

# SIEMENS

April 22, 1994

U.S. Nuclear Regulatory Commission  
Attention: Mr. Robert C. Pierson, Chief  
Licensing Branch  
Division of Fuel Cycle Safety and Safeguards, NMSS  
Washington, D.C. 20555

License No. SNM-1227  
Docket No. 70-1257

Dear Mr. Pierson:

Siemens Power Corporation (SPC) requests an amendment to its license to reflect organizational changes intended for the near future which affect the reporting relationships, responsibilities, and authority of certain key management positions which include safety-related functions in the safe operation of the SPC Engineering and Manufacturing Facility in Richland, Washington.

In the existing structure the Richland Plant Manager has reported to the Vice President Manufacturing, Nuclear Division, who reports to the General Manager. Although the Vice President, Manufacturing, has been responsible as the Senior Site Representative (Richland), position responsibilities also included overall management of the fabrication of nuclear fuels at the Lingen and Hanau sites in the Federal Republic of Germany. The Richland Plant Manager has been designated as the deputy to the Vice President, Manufacturing in the event of absence of the Vice President, Manufacturing. In the new organization, the Richland Plant Manager is assigned full responsibility for safe operation of the Richland plant and will report directly to the General Manager, SPC Nuclear Division.

The Vice President, Manufacturing, will become Vice President, international Manufacturing, responsible primarily for business-related decisions in the globalized manufacturing activities for the entire Siemens Power Corporation, Nuclear Division. Because the safety-related functions for operations at the Richland plant fully reside with the Richland Plant Manager, the position of Vice President, International Manufacturing, is not shown on the amended organization chart and the position description is deleted from Chapter 2 of the license. The effect of the intended change is to provide unequivocal responsibility and authority to the Richland Plant Manager in the safety-related functions in the fabrication of nuclear fuels at the Richland plant including manufacturing, maintenance, plant support engineering, transportation, materials handling and storage, licensing, and industrial, radiological, and nuclear safety. The amendment also provides for direct access and accountability of the Richland Plant Manager to the Nuclear Division General Manager.

Siemens Power Corporation

Nuclear Division - Engineering and Manufacturing Facility

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Additionally, quality control and quality assurance functions will be consolidated under the management of a new position, Director, Quality. The Director, Quality will report directly to the General Manager, SPC-Nuclear Division. The Director, Quality will have overall management responsibility for quality assurance programmatic activities in addition to monitoring and approving product quality during the manufacturing process. Overall management responsibility for the Analytical Laboratories, which provide safety-related support through analysis of environmental, process, waste, and safeguards/accountability samples is also assigned to the Director, Quality.

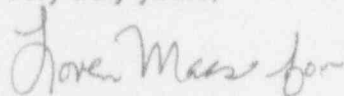
This change will provide additional focus and coherence in Division quality programs at the Richland plant, with direct access and accountability to the Division General Manager for both quality assurance and quality control functions. The change also provides for independence of the quality control functions, including Analytical Laboratory operations, from the production functions and responsibilities of the Richland Plant Manager.

In preparation of the appropriate changes to Chapter 2 of the SPC license relative to these changes, certain inconsistencies were noted between the organization chart as depicted in Figure I-2.1 and the text describing the Engineering Division organization. These inconsistencies are primarily administrative in nature and do not involve key safety functions. The inconsistencies in the text are also being corrected at this time. As in the case of the substantive changes described above, all changes are highlighted by change bars in the right hand margin.

Enclosed, to accomplish the changes described above, are six copies of pages 2-1 through 2-9c, 2-19, 9-7 and 11-1 through 11-46a for the current license and pages 2-1 through 2-12, 2-21, 9-7, and 11-1 through 11-46a for the renewal application.

SPC intends to implement the organizational restructuring effective May 1, 1994. If you need further information, you may contact me at (509) 375-8663 or Mr. R. E. Vaughan at (509) 375-8460.

Very truly yours,



James B. Edgar  
Staff Engineer, Licensing

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**CHAPTER 2 ORGANIZATION AND ADMINISTRATION**

The President of Siemens Power Corporation (SPC) has the ultimate responsibility for ensuring that all Company operations are conducted safely, and in full compliance with applicable Federal, State and local regulations, licenses, and permits. For the Nuclear Division of the Company such responsibilities are borne by the Senior Vice President and General Manager, Nuclear Division.

All functions which handle or store special nuclear material authorized by this License reside within the Manufacturing, Engineering, and Quality Divisions of the Nuclear Division of the Company. The relationship of those segments of the organization which contain a significant safety or licensing responsibility is depicted in Figure I-2.1. The organization of Safety, Security, and Licensing, which contains the responsible safety specialists and professionals, is depicted in Figure I-2.2.

**2.1 Organizational Responsibilities and Authority****2.1.1 President and Chief Executive Officer**

In connection with his ultimate safety responsibility, the President shall assure that adequate manpower, funding, and resources are made available within the Company to achieve the capabilities committed to in this Application. Additionally, he is responsible for assuring that there is a sound, consistent safety philosophy throughout the Company.

**2.1.2 Senior Vice President and General Manager, Nuclear Division**

The Senior Vice President and General Manager, Nuclear Division reports directly to the President and has the responsibility for ensuring that the safety-related functions of the Nuclear Division are carried out while meeting Division production and engineering goals.

**2.1.3 Richland Plant Manager**

The Richland Plant Manager is responsible for the fabrication of nuclear fuels and the safety-related functions of manufacturing, maintenance, plant support engineering, transportation, materials handling and storage, licensing and industrial, radiological and nuclear safety for the Engineering and Manufacturing Facility. He reports directly to the Senior Vice President and General Manager, Nuclear Division. In this capacity the Richland Plant Manager is the Senior Site Representative and has the full authority and responsibilities of the position.

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**2.1.4 Manager, Manufacturing Engineering**

The Manager, Manufacturing Engineering is responsible for all plant maintenance activities and for engineering assistance for all process, utility and safety systems. This position reports directly to the Richland Plant Manager and discharges day-to-day responsibilities through the Manager, Plant Engineering, Manager, Process Engineering, Manager, Waste Management Engineering, and Manager, Manufacturing Technology.

