient and safe operation in compliance with NRC requirements.

Security Supervisor

Coordinate and implement the Station Security Program in compliance with Nuclear Regulatory Commission requirements.

Refueling Engineer

Operational management of all those activities that affect major outages on nuclear steam supply systems so as to assure their proper and timely completion.

Emergency Planning Coordinator

Coordinates Con Edison emergency planning activities with offsite agencies; maintains emergency plan records; coordinates drill activities and keeps plan updated in accordance with state and federal guidelines.

Maintenance Engineer

Provides maintenance services for station equipment, buildings and grounds. Reviews and approves drawings and specifications for modifications and/or new work. Provides advance planning for station maintenance.

Instrument & Control Engineer

To provide a technically oriented organization responsible for the maintenance and repair of all nuclear and conventional instrumentation and control systems.

Chief Operations Engineer

To insure a safe, reliable, efficient and economical operations of Unit No. 2 and support systems. To manage all activities related to operations. To set and maintain high standards relating to the safe and efficient operation and maintenance of the units.

Test and Performance Engineer

To provide a technicallly oriented organization responsible for monitoring the efficiency and performance of plant equipment and for implementing the Surveillance Testing Program in compliance with the Technical Specifications and other relavent documents.

Chemistry and Radiation Safety Director

Provide and manage a Subsection to assist in providing efficient and economical generation of electricity from nuclear plants while minimizing employee exposures to radiation and the public's exposure to nuclear waste releases consistent with applicable State and Federal regulations. Maintain high standards of performance with rigid cost controls.

Safety Administrator

Provide surveillance of the safety practices and procedures; provide advisement regarding ways and means for achieving and maintaining a safe economical station work performance; provide a controlled efficient fire fighting system keeping abreast of NRC, OSHA and fire laws, maintaining documents of performance and achievement.

Position	Educational Background	Experience (Yrs) Nuclear	Total Power Plant*	Other Applicable
1. Managers				
Manager, Nuclear Power Generation Department	B.S. Marine Engrg. Unit 1 Hot SRO Lic. Unit 2 Cold SRO Lic. Emergency Director Training	15	16	
Plant Manager	B.S. Mech. Engrg. SRO License Emergency Director Training	13	15	
Maintenance Engineer	B.S. Marine Engrg.	7	9	2
Chief Operations Engr.	B.A. Mathematics SRO License Emergency Director Training	10	10	
Technical Engr. Dir.	B.S. Mech Engrg. M.S. Mech Engrg. Emergency Director Training	14	14	
2. Professional-Technical (a) Reactor Engineer Physics				
Reactor Engineer	B.S. Mech. Engrg. SRO License Emergency Director Training	13	15	
Engineer	B.S. EE MBA SRO License	6	9	
Operating Engr.	SRO License Emergency Director Training	19	33	
Refueling Engr.	B.S. Nuclear Engrg. SRO License M.S. Nuclear Engr. Emergency Director Training	7	13	
Asst. Refueling Engr.		19	30	

* Con Edison experience applicable to current position.

Position	Educational Background	Experience* (Yrs) Nuclear Power Plant	Total	Other App.
(b) Instrumentation & Control				
I&C Supervisors (3)	AAS in Electro-Tech.	7	7	15
		7	7	8
		9	9	24
I&C Engineers (3)		7	7	19
	AAS Math	7	7	24
	B.S. EE	1	1	0
Test & Performance Engr.	B.S. EE M.S. Nuclear Physics Emergency Director Training	7	7	7
(c) Radiochemistry				
Gen. Chemistry Supervisor	4 year College - Chemistry	17	17	9
Chemical Supervisors (2)	AAS in Electro-Tech.	17	17	3
	AAS in Electro-Tech.	17	17	5
Chem. Nuclear Supervisor	AAS in Electro-Tech.	17	17	3
(d) Radiation Protection				
Gen. HP Supervisor		7	7	
HP Supervisors (3)	Radiological Health & Science Degree	7	7	25
	B.A. Chemistry	2	2	
	Ass. Degree Nucl. Engrg.	7	7	
Chem. & Rad. Safety Dir.	B.S. Chemistry Emergency Director Training	8	8	8
Senior Engineer/Emergency Planning Coordinator		7	7	
3. Technical Support Personnel				
Engineers (4)	MBA;B.S. EE	6	6	
	ES Physics	6	6	
	BS and MS in Mech Engrg.	2	2	7
	B.E. Thermodynamics	8	8	
Assistant Engr.		0	1	
Associate Engr.	B.S. Nucl Engrg. M.S. Nucl Engrg.	2	2	
QA Engr.	B.S. Marine Engrg. M.S. Mech. Engrg.	8	8	1
QC Engr.	B.S. Bus Adm.	17	17	

