TABLE OF CONTENTS

8609190371

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF FIGURES

13.0 CONDUCT OF OPERATIONS

13.1 ORGANIZATIONAL STRUCTURE OF APPLICANT

13.1.1 MANAGEMENT AND TECHNICAL SUPPORT ORGANIZATION

This section provides a description of the applicant's corporate organization, its functions and responsibilities, and the number of personnel and qualifications of personnel participating in the design of the facility, design review, design approval, construction management, testing, and operation of the plant. Figure 13.1-1 and 13.1-2 show the applicant's Company and PNPP Project Organization Structure respectively.

13.1.1.1 Design and Operating Responsiblities

13.1.1.1.1 Design and Construction Activities (Project Phase) Interrelationships with Contractors and Suppliers

a. Gilbert Associates, Inc. (GAI) engineers and consultants, is the architect-engineer for Perry Nuclear Power Plant, Units 1 and 2. The company has its main office in Reading, Pennsylvania. In 1973, Gilbert Associates acquired Commonwealth with offices in Jackson, Michigan. Throughout the past 70 years, Gilbert Associates has progressively grown in size and in scope of activity. The collective experience and capabilities of the firm offer complete consulting and engineering services to both investor-owner utilities and general industry in such diverse fields as: nuclear and conventional power generation; transmission, substation, and distribution systems; economic engineering and management consulting service, steel making and processing; cement and mineral processing; chemical and general industrial facilities; water desalination plants; institutional and commercial installations; environmental and solid waste treatment; and water production projects. Projects undertaken have ranged from large electric power generating plants and production facilities to small industrial boiler plants and allied service facilities.

Since 1942, Gilbert Associates has been responsible for the design of well over 100 thermal generating units, both fossil and nuclear power, representing approximately 50,000,000 KW of new generating capacity. The Company's experience includes one of the first reheat units, one of the first once through boiler units and one of the first supercritical steam pressure units. Individual unit designs have ranged in ratings up to 1,200,000 KW, and stations have varied in complexity - nuclear, mine-mouth, closed cycle cooling tower, base-load, peaking and others.

Since 1950, Gilbert Associates has played an active and important role in the development of nuclear energy for private utilities, industry and governmental agencies. Gilbert Associates projects include complete programs of nuclear power development involving analysis of sites, complete evaluation of proposals, contract and fuel program assistance, preparation of license applications, containment vessel design concepts, complete plant design and procurement. More than a score of studies, cost estimates, evaluations, concept developments and preliminary plant designs have been prepared since 1953 for various utility customers and other clients. At present, Gilbert has over 17,000,000 KW of generation under design, of which 10,600,000 KW is nuclear.

Gilbert Associates, Inc., is qualified to provide the required services for engineering and plant design.

b. The General Electric Company, (G.E.) has been awarded the contract to design, fabricate, deliver, and install the single-cyle, boiling water nuclear steam supply system to fabricate the first core of nuclear fuel and to provide technical direction for installation and start-up of this equipment. General Electric has engaged in the development, design, construction and operation of boiling water reactors (BWR) since 1955. Thus, General Electric has substantial experience, knowledge and capability to design, manufacture and furnish technical assistance for the installation and start-up of the reactors.

c. The General Electric Company, (G.E.) will design, fabricate and deliver the turbine generator as well as provide technical assistance for installation and start-up of this equipment. General Electric has a long history in the application of turbine generators in nuclear power stations which goes back to the inception of nuclear facilities for the production of electrical power. General Electric is furnishing the turbine generator units for most of its BWR nuclear steam supply contracted stations. General Electric has firm orders to supply numerous turbine generator units for use in nuclear facilities, similar to the Perry Nuclear Power Plant. The inlet pressure of these units vary between 750 psig to 1500 psig and the inlet temperature vary from saturation to appxoximately $40^{\circ}F$ superheat. The ratings of these units range from 500,000 kW to 1,224,000 KW. Thus, General Electric is technically qualified to design, fabricate and deliver the turbine generator and to provide technical assistance for the installation and start-up of the turbine generator.

d. Kaiser Engineers, Incorporated (K.E.I.) has been engaged to assist in the construction management effort. At Perry the construction management function is performed by an integrated team of experienced construction personnel from both CEI and KEI. Key individuals from each company perform vital tasks of the management program with the assistance, cooperation and direct efforts of the other.

Kaiser Engineers is wholly owned by Raymond International. It is one of the major engineering and construction firms that has continuously served a wide range of industrial clients in the aluminum, chemical, power, steel and other industries throughout the world since 1914.

In the nuclear power field, Kaiser Engineers serves both private industry and the Nuclear Regulatory Commission (NRC). It is presently acting as construction manager providing complete construction services for Cincinnati Gas & Electric's William H. Zimmer Nuclear Power Plant. For the NRC, Kaiser Engineers has provided continuous construction and consulting services since 1950. The largest project performed for the

NRC was the construction of the New Production Reactor dual purpose reactor at Hanford, Washington, an installation used to produce plutonium and steam for two 440MW generating units of the Washington Public Power Supply System.

e. The NUS Corporation has been employed in the performance of environmental studies for preconstruction and construction monitoring.

NUS Corporation was established in 1960 to meet industrial and governmental needs in important sectors of nuclear technology. A significant activity of the firm through the years has been technical support in the analysis of environmental and process control factors associated with other facilities which employ nuclear materials. This has involved the evaluation of alternative sites and associated environmental factors, definition of the potential or actual nuclear pollutant source and the analysis of the release, transport, diffusion and deposition of the pollutant materials, and their effects on the plant environment. In conjunction with this in-depth capability to analyze the pollutant chain, NUS has formulated waste system designs, established site and area monitoring and meteorological programs to assess the pollutant burden attributed to plant operation and their effects on the environment; and participated in negotiation with state and federal regulatory agencies.

NUS has been active in multiple discipline and environmental analysis. Diffusion meteorology, hydrology and limnology (thermal effects and waste dispersion), ecology, geology and seismology and population studies have been utilized in assessing the effects of plant operations and release of pollutants. These efforts have played a major role in the site evaluation services NUS has performed for a number of utilities as well as the preparation of the Safety Analysis Reports for a number of nuclear power plants.

13.1.1.1.1.1 Principal Site-Related Engineering Work

Principal site-related engineering work in the areas of geology, seismology and hydrology have been performed by the project architect engineer, Gilbert

Associates Incorporated, (GAI) with input in some specific areas from the NUS Corporation, the project environmental consultant. Meteorologic and demographic studies, and assessment of environmental effects are performed by the NUS Corporation. Work in all the aforementioned areas was initiated in 1972. Ongoing environmental assessments by NUS and the applicant during plant construction continue to be made according to the established Construction Environmental Monitoring Program.

13.1.1.1.1.2 Design of Plant and Ancillary Systems

Overall plant and system design is being performed by the architect engineer (GAI). General Electric is responsible for the design of the Nuclear Steam Supply System.

Overall engineering progress for Units 1 and 2 was 85.2% as of January 31, 1980.

13.1.1.1.1.3 Review and Approval of Plant Design Features

Review and approval of plant design features is performed by the applicant's onsite Nuclear Engineering Design Section personnel in accordance with the Perry Nuclear Power Plant Quality Assurance Program.

13.1.1.1.1.4 Site Layout with Respect to Environmental Effects and Security Provisions

Orientation of the plant on the site was done in such a manner as to minimize terrestrial impact, specifically minimizing the number of trees which had to be removed. The wooded areas to the east and west of the plant were avoided as much as possible.

The original layout plant for the PNPP incorporated a low-profile design to minimize visual impact. The aesthetic intent of this design feature was negated, however, when the applicant changed the design of the cooling system from once-through to closed-cycle, utilizing two 500 foot high natural draft hyperbolic cooling towers, one for each unit. This design change was made as a result of the opinion of the Ohio EPA's Director (5-8-74), concluding that Federal and State statutes and regulations did not permit certification of the PNPP without a closed cooling system.

Security provision have been made in the site layout in accordance with applicable NRC regulations. These provisions are discussed in Section 13.6.2.

13.1.1.1.1.5 Development of Safety Analysis Reports

FSAR preparation is coordinated by the PNPP Nuclear Licensing and Fuel Management personnel with primary input from GAI. Where necessary, additional input is provided by G.E. and the NUS Corporation.

13.1.1.1.1.6 Material and Component Specification Review and Approval

The PNPP specifications are prepared by the applicant's architect engineer for the majority of plant materials and components and are subject to review and approval by the applicant's Nuclear Engineering Design Section personnel. Material and component specifications for the NSSS are established by General Electric and are also subject to the applicant's review.

Safety-related specifications are reviewed in accordance with the Perry Nuclear Power Plant Quality Assurance Program.

13.1.1.1.1.7 Procurement of Materials and Equipment

Material and equipment procurement is performed by the PNPP Nuclear Engineering Design Section through an onsite arm of the applicant's headquarters purchasing department dedicated solely to the PNPP.

100 percent of the material and equipment contracts have been awarded as of June, 1980.

13.1.1.1.1.8 Management and Review of Construction Activities

Since construction began on October 21, 1974, Project Management has conducted regular meetings to review progress of construction activity and associated costs.

Personnel in the Nuclear Licensing and Fuel Management Section are responsible for developing the overall project budget, monitoring its financial status, and providing management with timely cost data.

Nuclear Construction and Outage Coordination Section personnel conduct field inspections on a daily basis to assure contractor compliance with the terms of their contract(s). They also monitor all costs associated with construction contractors.

In addition to the information supplied by the Project Organization, Project Management also receives the following status reports on a regular basis.

a. Monthly Engineering Progress Reports from GAI.

b. Monthly Construction Progress Reports from KEI.

c. Quarterly Program Status Reports from NUS.

13.1.1.1.2 Preoperational Activities

13.1.1.1.2.1 Development of Human Engineering Design Objectives and Design Phase Review of Proposed Control Room Layouts.

(CEI to Supply Later)

13.1.1.1.2.2 Development and Implementation of Staff Recruiting and Training Program

The NTS indoctrination and training requirements are spelled out in a detailed procedure which is part of the NTS administrative procedure matrix. Another parallel procedure spells out the certification of NTS testing personnel. This is seperate from Perry Plant Department training. The PNPP training programs are described in Section 13.2 and organized as per Figure 13.2-1.

13.1.1.1.2.3 Development of Plans for Initial Testing

Planning for initial testing began in 1975 and included numerous discussions with consultants, other utility nuclear testing organizations, and the NRC Region III Office of Inspection and Enforcement. This planning effort resulted in a conceptual plan to establish a testing organization within the Nuclear Engineering Department which would be responsible for all aspects of acceptance and preoperational testing. Startup testing, commencing with fuel loading, would be the responsibility of the Plant Manager and would be implemented by the plant staff with assistance from the NSSS supplier and personnel from the testing organization. This conceptual plan also recognized that, because of other concurrent project activities, CEI could not provide the total testing organization resources from within, in the proper number and qualification of personnel, without affecting project objectives in other areas. Therefore, planning favored an integrated CEI - consultant organization as the approach which would maximize overall project organization effectiveness.

The conceptual plant was finalized, approved by CEI Management, and resulted in the formal establishment of the Nuclear Test Section within the Nuclear Engineering Department in 1977. To further increase the probability of filling specific needs for fully qualified test personnel, the Nuclear Test Section has contracts, with seven separate testing service organizations, which identify the specific numbers, qualifications of, and timing for consultant additions to the Nuclear Test Section. As of July 1980, the Nuclear Test Section Staffing totaled 81, of which 39 were CEI personnel and 42 were consultant personnel. The Nuclear Test Section has been allocated the necessary budget and resources to efficiently plan, organize, develop, and implement an effective testing program.

Administrative controls for the preoperational test program have been written and approved. The scope of the program has been defined and implementation is well under way. For further details, refer to Chapter 14.

The startup test program is the responsibility of the Perry Plant Department Manager and will be implemented by the Startup Test Organization under the direction of the Startup Test Organization Supervisor who reports directly to the Perry Plant Department Manager. The Startup Test Organization will consist of Plant Staff Personnel, General Electric Startup Test-Design-Analysis personnel, and Nuclear Test Section personnel who have participated in preoperational test phase activities.

The PNPP Operations Manual contains procedures which define the administrative controls that govern implementation of the startup test program. These procedures define the responsibilities of organizations and personnel involved in the program. Volume 20 of the Operations Manual shall contain the individual startup test procedures discussed in Chapter 14. The test procedures to be used for each specific startup test will be prepared by the Startup Test Organization, reviewed by PORC, GE and QA, and approved by the Plant Manager. For further details, refer to Chapter 14.

13.1.1.1.2.4 Development of Plant Maintenance Programs

Programs are being developed to support plant maintenance activities during pre-operational testing. Maintenance programs to support plant operations are scheduled for development throughout the preoperational test program and will include:

Corrective Maintenance Administrative Controls
Preventive Maintenance Administrative Controls
Stores Activity Administrative Controls

These programs will be designed to ensure the safety of the public and plant personnel, provide equipment reliability in accordance with the PNPP Quality Assurance Program and satisfy requirements of the regulatory agencies having jurisdiction.

The maintenance staff will be sized to perform routine and preventive maintenance and will be supplemented as necessary by other CEI plant personnel and/or outside contractor crews. In all cases, maintenance and repairs of safety related equipment will be performed under the direction of qualified supervision and in accordance with approved procedures; written instructions, vendor technical manuals, and applicable codes and regulations. Routine training meetings will be held to ensure safety awareness and emphasize the importance of quality workmanship.

Preventive maintenance periodicities will be established based on manufacturer's recommendations, qualified personnel judgements and past experiences with similar equipment. All maintenance activities, with the exception of those resulting from emergency situations will be preplanned.

13.1.1.1.3 Technical Support for Operations

Technical services and backup support for the operating organization have been established and are planned to continue throughout the life of the Plant.

These services are designed to provide the necessary specialized expertise as needed in such areas as nuclear, mechanical, electrical, thermalhydraulic and instrumentation and controls engineering, power production, chemistry and maintenance planning, licensing and quality assurance. Additional expertise or services will be provided as required through the use of outside consultants and other available professional services.

13.1.1.2 Organization Arrangement

The Cleveland Electric Illuminating Company corporate structure relative to the operation of Perry Nuclear Power Plant is as shown in Figure 13.1-2. Operational Organization is covered in Section 13.1.2.

13.1.1.3 Qualifications of Headquarters Staff Personnel

The qualifications of Headquarters staff personnel responsible for Perry Nuclear Power Plant technical support meet or exceed those requirements set by ANSI/ANS 3.1-1978. Table 13.1-1 lists members of the plant staff and designates equivalent ANSI/ANS 3.1-1978 titles or comparison. Table 13.1-2 lists the resumes of Headquarters supervisory personnel and Table 13.1-3 includes the resumes.

The Nuclear Analysis and Design Section General Supervising Engineer, who reports directly to the Nuclear Engineering Department Manager, is that individual who normally determines when to call consultants and contractors for dealing with complex problems beyond the scope of the company's corporate headquarter's staff. The Nuclear Analysis and Design Section General Supervising Engineer has a Bachelor's Degree in Engineering and a minimum of three years of nuclear experience. Therefore, this position corresponds the criteria stipulated in ANSI/ANS 3.1-1978 for the "Engineer in Charge."

13.1.2 OPERATING ORGANIZATION

This section describes the structure, functions and responsibilities of the onsite organization established to operate and maintain the Perry Nuclear Power Plant (PNPP).

13.1.2.1 Plant Organization

The organization for the PNPP is shown in Figure 13.1-3. This organization chart indicates the title of each position, the number of personnel assigned to each position (including common or duplicate positions), reporting responsibilities and the positions requiring NRC licenses. All functional positions designated in Figure 13.1-3 will be filled by the time of initial fuel loading of Unit 1 with a target date of May 1983 established for achieving the designated manning levels. Those duplicate positions requiring additional personnel for Unit 2 will be filled by the initial fuel loading of Unit 2. Additional consultant and contract personnel may be required to support normal crewing during outages and will be utilized as workloads dictate.

13.1.2.2 Plant Personnel Responsibilities and Authorities

The functions, responsibilities and authorities of various PNPP supervisory and staff positions are summarized briefly in the following paragraphs:

Plant Manager

The PNPP Plant Manager has overall responsibility for all plant operation, maintenance, technical, environmental, radiation protection, security, training and administrative activities. He is responsible for compliance with the plant's operating license, regulations, and the PNPP Operational Quality Assurance Program. He is also responsible for final approval and distribution of plant administrative procedures and reports. The Plant Manager is chairman of the Plant Operations Review Committee. He reports to the Vice-President, System Engineering and Construction and coordinates interfaces between the PNPP staff and all other onsite and offsite organizations.

Superintendent, Plant Operations

The Superintendent, Plant Operations is responsible for daily operations at the PNPP including technical, operations and maintenance activities. He reports to the Plant Manager and is a member of the Plant Operations Review Committee. The Superintendent, Plant Operations has, in the absence of the Plant Manager, full authority to control all plant operations activities to ensure compliance with the Operating License.

Operations Section General Supervisor

The operations Section General Supervisor is responsible for directing daily operation of the plant including all mechanical and electrical equipment, planning and scheduling of operations' activities including tests, startups and shutdowns, and directing the development and review of required procedures dealing with plant operations to assure that the plant is operated in accordance with the requirements of the Operating License and the PNPP Operations Manual. The General Supervisor, Operations is a member of the Plant Operations Review Committee and reports to the Superintendent, Plant Operations.

Maintenance Section General Supervisor

The Maintenance Section General Supervisor is responsible for directing the maintenance and repair of all electrical and mechanical equipment in the plant. He also directs the planning and supervision of major maintenance repairs and overhauls, preventive maintenance activities and is responsible for procuring and maintaining the plant stores inventory of spare parts and supplies. The General Supervisor, Maintenance is a member of the Plant Operations Review Committee and reports to the Superintendent, Plant Operations.

Technical Section General Supervising Engineer

The Technical Section General Supervising Engineer is responsible for directing all activities associated with providing technical support and services related to monitoring plant performance, equipment and system testing, instrument maintenance, calibration and repair and reactor technology. He is also responsible for the programming, operation and maintenance of the process computer and related software development. The Plant Technical Engineer is a member of the Plant Operations Review Committee and reports to the Superintendent, Plant Operations.