He has the full authority to discharge his responsibilities for furnishing direct maintenance and engineering support to all plant activities.

**2.1.5 Manager, Process Engineering**

Process engineering activities are directed by the Manager, Process Engineering who reports to the Manager, Manufacturing Engineering.

The Manager, Process Engineering is responsible for providing process engineering support to the fuel fabrication plant. This includes the preparation of process parameter operating limits and process specifications. He provides technical support for welding operations and for developing improved welding methods. These activities are conducted within licensing and safety requirements.

He has the necessary authority to carry out the responsibilities of this position.

**2.1.6 Manager, Plant Engineering**

The Manager, Plant Engineering is responsible for all plant maintenance activities and the necessary associated engineering support. This position reports directly to the Manager, Manufacturing Engineering.

In addition to common maintenance activities, the Manager, Plant Engineering is responsible for establishing and conducting preventative maintenance and inspection programs for all safety-related equipment and systems, and for alerting the plant management of deteriorating and/or substandard conditions of safety-related equipment and systems.

He is responsible for maintaining and calibrating radiation protection instruments and equipment, the criticality accident alarm system, and the fire detection and alarm system in accordance with established programs. He is also responsible for establishing and conducting tests of safety and emergency-related equipment as required by established programs.

The Manager, Plant Engineering is also responsible for the design and/or modification of new and existing equipment and facilities. This includes equipment and systems installed

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to maintain personnel exposures to radiation and radioactive materials, as well as releases of radioactive materials to the environment, as low as is reasonably achievable.

**2.1.7 Manager, Manufacturing Technology**

The Manager, Manufacturing Technology, reports to the Manager, Manufacturing Engineering and is responsible for development of chemical, ceramic, welding and mechanical processes and techniques to: implement step change advancements in existing manufacturing technology; support the manufacture of advanced fuel; develop processes and strategies for treatment and disposal of radioactive and hazardous wastes. Other responsibilities include training, preparation of operating procedures, and supervision of all activities involving radioactive materials within the chemical, process, ceramic, and mechanical development laboratory portions of the ELO facility.

**2.1.8 Manager, Waste Management Engineering**

The Manager, Waste Management Engineering reports to the Manager, Manufacturing Engineering and is responsible for implementing projects and recommending process changes to support waste treatment and environment compliance. He gives direction and provides equipment engineering for waste treatment processes and provides engineering support for environment compliance activities.

**2.1.9 Manager, Plant Operations**

The operation of the fuel manufacturing facilities are directed by the Manager, Plant Operations who reports to the Richland Plant Manager.

The safe operation and control of plant activities, including the safety of the environs as influenced by the conducted activities, are the responsibility of the Manager, Plant Operations. Other responsibilities include preparation of detailed operating procedures, training of employees, special nuclear materials safeguards control, supervision of all activities involving radioactive materials within the Gd scrap recovery area of the ELO facility, membership in the Plant Emergency Response Management Team (PERMT) and membership in the ALARA Committee.

The Manager, Plant Operations has the full authority required to discharge his responsibilities for safe operation of his plant.

**2.1.10 Manager, Materials and Scheduling**

The Manager, Materials and Scheduling reports to the Richland Plant Manager and is responsible for overall manufacturing scheduling, uranium planning, purchasing, and for shipment, receipt and storage of materials used in the manufacturing process.

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**2.1.11 Manager, Master Scheduling and Uranium Management**

The Manager, Master Scheduling and Uranium Management reports to the Manager, Materials and Scheduling and is responsible for developing uranium utilization plans and monitoring receipt, usage and shipment of nuclear material to assure that plant inventories do not exceed authorized possession limits.

**2.1.12 Supervisor, Traffic and Warehousing**

The nuclear material traffic activities for SPC facilities located at Richland are directed by the Supervisor, Traffic and Warehousing who reports to the Manager, Materials and Scheduling. The responsibilities of the Supervisor, Traffic and Warehousing include shipping, receiving and warehousing of nuclear materials and maintaining nuclear material transfer records.

**2.1.13 Manager, Safety, Security, and Licensing**

The Manager, Safety, Security, and Licensing reports to the Richland Plant Manager and is responsible for developing, administering, and auditing the licensing, industrial safety and health, health physics, criticality safety, environmental surveillance, ALARA, security, and safeguards programs for all SPC facilities located at Richland.

The Manager, Safety, Security, and Licensing is wholly independent with no manufacturing responsibility, and has direct access to the upper management of the Company.

If the Manager, Safety, Security, and Licensing judges any operation as unsafe, he has the authority to request management to shut down the affected operation. In the event of disagreement between line management and the Manager, Safety, Security, and Licensing, the operation shall be immediately shut down, and the issue promptly brought to the attention of the Richland Plant Manager. Actions following from this authority are subject to review and approval solely by the President of the Company.

**2.1.14 Supervisor, Safety**

The Supervisor, Safety, who reports to the Manager, Safety, Security, and Licensing, directs the activities of industrial safety and health, criticality safety, health physics, and radiological safety personnel in conformance with approved Company policies and programs in direct support of plant operations.

If the Supervisor, Safety judges any operation as unsafe, he has the authority to request management to shut down the affected operation. In the event of disagreement between line management and the Supervisor, Safety, the operations shall be immediately shut

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down, and the issue promptly brought to the attention of the cognizant department manager.

**2.1.15 Industrial Safety and Health Component**

The Industrial Safety and Health Component resides within the Safety organization. The general responsibilities of the Industrial Safety and Health Component are to provide information, advice and assistance to the Company operating and engineering components such that personnel safety and environmental protection are maximized, and to keep adequate records documenting conditions. Specific responsibilities of the Industrial Safety and Health Component include the following:

1. Establishing and administering industrial safety and health programs in accordance with criteria and standards provided by the Manager, Regulatory Compliance. Such programs include confined space monitoring, hazardous chemical monitoring, noise surveys, ergonomic programs and associated records systems.
2. Reviewing established programs and evaluating their effectiveness.
3. Providing industrial safety and health analyses of proposed operational modifications.
4. Preparing and updating the Industrial Safety Standards section of the Company Safety Manual (EMF-30).
5. Performing compliance inspections.
6. Membership in the Plant Emergency Response Management Team (PERMT).