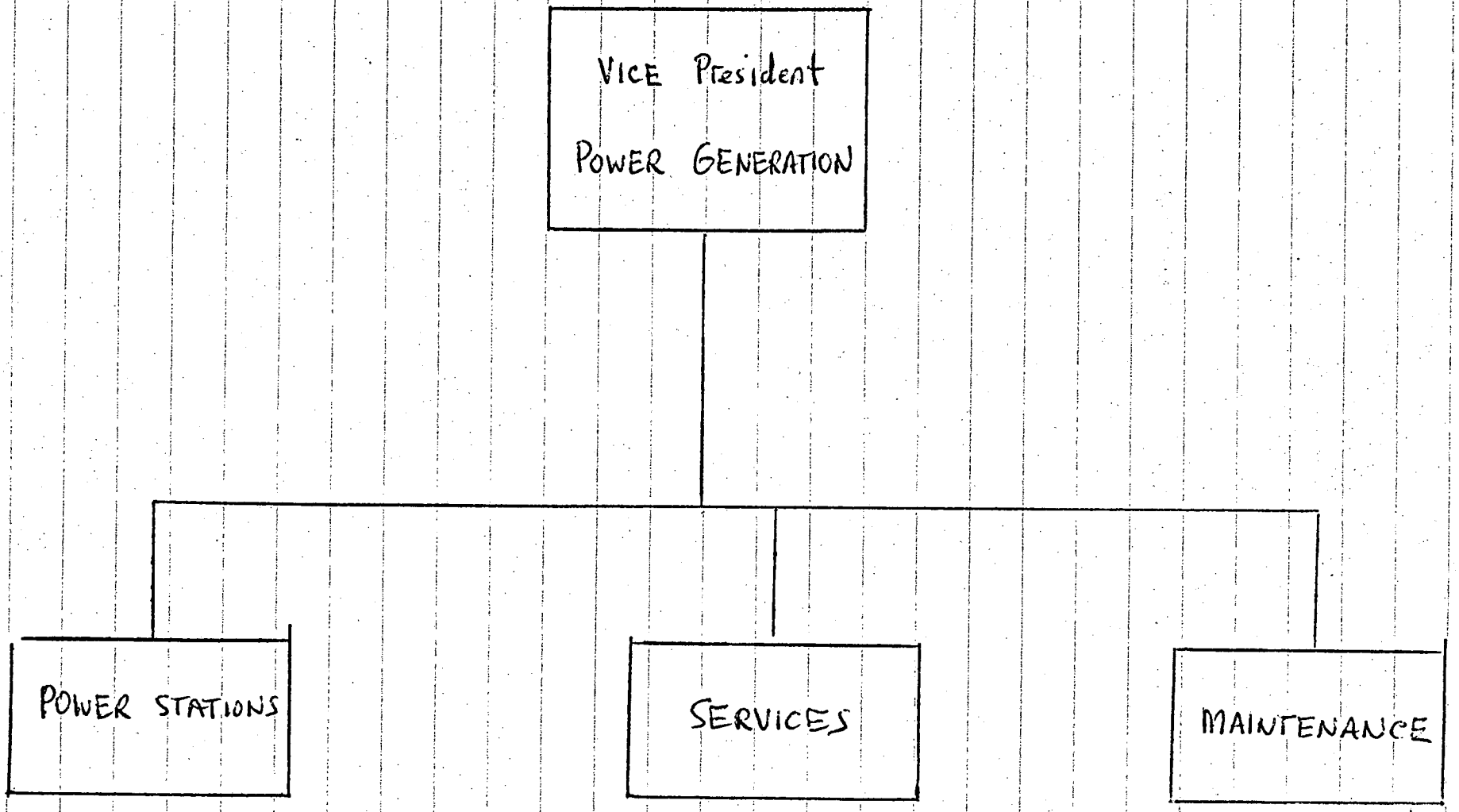
* Con Edison experience applicable to current position.