Radiation Protection General Supervising Engineer

The Radiation Protection General Supervising Engineer is responsible for directing all activities associated with the chemical, radiochemical, radwaste and other radiological control services required to support plant operation and maintenance activities. This includes conducting laboratory and plant survey activities required to ensure that personnel exposure to radiation and radioactive materials is within regulatory guidelines and that such exposure is kept as low as reasonably achievable (ALARA). The Radiation Protection Engineer is a member of the Plant Operations Review Committee and reports to the Plant Manager.

Nuclear Services Section General Supervisor

The Nuclear Services Section General Supervisor is responsible for directing all training activities required to develop and maintain a qualified workforce, and for insuring that all provisions of the PNPP Security Plan are implemented. He is also responsible for providing the necessary general maintenance and administrative services required to effectively support plant activities. He reports to the plant Manager and, via the Security Supervisor, maintains a communications link with the corporate Security Advisor.

Operating Shift Crews

Procedures are issued to delineate the responsibilities and authorities of the Shift Supervisors and shift operating crews for:

a. Adhering to the plant Technical Specifications and the Plant Operations Manual.

b. Observing and responding to instrument indications unless proven false.

c. Shutting down the reactor when it is determined that safety of the reactor is in jeopardy or when operating parameters exceed any of the reactor protection setpoints and automatic shutdown does not occur.

d. Determining the circumstance, cause and limits under which operations can safely proceed, before returning the reactor to power following a trip or an unscheduled or unexplained power reduction.

e. Reviewing routine operating data to assure safe operation.

f. Meeting the requirements of 10CFR 50, 54, parts (i), (j), (k), (l), (m) pertaining to reactor operator and senior reactor operator licensed personnel.

g. Departing from approved procedures in cases of emergency, if necessary, to prevent injury to personnel and/or the public or to prevent damage to the plant facility.

h. Documenting and incorporating necessary revisions to existing plant procedures.

The functions and responsibilities of the various shift crew positions are summarized as follows:

Shift Supervisor

The Shift Supervisor on duty is responsible for operating the plant in compliance with licensing requirements, administrative controls, and operating procedures. Administrative procedures clearly articulate operations command responsibilities for both normal and emergency conditions. These procedures define command and control responsibilities and authority. They also address when direct supervision is required in the control room.

Shift Supervisor responsibility further includes (when warranted): approving on-shift operations that may, of necessity, deviat from established procedures, evaluation of operating experience, and provides on-shift technical advice to the Unit Supervisors during emergencies or in the event of an accident. This plant accident assessment function may be performed by either a qualified Shift Supervisor, Unit Supervisor, or (when assigned) by the Shift Technical Advisor.

The Shift Technical Advisor, as suggested by ANS draft Standard 3.1-Dec. 1979, shall be a designated Operations Engineer from the Department Staff.

The Shift Supervisor reports to the Operations Section General Supervisor.

Unit Supervisor

The Unit Supervisor is responsible for assisting the Shift Supervisor on duty to operate the plant in a safe and dependable manner. This includes supervising the supervising operators, nuclear plant operators, attendants and assistants required to operate the unit, instructing the shift operating crew concerning temporary and permanent changes to the PNPP Operations Manual and assisting the Shift Supervisor in his administrative duties. The Unit Supervisor reports to the Shift Supervisor.

Supervising Operator

The Supervising Operator is resonsible for directing the activities of the non-licensed shift employees including nuclear plant operators, attendants, assistants and others as may be assigned for special tasks to insure proper operation and monitoring of plant systems and equipment. The Supervising Operator reports to the Unit Supervisor.

Plant Operator

The Plant Operator is the senior non-exempt operating person on each shift. He performs routine inspections and operations on plant equipment outside the control room at the direction of the Supervising Operator, Unit Supervisor or Shift Supervisor.

Succession of Authority

The Plant Manager has overall responsibility for all plant activities during normal operations. In the event of unexpected contingencies of a temporary nature, when the Plant Manager is unavailable, responsibility will be delegated to the following positions in the orders listed:

a. Superintendent, Plant Operations

b. General Supervisor, Operations

c. General Supervisor, Maintenance

13.1.2.3 Operating Shift Crews

There will be five operating shift crews. Each operating shift crew is qualified to carry out activities related to plant operations. Position titles, license requirements and their equivalent to positions listed in ANSI/ANS 3.1 1978 are as follows:

PNPP Position or Title	License	ANSI/ANS 3.1 1978 Equivalent
Shift Supervisor	SRO	Supervisor requiring NRC licenses
Unit Supervisor	SRO	Supervisor requiring NRC licenses
Supervising Operator	RO	Operator
Plant Operator	-	-
Plant Attendant	-	-
Plant Assistant	-	-
Health Physics Technician	-	Technician
Chemistry Technician	-	Technician

The PNPP operating shift crew will normally consist of a minimum of ten personnel as follows for Unit 1:

	Operations, Startup, Hot Shutdown		Cold Shutdown, Refueling
Job Title	Unit 1	Units 1 & 2	Unit 1 prior to Unit 2 operation
Shift Supervisor	1	1	1
			or
Unit Supervisor	1	2	1
Supervising Operator	2	3	1
Plant Operator	1	2	1
Plant Attendant	1	2	1
Plant Assistant	1	2	1

Job Title	Operations, Startup, Hot Shutdown		Cold Shutdown, Refueling
	Unit 1	Units 1 & 2	Unit 1 prior to Unit 2 operation
Radwaste Technician	1	1	1
Health Physics Technician	1	1	1
Chemistry Technician	1	1	1

During refueling operations, an additional Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling will supervise these operations and will have no other concurrent duties.

An around-the-clock radiation protection program will be implemented by the presence of at least one individual qualified in radiation protection. Additional personnel will be scheduled as required to cover special jobs or work loads as determined by radiation protection supervision. During normal work days, the radiation protection personnel report to radiation protection supervision. During off shifts and weekends, the radiation protection personnel will report to radiation protection supervision or the Shift Supervisor.

Shift crew composition for licensed operators and unlicensed operators may be less than the minimum requirements for a period of time not to exceed two hours in order to accommodate an unexpected absence of on duty shift crew members provided immediate action is taken to restore composition to within the minimum requirements as stated.

13.1.3 QUALIFICATIONS OF NUCLEAR PLANT PERSONNEL

Qualifications for Perry Nuclear Power Plant personnel are described in the following subsections.

13.1.3.1 Qualification Requirements

Perry Nuclear Power Plant follows the guidelines set forth in Regulatory Guide 1.8 for selection and training of management personnel, as discussed in Section 1.8 of this FSAR. Table 13.1-1 lists members of the plant staff and designates equivalent ANSI/ANS 3.1 1978 titles as a comparison.

13.1.3.2 Qualifications of Plant Personnel

The qualification of the initial personnel on the PNPP staff holding key managerial and supervisory positions are provided in the resumes included with this chapter as Appendix 13A.

TABLE 13.1-1

PNPP STAFF TITLES AND ANSI/ANS 3.1 - 1978 EQUIVALENT

PNPP Position or Title	ANSI/ANS 3.1 - 1978 Equivalent
Plant Manager	Plant Manager
Superintendent, Plant Operations	Plant Manager Alternate
Operations Section General Supervisor	Operations Manager
Maintenenace Section General Supervisor	Maintenance Manager
Technical Section General Supervising Engineer	Technical Manager
Radiation Protection Section General Supervising Engineer	Professional-Technical Radiation Protection Chemistry and Radiochemistry
Supervisor, Health Physics*	Professional-Technical, Radiation Protection
Supervisor, Chemicstry Unit	Professional-Technical, Chemistry and Radiochemistry
Reactor Engineer	Professional-Technical, Reactor Engineering
Operation Engineers	Professional-Technical, Instrumentation and Control
Shift Supervisor	Supervisor requiring NRC License
Unit Supervisor	Supervisor requiring NRC License
Supervising Operators	Operator

*The qualifications of one of these individuals will meet the requirements of ANSI/ANS-3.1-1978, for the position of Professional-Technical, Radiation Protection which is equivalent to the Radiation Protection Manager as described in Regulatory Guide 1.8.

TABLE 13.1-2[1]

PNPP HEADQUARTERS STAFF RESUME LIST

Number	Individual	Position
1.	Dalwyn R. Davidson	Vice President, System Engineering and Construction
2.	Murray R. Edelman	Manager, Nuclear Quality Assurance Department
3.	Garrett W. Groscup	Manager, Nuclear Engineering Department
4.	Richard G. Schuerger	Principal Nuclear Operations Engineer
5.	Barry L. Barkley	General Supervising Engineer, Nuclear Design Section
6.	Lawrence O. Beck	General Supervising Engineer, Nuclear Licensing and Fuel Management Section
7.	Ronald L. Farrell	General Supervisor, Procedures and Records
8.	William J. Kacer	General Supervising Engineer, Construction Quality Section
9.	Jack A. Kline	General Supervising Engineer, Nuclear Construction Section
10.	Joseph M. Lastovka	General Supervising Engineer, Nuclear Test Section
11.	Paul P. Martin	General Supervising Engineer, Program Quality Section

TABLE 13.1-2[1] (Continued)

PNPP OPERATIONS STAFF RESUME LIST

Number	Individual	Position
12.	John J. Waldron	Plant Manager
13.	Position Currently Unfilled	Superintendent, Plant Operations
14.	Russell J. Tadych	General Supervisor, Operations
15.	Donald J. Takacs	General Supervisor, Maintenance
16.	Paul E. Dietz	Plant Technical Engineer
17.	Steven F. Kensicki	Radiation Protection Engineer
18.	John B. Murray	Administrative Supervisor
19.	Thomas E. Mahon	Security Supervisor
20.	Terry K. Boyer	Shift Supervisor
21.	Allen J. Okorn	Shift Supervisor
22.	Kenneth F. Russell	Shift Supervisor
23.	Michael L. Wesley	Shift Supervisor
24.	Position Currently Unfilled	Training Supervisor
25.	James A. Latimer	Training Coordinator
26.	Martha E. Takacs	Chemistry Supervisor
27.	James E. Bontempo	Health Physics Supervisor
28.	Jimmy W. Leonard	Radwaste Supervisor
29.	William R. Kanda, Jr.	Instrument & Control Supervisor
30.	Michael H. Minns	Reactor Engineer

(1) NOTE:
1. Refer to Table 13.1-3 for Resumes.

TABLE 13.1-3

RESUMES OF KEY PERRY NUCLEAR
POWER PLANT PERSONNEL

RESUME NO. 1

Name: Dawlyn R. Davidson, Vice President, System Engineering and Construction

Formal Education and Training:

Bachelor of Electrical Engineering, Case Institute of Technology, 1941

Experience:

1941 - Present: The Cleveland Electric Illuminating Company

Joined CEI in 1941 and occupied various positions in engineering and operations through 1967 when named Manager of the System Planning Engineering Department. In 1974, assumed position of Vice President of Engineering and became Vice President of System Engineering and Construction in 1979 following a reorganization within CEI. As such, reports directly to the Executive Vice President and is responsible for planning and coordinating the development of CEI's power production facilities and electrical systems. These duties include being responsible for the engineering, licensing, quality assurance and construction of future power plants including the Perry Nuclear Power Plant. When complete, operation of the Perry Plant will also be the responsibilty of the Vice President of System Engineering and Construction

Professional Membership:

Institute of Electrical and Electronic Engineers
Registered Professional Engineer, State of Ohio
National Society of Professional Engineers
Edison Electric Institute, Codes and Standards Committee
Business Roundtable of Northern Ohio, Coordinating Committee

TABLE 13.1-3 (Continued)

RESUME NO. 2

Name: Murray R. Edelman, Manager, Quality Assurance Department

Formal Education and Training:

B.S. Mechanical Engineering, Case Institute of Technology, 1961
Juris Docter, Baldwin - Wallace Cleveland Marshall Law School, 1965

Experience:

1961 - Present: The Cleveland Electric Illuminating Company

Through 1972, occupied various engineering positions including Engineering Assistance Engineer and Senior Engineer in the Civil and Mechanical Engineering Department. In 1972, was assigned as Senior Licensing Engineer for the Perry Nuclear Power Plant and in 1975 was named General Supervising Engineer of the Licensing and Administration Section of the Nuclear Engineering Department.

In 1977, was trasferred to the Civil and Mechanical Engineering Department as a General Supervising Engineer.

In 1978, rejoined the Perry Plant Project as Manager of the Nuclear Quality Assurance Department. As such, reports to the Vice President of System Engineering and Construction and is responsible for the planning and directing of the quality program for the Perry Nuclear Power Plant.

Professional Membership:

Ohio State Bar Association
American Society of Mechanical Engineers
Cleveland Engineering Society
American Nuclear Society

TABLE 13.1-3 (Continued)

RESUME NO. 3

Name: Garrett W. Groscup, Manager, Nuclear Engineering Department

Formal Education and Training:

B.S. Electrical Engineering, Drexel University, 1962
Master of Electrical Engineering, Rensselear Polytechnic Institute, 1965

Experience:

1965 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Electrical Project Engineer on the Seneca pumped-hydro generating project.

In 1967, was named Overall Project Engineer for the Seneca Project and was responsible for the total coordination of design, construction and test of the pumped-hydro plant.

In 1970, was named Manager of the Contract Construction Department and was responsible for contract management of CEI's construction program.

In 1973, was assigned Manager of the Purchasing Department and was responsible for CEI's centralized procurement activity.

In 1975, was assigned to present position of Manager of the Nuclear Engineering Department. As such, is responsible for engineering, construction, testing (through fuel load), procedures and records, licensing and cost control of the Perry Nuclear Power Plant Reports to the Vice President of System Engineering and Construction.

1962 - 1965: General Electric Company

As a Design Engineer at General Electric was responsible for the design of large, low speed synchronous motors and generators up to 15,000 kW and generators for Marine and Naval Applications.

1957 - 1962: Baltimore Gas and Electric Company

Through Drexel cooperative education program worked as a Technician at BG&E.

TABLE 13.1-3 (Continued)

RESUME NO. 3 (Continued)

Professional Membership:

Edison Electric Institute, Prince Movers Committee
Atomic Industrial Forum, Committee on Power Plant Design, Construction and Operation; and its Cost Effectiveness Subcommittee
Institute of Electrical and Electronic Engineers
Cleveland Engineering Society

TABLE 13.1-3 (Continued)

RESUME NO. 4

Name: Richard G. Schuerger, Principal Nuclear Operations Engineer

Formal Education and Training:

B.S. Mechanical Engineering, Case Institute of Technology, 1949
M.S. Mechanical Engineering, Case Institute of Technology, 1953

Experience:

1949 - Present: The Cleveland Electric Illuminating Company

From 1949 to 1956, occupied various engineering positions with assignments involving the start-up and testing of fossil field generating plants.

In 1956, was assigned for two years to the Atomic Power Development Associates in Detroit, Michigan where responsibilities included design engineering of mechanical components for the Enrico Fermi fast breeder reactor project.

Returned to CEI in 1958 and was named General Supervising Engineer of what is now the Engineering Services Section where responsible for the Chemical Engineering Unit, the Production Engineering Unit and the Chemical Laboratory.

In 1962, was made Manager of the Civil and Mechanical Engineering Department. As Manager of the Civil and Mechanical Engineering Department was responsible for the engineering and licensing of the Perry Nuclear Power Plant from 1971 to 1975 when those responsibilities were assigned to the newly formed Nuclear Engineering Department.

In 1977, was appointed to the position of Manager of the Quality Assurance Department.

In 1978, became Principal Nuclear Operations Engineer reporting to the Vice President of System Engineering and Construction and is responsible for liason activities for CEI on the Davis-Besse Nuclear Power Station Unit No. 1, the Beaver Valley Nuclear Plant Unit No. 2, and the Bruce Mansfield Coal-Fired Plant. Duties also include overall security planning fo the Perry Plant.

Professional Memberships:

American Society of Mechanical Engineers
American Nuclear Society
Cleveland Engineering Society
Registered Professional Engineer, State of Ohio

TABLE 13.1-3 (Continued)

RESUME NO. 5

Name: Barry L. Barkley, General Supervising Engineer Nuclear Design Section

Formal Education and Training:

M.S. Nuclear Engineering, Catholic University of America, 1967

Experience:

1975 - Present: The Cleveland Electric Illuminating Company

Joined CEI in 1975 and Operations Engineer in the Perry Plant Department and was later assigned Senior Staff Engineer and was responsible for design and specification review for plant operability and initial work on the Plant Operations Manual.

In 1979, was named to present position of General Supervising Engineer of the Nuclear Design Section of the Nuclear Engineering Department responsible for the design engineering of the Perry Plant.

1970 - 1975: General Electric Company

As Start-Up Test Design and Analysis (STD&A) Engineer conducted start-up testing of Fukushinax * and KKM (Switzerland) and as Lead STD&A Engineer organized and coordinated the start-up of the Fitzpatrick nuclear plant and performed supervisory duties for GE on the plant site.

1968 - 1969: U.S. Army

Served as Nuclear Weapons Project Office for the U.S. Army Material Command.

TABLE 13.1-3 (Continued)

RESUME NO. 6

Name: Lawrence O. Beck, General Supervising Engineer, Licensing and Fuel Management Section

Formal Education and Training:

B.S. Electrical Engineering, Purdue University, 1958
Master of Business Administration, Case Western Reserve University, 1967

Experience:

1956 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Junior Draftsman in 1956. From 1956 through 1977 held various engineering positions in the Civil and Mechanical Engineering Department. As Senior Engineer and later Senior Project Engineer was responsible for coordination of preliminary engineering work and environmental studies for the Perry Plant.

In 1977, was named General Supervising Engineer of the Licensing and Administration Section (renamed the Licensing and Fuel Management Section) of the Nucelar Engineering Department. As such is responsible for the licensing, fuel management, and special design work for the Perry Plant.

Professional Memberships:

American Nuclear Society
Registered Professional Engineer, State of Ohio
East Central Nuclear Group, Progress Committee
Atomic Industrial Forum

TABLE 13.1-3 (Continued)

RESUME NO. 7

Name: Ronald L. Farrell, General Supervisor, Procedures and Records Section

Formal Education and Training:

B.A. Business Administration, Bowling Green State University, 1954
MBA Economics and Statistics, Case Western Reserve University, 1962

Experience:

1964 - Present: The Cleveland Electric Illuminating Company

Rejoined CEI as Project Industrial Engineer and was later named General Supervisor of the Industrial Engineering Section where responsible for development of information systems and the procedures and practices to be used in the construction of the Perry Plant.