**2.1.16 Criticality Safety Component**

The Criticality Safety Component resides within the Safety organization. The responsibilities of the Criticality Safety Component include the following:

1. Providing technical bases, criteria, and methods related to nuclear criticality safety.
2. Preparing and updating the Nuclear Criticality Safety Standards section of the Company Safety Manual (EMF 30).
3. Establishing criticality safety programs in accordance with criteria and standards provided by the Manager, Regulatory Compliance. Such

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programs include training, fire fighting restrictions, criticality alarm coverage and associated records systems.

4. Performing Criticality Safety Analyses for designs and procedures, including second-party reviews.
5. Providing professional advice concerning matters within the component's cognizance.
6. Membership in the Plant Emergency Response Management Team (PERMT).
7. Performing compliance inspections.
8. Preparing Criticality Safety Specifications and Limit Cards.

All Criticality Safety Analyses shall be reviewed by a second party who shall be knowledgeable of the technical data and qualified in the techniques of criticality physics. Second party reviews shall be arranged by the Criticality Safety Component, and may be either from within the component or by an outside reviewer. All nuclear Criticality Safety Analyses and reviews shall be documented, and documents shall be held until six months following the termination of the processes, equipment, or facilities to which they apply.

**2.1.17 Health Physics Component**

The Health Physics Component resides within the Safety organization. The responsibilities of the Health Physics Component include the following:

1. Providing technical bases, criteria, and methods related to health physics.
2. Providing for outside sources for aid and special services related to health physics and emergencies.
3. Preparing and updating the Radiation Protection Standards section of the Company Safety Manual (EMF-30).
4. Establishing radiological protection programs in accordance with criteria and standards provided by the Manager, Regulatory Compliance. Such programs include air sampling, contamination and radiation surveys, bioassay in-vivo examinations, and associated records systems.
5. Performing compliance inspections.



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<ol style="list-style-type: none"> <li>6. Membership in the Plant Emergency Response Management Team (PERMT).</li> <li>7. Membership in the ALARA Committee.</li> <li>8. Determining whole body exposure limits and frequency and types of measurements.</li> <li>9. Preparing Radiation Work Procedures.</li> <li>10. Preparing Radiological Safety Operating Procedures.</li> <li>11. Providing professional advice concerning matters within the component's cognizance.</li> </ol>	
<p><b>2.1.18 <u>Supervisor, Radiological Safety Component</u></b></p>	
<p>The Supervisor, Radiological Safety Component, who reports to the Supervisor, Safety, provides information, advice, and assistance to Company operating and engineering components such that personnel safety and environmental protection are maximized, and assures that records adequately document conditions. Specific responsibilities of the Supervisor, Radiological Safety Component include the following:</p>	
<ol style="list-style-type: none"> <li>1. Administering the plant radiological safety programs and evaluating their effectiveness.</li> <li>2. Directing the activities of the Health and Safety Technicians.</li> <li>3. Providing radiological safety analyses of proposed operational changes or modifications.</li> <li>4. Assisting in the preparation of Radiation Work Procedures.</li> <li>5. Assisting in the preparation of Radiological Safety Operating Procedures.</li> <li>6. Assisting in preparation of reports to regulatory agencies.</li> <li>7. Auditing operations for compliance with Radiation Work Procedures and license conditions.</li> <li>8. Assisting in health physics and radiation safety training.</li> <li>9. Membership in the Plant Emergency Response Team (PERT).</li> </ol>	
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10. Membership in the ALARA Committee.

**2.1.19 Health and Safety Technicians**

Health and Safety Technicians, who report to the Supervisor, Radiological Safety, carry out established programs and assist in initiating new programs. Their specific responsibilities include the following:

1. Providing radiation and chemical monitoring.
2. Collecting air and effluent samples.
3. Issuing and controlling personnel dosimeters.
4. Maintaining all records pertaining to personnel exposure, contamination and air surveys, sampling, inspections, tests, etc.
5. Inspecting operations and reporting violations of Radiation Work Procedures.
6. Membership in the Plant Emergency Response Team (PERT).
7. Providing personnel decontamination.
8. Providing training in radiological safety practices and procedures.

Health and Safety Technician Specialists may be assigned special duties, along with appropriate titles.

**2.1.20 Manager, Regulatory Compliance**

The Manager, Regulatory Compliance reports to the Manager, Safety, Security, and Licensing and is responsible for all safety-related licenses, permits, and amendments thereto necessary for plant operation. He is also responsible for the safeguards program. His responsibilities are carried out through issuance of appropriate Company Policies and Standards, and by approval of certain implementing procedures. He is responsible for Company interface with regulatory agencies.

**2.1.21 Staff Engineer, Licensing**

The Staff Engineer, Licensing reports to the Manager, Regulatory Compliance and is responsible for obtaining all NRC permits and licenses and amendments thereto necessary for plant operation. He is responsible for assuring that the requirements of such license and permits are appropriately implemented and that implementation is

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adequately documented. He is the Company interface with the NRC, hosts NRC inspections, and responds to inspection reports for the Company.

**2.1.22 Environmental Engineering Component**

The Environmental Engineering Component resides within the Regulatory Compliance organization and is responsible for ensuring that the sampling requirements described in Chapter 5 of this License are properly implemented; collecting all the analytical data from the environmental samples; and issuing required reports. The Environmental Engineering Component is also responsible for obtaining permits, other than those issued by the NRC and the State dealing with nuclear materials, necessary for plant operation. Both nuclear and non-nuclear environmental issues are included in the component's responsibilities, with non-nuclear constituting the larger portion. This component also has industrial hygiene responsibility.

**2.1.23 Vice President, Engineering, Nuclear Division**

The Vice President, Engineering, Nuclear Division is responsible for research and development activities in support of the fabrication of nuclear fuels, including the conduct of certain demonstrations involving special nuclear materials. The Vice President, Engineering, Nuclear Division, reports directly to the Senior Vice President and General Manager, Nuclear Division.

