THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

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MURRAY R. EDELMAN
VICE PRESIDENT
NUCLEAR

September 17, 1985
PY-CEI/NRR-0339 L

Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Perry Nuclear Power Plant
Docket Nos. 50-440; 50-441
FSAR Chapter 13
Plant Organization

Dear Mr. Youngblood:

The purpose of this letter is to update and clarify information contained in Chapter 13 of the FSAR related to plant organization. The attachment contains revised FSAR pages which will be included in a future amendment to the FSAR.

If you have any questions or comments, please do not hesitate to contact me.

Very truly yours,

Murray R. Edelman

Murray R. Edelman
Vice President
Nuclear Group

MRE:njc

Attachment

cc: Jay Silberg, Esq.
John Stefano (2)
J. Grobe

B001
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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-owned 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, and 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. These plant engineering and design services will be required until two months prior to Unit 2 fuel load.

b. The General Electric Company, (G.E.) has been awarded the contract to design, fabricate, deliver, and install the single-cycle, 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.

Plant engineering and design services will be required until one month prior to Unit 2 fuel load. Technical support and direction for installation and start-up will be required until commercial operation of Unit 2. 260.01

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 varies from 750 psig to 1500 psig and the inlet temperature varies from saturation to approximately 40°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.

Technical support and direction for installation and start-up will be required until Unit 2 has operated at full load for 24 hours. 260.01

d. Raymond Kaiser Engineers, Incorporated (RKE) 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 RKE with overall supervision by CEI. Key individuals from each company perform vital tasks of the management program with the assistance, cooperation and direct efforts of the other.

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 its effects on the environment; and participated in negotiations 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.

Evaluation services will be required up to fuel load in Unit 2.

260.01

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 were made according to the established Construction Environmental Monitoring Program that terminated in mid-1981. A demographic study of the area was completed in 1980. Radiation monitoring required for fuel load began early in 1981. The latest meteorological reports are maintained by CEI.

260.02

The original layout plan 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 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 provisions have been accounted for in the layout of the site 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 Section 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 by the applicant's Nuclear Construction Engineering 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 Corporate Nuclear Quality Assurance Program.

13.1.1.1.1.7 Procurement of Materials and Equipment

Material and equipment procurement solely for PNPP is performed by the PNPP Perry Project Services Department, an onsite arm of the applicant's headquarters Administrative Services Group.

One-hundred 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 Cost and Schedules Section are responsible for developing the overall project budget, monitoring its financial status, and providing management with timely cost data.

Nuclear Construction Services 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.

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.

The design and layout of the Perry Control Room was developed by CEI/GAI after much consideration of such factors as space, layout, access, color, lighting, audio vs. visual alarms, viewing angles and instrumentation labeling. Additionally, the BWR Owners Group Survey Team conducted a survey in September, 1981 to identify any human factor design deficiencies in the plant panels. CEI is utilizing the Survey Report to identify those deficiencies requiring improvement.

The Nuclear Engineering Department will be responsible for implementing all corrections and improvements.

13.1.1.1.2.2 Development and Implementation of Staff Recruiting and Training Program

The Nuclear Test Section of the Perry Plant Operations Department has been assigned the responsibility for preoperational and acceptance testing of systems turned over from construction. The Nuclear Test Section has developed procedures detailing the methods and requirements for indoctrinating, training and certifying test personnel. These procedures are incorporated in the Nuclear Test Section's Administrative Procedure matrix and are separate from the Training Program developed for the PNPP operating organization and described in Section 13.2 of this FSAR.

Recruiting of qualified personnel for staffing the Nuclear Test Section has been accomplished with a combination of CEI and consultant personnel. Selection of operating personnel is in process with attention directed toward manning with a combination of qualified employees from within CEI and outside hires, particularly from among those with previous nuclear experience.

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 January, 1985, the Nuclear Test Section staffing totaled 443 of which 99 were CEI personnel and 344 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 Technical 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 Technical Section General Supervising Engineer. 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 5 of the Operations Manual shall contain the individual startup test instructions discussed in Chapter 14. The test instructions 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 Operations and Technical Department Managers. 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:

Generic Electrical and Mechanical Instructions
Generic Welding Instructions
Corrective Maintenance Instructions
Preventive Maintenance Instructions
Stores and Material Instructions

These programs will be designed to ensure the safety of the public and plant personnel, provide equipment reliability in accordance with the PNPP Corporate Nuclear 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, thermal-hydraulic 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. The organizational group responsibility for technical support for operations is the Nuclear Engineering Department. This is separate from the technical support provided by the Nuclear Construction Department for the units under construction.

13.1.1.2 Organization Arrangement

The Cleveland Electric Illuminating Company corporate structure relative to the operation of Perry Nuclear Power Plant Project is as shown in Figure 13.1-2. The Operating Organization is discussed 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 and the qualifications of Plant Organization personnel meet or exceed as stated in Table 1.8-1.

the provisions of Regulatory Guide 1.8 Λ Table 13.1-1 lists members of the plant and selected Headquarters Λ staff and designates equivalent ANSI N 18.1-1971 titles for comparison. Table 13.1-2 Λ is an index to Λ the resumes of Headquarters supervisory personnel, Table 13.1-2B is an index to the resumes of Plant Organization personnel and Table 13.1-3 contains the resumes.

The Manager, Nuclear Engineering Department, who reports directly to the Nuclear Operations Division Vice President is that individual who normally determines when to call consultants and contractors for dealing with complex problems in technical support for operations beyond the scope of the company's corporate headquarter's staff. The criteria stipulated in ANSI N 18.1-1971 requires that the Engineer-in-Charge have a Bachelor's degree in engineering and a minimum of 3 years of nuclear experience. The Manager, Nuclear Engineering Department, meets and exceeds this criteria. As depicted in the

of
organizational structure, essentially all the technical support will be located on site. Members of the staff possess the combined education and expertise to reasonably ensure that decisions and actions required from design through operating phases will not result in a hazard to the health and safety of employees and the public.

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 organizations of the Perry Plant Operations and Technical Departments are as shown on Figures 13.1-3 and 13.1-4 respectively. These organization charts indicate the title of each position, the minimum number of personnel required for each position (including common or duplicate positions), reporting responsibilities and the positions requiring NRC licenses. All functional positions designated in Figures 13.1-3 and 13.1-4 will be filled by the time of initial fuel loading of Unit 1. 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:

13.1.2.2.1 Perry Plant Operations Department

Manager, Perry Plant Operations Department

The Manager, Perry Plant Operations Department (PPOD) has overall responsibility for plant operations, maintenance, material services and outage planning activities. Additionally, he oversees the preoperational and acceptance testing activities as systems are turned over from construction. He is responsible for compliance with the plant's operating license, regulations, and the PNPP Operational Quality Assurance Program. The Manager, PPOD serves as Chairman of the Plant Operations Review Committee and along with the Manager, PPTD is responsible for approval of all Plant administrative procedures. He reports to the Vice President, Nuclear Operations, Division.

General Supervising Engineer, Nuclear Test Section

The General Supervising Engineer, Nuclear Test Section (NTS) is responsible for the planning, directing and control of all initial checkout and run-in testing and all preoperational and acceptance testing of systems turned over from construction to PPOD. The GSE, NTS is responsible for the development and implementation of all test procedures contained in the Test Program Manual. He reports to the Manager, Perry Plant Operations Department.

General Supervisor, Operations Section

The General Supervisor, Operations Section is responsible for directing daily operation of the plant including all mechanical and electrical equipment, planning and scheduling of operations' and radwaste activities including tests, startups and shutdowns, and directing the development and review of required procedures and instructions 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 Section is a member of the Plant Operations Review Committee and reports to the Manager, Perry Plant Operations Department.

General Supervisor, Maintenance Section

The General Supervisor, Maintenance Section is responsible for the maintenance and repair of all electrical and mechanical equipment including instrumentation and controls. He also directs the planning and supervision of major maintenance repairs, and overhauls, and preventive maintenance activities.

The General Supervisor, Maintenance Section is a member of the Plant Operations Review Committee and reports to the Manager, Perry Plant Operations Department.

General Supervisor, Outage Planning Section

The General Supervisor, Outage Planning Section is responsible for directing the scheduling and coordination of outage planning including the development of an

and
outage plan providing a description of tasks to be performed during the course of an outage. The General Supervisor, Outage Planning Section reports to the Manager, Perry Plant Operations Department.

General Supervising Engineer, Material Services Section

The General Supervising Engineer, Material Services Section is responsible for the procurement and maintenance of the Plant stores inventory of spare parts and supplies, for the upkeep of site grounds, and for directing general building maintenance and housekeeping activities within the plant. The General Supervising Engineer, Material Services Section reports to the Manager, Perry Plant Operations Department.

13.1.2.2.2 Perry Plant Technical Department

Manager, Perry Plant Technical Department

The Manager, Perry Plant Technical Department (PPTD) has overall responsibility for the plant technical, radiation protection, security, training, instrumentation and control, and administrative activities. He is responsible for compliance with the plant operating license, regulations, and the PNPP Operational Quality Assurance Program. The Manager, PPTD, is also responsible for implementation of the Perry Physical Security Plan. He serves as Vice-Chairman of the Plant Operations Review Committee and, along with the Manager, PPOD, is responsible for approval of all Plant administrative procedures. The Manager, PPTD reports to the Vice President, Nuclear Operations Division.

Technical Superintendent

The Technical Superintendent is responsible for coordinating the technical, and I&C activities and for the administrative support, and radiological control services required to support plant operations and maintenance activities. The Technical Superintendent is a Vice Chairman of the Plant Operations Review Committee and reports to the Manager, Perry Plant Technical Department.

General Supervising Engineer, Technical Section

The General Supervising Engineer, Technical Section is responsible for directing all activities associated with providing technical support and services related to monitoring plant performance, compliance and surveillance engineering, startup testing, systems engineering and reactor technology. He is also responsible for the programming, operation and maintenance, and related software development of all in-plant computers and the process simulator computer. The General Supervising Engineer, Technical Section is a member of the Plant Operations Review Committee and reports to the Technical Superintendent.

General Supervising Engineer, Radiation Protection Section

The General Supervising Engineer, Radiation Protection Section is responsible for directing all activities associated with the chemical, radiochemical, health physics 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 General Supervising Engineer, Radiation Protection Section is a member of the Plant Operations Review Committee and reports to the Technical Superintendent.

Plant Health Physicist

The Plant Health Physicist is designated as the Radiation Protection Manager (RPM) and is responsible for development and implementation of the radiation protection programs for the plant. This includes supervising all health physics activities, monitoring plant radiation health and safety practices, reviewing all health physics instructions, implementing the ALARA program and supervising the preparation of reports and manuals. The Plant Health Physicist is a member of the Plant Operations Review Committee and reports to the General Supervising Engineer, Radiation Protection Section. As RPM he has direct recourse to the Manager, Perry Plant Technical Department in order to resolve questions related to the conduct of the radiation protection program.

* SEE INSERT B

Insert B

Plant Chemist

The Plant Chemist is responsible for the development and implementation of the chemistry program for the plant. The Plant Chemist is also responsible for all wet chemistry, plant process chemistry and all system operations performed by Chemistry Unit personnel, and has overall supervision of all chemistry Unit personnel.

General Supervising Engineer, Instrumentation and Control Section

The General Supervising Engineer, Instrumentation and Control Section is responsible for calibration of M&TE, maintenance of all instrumentation and control systems, and maintenance of various microprocessors, and computers including process, emergency response, fire, security, meteorological tower and radiation protection computers. The General Supervising Engineer, Instrumentation and Control Section is a member of the Plant Operations Review Committee and reports to the Technical Superintendent.

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 instructions. This includes, when warranted, approving on-shift operations that deviate from established procedures and instructions, evaluating operating experiences and providing on-shift technical advice to the Unit Supervisors.

Administrative procedures will be written to clearly define the Shift Supervisor's command and control responsibilities and authorities and to emphasize his responsibility for safe operation of the plant. Those functions which clearly detract from responsibility for assuring safe operation of the plant will be assigned to other personnel.

The Shift Supervisor reports to the General Supervisor, Operations Section.

Unit Supervisor

The Unit Supervisor is responsible for assisting the Shift Supervisor on duty in operating the plant in a safe and dependable manner. This includes supervising the supervising operators, 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 responsible for directing the activities of the non-licensed shift employees including 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 Manager, Perry Plant Operations Department has overall responsibility for all plant activities during normal operations. In the event of unexpected contingencies of a temporary nature, when the Manager, Perry Plant Operations Department is unavailable, responsibility will be delegated to the following positions in the order listed:

a. General Supervisor, Operations

b. General Supervisor, Maintenance

Administrative procedures will be written to limit access to the control room and to establish a clear line of authority, responsibility, and succession in the control room.

13.1.2.3 Operating Shift Crews

Four shift crews may be established during certain phases such as startup testing to maximize training.

The PNPP will normally have a minimum of five operating shift crews with a goal to staff operating positions to support a six-shift rotation. 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 N 18.1-1971 are as follows:

PNPP Position or Title	License	ANSI N 18.1-1971 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
I & C Technician	-	Technician
Shift Technical Advisor	-	-

The PNPP operating shift crew will normally consist of a minimum of eleven personnel for Unit 1 and fifteen for Units 1 and 2 as listed in the following table. In addition, each operating shift will have assigned to it a person with commercial BWR startup/operating experience for a period of one year from fuel load, or the attainment of a nominal 100% power, whichever occurs later. The experience requirement will be in accordance with Generic Letter 84-16, "Adequacy of On-Shift Operating Experience for Near Term Operating License Applicants."

	Operations, Startup, Hot Shutdown		Cold Shutdown, Refueling
Job Title	Unit 1	Units 1 & 2	Unit 1 prior to Unit 2 operation
Shift Supervisor (SRO)	1	1	1
Unit Supervisor (SRO)	1	2	None

Job Title	Operations, Startup, Hot Shutdown: Unit 1	Operations, Startup, Hot Shutdown: Units 1 & 2	Cold Shutdown, Refueling: Unit 1 prior to Unit 2 operation
Supervising Operator (RO)	2	3	1
Plant Operator (AO)	1	2	1
Plant Attendant (AO)	1	2	1
Radwaste Technician	1	1	1
Health Physics Technician	1	1	1
Chemistry Technician	1	1	1
I & C Technician	1	1	1
Shift Technical Advisor	1	1	0

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 to 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.

A Shift Technical Advisor will be available to provide technical support to the Shift Supervisor, including advising him on the safety status of the plant, diagnosing plant accidents and recommending actions to mitigate the consequences of accidents.

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 N 18.1-1971 titles as a comparison.

13.1.3.2 Qualifications of Plant Personnel

The qualifications of the initial personnel on the PNPP staff holding key managerial and supervisory positions are provided in the resumes included with this chapter as Table 13.1-3.

TABLE 13.1-1

PNPP STAFF TITLES AND ANSI N18.1-1971 EQUIVALENT

PNPP Position or Title	ANSI N18.1-1971 Equivalent
Manager, Perry Plant Operations Dept.	Plant Manager
Manager, Perry Plant Technical Dept.	Plant Manager
Technical Superintendent	Technical Manager
Manager, Nuclear Engineering Dept.	Engineer In Charge
General Supervisor, Operations Section	Operations Manager
General Supervisor, Maintenance Section	Maintenance Manager
General Supervising Engineer, Technical Section	Technical Manager
General Supervising Engineer, Radiation Protection Section	Technical Manager
General Supervising Engineer, I&C Section	Technical Manager
General Supervising Engineer, Material Services Section	Technical Manager
Supervisor, Health Physics	Supervisor Non-Licensed
Supervisor, Chemistry Unit	Professional-Technical Chemistry and Radiochemistry
Reactor Engineer	Professional-Technical, Reactor Engineering
Shift Supervisor	Supervisor requiring NRC License
Unit Supervisor	Supervisor requiring NRC License
Supervising Operators	Operator

TABLE 13.1-2A

PNPP HEADQUARTERS STAFF RESUME LIST

Number	Individual	Position
1.	Murray R. Edelman	Vice President, Nuclear Group
2.	Alvin Kaplan	Vice President, Nuclear Operations Division
3.	Cyril M. Shuster	Manager, Nuclear Quality Assurance Deparment
4.	Jack A. Kline	Manager, Nuclear Construction Department
5.	Frank R. Stead	Manager, Nuclear Engineering Department
6.	Ronald L. Farrell	Manager, Perry Project Services Department
7.	Richard G. Schuerger	Principal Nuclear Operations Engineer
8.	Lawrence O. Beck	General Supervising Engineer, Nuclear Licensing and Fuel Management Section
9.	Jack P. Bellack	General Supervising Engineer, Nuclear Design and Analysis Section
10.	Leo R. Haworth	General Supervisor, Procedures, Records and Services Section
11.	Martin Cohen	General Supervising Engineer, Nuclear Construction Services Section
12.	Kenneth R. Pech	General Supervising Engineer, Nuclear Construction Engineering Section
13.	Paul P. Martin	General Supervising Engineer, Procurement and Administration Quality Section
14.	Daniel D. Hulbert	Emergency Planning Supervisor

TABLE 13.1-2A (Continued)

PNPP HEADQUARTERS STAFF RESUME LIST

Number	Individual	Position
15.	Emanuel Riley	General Supervising Engineer, Construction Quality Section
16.	Peter A. Solanics	General Supervising Engineer, Cost and Schedules Section
17.	Robert L. Vondrasek	General Supervising Engineer, Reliability and Design Assurance Section
18.	Barton D. Walrath	General Supervising Engineer, Operational Quality Section
18-A	Richard R. Bowers	Corporate Health Physicist
18-B	Robert A. Newkirk	Senior Staff Engineer Nuclear Engineering Department

TABLE 13.1-2B

PNPP OPERATIONS/TECHNICAL STAFF RESUME LIST

Number	Individual	Position
19.	John J. Waldron	Manager, Perry Plant Technical Department
20.	Michael D. Lyster	Manager, Perry Plant Operations Department
21.	Steven F. Kensicki	Technical Superintendent, Perry Plant Technical Department
22.	Russell J. Tadych	General Supervisor, Operations Section
23.	Donald J. Takacs	General Supervisor, Maintenance Section
24.	Gary R. Leidich	General Supervising Engineer, Nuclear Test Section
25.	Joseph M. Lastovka	General Supervising Engineer, Material Services Section
26.	William R. Kanda, Jr.	General Supervising Engineer, Technical Section
27.	Anthony F. Silakoski	General Supervisor, Perry Training Section
28.	Robert A. Stratman	General Supervising Engineer, Radiation Protection Section
29.	Position Currently Unfilled	General Supervising Engineer, Outage Planning Section
30.	Thomas E. Mahon	General Supervisor, Site Protection Section
31.	Robert P. Jadgchew	General Supervising Engineer, I&C Section
32.	John B. Murray	Administrative Supervisor
33.	Terry K. Boyer	Shift Supervisor
34.	Henry N. Kelly	Shift Supervisor
35.	Allen J. Okorn	Shift Supervisor

TABLE 13.1-2B (Continued)

PNPP OPERATIONS/TECHNICAL STAFF RESUME LIST

Number	Individual	Position
36.	Kenneth F. Russell	Shift Supervisor
37.	Roger M. Stiffler	Shift Supervisor
38.	Michael L. Wesley	Shift Supervisor
39.	Ronald L. Jones	Operator Training Supervisor
40.	Perry M. Moskowitz	Health Physics Supervisor
41.	William T. Burkhart	Radwaste Supervisor
42.	David L. Reyes	Plant Chemist
43.	Edward J. Traverso	Chemistry Supervisor
44.	David J. Rossetti	ALARA Coordinator
45.	Dennis J. Meinke	Lead Instrument & Control Supervisor
46.	James J. Miller, Jr.	Instrument & Control Supervisor
47.	Stephen A. Braunfield	Instrument & Control Supervisor
48.	William B. McKibben	Instrument & Control Supervisor
49.	James Wright	Instrument & Control Supervisor
50.	Gary L. Garrett	Instrument & Control Supervisor
51.	Larry L. VanDerHorst	Plant Health Physicist
52.	Richard E. Evans, Jr.	Fire Protection Coordinator
53.	Charles S. Orogvany	Reactor Engineer
54.	Thomas A. Remick	Associate Operations Engineer (STA)
55.	Patrick J. Curran	Associate Operations Engineer (STA)

TABLE 13.1-2B (Continued)

PNPP OPERATIONS/TECHNICAL STAFF RESUME LIST

Number	Individual	Position
56.	Peter D. Roberts	Associate Operations Engineer (STA)
57.	Robert H. Storch	Associate Operations Engineer (STA)
58.	David B. Miller	Associate Operations Engineer (STA)
59.	Daniel G. Philipps	Associate Operations Engineer (STA)
60.	Scott H. Soper	Associate Operations Engineer (STA)
61.	James D. Ellis	Associate Operations Engineer (STA)
62.	Gary R. Anderson	Operations Engineer
63.	John G. Cantlin	Operations Engineer
64.	Melvin W. Gmyrek	Senior Operations Coordinator
65.	Lewis B. Biddlecome	Senior Staff Engineer Operations Technical Staff
66.	Vincent J. Concel	Senior Desing Engineer

TABLE 13.1-3

RESUMES OF KEY PERRY NUCLEAR
POWER PLANT PERSONNEL

RESUME NO. 1

Name: Murray R. Edelman, Vice President, Nuclear Group

Formal Education and Training:

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

Experience:

1961 - Present: The Cleveland Electric Illuminating Company

Through 1972, occupied various engineering positions including Engineering Assistant, 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 transferred 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 responsible for the planning and directing of the quality program for the Perry Nuclear Power Plant.