In 1978, was assigned present position of Supervisor of the Procedures and Records Section of the Nuclear Engineering Department where responsible for Perry Plant office services, procedures and records management and project-wide information systems.

1963 - 1964: Aerojet General

As Senior Systems Analyst, responsibilities included designing and implementing management and financial information systems and the technical supervision and training of programming personnel.

1956 - 1963: The Cleveland Electric Illuminating Company

Joined CEI as an Office Methods Analysist performing various duties related to data processing, administrative procedures and work measurements.

TABLE 13.1-3 (Continued)

RESUME NO. 8

Name: William J. Kacer, General Supervising Engineer, Construction Quality Section

Formal Education and Training:

B.S. Electrical Engineering and Education, Northwest Missouri State University, 1966

Experience:

1979 - Present: The Cleveland Electric Illuminating Company

Joined CEI as General Supervising Engineer of the Construction Quality Section of the Quality Assurance Department. As such, is responsible for development and maintenance of a QA program for all construction quality functions.

1973 - 1979: Kaiser Engineers, Inc.

Joined Kaiser Engineers, Inc. as Lead Electrical QA Engineer on the Zimmer I Nuclear Project and later became Assistant QA Manager on that project and then was moved Quality Control Supervisor of the Construction Quality Section of Kaiser Engineers, Inc. on the Perry Project.

1970 - 1973: Iowa Electric Light and Power Company

As Quality Assurance Engineer was responsible for QA Program Development, Administration and Implementation. Performed site surveillance and QA audits of construction and servied as audit chairman for A/E and vendor audits.

1966 - 1970: Collins Radio Company

As Staff Quality Control Engineer responsibilities included evaluation of vendor QC programs, implementation and maintenance of the Quality Control Program, quality design reviews and design of inspection tooling and test equipment for QA personnel.

TABLE 13.1-3 (Continued)

RESUME NO. 9

Name: Jack A. Kline

Formal Education and Training:

B.S. Aerospace Engineering Technology, Kent State University, 1970

Experience:

1978 - Present: The Cleveland Electric Illuminating Co.

Joined CEI as Senior Project Engineer in the Nuclear Design Section of the Nuclear Engineering Department where responsibilities included equipment and systems specifications, design coordination, and field engineering support of construction for Perry Plant mechanical equipment and systems.

In 1980, named General Supervising Engineer of the Nuclear Construction Section of the Nuclear Engineering Department. As such, is responsible for the administration of construction contracts, construction scheduling, cost estimating construction control and industrial relations.

1970 - 1978: General Electric Company

Joined General Electric in 1970 in their Field Engineering Training Program and held various engineering positions. Responsibilities included design, installation and startup related activities for power generation equipment, including gas turbines, steam turbines, combined cycle systems and nuclear steamed supply systems. In 1978, was named Area Manager of the Kansas City Mechanical and Nuclear Installation and Service Engineering Department.

1964 - 1966: United Airlines

1962 - 1964: U.S. Navy

TABLE 13.1-3 (Continued)

RESUME NO. 10

Name: Joseph M. Lastovka, General Supervising Engineer, Nuclear Test Section

Formal Education and Training:

Bachelor of Electrical Engineering, Cleveland State University, 1968

Experience:

1950 - Present: The Cleveland Electric Illuminating Company

Through 1968 held various engineering and operations related positions in Customer Service, Plant and Substation Engineering and Operations. In 1968 was named Supervisor of the Technical Services Unit responsible for coordinating work practices, maintenance procedures, and tooling for the substation, distribution and transmission systems. Served one year as Lead Electrical Start-Up Engineer on a 650 MW fossil unit.

In 1975 was placed on special assignment as Construction QA Engineer at the Davis-Besse Nuclear Station.

From 1977 to 1979 served in senior level positions in the Nuclear Engineering Department and the Quality Assurance Department.

In 1979, was named to present position of General Supervising Engineer of the Nuclear Test Section of the Nuclear Engineering Department where responsible for the overall development and implentation of the start-up and test programs for the Perry Plant (prior to fuel load).

1953 - 1955: U.S. Navy

Served as Submarine Technician on USS Lionfish and USS Albacore.

1948 - 1950: Ohio Bell Company

Employed as Central Office Equipment Man.

TABLE 13.1-3 (Continued)

RESUME NO. 11

Name: Paul P. Martin, General Supervising Engineer, Program Quality Section

Formal Education and Training:

B.S. Electrical Engineering, Illinois Institute of Technology, 1946

Experience:

1946 - Present: The Cleveland Electric Illuminating Company

From 1946 to 1965 served in several engineering positions in the Plant and Substation Engineering Department where responsible for substation design and equipment applications. In 1965 was named Senior Engineer responsible for transmission substation and communications design and instruction.

In May 1974, assumed position of General Supervising Engineer of the Planning Services Section of the System Planning Engineering Department. As such was responsible for coordinating the Company's construction programs.

In 1978, assured present position of General Supervising Engineer of the Program Quality Section of the Quality Assurance Department and as such is responsible for planning and directing the procurement and manufacturing program development and for indoctrination and training for the Perry Project AQ Program.

Professional Memberships:

Institute of Electrical and Electronic Engineers
Cleveland Engineering Society
Registered Professional Engineer, State of Ohio

TABLE 13.1-3 (Continued)

RESUME NO. 12

Name: John J. Waldron, Perry Plant Department Manager

Formal Education and Training:

Bachelor of Mechanical Engineering Degree, Marquette University, 1951
Eight-Day PWR Design Orientation Course (B&W), 1969
Three-Week BWR Design Orientation Course (GE), 1972
Three-Week Nuclear Technology Course for Power Plant Engineers (General Physics Corporation), 1976
Twenty-Week Academic Program for Nuclear Power Plant Personnel (General Physics Corporation), 1979

Experience:

1954 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Junior Engineer in the Product Engineering Department. From 1958 to 1972 assigned to Avon Lake Plant (fossil-fired plant) with assignments including Results Engineer, Plant Technical Engineer, and Operations General Supervisor. In 1972, transferred to Perry Nuclear Plant Production team assisting in preparation of PSAR, design revision and specification review. In 1974, named Manager of the Perry Plant Department with overall responsibility for the stafting and training of the plant operating organization. Reports directly to the Vice President, System Engineering and Construction. Additionally assigned to the Edison Electric Institute's Prime Movers Committee, Nuclear Power Task Force and Subcommittee since 1972.

1951 - 1954: United States Navy

Line Officer on an aircraft carrier - duties included assignments as Gunnery Department Division Officer, Legal Officer, First Lieutenant

1950 - 1951: Junior Engineer, Chain Belt Company, Milwaukee, Wisconsin

Professional Memberships:

American Society of Mechanical Engineering
American Nuclear Society
Registered Professional Engineer, State of Ohio

TABLE 13.1-3 (Continued)

RESUME NO. 13

Name: Position Currently Unfilled, Superintendent, Plant Operations

TABLE 13.1-3 (Continued)

RESUME NO. 14

Name: Russell J. Tadych, General Supervisor, Operations

Formal Education and Training:

Bachelor of Science Degree in Mathematics, U.S. Naval Academy, 1967
Master of Science Degree in Mathematics, U.S. Naval Post Graduate School, Monterey, California, 1968
Nuclear Power Training, U.S. Navy, 1968-1969
Seven-Day BWR Fundamentals Course (GE), 1974
Twenty-Week Academic Program for Nuclear Power Plant Personnel (General Physics Corporation), 1979
Five-Week Dresden Nuclear Plant Technology (GE), 1979
Ten-Week Operators Training Course, Dresden Simulator (GE), 1979

Experience:

1974 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Operations Engineer. Assignments included four months participation in a refueling outage at Northeast Utilitites, Millstone Nuclear Plant, six weeks training at Eastlake Plant qualifying as Electrical Operator and assisting Engineering Department in design review of systems to be installed at Perry Plant. In 1976, was assigned to the Eastlake Plant (fossil-fired plant) as General Supervisor, Services Section. In 1977, was appointed to his present position of General Supervisor, Operations at the Perry Plant. Reports directly to the Plant Manager and directly supervises all operations personnel. Qualified as SRO in 1979.

1967 - 1974: U.S. Navy

Officer - Qualified as Engineering Office of the Watch - duties included Reactor Controls Division Officer, Machinery Division Officer and Weapons Officer on S5W class submarines.

Professional Membership:

Registered Professional Engineer, State of Ohio

TABLE 13.1-3 (Continued)

RESUME NO. 15

Name: Donald J. Takacs, General Supervisor, Maintenance

Formal Education and Training:

Bachelor of Science Degree in Mechanical Engineering, University of Dayton, 1968
Twenty-Week Academic Program for Nuclear Power Plant Personnel, (General Physics Corporation), 1979

Experience:

1968 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Junior Engineer in Civil and Mechanical Test Section evaluating plant performance and efficiency. In 1969 transferred to Lake Shore Plant (fossil-fired plant) and held various positions including Junior Engineer, Results Engineer and General Supervisor of Maintenance. In 1978 transferred to the Perry Plant Department as General Supervisor, Maintenance. Reports directly to the Plant Manager and is responsible for maintenance and spare parts activities at the Plant.

TABLE 13.1-3 (Continued)

RESUME NO. 16

Name: Paul E. Dietz, Plant Technical Engineer

Formal Education and Training:

Bachelor of Science Degree in Electrical Engineering, Marquette University, 1967
Master of Science Degree in Electrical Engineering, Marquette Univeristy, 1970
Postgraduate courses in Metallurgy at Norte Dame, 1974
Nuclear Power Training, U.S. Navy, 1969-1970
Three-Week BWR Design Orientation Course (GE), 1976
Five-Week Station Nuclear Engineering Course (GE), 1977

Experience:

1975 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Operations Engineer. Duties included Perry Plant system review and development and coordination of System Operation Descriptions. In 1975, participated in five-month refueling outage at Pilgrim Nuclear Power Plant serving as Test Leader for Integrated Leak Rate testing ofthe plant. In 1976, spent two months at the Davis-Besse Nuclear Power Plant serving as a Test Leader for Integrated Leak Rate Testing. In 1978, appointed to his present position of Plant Technical Engineer. Reports directly to the Plant Manager and is responsible for directing instrument and control activities and the plant technical engineering staff.

1969 - 1975: U.S. Navy

Officer - qualified as Engineering Officer of the Watch on a nuclear powered surface ship. Duties included Reactor Control Division Officer and Nuclear Accident Drill Coordinator. In 1973 appointed Assistant Professor of Naval Science at Notre Dame University instructing Naval Engineering courses.

1964 - 1966: Honeywell, Incorporated, Aeronautical Division

Student Engineer, Production Engieer, Instrumentation Test Engineer and Systems Analysis Engineer

Professional Memberships:

American Nuclear Society
Registered Professional Engineer State of Ohio

TABLE 13.1-3 (Continued)

RESUME NO. 17

Name: Steven F. Kensicki, Radiation Protection Engineer

Formal Education and Training:

Bachelor of Science Degree in Chemical Engineering, University of Detroit, 1968
Three-Week Nuclear Technology Course for Power Plant Engineers, (General Physics Corporation), 1975
Three-Week BWR Design Orientation Course (GE), 1976
Two-Week Research Reactor Training Program (University of Wisconsin), 1976
Twelve-Week BWR Chemistry Course (GE), 1978

Experience:

1968 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Junior Engineer assigned to the Chemical Engineering Unit. Assisted in startup of two large fossil units with responsibility for checkout, initial operation and training on all water treatment and analytical sampling equipment. In 1972 assigned to the Davis-Besse Nuclear Power Plant to write acceptance and pre-operational test procedures, operating procedures, surveillance and periodic test procedures. Also served as a Test Leader during the plant startup. Returned to CEI in 1976 and assigned to the Perry Plant Department to assist the Nuclear Engineering Department with design reviews of radwaste systems, water treatment systems, chemical cleaning design and laboratory layout. In 1978, appointed to present position as Radiation Protection Engineer. Reports directly to the Plant Manager and is responsible for all activities of the Health Physics, Chemistry and Radwaste Units.

Professional Memberships:

American Nuclear Society
American Institute of Chemical Engineers
Registered Professional Engineer, State of Ohio

TABLE 13.1-3 (Continued)

RESUME NO. 18

Name: John B. Murray, Administrative Supervisor

Formal Education and Training:

Bachelor of Business Administration Degree, Cleveland State University, 1966
Nuclear Power Plant Fundamentals Course (General Physics Corporation), 1979
Miscellaneous Short Courses and Seminars Dealing With Basic Computer Applications, Records Management and BWR/6 Operations, 1979

Experience:

1956 - Present: The Cleveland Electric Illuminating Company

Joined CEI in 1956 and held various Bargaining Unit job classifications. In 1966, assumed duties of district Operations Analyst including workload and manpower forecasting, performance analysis, computerized time and activity systems development and office clerical supervision. In 1972, assigned as Supervisor, Meter Reading with responsibilities for directing twenty to thirty Bargaining Unit and clerical employees. In 1977, appointed to present position as Administrative Supervisor for the Perry Plant Department. Reports directly to the Plant Manager and is responsible for supervising the activities of all department administrative, clerical, and training personnel.

1961 - 1967: United States Army Reserve

Records Specialist with duties dealing primarily with Personnel and Payroll Administration.

Professional Membership:

American Nuclear Society

TABLE 13.1-3 (Contiued)

RESUME NO. 19

Name: Thomas E. Mahon, Security Supervisor

Formal Education and Training:

Associate-Degree Law Enforcement, Cuyahoga Community College, 1974
Police Community Relations, Michigan State University, 1963
Urban Guerrilla Warfare, F.B.I. Washington, D.C., 1971
National Symposium on Terrorism, F.B.I. Training Academy
Quantico, Virginia, 1973
Ohio Organized Crime - Law Enforcement Training Conference
Columbus, 1973
Dignitary Protection, U.S. Secret Service School, 1976
Terrorism Seminar, F.B.I. Academy, Quantico, Virginia, 1977
Workshop on Terrorism and Dignitary Protection, Illinois State Police,
Springfield, Illinois, 1977

Experience:

1979 - Present: The Cleveland Electric Illuminating Company

Joined CEI in 1979 as Security Supervisor in the Perry Plant Department and is presently involved in the development and implementation of the Perry Plant Security Plan. Reports directly to the Plant Manager and is responsible for all aspects of Plant security.

1962 - 1979: Cleveland Police Force

Progressed from Patrolman to Detective to Sergeant in the period from 1962 to 1971. In 1971, promoted to Lieutenant, Officer in charge of the Headquarters Intelligence Unit. Supervised staff of 15 detectives and 2 sergeants with responsibility for all special investigations including terrorist activities and racial and religious conflicts.

1960 - 1961: General Acceptance Corporation

Management Trainee

1957 - 1960: U.S. Air Force

Radar Operator

Professional Memberships:

Crime Clinic, Inc.
American Society of Industrial Security
American Nuclear Society

TABLE 13.1-3 (Continued)

RESUME NO. 20

Name: Terry K. Boyer, Shift Supervisor

Formal Education and Training:

Associate Degree - Electronics Engineering, Franklin University, 1965
Electronics Technician "A" School, U.S. Navy, 1966
Submarine School, U.S. Navy, 1968
Nuclear Power Training, U.S. Navy, 1968-1969
Electronics Technicians "B" School, U.S. Navy, 1972
Instructor Training School, U.S. Navy, 1972
Twenty-Week Academic Program for Nuclear Power Plant Personnel, (General Physics Corporation), 1979
Five-Week Dresden Nuclear Plant Technology (G. E.), 1979
Ten-Week Operators Training Course, Dresden Simulator (G. E.), 1979

Experience:

1974 - Present: The Cleveland Electric Illuminating Company

Joined CEI as an Operations Engineering Assistant assigned to Eastlake Plant (fossil-fired plant) and qualified in all aspects of plant operation. In 1976, promoted to Relief Plant Watch Engineer and served in that capacity at Eastlake Plant until transfer to the Perry Plant in 1978. Qualified as SRO at Dresden Simulator and promoted to Shift Supervisor in 1979. Reports directly to the General Supervisor, Operations.

1965- 1974: U.S. Navy

Electronics Technician - qualified as Reactor Operator and Reactor Technician on S5W class submarine; 2 years as Instructor at Submarine School in Advanced Electronics Section.

TABLE 13.1-3 (Continued)

RESUME NO. 21

Name: Allen J. Okorn, Shift Supervisor

Formal Education and Training:

Electronics SChool, (U.S. Navy), 1970
Electricians Mate School, (U.S. Navy), 1970
Nuclear Power Training, (U.S. Navy), 1971
Nuclear Prototype Training, (U.S. Navy), 1972
One-Week Research Reactor Training, (Memphis State University), 1977
Sixteen-hours Fire Ground Command Principles, Lakeland Community College, 1978
One-Week Fire Protection for Nuclear Power Plants, National Loss Control Service Corp., 1978
Fire Safety Training (Ohio Fire Academy), 1978
Associate Degree-Industrial Engineering, Kent State University, 1978
Associate Degree-Mechanical Engineering, Kent State University, 1979
Twenty-Week Academic Program for Nuclear Power Plant Personnel (General Physics Corporation), 1979
Five-Week Dresden Nuclear Plant Technology, (GE), 1979
Ten-Week Operators Training Course, Dresden Simulator (GE), 1979

Experience:

1976 - Present: The Cleveland Electric Illuminating Company

Joined CEI as an Operations Engineering Assistant - Initially assigned to Lakeshore Plant (fossil-fired plant) and qualified in all aspects of plant operation. In 1977, assigned to the Perry Plant Department. Activities included extensive involvement in Plant Fire Protection requirements including State Certification as Trade and Industrial Fire Instructor. Also assisted in initial synchronization of Davis-Besse Nuclear Power Station and preparation of Perry Plant system descriptions and operating procedures. In 1979, qualified as SRO at Dresden Simulator and promoted to present position as Shift Supervisor. Reports directly to the General Supervisor, Operations.

1970 - 1976: U.S. Navy

Leading Petty Officer of the Electrical Division. Qualified as Electrical Operator and Engineering Watch Supervisor.