II.B. TECHNICAL RESOURCES-OFFSITE (NONPLANT STAFF)

1. Organization

Figures 3,4,5 and 6 are the organizational charts for Power Generation, Engineering, Quality Assurance-Research & Development, and Construction. These offsite functional groups contain engineering-professional-technical resources that could be used to support the plant staff. The functional responsibilities of each of the offsite groups is presented on the back of its respective organization chart.

The educational background and work experience for the professional-technical personnel in each group is presented in Table II-2.



POWER GENERATION

Figure 3

POWER GENERATION

FUNCTIONAL RESPONSIBILITIES

MAINTENANCE

Plan and control overhaul maintenance programs for the support of power station equipment.

Develop, in coordination with Power Stations and Services Departments schedules and priorities for the accomplishment of required maintenance for generating equipment.

Support in coordination with Power Stations and Services Departments, a scheduled preventative maintenance program for generating equipment.

Control departmental overhaul budget programs to provide economical and efficient utilization of available resources.

Responsible for XM4 Capital Budget.

Review and recommend departmental salary and promotional programs.

POWER STATIONS

Responsible for operation, house maintenance, performance, chemical, instrument and control, and personnel functions for all Base Load Stations, Peaking and Steam Stations, Nuclear Stations and Gas Turbine facilities.

Prepare work lists, requisitions and priorities for the accomplishment of all required equipment overhauls, and a scheduled preventative maintenance program for generating equipment in coordination with Maintenance and Services Departments.

Control Departmental budget program to provide economical and efficient utilization of available resources.

Review and recommend departmental salary and promotional programs.

SERVICES

Provide essential services to the Power Generation Stations and Maintenance organizations. These essential services fall into the following areas:

Operation Control - Coordinates intradepartmental and interdepartmental activities and provides emergency and off watch services for Power Generation.
Instrument and Control - Technical services concerning protective relays, electrical testing, instruments and controls.
Chemical - Technical support for chemical, environmental and nuclear matters concerning generation and distribution. Responsible for XM15 Capital Budget.
Performance - Analyze and evaluate performance of power stations.
Engineering - Provide Engineering liaison and control of major capital projects.
Personnel, Security and Training - Coordinate all personnel, security and training functions.
Safety - Coordinate and apply the Corporate Policy on safety within Power Generation facilities.
Budget and Material - Coordinates Budget, Manpower and Cost Control functions and controls inventory and purchasing activities.

Review and recommend departmental salary and promotional programs.

Represent management in union negotiations at the executive level.

WS/rd
5/26/78

Approved: R. F. Tully
CMS 6/5 Robert F. Tully
Acting Vice President

CONSOLIDATED EDISON COMPANY OF NEW YORK INC.