In 1981, was appointed Manager of the Nuclear Engineering Department. As such, was responsible for engineering, construction, testing (through fuel load) procedures and records, licensing and cost control of the Perry Nuclear Power Plant.

In 1982, was assigned to the position of Division Manager, Nuclear Engineering and Construction Division. Responsible for all nuclear engineering and construction, licensing and fuel management activities, design and analysis and cost administration for the Perry Nuclear Power Plant.

In December, 1982, was elected to the position of Vice President, Nuclear Group. As such, is responsible for all nuclear construction, engineering, quality assurance, and Perry Plant operations. Reports to the Executive Vice President.

Professional Memberships:

American Society of Mechanical Engineers
Cleveland Engineering Society

TABLE 13.1-3 (Continued)

RESUME NO. 7

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 fired 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 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 of two 650 MW coal-fired units, a 320 MW pumped hydro plant, and the CEI fossil plant environmental compliance program, and 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, responsible for liason activities for CEI on the Davis-Besse Nuclear Power Station Unit No. 1, and the Beaver Valley Nuclear Plant Unit #2. In 1984, become founding chairman of the PNPP Nuclear Safety Review Committee (NSRC). Reports to the Vice President, Nuclear Group.

Richard G. Schuerger

TABLE 13.1-3 (Continued)

RESUME NO. 7 (Continued)

Professional Memberships:

American Society of Mechanical Engineers
American Nuclear Society
Cleveland Engineering Society
Registered Professional Engineer, State of Ohio
EPRI Nuclear Systems & Materials Task Force
Chairman, EPRI NDE Subcommittee
Senior Representative, BWR Owners Group on IGSCC pipe cracking research

TABLE 13.1-3 (Continued)

RESUME NO. 8

Name: Lawrence O. Beck, General Supervising Engineer, Nuclear 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 Nuclear Engineering Department. As such is responsible for the licensing and fuel management for the Perry Plant. Reports to the Manager, Nuclear Engineering Department.

Professional Memberships:

American Nuclear Society
Registered Professional Engineer, State of Ohio
Atomic Industrial Forum

TABLE 13.1-3 (Continued)

RESUME NO. 11

Name: Martin Cohen, General Supervising Engineer, Nuclear Construction Services Section

Formal Education and Training:

B. S. Civil Engineering, University of California at Davis, 1973
Juris Doctor, Cleveland - Marshall College of Law, 1985

Experience:

1982 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Contract Manager in the Nuclear Construction Administration Section responsible for Civil, Mechanical, and Piping disciplines. Provided supervision and coordination to Contract Administrators for adherence to contract schedules and the Project Construction Budget.

In 1984, was appointed Contracts Manager of Instrumentation and Controls to develop and implement an accelerated construction program to meet a September 1984, RPV hydrotest goal.

In October 1984, was named Test Support Group Supervisor responsible for coordination and supervision of Nuclear Test Support engineers, superintendents and contractor personnel.

In 1985, assigned as General Supervising Engineer of the Nuclear Construction Administration Section (later reorganized into the Nuclear Construction Services Section) responsible for supervising the Contract/Project Administration and Test/Operations Support Units. Reports to the Manager, Nuclear Construction Department.

1976 - 1982: Kaiser Engineers, Incorporated

Joined Kaiser Engineers at the Perry Nuclear Power Plant holding various positions within the Construction Quality Control Group from Civil Engineer to Inspection Supervisor. Responsibilities included all disciplines with respect to supervision, program development, implementation of plans and procedures, training and policies.

In 1978, promoted to Area Engineer planning all project work schedules, interfacing contractor schedules with the area plan, coordinating area work, and monitoring contractor manpower and equipment.

In 1979, was named Contract Administrator responsible for the critical path civil, mechanical and piping contractors respectively. All activities for commercial and work functions were maintained.

Martin Cohen

TABLE 13.1-3 (Continued)

RESUME NO. 11 (Continued)

Experience: (Cont.)

In 1982, held the position of Principal Project Administrator within the Nuclear Construction Administration Section of the Nuclear Construction Department. Responsibilities included special projects to support the construction activities at the Perry Nuclear Power Plant.

1973 - 1976: Guy F. Alkinson Company

In 1973, joined the home office in South San Francisco, California, as an Engineer of bid proposal team. Activities included CPM scheduling quantity take-offs and feasibility studies.

In 1974, named Quality Assurance Engineer at the Diablo Canyon Nuclear Power Plant and was named sole civil contractor at the Power Station. Program development, implementation, audits and inspections were conducted in the Civil (concrete, reinforcing steel, cadwelds, soils), Structural (structural steel, bolting, welding-AWS and Mechanical (fuel pool racks, reactor building containment, welding-ASME disciplines.

In 1975, worked as Lead Form and Lift Engineer at three Dam Projects on the Snake River in Washington state. Responsible for design and detailing of concrete forms, production of lift drawings, fabrication and installation of reinforcing steel, installation of cadweld splices and the research and writing of various weld procedures.

Professional Memberships:

American Society for Quality Control
Registered Professional Engineer, No. 43004, State of Ohio (Civil, Structural)
Registered Professional Engineer, No. QU-5068, State of California (Quality)
Certified Quality Engineer, No. E4828, "American Society for Quality Control"
Nuclear Quality Assurance certifications include:

- Certified as Level III Inspector/Engineer by Kaiser Engineers in accordance with the requirements of ASME Section III, Division II.
- Certified as Level III Civil by Kaiser Engineers in compliance with ANSI N45.2.6.
- Certified as Level II visual weld Examiner by Kaiser Engineers and Guy F. Atkinson, Co.
- Certified as Lead Nuclear Quality Assurance Auditor in compliance with ANSI N45.2.23 by Kaiser Engineers.

TABLE 13.1-3 (Continued)

RESUME NO. 12

Name: Kenneth R. Pech, General Supervising Engineer, Nuclear Construction Engineering Section

Formal Education and Training:

B. S. Mechanical Engineering, Lehigh University, 1969

Experience:

1985 - Present: The Cleveland Electric Illuminating Company

Joined CEI in 1985 as a Senior Project Engineer, assigned as supervisor of the System Engineering Response Team Element of the Nuclear Construction Engineering Section with responsibility for engineering support of the Preoperational Test Program.

Later in 1985, was assigned as General Supervising Engineer, Nuclear Construction Engineering Section with responsibility for onsite and architect/engineer home office engineering in support of the Construction Program for the Perry Plant.

1969 - 1972

Building Services Engineer - Responsible for design engineering and specification of heating, ventilating and air conditioning equipment and systems for Kansai Electric Power Company's Ohio Nuclear Station, Units 1 and 2, 1100 MW each; South Carolina Electric & Gas Company's Lackawanna Substation; Baltimore Gas and Electric Company's Riverside Station; the Cleveland Electric Illuminating Company's Eastlake Plant, Unit 5 625 MW.

Start-up and Test Engineer - Supervised startup and testing of cooling and ventilation system for Kansai Electric Power Company's Mihama Nuclear Station, Unit 1, 340 MW, nuclear.

1972 - 1978

Project Control Engineer - Responsible for project administration and control; including planning, scheduling, and technical coordination in an assistant capacity to the Project Manager of Cleveland Electric Illuminating Company's Perry Nuclear Power Plant, Units 1 and 2, 1200 MW each. Project responsibilities included coordination of specifications, bills of material, expediting, project services and construction administration departments. Provided liaison between engineering and Quality Assurance groups and also between engineering and construction site personnel. Developed and maintained project design control program and monitored drawing schedules, production and issues in support of project schedules.

TABLE 13.1-3 (Continued)

RESUME NO. 12 (Continued)

1978 - 1985

Project Manager - Supervisor of GAI's on-site design team at Cleveland Electric Illuminating Company's Perry Nuclear Power Plant. Administrative lead for all Power and Industrial Systems Division personnel on-site. Responsibilities and duties include providing project management direction to the engineers assigned to the site design team; providing liaison between GAI and client's engineering and construction staff; administering indoctrination program for GAI site engineeers; providing project management review of Engineering Change Notices; and preparing and/or reviewing performance appraisals for site personnel.

Professional Memberships:

Registered P.E., Pennsylvania
Member, American Society of Mechanical Engineers

TABLE 13.1-3 (Continued)

RESUME NO. 14

Name: Daniel D. Hulbert, Emergency Planning Supervisor, Perry Project Services Department

Formal Education and Training:

Electrician's Mate School, U. S. Navy, 1973-1974
Nuclear Power Training, U. S. Navy, 1974-1975
Engineering Laboratory Technician School, U. S. Navy, 1975
One-Week Basic BWR Systems (PDP), 1980
Fifteen-Week Davis-Besse Nuclear Power Station (Emergency Planning), 1980
Eight-Week Davis-Besse Nuclear Power Station (Evacuation Time Estimates), 1981
One-Week Electrical Fundamentals II, 1981
One-Week Planning for Nuclear Emergencies Course, Harvard School of Public Health, 1982
One-Week Emergency Preparedness Plans and Programs, Battelle Pacific Northwest Laboratories, 1985

Experience:

1979 - Present: The Cleveland Electric Illuminating Company

Joined CEI as an Engineering Technician and assigned to development of the PNPP Emergency Plan. Assisted in the preparation of the Davis-Besse Nuclear Power Station Emergency Plan, implementating procedures, and the Davis-Besse education time estimates. Participated in several Emergency Plan exercises at other Nuclear Power Plants as an official Exercise Observer. In 1982 promoted to present position of Emergency Planning Coordinator reporting directly to the Technical Superintendent, Perry Plant Technical Department and was responsible for the preparation, implementation and maintenance of the PNPP Emergency Plan. In 1985 promoted to present position of Emergency Planning Supervisor. Reports directly to the Community Relations Section, General Supervising Engineer, Perry Project Services Department.

1973 - 1979: U. S. Navy

Electrician's Mate - Qualified as Engineering Laboratory Technician, Electrical Operator and Shutdown Reactor Operator on a S5W Class Submarine. Duties included operation and maintenance of electrical systems, chemistry controls for both primary and secondary plant, and routine and emergency health physics coverage. Assignments included one tour on an S5W Submarine and one tour assigned to the Radiological Controls Division of a Submarine Tender.

TABLE 13.1-3 (Continued)

RESUME NO. 15

Name: Emanuel Riley, General Supervising Engineer, Construction Quality Section

Formal Education and Training:

Academic Diploma with Technical Training in the Fundamentals of Electricity, East Technical High School, 1954
Courses in Architectural and Construction Engineering Technology, Cuyahoga Community College, 1971-1972
Ten-Week Nuclear Power Production Course, 1972
Three-Day BWR Design Orientation Course, 1975
Forty-Hour Quality Assurance/Quality Control Course (NNIC), 1977
Construction Management Fundamentals, Center for Professional Advancement, New Jersey, 1977
Contract Administration Course, George Washington University, 1978
Quality Assurance Audit Techniques Course, L. Marvin Johnson & Associates, Inc., 1981
Construction Scheduling and Cost Control, Hill International, 1981
Career Development Program Track II, Case Western Reserve University, 1981-1982
Management of Managers, University of Michigan, 1983

Experience:

1971 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Senior Construction Technician in the Contract Construction Department. From 1971 to 1975, assignments varied from contracts administration and inspection of general construction projects to the Lakeshore fuel conversion. Other assignments included the coordination and inspection of mechanical and piping disciplines during the construction of Eastlake Unit #5 (fossil-fuel plant). In 1974, assigned to Davis-Besse Nuclear Station for surveillance of construction activities and assisted in the inspection of system hydro test. Also worked four months on rotation of assignment to Nuclear Quality Assurance Department. Promoted to Associate Inspector in 1974. In 1975, began assignment at Perry Plant in the Nuclear Construction Section and served as Project Inspector, Senior Project Inspector and Senior Project Administrator.

In 1981, promoted to General Supervisor, Construction Quality Section responsible for development and maintenance of a QA Program for all construction quality functions. Reports to the Manager, Quality Assurance Department.

1968 - 1971: Cuyahoga Metropolitan Housing Authority

Maintenance and Modernization Coordinator. Duties included supervision of maintenance operations of three large housing projects and also supervision of the Central Heating Plant and Steam Distribution System.

TABLE 13.1-3 (Continued)

RESUME NO. 15 (Continued)

Experience:

1960 - 1968: City of Cleveland

Steam Fireman was the beginning position with the City of Cleveland. Advanced through the line of progression to Stationary Engineer, to Shift Engineer responsible for a working crew of sixteen men, including Boilermakers, Steam Fitters and Pipefitters.

1955 - 1960: Cuyahoga Metropolitan Housing Authority

Chief Maintenance Clerk responsible for inventory control, payroll and budget preparation.

TABLE 13.1-3 (Continued)

RESUME NO. 16

Name: Peter A. Solanics, General Supervising Engineer, Cost and Schedules Section

Formal Education and Training:

B.A. Mathematics, Baldwin-Wallace College, 1964
B.S. Electrical Engineering, Carnegie Institute of Technology, 1964
M.S. Engineering Administration, Case Institute of Technology, 1967
Nine-month Power System Engineering Course (GE), 1969

Experience:

1964 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Junior Engineer in the System Planning and Operations Department. From 1964 to 1980, held various engineering positions in the Relay Activity of the System Protection Section. As Senior Protection Engineer was responsible for directing and coordinating the work of the Relay Activity.

In 1980, assumed position as Senior Engineer of the newly formed Environmental and Control Section, responsible for organizing and administering the Instrument and Control Activity.

In 1982, assumed position as General Supervising Engineer, System Protection Section, responsible for planning of the system protective relay and communications facilities, and power system computer and analytical applications. Participated in the INPO Self-Initiated Evaluation of the Perry Nuclear Power Plant in October, 1982.

In July, 1983 assumed present position as General Supervising Engineer of the newly formed Cost and Schedules Section. As such, is responsible for integrating, coordinating and reporting on the cost and scheduling aspects of the Perry Nuclear Power Plant. Reports to the Vice President, Nuclear Group.

Professional Memberships:

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

TABLE 13.1-3 (Continued)

RESUME NO. 17

Name: Robert L. Vondrasek, General Supervising Engineer, Reliability and Design Assurance Section

Formal Education and Training:

Bachelor of Science in Engineering, Cleveland State University, 1975
Master of Business Administration, Cleveland State University, 1982
One-week Quality Assurance Auditor Course, Gilbert/Commonwealth Inc.
One-week Principles of BWR Operation Course, General Physics Corporation

Experience:

1968 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Junior Engineering Aide in 1968. From 1968 through 1978 held various engineering positions in the Plant and Substation Engineering Department. As Electrical Project Engineer was responsible for plant and transmission substation design and equipment applications.

In July, 1978, transferred to Nuclear Quality Assurance Department as a Quality Engineer in Program Quality Section. In October, 1978, named Director of Training responsible for development of indoctrination and training program during construction phase of Perry Nuclear Plant. In April, 1979, was named Supervisor, Construction Quality Engineering Unit, responsible for quality assurance support of all construction functions.

In September, 1980, assumed position as General Supervising Engineer, Training/Administration Section responsible for quality assurance program development and maintenance for indoctrination and training, quality records, coordination of activities involving the Nuclear Regulatory Commission during construction phase, and general administration functions.

In April, 1981, assumed position of General Supervising Engineer, Program Quality Section, responsible for planning and directing the quality assurance activities involving design, procurement, manufacturing, program development and quality control for the start-up and operation of Perry Nuclear Plant.

In December, 1982, assumed duties of General Supervisor, Nuclear Project Training Section responsible for the overall development and coordination of training for the Perry Nuclear Power Plant.

In February, 1984, transferred to new position of General Supervising Engineer, Reliability and Design Assurance Section. Responsible for

Robert L. Vondrasek

TABLE 13.1-3 (Continued)

RESUME NO. 17 (Continued)

Experience:

planning and directing activities of the Independent Safety Engineering Group (ISEG), Corporate Health Physicist, Plant Reliability and Performance Engineering, and Design Assurance. Reports to the Manager, Nuclear Engineering Department.

1964 - 1968: U. S. Air Force

Served as Nuclear Weapons Maintenance Crew Member, Nuclear Weapons Crew Chief, Nuclear Quality Control Inspector, and Nuclear Maintenance Member of Base Disaster Control Team.

Professional Memberships:

American Nuclear Society
Institute of Electrical and Electronic Engineers
National Society for Performance and Instruction

TABLE 13.1-3 (Continued)

RESUME NO. 18

Name: Barton D. Walrath, General Supervising Engineer, Operational Quality Section

Formal Education and Training:

Bachelor of Science Degree in Electrical Engineering, Cleveland State University, 1970

Experience:

1978 - Present: The Cleveland Electric Illuminating Company

Rejoined CEI in 1978 as a Senior Engineer, Quality Assurance and was later named Supervisor, Program Quality Engineering Unit. Responsibilities included developing and implementing a quality assurance program to support procurement, pre-operational testing, operations, and the internal audit program. In 1981, was assigned to devote full time effort to develop the Operational Quality Assurance Program.

In December, 1982, assumed the position of General Supervising Engineer, Program Quality Section (renamed Operational Quality Section). As such, is responsible for planning and directing the quality assurance activities involving preoperational testing, start-up and operation of the Perry Nuclear Power Plant. Reports to the Manager, Quality Assurance Department.

1977 - 1978: San Diego Gas & Electric Company

As an electrical quality assurance specialist was to be responsible for the electrical quality program during the construction of the Sun Desert Nuclear Power Plant. Was also involved in the start-up testing of an oil fired generating unit during this period.

1965 - 1977: The Cleveland Electric Illuminating Company

Began work in the electrical engineering of coal-fired plant projects and transmission substation design while in a cooperative education program.

In 1971, assumed the responsibilities of a Results Engineer in a coal-fired plant involved in the start-up of a new unit as well as technical support for the operation of four existing units.

In 1973, began work in quality assurance involved in overall program development and responsible for the Procurement Quality Assurance Program.

TABLE 13.1-3 (Continued)

RESUME NO. 18-A

Name: Richard R. Bowers, Corporate Health Physicist

Formal Education:

Bachelor of Science in chemistry, The Pennsylvania State University, 1955

Experience:

1984-Present: Cleveland Electric Illuminating Company

As Corporate Health Physicist, responsible for overview of operational, engineering, and environmental radiological control programs. Responsible to provide policy, criteria, standards, measurement methodologies, and evaluations for radiological and radiological environmental protection programs and practices.

1970-1984: NUS Corporation

As Manager of the Health Physics Services Department, responsible for management and technical direction/review of radiation protection consulting projects for utility clients. Projects included development of operational radiation protection programs, health physics procedures, radiological emergency plans, health physics training, and decommissioning programs as well as plant/system ALARA reviews, radiation protection equipment evaluations, and reviews of health physics programs.

1963-1970: Niagara Mohawk Power Corporation

As Health Physics and Chemistry Supervisor, responsible for setup and management of the radiation protection program at Nine Mile Point 1. Trained and supervised technicians, administered environmental monitoring program, developed radiological emergency plan, wrote health physics and chemistry procedures, and purchased and set up health physics/chemistry equipment.

As Radiological Engineer, assisted in the design of Nine Mile Point 1. Assisted with general plant layout and designed plant shielding. Designed health physics and chemistry facilities. Designed installation details of process and effluent monitors.

1955-1963: E. I. duPont de Nemours and Co.

As Health Physics Engineer at the Savannah River Plant, supervised technicians in separations plants, fuel fabrication facilities, and production reactors.

Professional Memberships:

Health Physics Society

Certification:

Comprehensive Health Physics-American Board of Health Physics-1963
Power Reactor Health Physics-American Board of Health Physics-1980

TABLE 13.1-3 (Continued)

RESUME NO. 18-B

Name: Robert A. Newkirk, Senior Staff Engineer

Formal Education and Training:

Bachelor of Science Degree, U.S. Naval Academy, 1964

Nuclear Power Training, U.S. Navy, 1965-1966

Reactor Operator Course, General Electric Company, BWR Training Center, Morris, Illinois

Experience:

1985-Present: The Cleveland Electric Illuminating Company

Joined CEI in September 1985 as Senior Staff Engineer and reports to the Manager, Nuclear Engineering Department.

1982-1985: Public Service Power & Light Company

Assigned as assistant to Vice President, Engineering and Operations. While on leave of absence from February 1985 to May 1985, served as consultant to the Public Service Electric and Gas Company's Plant Technical Manager at the Hope Creek Nuclear Generating Station. Also was on loan to Portland General Electric to develop and implement a performance monitoring program for the Trojan Nuclear Plant.

Served as a loaned employee to INPO from July 1980 to August 1982. Participated in 11 INPO evaluations of operating nuclear plants, primarily in the maintenance and technical support areas of PWRs and BWRs.

Designated as Skagit Nuclear Plant Manager between April 1979 and June 1980. As Senior Project Engineer for the Skagit Plant from April 1974 to March 1979, provided direction to the architect/engineer and performed design review for operations.

Robert A. Newkirk

1970-1974: Commonwealth Edison Company

Was department head for technical staff at the Quad Cities Nuclear Power Station from August 1971 to April 1974 during initial fuel loading on both units. Responsible for nuclear engineering, plant modification control, performance monitoring, instrumentation and control maintenance, radiation protection and chemistry, and quality control. Licensed Senior Reactor Operator for Quad Cities Units 1 and 2.