TABLE 13.1-3 (Continued)

RESUME NO. 22

Name: Kenneth F. Russell, Shift Supervisor

Formal Education and Training:

Electronics Technician School, U.S. Navy, 1968
Nuclear Power Training, U.S. Navy, 1970
Associate Degree-Electrical Technology, Lakeland Community College, 1979
Twenty-Week Academic Program for Nuclear Power Plant Personnel (General Physics Corporation), 1979
Five-Week Dresden Nuclear Plant Technology (GE), 1979
Ten-Week Operator's Training Course, Dresden Simulator (GE), 1979

Experience:

1975 - Present: The Cleveland Electric Illuminating Company

Joined CEI as an Operations Engineering Assistant - initially assigned to Eastlake Plant (fossil-fired plant) and qualified in all aspects of plant operation. In 1976, assigned to the Perry Plant Department. Activities included providing input to the Nuclear Engineering Department on the design of various Plant systems and preparing written system descriptions and operating procedures. In 1979, qualified as SRO at Dresden Simulator and promoted to present position as Shift Supervisor. Reports directly to General Supervisor, Operations.

1968 - 1975: U.S. Navy

Electronics Technician - qualified as Reactor Operator, Reactor Technician, Electrical Operator and Shutdown Reactor Operator. Duties included the performance of preventive and corrective maintenance on the reactor control equipment and scheduling and supervising the performance of the maintenance by the rest of the division.

TABLE 13.1-3 (Continued)

RESUME NO. 23

Name: Michael L. Wesley, Shift Supervisor

Formal Education and Training:

Electronics Technician School, U.S. Navy, 1970
Nuclear Power Training, U.S. Navy, 1972
Twenty-Week Academic Program for Nuclear Power Plant Personnel (General Physics Corporation), 1979
Ten-Week Operator's Training Course, Dresden Simulator (GE), 1979

Experience:

1976 - Present: The Cleveland Electric Illuminating Company

Joined CEI as an Operations Engineering Assistant - Initially assigned to Eastlake Plant (fossil-fired plant) and qualified in all aspects of plant operation. In 1976, assigned to the Perry Plant Department. Activities included providing input to the Nuclear Engineering Department on the design of various Plant systems and preparing written system descriptions and procedures. In 1979, qualified as SRO at Dresden Simulator and promoted to present position as Shift Supervisor. Reports directly to the General Supervisor, Operations.

1970 - 1976: U.S. Navy

Electronics Technician - qualified as Reactor Operator, Reactor Technician, Electrical Operator and Shutdown Reactor Operator. Duties included the performance of preventive and corrective maintenance on the reactor control equipment, maintaining all records for the reactor division and supervision of training for junior personnel.

TABLE 13.1-3 (Continued)

RESUME NO. 24

Name: Position Currently Unfilled, Training Supervisor

TABLE 13.1-3 (Continued)

RESUME NO. 25

Name: James A. Latimer, Training Coordinator

Formal Education and Training:

Gannon College, Erie, Pennsylvania, 1953-1954
Lakeland Community College - Business Administration, 1976-1979
(No Degree)
Submarine School, U.S. Navy, 1954
Electronics Technician School, U.S. Navy, 1956
Nuclear Power Training Program, U.S. Navy, 1957-1958
Instructor Training, U.S. Navy, 1970
Three-Week BWR Design Orientation Course (GE), 1975
Twenty-Week Academic Program for Nuclear Power Plant Personnel
(General Physics Corporation), 1979

Experience:

1974 - Present: The Cleveland Electric Illuminating Company

Joined CEI in 1974 as Relief Plant Watch Engineer - Assigned to the Eastlake Plant (fossil-fired plant) for three months qualifying as Electrical Operator. Named Perry Plant Training Coordinator in 1975 and reports to the Administrative Supervisor. Responsible for the development and implementation of the Perry Plant Training Program.

1954 - 1974: United States Navy

Electronics Technician - Qualified as Reactor Operator and Engineering Watch Supervisor. Duties included six years as Reactor Controls Division Leading Petty Officer, three years as Training Coordinator at a Nuclear Power Prototype and two years as Instructor at Submarine School.

Professional Membership:

American Nuclear Society

TABLE 13.1-3 (Continued)

RESUME NO. 26

Name: Martha E. Takacs, Chemistry Supervisor

Formal Education and Training:

Bachelor of Science Degree in Chemistry, Cleveland State University, 1970
Three-Week BWR Design Orientation Course (GE), 1976
Radiochemistry Course (Hiedelberg College), 1977
Twelve-Week BWR Chemistry Couse (GE), 1978

Experience:

1970 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Junior Chemist assigned to the Chemical Engineering Unit responsible for chemical and trace metal analysis on water and waste water systems. Set up program for monitoring waste water to conform to Ohio Environmental Protection Agency Standards for all fossil plants and developed programs to comply with National Polution Discharge Elimination Standards. Assigned to Perry Plant Department in 1977 as Chemistry Supervisor and reports directly to the Radiation Protection Engineer. Responsible for development of chemical procedures, ordering laboratory equipment and training of technicians.

Professional Memberships:

American Chemical Society
Cleveland Engineering Society
American Nuclear Society

TABLE 13.1-3 (Continued)

RESUME NO. 27

Name: James E. Bontempo, Health Physics Supervisor

Formal Education and Training:

Associate Degree, Pre-Engineering, Miami-Dade Community College, 1977
Engineer Reactors Group Operator and Helath Physics Speciality,
One year course U.S. Army, 1964

Experience:

January 1980 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Health Physics Supervisor, Perry Nuclear Power Plant. Reports directly to the Radiation Protection Engineer and is responsible for the development of the radiation protection program.

1977 - 1980: Houston Lighting and Power Company

1977, Station Health Physicist, South Texas Project. In 1979, assigned as Station Helath Physicist, Allens Creek Project, assisted in the development of a Radiation Protection Program for nuclear projects.

1974 - 1976: Florida Power & Light Company

1974, Health Physics Administrative Assistant, Turkey Point Plant. In 1976, promoted to Health Physics Shift Supervisor, responsible for radiological surveys, control of personnel exposure and shipping and receiving radioactive materials.

1968 - 1974: Ohio State University

Radiation Safety Officer providing radiological health services, maintaining environmental surveillance program and ensuring compliance with Nuclear Regualtory Commission regulations.

1965 - 1968: U.S. Army

1965, - Plant Chemistry Instructor, Nuclear Power Plant Operator School, Fort Belvoir, Virginia. 1966, Plant Chemistry Specialist, Naval Nuclear Power Plant, McMurdo Sound, Antarctica. 1967, Plant Operator, Nuclear Power Plant, Fort Belvoir, Virginia.

Professional Memberships:

National Health Physics Society
Health Physics Society
American Nuclear Society

TABLE 13.1-3 (Continued)

RESUME NO. 28

Name: Jimmy W. Leonard, Radwaste Supervisor

Formal Education and Training:

Machinist Mate School, U.S. Navy, 1967
Nuclear Power Training, U.S. Navy, 1968
Engineering Laboratory Technician School, U.S. Navy, 1969
Instructor Training School, U.S. Navy, 1970
Associate Degree, Applied Science, Lakeland Community College, 1979

Experience:

1975 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Operations Engineering Assistant assigned to Chemical Engineering Unit. Duties included waste water sampling, demineralizer testing and routine platn testing and sampling. Also involved in special thermal pollution studies at all plants and a program to conform to National Pollution Discharge Elimination Program. In 1976, transferred to the Perry Plant Department and in 1978 designated as Radwaste Supervisor. Reports directly to the Radiation Protection Engineer and is responsible for all radwaste activities.

1967 - 1974: U.S. Navy

Served as a Machinist Mate responsible for maintenance of mechanical systems, chemical controls for both primary and secondary plant and routine and emergency health physics coverage. Assignments included one tour on a S5W submarine and one tour as Radiochemistry Instructor at the Naval Prototype at National Reactor Testing Station.

Professional Membership:

American Nuclear Society

TABLE 13.1-3 (Continued)

RESUME NO. 29

Name: William R. Kanda, Jr., Instrument and Control Supervisor

Formal Education and Training:

Bachelor of Science Degree in Electrical Engineering, University of Detroit, 1972
Master of Arts Degree in Managerial Economics, Case-Western Reserve University, 1976
Three-Week Nuclear Technology Course for Power Plant Engineers (General Physics Corporation), 1975
Three-Week BWR Design Orientation Course (GE), 1976
Three-Week Pneumatic Instrumentation Course (Bailey Controls), 1976
Six-Week Process Instrumentation Course (GE), 1977
Five-Week Nuclear Instrumentation Course (GE), 1977
Three-Week Recirculation Flow Control Course (GE), 1978
Four-Week Rod Control and Information Course (GE), 1978
Three-Week Feedwater Control Course (GE), 1979
Twenty-Week Academic Program for Nuclear Power Plant Personnel (General Physics Corporation), 1979

Experience:

1973 - Present: The Cleveland Electric Illuminating Company

Joined CEI as an Junior Operations Engineer and assigned as Field Engineer responsible for plant operating computers, microwave and communications systems. In 1976 transferred to Perry Plant Department as Associate Operations Engineer. Duties included review of Instrumentation and Plant Systems. Also spent three months at the Davis-Besse Nuclear Power Plant serving as a preoperational Test Leader. Appointed to present position as Instrument and Control Supervisor in 1978. Reports to the Plant Technical Engineer and is responsible for instrument and control activities including design review and training of technicians.

1971 - 1973: Wright Patterson Air Force Base

Engineer - Testing communications transponders

1969 - 1971: Park-Ohio Industries, Tocco Division

Co-op Student - Research and Development Department

Professional Memberships:

American Nuclear Society
Cleveland Engineering Society
Registered Engineer-in-Training, State of Ohio

TABLE 13.1-3 (Continued)

RESUME NO. 30

Name: Michael H. Minns, Reactor Engineer

Formal Education and Training:

Bachelor of Science Degree in Nuclear Engineering, University of Michigan, 1972
Master of Science Degree in Nuclear Engineering, University of Michigan, 1975
Three-Week BWR Design Orientation Course (GE), 1976
Six-Week Station Nuclear Engineering Course (GE), 1978
Three-Week Fuel Management Course, Nuclear Associates, Inc., 1978

Experience:

1975 - Present: The Cleveland Electric Illuminating Company

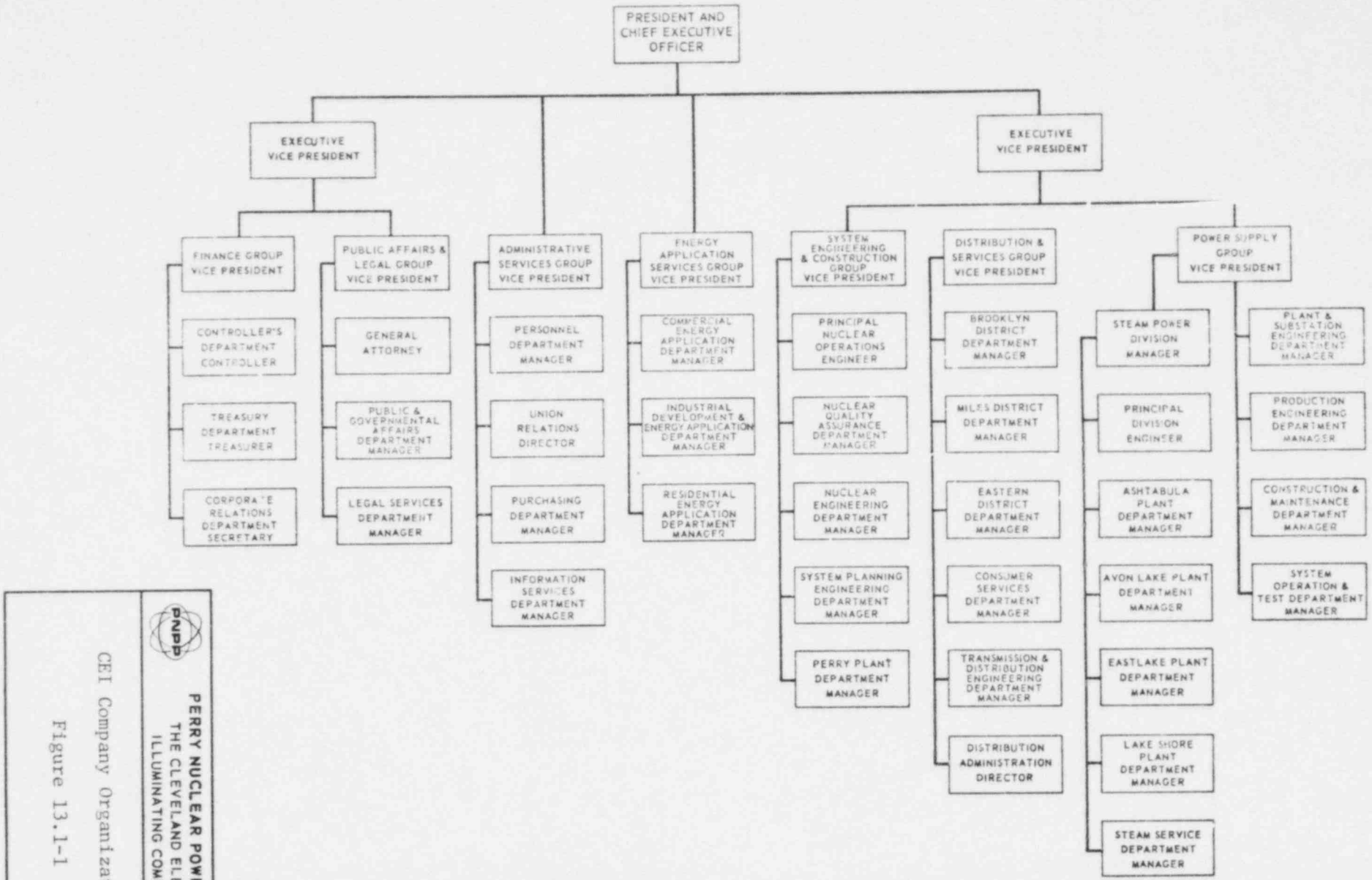
Joined CEI as Operations Engineer and assigned to development of reactor engineering procedures and fuel accountability procedures. Named to present position of Reactor Engineer in 1978. Reports directly to the Plant Technical Engineer and is responsible for all procedures and contracts concerned with fuel.

1972 - 1975: University of Michigan

Employed at the Ford Nuclear Reactor, qualified RO and SRO in 1973. Duties included working as Shift Supervisor responsible for reactor safety, loading of smaples for irradiation and assisting in maintenance program for the reactor.

Professional Memberships:

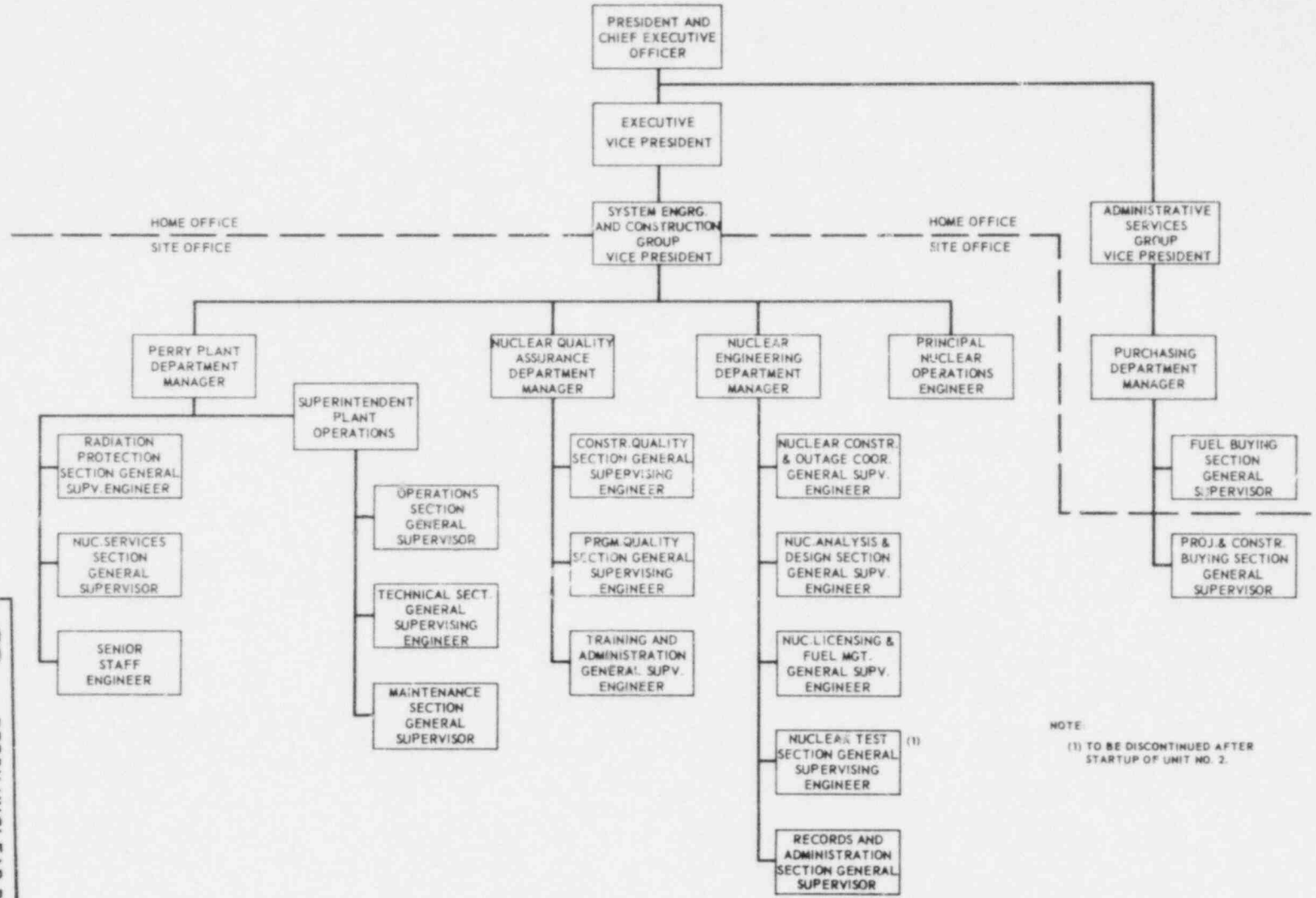
American Nuclear Society
Registered Professional Engineer, State of Ohio