ENGINEERING

DECEMBER 1978

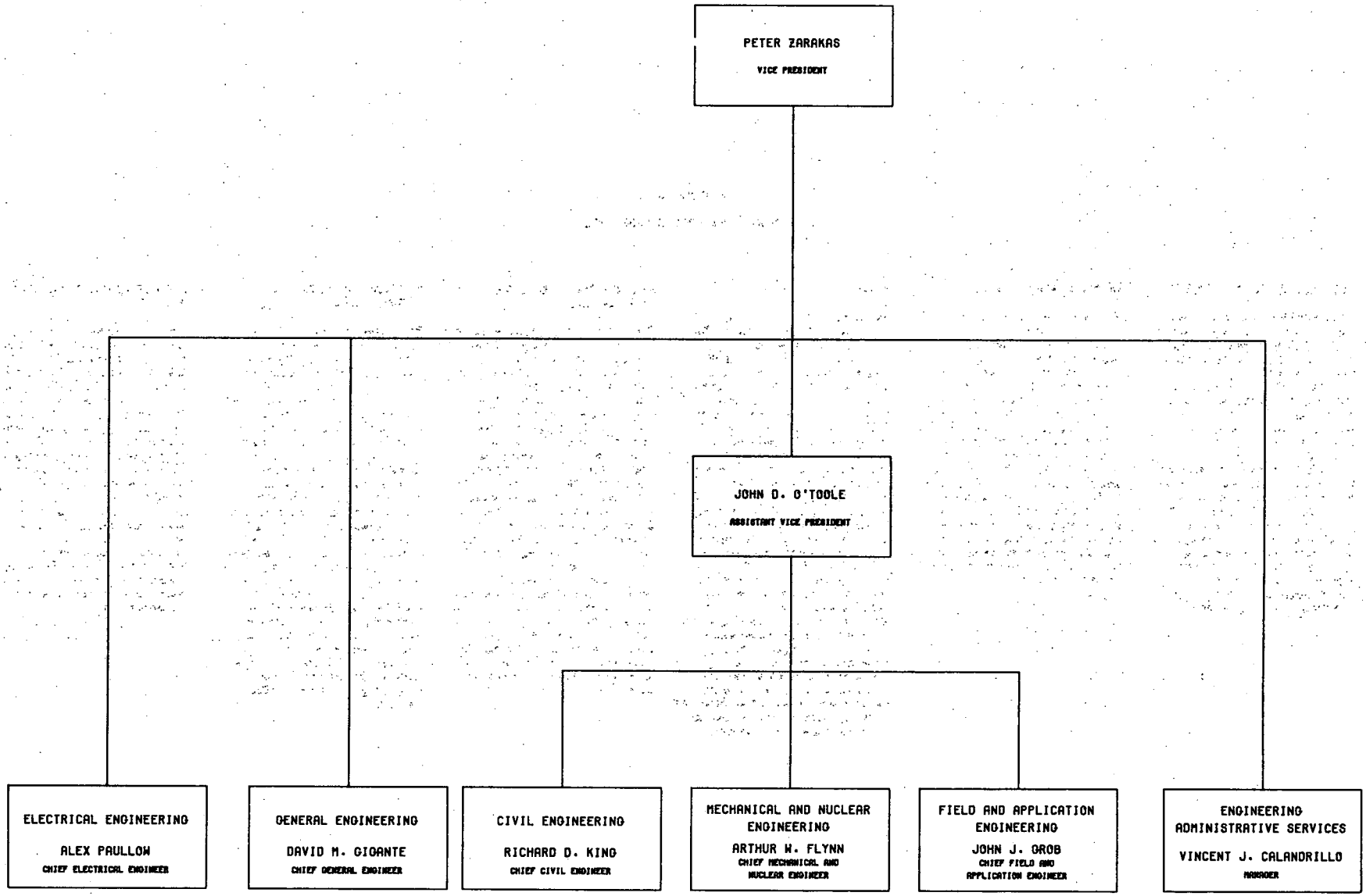


Figure 4

DISTRIBUTED BY ORGANIZATION PLANNING

APPROVED BY _____ DECEMBER 1978

CHART 390 SUPERSEDES SEPTEMBER 1978

ENGINEERING

FUNCTIONAL RESPONSIBILITIES

ELECTRICAL ENGINEERING

Responsible for the overall engineering and design of the electrical system including electrical generators, high voltage transmission switching stations, substations, relay protection and determination of relay settings. Provides standards and design criteria for the electrical distribution systems, communications (telephone and radio), closed circuit TV and security systems. Responsible for specifying equipment, materials and methods used on the Company electrical system. Responsible for establishing distribution system planning criteria and specifications for purchase installation and establishment of test and maintenance practices for revenue meters and metering devices. Provides electrical engineering support to the Divisions, Power Generation, System Operation and Construction Departments.

GENERAL ENGINEERING

Responsible for conceptual and detailed designs of all company gas, electric, and steam, plant and transmission facilities. Responsibilities include preparation of conceptual design drawings for engineering feasibility estimating and preliminary plant designs, and feasibility studies, preparation of engineering and construction drawings, drawing standards, reproduction services, and retention of all company drawing records for plant and transmission facilities. Responsible for furnishing: all cost estimates required by Central Operations, Gas Engineering and Steam Engineering; Construction cost analysis, cost trend analysis, interpretation of construction trades work rules and construction trade labor rates.