As Technical Staff Engineer from January 1970 to December 1970 on Dresden Nuclear Power Station, was responsible for review of preoperational test procedures and test results. Licensed Senior Reactor Operator for Dresden Units 2 and 3.

1964-1970: Unites States Navy

Served as Reactor Control and Communications Officer on USS Plunger (SSN-595) and Damage Control Officer on USS Puffer (SSN-652).

TABLE 13.1-3 (Continued)

RESUME NO. 19

Name: John J. Waldron, Manager, Perry Plant Technical Department

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
Five-Week Perry Nuclear Plant Technology (GE), 1980
Nine-Week Operator Training Course, Perry Simulator (GE), 1980
(SRO Certification)

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 Project 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 staffing and training of the plant operating organization. In 1984, named Manager of the Perry Plant Technical Department with overall responsibility for project security, training, radiation protection, technical and administrative support of plant operations. Reports to the Vice President, Nuclear Operations Division. Member of the Edison Electric Institute's Prime Movers Committee, Nuclear Power Task Force and Subcommittee from 1972 to 1980. Member of the EEI Nuclear Operations Committee 1980 - present.

1951-1954: U. S. 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. 20

Name: Michael D. Lyster, Manager, Perry Plant Operations Department

Formal Education and Training:

U.S. Navy Nuclear Power Training School, 1964
U.S. Navy Welding & Metallurgy School, 1965
Bachelor of Science Degrees in Business Administration and Physical Science, Hawthorne College, 1978
Mechanical Engineering Technology and graduate-level Business Courses, Keene State College, 1979-1980

Experience:

1982 - Present: The Cleveland Electric Illuminating Company

Joined CEI in December, 1982 as Superintendent, Plant Operations responsible for directing the operations, maintenance and technical activities in the Perry Plant Department. In May, 1984 assigned responsibility for directing the Plant's preoperational test program while reporting to the Vice President, Nuclear Operations Division.

In October, 1984 promoted to present position as Manager, Perry Plant Operations Department responsible for directing plant testing, operations, maintenance, and outage planning activities. Reports to the Vice President, Nuclear Operations Division.

1969 - 1982 Vermont Yankee Nuclear Power Corporation

Worked as Supervisory Control Room Operator. Duties included preparing and supervising completion of preoperational and startup test program. Prepared and supervised implementation of operating procedures for normal plant operations. Also served as instructor of Cold License Training Program and as coordinator and instructor of Hot License Programs. Licensed SRO in 1971 - (Lic. # SOP-1567-5).

During 1973 - 1976 period, assigned as Operations Training Supervisor responsible for drafting and implementing all Licensed operator training and retraining programs. From 1976 - 1980, was Shift Supervisor responsible for supervising plant operations and testing and coordinating various maintenance activities. In 1980, promoted to Operations Supervisor with responsibilities for supervising the forty-nine man Operations Department.

In 1981, appointed Assistant Plant Manager responsible for the Maintenance, Instrument and Control, and Administrative Departments.

Michael D. Lyster

TABLE 13.1-3 (Continued)

RESUME NO. 20 (Continued)

1961 - 1969: U. S. Navy

From 1961 - 1964 involved in operation and maintenance of conventional destroyer's auxiliary equipment. In 1964, entered the naval nuclear program and qualified on DIG prototype, and as Engineering Officer of the Watch on S5W submarine. Duties included supervising sixteen-man Machinery Division for plant operations and maintenance work. Also participated in overhaul and refueling operations.

TABLE 13.1-3 (Continued)

RESUME NO. 21

Name: Steven F. Kensicki, Technical Superintendent, Perry Plant Technical Department

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
Three-Week Nuclear Technology Course for Power Plant Engineers (General Physics Corporation, 1976
Two-Week Research Reactor Training Program (University of Wisconsin), 1976
Twelve-Week BWR Chemistry Course (GE), 1978
Eight-Week Radiological Engineering Course (GE), 1980

Experience:

1968 - Present: The Cleveland Electric Illuminating Company

May, 1968 - October, 1972: Junior Engineer, Associate Engineer, Chemical Engineering Unit. Participated in the startup of two 650 megawatt supercritical fossil fired electrical generating units. Responsible for the preoperational cleaning, checkout, initial operation, and operator training on all water treatment and analytical sampling equipment. The equipment included high flow rate deep bed demineralizers with external regeneration, condensate filtration equipment, and sodium, oxygen, silica, conductivity, and pH continuous flow analytical equipment.

October 1972 - June 1976: Engineer, assigned to Toledo Edison Company, Davis-Besse Nuclear Station, Operations Section. Responsibilities included writing startup, operating, periodic, and surveillance test procedures. Procedures were prepared for all phases of plant operation including NSSS, Radwaste, and Secondary Systems. Served as a test leader during station startup. Completed all aspects of Health Physics training for station employees.

June 1976 - January 1978: Engineer, Nuclear Engineering Department. Participated in the design review of radwaste and water treatment systems. Responsible for the design of the preoperational chemical cleaning systems and the layout of the laboratory and health physics facilities for the Perry Plant.

January 1978 - September 1984: General Supervising Engineer, Radiation Protection Section. Responsible for directing all activities of the Health Physics, Chemistry, and Radwaste Units. Developing the Radiation Protection, Chemistry, and Radwaste Management Programs for the Perry Plant. This included facility and equipment reviews,

Steven F. Kensicki

TABLE 13.1-3 (Continued)

RESUME NO. 21 (Continued)

Experience:

procedure preparation and approval, and developing supervisory and technician training and staffing requirements. Also reponsible for directing the onsite development and implementation of emergency response planning. Assigned to the Electric Power Research Institute, Nuclear Engineering and Operations Task Force, Chemistry, Radiation, and Monitoring Subcommittee, 1981.

October 1984 to present: Technical Superintendent, Perry Plant Technical Department. Responsible for directing the radiation protection, technical support and administrative functions of the Perry Plant Technical Department. Also responsible for directing the onsite emergency response planning effort. Reports to the Manager, Perry Plant Technical Department.

Professional Memberships:

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

TABLE 13.1-3 (Continued)

RESUME NO. 22

Name: Russell J. Tadych, General Supervisor, Operations Section

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 Operator Training Course, Dresden Simulator (GE), 1979 (SRO Certification)
Five-Week Perry Plant Technology (GE), 1982
Thirty-Week Perry License Training, 1983
Ten-Week Perry License Refresher Training, 1985 (SRO License No. SOP-30439, effective 4 Apr 85)

Experience:

1974 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Operations Engineer. Assignments included four months participation in a refueling outage at Northeast Utilities, Millstone Nuclear Plant, six weeks training at Eastlake Plant qualifying as Electrical Operator, assisting Engineering Department in design review of systems to be installed at Perry Plant and six weeks experience training at the Commonwealth Edison Company's Dresden Station. In 1976, was assigned to the Eastlake Plant (fossil-fired plant) as General Supervisor, Services Section. In 1978, was appointed to his present position of General Supervisor, Operations Section at the Perry Plant. Reports to the Manager, Perry Plant Operations Department and supervises all operations personnel.

1967 - 1974: U. S. Navy

Officer - Qualified as Engineering Officer of the Watch - duties included Electrical Division Officer, Damage Control Assistant and Weapons Officer on S5W class submarines.

Professional Membership:

Registered Professional Engineer, State of Ohio

TABLE 13.1-3 (Continued)

RESUME NO. 23

Name: Donald J. Takacs, General Supervisor, Maintenance Section

Formal Education and Training:

Bachelor of Science Degree in Mechanical Engineering Technology, University of Dayton, 1968
Twenty-week Academic Program for Nuclear Power Plant Personnel, (General Physics Corporation), 1979
One-Week Quality Assurance Codes and Standards Course, (General Atomic Company), 1979
One-Week Quality Assurance Audit Training (GAI & Associates), 1980
Nine-Week Operator Training Course, Perry Simulator (GE), 1982 (SRO Certification)
Eight-Week Observation Training at Northeast Utilities Millstone Unit 1 Nuclear Plant, (including one week specific Control Rod Drive Training), 1982
One-Week General Electrical Maintenance Training Overview at the BWR Services Training Facility, 1985

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, Supervisor - Plant Maintenance, Plant Technical Engineer, and General Supervisor of Maintenance. In 1978 transferred to the Perry Plant Department as General Supervisor, Maintenance Section. Reports to the Manager Perry Plant Operations Department and is responsible for maintenance, warehousing, and spare parts activities at the Perry Plant.

Professional Memberships:

Member American Society of Mechanical Engineers
Member American Welding Society

TABLE 13.1-3 (Continued)

RESUME NO. 24

Name: Gary R. Leidich, General Supervising Engineer, Nuclear Test Section

Formal Education and Training:

B.S. Electrical Engineering, University of Toledo, 1972
M.S. Engineering Sciences, University of Toledo, 1974

Experience:

1974 - Present: The Cleveland Electric Illuminating Company

Joined CEI in 1974 as a Associate Engineer in various fossil plant electrical engineering responsibilities in Plant & Substation Engineering Department. Responsible Engineer for precipitator retrofit.

In 1975, was assigned to the Perry Project and was Responsible Engineer for procurement of plant electrical equipment. Also responsible for Perry electrical system design calculations, voltage and short circuit studies and transmission system interface criteria.

In 1978, served as Lead Electrical Engineer and was responsible for supervision of personnel involved in all electrical engineering aspects.

In 1980, was Senior Engineer on assignment as Supervisor of Construction Quality Engineering. Responsibilities included supervision of personnel involved in monitoring contractors' QA/QC performance during construction.

In 1982, was assigned Senior Engineer in Nuclear Construction Engineering Section. Responsibilities included supervision of engineering personnel, providing construction support for electrical, civil, structural and chemical disciplines. Was also responsible for cost and schedule control of all primary engineering consultants.

In 1984, assigned as General Supervising Engineer, Nuclear Construction Engineering Section responsible for the onsite engineering to support the construction program for the Perry Plant.

In 1985, was named to present position as General Supervising Engineer, Nuclear Test Section in the Perry Plant Operations Department responsible for the initial check-out and run-in, acceptance testing and preoperational testing of the Perry Plant.

Professional Memberships:

Secretary, Nuclear Power Engineering Committee (NPEC) of Power Engineering Society of Institute of Electrical and Electronic Engineers

TABLE 13.1-3 (Continued)

RESUME NO. 25

Name: Joseph M. Lastovka, General Supervising Engineer, Material Services 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 1955, promoted to Engineering Technician and was responsible for the design of power plants. In 1962, transferred to Avon Lake Power Plant (coal-fired plant) an Electrical Maintenance Foreman. Promoted to Staff Analyst for Steam Power Operations group in 1966. 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. From 1979 to 1982, served as General Supervising Engineer, Nuclear Test Section of the Nuclear Engineering Department and was responsible for the overall development and implementation of the start-up and test programs for the Perry Plant (prior to fuel load).

From 1982 to 1984, served in position of General Supervising Engineer, Nuclear Construction Engineering Section responsible for the on-site engineering to support the construction program for the Perry Plant.

In 1984, assigned as second shift General Supervising Engineer, Nuclear Test Section. In mid 1985, assigned as General Supervising Engineer of Material Services Section which consists of spare parts, warehousing and plant helper personnel. Reports to the Manager, Perry Plant Operations Department.

1953 - 1955: U. S. Navy

Served as Submarine Electrician on USS Lionfish and USS Albacore.

1948 - 1950: Ohio Bell Company

TABLE 13.1-3 (Continued)

RESUME NO. 26

Name: William R. Kanda, Jr., General Supervising Engineer, Technical Section

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), 1976
Three-Week BWR Design Orientation Course (GE), 1976
Two-Week Pneumatic Instrumentation Course (Bailey Controls), 1977
Two-Week Bailey 7000 Analog Course (Bailey Controls), 1977
Four-Week Process Instrumentation Course (GE), 1978
Five-Week Nuclear Instrumentation Course (GE), 1978
Eight-Week Rod Control and Information Course (GE), 1979
Three-Week Recirculation Flow Control Course (GE), 1979
Twenty-Week Academic Program for Nuclear Power Plant Personnel (General Physics Corporation), 1979
Five-Week Perry Nuclear Plant Technology (GE), 1980
Nine-Week Operator Training Course, Perry Simulator (GE), 1980 (SRO Certification)
Five-Week Station Nuclear Engineering Course (GE), 1982

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 position of Instrument and Control Supervisor in 1978 and was responsible for instrument and control activities including design review and training of technicians. Promoted to Operations Engineer in 1980. In 1982, promoted to present position as General Supervising Engineer, Technical Section reporting to the Manager, Perry Plant Technical Department.

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

William R. Kanda, Jr.

TABLE 13.1-3 (Continued)

RESUME NO. 26 (Continued)

Professional Memberships:

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

TABLE 13.1-3 (Continued)

RESUME NO. 27

Name: Anthony F. Silakoski, General Supervisor, Perry Training Section

Formal Education and Training:

Bachelor of Science Degrees in Aerospace and Mechanical Engineering, U.S. Naval Academy, 1974
Nuclear Power Training, U.S. Navy, 1974 - 1975
Master of Business Administration Program, John Carroll University, 1984
Five-Week Perry Nuclear Plant Technology (GE), 1980
Nine-Week Operator Training Course, Perry Simulator (GE), 1980
(SRO Certification)

Experience:

1979 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Operations Engineer assigned to coordinate the development of a spare parts program including initial procurement of spare parts inventory for the Perry Plant. From 1981-1984, assigned as Training Supervisor, Perry Plant Department. Responsibilities included coordinating all operator license training and development and implementation of training programs for plant operating personnel.

In 1984, assigned to present position as General Supervisor, Perry Training Section. Reponsible for the overall direction, development, and maintenance of the coordinated training program covering the entire Perry Project Organization including operating, engineering and quality assurance departments. Reports to the Manager, Perry Plant Technical Department.

1974 - 1979: U. S. Navy

Officer - Qualified as Engineer Officer and Engineering Officer of the Watch - duties included, Reactor Controls Division Officer, Radiological Controls Officer, Main Propulsion Assistant, Radiological Controls Officer, Electronics Material Officer and Weapons Officer.

Professional Memberships:

Registered Professional Engineer, State of Ohio
American Society of Mechanical Engineers
Institute of Electrical and Electronics Engineers
Midwest Nuclear Training Association
National Society for Performance and Instruction

TABLE 13.1-3 (Continued)

RESUME NO. 28

Name: Robert A. Stratman, General Supervising Engineer, Radiation Protection Section

Formal Education and Training:

Bachelor of Science Degree in Physics, Ohio State University, 1971
Master of Business Administration Degree in Finance, University of New Haven, 1981
Master of Science in Mechanical Engineering, Cleveland State University, 1985
Five-Week Perry Nuclear Plant Technology (GE), 1980
Nine-Week Operator Training Course, Perry Simulator (GE), 1980 (SRO Certification)
Five-Week Station Nuclear Engineering (GE), 1982

Experience:

1980 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Operations Engineer. Initially assigned to assist the Operations Section General Supervisor. In 1982, assigned to develop the Plant Emergency Instructions.

In December, 1982 assumed position as General Supervisor, Nuclear Services Section with responsibility for developing and maintaining a qualified permanent plant security force and for all plant administrative and general maintenance support services.

In October, 1984 assumed present position as General Supervising Engineer, Radiation Protection Section with responsibility for directing all activities of the Health Physics and Chemistry Units including the development of the Radiation Protection and Chemistry Programs for the Perry Plant. Reports to the Technical Superintendent, Perry Plant Technical Department.

1977 - 1980: Northeast Utilities

Engineer at Millstone Nuclear Plant. Responsibilities included evaluation of plant systems, the design, procurement and implementation of modifications to plant systems and conformance to code and regulatory requirements. Supervised refueling and unscheduled outages, and managed the test of the plant's reactor containment systems. Also served as a member of the Plant Operations Review Committee.

1971 - 1976: U. S. Navy

Officer - Qualified as Engineering Officer of the Watch and qualified Engineer of a naval nuclear powered propulsion plant - duties included Electronics Material Officer, Main Propulsion Assistant, Radiation Controls Officer and Submarine Qualification Officer.

Robert A. Stratman

TABLE 13.1-3 (Continued)

RESUME NO. 28 (Continued)

Professional Membership:

Registered Professional Engineer - State of Ohio

TABLE 13.1-3 (Continued)

RESUME NO. 29

Name: Position Currently Unfilled, General Supervising Engineer, Outage Planning Section

TABLE 13.1-3 (Continued)

RESUME NO. 30

Name: Thomas E. Mahon, General Supervisor, Site Protection Section

Formal Education and Training:

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
Associate-Degree Law Enforcement, Cuyahoga Community College, 1974
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. Duties included the development and implementation of the Perry Plant Security Plan and selection and training of the permanent security force. In 1985, promoted to present position of General Supervisor, Site Protection Section, responsible for all plant security activities. Reports to the Manager, Perry Plant Technical Department.

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. 31

Name: Robert P. Jadgchew, General Supervising Engineer, Instrumentation and Control Section

Formal Education and Training:

B. S. Mechanical Engineering, Cleveland State University, 1968
M. S. Mechanical Engineering, Cleveland State University, 1971
Professional Engineer State of Ohio, 1977

Experience:

1968 - Present: The Cleveland Electric Illuminating Company

Joined CEI in 1968 as a Junior Engineer in the Production Engineering Section and assigned as the Engineer-in-Charge of the ASME Turbine Acceptance Test for the 650 MW Avon No. 9 Unit.

In 1972, was assigned to the Davis-Besse Nuclear Power Plant Operations Staff as a System Test Engineer. Primary duties included procedure preparation, system turnovers, initial checkout and run-in tests and formal per-operational tests.

In 1976, was assigned to CEI's newly formed Nuclear Test Section as the Lead NSSS Test Engineer. Responsibilities included test program development, manning, budgets and selection of consultant assistance.

In 1980, was assigned as Senior Project Engineer, Nuclear Design Section and was responsible for mechanical design engineering of the Perry Plant.

In 1981, was named Contracts Manager, Nuclear Construction Section and was responsible for supervising and coordinating the efforts of all Contract Administrators to assure adherence to contract schedules and the project construction budget.

In 1982, was promoted to position of General Supervising Engineer, Nuclear Construction Administration Section and was responsible for supervising the Contracts Administration and the Field Construction Units. Reported to the Manager, Nuclear Construction Department.

In 1985, was transferred to present position of General Supervising Engineer, Instrumentation and Control Section and is responsible for supervising the Electrical and I&C Engineering and the I&C Maintenance and Calibration Units. Reports to the Technical Superintendent, Perry Plant Technical Department.

TABLE 13.1-3 (Continued)

RESUME NO. 32

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 - 1983

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. Responsible for administrative and clerical activities in support of the Perry Plant Operations and Technical Departments. Reports to the Technical Superintendent, Perry Plant Technical Department.

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 (Continued)

RESUME NO. 33

Name: Terry K. Boyer, Shift Supervisor, Operations Section

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 (GE), 1979
Ten-Week Operator Training Course, Dresden Simulator (GE), 1979 (SRO Certification)
Three-Day Degraded Core Training Course (GE), 1982
Twenty-Eight Week Cold License Course, 1984-1985

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 transferred to the Perry Plant in 1978. In 1979, promoted to Shift Supervisor. In March, 1983 completed a seven-month rotation of assignment to the Eastlake Plant (fossil-fired plant) as General Supervisor, Plant Services Section. Reports directly to the General Supervisor, Operations Section. Licensed as SRO (SOP-304) in May, 1985.

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. 34

Name: Henry N. Kelly, Shift Supervisor, Operations Section

Formal Education and Training:

Electricians Mate "A" School, U.S. Navy, 1965
Nuclear Power Training, U.S. Navy, 1966-1967
Submarine School, U.S. Navy, 1967
Six-Week BWR Technology, (GE), 1973
Thirteen-Week Hot License Course, (NUS), 1976
One-Week Dresden Simulator Operator Training, (GE), 1976
Six-Week Basic PWR Systems Course, (General Physics), 1979
Shift Technical Advisor Program, Purdue University and Indiana University, 1981-1982
Twenty-Eight Week Cold License Course, 1984-85

Experience:

1984 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Shift Supervisor assigned to the Operations Section, Perry Plant Department. Reports directly to General Supervisor, Operations Section. Licensed as SRO (SOP-30456) in May 1985. Functioned as Test Coordinator during preoperational testing phase of plant construction.

1979 - 1984: Public Service of Indiana

Joined Public Service of Indiana as Shift Supervisor assigned to Marble Hill Nuclear Plant. Responsible for writing and reviewing various administrative and operating procedures. Served on the Westinghouse Owners Group Committee for development of Emergency Operating Procedures. Participated in five evaluations of operating BWR's and PWR's while on-loan to INPO in the Evaluation and Assistance Division from September, 1980 to August, 1981.

1972 - 1979: Iowa Electric Light and Power Company

Joined Iowa Electric Light and Power Company as an Auxiliary Operator at the Duane Arnold Energy Center (550 MWe, Type 4 BWR). Promoted to Reactor Operator (OP-4176) in 1977. Received experience in pre-operational and start-up testing, and participated in five refueling outages (three as licensed operator) and a safe-end repair outage.