PERRY NUCLEAR POWER PLANT
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

CEI Company Organization

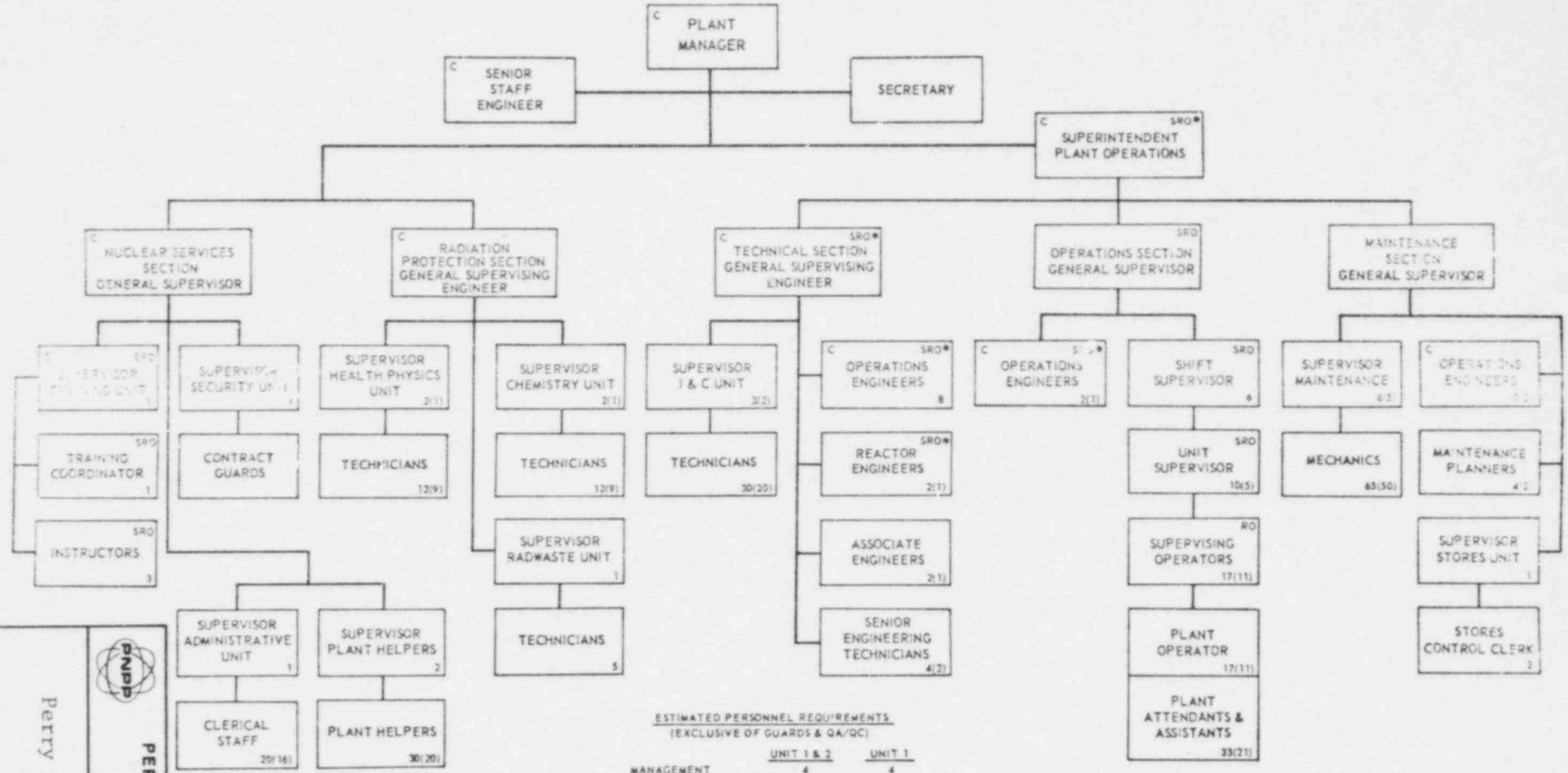
Figure 13.1-1



PERRY NUCLEAR POWER PLANT
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

Project Organization

Figure 13.1-2



LEGEND:

C = COLLEGE GRADUAGE
SRO = SENIOR RX OPERATOR LICENSE
RO = REACTOR OPERATOR LICENSE
* = LICENSE DESIRABLE
( ) = PARENTHESIS INDICATE THE NUMBER OF PERSONNEL FOR UNIT 1 ONLY. NUMBERS OUTSIDE PARENTHESIS ARE MANNING LEVELS FOR TWO-UNIT OPERATION IF DIFFERENT FROM ONE-UNIT OPERATION.

ESTIMATED PERSONNEL REQUIREMENTS
(EXCLUSIVE OF GUARDS & QA/QC)

	UNIT 1 & 2	UNIT 1
MANAGEMENT	4	4
MAINTENANCE	82	63
OPERATIONS	86	56
TECHNICAL	50	35
RAD. PROTECTION	35	27
SERVICES	54	40
TRAINING	5	5
SECURITY	1	1
TOTAL	317	231

PERRY NUCLEAR POWER PLANT
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
PNPP

Perry Nuclear Power Plant
Organization
Figure 13.1-3

13.2 TRAINING PROGRAM

13.2.1 TRAINING PROGRAM

A training program for the Perry Nuclear Power Plant (PNPP) has been implemented to develop and maintain an organization fully qualified to operate and maintain the plant in a safe and efficient manner. The initial and requalification n programs are intended to meet the requirements of 10 CFM 55 and are based on the individual employee's level of education, experience and skills as well as the level of assigned responsibility and intended position. Figure 13.2-1 indicates the implementing schedule as related to preoperational testing and initial fuel load. The course codes utilized in Figure 13.2-1 are listed below in parenthesis after the course title.

The Plant Manager is responsible for the training program with responsibility for administering the program and monitoring its effectiveness delegated to the Training Supervisor.

13.2.1.1 Program Description

The program description which follows is divided into three sections relating to the three categories of personnel to be trained; licensed personnel, non-licensed technical personnel and general employees. Although the program is specifically written for PNPP Unit 1 personnel, Unit 2 is identical in design and the program outlined below will be directly applied to Unit 2 personnel. Because of this similarity, Unit 1 personnel who may be reassigned to Unit 2 will not repeat the training listed below.

CEI intends to request an amendment for Unit 1 licensed personnel meeting the requirements of 10CFR 55, for Unit 2. The duration of listed courses are typical, but some may vary depending on the intensity of the course instruction and needs of the students.

13.2.2 LICENSED PERSONNEL

13.2.2.1 Initial Training

Persons seeking operator and senior operator licenses receive extensive classroom, simulator, and on-the-job training. The following describes the licensed operator training program in more detail.

13.2.2.1.1 Basic Nuclear Course (S1, S2)

This eighteen week classroom course has been taught by personnel from General Physics Corporation of Columbia, Maryland, and subsequently has been used for self study. The course included classroom lectures and test reactor operating experience. The lecture subjects include Mathematics, Physics, Electricity, Fluids, Nuclear Physics, Heat and Thermodynamics, Reactor Physics, Instrumentation, Chemistry and Materials, Health Physics and Reactor Operations.

The course includes operations training on Research Reactors at Memphis State University or the University of Wisconsin.

This course will be presented to cold license candidates who have had little nuclear experience. Where cold license candidates have previous nuclear experience and training, this written material will be used as a review with examinations administered to ensure adequate knowledge. Personnel with a Bachelor or advanced degree in the Nuclear Sciences and those who have been previously licensed (i.e., SRO, RO, Navy EOOW) will not be required to attend this course.

13.2.2.1.2 Dresden BWR Technology (B6)

This is a five-week classroom course in BWR Technology taught by General Electric Company (GE) training instructors. The course directly preceded the operator training course (A1) at the BWR training center in Morris, Illinois.

The course provides the license candidate with a sound knowledge of the Dresden 2 plant and allows him to integrate smoothly into BWR operator training. The BWR Technology Course chosen for the initial operations personnel is specific to the Dresden 2 Nuclear Power Plant. The course material includes, but is not limited to, classroom lectures on the Dresden Plant components and systems, core design, thermal hydraulics, and nuclear instrumentation design and operation.

13.2.2.1.3 BWR Operator Training (A1)

The purpose of this course is to fulfill the eligibility requirements necessary to qualify an individual for the NRC Senior Reactor Operator (SRO) or Reactor Operator (RO) license examination and to provide the opportunity to develop the skill and understanding necessary to operate a BWR power plant. The course is approximately ten weeks in length and includes guided Plant tours and control room exercises which simulate BWR plant operation. The course is conducted by GE Training instructors at a GE BWR Training Center.

13.2.2.1.4 BWR Observation Training (B7)

This four-week period involves on-site observation of an operating BWR plant. The observation training is provided for cold license applicants without previous operating reactor experience to acquaint them with procedures, problems, and practices used in operating a BWR power plant. This training permits trainees to observe and, if possible, participate in plant evolutions and activities such as startup, shutdown, surveillance testing and plant maintenance. Observation training has been conducted at Northeast Utilities' Millstone Unit 1 Nuclear Plant and Commonwealth Edison's Dresden Unit under the guidance of a General Electric Training Engineer. Future observation training will be conducted at an operating BWR unit, as well.

The observation training requirement for personnel with previous operating experience in a nuclear power plant may be fulfilled by visits to operating BWR plants.

13.2.2.1.5 Perry Technology Course (B8)

This course, which is currently five weeks in length, consists of classroom instruction on PNPP components, core design, thermal hydraulics, plant control and protection systems, process and nuclear instrumentation and system operations. The course includes both NSSS and BOP systems. It will be taught initially by qualified General Electric Company instructors at the Perry Plant site.

13.2.2.1.6 Onsite Training

This training phase is approximately one year in length and consists of on-the-job training at the Perry Plant site during the initial test program. It involves classroom lectures, operations during plant startup, and preparation of plant operating procedures. Formal system lectures are supplemented by construction site walk-throughs to observe systems and components during installation. During this period, PNPP Operations Section personnel will prepare plant system and integrated operating procedures and administrative procedures affecting operations.

Lectures during this phase will refresh the license candidate's knowledge of reactor fundamentals, radiation protection, heat transfer, fluid flow, thermodynamics, plant transients, and plant systems as well as updating the license candidate on procedures, plant design changes, technical specifications, and regulations with which the operator or senior operator must comply. Operators will be trained in the use of installed plant systems to monitor and control accidents in which severe core damage may result. A five-day simulator refresher course will be scheduled prior to the NRC examination.

13.2.2.1.7 Contingency Training

The training plans, as outlined, present a continuous training program for license candidates from initial entry to the NRC license examination phase. Recognizing that a significant change with respect to fuel load date could result in a gap in training, this training plan provides the means for achieving the desired continuity.

In the event of a schedule change, initial license personnel will continue to participate in the on-site training program. Classroom lectures and walk-throughs conducted in the same manner, and covering such material as outlined in Section 13.2.2.1.6 will be implemented to ensure operator knowledge is maintained and updated.

This training phase will continue until approximately five month's before scheduled fuel load. At that time, a license preparation course, including Simulator Refresher Training will be scheduled.

13.2.2.2 Operator Requalification Program

The operator requalification program will include preplanned lectures and seminars and may be supplemented by the selective use of films videotapes and individual study materials. The use of films, videotapes and individual study materials will be limited to less than one-half of the requalification lecture program. The preplanned lectures and seminars will be normally presented by a licensed member of the training staff or a designated qualified member of the operating staff receiving the training. Procedures will be implemented to ensure that operating experiences are related to the PNPP staff during the requalification program. If plant manipulations required in 10CFR 55, Appendix A, Paragraph 3.a, are not accomplished by normal plant evolutions, a simulator may be used to satisfy the requirements mentioned above.

The Perry Nuclear Power Plant anticipates a five shift cycle. During each shift cycle, each operating shift will be available for off-the-job retraining for a period of four days. With this approach to training, the preplanned lectures are presented five times over the period of a shift cycle. Since the preplanned lectures are presented during normal working hours on weekdays, the retraining program provides ample flexibility for non-operating licensed personnel to attend required lectures. Individual operators who miss an assigned lecture for one reason or another or individual operators who need additional attention can be re-scheduled to attend specific lectures on a timely basis without affecting the established sequence of training. Seminars, which include on-the-job discussions and simulation of emergency and abnormal conditions, will be conducted through each shift cycle for operating personnel.

The established schedule of training during each shift cycle provides an appropriate means of keeping operating personnel knowledgeable of current happenings and developments and provides them an opportunity to discuss these developments with knowledgeable staff personnel on a timely basis.

13.2.2.2.1 Annual Examination

A written examination will be administered annually to each licensed operator to provide a basis for determining the content of the preplanned lecture series for the subsequent retraining year. The examination will include the following subjects:

(1) Provisions of the Plant License
(2) Technical Specifications
(3) Theory and Principles of Reactor Operations
(4) General and Specific Plant Operating Characteristics
(5) Plant Instrumentation and Control Systems
(6) Plant Protection Systems
(7) Integrated, Abnormal and Emergency Operating Procedures

(8) Engineered Safety Systems

(9) Radiation Control and Safety

(10) Applicable Portions of Title 10, Code of Federal Regulations

A licensed operator scoring above 80% in all sections of the annual requalification examination shall not be required to attend further requalification lectures until the next annual requalification examination. Other licensed operators may be excused from lectures in subjects for which they scored above 80%, but shall be required to attend lectures on all other topics.

The licensed individual who prepares and grades the annual examination need not take the examination. This exclusion shall extend to only one individual.

13.2.2.2.2 Preplanned Lecture/Seminar Series

All licensed shift operating personnel will attend a minimum of six preplanned lectures each year, during the two-year term of their license. The lecture series will include instructions on items mentioned in Item 13.2.2.2.1. Periodic quizzes will be conducted during the preplanned lecture series to evaluate the effectiveness of the retraining lectures. These quizzes will be completed by the senior reactor operators and reactor operators who are required to attend the preplanned lectures. A passing grade of 80% will be required; if an operator or senior operator scores below 80%, that operator or senior operator will be required to repeat the specific lecture covered by the quiz. A failure of a quiz will not be considered as reason to remove a licensed operator from his normal licensed duties.

Seminars or discussion periods may be scheduled for both on-shift and non-operating personnel.

The lecture/seminar series will also cover the following topics:

(1) Review of significant facility design, procedural and licensing changes.

(2) Detailed review of integrated operating procedures.

(3) Review of operating and emergency procedures.

(4) Review of reportable occurrences and unusual events.

(5) Review of administrative matters of significance to operating personnel.

(6) Preview of refueling outage activities.

13.2.2.2.3 On-the-Job Evaluations

Each operating shift will conduct drill walk-throughs periodically while on shift. The drill walk-throughs will be preplanned and evaluated by a licensed senior reactor operator on shift. These walk-throughs will be credited to the lectures required of the operators. In addition, each licensed operator and senior reactor operator will participate in designated drills with a minimum of two drills per year for the purpose of evaluating the individual's operating knowledge and performance ability including an evaluation of actions taken during simulated abnormal or emergency conditions. The drill sessions may be conducted on an individual or on a shift crew basis and will be evaluated by a qualified licensed senior reactor operator. Reactivity control manipulations may be used for drill purposes.

Oral examinations of licensed operators by a licensed senior reactor operator may be conducted to satisfy a portion of the on-the-job evaluation and to reinforce weak areas for individuals.

It is anticipated that an appropriate simulator will be used for operator evualtion to satisfy additional training requirements. This may preclude the on-shift drill requirement for operator evaluation.

13.2.2.2.4 Reactivity Control Manipulations

Each licensed reactor opeator and senior reactor operator will perform or supervise, when applicable, at least ten reactivity control manipulations during each two-year term of his license in accordance to 10CFR 55, Appendix A, 3.a. The reactivity control manipulations may be a combination of the evolutions listed below.

(1) Plant or reactor startup to include a range such that reactivity feedback from heat addition is noticeable.

(2) Orderly Plant Shutdown.

(3) Control rod sequence change.

(4) Shutdown margin checks.

(5) Control rod scram insertion time test.

(6) Any reactor power change of 10% or greater, including testing of equipment where load changes are performed with control rods, manual control of turbine load or where the recirculation system is in flow control.

(7) Plant and reactor operation that involves emergency or transient procedures when powerchanges greater than 10%.

(8) Refueling operation where fuel is moved into the core.

Each operator may take credit for no more than three of each type of manipualtion to achieve the ten required.

In the event that a licensed operator is not involved in required reactivitiy control manipulations on the plant, a simulator may be used to satisfy requirements listed above.

Each licensed operator will be required to record his own reactivity manipulations at the end of each shift. A "Reactivity Manipulation Log" will be provided in the control room for this purpose. This log will be reviewed at least quarterly by the Training Coordinator.

13.2.2.2.5 Accelerated Requalification Program

Each licensed operator or senior operator who does not meet the requirements of the requalification program must complete an accelerated requalification program tailored to the operator's individual needs.

This program will be developed by the Training Supervisor and reviewed by the General Supervisor, Operations Section before implementation. At a minimum, the program will include documentation that the licensed operator is aware of all plant design changes, modifications to license and significant reportable occurrences that have occurred during his absence. A written examination similar to the annual written examination will be administered. The licensed operator must score of at least 80 percent on this examination. In addition, the Accelerated Requalification Program will include spending a minimum of 8 hours, under instruction, in the control room observing the operation of the plant and conclude with an oral examination verifying that the individual is thoroughly knowledgeable of the existing status of the plant systems and controls.

A licensed operator will be assigned an individual accelerated requalification program if he scores a grade of less than 80 percent overall or 70 percent in any category on his annual examination or if absent from the plant for a duration of four consecutive months.

While participating in an accelerated requalification program, licensed operators will be prohibited from performing unsupervised licensed activities, but will not be excused from other requalification program activities.

13.2.2.2.6 Records and Audit

The Training Supervisor is responsible for maintaining all records of the requalification program to document participation and grades of all licensed operators and senior operators. Copies of all written examinations administered, and answers to the examinations will be maintained until they have been reviewed by the Operator Licensing Branch of the NRC. Based on the results of the annual examination the Training Supervisor will have prepared an outline of the preplanned lecture series for the year including a general description of each anticipated lecture, duration of each lecture and a listing of who must attend each lecture.

A record of individual participation in the preplanned lecture series, seminars, on-the-job training, accelerated requalification program, reactivity manipulations and simulator training will be maintained. These records will include dates, duration and a general description of each event. In addition, a record of review of procedure changes, procedure review, facility design changes and facility license changes will be maintained.