CIVIL ENGINEERING

Responsible for design and engineering of civil and structural aspects for new facilities, rehabilitations and modifications, and retirements of existing facilities; for foundations, super-structures, heating, ventilating, air conditioning, architecture, fire protection, site work for roads, parking lots, drainage, water supply and sewage disposal; for overhead transmission line foundations structures and cable, and for underground transmission river crossings; for landscape architecture and vegetation management; for support of Division requirements in building and yards projects, structural distribution standards and specialized distribution problems. Acts as Professional Engineer-of-Record in obtaining permits from governmental authorities. Responsible for filing and obtaining all permits for major construction projects from municipal and government agencies; responsible for filing and obtaining all generating facilities operating permits and operators' licenses from N.Y.C. agencies having jurisdiction. Prepares siting evaluations for new and modifications to existing generating facilities. Develops system-wide space use guidelines.

MECHANICAL & NUCLEAR ENGINEERING

Responsible for planning and engineering required for installation of mechanical equipment, system controls, and instrumentation in all generating stations including gas turbine barges. Prepare documents and reports to government agencies for nuclear licenses. Provide engineering services for thermodynamic cycles, nuclear reactor core performance, nuclear safety, water treatment, waste treatment, nuclear fuel management, and plant improvements. Studies equipment and system failure to determine causes and recommend corrective measures. Prepare specifications for the purchase of turbines, boilers, nuclear fuel and nuclear steam supply. Prepare standards for and analyzes the design of piping systems. Responsible for programs to utilize municipal solid waste as fuel and for on site cogeneration. Assists other company organizations in the interpretation of nuclear regulations. Manage activities of consultants and specify the scope of their work.

FIELD AND APPLICATION ENGINEERING

Responsible for providing field engineering support to the operating organizations, coordination of Central Engineering services to operating organizations, scheduling services for all major construction and special work programs, project engineering for ongoing large projects, and determination of programs for alterations and additions to Company facilities. The department does engineering of systems related to maintenance problems, field alterations, system additions and improvements. Does overall facility studies to develop concepts for improvements in performance, reliability and availability. Inspects and examines equipment failures to determine causes, provides engineering consulting services to operating organizations, performs engineering calculations, prepares specifications, develops design scopes and other engineering functions on a multidiscipline basis or coordinates work performed by the various engineering departments for Company facilities.

ENGINEERING ADMINISTRATIVE SERVICES

Responsible for the management, control and coordination of all administrative services for the Electrical, Civil, Mechanical & Nuclear, General and Field & Application Engineering Departments, and specific administrative services for the Quality Assurance and Research & Development Groups. Services include all phases of personnel administration, purchase requisition and accounts payable administration, all operating budgets control and administration, union relations, computer application - advice and development, manpower control system administration, building services, transportation, corporate manual, and System and Information Processing coordination. Perform specific other services for the Vice Presidents as may be requested.

CONSOLIDATED EDISON COMPANY OF NEW YORK INC.