1964 - 1972: U.S. Navy

Leading Petty Officer of the Electrical Division, assigned to a nuclear powered submarine. Qualified Electrical Operator, Steam Plant Operator, and Shutdown Manuevering Area Watch.

TABLE 13.1.3 (Continued)

RESUME NO. 35

Name: Allen J. Okorn, Shift Supervisor, Operations Section

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 Operator Training Course, Dresden Simulator (GE), 1979 (SRO Certification)
Four-Week BWR Observation Training, Millstone Nuclear Power Plant (GE), 1979
SRO Upgrade Program, Lakeland Community College and Ohio State University, 1980 - 1982

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, promoted to present position as Shift Supervisor. Reports directly to the General Supervisor, Operations Section.

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. 36

Name: Kenneth F. Russell, Shift Supervisor, Operations Section

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 Training Course, Dresden Simulator (GE), 1979 (SRO Certification)
SRO Upgrade Program, Lakeland Community College and Ohio State University, 1980 - 1982
Received Senior Reactor Operator License for Perry Unit 1 in May 1985

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, promoted to present position as Shift Supervisor. Reports directly to General Supervisor, Operations Section.

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. 37

Name: Roger M. Stiffler, Shift Supervisor, Operations Section

Formal Education and Training:

Electronic Technician "A" School, U. S. Navy, 1969-1970
Nuclear Power Training School, U. S. Navy, 1970-1971
Fifteen-Week Hot Licenses Class for Brunswick 1 & 2 (BWR-4), 1976
One-Week Course, Dresden Simulator Operator Training, 1976
Licensed Reactor Operator at Brunswick (BSEP) 1 & 2, 1976
Six-Week SRO Class for BSEP 1 & 2, 1978
Licensed Senior Reactor Operator at Brunswick (BSEP) 1 & 2, 1979
One-Week Annual Recertification at Browns Ferry Simulator (TVA), 1979-1981
One-Week Analytic Trouble Shooting (BSEP), 1981
One-Week Mitigated Core Damage (BSEP), 1981
Four-Week Perry Technology Course (PPD), 1982
SRO Upgrade Program, Lake Community College and Ohio University, 1982
Thirty-Week Perry License Training, 1983
Certified Level II & III System Test Engineer, 1983/1984
Forty Hour Brigade Leader Class (PPD), 1984
Twelve-Week SRO Upgrade, 1985
Licensed Senior Reactor Operator at PNPP, May 1985

Experience:

1981 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Shift Supervisor assigned to Operations Section, Perry Plant Operations Department. Duties have included writing and reviewing Perry Plant Procedures, supervising shift work, and working with the Nuclear Test Section in testing the liquid and solid radwaste systems. In 1983, certified Level II System Test Engineer. Reports directly to General Supervisor, Operations Section. In 1984, certified Level III System Test Engineer. Licensed SRO May 9, 1985. Presently working as a Shift Supervisor/Test Coordinator in the Control Room on a rotating shift.

1975 - 1981: Carolina Power and Light Company

Joined Carolina Power and Light Company as Auxiliary Operator assigned to Brunswick Steam Electric Plant (BSEP). Licensed as Control Operator (RO) in December of 1976. In January of 1979, licensed as Senior Reactor Operator on BSEP 1 & 2 (850 MWE, Type 4 BWR). Promoted to Operations Shift Foreman in April of 1981. While at Carolina Power and Light Company, received extensive experience in radwaste operations, and supervised refueling outages on both units. Participated in the start-up and start-up test program of BSEP 1.

Roger M. Stiffler

TABLE 13.1-3 (Continued)

RESUME NO. 37 (Continued)

1969 - 1975: U. S. Navy

Reactor Operator/Reactor Technician - qualified as Reactor Operator, Reactor Technician, Electric Plant Operator, Main Propulsion Plant Operator, and Shutdown Reactor Operator, in charge of Engine Room #2 Preventive Maintenance. Served as Reactor Control Division's Training Petty Officer.

TABLE 13.1-3 (Continued)

RESUME NO. 38

Name: Michael L. Wesley, Shift Supervisor, Operations Section

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
Five-Week Dresden Nuclear Plant Technology, (GE), 1979
Ten-week Operator Training Course, Dresden Simulator (GE), 1979 (SRO Certification)
SRO Upgrade Program, Lakeland Community College and Ohio State University, 1980 - 1982

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, promoted to present position as Shift Supervisor. In 1983, completed a one-year experience training assignment at the Grand Gulf Nuclear Plant. Reports directly to the General Supervisor, Operations Section.

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. 39

Name: Ronald L. Jones, Operator Training Supervisor, Perry Training Section

Formal Education and Training:

Electricians Mate "A" School, U.S. Navy, 1966
Basic Nuclear Power School, U.S. Navy, 1967-1968
Nuclear Prototype Training School, U.S. Navy, 1968
Bachelor of Science Degree in Metallurgical Engineering, Nuclear Engineering option, University of Missouri Rolla, 1973
Twenty-Four Week Beaver Valley Cold license Operator Training Program, 1974.
Three-Week Westinghouse, Zion Simulator (SRO Certification), 1974
Eight-Week Grand Gulf System Training (GE), 1982
Nine-Week Operator Training Course, Perry Simulator (GE), 1982 (SRO Certification)
Six-Week Observation training Suesquehanna Steam Electric Station, 1984
Thirty-Week Perry Cold License Operator Training Program, 1985

Experience:

1983 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Operations Engineer assigned to the Training Unit, Perry Plant Department. Assignments included license candidate systems training, simulator instruction, and requalification training.

In 1984, promoted to present position as Supervisor, Operator Training Unit. Responsibilities include licensed operator training, requalification training, and supervision of all Licensed Training Instructors. Reports to the General Supervisor, Perry Training Section.

1982 - 1983: Mississippi Power and Light Company

Operations Instructor at the Grand Gulf Nuclear Station. After completion of BWR classroom training, assigned to Operations Department as Shift Supervisor in training. Participated in Non-Nuclear Heat-Up and Systems Pre-Operations Testing.

1976 - 1982: University of Missouri - Rolla - Nuclear Reactor Facility

Reactor Engineer and graduate student in Nuclear Engineering and Engineering Management programs. Licensed Senior Reactor Operator on 200KW MTR. Instructed Reactor Operation and Reactor Physics Laboratory course for Nuclear Engineering Department.

TABLE 13.1-3 (Continued)

RESUME NO. 39 (Continued)

1973 - 1976: Westinghouse Electric Corporation

Training Coordinator and Station Operation Foreman at Duquesne Light Company's Beaver Valley Power Station. Taught Westinghouse Systems to utility cold license candidates. Licensed Senior Reactor Operator and participated in Cold Hydro - Hot Functions, Initial Core Load and Pre-commercial testing to 50% power as SOF.

1966 - 1969: U.S. Navy

Repair Electrician on USS Fulton submarine tender for nuclear submarine fleet. Qualified Electrical Operator on USS Long Beach.

Professional Membership:

Registered Professional Engineer, States of Ohio and Missouri
American Nuclear Society - Northern Ohio Section - Exec Committee 83 to present; Vice Chairman/Chairman Elect 1985

TABLE 13.1-3 (Continued)

RESUME NO. 40

Name: Perry M. Moskowitz, Heath Physics Unit Supervisor, Radiation Protection Section

Formal Education and Training:

Bachelor of Arts Degree in Biology, State University of New York, New Paltz College, 1978
Twelve-Week DOE Fellowship in Health Physics, Associated Universities, Brookhaven National Laboratory, 1979
Completed 100% of course work for Master of Science Degree in Radiation Science, Rutgers University, New Jersey, 1980
Internal Radiation Dosimetry Course - Lowell University, Lowell, Mass., 1985
MSA Level II and Level III Air Mask Maintenance and Repair Course, 1985

Experience:

1985 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Health Physics Unit Supervisor assigned to the Health Physics Unit, Radition Protection Section, Perry Plant Technical Department. Responsibilities include the implementation of the External and Internal Dosimetry Programs and the Respiratory Protection Program. Reports to the Plant Health Physicist, Perry Plant Technical Department.

1980 - 1985: Dames & Moore, Consultants in Applied and Earth Science

Health Physicist assigned to the DOE West Valley Demonstration Project, West Valley, New York Assignments included the development, procedures preparation, and implementation of the External and Internal Dosimetry Programs, and Radiation Protection instrumentation calibration and maintenance programs. Preparation of specifications band procurement of fixed and portable radiation protection instrumentation and radiological control equipment and supplies. Coordination of the various project departments in the development and implementation of the ALARA program.

Health Physicist assigned to support in the development of criteria for 10CFR61, Shallow Land Burial.

Health Physicist assigned to supervise baseline radiation studies at various proposed phosphate mining locations in Central Florida.

Health Physicist assigned to supervise radiological studies for the reclamation of various mining and milling and chemical manufacturing sites.

Perry M. Moskowitz

TABLE 13.1-3 (Continued)

RESUME NO. 40 (Continued)

Professional Membership:

Health Physics Society
American Nuclear Society
American Industrial Hygiene Association

TABLE 13.1-3 (Continued)

RESUME NO. 41

Name: William T. Burkhart, Radwaste Supervisor, Operations Section

Formal Education and Training:

Undergraduate Courses in Chemistry and Biology, Kent State University, 1970-1972
Associates Degree in Marine Laboratory Technology, Cape Fear Technical Institute, 1975
Certified Grade IV Wastewater Treatment Plant Operator, Cape Fear Technical Institute, 1978
Radioactive Waste Packaging, Transportation, and Disposal Seminar, Chem-Nuclear Systems, Inc., 1984

Experience:

1982 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Senior Engineering Technician assigned to the Radiation Protection Section, Perry Plant Technical Department. Responsibilities included preparation and review of radwaste procedures and instructions. Assigned as Acting Radwaste Unit Supervisor, October, 1982, responsible for supervision of Radwaste Unit personnel. Qualified Level II Test Engineer, July, 1983, working with Nuclear Test Section on testing of liquid and solid radioactive waste systems. Qualifed Level III Test Engineer, June, 1984. Promoted to present position of Radwaste Unit Supervisor in December, 1984, reporting to the General Supervisor, Operations Section.

1980 - 1982: Carolina Power and Light Company

Joined CP&L as Auxilliary Operator B at the Brunswick Steam Electric Plant. Promoted to Auxilliary Operator A, Radwaste in 1981, and to Radwaste Control Operator in 1982. Responsibilities included operation of radwaste systems and associated record-keeping, and supervising auxilliary operators.

1977 - 1980: Cape Fear Technical Institute

Part-Time Instructor for North Carolina Wastewater Treatment Plant Operator Certification Course.

1978 - 1980: DePoortere Corporation

Wastewater Treatment Plant Operator and Laboratory Technician. Managed operation of 0.8 MGD activated sludge wastewater treatment plant and performed associated laboratory analyses. Responsible for required monitoring reports.

William T. Burkhart

TABLE 13.1-3 (Continued)

RESUME NO. 41 (Continued)

Experience:

1975 - 1978: City of Wilmington, NC

Laboratory Technician. Collected samples from wastewater treatment plant and performed various laboratory analyses.

TABLE 13.1-3 (Continued)

RESUME NO. 42

Name: David L. Reyes, Plant Chemist, Radiation Protection Section

Formal Education and Training:

U. S. Navy Nuclear Power School, 1973
U. S. Navy Engineering Laboratory Technician School, 1974
U. S. Navy SIC Nuclear Prototype School, 1974
Davis-Besse OJT in Chemistry and Counting Room, 1979
Seven-Week Zimmer Nuclear Station BWR Chemistry Course, 1981
One-Week Digital Equipment Corp. RSX-11M User Course, 1981
Associate Degree in Mechanical Engineering Technology, Lakeland Community College, 1982
Six-Week BWR Chemistry for Technicians Course (GE), 1983
One-Week Perry Fundamentals Course, 1984
Seven-Week Systems Upgrade Course, 1984
Susquehanna OJT in Chemistry/Unit Startup, 1984

Experience:

1978 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Senior Chemistry Technician at the Perry Nuclear Power Plant. Duties have included writing of various in-plant System Operation Descriptions, System Operation Instructions and Alarm Response Instructions. Have also written various administrative, reagent preparation, analytical and equipment operation/calibration instructions for the Chemistry Unit. Performed formal training for Radiation Protection Section and Operations Section personnel. Performed flushwater analyses and trained Chemistry Unit personnel in the analysis of flushwater. Assisted Nuclear Test Section personnel in startup and operation of the Two-Bed and Mixed-Bed Makeup Demineralizer Systems. Assisted in placement and startup of the computerized Radiation Protection Section Data Information System (RPDIS). Promoted to Chemistry Supervisor in 1982. Reports directly to General Supervising Engineer, Radiation Protection Section, and is responsible for all wet chemistry, plant process chemistry and all system operations performed by Chemistry Unit personnel. Promoted to Plant Chemist in 1985. Reports directly to General Supervising Engineer, Radiation Protection section and is responsible for all Chemistry Unit functions.

1972 - 1978: U. S. Navy

Engineering Laboratory Technician, U. S. Navy. Served on board USS Benjamin Franklin, SSBN 640. Qualified as Mechanical Operator on all watch stations through Engine Room Supervisor. Qualified and acted as Leading Engineering Laboratory Technician. Duties included preparation and submittal of Quarterly Data Report to Naval Reactors, all radiation survey documentation, all radioactive waste discharge and shipment documentation, all primary and secondary chemistry

David L. Reyes

TABLE 13.1-3 (Continued)

RESUME NO. 42

Experience:

documentation, setup, control and surveying of controlled access areas during maintenance, and preparation of work center personnel performance evaluations.

Professional Membership:

American Nuclear Society

TABLE 13.1-3 (Continued)

RESUME NO. 43

Name: Edward J. Traverso, Chemistry Supervisor, Radiation Protection Section

Formal Education and Training:

Associate Degree in Nuclear Engineering Technology, Penn State Univ., 1976
Two-Week General Electric BWR Chemistry Course, 1978, 1979
Fortran Programming Course, Millerville State College, 1980
Piping and Instrument Drawing Interpretation, Peach Bottom Nuclear Power Station, 1980
Radioactive Waste Shipping Classes, Peach Bottom Nuclear Power Station, 1980
Nuclear Data Operational Training, Peach Bottom Nuclear Power Station, 1981
One-Week Digital Equipment Corp. RSX-11M User Course, 1983

Experience:

1983 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Chemistry Unit Supervisor assigned to the Radiation Protection Section, Perry Plant Department. Responsible for establishing Chemistry Quality Assurance Program, Technician Training Program, Radiological Effluent Release Program, Radio-chemistry Laboratory analyses and the supervision of activities involving routine radio-chemical analyses. Reports to the Plant Chemist, Radiation Protection Section.

1978 - 1983: Philadelphia Electric Company

Technical Assistant/Chemistry, Peach Bottom Nuclear Power Station Units 2 & 3. Major responsibilities involved the supervision of two chemistry groups: Surveillance Testing and Counting Room. Surveillance test duties involved scheduling manpower and reviewing tests for accuracy and completeness. The tests under responsibility ranged from reactor water chemistry to radioactive effluents. Counting room duties were the following: instrument calibration, minor repair (GeLi/MCA, NaI, Proporiational, GM, and Liquid Scintillation), procurement and training of counting staff, and QC program for analytical techniques used for determining liquid and gaseous radioactive effluents. Also supervised the shipping of low level radioactive samples to outside laboratories.

1976 - 1978: Philadelphia Electric Company

Technical Assistant/Health Physics, Peach Bottom Nuclear Power Station Unit 2 & 3. Responsible for safeguards and monitoring in-plant radiological conditions that involved reviewing Radiation Work Permits, techniques for determining radioactive contamination, and staffing control points. Also provided technical support for special projects such as control rod drive removal, diving in contaminated water, chemical decontamination of reactor water cleanup systems and drafted procedures for in-house work.

TABLE 13.1-3 (Continued)

RESUME NO. 44

Name: David J. Rossetti, Associate Operations Engineer, Radiation Protection Section

Formal Education and Training:

Bachelor of Science Degree in Environmental Engineering - Radiological, Pennsylvania State University, 1980
ALARA Engineer Training Course, General Dynamics - Electric Boat Division, Reactor Plant Services, 1980
Perry Fundamentals (BWR/6) Training Course (CEI), 1982
Personnel Radiation Dosimetry Training Course - Oak Ridge National Laboratory, 1982
Control of Occupational Exposures in Nuclear Power Plants Training Course - Harvard School of Public Health, Boston, MA, 1983
PNPP Technical Systems Upgrade Training Course (CEI), 1984
MSA Level II Respirator Repair, 1985

Experience:

1982 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Associate Operations Engineer, assigned to Health Physics Unit as ALARA Coordinator, for the Perry Plant. Duties include establishing and implementing Plant ALARA Program, writing related implementing procedures, Plant ALARA Review Committee Chairman, Plant ALARA Training development, pre-operational ALARA review of plant, and plant photo documentation. Reports to the Plant Health Physicist, Perry Plant Technical Department.

1980 - 1982: GPU Nuclear Corporation, Three Mile Island Nuclear Station, Unit 1

Radiological ALARA Engineer with responsibility for Man/Rem Exposure Reduction/Tracking, Plant Shielding Reviews/Evaluations, ALARA Reviews, Personnel Dosimetry, and Respiratory Protection.

Professional Membership:

Health Physics Society, Plenary Member

TABLE 13.1-3 (Continued)

RESUME NO. 45

Name: Dennis J. Meinke, Lead Instrument and Control Supervisor, Instrumentation and Control Section

Formal Education and Training:

Electronics Technician School, U. S. Air Force, 1971
Microwave Communications Maintenance School, U. S. Air Force, 1971
Ten-Week Honeywell 4400 Process Computer Course, Honeywell, 1978
Four-Week Honeywell 380 Peripherals Course, Honeywell, 1979
Four-Days Datapoint Corporation 2700 Tape Drive Maintenance, 1979
Three-Week Aydin Controls 5205 Failure Analysis, 1979
Eight-Days Applications in Process Control, Cleveland State University, 1980
One-Week Vermont Research Corporation Model 3016 Drum, 1980
Eight-Hour Data Communications Seminar, 1980
Three-Week Process Instrumentation Control Course, (G. E.), 1980
Ninety-Hour courses in Electronics Refresher, Digital Circuits, and Micro Processors, Lakeland Community College, 1981-1983
Three-Week Honeywell Fire & Security Delta Workshop, 1981
One-Week Model 2260 Line Printer, 1981
Six-Week Perry BWR/6 Technology Course, 1982
Five-Week DEC "VAX 11/780" CPU Hardware Diagnostic User Course, 1983
Two-Week ERIS Analogics & Toshiba Equipment Training (GE), 1984

Experience:

1971 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Meter Reading Clerk, and then in April, 1971 went on MLOA to U. S. Air Force. Returned in 1975 and worked as Engineering Aide in Transmission and Distribution Department. In May of 1978, transferred to Perry Plant Department as Engineering Technician. In December, 1978, promoted to Senior Engineering Technician and assigned to maintain the Perry Process Computer offsite for two years. In December, 1980, promoted to Senior Plant Technician and continued to support installation of Process Computer and Fire & Security computers.

In December, 1981, promoted to Instrument and Control Supervisor and responsible for instrument and control activities including design and technician training. In April 1985 promoted to current position as Lead Instrument and Control Supervisor and is responsible for coordination and direction of instrument and control units activities including technician hiring, appraisals, training, I&C planning activities and design recommendations. Reports to the General Supervising Engineer, Instrumentation and Control Section.

1971 - 1974: U. S. Air Force

Microwave Communications Equipment Repairman, responsible for maintenance of five Microwave Systems at Communication Site in W. Germany.

Dennis J. Meinke

TABLE 13.1-3 (Continued)

RESUME NO. 45

Experience:

Shift Supervisor for two years responsible for coordinating site maintenance and providing training for less experienced technicians.

1970 - 1971: RCA Factory Service

Color Television Repairman - Repaired televisions in customers homes.

TABLE 13.1-3 (Continued)

RESUME NO. 46

Name: James J. Miller, Jr., Instrument and Control Supervisor, Instrumentation and Control Section

Formal Education and Training:

Bachelor of Science Degree in Mathematics, Ohio University, 1972
Electronics Technician School, U.S. Navy, 1972 - 1973
Nuclear Power Training, U.S. Navy, 1973 - 1974
Nuclear Instrumentation School, U.S. Navy, 1977
Electronics Technician Maintenance School, U.S. Navy, 1978
Pneumatic Measurement and Control Course, Bailey Controls, 1979
Nuclear Instrumentation Course, GE, 1980
Process Instrumentation and Control Course, GE, 1980
Rod Control and Information System Course, GE, 1981
RECIRC Flow Control Course, GE, 1981
Redundant Reactivity Control Course, RTS, 1985

Experience:

1979 - Present: The Cleveland Electric Illuminating Company

Joined CEI as an Associate Engineering Technologist assigned to Technical Section, Perry Plant Department. In 1980, promoted to Engineering Technologist and served on Rotation of Assignment as Instrument and Control Supervisor. In 1981, promoted to Instrument and Control Supervisor. Reports to the Lead Instrument and Control Supervisor, Instrumentation and Control Section and is responsible for instrument and control activities including design review and technician training.

1972 - 1979: U. S. Navy

Electronics Technician - qualified as Reactor Operator and Shutdown Reactor Operator on an S5W Class Submarine. Duties included Work Center Supervisor of Reactor Controls Division and Engineering Departmental Training Petty Officer. Also assigned for two years as Instructor at S3G Nuclear Power Prototype.