The Training Supervisor will prepare a brief summary of the status of the requalification program every three months. This summary will include a general progress report and details of existing or potential problems. Upon review by the Plant Manager and General Supervisor, operations Section, corrective action to problem areas will be initiated as required.

13.2.3 TRAINING PROGRAMS FOR NON-LICENSED TECHNICAL PERSONNEL

Selected technical, professional, and supervisory personnel are provided the necessary training to satisfy the applicable requirements of their particular position. This is accomplished by assigning individuals to specific courses of instruction (Figure 13.2-1) that best fit their education, previous experience, and intended position. In addition to the specific courses described in the following subsections, technical and professional staff personnel are scheduled to attend portions of the Licensed Personnel Training Programs to enable them to become familiary with Perry Plant operation.

The courses listed are not intended to be the total training program. Additional training is provided through industry seminars, technical society courses, university courses, etc.

13.2.3.1 Station Nuclear Engineering (C2)

This five-week course is designed to train selected engineers and plant supervisors in the techniques of fuel calculations and management, startup testing, and assessment of nuclear performance. The course is taught by the General Electric Company at San Jose, California, and consists of lectures and studies in fuel loading, isotopic content, cycle length predictions, plant discharge requirements, and procedures for shipping spent fuel. Reactor Engineers are required to attend this course.

13.2.3.2 BWR Chemistry (C3)

This twelve-week course is designed to prepare and familiarize the plant chemistry staff with the radiochemical and analytical chemistry techiques of liquids and gases associated with operation of BWRs. The course includes BWR water chemistry, waste disposal, effluent monitoring, process monitoring, and laboratory instrument calibrations and studies in laboratory work. Compliance with and interpretation of the chemical and radiochemical aspects of the techical specifications, licenses, and plant warranties are also covered. Additionall, the course prepares the students for training their own laboratory technicians in analytical techniques, use of equipment, and procedures required to monitor the chemical aspects of BWR operation. Experienced GE startup chemistry instructors teach this course at the Vallecitos Nuclear Center. The plant chemist is required to attend this course.

13.2.3.3 BWR Maintenance (C6)

This course is designed to train responsible maintenance supervisors and senior mechanics in the specialized tasks of control rod drive and hydraulic control unit maintenance. The instructor is a GE Training Engineer thoroughly versed and experienced in actual component maintenance. Heavy emphasis is placed on student participation and each man is required to disassemble and assemble actual components using the proper tools and maintenance procedures. Selected maintenance personnel are designated to attend this course.

13.2.3.4 Nuclear Instrumentation (C4)

This course is designed to train instrument technicians and supervisors in the maintenance techniques of BWR nuclear instrumentation and controls. The course consists of classroom lecture integrated with laboratory work and is currently given in two six-week segments. Experienced GE nuclear instrumentation startup and design instructors provide the instruction for this course. The Instrument and Control (I&C) Supervisor, and selected technicians are scheduled to attend this course.

13.2.3.5 Process Instrumentation and Control (C5)

This four-week course is designed to train technicians and responsible supervisory personnel in the theory and application of process instrumentation and control systems used in BWR nuclear steam supply systems. The course consists of classroom training integrated with laboratory work and is taught by experienced GE instrumentation startup and design instructors. The I&C Supervisor, and selected I&C technicians are scheduled to attend this course.

13.2.3.6 Radiological Engineering (C1)

This course, currently 8-weeks long, is designed to train radiation protection personnel in establishing the radiation protection program. It is a course of instruction in radiation monitoring methods, monitoring of the environs, internal and external dosimetry, bioassay, applied radioanalyses, applied shielding design, radiation safety administration procedures and licensing and compliance administration. The course is taught by General Electric specialists. The Radiation Protection Engineer is scheduled to attend this course. Required attendance by other radiation protection personnel will be based on prior education and experience and specific job assignments.

13.2.3.7 Process Computer Training

This series of courses is intended to train a sufficient number of plant personnel on the use of the Honeywell 4400 computer. User Programming, RTMOS Analysis, SEER, and computer maintenance are among the courses taught by Honeywell training instructors in Phoenix, Arizona. Selected engineers and technicians will complete these Honeywell courses.

13.2.3.8 Vendor Schools

Selected plant technicians will attend various vendor schools on specialized equipment maintenance and troubleshooting techniques such as malfunction diagnosis and nondestructive evaluation.

13.2.3.9 Additional Training

Each Health Physics Technician will receive formal training at the PNPP site related to radiation protection to allow them to safely and efficiently carry out their assigned responsibilities in accordance with established policies and

procedures. The course is based on the PNPP Radiation Protection Manual and Radiation Protection Instructions and includes, but is not limited to, the following subject areas:

a. Radiation control

b. Contamination control

c. Airborne radioactivity control

d. Medical program

e. Radioactive waste disposal

f. Radioactive material shipment

g. Radiation protection forms, records, and reports

h. Emergency plan and instructions

In addition to the courses described previously, specific programs of instruction will be designed to fulfill the needs of a specific section. Program material will be developed as the training requirements of each individual are defined.

Plant technicians also receive extensive training through participation in the preoperational testing program and startup activities, establishment of labs and shops, and on-the-job training associated with their plant specialty.

13.2.3.10 Non-Licensed Personnel Refresher Training

All non-licensed personnel on the Perry Plant staff will receive refresher training, the extent of which will be based on individual assigned duties. At the minimum all employees will receive General Employee training annually. This

training will cover applicable instruction on security, emergency, fire protection and radiation protection and Plant Administrative Procedures.

Support personnel such as Instrumentation and Control technicians, Chemistry and Health Physics technicians and maintenance personnel will be upgraded and retrained in their expertise area on a continuing basis. Their retraining program will average four hours per month based on a two-year cycle. These personnel will be kept abreast of plant operations, design changes and license modifications through a regularly scheduled lecture series.

13.2.4 GENERAL EMPLOYEE TRAINING

Each full-time employee who has not received more intensive training in the subjects covered will attend an orientation course. The course will indoctrinate personnel concerning plant layout, controlled security and radiation protection areas. It will also briefly cover applicable sections of the security plan, emergency plan, fire protection, and radiation protection manuals. Temporary personnel, if periodically utilized, are also trained in the previous courses to the extent necessary to assure safe execution of their duties.

Each employee who will enter radiation areas and who has not received more intensive training will attend a radiation protection course or will be accompanied by a person who has passed the radiation protection course. This course will cover radiation theory, plant radiation exposure limits, exposure and contamination control, respiratory protection and safe radiological practices.

It is to be expected that through attrition, replacements will be required for the various positions in the plant organization. Each replacement employee will receive training commensurate with his previous education and experience and the duties he is to assume in the organization. The plant organization provides for lower level personnel to receive on-the-job training to help prepare them for promotion into positions of higher responsibility. This on-the-job training will be augmented with plant training

programs described above. Newly hired personnel will, as appropriate, be given on-the-job and formal classroom training comparable to that described for the respective position on the initial staff.

13.2.5 FIRE PROTECTION TRAINING

The primary purpose of fire protection training is to develop a group of plant employees knowledgeable in fire prevention, fire fighting techniques and equipment, first aid procedures, and emergency response who are trained and equipped to function as a team for the fighting of fires. The plant fire protection organization, consisting of a fire prevention staff, fire brigade and on-shift personnel, is intended to be self-sufficient with respect to fire fighting activities.

13.2.5.1 Fire Brigade Training

The fire brigade training program provides for classroom training, practice sessions and drills.

The initial fire brigade receives approximately 16 hours of classroom training in the fundamentals of fire fighting, fire prevention, fire protection equipment, fire brigade organization, hazard recognition, implementing procedures and individual responsibilities.

A periodic training program will be conducted for all designated brigade members and replacements, on a regularly scheduled basis in conjunction with operation periodic training. The periodic training program will be repeated on a two-year cycle and includes instruction on:

1. The plant fire brigade organization and plan of implementation, including individual responsibilities and specific response procedures.

2. Basic fire fighting principles such as the chemistry of fire, first aid and rescue procedures, forceable entry methods and salvage techniques.

3. Identification of the location of various fire fighting equipment throughout the plant, access and egress routes, latest plant modifications that affect fire protection and current fire fighting procedures.

4. The proper use of available fire fighting equipment including both permanent and portable systems such as deluge systems, detection and alarm systems, sprinklers, fire hoses, extinguishers, ladders, communication, lighting, ventilation and emergency breathing equipment.

5. Identification of the fire hazards and associated types of fires that could occur in the plant, probably locations and the correct methods of fighting each type of fire. Included are electrical fires, cable tray fires, flammable gas fires, flammable liquid fires, record file fires, and other ordinary combustible fires.

Fire brigade leaders will be provided additional training in directing and coordinating fire fighting activities. The NFPA Fire Protection Handbook, NRPA National Fire Codes and others are used as refernces for conducting all training activities. Classroom training is provided by qualified individuals knowledgeable and experienced in fire fighting and in using the types of equipment available in a nuclear plant. Members of the fire protection staff and fire brigade leaders are responsible for conducting this training.

Practice sessions are held for fire brigade members annually. These sessions will be utilized to provide instruction in the proper methods of fighting various types of fires and will include practical exercises in extinguishing actual fires. During these exercises, brigade members will don protective equipment including emergency breathing apparatus.

Fire drills are conducted in the plant so that the fire brigade can practice as a team. Drills are conducted at regular intervals, that will not exceed three months for each fire brigade.

The minimum number of fire brigade drills conducted within a three-month period, is equal to the number of operating shifts at the plant. At least one drill per year for each fire brigade is unannounced. Drills are preplanned to provide experience for each team in fighting fires in various areas of the plant with emphasis on safety-related areas containing significant hazards.

The drills are selected to simulate as realisticially as practical the size, type, and location of potential fires which could occur in the plant and to provide as much experience as possible in the use of the various fire fighting equipment available. Each drill is critiqued to evaluate the entire brigade response and how well the objectives were met. Fire alarm effectiveness response time, leaders direction of the effort, each individual members' response, selection, and placement and use of equipment, are assessed by the critique.

13.2.5.2 Fire Protection Staff Training

Training for the Fire Protection Staff members includes courses in design and maintenance of fire detection, suppression and extinguishing systems, fire prevention and manual firefighting techniques and procedures for plant personnel and the fire brigade.

13.2.5.3 On-Shift Personnel

All on-shift personnel will receive the same basic training and retraining as that received by the fire brigade. These on-shift personnel will be available and trained to assist or replace designated members of the fire brigade as necessary.

13.2.5.4 Off-Site Fire Department

Public fire department response is limited to assistance outside the restricted (protected) area or as additional manpower under the direct supervision and control of responsible plant personnel inside the restricted area.

Training sessions for these personnel will be available periodically to cover basic radiation principles, typical radiation hazards, precautions for fires involving radioactive materials, station layout, fire hydrant locations outside the restricted area, basic emergency plans and plant security procedures.

13.2.6 EVALUTION OF TRAINING

The Training Supervisor is responsible for implementing the overall plant staff training programs. To effectively evaluate these programs, inputs are needed from all levels. Students will submit to the Training Supervisor a course evaluation on completion of a training segment. Instructors will likewise submit to the Training Supervisor a class evaluation including comments and grades. The Training Supervisor will have all inputs collected and evaluate instruction and instructors on a periodic basis and prepare a quarterly training summary to the Plant Manager.

POSITION	TRAINING COMPLETED TO DATE	(9/80) FSAR SUBMITTAL							(5/83) FUEL LOAD					(5/84) UNIT 1 COMMERCIAL	
PLANT MANAGER	S1, S2, B7		B8	A1		X1							X4		
SUPERVISOR PLANT OPERATIONS			B8	A1		X1			A4	X2	X3		X4	X5	
OPERATIONS GENERAL SUPERVISOR	B6, A1*		B8	A1		X1			A4	X2	X3		X4	X5	
TECH.GENERAL SUPV.ENGINEER	C2		B8	A1		X1			A4	X2	X3		X4	X5	
REACTOR ENGINEER	C2		B8	A1		X1			A4	X2	X3		X4	X5	
TRAINING SUPERVISOR			B8	A1		X1			A4	X2	X3		X4	X5	
TRAINING COORDINATOR	S1		B8	A1		X1			A4	X2	X3		X4	X5	
TRAINING INSTRUCTORS			B8	A1		X1			A4	X2	X3		X4	X5	
I & C SUPERVISOR	S1, S2, C4, C5		B8	A1		X1			A4	X2	X3		X4	X5	
MAINTENANCE GENERAL SUPV.	S1, S2		B8	A1		X1							X4		
SHIFT SUPERVISOR	S1, S2, B6, B7, A1*		B8	A1		X1			A4	X2	X3		X4	X5	
UNIT SUPERVISOR	S1, S2, B6, B7, A1*		B8	A1		X1			A4	X2	X3		X4	X5	
SUPERVISING OPERATOR	S1, S2, B6, B7, A1*		B8	A1		X1			A4	X2	X3		X4	X5	
RAD.PROT.GEN.SUPV.ENGINEER	C1, C3														
CHEMIST	C3														
HEALTH PHYSICS SUPERVISOR	C1														
MAINTENANCE PERSONNEL						C6									
GENERAL EMPLOYEE									X6						
MONTHS BEFORE COMMERCIAL		48				36			24				12		0

COURSES

A1	SIMULATOR TRAINING
A4	SIMULATOR REFRESHER
B6	DRESDEN BWR TECHNOLOGY
B7	OBSERVATION TRAINING
B8	PERRY BWR TECHNOLOGY
C1	RADIOLOGICAL ENGINEERING
C2	STATION NUCLEAR ENGINEERING
C3	BWR CHEMISTRY
C4	NUCLEAR INSTRUMENTATION
C5	PROCESS INSTRUMENTATION
C6	RECIRCULATION FLOW CONTROL
C7	ROD CONTROL & INFORMATION
S1	BASIC NUCLEAR THEORY
S2	RESEARCH REACTOR
X1	ONSITE TRAINING (SYSTEMS PROCEDURES & STARTUP TESTING)
X2	EXAM PREP
X3	NRC EXAM
X4	PREOPERATIONAL TESTING
X5	REQUALIFICATION PROGRAM
X6	GENERAL EMPLOYEE

* OPERATORS CERTIFIED AT DRESDEN SIMULATOR WILL RECEIVE ADDITIONAL TRAINING ON PERRY SIMULATOR.

NOTES:

A. COURSES NOT IDENTIFIED BY TIME BOX HAVE NO SPECIFIC TIME TABLE
B. THIS SCHEDULE SUBJECT TO CHANGE
C. FUEL LOAD DATE UNIT 1 – MAY 1983
D. COMMERCIAL DATE UNIT 1 – MAY 1984
E. UNIT 2 FUEL LOAD DATE – MAY 1987

PERRY NUCLEAR POWER PLANT
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

Perry Nuclear Power Plant
Training Schedule

Figure 13.2-1

13.3 EMERGENCY PIANNING

A detailed emergency plan document describing CEI's plans for coping with emergency sitatuions is provided in Appendix 13A. The PNPP Emergency Plan's conformance to applicable codes, Regulatory Guides and standards is discussed in the plan.

The plan has as its objectives the protection of the health and safety of the public, including CEI employees, and the limitation of damage to facilities or property in the event of an accident occurring at Perry Nuclear Power Plant.

The Emergency Plan sets forth the plan objectives and the methods for achieving them. It describes the related emergency organization, including assignments of authority and responsibility. The plan provides for detecting and evaluating emergency conditions, establishing protective action levels and protective measures when such levels are exceeded, communications, post accident recovery and reentry, liaison with offsite support groups, including federal, state and local governmental authorities, document review and control, periodic emergency preparedness assessment, drills and training of the participating personnel.

The plan identifies the spectrum of accidents considered credible and provides that detailed procedures are prepared for dealing with them. It also provides the bases for actions to be taken in providing for decontamination, administering of first aid and for diagnosis and treatment of persons injured as a result of a nuclear incident occurring at the Perry Nuclear Power Plant.

Detailed implementing procedures for the Emergency Plan are prepared for accomplishing appropriate emergency functions at Perry Nuclear Power Plant.

13.4 REVIEW AND AUDIT

A program for reviews, including in-plant and independent reviews, is established to insure that all operational tests and foreseeable emergencies will be handled in accordance with written procedures which have been reviewed and approved by established authorities. This program provides for:

a. Review of significant proposed plant changes, tests and procedures.

b. Verification that reportable events, which require reporting to the NRC in writing within 24 hours, are promptly investigated and corrected in a manner which reduces the probability of recurrence of such events.

c. Detection of tends which may not be apparent to a day-to-day observer.

CEI utilizes a formal committee method, functioning at two levels, to provide for reviews. Reviews at the plant operating level are the responsibility of the Plant Operations Review Committee (PORC). Independent reviews are the responsibility of the Nuclear Safety Review Committee (NSRC) which is independent of direct responsibility for plant operations.

A program for audits of activities affecting plant safety during the operational phase is also established to verify that such activities are performed in accordance with Company policy and rules, approved operating procedures, license provisions and quality assurance requirements. Audits of plant operations will be administered and performed as discussed in FSAR Sections 16.6.5.2.h and 17.2.1B.

Guidance in the development of the review and audit programs was derived from USNRC Regulatory Guide 1.33, Revision 2, which endorses ANSI Standard N18.7-1976.

13.4.1 PLANT OPERATIONS REVIEW COMMITTEE

The Plant Operations Review Committee (PORC) is responsible for onsite plant reviews of PNPP safety-related operating activities. This committee shall be comprised of qualified, Perry Plant Department, mangement and technical personnel and shall be established and functional at least six months prior to initial fuel loading of Unit 1.

13.4.1.1 Written Character

The PORC shall be chartered to function in accordance with a written plant administrative procedure which delineates committee composition, responsibility and authority, subjects to be reviewed, reporting requirements and administrative controls within which the committee shall conduct business.

13.4.1.2 Committee Membership

The PORC shall be composed of six permanent members and an unspecified number of alternate members who have been recommended by their supervisors and approved by the Manager - Perry Plant Department. The PORC may perform its designated functions only if no less than four members are present, including either the Chairman or Vice-Chairman; and no more than two of the five are alternate members. Alternates may participate in PORC activities only in the absence of a permanent member. Permanent membership of the PORC shall consist of:

- Plant Department Manager (Chairman)
- Superintendent of Plant Operations (Vice-Chairman)
- Operations Section General Supervisor (Member)
- Maintenance Section General Supervisor (Member)
- Technical Section General Supervising Engineer (Member)
- Radiation Protection Section General Supervising Engineer (Member)

In the absence of a permanent member, an alternate member with qualifications similar to the absent permanent member shall be selected to act in behalf of the absent member, when feasible. The PORC may invite non-member individuals or alternate members to assist in presenting material for the committee's review. When this occurs, only the permanent members, and/or alternates designated to act in behalf of permanent members for the specific meeting, shall participate in the PORC review and evaluation process.