QUALITY ASSURANCE · RESEARCH AND DEVELOPMENT

JUNE 1978

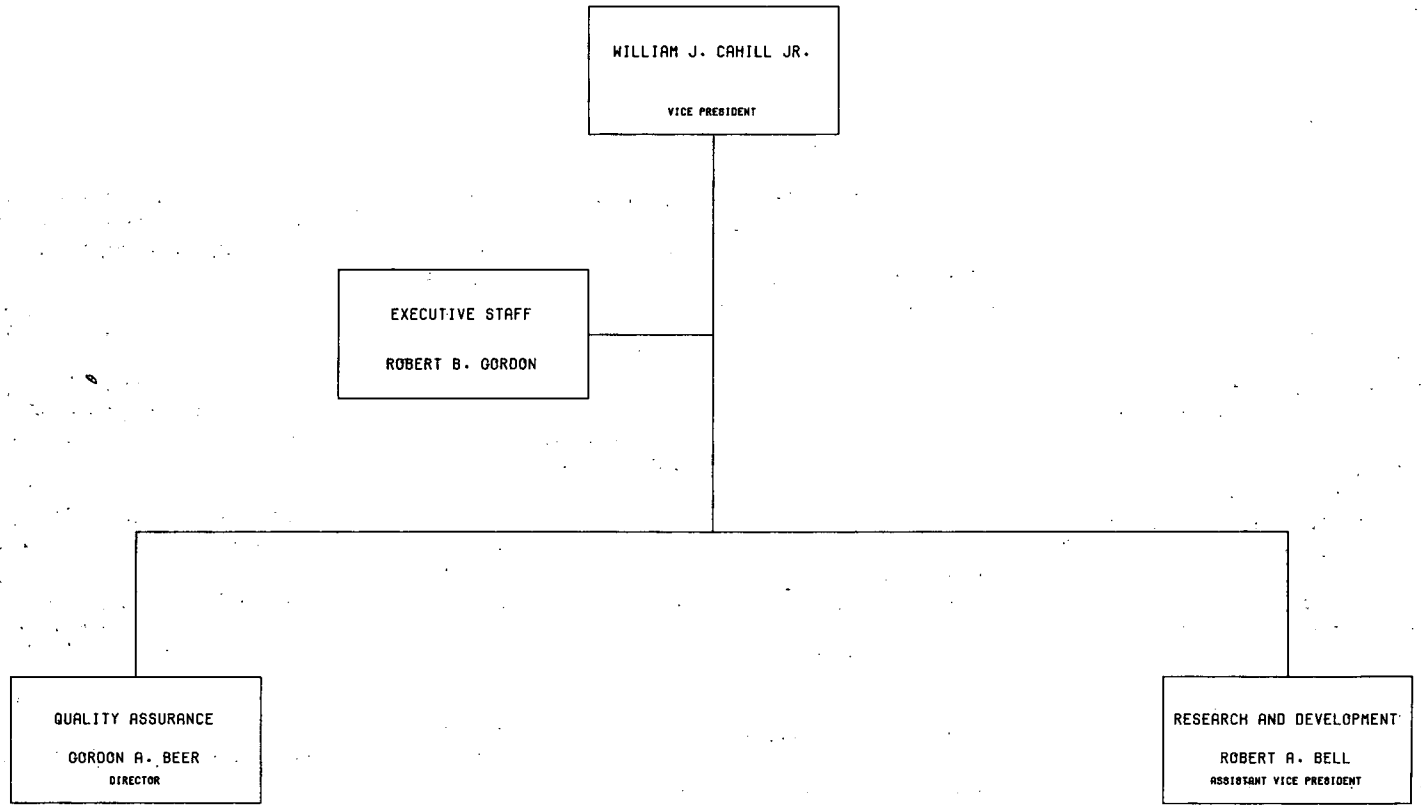


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CHART 830

Figure 5

QUALITY ASSURANCE AND RESEARCH & DEVELOPMENT

Functional Responsibilities

QUALITY ASSURANCE

Develops Company Quality Assurance Programs covering design material procurement, construction, testing and operating phases of generating plants.

Initiates and administers Quality Assurance programs on major facilities and construction projects.

Provides Quality Assurance Engineering support in areas of code requirements, technical advice, and quality assurance requirements.

Evaluates vendors for their capability of consistently supplying quality products and monitors these vendors to assure compliance with procurement documents.

Performs surveillance over the quality control activities provided by others during the construction and operation of major projects.

Develops and implements quality assurance standards for purchased equipment and supplies, construction, production operations and maintenance.

Provides consulting assistance in nondestructive examination and nuclear fuel Q.A.

Develops and applies methods for measuring the effectiveness of the Company's quality assurance and quality control programs. Performs audits and reports to management.

RESEARCH AND DEVELOPMENT

Determines the technological R&D needs and develops the R&D plan of the Company.

Develops R&D programs responsive to the needs which implement the plan.

Develops various cooperative funding arrangements between Federal, Industry, State, other utilities and manufacturers whereby these R&D programs can be supported.

Develops and administers the R&D budget.

Maintains surveillance of new developments in technical areas in which Con Edison is not presently active but which might be of interest in the future.

Represents the Company and articulates its needs on steering committees and task forces established to direct industry-wide research projects.

LIBRARY

Provides and maintains books, periodicals, documents, pamphlets, newspapers and microforms supporting the Company's activities.

Performs bibliographical and reference services for Con Edison personnel.

COMPUTER APPLICATIONS & RELIABILITY ENGINEERING

Analysis of proposed engineering computer applications.

Administration of outside time-sharing computer service contracts, mathematical modeling and statistical analysis studies.

Develop and introduce new computer technology such as computer graphics for solving company problems.

Participate in Research and Development projects which are computer related.

Leads the establishment of a reliability improvement program for the Company's mechanical, electrical and nuclear equipment. Collects and analyzes failure and test data and uses them to achieve improved reliabiliy.