Professional Memberships:

Instrument Society of America

TABLE 13.1-3 (Continued)

RESUME NO. 47

Name: Stephen A. Braunfield, Instrument and Control Supervisor, Instrumentation and Control Section

Formal Education and Training:

Associates Degree in Nuclear Engineering Technology, The Pennsylvania State University, 1977
Eighteen-Hour IEEE Nuclear Power Plant Course, Westinghouse Educational Center, 1977
Nine-Week Nuclear and Process Instrumentation and Control Technology Course, General Physics Corporation, 1978
Eight-Hour Area Radiation Monitors Course, Victoreen Inc., 1981
Three-Day Vibration Analysis Course, IRD Mechanalysis, 1981
Ninety-Hour Digital Electronics I & II Courses, Lakeland Community College, 1981
Three-Day Precision Measuring Equipment Calibration and Repair Course, L.S. Starrett Company, 1982
Three-Day Automatic Meter Calibration System Training, Valhalla Scientific Inc., 1984

Experience:

1980 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Senior Engineering Aide assigned to the Nuclear Test Section. Responsibilities included calibrating Measuring & Test Equipment (M&TE) and performing functional checks of plant equipment. In 1981, assumed responsibility for operation of the M&TE Laboratory including supervising Technicians assigned to the Laboratory, preparing calibration procedures, and supervising Laboratory operations. In 1982, promoted to Senior Engineering Technician.

In 1985, assumed present position of Instrument and Control Supervisor assigned to the I&C Section, Perry Plant Technical Department. Responsible for operation of the M&TE Calibration Laboratory including supervising I&C Technicians assigned to the Laboratory, procedure development, and issuance and control of M&TE. Also responsible for supervision of the Miles Meter Laboratory M&TE interface with the Perry Plant. Reports to the Lead E/I&C Engineer, Instrumentation and Control Section.

1978 - 1980: Power Authority of the State of New York

Instrument and Control Technician, James A. Fitzpatrick Nuclear Power Plant. Responsibilities included calibration and maintenance of pneumatic and electronic instruments, and control and calibration of Measuring and Test Equipment.

TABLE 13.1-3 (Continued)

RESUME NO. 47 (Continued)

1976 - 1978: Keystone Small Engine Repair

Technician/Mechanic. Responsibilities included troubleshooting and repair of controls, small engines, transmissions, and transaxles.

1974 - 1976: Westinghouse Electric Corporation

Nuclear Material Technician, Bettis Atomic Power Laboratory. Responsibilities included processing green fuel pellets for the Light Water Breeder Reactor.

Professional Memberships:

Instrument Society of America

TABLE 13.1-3 (Continued)

RESUME NO. 48

Name: William B. McKibben, Instrument and Control Supervisor, Instrumentation and Control Section

Formal Education and Training:

Electronics Technician School, U.S. Navy, 1971-1972
Nuclear Power Training, U.S. Navy, 1972-1973
Nuclear Instrumentation Course, GE, 1980
Process Instrumentation and Control Course, GE, 1980
Rod Control and Information System Course, GE, 1981
Annunciator and Sequence of Events Recorder School, RIS, 1982
Pre-Simulator System Training, 1982
Associate in Applied Science Degree, Electronic Technology, Lakeland Community College, 1982
Turbine Electro-Hydraulic Controls, 1985

Experience:

1980 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Senior Engineering Technician assigned to Technical Section, Perry Plant Department. In 1981, promoted to Senior Plant Technician. In 1984, promoted to Instrument and Control Technician. In 1985, promoted to Instrument and Control Supervisor. Reports to the General Supervising Engineer, Instrumentation and Control Section and is responsible for instrument and control activities including design review and technician training.

1976 - 1980: Combustion Engineering, Inc.

Joined CE as an Engineer, working in an Instrument and Control design group. Responsibilities involved design and procurement instrumentation for various nuclear power plants.

1970 - 1976: U.S. Navy

Electronics Technician - qualified as Reactor Operator, Shutdown Maneuvering Area Watch and Engineering Watch Supervisor. Duties included maintaining and operating a submarines nuclear power plant.

TABLE 13.1-3 (Continued)

RESUME NO. 49

Name: James Wright, Instrument and Control Supervisor, Instrumentation and Control Section

Formal Education and Training:

Electronics School, U.S. Navy, 1967
Nuclear Power School, U.S. Navy, 1968
DeVry Technical Institute, 1970
Bachelor of Science Degree in Resource Management, Northern Arizona University, 1978
Three-Week Honeywell Fire & Security Delta Workshop, 1981
Two-Week Instrument and Control Technology, Foxboro, 1982
Two-Week Electric Hydraulic Control CEI, 1984

Experience:

1982 - Present: The Cleveland Electric Illuminating Company

Joined CEI as an Instrument and Control Technician. Certified Level III Test Engineer as Lead Technician in charge of an NTS field crew. In May 1984 assigned responsibility of the review of all I&C Surveillance Instructions. In February, 1985, promoted to current position as I&C Supervisor and is responsible for instrument design and technician training. Reports to the Lead I&C Supervisor, Instrumentation and Control Section.

7/82 - 9/82: Martin - Marietta

Consultant Calibration Engineer - responsible for the startup of instrumentation for a coal conversion project.

1981 - 1982: James A. Fitzpatrick

Consultant Instrument and Control Technician - calibration and repair of instrumentation for a refueling outage.

6/81 - 8/81: VEPCO, Mt. Storm Generating Station

Consultant Instrument and Control Technician - Updating instrument loop diagrams.

1981 - 1981: Louisiana Power and Light

Consultant Instrument and Control Technician - Instrumentation startup.

1980 - 1981: The Cleveland Electric Illuminating Company

Consultant Instrument and Control Technician - startup of instrumentation and calibration of M&TE.

TABLE 13.1-3 (Continued)

RESUME NO. 49 (Continued)

Experience:

1979 - 1980: Southern California Edison

Instrument and Control Technician - repair and calibration of instrumentation.

1976 - 1979: Jim's Audio & Stereo Repair

Electronics Technician/Owner - repair of electronics equipment.

1973 - 1976: Northland Electronics

Electronics Technician - repair of electronics equipment.

1966 - 1973: U.S. Navy

Electronics Technician - qualified as Reactor Operator, Electrical Operator and Shutdown Reactor Operator on a S5W submarine.

1963 - 1966: Oliver Corporation

Photographer/Illustrator Draftsman - responsible for photographs and part drawings for instruction and parts manuals.

1962 - 1963: Blaw Knox

Expeditor - responsible for the tracking and maintenance of parts for the final assembly line.

TABLE 13.1-3 (Continued)

RESUME NO. 50

Name: Gary L. Garrett, Instrument and Control Supervisor, Instrumentation and Control Section

Formal Education and Training:

Associate Degree Applied Science in Electronic Engineering Technology, Lakeland Community College, 1979.
Honeywell HS 4400 Computer Maintenance Course, 1980
Vermont Research Model 3016 Drum Maintenance Course, 1980
Applications in Process Control, Cleveland State University, 1980
Process Instrumentation and Control Course, GE, 1980
Aydin Control 5205C Failure Analysis, 1980
Data Products Model 2260 Lineprinter Course, 1981
Rod Control and Information System, GE, 1981
Canberra Series 80/85 Multichannel Analyzer Course, Canberra, 1982
Printronix P300 Hardware Maintenance Course, Printronix, 1982
Digital Equipment Corp. PDP 11/44 Processor Maintenance, DEC, 1982
Digital Equipment Corp. XXDPT DEC/X11 Utilities and Commands Course, DEC, 1983
Digital Equipment Corp. RK611/RK06/RK07 Disk System Maintenance, DEC, 1983
International Computer Equipment VAX/VMS for System Maintenance, I.C.E., 1985
International Computer Equipment VAX 11/780 Hardware Diagnostic User Course, I.C.E., 1985
International Computer Equipment VAX/11 Concepts and Instruction Set, I.C.E., 1985

Experience:

1979 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Engineering Technician, Technical Section, Perry Plant Department. In 1980, promoted to Senior Engineering Technician. In 1982, promoted to Senior Plant Technician. In 1984, promoted to I&C Plant Technician. In 1985, promoted to Instrument and Control Supervisor. Reports to General Supervising Engineer, Instrumentation and Control Section and is responsible for instrument and control activities and all plant computer systems including design review and technician training.

1969 - 1979: Bailey Meter Corporation

Electronics Technician - Duties included the testing, troubleshooting, and repair of computer modules used in power and process control.

TABLE 13.1-3 (Continued)

RESUME NO. 51

Name: Larry L. VanDerHorst, Plant Health Physicist, Radiation Protection Section

Formal Education and Training:

Nuclear Power School, U.S. Navy, 1967
Nuclear Prototype School, U.S. Navy, 1967
Submarine School, U.S. Navy, 1968
Radiological Control Monitoring Training Course - General Dynamics, 1972
Health Physics Supervision Course, Northeast Utilities, 1976

Experience:

1983 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Health Physics Supervisor, assigned to the Radiation Protection Section, Perry Plant Department. Responsible for assisting the Plant Health Physicist in establishing the Radiation Protection Program, including procedure development and review, training of Health Physics Technicians, coordination of Emergency Plan, development of Radiation Protection Data Information System, and establishment of internal and external dosimetry requirements. In December, 1983, temporarily assigned the duties of the Plant Health Physicist.

In 1984, promoted to present position of Plant Health Physicist, Perry Nuclear Power Plant. Designated as the Regulatory Guide 1.16 Radiation Protection Manager responsible for the development of the Radiation Protection Program. Assignments include establishing internal and external dosimetry requirements, training of Health Physics technicians, operational ALARA, scheduling of health physics tasks, and selection of all operational radiological monitoring equipment. Responsible for ensuring that plant radiological practices are in compliance with Federal and State of Ohio regulations, supervising all radiological survey activities and preparation of Health Physics Instructions, reports and manuals required by the Company and regulatory agencies. Reports to the General Supervising Engineer, Radiation Protection Section.

1982 - 1983: Louisiana Power and Light

Consultant, Waterford 3 Nuclear Station. Responsible for consulting on radioactive waste processing and disposing. Assignments included development of transportation procedures, evaluation of respiratory protection cleaning systems, and evaluation of cleaning systems for protective clothing.

Larry L. VanDerHorst

TABLE 13.1-3 (Continued)

RESUME NO. 51 (Continued)

Experience:

1974 - 1982: Northeast Utilities

Joined Northeast Utilities as a Plant Equipment Operator, Millstone Nuclear Plant, responsible for system turnover and preoperational testing. In 1975, worked as a Health Physics Technician, responsible for providing radiological coverage during operational and refueling phases. In 1976, promoted to Health Physics Foreman in preparation for Unit 2 initial core load, low power physics testing and power range testing. In 1978, promoted to Radiation Protection Supervisor, responsible for supervision of Health Physics Foreman and Technicians, setting protective requirements, and outage planning. In 1979, assumed responsibilities of Radiation Protection Specialist, Northeast Utilities Service Company. Assignments included providing technical assistance to the Health Physics Supervisor, auditing all areas of the radiation protection program, supplementing plant supervision, and developing emergency plans.

1972 - 1974: General Dynamics/Electric Boat Division

Radiological Control Monitor, responsible for performing radiation surveys, and providing radiological coverage during maintenance and refueling overhauls of nuclear powered submarines.

1966 - 1972: U.S. Navy

Nuclear Machinists Mate aboard the USS James K. Polk SSBM 645. Qualified on all mechanical watch stations and as Assistant Engineering Laboratory Technician.

TABLE 13.1-3 (Continued)

RESUME NO. 52

Name: Richard E. Evans, Jr., Fire Protection Coordinator, Site Protection Services Unit

Formal Education and Training:

Florida Police Officer Academy, Daytona Beach, Florida, 1953-1958
Instructor Training Courses:
Florida Forest Service, Lakeland, Florida, 1964
U. S. Forest Service, Missouri School of Mines, Rollo, Missouri, 1964
U. S. Army. 1966-1976
Ohio Trade and Industry, Sandusky, Ohio, 1978
Associate of Arts Degree, Fire Science and Industrial Safety, Fairmont State College, 1977
Many assorted short courses in Law Enforcement; Riot Control; Fire Service: Command, Tactics, Maintenance, Investigation, Public Relations, Instruction, Management. Military: N.C.O. Academy, Ft. Bragg, North Carolina, 1958, Sr. Air Transporation N.C.O., Ft. Eustis, Virginia, 1971, Recruiting N.C.O., Ft. Ben Harrison, Indiana, 1976, Sr. N.C.O. Academy, Columbus, Ohio, 1982.

Experience:

1982 - Present: The Cleveland Electric Illuminating Company

Joined CEI in 1982 as Fire Protection Coordinator in the Perry Plant Department and is presently involved in the development and implementation of the Perry Plant Fire Training Plans. Reports to General Supervisor, Site Protection Section and is responsible for all phases of fire training aspects of the plant fire fighting forces.

1981 - 1982: Mead Loss Control, Mead World Headquarters, Dayton, Ohio

Chief, Fire Service Training for Mead Loss Control, a division of the Mead Corporation, wrote, organized and presented incipient Fire Brigade Programs, Structural Fire Brigade Training Programs for Mead facilities as well as other related major firms. Designed equipment, wrote specifications and standards for new equipment. Presented seminars and special training sessions for Mead at various locations within the United States. Conducted training for several hundred fire fighters and support personnel.

1978 - 1981: Ohio Fire Academy, State Fire Marshall's Office, Reynoldsburg, Ohio

First Training Coordinator for overall supervision of training programs for fire and rescue personnel. Primary duties included drafting and writing 200 hour Basic Program as required by Ohio Law for career fire fighting, Industrial and Rescue Courses.

TABLE 13.1-3 (Continued)

RESUME NO. 52 (Continued)

Experience:

1974 - 1978:

Various concurrent involvements include, National Guard Technician, Owner/Manager of a Construction Company and 1½ years as a Chief of Fire - Rescue for a Municipal Fire Department.

1966 - 1974: U. S. Army

Senior Non-Commissioned Officer, (E8), First Sergeant, Operations Intelligence N.C.O. for Air Defense Battalions.

1961 - 1966:

Chief, Fire Control District, Rural Fire Department (3 years); Rural Fire Defense Training Specialist (1 year); Driver Engineer - Instructor M.S.L.A. N.A.S.A. (1 year).

1959 - 1961:

Fire Chief (volunteer), Holly Hill Fire Department; Police Officer, city of Holly Hill (concurrently).

1956 - 1959:

Artillery Technician, Florida National Guard, and special deputy Volusia County, Florida.

1953 - 1956:

Police Officer, City of Daytona Beach, Florida.

1952 - 1953: National Guard

Active duty, Florida National Guard.

Professional Memberships:

International Society of Fire Service Instructors
International Association of Fire Chiefs
Ohio Fire Chiefs Association
EMT-A, T&I Instructor - Fire Rescue, Ohio
T&I Instructor - Law Enforcement, Ohio
Ohio Army National Guard
Madison Fire District

TABLE 13.1-3 (Continued)

RESUME NO. 53

Name: Charles S. Orogvany, Reactor Engineer, Technical Section

Formal Education and Training:

B.S. Nuclear Engineering, Rensselaer Polytechnic Institute, 1973
Licensed SRO for Fitzpatrick, 1980

Experience:

1982 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Senior Nuclear Engineer assigned to the Operations Section, Perry Plant Department. Initial assignments included coordinating the preparation of the Technical Specifications. Presently acting as the interim Reactor Engineer developing instructions and training for reactor engineering activities. Reports to the General Supervisor, Technical Section.

1976 - 1982: James A. Fitzpatrick Nuclear Power Plant

Joined James A. Fitzpatrick Nuclear Power Plant as a Reactor Analyst Supervisor. Primarily responsible for operational management of the reactor core, supervision and training of two reactor engineers, supervision of the post-refueling startup test program, and accountability for all special nuclear material. Secondary responsibilities involved the development and review of procedures, membership on the Plant Operations Review Committee, supervision of core alterations, and the preparation and review of proposed changes to the technical specifications, including the reload licensing submittal.

1973 - 1976: Oyster Creek Nuclear Power Plant

Joined Oyster Creek Nuclear Power Plant as an Associate Engineer and performed a variety of assignments assisting the lead nuclear engineer.

TABLE 13.1-3 (Continued)

RESUME NO. 54

Name: Thomas A. Remick, Associate Operations Engineer, Technical Section

Formal Education and Training:

Bachelor of Science Degree in Nuclear Engineering, University of Cincinnati, 1981
Five-Week Station Nuclear Engineering Course (GE), 1982
Five-Week Perry Nuclear Power Plant Technology Course (GE), 1982
Nine-Week Operator Training Course, Perry Simulator (GE), 1982 (SRO Certification)
Initial Cold License Course, 1983-1985

Experience:

1981 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Junior Operations Engineer assigned to the Technical Section, Perry Plant Technical Department. Duties included system reviews, support of turnover activities, and writing Local Leak Rate Test Procedures. Promoted to current position of Associate Operations Engineer in 1983. Successfully completed the cold license program, receiving a SRO license (SOP-30470). Spent eleven months at the Susquehanna Steam Electric Station serving as a Test Director in the Unit 2 Initial Power Ascension Program. Participated in final procedure preparation, fuel load, and power testing through to the completion of almost all of the 100% power tests. Currently involved in the development of the Power Ascension Test Program for Perry Unit #1. Reports to the General Supervising Engineer, Technical Section.

1978 - 1980: Indiana & Michigan Electric Company

Student Engineer at D.C. Cook Nuclear Power Plant. Duties included core performance testing, core surveillance testing, technical studies, and budget planning. Participated in one refueling outage, including fuel receipt, fuel shuffle and irradiated fuel inspection. Participated in the startup of three reload cores, performing startup, low power, and power ascension tests.

1977 - 1978: General Physics Corporation

Student Engineer, assisted in the development of in-service inspection programs for both Pressurized and Boiling Water Reactor power plants.

Thomas A. Remick

TABLE 13.1-3 (Continued)

RESUME NO. 54 (Continued)

Professional Memberships:

American Nuclear Society
National Society of Professional Engineers
Engineer in Training, State of Ohio

TABLE 13.1-3 (Continued)

RESUME NO. 55

Name: Patrick J. Curran, Associate Operations Engineer, Technical Section

Formal Education and Training:

Bachelor of Science Degree in Nuclear Engineering,
University of Cincinnati, 1981
Six-Week Station Nuclear Engineering Course (GE), 1982
Five-Week Perry Nuclear Power Plant Technology Course (GE), 1982
Nine-Week Operator Training Course, Perry Simulator (GE), 1982
(SRO Certification)
Initial Cold License Course, 1983 - 1985
License Senior Operator License for Perry Unit 1, 1985

Experience:

1981 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Junior Operations Engineer assigned to the Technical Section, Perry Plant Technical Department. Duties included development of fuel handling procedures and reactor engineering procedures. Promoted to current position of Associate Operations Engineer in 1983. Reported to Human Factors Engineering Group from September, 1982 to March, 1983. Duties included review of the NRC Audit Report and a review of proposed design changes. Spent eleven months at the Susquehanna Steam Electric Station serving as a Test Director in the Unit 2 Initial Power Ascension Program. Participated in final procedure preparation, fuel load, and power testing through to the completion of almost all of the 100% power tests. Currently involved in the development of reactor engineering procedures for Perry Unit #1. Reports to the Reactor Engineer, Technical Section, as a Reactor Engineer in the Reactor Engineering activity.

1977 - 1980: Northern State Power Company

Student Engineer at Northern State Power Company's Prairie Island Nuclear Plant, assigned to the Reactor Engineering Group. Duties included core surveillance and technical studies. Participated in four refueling outages including fuel receipt, core reload, zero power physics tests and power tests.

TABLE 13.1-3 (Continued)

RESUME NO. 56

Name: Peter D. Roberts, Associate Operations Engineer, Technical Section

Formal Education and Training:

Bachelor of Science Degree in Nuclear Engineering, University of Cincinnati, 1982
Two-week Academic Refresher Course, Ohio State University, 1982
Eight-Week Perry Nuclear Power Plant Technology Course (GE), 1983
Nine-Week Operator Training Course, Perry Simulator (GE), 1983 (SRO Certification)
Twenty-Eight Week Initial Cold License Course (SRO), 1984 - 1985

Experience:

1982 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Junior Operations Engineer assigned to the Technical Section, Perry Plant Department. Duties included administrative procedure preparation and review, system turnover support, and development of reporting requirements program. Promoted to current position of Associate Operations Engineer in 1984. Completed eleven month experience training assignment at the Susquehanna Steam Electric Station serving as a Test Director in the Unit 2 Initial Power Ascension Program. Participated in final procedure preparation, fuel load, and power testing through to the completion of almost all of the 100% power tests. Also participated in surveillance testing for both SSES Units 1 and 2. Licensed as Senior Reactor Operator in May, 1985. Currently involved in development in the post-fuel load Startup Test Program for Perry Unit 1. Reports to the General Supervising Engineer, Technical Section.

1979 - 1981: Babcock & Wilcox Company

Co-op Engineer at the B&W Nuclear Power Generation Division. Performed support work for the Three Mile Island accident involving tabulation and plotting of computer data. Participated in preparation of computer-based models to perform accident analyses on nuclear power plants, including code initialization, transient simulation, and analysis documentation.