Should experience warrant the expansion of the PORC permanent membership, the Chairman may appoint additional personnel to serve as permanent members. Any expansion of PORC membership shall be in accordance with a written plant administrative procedure and shall not alter the minimum quorum or alternate requirements.

13.4.1.3 Meeting Frequency

The PORC shall meet as frequently as is necessary to provide a quoroum for timely review of matters related to nuclear safety, but shall meet no less than once per calendar quarter as convened by the chairman or his designated alternate. A quorum shall consist of at least a majority of the members or their designated alternatives, including the chairman.

13.4.1.4 Responsibility

Membership in the PORC carries with it primary responsibilities for each member, whether particpating in a formal meeting or as part of their individual job, to:

1. Provide advice to the Manager, Perry Plant Department on all matters related to nuclear safety.

2. Provide timely and continuing surveillance of operating activities to assist the Manager, Perry Plant Department in keeping abreast of general plant conditions and to verify that all operating activites are conducted safely and in conformance with established administrative controls.

3. Perform reviews periodically, and as situations demand, to evaluate plant operation and plan future activities.

4. Perform preliminary reviews, investigations and evaluations of those subjects requiring review by the Nuclear Safety Review Committee.

Additional PORC responsibilities are to:

1. Review safety-related plant administrative procedures and startup test procedures.

2. Review the results of preoperational and startup tests.

3. Review written safety evaluations of changes in the plant or procedures as described in the FSAR and tests or experiments not described in the FSAR which are conducted without prior NRC approval under the provisions of 10CFR 50.59a1. These reviews are performed to verify that such changes tests, or experiments do not involve a change in the Technical Specifications or an unreviewed safety question.

4. Review proposed changes in the plant or procedures and proposed tests or experiments which involve a change in the Technical Specifications or an unreviewed safety question. Proposals of this nature and results of the PORC review shall be referred to the Nuclear Safety Review Committee prior to implementation.

5. Review proposed changes in the Technical Specifications or license amendments relating to nuclear safety prior to implementation unless the change is identical to a previously reviewed change.

6. Review violations of code commitments, regulations, orders, Technical Specifications, license requirements or plant procedures or instructions which are significant to nuclear safety.

7. Review significant operating abnormalities, or devaitions from normal or expected performance of safety-related structures, systems or components.

8. Review results of operating plant inspections performed by the NRC and operating plant audits performed by the Nuclear Quality Assurance Department.

9. Review subjects involving safe operation of the plant referred to PORC by other CEI organizations or which the PORC considers appropriate.

10. Perform special reviews or investigations as requested by the Chairman of the Nuclear Safety Review Committee.

11. Review the Emergency and Security Plans and their implementing procedures and instructions annually to ensure compliance with current industry standards and regulatory guidance and to recommend changes to the Nuclear Safety Review Committee.

12. Review preparations for and results of Emergency Plan drills.

13.4.1.5 Records

Meeting minutes and written records of reviews shall be prepared and all documentary material reviewed shall be identified. Results of reviews, recommendations and decisions made by the PORC shall be documented and promptly distributed to appropriate members of management and the Nuclear Safety Review Committee.

13.4.2 NUCLEAR SAFETY REVIEW COMMITTEE

The Nuclear Safety Review Committee, which is responsible for the independent review function, shall be established and functional prior to initial fuel loading for Unit 1. The NSRC will report directly to the CEI Vice President-System Engineering and Construction and will have a majority of members who are not directly responsible for plant operations.

13.4.2.1 Written Charter

The NSRC shall function in accordance with a written charter which delineates committee composition, responsibility and authority, subjects to be reviewed, reporting reqirements and administrative controls under which the committee will operate.

13.4.2.2 Committee Membership

The NSRC shall be composed of eight CEI personnel appointed by the Vice President System Engineering and Construction Group. This membership shall collectively have the experience and competence necessary to review issues in the following areas:

- Nuclear Power Plant Operations
- Nuclear Engineering
- Chemistry and Radiochemistry
- Metallurgy
- Nondestructive Testing
- Instrumentation and Control
- Radiological Safety
- Mechanical and Electrical Engineering
- Administrative Controls and Quality Assurance Practices

Appointees to membership on the NSRC shall meet the following qualifications:

Chairman

The Chairman, appointed by the Vice President - System Engineering and Construction, shall have ten years of power plant experience, of which three years shall be nuclear power plant experience. A maximum of four years of the remaining seven years of experience may be fulfilled by academic training on a one-for-one time basis. This academic training shall be in an engineering or scientific field associated with power plants. In addition, the Chairman shall have the necessary overall nuclear background to determine when to call consultants and contractors for dealing with complex problems beyond the scope of owner-organization expertise.

Member

Members shall have a Bachelor's Degree in Engineering, or the Physical Sciences, as appropriate and three years of professional level experience in the field or his specialty. In special cases, eight years of experience in a specialized field may be acceptable. Credit toward experience may be given for advanced degrees in any of the above mentioned specialized fields on a one-for-one basis up to a maximum of two years.

Competent alternates shall be permitted if designated in advance, but the use of alternates shall be restricted to legitimate absences of the members.

Consultants may also be used for in-depth expertise in any area if so desired by the committee.

13.4.2.3 Meeting Frequency and Requirements

The NSRC shall meet as needed, but no less frequently than once per calendar quarter during the twelve-months after initial fuel loading for Unit 1. Subsequently, the meeting frequency shall not be less than twice per year. A quorum for formal meetings shall consist of not less than a majority of the members or their duly appointed alternates. The Chairman, or his duly appointed alternate, must be present for all formal meetings and no more than a minority of the quorum shall have line responsibility for operation of the plant.

13.4.2.4 Responsibility

The specific details related to the review and audit responsiblities of the NSRC and the NSRC's relationship with the Plant Operations Review Committee and the Quality Assurance Department are set forth in the Technical Specifications, FSAR Section 16.6.5.2 and are consistent with the requirements of ANSI-N18.7, Section 4.0.

The Quality Assurance Department will conduct audits of the operation phase activities as described in the Operations Quality Assurance Manual. Audits may also be conducted and/or directed by the NSRC. Audit frequencies of safety-related activities are specified in the Operations Quality Assurance Manual and Technical Specifications and are based on the safety significance of the particular activity.

The NSRC will recommend approval to the Vice President - System Engineering and Construction of items audited and reviewed.

13.4.2.5 Records

Meeting minutes and written records of reviews shall be prepared and all documentary material reviewed shall be identified. Results of reviews, recommendations, and decisions made by the NSRC shall be documented and promptly disseminated to appropriate members of management.

13.4.3 AUDIT PROGRAM

The Nuclear Quality Assurance Department shall conduct audits of the PNPP operational phase activities as described in FSAR Section 17.2.18. Audit frequencies of specific safety-related activities as listed in Technical Specifications, and FSAR Section 16.6.5.2.h, are based on the safety significance of each activity, and are consistant with Regulatory Guide 1.33, Revision 2 and N18.7-1976. Written reports of such audits shall be directed to the PORC, the NSRC and appropriate management for review and assessment.

13.5 PLANT PROCEDURES

The safe, efficient and reliable operation of the Perry Nuclear Power Plant is dependent upon the knowledge and performance of trained and qualified personnel and upon effective management and direction of these personnel. A series of documents, collectively entitled the "Perry Nuclear Power Plant Operations Manual", clearly delineates the methods used to train, manage and direct Perry Nuclear Power Plant personnel. This manual is prepared to document and communicate approved Perry Plant Department methods for complying with corporate commitments to the Technical Specifications, Operational Quality Assurance Program, Final Safety Analysis Report, and Regulatory Guide 1.33.

Since the "PNPP Operations Manual" is established as a complete management philosophy, it addresses all aspects of plant management including administrative, technical, quality, safety, personnel and environmental. This management philosophy is communicated in the procedures and instructions which comprise the "PNPP Operations Manual". A procedure and instruction preparation plan has been prepared and indicates that all required documents are best presented and controlled in the form of twenty separate volumes. Each volume shall contain the number of books necessary to adequately address specific volume title requirements. Individual procedures and instructions shall be prepared by plant personnel or consultant knowledgeable in the subject matter to be presented.

Responsiblity for approval of the procedures and instructions contained in the twenty volumes of the "PNPP Operations Manual" are listed in Table 13.5-1.

13.5.1 ADMINISTRATIVE PROCEDURES

13.5.1.1 Conformance with Regulatory Guide 1.33

Plant procedures and instructions shall be prepared to address the applicable systems, activities and subjects identified in Appendix A of Regulatory Guide

1.33, "Quality Assurance Program Requirements (Operation)", Revision 2, dated February 1978 and shall be contained in the "Perry Nuclear Power Plant Operations Manual". Certain specific clarifications on the degree of conformance with Regulatory Guide 1.33 are provided in Table 1.8-1.

Specific systems, activities and subjects identified in Appendix A may be deleted, combined or separated, as appropriate, to conform with plant configuration and the procedures plan for the "PNPP Operations Manual". Procedures and instructions shall address all aspects of subject activities including administrative, technical and quality.

13.5.1.2 Preparation of Procedures

Safety-related procedures and instructions shall be prepared in accordance with the procedures plan for the "PNPP Operations Manual." All safety-related activities performed by the Perry Plant Department shall be performed in accordance with approved, written procedures or instructions. Procedures and instructions required for fuel loading shall be written and approved for use prior to oinitial fuel loading. Procedures and instructions which address plant operation under normal and emergency conditions shall be written, to the extent practical, for use during the initial test program to familiarize plant operating and technical personnel with the operation of the plant, to verify the adequacy of content, and to provide sufficient time, prior to initial fuel loading, for any necessary revisions resulting from the initial test program.

Responsibility for preparing and approving plant procedures is assigned to appropriate plant management personnel as indicated in FSAR Section 13.5. Safety-related Administrative Procedures shall be independently reviewed by the Plant Operations Review Committee (PORC) and a qualified representative of the Operational Quality Assurance Unit. Safety-related section procedures and instructions shall be independently reviewed by plant staff personnel knowledgeable in the requirements applicable to the activity being described. Section 13.4 identifies types of procedures or instructions requiring review by the PORC.

Temporary changes to procedures or instructions which clearly do not change the intent of the approved document shall, as a minimum, be approved by two members of the plant staff knowledgeable in the areas affected by the procedure or instruction. After fuel loading, at least one of these individuals shall be the supervisor on the affected unit who is in charge of the shift and who holds a senior operator's license.

Appropriate plant management, as identified in FSAR Section 13.5, shall approve all permanent and temporary procedures or instructions in accordance with administrative procedure requirements. Distribution of the "PNPP Operations Manual", or portions thereof, shall be controlled by Plant Administrative Procedures. Subsequent revisions, changes or temporary changes shall also be governed by Plant Administrative Procedures. Proposed changes which conflict with the intent of the operating license shall not be made without prior approval of the PORC and authorization from the Nuclear Safety Review Committee and the Nuclear Regulatory Commission.

In addition to those procedures and instructions contained in the "PNPP Operations Manual", a separate volume of procedures entitled, "Procedures Volume 7 - Perry Plant Department Interface" is discussed here to provide continuity with project activities. Procedures shall be prepared to address the interfaces with organizations external to the Perry Plant Department during the construction and preoperational test phases of the PNPP Project. These procedures shall be prepared by the plant staff, approved by the Manager, Perry Plant Department and the Manager, Nuclear Quality Assurance Department. They shall be issued by the PNPP Project Organization as part of the Project Administrative Procedures which implement the Corporate Nuclear Quality Assurance Program during the design, construction and preoperational test phases of each unit.

13.5.1.3 Procedures

The "PNPP Operations Manual" shall contain two levels of Administrative Procedures: Plant Administrative Procedures and Section Administrative Procedures.

The Plant Administrative Procedures shall be prepared under the immediate direction of the Manager, Perry Plant Department and shall be subject to his approval. These procedures are the top level documents within the "PNPP Operations Manual" and delineate the Perry Plant Department administrative and quality assurance policies and controls which implement the PNPP Operational Quality Assurance Program. They define department, section and unit responsibilities; assign authority to the section, unit and shift supervisors; and, in most cases, address activities which involve two or more Perry Plant Department sections and/or units. A Plant Administrative Procedure may address only one Perry Plant Department section or unit if the activity being addressed is considered exceptionally significant to the safe and efficient management of the plant.

Section Administrative Procedures shall be prepared by certain plant sections wherein the section supervisor addresses section administrative and quality assurance policies and practices and assigns specific responsibilities and authorities to section personnel. Responsibility for preparation, review and implementation of Section Administrative Procedures rests with each individual section supervisor.

The Plant and Section Administrative Procedures are included in Volume 1 of the "PNPP Operations Manual" and shall be subject to review by the PORC prior to implementation. These administrative procedures shall address such subjects as:

1. Standing orders to operations shift supervisors and personnel.

2. Authority and responsibilities of senioroperators and reactor operators.

3. Responsibility to meet licensed operator requirements as described in 10CFR50.54(i), (j), (k), (l) and (m). The area "at the controls" as discussed in the above articles of 10CFR50.54 is as shown in Figure 13.5-1.

4. Special orders of a temporary or self-canceling nature.

5. Equipment, modification and maintenance control.

6. Surveillance testing and scheduling.

7. Logbook usage and control.

8. Temporary procedure issuance and control.

13.5.2 OPERATING AND MAINTENANCE INSTRUCTIONS

13.5.2.1 Control Room Operating Instructions

Instructions described in this FSAR Section are implemented primarily by licensed operators or reflect licensed operator actions in the performance of their work. These operating instructions are presented categorically and include a descriptive title for each instruction within the category. Operating instructions are identified by title in Table 13.5-2. Any immediate action instructions, or portions thereof, required to be memorized by the operators shall be so identified.

13.5.2.1.1 Integrated Operating Instructions

Detailed operating instructions shall be written to provide operating personnel with step-by-step instructions for changing modes of operation. These instructions shall ensure the operator has information required to safely operate the plant from initial startup to power operation and return to a shutdown condition within the limits and conditions specified in the Technical Specifications and Operating License. These instructions shall reference other instructions or documents as required for changing modes. They shall contain check-off provisions for verifing such items as initial conditions, Technical Specification requirements and procedural steps.

These instructions shall be contained in Volume 4 of the "PNPP Operations Manual". Their format shall provide for the instruction title, scope, precautions and limitations, prerequisites, detailed description of operation, final conditions and references.

13.5.2.1.2 System Operating Instructions

System Operating Instructions shall be written to provide guidance for operating the various plant systems. These instructions shall provide the operator with the steps necessary for safe startup, operation and shutdown of plant equipment and systems. They shall also identify the necessary valve and electrical lineups required as prerequisite starting conditions for each operation.

These instructions shall be contained in Volume 3 of the "PNPP OPerations Manual". Thier format shall provide for the instruction title, scope, precautions and limitations, prerequisites, startup, operation, shutdown, other operations, references, valve lineup and electrical lineup.

13.5.2.1.3 Off-Normal Operating Instructions

Off-Normal Operating Instructions shall be prepared to address correction of off-normal plant conditions which, in themselves, do not constitute an actual emergency condition, but which could degenerate into an emergency condition if positive actions were not initiated.

These instructions shall be contained in Volume 4 of the "PNPP Operations Manual". Their format shall provide for the instruction title, scope, systems, automatic action, immediate operator action, subsequent action and final conditions.

13.5.2.1.4 Emergency Instructions

Emergency Instructions shall be prepared to ensure that proper action is taken in response to emergency conditions or malfunctions. These instructions shall provide guidance to the operators for reacting to emergency situations as necessary to either verify that the plant is in or place the plant in a safe condition with the minimum effect on the safety of the general public, site personnel or plant equipment.

These instructions shall be contained in Volume 5 of the "PNPP Operations Manual". Their format shall provide for the instruction title, scope, symptoms, automatic action, immediate operator action, subsequent action, and final conditions.

13.5.2.1.5 Alarm Response Instructions

Alarm Response Instructions shall be prepared to provide operators with the necessary information to respond to actuation of all significant annunciator and alarm indications in the control room.

These instructions shall be contained in Volume 6 of the "PNPP Operations Manual". Their format shall provide for the instruction title, identify the alarm, its panel location and setpoint, probable cause, automatic action, immediate operatoraction and subsequent operator action.

13.5.2.1.6 Temporary Procedures and Instructions

Temporary procedures or instructions may be issued to direct operations during testing or maintenance, to provide guidance in unusual situations not within the normal scope of plant administrative procedures or operating instructions and to ensure orderly and uniform operation for short periods when the plant, a system or component is performing in a manner not covered by existing documents. Each temporary procedure or instruction shall identify its period or condition of effectivity, normally limited to six months after issue. When

appropriate, portions of temporary procedures or instructions may be included in revisions to permanent procedures before being canceled.

These procedures and instructions shall be contained in Volume 19 of the "PNPP Operations Manual". The format for temporary operating instructions shall be that of the type of procedure they replace or modify.

13.5.2.2
Other Plans, Manuals, Descriptions, Procedures and Instructions

This FSAR section describes the remainder of the "PNPP Operations Manual" including specific volumes that are dedicated to other procedures and instructions and specific plans, manuals, descriptions and plant data that management believes sufficiently important to address, as part of the "PNPP Operations Manual".

13.5.2.2.1 Health Physics Manual and Instructions

Plant radiation protection instructions shall be written and included in this volume of the "PNPP Operations Manual". This manual and instructions account for special nuclear material and implement the radiation protection program described in FSAR Chapter 12. These documents shall be contained in Volume 11 of the "PNPP Operations Manual".

13.5.2.2.2 Emergency Plan and Instructions

The Emergency Plans and Instructions shall provide an orderly program for dealing with plant emergencies. Step-by-step methods shall be presented for evaluating emergency conditions and the individual and collective responses required to mitigate or terminate them. Instructions shall address actions to be taken by specific plant personnel in responding to general site, plant and personnel emergencies and emergency alert situations.