**2.1.24 Manager, Product Mechanical Engineering**

The Manager, Product Mechanical Engineering (PME) reports to the Vice President, Engineering, Nuclear Division and is responsible for preparation/integration of mechanical design drawings and specifications, stress analysis, and parts lists for SPC product hardware. Through the Manager, Product Development and Testing, the Manager, PME is responsible for operation of the Product Development Test Facility and the conduct of Materials Research activities within the Engineering Laboratory Operations (ELO) facility.

**2.1.25 Manager, Product Development and Testing**

The operation of the Product Development Test Facility (PDTF), where reactor-simulated flow tests involving a single fuel element are conducted, is directed by the Manager, Product Development and Testing who reports to the Manager, Product Mechanical Engineering. The Manager, Product Development and Testing is responsible for the safe operation of the PDTF within the constraints imposed by license conditions, Radiation Work Procedures, and Criticality Safety Specifications. The Manager, Product Development and Testing is also responsible for Materials Research activities conducted within the Engineering Laboratory Operations (ELO) Building. Handling of fissile materials associated with those activities must be conducted within the constraints of license-mandated safety programs.

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**2.1.26 Director, Quality**

The Director, Quality reports directly to the Senior Vice President and General Manager, Nuclear Division and is responsible for all aspects of Nuclear Division quality programs. The Director, Quality has overall management responsibility for both quality assurance programmatic functions and product quality control functions, including monitoring of product quality during the manufacturing process as well as approving the quality of the finished product. The product quality control functions, administered via the Manager, Quality Control, also include responsibility for the Analytical Laboratories, which in addition to product quality-related testing, provide analyses in support license-mandated safety, environmental, and safeguards/accountability programs.

**2.1.27 Manager, Quality Control**

The Manager, Quality Control reports to the Director, Quality and is responsible for monitoring product quality during the manufacturing process as well as approving the quality of the finished product. This responsibility is discharged in part by inspection and release of incoming materials and components, in-process inspection during manufacturing, and inspection and certification of the product. The Manager, Quality Control is responsible for the Analytical Laboratories.

This position has the full authority necessary to carry out the responsibilities.

**2.1.28 Manager, Analytical Laboratories**

The Manager, Analytical Laboratories reports to the Manager, Quality Control and is responsible for coordinating and supervising the activities of the analytical laboratories which provide safety-related support through analysis of environmental, process, waste discharge, and safeguards/accountability samples.

**2.2 Personnel Education and Experience Requirements**

Responsibilities and authorities of all line managers shall be provided in writing. Hiring of managers and key professionals in plant operations, health physics, and nuclear criticality safety shall be subject to approval by the Richland Plant Manager.

The Richland Plant Manager, the Manager of Plant Operations and managers in engineering and technical services functions which have responsibilities for the processing, storing, or handling of special nuclear materials, shall have a minimum of two years of experience in the nuclear industry, and a degree in science or engineering. There are certain other positions where a technical degree is not required; however in those cases, the incumbent shall have adequate job training, and technical support and overview shall be available. Specific requirements for key safety professionals whose major responsibility is in a safety field are listed below.

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**2.2.1 Manager, Safety, Security, and Licensing**

The minimum qualifications of the Manager, Safety, Security, and Licensing shall be a BS degree in a technical field with 10 years experience in the nuclear energy field, of which four shall have been in positions with nuclear safety responsibility.

**2.2.2 Manager, Regulatory Compliance**

The minimum qualification for the Manager, Regulatory Compliance shall be a Bachelor's degree in science or engineering, plus eight years experience in the nuclear or environmental safety fields.

**2.2.3 Staff Engineer, Licensing**

The minimum qualifications shall be a Bachelor's degree in science or engineering, plus at least five years experience in the nuclear field or which three years experience shall have been in safety-related or safeguards fields requiring significant interaction with regulatory agencies.

**2.2.4 Supervisor, Safety**

The minimum qualifications shall be a Bachelor's degree in a technical field, with five years experience in safety-related fields (industrial, radiological, health physics, or nuclear).

**2.2.5 Supervisor, Radiological Safety**

The minimum qualifications shall be a Bachelor's degree in a technical field, with five years experience in radiation safety, or, in the absence of a degree, then 10 years experience shall be required.

**2.2.6 Industrial Safety and Health Specialist (Industrial Hygienist)**

The minimum qualifications of at least one member of the Industrial Safety and Health Component shall be a Bachelor's degree in science or engineering with two years experience in industrial safety or health.

**2.2.7 Criticality Safety Specialist**

The minimum qualifications of at least one member of the Criticality Safety Component, as well as for each second-party reviewer, shall be a Bachelor's degree in science or engineering with two years experience in nuclear criticality safety analysis.

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**2.2.8 Health Physics Specialist (Health Physicist)**

The minimum qualifications of at least one member of the Health Physics Component shall be a Bachelor's degree in science or engineering with five years general experience in radiation protection, or at least two years of radiation protection experience allied with nuclear fuel fabrication.

**2.2.9 Health and Safety Technician Specialists**

The minimum qualifications shall be a high school diploma with ten years experience in radiation and chemical monitoring. They shall have passed the SPC Environmental Monitoring Training and Qualification Program or shall have had the equivalent prior training. They must demonstrate the ability to perform and direct all aspects of SPC's radiological and environmental safety programs and activities.

**2.2.10 Health and Safety Technicians**

The minimum qualifications of certified Health and Safety Technicians shall be a high school diploma with two years of radiation and/or chemical monitoring experience, or four years of similar experience in lieu of a high school diploma. Health and Safety Technicians shall complete a formal SPC training program, or shall have had equivalent prior training. They shall be proficient in SPC's radiological and chemical safety programs, criteria, specifications, procedures, and routines.

**2.2.11 Environmental Engineer**

The minimum qualifications of at least one member of the Environmental Engineering Component shall be a Bachelor's degree in science or engineering, and at least one year's experience in the environmental field.