TABLE 13.1-3 (Continued)

RESUME NO. 57

Name: Robert H. Storch, Associate Operations Engineer, Technical Section

Formal Education and Training:

Bachelor of Science Degree in Nuclear Engineering,
University of Cincinnati, 1982
Eight-Week Perry Nuclear Power Plant Technology Course (GE), 1983
Nine-Week Operator Training Course, Perry Simulator (GE), 1983
(SRO Certification)
Initial Cold License Course, 1984 - 1985

Experience:

1982 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Junior Operations Engineer assigned to the Technical Section, Perry Plant Technical Department. Duties included writing and reviewing local leak rate tests, startup tests, and administrative procedures; support of turnover activities; reviewing preoperational tests; and reviewing and resolving INPO Significant Operating Event Reports and NRC IE Bulletins.

From November, 1983 to October, 1984, spent eleven months at the Susquehanna Steam Electric Station serving as a Startup Engineer/Test Director in the Unit 2 Initial Power Ascension Program. Participated in fuel load and power testing through to the completion of almost all of the 100% power tests. Duties included preparing and reviewing startup tests, performing tests, completing analysis on test results, and reviewing completed tests.

Promoted to current position of Associate Operations Engineer in 1984. Presently assigned to reactor engineering within the Technical Section. Reports to the General Supervising Engineer, Technical Section.

1979 - 1981: Cincinnati Gas & Electric Company

Worked six quarters, alternating work with school quarters, at the Wm. H. Zimmer Nuclear Power Station during the preoperational testing phase in the Maintenance, Operations, I&C, Technical, Quality, Rad/Chem and Reactor Engineering groups. Duties included writing and reviewing procedures, evaluating costs and initiating work on engineering changes, and determining spare parts requirements.

Professional Memberships:

American Nuclear Society
Engineer in Training, State of Ohio

TABLE 13.1-3 (Continued)

RESUME NO. 58

Name: David B. Miller, Associate Operations Engineer, Technical Section

Formal Education and Training:

Bachelor of Science Degree in Nuclear Engineering, Purdue University, 1982
One-Week Refueling Activities Course (GE), 1983
Two-Week Academic Refresher Course (GE), 1983
Eight-Week Perry Nuclear Power Plant Technology Course (GE), 1983
Nine-Week Operator Training Course, Perry Simulator (GE), 1983
Five-Week Station Nuclear Engineer Course (GE), 1984
Two-Week Core Management Engineering Course (GE), 1984
One and One-Half Day BWR In-Vessel Servicing Workshop (EPRI), 1984
Three-Day Engdahl Seismic Monitoring Equipment Course, 1985
Three-Day Kinemetrics Seismic Monitoring Equipment Course, 1985
Two-Day Rockwell Vibration and Loose Parts Monitor System Analysis Course, 1985

Experience:

1982 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Junior Operations Engineer assigned to the Technical Section, Perry Plant Technical Department. Duties included preparing and reviewing procedures and instructions, support of system turnover activities, coordinating the review of GE Service Information Letters, and assisting with the design of the Control Room communications system and internal plant radio system. Spent two weeks at the Fermi #2 Nuclear Power Plant to observe fuel receipt activities in 1983. Promoted to current position of Associate Operations Engineer in 1984. Currently involved in the development of reactor engineering procedures for Perry Unit #1 and the coordination of startup source receipt and fuel loading activities. Reports to the General Supervising Engineer, Technical Section.

1981: American Electric Power Service Company

Summer Intern at the American Electric Power Service Company's main office in New York City, assigned to the D. C. Cook Final Safety Analysis Report review group. Primary area of review was Chapter 13, Thermal Hydraulic Safety Analysis.

TABLE 13.1-3 (Continued)

RESUME NO. 59

Name: Daniel G. Philipps, Associate Operations Engineer, Technical Section

Formal Education and Training:

Bachelor of Science Degree in Mechanical Engineering, University of Akron, 1982
Two-Week Academic Refresher Course, Ohio State University, 1983
Eight-Week Perry Nuclear Power Plant Technology Course (GE), 1983
Nine-Week Operator Training Course, Perry Simulator (GE), 1983 (SRO Certification)
One-Week Harvard In-Place Filter Testing Workshop, 1984

Experience:

1982 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Junior Operations Engineer assigned to the Technical Section, Perry Plant Technical Department. Duties included support of system turnover activities including review of preoperational and acceptance tests and system turnover packages; and preparation and review of administrative procedures, diesel generator operating instructions, and HVAC system procedures. Promoted to current position of Associate Operations Engineer in 1984. Current duties include development of the HVAC Technical group responsible for HVAC system turnover reviews, the in-place filter testing program, and surveillance and periodic test programs. Reports to the General Supervising Engineer, Technical Section.

1979 - 1981: Ohio Edison Company

Completed four work terms, alternating work with school semesters, at the W. H. Sammis Plant and the General Office. Duties included performance monitoring, evaluation of engineering design changes, and generation planning.

Professional Memberships:

American Society of Mechanical Engineers
Engineer in Training, State of Ohio

TABLE 13.1-3 (Continued)

RESUME NO. 60

Name: Scott H. Soper, Associate Operations Engineer, Technical Section

Formal Education and Training:

Bachelor of Science Degree in Nuclear Engineering, Rensselaer Polytechnic Institute, 1983
Five-Week Station Nuclear Engineer Course (GE), 1984
Six-Week Perry Nuclear Power Plant Technology Course (GE), 1984
One-Week Reactor Operator Training Program, University of Michigan, 1984
Nine-Week Operator Training Course, Perry Simulator (GE), 1984-1985 (SRO Certification)

Experience:

1983 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Junior Operations Engineer assigned to the Technical Section, Perry Plant Technical Department. Duties included development of Fuel Receipt and Fuel Accounting Instructions, review and preparation of System Operating Instructions and Preoperational Instructions, review of NRC IE Documents and INPO Reports, and monitoring development of the Power Shape Monitoring System. Promoted to current position of Associate Operations Engineer in 1985. Duties include review of preoperational test results, support of system turnover activities, review of Startup Test Instructions, and development of Reactor Engineering Instructions. Reports to the General Supervising Engineer, Technical Section.

1981 - 1982: Maine Yankee Atomic Power Company

Student Engineer at the Maine Yankee Atomic Power Plant, assigned to the Plant Engineering and Reactor Engineering groups. Duties included outage support for design changes, performance of in-service inspections, development of transient power predictions during coastdown, participation in fuel receipt, and analysis of plant performance problems.

Professional Memberships:

American Nuclear Society
Engineer in Training, State of Ohio

TABLE 13.1-3 (Continued)

RESUME NO. 61

Name: James D. Ellis, Associate Operations Engineer, Technical Section

Formal Education and Training:

Bachelor of Science Degree in Mechanical Engineering, Ohio State University, 1983
Six-Week Perry Nuclear Power Plant Technology Course (GE), 1984
One-Week Reactor Operator Training Program, University of Michigan, 1984
Nine-Week Operator Training Course, Perry Simulator (GE), 1984-1985 (SRO Certification)
Two-Day Loose Parts Monitoring System Orientation (General Physics), 1985

Experience:

1983 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Junior Operations Engineer assigned to the Technical Section, Perry Plant Technical Department. Duties included support of system turnover activities and preparation and review of Administrative Procedures, Technical Specification Surveillance Instructions, and System Operating Instructions. Worked with Startup Test Organization on development of Fire Protection Programs for 10 CFR 50, Appendix R concerns. Promoted to current position of Associate Operations Engineer in 1985. Duties include development of the Surveillance Test Program. Reports to the General Supervising Engineer, Technical Section.

1979 - 1982: Ohio Power Company

Co-op Engineer at the Muskingum River Plant. Provided engineering support for Maintenance Department and Outage Planning Group. Duties included outage planning, performance monitoring, design modification, and coordination of engineering activities to support turbine generator overhauls.

Professional Memberships:

American Society of Mechanical Engineers
American Nuclear Society
Engineer in Training, State of Ohio

TABLE 13.1-3 (Continued)

RESUME NO. 62

Name: Gary R. Anderson, Operations Engineer, Instrumentation and Control Section

Formal Education and Training:

Bachelor of Science Degree in Electrical Engineering, Marquette University, 1971
Four-Week I&SE Electrohydraulic Turbine Controls Course (GE), 1974
Ten-Week Engineering Refresher Course, Cleveland Engineering Society, 1976
Ten-Week NED Rod Control & Information System Course (GE), 1979
Five-Week NED Nuclear Instrumentation Course (GE), 1979
Bachelor of Arts Degree Candidate in Business Administration, Garfield Senior College, 1980 - Present
Certified Level III Test Engineer (ANSI N45.2.6)

Experience:

1985 - Present: The Cleveland Electric Illuminating Company

Joined CEI as an Operations Engineer, and is currently assigned to the I&C Section, Perry Plant Technical Department. Responsibilities include supervision of Electrical and I&C engineers and technicians, review of operations manual procedures including surveillance, calibration and maintenance instructions. Also responsible for review and approval of instrument calibration data. Reports to the General Supervising Engineer, I&C Section.

1979 - 1985: General Electric Company

From 1984 to 1985, served as Senior Program Manager in the Control and Instrumentation Unit at GE's San Jose, CA headquarters. Responsibilities included the day-to-day supervision of Control and Instrumentation engineers assigned to domestic and overseas BWR sites and marketing GE's service to customers involving the preparation of customer proposals for the installation of nuclear power plant retrofit systems and services.

From 1979 to 1984, served as Senior Controls and Instrumentation Engineer at the Perry Nuclear Power Plant. Responsibilities as Power Generation Control Complex Coordinator/Test Coordinator were to provide technical direction and engineering support for the installation, jurisdictional turnover, modification, initial checkout, and preoperational testing of the main control room for each unit. Responsibilities as System Test Engineer were for the preparation, review, and performance of preoperational and acceptance tests; turnover, initial checkout, and testing

TABLE 13.1-3 (Continued)

RESUME NO. 62 (Continued)

Experience:

of assigned systems; instrument setpoint analysis; and FSAR review. Also provided technical support and supervision for installation, testing, startup, and operation of the nuclear steam supply system instrumentation and components.

1977 - 1979: Sargent & Lundy Engineers

Served as Senior Test Engineer in the plant operations department at the Wm. H. Zimmer Nuclear Power Station. Responsibilities as System Turnover Coordinator were to assist plant management in determining construction priorities, expediting those systems for testing and operation, and supervising the system turnover group. As System Test Coordinator, responsibilities included establishing preoperational testing concepts, preparation and review of preoperational testing and flushing procedures, preparation of instrument and mechanical checkout and calibration procedures for HVAC equipment, final evaluation of preoperational test results, and supervision of Test Engineers.

1976 - 1977: Stone and Webster Engineering Corporation

Served as Test Engineer during preoperational testing and initial startup of North Anna Power Station Units 1 and 2. Responsibilities included completion of preoperational testing on all plant instrumentation, valves, and electrical equipment; flushing and startup of major plant systems; preparation of testing procedures; and initiation of system turnover documentation from construction to preoperational test group on Unit 2.

1975 - 1976: Victoreen Instrument Company

Served as System Design Engineer in the Radiation Monitoring System Department, responsible for state of the art design, fabrication, and installation of large process radiation monitoring systems. Developed new design of containment leak detection monitor and failed fuel monitoring systems. Also responsible for the design and development of a new model Beta and Gamma scintillation detector and gaseous effluent sampler.

1972 - 1975: Tennessee Valley Authority

Served as Instrument Engineer during construction, startup, and initial operation of the Browns Ferry Nuclear Plant. Responsible for preparation and performance of maintenance and test procedures for nuclear instrumentation, emergency core cooling systems logic and controls, turbine EHC, and Reactor Protection System. Assisted with final preparation of plant Technical Specifications and Final Safety Analysis Report. Participated in emergency recovery work during and following a major fire in the Unit 1 reactor building.

Gary R. Anderson

TABLE 13.1-3 (Continued)

RESUME NO. 62 (Continued)

Experience:

1971 - 1972: Wisconsin-Michigan Power Company

Served as Technical Assistant to the engineering staff at the Point Beach Nuclear Plant. Responsibilities included writing and performing preoperational and surveillance tests, recommending and implementing design engineering change modifications, and scheduling and performing plant outage activities.

1968 - 1971: Square D Company

Served as Co-op Engineering Student, alternating work and school semesters, assigned to the design, new product, sales, and tool engineering groups.

TABLE 13.1-3 (Continued)

RESUME NO. 63

Name: John G. Cantlin, Operations Engineer, Technical Section

Formal Education and Training:

Electronic Technician "A" School, U.S. Navy, 1971-1972
Nuclear Power Training School, U.S. Navy, 1972-1973
Nuclear Prototype Training School, U.S. Navy, 1973
Bachelor of Science in Nuclear Engineering, University of Florida, 1979
Five-Week Perry Nuclear Plant Technology (GE), 1980
Operator Training Course, Perry Simulator (GE), 1980 (SRO Certification)
Station Nuclear Engineering, (GE), 1981
SRO License Candidate Course (CEI/GE), 1983, 1985
Masters of Science in Mechanical Engineering, Cleveland State, 1984

Experience:

1980 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Associate Operations Engineer assigned to Technical Section, Perry Plant Department. Assignments included design review, technical specifications, system descriptions, FSAR review, and test procedure review. Participated in a refueling outage at the Monticello Nuclear Plant for five weeks in 1980, and at the Grand Gulf Nuclear Plant initial fuel loading for two weeks in 1982. Promoted to Operations Engineer in September, 1982. Completed four weeks of hot operation training at Dresden Nuclear Plant and two weeks at Susquehanna Nuclear Plant in 1984. Obtained Senior Reactor Operators license for Perry Unit 1 in 1985 (License SOP-30472). Lead CEI engineer for the post-fuel load Startup Test Program since 1983. Reports directly to General Supervising Engineer, Technical Section.

1978 - 1979: The University of Florida

Qualified and licensed by the NRC as Reactor Operator on the University of Florida Training Reactor; a 100KW Argonaut-type training reactor. (License OP-4972) Responsibilities included operations, maintenance, and training.

1971 - 1977: U.S. Navy

Qualified Reactor Operator at Nuclear Prototype Training School in 1973 at Windsor Locks, Connecticut. Assigned to the USS Sam Rayburn, an operating nuclear-powered fleet ballistic missile submarine, in 1973 as an Electronics Technician. Qualified as Engineering Officer of the Watch, Engineering Watch Supervisor, and Reactor Operator. Leading Petty Officer of the Reactor Control Division. Responsible for all preventive and corrective maintenance for nuclear instrumentation, reactor process instrumentation, and reactor control systems.

TABLE 13.1-3 (Continued)

RESUME NO. 63 (Continued)

Professional Membership:

American Nuclear Society

TABLE 13.1-3 (Continued)

RESUME NO. 64

Name: Melvin W. Gmyrek, Senior Operations Coordinator, Operations Section

Formal Education and Training:

Bachelor of Arts Degree, University of New Hampshire, 1972
Six week specialized training program in Math, Chemistry, H.P. and Radiation Protection (New England Laboratories), 1977
Sixteen week Vermont Yankee Hot License Reactor Operator Training Program (General Physics Corp.), 1977.
Three week Reactor Operator Certification Program at TVA Training Cneter, Soddy Daisy, Tennessee (General Physics Corp), 1977
Six week Operator Training Course (Susquehanna S.E.S.), 1980
Eight week Susquehanna S.E.S., Senior Reactor Operator Cold License Certification Program (Susquehanna S.E.S.), 1981
Fifteen week Susquehanna S.E.S. Senior Reactor Operator Cold License Program (Susquehanna S.E.S., G.E.), 1982
Six week Susquehanna S.E.S. Unit 1, Unit 2 differences training for Unit 2 SRO License (Susquehanna S.E.S.), 1983

Experience:

1985 - Present: The Cleveland Electric Illuminating Company

Joined CEI in April, 1985 as Senior Operations Coordinator. Responsibilities include providing support to the GSE to ensure safe, efficient and reliable plant operation by coordinating operating and refueling activities, performing analyses of plant operations, developing methods to insure effective operating practices and coordinating investigations of plant equipment damage or malfunctions.

1980 - 1985: Pennsylvania Power and Light Company

Joined PP&L at the Susquehanna Steam Electric Station (S.E.S.) in May, 1980 as an Assistant Shift Supervisor. Duties included directing the performance of Start-up Tests, Acceptance Tests and Tech Spec Surveillances on Unit 1 and Common Systems as acting Shift Supervisor. Promoted to Shift Supervisor in March, 1982. Responsibilities included management of all station resources to provide for the safe and efficient operation of the plant through the Pre-op, initial fuel load and start-up test phases to commercial operation (6/83).

Also received Unit 1 SRO License (Lic. No. SOP4346) in July, 1982.

During 1984 - 1985, performed Unit 2 Start-up from Pre-op through commercial operation (2/85). Licensed on Unit 2 January, 1984. (Lic. No. SOP 4346, amended).

Cyril M. Shuster

1972 - 1980: Vermont Yankee Nuclear Power Corporation

First employed by VYNPC as a Temporary Auxiliary Operator (TAO) in 1972. Performed duties to accomplish plant start-up test activities and normal plant system operation. Worked as Technical Assistant (TA) to Operations Supervisor from 1/72 to 12/72. Duties included writing and revising Operator Rounds, writing Operator work schedules and scheduling and documenting the completion of surveillances.

In December 1972, promoted to Auxiliary Operator (A(). Duties included local operation of all BWR Balance of Plant Systems, Plant Fire Brigade member, backshift Health Physics Technician and performane of plant permit and tag procedures.

In December, 1976, promoted to Alternate Control Room Operator (ACRO). Performed training and received NRC Reactor Operator License 7/77. (Lic No. OP-4520)

Promoted to Reactor Operator in 1978. Responsibilities included operation of all plant systems and components in accordance with plant procedures and T.S. requirements, performing surveillances and on-going training to maintain valid operators license.

TABLE 13.1-3 (Continued)

RESUME NO. 65

Name: Lewis B. Biddlecome, Senior Staff Engineer, Perry Plant Technical Department

Formal Education and Training:

Interior Communications Technician "A" School, U.S. Navy, 1957
Submarine School, U.S. Navy, 1958
Nuclear Power Training School, U.S. Navy, 1958
S1W Nuclear Prototype Training, U.S. Navy, 1959
NESEP College Preparatory School, U.S. Navy, 1960
Polaris Precommissioning School, U.S. Navy Westinghouse Bettis, 1963
Bachelor of Science Degree in Metallurgical Engineering, University of Idaho, 1960-1963, 1968-1970
Graduate Courses in Secondary Education, University of Idaho, 1970

Experience:

1985 - Present: The Cleveland Electric Illuminating Company

Joined CEI as a Senior Staff Engineer assigned to the Office of the Manager, Perry Plant Technical Department. Duties include compliance engineering, reviewing and resolving NRC IE and INPO Event Reports, Licensing commitment tracking, preparation and review of Periodic Test Instructions, and coordination of Nuclear Plant Reliability Data System activities.

1972 - 1984: General Electric Company

From 1981 to 1984, GE Operations Manager at Hanford-2 Nuclear Power Plant, pre-hydro through commercial operation. Provided technical direction and procedure review on GE scope-of-supply equipment. Coordinated resolution of startup/operations problems with GE projects office. Provided administrative supervision to other GE site test personnel. Certified by GE to Level III under ANSI 45.2.6.

From 1978 to 1981, dual GE Lead Test Engineer and CEI NSSS Lead Test Engineer at Perry Nuclear Power Plant. GE duties identical to Hanford-2 duties. In addition to the usual NSSS Lead functions, provided technical assistance to utility management personnel for planning, scheduling and administrative procedures.

From 1974 to 1978, GE Startup Testing and Operations Engineer at Brunswick-1 & 2, Hatch-2, and Shoreham. GE SRO certification - was GE Shift Superintendent on Brunswick-2 startup. Experience with all NSSS mechanical systems and some BOP. Writing, review, and performance experience on all types of procedures. Trained one RO class through complete certification course.