These documents shall be contained in Volume 15 of the "PNPP Operations Manual".

13.5.2.2.3 Instrument Calibration Instructions

Instructions shall be prepared to provide guidance to plant calibration personnel in the performance of plant system, plant instrument, and measuring and test equipment calibration and maintenance.

These instructions shall be contained in Volume 8 of the "PNPP Operations Manual."

13.5.2.2.4 Chemistry Manual and Instructions

The Chemistry Manual and its implementing instructions shall provide direction for laboratory techniques, reagent preparation, laboratory equipment calibration, obtaining samples, performing chemical and radiochemical analyses, and arriving at chemical and radiochemical determinations.

These documents shall be contained in Volume 12 of the "PNPP Operations Manual".

13.5.2.2.5 Radwaste Instructions

Instructions shall be written to address liquid and solid radioactive waste mangement, radwaste system operation and radwaste alarm response actions. These instructions shall provide appropriate plant personnel with details necessary to control radwaste discharge, handling, storage and shipping and to determine the activity of packaged radwaste. System operation and alarm response intructions similar in content and format to those discussed in FSAR Sections 13.5.2.1.2 and 13.5.2.1.5 shall provide guidance for radwaste system operation and control.

These instructions shall be contained in Volume 13 of the "PNPP Operations Manual".

13.5.2.2.6 Maintenance Instructions

Maintenance instructions shall be prepared to provide maintenance personnel with a maintenance planning guide, as well as detailed instruction for general, preventive, and corrective maintenance applicable to the electrical and mechanical activities within the PNPP Maintenance Section.

These instructions shall be contained in Volume 9 of the "PNPP Operations Manual."

13.5.2.2.7 Material Control Instructions

Stores and material control instructions shall be prepared to address receiving, inspection, warehousing, storage, material and parts requisition and issue; including any special handling, storage or shipping requirements to be implemented by the Perry Plant Department Stores Unit.

These instructions shall be contained in Volume 9 of the "PNPP Operations Manual".

13.5.2.2.8 Surveillance Manual and Instructions

Technical Specifications surveillance requirements shall be covered by detailed surveillance instructions. A surveillance manual and master surveillance schedule shall identify responsibility for and coordinate efforts for these instructions. The instructions shall address surveillance activities to be performed by plant personnel responsible for monitoring specific operations, instrument, maintenance, reactor engineering, chemistry and radiochemistry, health physics and environmental activities or equipment.

These instructions shall be contained in Volume 7 of the "PNPP Operations Manual".

13.5.2.2.9 Fuel and Technical Specifications

Fuel and Technical Instructions shall be written to provide Technical Section personnel with direction for performing reactor engineering activities, fuel and core analysis and for application and usage of process and off-line computers and special nuclear material accountability.

These instructions shall be contained in Volume 10 of the "PNPP Operations Manual."

13.5.2.2.10 Security Plans and Instructions

The Security Plan, Security Personnel Training and Qualification Plan and Instructions shall be prepared to describe impementation and maintenance of the plant security plan discussed in FSAR Section 13.6. The instructions shall address routine administration, implementation, equipment inspections, maintenance and tests; and records as required to implement, maintain and document the security program.

These documents shall be contained in Volume 16 of the "PNPP Operations Manual".

13.5.2.2.11 Fire Protection Instructions

Fire Protection Instructions shall be prepared to provide plant personnel with guidance on the storage and use of combustibles, conduct of fire watches, control of ignition sources, fire protection system maintenance and testing, fire brigade organization, condut of fire drills and fire fighting plans for specific types and locations of fires.

These instructions shall be contained in Volume 17 of the "PNPP Operations Manual."

13.5.2.2.12 Training Manual

The Training Manual shall address the Plant Training Program organization, requirements, and description. It shall detail general employee training to be provided in such subjects as security, emergencies, first aid/rescue, fire protection, health physics, as well as specific training for Perry Plant Department Section or Unit personnel, and licensed and non-licensed operator training. Specific instruction is also provided for documenting training received and the retention of training records.

Those documents shall be contained in Volume 14 of the "PNPP Operations Manual".

13.5.2.2.13 System Operation Descriptions

System Operation Descriptions shall be written to provide plant operators with a description of the function each plant system serves and how the functions are performed. The main objective of the System Operation Descriptions is to present an operator oriented "big picture" of what the system does for the overall plant and how it is accomplished. System Operation Descriptions are used extensively to train new operators and other plant personnel.

These descriptions shall be contained in Volume 2 of the "PNPP Operations Manual".

13.5.2.2.14 Plant Data Book

A Plant Data Book shall be prepared and controlled to provide plant personnel with specific information and data such as tank capacity curves and equipment performance curves.

This information shall be contained in Volume 18 of the "PNPP Operations Manual".

13.5.2.2.15 Startup Test Procedures

Startup Test Instructions, as discussed in FSAR Chapter 14 shall be prepared and be included in volume 20 of the "PNPP Operations Manual".

TABLE 13.5-1

PNPP OPERATIONS MANUAL, TITLES AND RESPONSIBILITIES

VOLUME	TITLE	RESPONSIBLITY
1	Administrative Procedures	Plant Manager/Section Supervisors/QA Manager
2	System Operating Descriptions	Operations Section Supervisor
3	System Operating Instructions	Operations Section Supervisor
4	Plant Integrated Operating Instructions	Operations Section Supervisor
5	Plant Emergency Instructions	Operations Section Supervisor
6	Alarm Response Instructions	Applicable Section Supervisor
7	Surveilance Instructions	Applicable Section Supervisor
8	Instrumentation Calibration Instructions	Technical Section Supervisor
9	Maintenance Instructions	Maintenance Section Supervisor
10	Fuel and Technical Instructions	Technical Section Supervisor
11	Health Physics Manual and Instructions	Radiation Protection Section Supervisor
12	Chemistry Manual and Instructions	Radiation Protection Section Supervisor
13	Radwaste Instructions	Radiation Protection Section Supervisor
14	Training Manual	Administrative Unit Supervisor
15	Emergency Plan and Instructions	Radiation Protection Section Supervisor
16	Security Plan and Instructions	Security Unit Supervisor
17	Fire Protection	Application Section Supervisors
18	Plant Data	Application Section Supervisors
19	Temporary Instructions	Application Section Supervisors
20	Startup Test Instructions	Applicable Section Supervisors

TABLE 13.5-2

SYSTEM AND PLANT OPERATING INSTRUCTIONS

Plant Integrated Operating Instructions

Initial Plant Startup
Approach to Critical
Unit Heatup
Hot Standby to Unit on the Line
Low to Full Power Increase
Xenon Follow and Steady State Power Operation
Load Changes
Full to Low Power Decrease
Unit off the Line to Hot Standby
Unit Cooldown and Subcritical
All Rods In and Plant Secure

Steam Generator System Operating Instructions

Nuclear Boiler System
Nuclear Boiler Automatic Depressurization System
Reactor Recirculation Flow Control System

Control System Operating Instructions

Control Rod Drive Hydraulic Control System
Feedwater Control System (Turbine Drive)
Standby Liquid Control System
Neutron Monitoring System
Reactor Protection System
Steam Bypass and Pressure Regulation System
Rod Control and Information System
Process Computer
Turbine Control (EHC) System
Loose Parts Monitoring System

Radiation Monitoring System Operating Instructions

Plant Radiation Monitoring System
Area Radiation Monitoring System (In-Plant)

Core Cooling and Containment System Operating Instructions

Residual Heat Removal System
Low Pressure Core Spray System
High Pressure Core Spray System
High Pressure Core Spray System Diesel Generator System
Leak Detection System
MSIV Leakage Control System
Reactor Core Isolation Cooling System

TABLE 13.5-2 (Continued)

HVAC System Operating Instructions

Containment Vessel Cooling System
Drywell Cooling System
Containment Vessel and Drywell Purge Systems
Annulus Exhaust Gas Treatment System
Drywell Vacuum Relief System
Containment Vacuum Relief System
Controlled Access and Miscellaneous Equipment Area HVAC System
MCC, Switchgear and Miscellaneous Electrical Equipment Area HVAC System and Battery Room Exhaust System
Control Room HVAC System and Emergency Recirculation System
Emergency Closed Cooling Pump Area Cooling System
Emergency Service Water Pump House Ventilation System
Intermediate Building Ventilation System
Turbine Building Ventilation System
Off Gas Building Exhaust System
Water Treatment Building Ventilation System
Auxiliary Building Ventilation System
ECCS Pump Room Cooling System
Fuel Handling Area Ventilation System
Heater Bay Ventilation System
Turbine Power Complex Ventilation System
Diesel Generator Building Ventilation System
Service Building HVAC Systems
Circulating Water Pumphouse Ventilation System
Miscellaneous HVAC Systems
Steam Tunnel Cooling System
Miscellaneous Electrical Areas Smoke Venting System
Combustible Gas Control System

Main Loop System Operating Instructions

Main and Reheat Steam System
Condensate System
Main, Reheat, Extraction and Miscellaneous Drains System
Condensate Filtration System
Condensate Demineralizer System
High Pressure Heater Drains and Vents
Low Pressure Heater Drains and Vents
Feedwater System
Turbine
Reactor/Turbine Generator Trip System
Steam Seal System
Lube Oil System
Hydrogen Supply System
Extraction Steam System

Generator
Hydrogen Seal System
Generator Stator Cooling System
Excitation System
Condenser Air Removal System
Off Gas System
Off Gas Vault Refrigeration System
Circulating Water System

Auxiliary System Operating Instructions

Condensate Transfer and Storage System
Condensate Seal Water System
Makeup Water Pretreatment System
Two-Bed Water Demineralizer and Distribution System
Mixed Bed Demineralizer ad Distribution System
Service Water Screen Wash System
Service Water System
Emergency Closed Cooling System
Nuclear Closed Cooling System
Turbine Building Closed Cooling System
Emergency Service Water System
Turbine Building Chilled Water System
Control Complex Chilled Water System
Service Water Chlorination System
Emergency Service Water Screen Wash System
Containment Vessel Chilled Water System
Service and Instrument Air Systems
Fire Protection System
Building Heating System
Safety-Related Instrument Air System
Auxiliary Steam System
Auxiliary Boiler Fuel Oil System
Industrial Waste Disposal System
Auxiliary Boiler Chemical Treatment
Potable Water Supply System
Plant Foundation Underdrain System
Miscellaneous Chemical Treatment Systems
Cooling Tower Acid Addition System
Hypochlorite Generation, Cooling Tower Feed, and
  Plant Discharge Dechlorination Systems
Nitrogen Supply System

Plant Electrical System Operating Instructions

Station Transformers
Isolated Phase Bus
120V AC Vital System (inverters & distribution equipment)
Metal Clad Switchgear (15 kV & 5kV)

Load Centers (480V)
Motor Control Centers
DC System (Batteries, Chargers & Switchboards)
Standby Diesel Generator System

Cleanup and Filtering System Operating Instructions

Reactor Water Cleanup System
RWCU Filter/Demineralizer System
Fuel Pool Cooling and Cleanup System
Suppression Pool Makeup System
Miscellaneous Sump System

Radwaste System Operating Instructions

Fuel Pool F/D Backwash Receiving System
RWCU F/D Backwash Receiving System
CNDS Filter Backwash Receiving System
Radwaste Building Ventilation System
Equipment Drain Sump System
Waste Collector System
Floor Drain Sump System
Floor Drain Collector System
Detergent Drain Sump System
Detergent Drain System
Chemical Waste Sump System
Chemical Waste System
Spent Resin System
Solid Radwaste Solidification System
Solid Radwaste Compaction System
Suppression Pool Demineralizer
Nuclear Sample System

Refueling Instructions

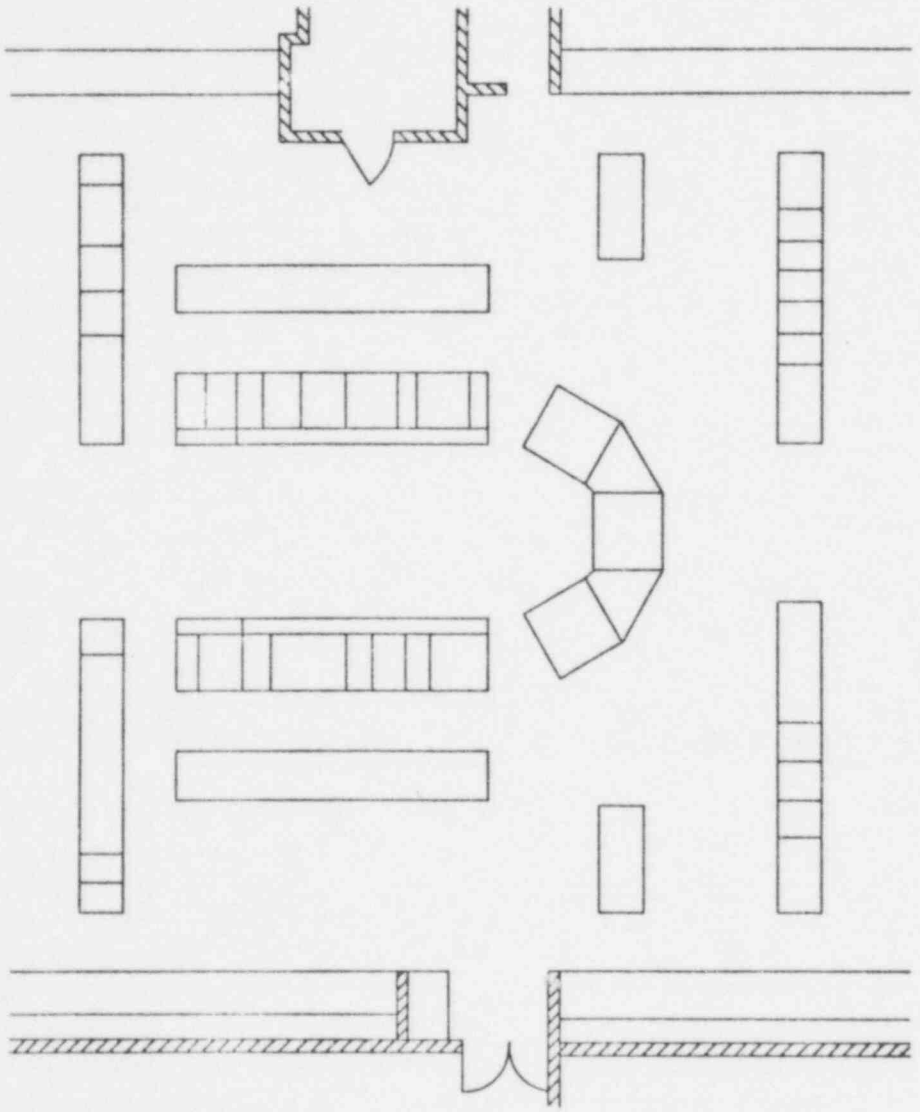
Refueling Operation
Preparation of Plant for Refueling
Securing Plant after Refueling
Receiving, Inspection and Storage of New Fuel
Shipment of Fuel
Fuel Transfer Equipment
Fuel Assembly Transfer
Control Rod Installation and Removal
Fuel Support Installation and Removal
Source Holder Installation and Removal
In-Core Detector Installation and Removal
Use of Underwater Television
Use of Underwater Vacuum Cleaner
In-Core Sipping
Out-of-Core Sipping
CRD Guide Tube Removal and Installation

Off-Normal Operating Instructions

Reactor Scram
Fast Reactor Shutdown
Reactor Scram Recovery
Maintaining Hot Standby Condition
Reactor and/or Containment Isolation
Unexplained Change in Reactor Power or Reactivity
RPIS Failure/Inability to Move Control Rods
Uncoupled Control Rod
Safety/Relief Valve Malfunction
Recirculation Flow Control Malfunction
Loss of One/Both Reactor Recirculation Pumps
Pressure Regulator Failure
Inadvertent Initiation of ECCS
Turbine and/or Generator Trip
Loss of Feedwater Flow
Feedwater Controller Failure-Maximum Demand
Loss of Feedwater Heating
Condenser Tube Leak
Loss of Condenser Vacuum
Loss of Shutdown Cooling
Loss of Normal Service Water (NCC and/or TBCCW)
Loss of Instrument and/or Service Air
Loss of Offsite Power
Loss of Instrument Bus/Busses
Loss of Vital AC Bus
Water Management Instructions
Cold Weather Operation

Emergency Instructions

Small Break LOCA
Large Break LOCA
LOCA with Loss of Offsite Power
Post LOCA Containment Control
Loss of Containment Integrity
Pipe Break Outside Containment
Control Rod Drop
Inability to Shutdown with Control Rods (SBLC Shutdown)
Shutdown from Outside Control Room
Gross Fuel Classing Failure
Abnormally High Radiation Levels in Accessible Areas
Fuel Bundle Rupture While Refueling
Tornado or High Wind
Earthquake
Fire



PERRY NUCLEAR POWER PLANT
THE CLEVELAND ELECTRIC
ILLUMINATING COMPANY

Area Designates as "At the Controls" (Unit 1 shown- Unit 2 similar)

Figure 13.5-1

13.6 INDUSTRIAL SECURITY

13.6.1 SECURITY PLAN

A Security Plan has been prepared which describes the comprehensive physical security program for the Perry Nuclear Power Plant. The plan was prepared in accordance with ANSI N.18.7-1976 to meet the intent of 10CFR 73 and Regulatory Guide 1.17-1973, which references ANSI N18.17 and GSA Specification W-A-00450 A(GSA-FSS).

Pursuant to provisions of 10CFR, Part 2, Paragraph 2.790(b), and 10CFR 9.5, this Security Plan will be filed separately and is exempt from public disclosure.

13.6.2 SECURITY ORGANIZATION

The Plant Manager is responsible for the overall security at the PNPP. Reporting directly to the Plant Manager is the Security Unit Supervisor who is responsible for administration of the Security Plan. Responsibility for surveillance and enforcement is delegated to a contract security service who will provide security personnel meeting the requirements of 10CFR 73, Appendix B with respect to suitability, physical and mental qualifications and training.

13.6.3 SECURITY PROCEDURES

Detailed procedures will be prepared to cover implementation of the Security Plan including procedures for investigation, resolution and reporting of each security incident.

The plan applies jointly to Units 1 and 2 and specifically addresses procedures required during the interim period involving Unit 1 operation and Unit 2 construction. Implementation shall be completed no less than one month prior to fuel loading of Unit 1.