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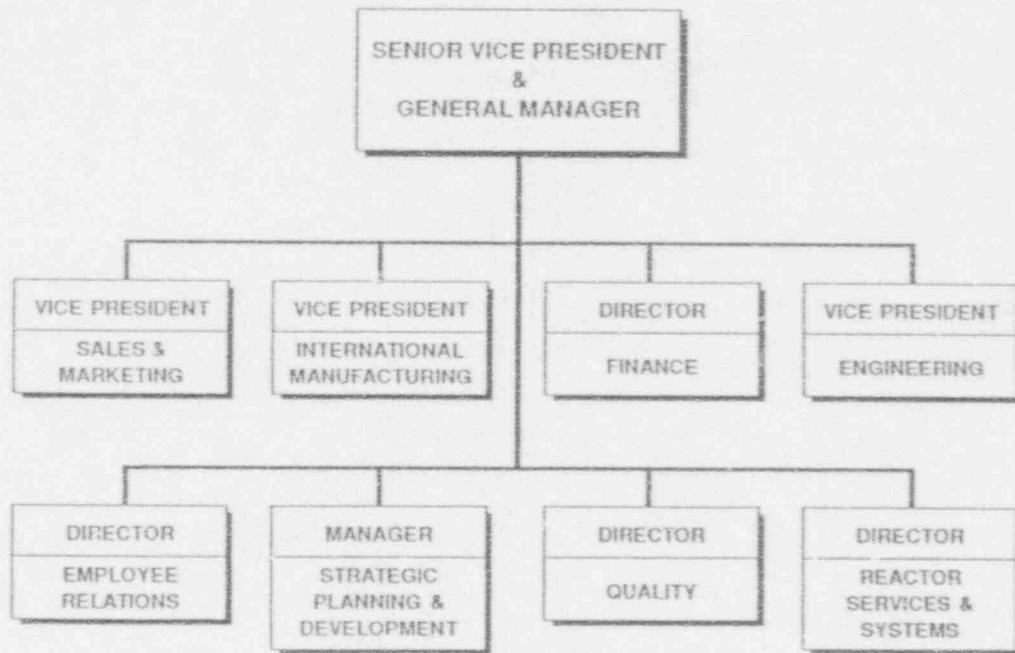
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FIGURE I-2.1

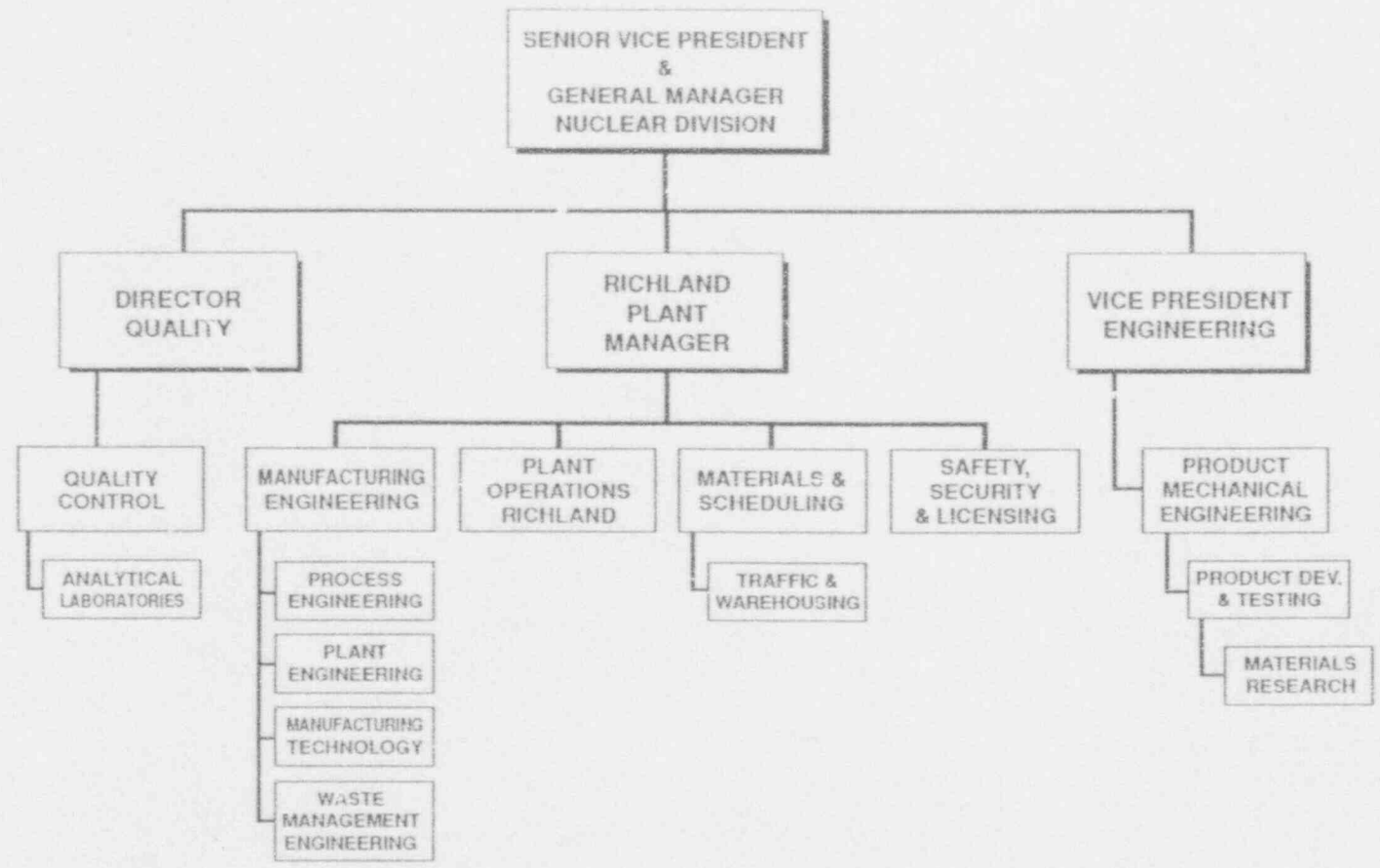
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GR 3330.035 - New (04/94)

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FIGURE II-9.1



GR-3330 014 - Rev4 (04/94)

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**CHAPTER 11 ORGANIZATION AND PERSONNEL****11.1 Organizational Responsibilities**

It is the policy of SPC to conduct its business in a manner so as to assure that its facilities are safe from radiation and other nuclear hazards, that its operations will not be detrimental to the environs, and to assure that personnel (both in-plant and off-site) radiation exposures are maintained as low as is reasonably achievable (ALARA). In providing this assurance, conditions of applicable NRC licenses are complied with and full regard is given to applicable NRC Regulatory Guides.