TABLE 13.1-3 (Continued)

RESUME NO. 66

Name: Vincent J. Concel

Formal Education and Training:

B.S. Mechanical Engineering, Pennsylvania State University, 1973
Seeking MBA degree

Experience:

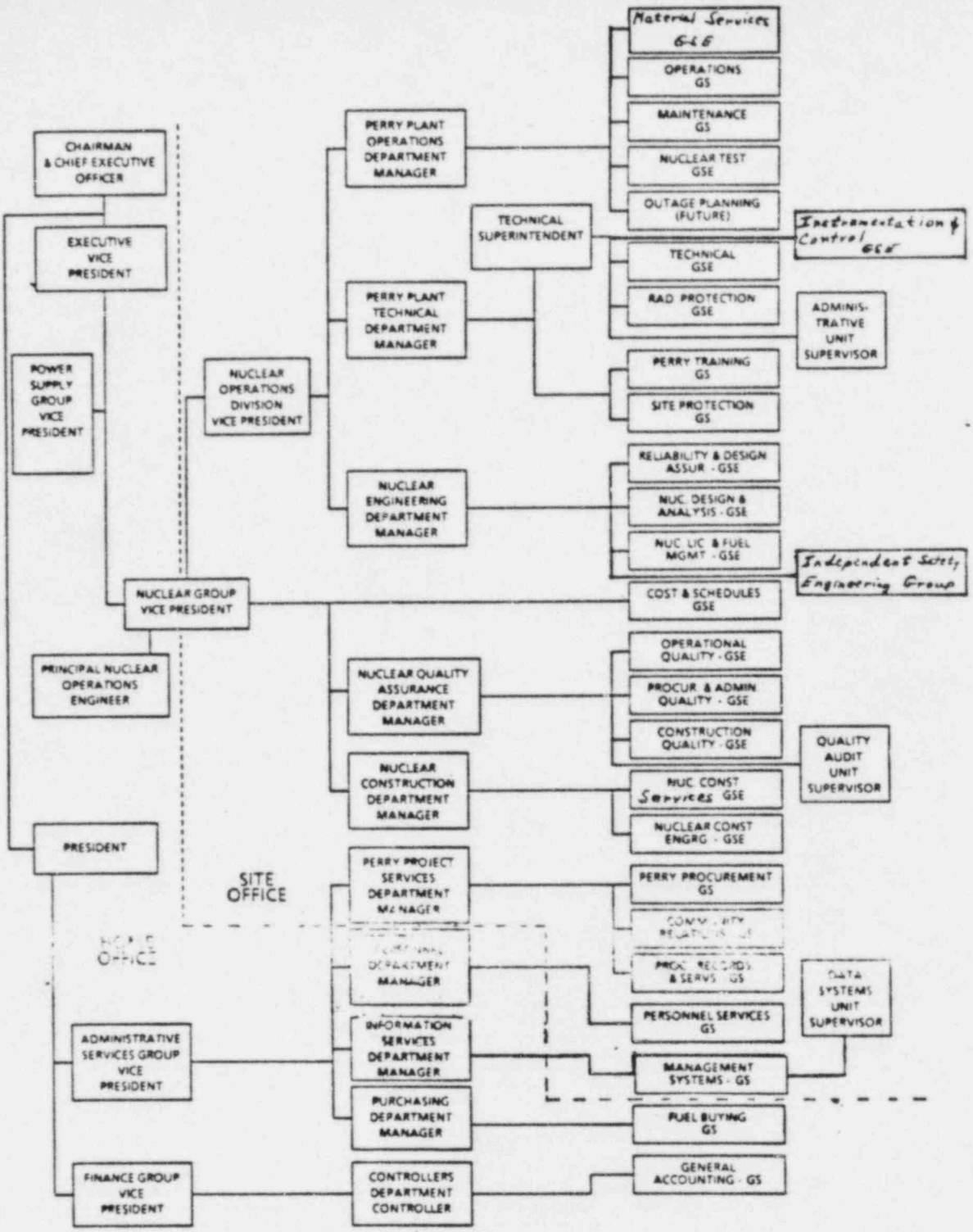
1985 - Present: The Cleveland Electric Illuminating Company

Joined CEI as Senior Design Engineer in the Technical Section of Perry Plant Technical Department. Lead engineer responsible for the Systems and Performance Engineering Group.

1978 - 1985: Pennsylvania Power & Light Company

Joined PP&L as a Power Production Engineer at the Susquehanna Steam Electric Station in the Technical Section of the Plant Engineering Group. Responsible for Engineer Level II and various plant engineering including Reactor Vessel internals, Reactor Recirculation, 480-volt and below and 4kv and above Electrical Distribution Systems, River Water Make-Up and Sampling Systems. Responsible Systems Engineer for the HPCI, Main Steam and Main Steam Leakage Control Systems, Feedwater Heater's Vents and Drain System, and Condenser Air Removal and Off-gas Recombiner Charcoal Adsorber Systems requiring system descriptions and operating and surveillance procedure writing/updating; recommending and assisting in writing and evaluating plant pre-operational tests and recommending and implementing plant design modifications to improve plant safety, availability and maintainability. Other activities involved the development of a Condenser Helium Leak Detection Program and Tech Section Vibration Signature Analysis Program with equipment ordering/check-out, computer programming, procedural writing and results evaluation.

In 1982, promoted to Engineering Support Group Leader. Responsible for directing and assisting the assignments of engineering/consulting incumbents with each having engineering responsibilities developing and implementing various plant reliability, availability and maintainability programs. Acountable for assisting in maintaining a safe, efficient and reliable plant by supervising surveillance testing, performance testing, plant modifications and technical investigations of plant systems.

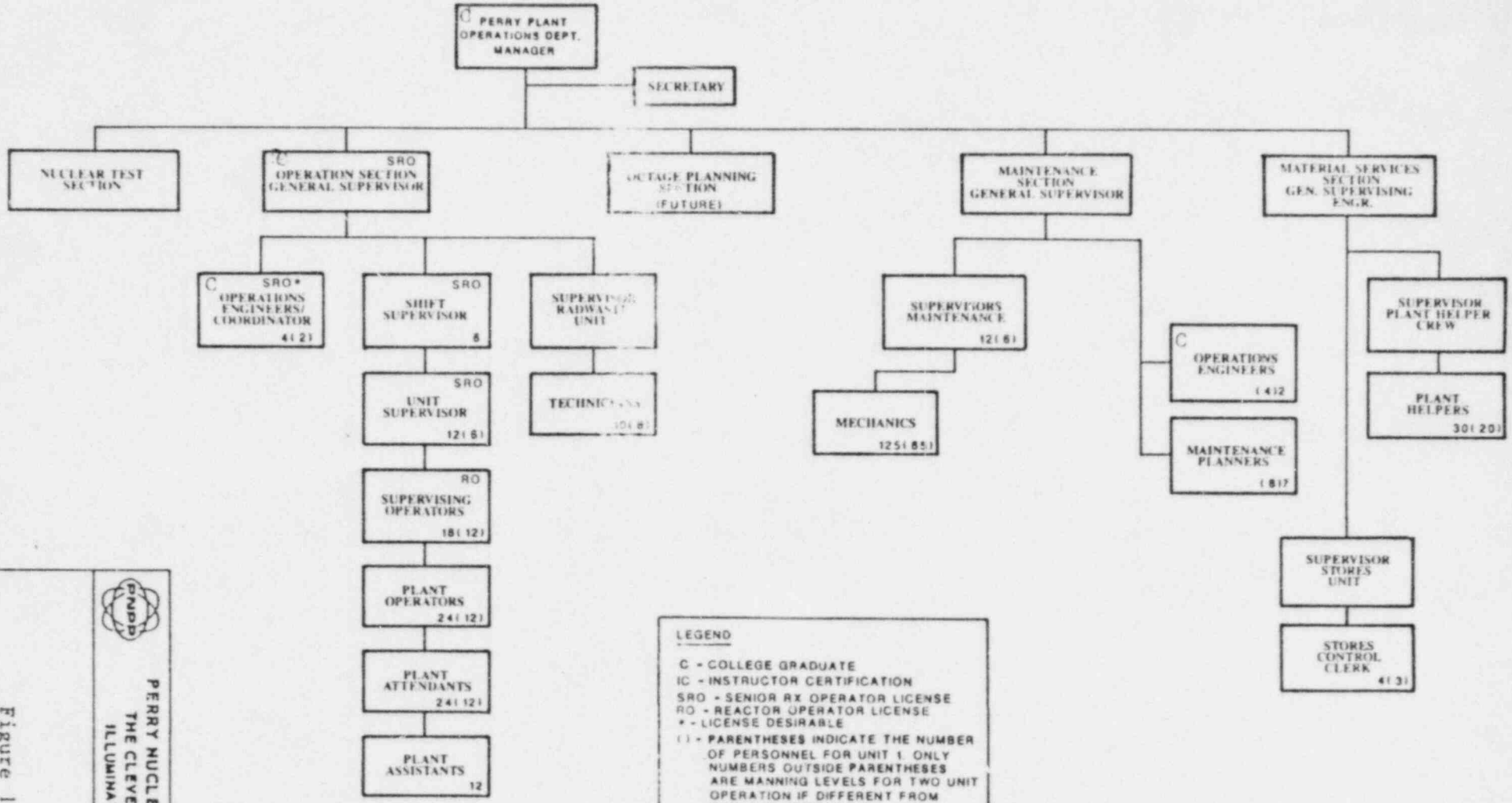


PERRY NUCLEAR POWER PLANT
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

Perry Nuclear Power Plant
Project Organization

Figure 13.1-2

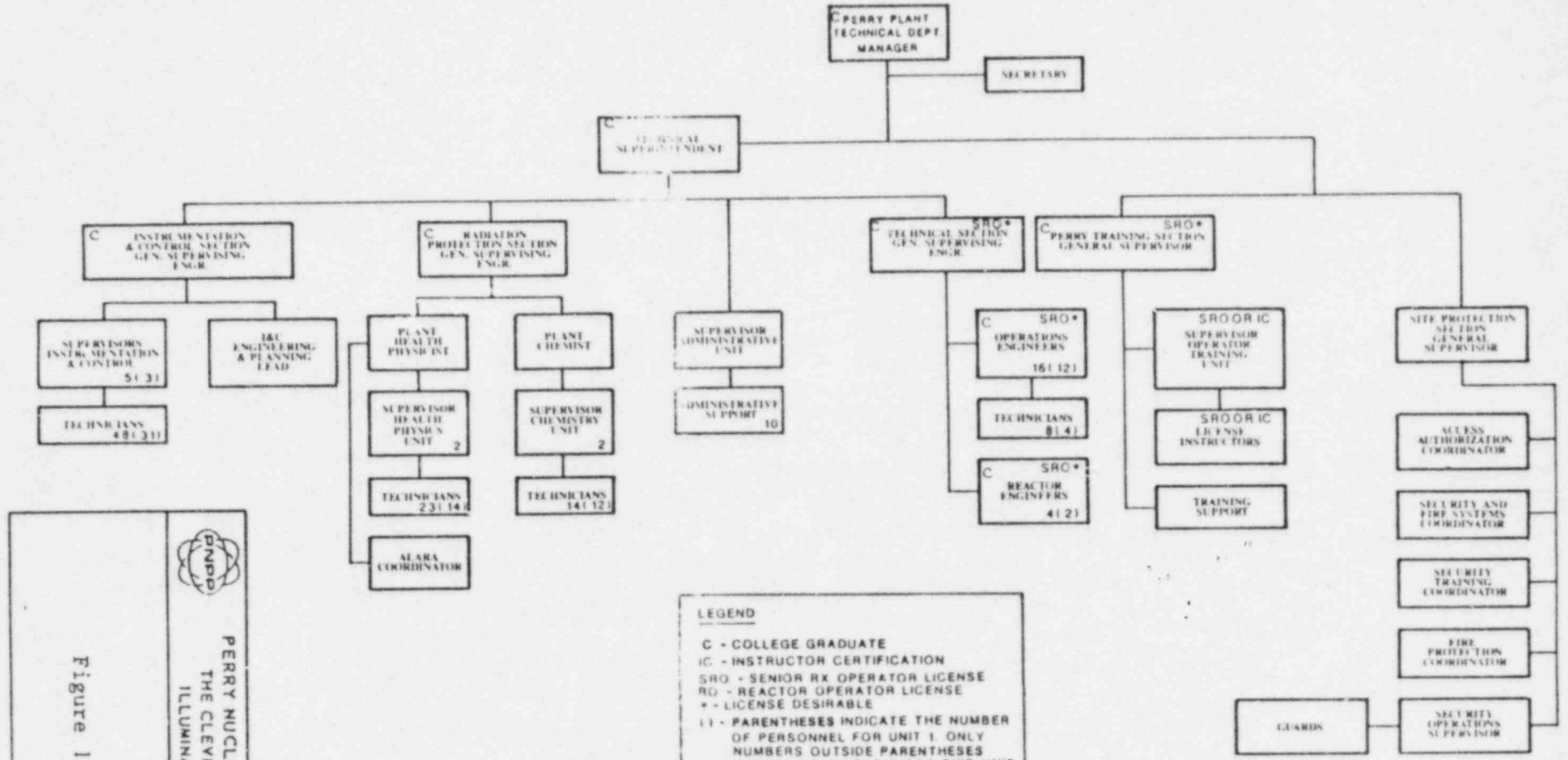
PERRY PLANT OPERATIONS DEPARTMENT



PERRY NUCLEAR POWER PLANT
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

Figure 13.1-3

PERRY PLANT TECHNICAL DEPARTMENT



PERRY NUCLEAR POWER PLANT
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

Figure 13.1-4

13.2 TRAINING PROGRAM

13.2.1 TRAINING PROGRAM

See attached pages 13.2-1, 2 & 3

See attached pages 13.2-1, 2 & 3

See attached pages 13.2-1, 2 & 3

See attached pages 13.2-1, 2 & 3

See attached pages 13.2-1, 2 & 3

13.2 TRAINING PROGRAM

13.2.1 TRAINING PROGRAM

The Perry Nuclear Power Plant (PNPP) training program is implemented to develop and maintain the qualifications of key plant personnel, in order to assure the safe operation and maintenance of the plant. The Manager, Perry Plant Technical Department (PPTD) and the Manager, Perry Plant Operations Department (PPOD) are responsible for the qualifications of the personnel who report to them. The responsibility for managing, administering and monitoring the training program is delegated to the General Supervisor, Perry Training Section.

The Perry Training Section is responsible for consolidating all required training activities, and for developing, delivering and maintaining training courses designed to meet the qualification requirements specified by the Managers, PPTD and PPOD.

The initial and requalification training programs for plant operators are intended to meet the requirements of 10 CFR 55. Programs are based upon the employee's level of education, experience, skill, level of assigned responsibility, and intended position. Figure 13.2-1 (Training Schedule) provides the intended course requirements for key positions, related to preoperational testing and fuel load.

Management personnel occupying positions identified in FSAR Section 13.1.2.2 and Figures 13.1-3 and 13.1-4 as requiring operator licenses shall participate in Licensed Operator training to the extent indicated on Figure 13.2-1. Non-licensed supervisory personnel course requirements are indicated in Section 13.2.3 and on Figure 13.2-1. Additionally, all supervisory personnel will participate in various in-house management training courses and other courses as determined necessary by their supervisor.

Figure 13.2-1 lists the minimum training requirements for designated positions. The Manager, Perry Plant Technical or Operations Department, as appropriate, may authorize waiver of specific training requirements identified in Figure 13.2-1 for individuals who can document prior equivalent training or experience. Examples of equivalent training or experience can be, but are not limited to;

Perry BWR Technology - waives - Dresden Technology
Operating Experience - waives - Research Reactor

Training instructors who teach system inter-relationships, integrated system responses, transients, or simulator courses to licensed operators or license operator candidates, after August 1 1980, will have successfully completed, or be monitored by personnel who have successfully completed, an SRO certification program approved by the NRC. Subsequent to initial fuel load, these instructors shall be required to possess valid NRC SRO licenses, instructor certifications, or be technically competent

in the specific area of instruction and be monitored by an NRC SRO or instructor licensed individual.

13.2.1.1 PROGRAM DESCRIPTION

The Perry Nuclear Power Plant Training Program is separated into three categories, relating to the three categories of personnel to be trained: Licensed Personnel, Non-Licensed Technical Personnel, and General Employees. The program references PNPP Unit 1 personnel throughout; however, Unit 2 is identical in design and the program will be directly applied to Unit 2 personnel. Training provided to individuals under this program, regardless of their Unit assignment, will be considered applicable to both units.

13.2.2 LICENSED PERSONNEL

13.2.2.1 Initial Training

Personnel seeking Reactor Operator and Senior Reactor Operator licenses shall receive classroom, simulator and on-the-job training.

Certification of training completion and readiness to perform licensed duties pursuant to 10 CFR 55, Sections 55.10a(6) and 55.33a(4) and (5) shall be signed by the Vice President, Nuclear Group.

13.2.2.1.1 Basic Nuclear Course (S1, S2)

An eighteen week classroom course (S1) was initially taught by personnel from General Physics Corporation of Columbia, Maryland, and has subsequently been delivered by PNPP Training personnel in both classroom and self study modes. The lecture subjects include Mathematics, Physics, Electricity, Fluids, Nuclear Physics, Heat Transfer and Thermodynamics, Reactor Physics, Instrumentation and Controls, Chemistry and Materials, Health Physics, and Reactor Operations.

Course (S2) includes operations training on Research Reactors such as those maintained by the Center for Nuclear Studies, the University of Wisconsin, and the Westinghouse Zion Training Center.

Both courses (S1 and S2) are presented to COLD license candidates who have had little previous nuclear experience. Course S1 will be used as a review (with examinations administered to ensure adequate knowledge) for COLD license candidates who have previous nuclear experience and training, but have not held an NRC license. Personnel holding a Bachelors or advanced degree in Engineering or Nuclear Sciences, and those who have been previously licensed (i.e., SRO, RO, Navy EEOW) will not be

required to attend course S1.

13.2.2.1.2 BWR Technology (B6, B8)

This course, approximately five weeks in length, consists of classroom instruction on power plant 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.

Course (B6) is a General Electric course taught at the training center in Morris, Illinois and is referenced to the Dresden 2 plant. Course (B8) is a PNPP course, and is taught directly preceding the operator training courses (A1, A4). Systems training on Perry systems shall be repeated prior to operator licensing, utilizing Perry Instructors and detailed system inspection tours in the plant.

13.2.2.1.3 BWR Operator Training (A1, A4)

This course (A1) is approximately eight weeks in length and includes full scope control room simulator exercises which simulate BWR plant operation. The course may be conducted by PNPP License Training Instructors at the PNPP Simulator, or by qualified Instructors at another BWR Training Center. RO and SRO certifications under this program are controlled by the Perry Training Section; however, the actual conduct of the certification examination is usually delegated to a knowledgeable second or third party. Personnel previously licensed as an NRC RO or SRO on a BWR need not complete this course.

A five-day simulator refresher (A4) course will be scheduled prior to the NRC administered examinations.

13.2.2.1.4 BWR Observation Training (B7)

This course provides on-site observation of an operating BWR for COLD license applicants without previous operating reactor experience, to acquaint them with procedures, problems, and practices used in operating a BWR power plant. The course involves four weeks (RO) or six weeks (SRO) of observation and, if possible, participation 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, Commonwealth Edisons's Dresden Unit, and other fueled BWR stations, under the guidance of a GE Training Engineer or the utility Shift/Unit Supervisor.

13.2.2.1.5 Perry Technology Course (B8)

DESCRIPTION COMBINED WITH 13.2.2.1.2

13.2.2.1.5 Perry Technology Course (B8)

See attached pages 13.2-1, 2 & 3

13.2.2.1.6 Onsite Training (X1)

Cold License

This training course 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.

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

13.2.2.1.7 Degraded Core Training (A5)

This course is designed to ensure that plant operators, appropriate staff engineers, and management personnel possess the knowledge and skills necessary to recognize potentially severe accident conditions that have resulted or could result in core damage, and to mitigate the consequences of such accidents.

Training on the use of installed systems to monitor and control accidents, in which the core may be severely damaged, will be completed prior to issuance of a full power license. This training shall include specific instruction in subjects related to degraded core conditions. Instruction is provided on recognition and recovery from inadequate core cooling conditions.

13.2.2.1.8 NRC License Academic Upgrade Instruction (X7)

This course consists of instruction in thermodynamics, fluid flow, and heat transfer.

13.2.2.1.9 Contingency Training

fuel load operator
In the event of a schedule change, initial license candidates 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 months before scheduled fuel load. At that time, a license preparation course, including Simulator Refresher Training will be scheduled.

13.2.2.1.10 Low Power Test Training

A low power testing program will be conducted for the purpose of providing technical information and to supplement training. Completion of supplemental operator training at low power, to involve all shifts not participating in testing, will be completed prior to full power operation.

13.2.2.2 Operator Requalification Program (X5)

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. Plant manipulations required by 10 CFR 55, Appendix A, Paragraph 3.a, not accomplished during normal plant evolutions may be performed on the simulator.

Specific areas covered in the requalification program will include heat transfer, fluid flow, thermodynamics and mitigation of accidents involving a degraded core.

The Perry Nuclear Power Plant views a six shift cycle as its goal. During each six-week shift cycle, each operating shift would be available for off-the-job retraining for a period of up to one week. With this approach to training, the preplanned lectures are presented six 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, 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 Requalification Examination

A written examination will be administered annually or as designated in the requalification program approved by the USNRC 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, Off-Normal, and Emergency Operating Instructions

13.2.2.2.4 Reactivity Control Manipulations

Each licensed reactor operator 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 with 10 CFR 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 ten percent 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 power changes greater than ten percent.

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

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

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

A record of reactivity manipulations performed by each licensed operator will be maintained. This record 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 will be administered. The licensed operator must score 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 Perry Training Section is responsible for maintaining all records of the requalification program which 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 for two years.

Based on the results of the annual examination, the Training Supervisor will prepare an outline of the preplanned lecture series for the following 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 above records will be retained for at least two years.

The Training Supervisor will prepare a brief summary of the status of the requalification program at least every three months. This summary will include a general progress report and details of existing or potential problems. This summary will be reviewed by the Manager, Perry Plant Operations Department and General Supervisor, Operations Section. Corrective action to correct program deficiencies will be initiated as required.

13.2.3 TRAINING PROGRAMS FOR NON-LICENSED TECHNICAL PERSONNEL

Selected technical, professional, and supervisory personnel will be provided the necessary training to satisfy the applicable requirements of their particular positions. This will be 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 sections, technical and professional staff personnel are scheduled to attend portions of the Licensed Personnel Training Programs to enable them to become familiar with Perry Plant operation.