Provides consulting assistance in specialized areas, such as: statistical analysis, maintainability engineering, failure analysis, fault-free analysis and the life cycle costs.

CONSOLIDATED EDISON COMPANY OF NEW YORK INC.

CONSTRUCTION

NOVEMBER 1978

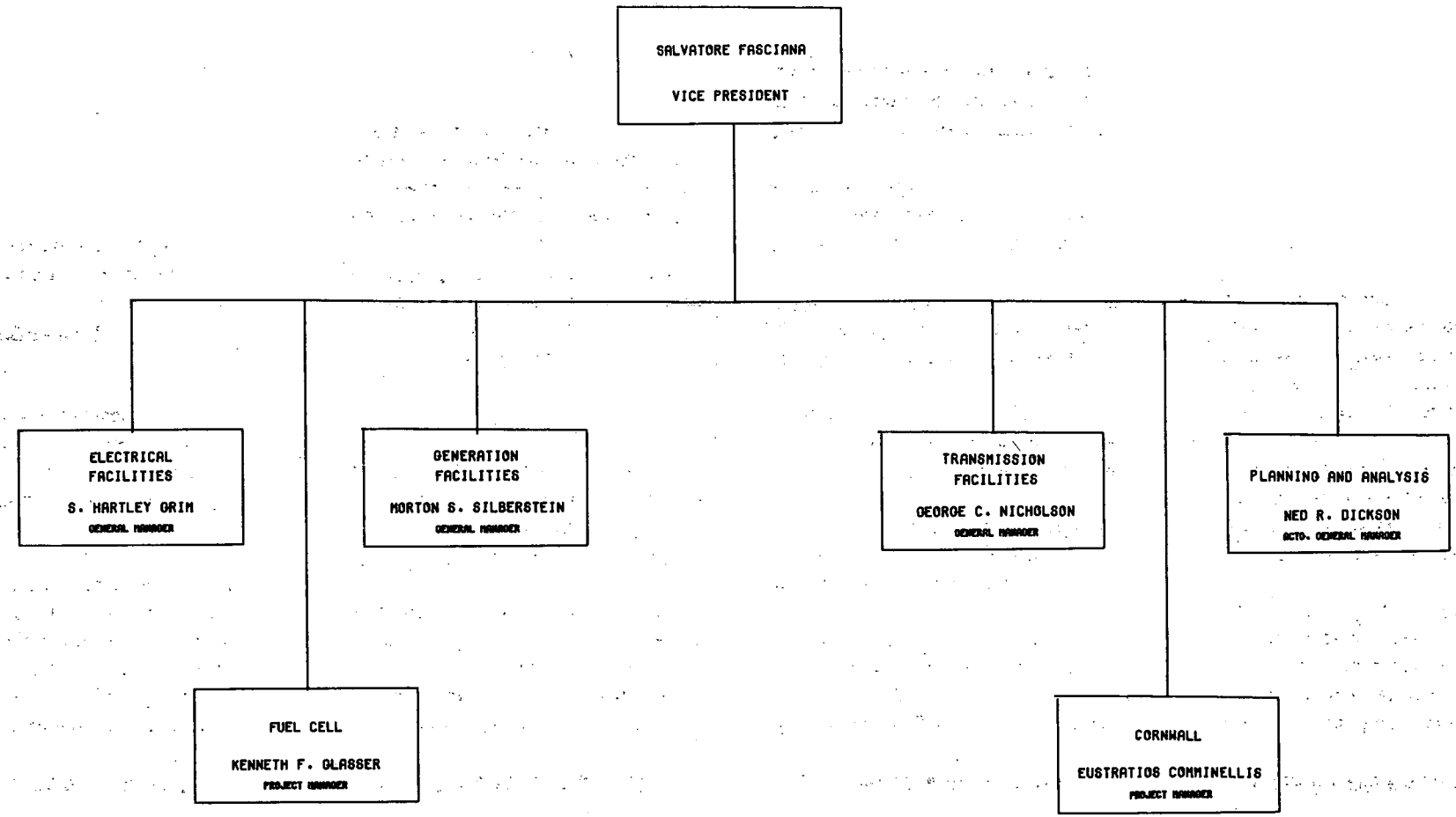

Figure 6

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CHART 370 SUPERSEDES OCTOBER 1977

CONSTRUCTION

FUNCTIONAL RESPONSIBILITIES

TRANSMISSION FACILITIES

Construction of overhead and underground portions of the 345 KV and 138 KV electrical transmission systems and all gas and steam transmission facilities; cable pulling and splicing, plus maintenance of underground transmission over 27 KV.