Responsibility for establishing and assuring adherence to this policy rests with the President of SPC and is exercised through the Senior Vice President and General Manager, Nuclear Division; the Vice President, Engineering, Nuclear Division; the Director, Quality; and the Richland Plant Manager. This policy is implemented through appropriate delegations to managers responsible for particular facilities processing or otherwise handling radioactive and nuclear materials. Each responsible manager is required to know, understand and carry out the provisions of this policy and the procedures for its implementation.

**11.2 Functions of Key Personnel**

The organization at the Corporate level is depicted in Figure II-9.1.

The function and responsibilities of the various safety-related positions are described in Chapter 2 with the flow of responsibility depicted in Figures I-2.1 and I-2.2. During the absence of key individuals, another individual is delegated, in writing, to assume his responsibilities. In the case of a plant emergency, the SPC Emergency Plan lists alternates to the Emergency Director.

**11.3 Education and Experience of Key Personnel**

Resumés of personnel who currently occupy key safety-related positions are listed in this section.

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**11.3.1 President and Chief Executive Officer - R. B. Stephenson****Education**

BS	Mechanical Engineering	1965	Purdue University
MS	Nuclear Engineering	1970	University of Michigan
MBA	Business/Finance	1972	University of Michigan

**Experience****1965-1970**

Various capacities as a commissioned officer in the U.S. Navy Nuclear Power Program, including service aboard a nuclear-powered, attack-class submarine.

**1972-1985**

Employed by Siemens Power Corporation.

- Manager, Test Facilities, responsible for operations and operations support for the Atomic Vapor Laser Isotope Separation Research and Development Program. (1972-1975)
- Manager, Methods Engineering, responsible for industrial engineering for the light water reactor fuels manufacturing division. (1975-1976)
- Manager, Plant Engineering, responsible for all equipment and facilities engineering related to operation, maintenance, and improvement for fuels manufacturing. (1976-1977)
- Manager, UO<sub>2</sub> Shop Operations, responsible for manufacturing operations for pressurized water and boiling water fuel assembly production. (1977-1980)
- Managing Director and Manager, Manufacturing, for Advanced Nuclear Fuels GmbH in Lingen, West Germany, responsible for all logistics, manufacturing, engineering, security, and health physics for European manufacturing operations. (1980-1983)
- Manager, Marketing Analysis, responsible for market environment and competitor analysis supporting sales. (1983-1984)
- Regional Sales Manager responsible for fuel sales to approximately one-fourth of the U.S. nuclear utilities. (1984-1985)

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1985-1987

- Employed by Exxon Enterprises as President, Chief Executive Officer, and Chairman of the Board of EPID, Inc., responsible for general management of an enterprise engaged in the development, manufacturing, and sales of computer components. (1985-1986)
- Vice President, Administration. (1986)
- Vice President, Commercial Division. (1986-1987)

1988 - 1991

- President and Chief Executive Officer, Director, Siemens Nuclear Power Corporation (SNP); Director, Advanced Nuclear Fuels International (ANFI); Director, Universal Testing Laboratory (UTL).

1991

- President and Chief Executive Officer, Director, SNP; Director, ANFI; Director, Siemens Nuclear Power Services (SNPS).

1991 - Present

- President and Chief Executive Officer, Director, SPC; Director, ANFI; Director, SPCS; President and Chief Executive Officer, Director Siemens KWU, Inc.; President and Chief Executive Officer, Director, Siemens Power Corporation.

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**11.3.2 Senior Vice President and General Manager, Nuclear Division - D. G. McAlees****Education**

BS	Aeronautical Engineering	1965	Rensselaer Polytechnic Institute
MS	Nuclear Engineering	1971	University of Wisconsin
PhD	Nuclear Engineering	1974	University of Wisconsin

**Experience****1972-1974**

Instructor & Research Assistant, Nuclear Engineering - U of Wisconsin

**1974-Present**

Employed by Siemens Power Corporation

- Physicist/Engineer, Fusion Energy Division, ORNL, Oak Ridge, TN. (1974-1976)
- Manager, Experimental Development, Laser Enrichment. (1977-1978)
- Manager, Program Development, Laser Enrichment. (1978-1980)
- Sr. Planning Advisor, Finance/Planning. (1980)
- Sr. Staff Planner, Uranium Operations. (1980-1982)
- Manager, Plant Operations, Plant Operations. (1982-1985)
- Manager, Fuel Engineering & Technical Services, Engineering & Production. (1985)
- Manager, Regional Sales, U.S. Marketing. (1985)
- Vice President, U.S. Marketing. (1985-1986)
- Vice President, Commercial Division and Director - Advanced Nuclear Fuels; President and Director, Advanced Nuclear Fuels International. (1988-1991)

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- Vice President, Commercial Division and Director, Siemens Nuclear Fuels Corporation; Vice President and Director, Advanced Nuclear Fuels Corporation; President and Director ANFI; President and Director, Siemens Nuclear Power Services. (1991-1992)
- Senior Vice President and General Manager - Nuclear Division, Siemens Power Corporation; Vice President and Director, Advanced Nuclear Fuels Corporation; President and Director ANFI; President and Director, Siemens Nuclear Power Services. (1992-Present)

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**11.3.3 Director, Quality - C. M. Powers****Education**

BA	Mathematics/Physics	1971	Willamette University
MS	Nuclear Engineering	1973	University of Washington

**Experience****1972-1980**

Employed by General Electric Company, San Jose, CA.