This program is not limited to the courses listed in Figure 13.2-1. 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. It 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. Shift Technical Advisors (STA) shall complete this course or receive equivalent instruction on the included subject areas of reactor physics, thermal hydraulics, core flow, and core power response.

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 techniques associated with liquids and gases formed during operation of a BWR. The course includes BWR water chemistry, waste disposal, effluent monitoring, process monitoring, laboratory instrument calibration and studies in laboratory work. Compliance with, and interpretation of, the chemical and radiochemical aspects of the technical specifications, licenses, and plant warranties are also covered. Additionally, 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.

Chemistry Unit Supervisors will attend this course as needed, based on prior education and experience.

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.

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.

Additionally, instruction in other areas such as recirculation pump seal, safety relief valve, and main steam isolation valve maintenance shall be conducted.

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.

The Instrument and Control (I&C) Supervisors (as appropriate) and selected technicians will attend this course as needed, based on prior education and experience.

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.

The I&C Supervisors (as appropriate) and selected I&C technicians will attend this course as needed, based on prior education and experience.

13.2.3.6 Rod Control and Information System (C7)

This seven-week course is designed to train technicians and supervisors in the maintenance and testing of the BWR/6 manual control system. The course consists of classroom lecture integrated with laboratory experience in circuit analysis and troubleshooting.

The I&C Supervisors (as appropriate) and selected technicians will attend this course as needed, based on prior education and experience.

13.2.3.7 Recirculation Flow Control (C8)

This three week course is designed to train technicians and responsible supervisors in the theory and operation of instrumentation utilized in the BWR recirculation system. The course consists of classroom lectures supported by laboratory experience in inspection and calibration of instrumentation.

The I&C Supervisors (as appropriate) and selected technicians will attend this course as needed, based on prior education and experience.

13.2.3.8 Radiological Engineering (C1)

This course, currently eight-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 radioanalysis, applied shielding design, radiation safety administrative procedures and licensing and compliance administration.

The General Supervising Engineer, Radiation Protection Section will attend this course if determined necessary, based upon prior education and experience. Required attendance by other radiation protection personnel will be based upon prior education and experience and specific job assignment .

13.2.3.9 Applied Health Physics (B13)

This course, currently five-weeks in duration, emphasizes the fundamentals of health physics, problems and practices in providing radiation protection, the mechanism of radiation damage, and methods and procedures for evaluating radiation hazards.

Health Physics Supervisors will attend this course as needed, based on prior education and experience.

13.2.3.10 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.

13.2.3.11 Vendor Schools

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

procedures. The course is based on Health Physics Instructions and includes, but is not limited to, the following subject areas:

a. Radiation control

b. Contamination control

c. Airborne radioactivity control

d. Respiratory Protection

e. Radioactive waste disposal

f. Radioactive material shipment

g. Health Physics 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 specific needs. Program material will be developed as training requirements 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.

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

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 EVALUATION OF TRAINING

The General Supervisor, Perry Training Section 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 instructor a course evaluation on completion of a training segment.

The General Supervisor, Perry Training Section will have all inputs collected and evaluate instruction and instructors on a periodic basis. A quarterly training summary will be prepared for the Managers, Perry Plant Operations and Perry Plant Technical Departments.

POSITION					FUEL LOAD ↓	UNIT 1 COMMERCIAL ↓	
PLANT OPERATIONS MANAGER	(B7, B8, A1, A4	X1, X3) *			A5, X7	X4	
OPERATIONS GENERAL SUPERVISOR	B6, B7, A1, A4, A5,	X1, X2, X3				X4, X5	
SHIFT/UNIT SUPERVISOR	S1, S2, B6/8, B7	A1, A4, A5, X1 X7	X3			X4, X5	
SUPERVISING OPERATOR	S1, S2, B6/8, B7	A1, A4, A5, X1, X7	X3 X8			X4, X5	
MAINTENANCE GEN. SUPERVISOR	B8					X4	
MAINTENANCE MECHANICS			C6**				
OPERATOR TRAINING SUPERVISOR	B7, B8, A1, A4	A5, X1, X7			X3	X4, X5	
LICENSED INSTRUCTORS	S1, S2, B8, B7	A1, A4, A5, X1, X7	X3			X4, X5	
TECHNICAL GENERAL SUPV. ENGR.	C2, B8	A1			A5	X4	
SHIFT TECHNICAL ADVISOR	B8, A6		A5, X7	X7**, X3**		(X4, X5)**	
REACTOR ENGINEER	C2, B8, A1				A5	X4	
I & C SUPERVISOR/TECHNICIANS	(C4, C5, C7, C8)**						
RADIATION PROTECTION GEN. SUPERVISOR	C1						
PLANT HEALTH PHYSICIST			B8***				
CHEMISTRY SUPERVISOR	C3						
SECURITY OFFICER			X8**				
GENERAL EMPLOYEES (UNESCORTED)			X6, X9**				

PREOPERATIONAL TEST PERIOD

COURSES

A1	SIMULATOR TRAINING	C7	ROD CONTROL & INFORMATION
A4	SIMULATOR REFRESHER	C6	RECIRCULATION FLOW CONTROL
A5	DEGRADED CORE TRAINING	S1	BASIC NUCLEAR THEORY
A6	SIMULATOR TRAINING (STA)	S2	RESEARCH REACTOR OR EQUIVALENT EXPERIENCE
B6	DRESDEN BWR TECHNOLOGY	X1	ONSITE TRAINING (SYSTEMS PROCEDURES & STARTUP TESTING)
B7	OBSERVATION TRAINING	X1'	ONSITE TRAINING (DESIGNATED PORTIONS)
B8	PERRY BWR TECHNOLOGY	X3	NRC EXAM
B13	APPLIED HEALTH PHYSICS	X4	PREOPERATIONAL TESTING
C1	RADIOLOGICAL ENGINEERING	X5	REQUALIFICATION PROGRAM (NRC LICENSE)
C2	STATION NUCLEAR ENGINEERING	X6	GENERAL EMPLOYEE
C3	BWR CHEMISTRY	X7	NRC LICENSE ACADEMIC UPGRADE
C4	NUCLEAR INSTRUMENTATION	X8	FIRE BRIGADE TRAINING (DESIGNATED PERSONNEL)
C5	PROCESS INSTRUMENTATION	X9	EMERGENCY PLAN TRAINING
C6	BWR MAINTENANCE		

* WAIVED BY VIRTUE OF HAVING HELD PREVIOUS USNRC BWR OPERATOR LICENSE
** DESIGNATED PERSONNEL
*** APPLICABLE SYSTEMS ONLY

NOTES: STATUS OF TRAINING IS SHOWN AS OF MARCH 1985 RELATIVE TO A JUNE 1985 SCHEDULED FUEL LOAD DATE.

PERRY NUCLEAR POWER PLANT
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

Perry Nuclear Power Plant
Training Schedule

Figure 13.2-1

13.3 EMERGENCY PLANNING

A detailed emergency plan document describing CEI's plans for coping with emergency situations is provided in the Emergency Plan for the Perry Nuclear Power Plant.(1) The PNPP Emergency Plan's conformance to applicable codes, Regulatory Guides and standards is discussed in Section 2.4.1 of 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 the Perry Nuclear Power Plant.

The Emergency Plan sets forth the objectives and the methods for achieving them. It describes the related emergency organization, including assignments of authority and responsibility. The Plan provides for the following activities: 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 be 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 have been prepared for accomplishing appropriate emergency functions at the Perry Nuclear Power Plant.

13.3.1 REFERENCE FOR SECTION 13.3

1. CEI Report No. OM-15A, Revision 5, "Emergency Plan for Perry Nuclear Power Plant", August 16, 1985.

13.4 REVIEW AND AUDIT

A program for review , including in-plant and independent review , has been established to ensure that operation of the PNPP is in accordance with written procedures, instructions, and license provisions 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, as defined in 10 CFR 50.73, are promptly investigated and corrected in a manner which reduces the probability of recurrence of such events.

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

d. Examination of plant operating characteristics, design and operating experience information that may indicate areas for improving plant safety.

Two organizations have been established to accomplish the review and audit function. 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) and the Independent Safety Engineering Group (ISEG), which are independent of direct responsibility for plant operation.

A program for audits of activities affecting plant safety during the operational phase has also been 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 17.2.18 and Section 6.5 of the Perry Technical Specifications.

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 review of PNPP safety-related operating activities. This committee shall be comprised of qualified, Perry Plant Operations and Technical Department management 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 Charter

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 ten permanent members and an unspecified number of alternate members who have been recommended by their supervisors and approved by the Manager - Perry Plant Operations Department. The PORC may perform its designated functions only if no less than five members are present, including either the Chairman, a Vice-Chairman; or the member designated in writing as the alternate for the Manager, Perry Plant Operations Department; and, provided no more than two of the four other members are alternate members. The Vice Chairmen may serve as members when not presiding as Chairman. Alternates may participate in PORC activities only in the absence of a permanent member. Permanent membership of the PORC shall consist of:

- Manager, Perry Plant Operations Department (Chairman)
- Manager, Perry Plant Technical Department (Vice-Chairman)
- Technical Superintendent (Vice-Chairman)
- General Supervisor, Operations Section (Member)
- General Supervisor, Maintenance Section (Member)
- General Supervising Engineer, Technical Section (Member)
- General Supervising Engineer, Radiation Protection Section (Member)
- Reactor Engineer (Member)
- Plant Health Physicist (Member)
- General Supervising Engineer, Instrumentation and Control Section (Member)

3. Assure that those portions of the "Perry Nuclear Power Plant Operations Manual" assigned as their reponsibility are properly reviewed, approved and implemented.

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

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

Additional PORC responsibilities are to:

1. Review plant administrative procedures and designated section administrative procedures and instructions.

2. Review startup test procedures, results and reports.

3. Review written safety evaluations performed as a result of proposed changes to the plant or procedures or instructions 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 50.59 . These safety evaluations 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.

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

8. Review reportable events as defined in 10 CFR 50.73.

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

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

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

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

13. 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, (NSRC) which is responsible for the independent review function, shall be established and functional prior to

initial fuel loading of Unit 1. The NSRC will report directly to the CEI Vice President-Nuclear Group and will have a majority of members who are not directly responsible for plant operations. At least two members will be senior individuals with commercial BWR operating/management experience.

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 requirements and administrative controls under which the committee will operate.

13.4.2.2 Committee Membership

The NSRC shall be composed of at least eight personnel appointed by the Vice President Nuclear 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 - Nuclear Group, 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

The members shall hold a Bachelor's degree in an engineering or physical science field, or equivalent experience, and a minimum of 5 years of technical experience of which a minimum of three years shall be in one or more of the disciplines of Specification 6.5.2.1 Competent alternates may be designated in advance and consultants may be used for in-depth expertise if 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 of Unit 1. Beyond this first twelve-month period, the meeting frequency shall be no 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 Section 6.5 of the Perry Technical Specifications, 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 review and approve the subject areas and schedules for audits specified in the Technical Specifications or delegated by the NSRC.

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 INDEPENDENT SAFETY ENGINEERING GROUP

An Independent Safety Engineering Group, (ISEG) staffed by full-time engineers and other technically oriented personnel located onsite shall be responsible for maintaining surveillance of plant activities to provide independent verification that these activities are performed correctly. The ISEG shall be established and functional prior to initial fuel load.

13.4.3.1 Written Charter

The ISEG shall be chartered to function in accordance with written procedures which delineate composition, responsibility and authority, items and subjects to be reviewed, reporting requirements and administrative controls.

13.4.3.2 Committee Membership

The ISEG staff will consist of five individuals from mechanical, electrical, chemical, environmental and quality assurance disciplines, one of whom will be

designated as Chairman. The Chairman of the ISEG will report directly to the Manager, Nuclear Engineering Department.

13.4.3.3 Authority

The ISEG shall make detailed recommendations for procedure revisions, equipment modifications, maintenance activities, operations activities and other means for improving plant safety.

13.4.4 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 Section 6.5 of the Perry Technical Specifications, 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 Operations/Technical Departments' methods for complying with corporate commitments to the Technical Specifications, Operational Quality Assurance Program, Final Safety Analysis Report, and Regulatory Guide 1.33.

The "PNPP Operations Manual" is established as a complete management document addressing all aspects of plant management including administrative, technical, quality, safety, personnel and environmental.

A procedure and instruction preparation plan has been prepared and indicates that all required documents are best presented and controlled in the form of nineteen separate volumes of the PNPP Operations Manual. Each volume shall contain the number of books necessary to adequately address specific volume title requirements. Individual procedures and instructions shall be prepared and reviewed by plant or consultant personnel knowledgeable in the subject matter to be presented. Each review shall include a determination of whether or not an unreviewed safety question is involved per 10 CFR 50.59.

All plant administrative procedures will be approved by the Managers, Quality Assurance Department, Perry Plant Operations Department and Perry Plant Technical Department. Responsibility for preparation of the procedures and instructions contained in the nineteen volumes of the "PNPP Operations Manual" is listed in Table 13.5-1.

1.33, "Quality Assurance Program Requirements (Operation)", Revision 2, dated February, 1978 and shall be contained in the "Perry Nuclear Power Plant Operations Manual".

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 Operations and Technical Departments 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 initial 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.

Plant procedures and instructions are assigned to appropriate plant management personnel as indicated in FSAR Section 13.5. All Plant Administrative Procedures (PAPs), the various Section Administrative Procedures (SAPs) and designated Instructions shall be independently reviewed by the Plant Operations Review Committee (PORC) prior to approval and implementation. Other instructions determined by PORC to not require PORC review shall be independently reviewed by plant staff personnel knowledgeable in the requirements applicable to the activity being described.

The Plant Administrative Procedures shall be prepared under the immediate direction of the Managers, Perry Plant Operations and Technical Departments and shall be subject to their approval. These procedures are the top level documents within the "PNPP Operations Manual" and delineate the Perry Plant Operations and Technical Departments 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 Operations/Technical Department sections and/or units. A Plant Administrative Procedure may address only one Perry Plant Operations/Technical 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. All Section Administrative Procedures will be subject to a PORC review prior to submittal for approval by the Operations and Technical Department Managers.

The Plant and Section Administrative Procedures are included in Volume 1 of the "PNPP Operations Manual." These administrative procedures shall address such subjects as:

1. Standing orders to operations shift supervisors and personnel including proper shift relief and turnover procedures.

2. Authority and responsibilities of reactor operators and senior reactor operators including succession in the control room.

3. Responsibility to meet licensed operator requirements as described in 10CFR50.54(i), (j), (k), (l) and (m).

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The areas associated with the "at the controls" concept as discussed in the above articles of 10CFR50.54 and in the guidance in Regulatory Guide 1.114 are as shown in Figure 13.5-1. The horseshoe area depicted on this Figure is the normal operating area. In the event of an emergency affecting the safety of operations, the "operator at the controls" may enter the expanded area depicted on Figure 13.5-1. In extreme emergencies, such as situations threatening the operator's personal well being, or situations which require evacuation of the control room, relocation to the Remote Shutdown Panel will be allowed.

13.5.2.1.5 Off-Normal Instructions

Off-Normal 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, symptoms, automatic actions, immediate operator actions and subsequent actions.

13.5.2.1.6 Plant Emergency Instructions

Plant Emergency Instructions shall be prepared to ensure that proper action is taken in response to emergency conditions or malfunctions. These instructions shall provide symptom oriented 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 4 of the "PNPP Operations Manual". Their format shall provide for the instruction title, scope, entry conditions and operator actions.

13.5.2.1.7 Startup Test Instructions

Startup Test Instructions, as discussed in FSAR Chapter 14, shall be prepared and be included in Volume 5 of the "PNPP Operations Manual".

13.5.2.1.8 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, identity of the alarm, its panel location and setpoint, probable cause, automatic actions, immediate operator actions and subsequent operator actions.

13.5.2.1.9 Temporary Instructions

Temporary instructions may be issued to direct operations during testing or maintenance, to provide guidance in unusual situations not within the normal scope of 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 effectiveness which is 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 Instructions

Plant Health Physics instructions shall be written and included in the "PNPP Operations Manual". These 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 Plan and Instructions shall provide an orderly program for dealing with plant emergencies. Step-by-step methods shall be presented for evaluating emergency conditions. The individual and collective responses required to mitigate or terminate the emergency conditions will also be included. Instructions shall address actions to be taken by specific plant personnel in responding to Unusual Event, Alert, Site and General Emergency situations.

These instructions shall be contained in Volume 15 of the "PNPP Operations Manual". The PNPP Emergency Plan will be maintained as an individual document under separate cover.

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 Instructions

Instructions to implement the Chemistry Program 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 management, 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 instructions similar in content and format to those discussed in FSAR Sections 13.5.2.1.2 and 13.5.2.1.8 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 instructions 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 Operations 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".

13.5.2.2.12 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 and health physics, as well as specific training for Perry Plant Operations and Technical Department personnel, and licensed and non-licensed operator training. Specific instruction is also provided for documenting training received and for retention of training records.

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

13.5.2.2.13 Administrative Unit Instructions

Administrative Unit Instructions shall be prepared to provide Administrative Unit personnel with the detailed instructions necessary to implement activities outlined in the various Plant and Section Administrative Procedures. These instructions 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.

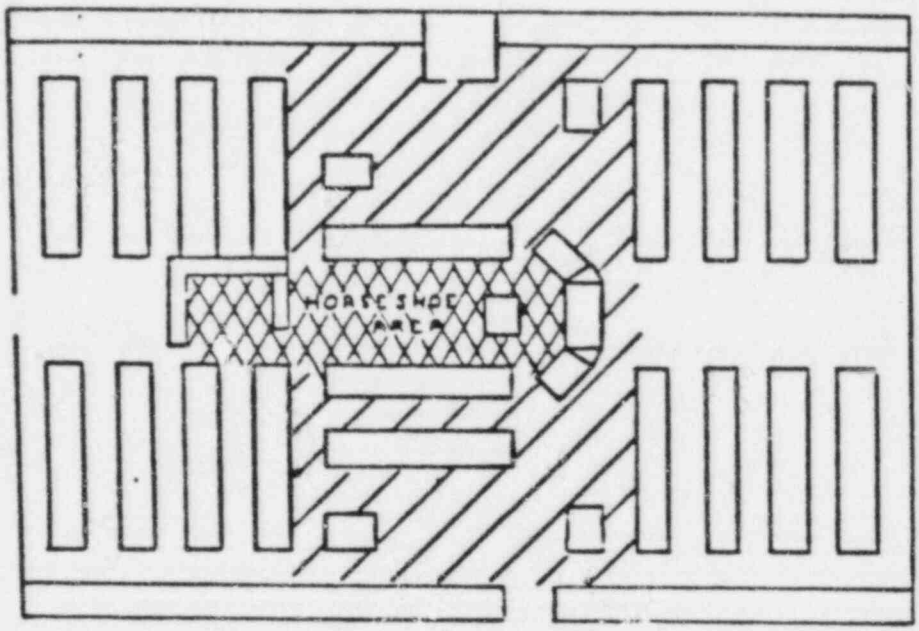
This information shall be contained in Volume 18 of the "PNPP Operations Manual".

TABLE 13.5-1

PNPP OPERATIONS MANUAL, TITLES AND RESPONSIBILITIES

VOLUME	TITLE	RESPONSIBILITY
1	Administrative Procedures	Plant Operations or Technical Manager/Section Supervisors/QA Manager
2	Administrative Unit Instructions	Admin. Unit Supervisor
3	System Operating, Electrical and Valve Lineup Instructions	General Supervisor, Operations Section
4	Integrated Operating Instructions, Off-Normal Instructions and Plant Emergency Instructions	General Supervisor, Operations Section
5	Startup Test Instructions	General Supervising Engineer, Technical Section
6	Alarm Response Instructions	Applicable Section Supervisor
7	Surveillance, In-Service Inspection and Periodic Test Instructions	General Supervising Engineer Technical Section
8	Instrumentation Calibration Instructions	General Supervising Engineer, Instrumentation & Control Section
9	Maintenance Instructions	Applicable Section Supervisor
10	Fuel and Technical Instructions	General Supervising Engineer, Technical Section
11	Health Physics Instructions	General Supervising Engineer Radiation Protecting Section
12	Chemistry Manual and Instructions	General Supervising Engineer Radiation Protection Section
13	Radwaste Instructions	General Supervisor, Operations Section
14	Training Manual	General Supervisor, Perry Training Section
15	Emergency Plan and Instructions	Technical Superintendent
16	Security Plan and Instructions	General Supervisor, Site Protection Section

17	Fire Protection	General Supervisor, Site Protection Section
18	Plant Data Book	General Supervising Engineer, Technical Section
19	Temporary Instructions	Applicable Section Supervisors



LEGEND:

EXPANDED AREA

HORSESHOE AREA
(Normal Operating Area)

PERRY NUCLEAR POWER PLANT
THE CLEVELAND ELECTRIC
ILLUMINATING COMPANY

Area Designated 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.18.17-1973 to meet the intent of 10CFR 73 and Regulatory Guide 1.17-1973, which references ANSI N18.17 and GSA Specification W-A-00450 B(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 Perry Plant Technical Department Manager, is responsible for the overall security at the PNPP. Reporting directly to the Manager, Perry Plant Technical Department is the General Supervisor, Site Protection Section who is responsible for administration of the Security Plan, including the selection and training of a security force that meets the requirements of 10CFR 73, Appendix B with respect to suitability, physical and mental qualification 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.