Control schedules, costs, and quality, and maintain a continuing analysis to detect problems, and initiate corrective action on projects.

CORNWALL

Planning for construction of a 2000-MW pumped storage facility.

ELECTRICAL FACILITIES

Construction of electrical switching stations and substations throughout the system, and electrical construction support activities in major generating stations and other Company facilities.

Control schedules, costs, and quality, and maintain a continuing analysis to detect problems or potential problems, and initiate corrective action on projects.

FUEL CELL

Construction and performance testing of a 4.8 MW demonstrator fuel cell.

Control schedules, costs, and quality, and maintain a continuing analysis to detect problems, and initiate corrective action on projects.

PLANNING & ANALYSIS

Special planning, progress reporting and variance analysis, and maintaining a system for development of budgets for the Construction Group.

Provide for a long-range (minimum 5 years) budget forecast and monthly and quarterly budget status reviews.

Plan manpower requirements for the five-year and one-year periods of the budgets.

Develop and maintain Construction Group programs for safety and labor affairs.

Provide expediting and material planning services upon request by the Project Managers.

Develop and maintain a system of cost reporting and cost analysis for use by the Departments within Construction.

GENERATION FACILITIES

Construction of generation facilities (fossil, nuclear, demineralization, and package and field erected boilers for steam) and related Construction Projects at such sites.

Construction work on mechanical projects in generating stations, and providing construction management to other Department and Divisions.

Control schedules, costs, and quality, and maintain a continuing analysis to detect problems or potential problems, and initiate corrective action on projects.

TABLE II-2

Total or subtotal by subunit — Technical Staff (Offsite)

	POWER GENERATION MAINTENANCE	POWER GENERATION SERVICES	POWER GENERATION Power STATIONS	ELECTRICAL ENGINEERING
1. Total number (Managers, Engineers, and Professional Personnel)	187	47	9	100
2. By education background,* e.g. -				
B.S.	5	14	2	65
MBA	—	3	—	4
M.S.	—	4	—	26
Ph.d.	—	3	—	—
3. Technical Experience (in man-years)	≈ 5300	≈ 600	≈ 250	≈ 650**
4. Nuclear Experience (in man-years)	≈ 800	≈ 220	≈ 90	≈ 100

* Highest Degree Achieved

** Estimated Experience Based Upon Positim Level Minimum Experience Requirement (e.g., Engineers - 5 years exp; Senior Engineers - 9 years exp.)

TABLE II-2

Total or subtotal by subunit — Technical Staff (Offsite)

	MECHANICAL AND NUCLEAR ENGINEERING		CIVIL ENGINEERING	FIELD ENGINEERING	GENERAL ENGINEERING
	NUCLEAR	MECHANICAL			
1. Total number (Managers, Engineers, and Professional Personnel)	27	48	45	21	68
2. By education background,* e.g. -					
B.S.	10	29	33	16	15
MBA	1	3	—	1	2
M.S.	9	12	8	4	5
Ph.d.	7	—	—	—	—
3. Technical Experience** (in man-years)	≈260	≈350	≈350	≈200	≈350
Nuclear Experience (in man-years)	≈230	≈100	≈50	≈60	≈50

* Highest Degree Achieved

** Estimated Experience Based Upon Positin Level Minimum Experience Requirement (e.g., Engineers - 5years exp; Senior Engineers - 9 years exp. etc)

TABLE II-2

Total or subtotal by subunit — Technical Staff (Offsite)

	QUALITY ASSURANCE	CONSTRUCTION "GENERATION FACILITIES"		
1. Total number (Managers, Engineers, and Professional Personnel)	30	13		
2. By education background,* e.g. -				
B.S.	14	5		
MBA	2	—		
M.S.	4	2		
Ph.d.	1	1		
3. Technical Experience (in man-years)	≈ 500	≈ 325		
Nuclear Experience (in man-years)	≈ 300	≈ 200		

* Highest Degree Achieved