- Held various positions (Nuclear Engineer, Lead Startup Engineer) involved with nuclear fuel cycle economic evaluation, nuclear fuel and core design, as well as a progression of leadership positions in the startup of five commercial nuclear power plants.

**1980-1993**

Employed by Washington Public Power Supply System, Richland, WA.

- Assistant Plant Manager, Reactor Engineering Supervisor, Senior Engineer - various individual contributor and supervisory positions with project/program management responsibilities (1980-1985).
- Plant Manager - WNP-2 Nuclear Plant, reporting to the Assistant Managing Director - Operations (1985-1990).
- Director of Engineering, reporting to the Managing Director (1990-1993).

**1993-Present**

Employed by Siemens Power Corporation, Nuclear Division, Richland, WA.

- Senior Staff Engineer reporting to the Vice President, Engineering, Nuclear Division.
- Director, Quality reporting to the Senior Vice President and General Manager, Nuclear Division (May 1993).

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**11.3.4 Richland Plant Manager - B. N. Femreite****Education**

BS	Metallurgical Engineering	1966	University of Idaho
MS	Metallurgical Engineering	1967	University of Idaho
	Post-Graduate MBA Studies	1974	University of Washington

**Experience****1967-1970**

Employed by United Nuclear in Richland, Washington as a Senior Process Development Engineer responsible for manufacturing process and materials development for defense reactor fuels.

**1970 - Present**

Employed by Siemens Power Corporation.

- Senior Engineer, Research and Engineering, responsible for process development, materials evaluation, and process support for UO<sub>2</sub> and MOX commercial fuels.
- Manager, Shop Operations, responsible for manufacturing operations for UO<sub>2</sub> and MOX fuels.
- Manager, European Projects, responsible for planning, staffing, training, and initial startup of the European Fuel Plant.
- Manager, Uranium Waste Project, responsible for process development, design, installation, and startup of liquid and solid waste recovery systems in Richland manufacturing plant.
- Manager, Richland Employee Relations, responsible for Human Resources function for Richland site.
- Manager, Plant Operations, responsible for design criteria, staffing, training, and startup of manufacturing operations for a DOE plant at the Idaho National Engineering Laboratory.
- Manager, Corporate Employee Relations, responsible for corporate Human Resources function in U.S. and Europe.

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<b>PART II - SAFETY DEMONSTRATION</b>	REV
<ul style="list-style-type: none"><li>• Manager, Operations-Richland, responsible for manufacturing, quality control, and maintenance for Richland operations.</li><li>• Manager, Manufacturing Engineering, responsible for Process and Plant Engineering for Richland Operations.</li><li>• Richland Plant Manager, responsible for manufacturing operations at the Engineering and Manufacturing facility in Richland.</li></ul>	
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**11.3.5 Manager, Manufacturing Engineering - M. K. Valentine****Education**

BS	Chemical Engineering	1969	Montana State University
MBA	Business Administration	1974	University of Idaho

**Experience****1969-1972**

Employed by Idaho Nuclear Corporation at Idaho Falls, Idaho as a Research Engineer in the Planning and Cash Flow Analysis section. Activities included:

- Long range planning of fuel reprocessing activities, conceptual design of process improvements/budget planning, and preparation of funding packages for major new additions for presentation to the AEC.
- Development of a computer program simulating nuclear fuel reprocessing operations, integrating new processes and case flows.
- Conceptual design, program management, and preparation of a safety analysis report for a neptunium purification, recovery and packaging process.

**1972-1977**

Employed by Allied Chemical Corporation at Idaho Falls, Idaho as a Senior Research Engineer in the Process Technology Branch. Activities included:

- Pilot-plant development of a reprocessing method for the High Temperature Gas-Cooled Reactor Program.
- Development of a fluidized-bed method for classifying microspheres of nuclear fuel particles from HTGR fuel and assisted in the development of a fluidized-bed graphite burner for the same program.
- AS Supervisor of the Safety Analysis Group of the Operational and Environmental Safety Office, activities involved the preparation of a safety review document covering all aspects of the multiple-headend Idaho Chemical Processing Plant, nuclear fuel reprocessing facility. Supervision of three other chemical engineers in preparing the SAR. The analysis included detailed process and equipment

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descriptions, fault-tree analysis, consequence analysis, and environmental impacts.

1977-Present

Employed by Siemens Power Corporation

- Plant Chemical Engineer in July 1977.
- Manager, Maintenance Engineering in November 1977.
- Manager, Process and Maintenance Engineering in March 1979.
- Manager, Fuel Testing in December 1982.
- Manager, Operations Planning and Scheduling in July 1983.
- Manager, Plant Operations in January 1985.
- Manager, Fuel Warranty and Site Services in May 1988.
- Sales Manager in October 1991.
- Manager, Manufacturing Engineering in July 1992.

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**11.3.6 Manager, Process Engineering - R. B. McLees****Education**

BS	Ceramic Engineering	1959	Clemson University
MS	Ceramic Engineering	1960	Clemson University

**Experience****1960-1969**

Employed by Y-12 Plant, Oak Ridge, TN as a Development Engineer engaged in materials research and development.

**1969-1975**

Employed by General Electric, Wilmington, NC as an Equipment Engineer responsible for equipment installation and startup.

**1975-1976**

Employed by General Atomic Plant, San Diego, CA as a Staff Engineer responsible for the liaison with A/E on design of HTGR fuel fabrication plant.

**1976-Present**

Employed by Siemens Power Corporation.

- Equipment Engineer. (1976-1977)
- Supervisor, Chemical Conversion Operation. (1977-1978)
- Lead Engineer, Incremental Plant Expansions. (1978-1980)
- Project Engineer, 550 MTU Plant Expansion and Lingen Pelletizing Project. (1981-1985)
- Manager, Process Engineering. (1985-Present)

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**11.3.7 Manager, Plant Engineering - J. W. Helton****Education**

BS	Mechanical Engineering	1955	Colorado State University
MS	Nuclear Engineering	1963	University of Washington
	Professional Engineer License		State of Washington

**Experience****1955 - 1970**

Employed by General Electric Company in a variety of positions.

- Various engineering assignments in Richland, WA including reactor operator training, inspection, piping design engineer, and engineering supervisor. (1955-1965)
- Manager, Construction Engineering, responsible for administration of a construction subcontractor involved in the construction completion, repairs, and alterations of the Saturn V Test Facility. (1965-1967)
- Resident Manager, Monticello Nuclear Power Plant, site manager for construction of the Turnkey Power plant (1967-1970).

**1970 - Present**

Employed by Siemens Power Corporation.

- Manager, Manufacturing Engineering, responsible for the determination, engineering, installation and maintenance of production equipment for the fuels plant. (1970-1972)
- Project Engineer responsible for project modifications and additions to facilities and process equipment for fuels plant. (1972-1975)
- Project Manager responsible for project design, licensing, construction, and startup of nuclear fuels plant in Lingen, West Germany. (1975-1978)
- Manager, Construction, responsible for all construction activities by construction contractors during major plant additions and modifications. (1978-1982)

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- Project Engineer responsible for project activities associated with facility and process equipment additions and/or modifications for fuels plant. (1982-1985)
- Project Manager responsible for addition of pelletizing equipment and facilities in the Lingen, West Germany fuels plant. (1985-1987)
- Staff Engineer responsible for all construction activities for fuels plant. (1987-1990)
- Manager, Plant Engineering, responsible for the engineering and maintenance of all process equipment, facilities, and facility equipment for the Richland fuels plant. (1990-Present)

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**PART II - SAFETY DEMONSTRATION**

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**11.3.8 Manager, Plant Operations - B. F. Bentley****Education**

BS Ceramic Engineering 1965 Alfred University

**Experience****1965 - 1993**

Employed by General Electric.

- Manufacturing Management Program (1965-1968) Three year training program that included graduate level business/management courses with job rotation every 6 months, location rotation every 3 months.
- Manufacturing Engineer (1968-1972) Neutron Devices St. Petersburg,
- Manufacturing Engineer (1972-1973) Nuclear Fuel Department Wilmington NC.
- Process Control Engineer (1973-1976) Nuclear Fuel Department Wilmington NC.
- Manager Production Operations 1976-1993.

**1993 - Present**

Employed by Siemens Power Corporation as Manager, Plant Operations.

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## PART II - SAFETY DEMONSTRATION

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**11.3.9 Manager, Quality Control - D. J. Hill****Education**

BS      Chemistry and Physics                      1971                      Whitworth College

**Experience****1971-1973**

Employed by Teledyne Isotopes Company, Inc., as Assistant Scientist and Laboratory Supervisor in a low background radioisotope counting laboratory. Activities included development of special low background counting systems and gas purification and analysis systems.

**1973-1976**

Employed by Hanford Environmental Health Foundation in Richland, WA as Industrial Hygienist. Activities included nuclear facility safety/industrial hygiene inspections, environmental monitoring, and methods development.

**1976-1984**

Employed by Exxon Nuclear Company, Inc., as a Chemist in the UO<sub>2</sub> Analytical Laboratory, and later as Supervisor of the UO<sub>2</sub> Laboratory. Responsibilities included Quality Control analyses of nuclear fuel components, methods development, and testing and analyses in support of engineering studies.

**1984-1987**

Employed by Exxon Nuclear Idaho Company, Idaho Falls, Idaho, as Manager of Quality Control. This position involved development and management of inspection, quality engineering, and analytical support for a classified government manufacturing activity.

**1987-1990**

Employed by Rockwell-INEL as Director, Quality Operations. This position included Quality Assurance, Quality Engineering, and Quality Control management for the SMC project in Idaho Falls, ID.

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1990-Present

Employed by Siemens Power Corporation as Manager, Quality Control. This position directs the activities of inspection, analytical and quality engineering functions in support of the SPC nuclear fuel fabrication activities.

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**11.3.10 Manager, Materials and Scheduling - R. L. Feuerbacher****Education**

BS	Nuclear Engineering	1974	Oregon State University
MS	Nuclear Engineering	1984	University of Washington
MBA	Business Administration	1989	University of Washington

**Experience****1974 - 1975**

Employed by General Atomic Company in two engineering positions in LaJolla, CA.

- Nuclear Engineer, Core Physics Section, performing fuel design and reactor core development for the high temperature gas-cooled reactor. (1974)
- Engineer, Fusion Engineering, performing structural and thermal hydraulic flow analyses for a Tokamak fusion test facility. (1975)

**1975 - Present**

Employed by Siemens Power Corporation.

- Nuclear Engineer, BWR Neutronics, performing fuel design and in-core fuel management for boiling water reactor (BWR) nuclear power plants. (1975-1977)
- Nuclear Engineer, PWR Neutronics, performing fuel design and in-core fuel management for pressurized water reactor (PWR) nuclear power plants, including on-site support for power plant startups. (1977-1979)
- Lead Engineer, PWR Neutronics, providing technical support for marketing efforts and proposals, including custom designs and economic analyses, and supporting research and development efforts for PWR fuel designs from a neutronics standpoint. (1979-1981)
- Unit Manager, PWR Neutronics, responsible for supervising a group of engineers performing nuclear fuel design and fuel management for PWR nuclear power plants, including technical support for proposals. (1982-1983)

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- Manager, In-core Monitoring Software Applications, responsible for managing a technical group performing design and installation of a software system to monitor in-core operation at BWR nuclear power plants. Technical support included development, testing, documentation, customer interfacing, and marketing support. (1983-1985)
- Senior Staff Planner, Planning and Uranium Operations, responsible for coordination of corporate-wide planning efforts, including preparation of executive presentation material for Board review meetings and conducting various business analysis studies. Supervised a planning analyst who maintained a commercial data base. (1985-1990)
- Commercial Coordinator, Universal Testing Laboratories, Inc., responsible for supporting integration of newly acquired subsidiary into parent company. Responsibilities included preparation of a business plan for subsidiary. (1990)
- Manager, Plant Operations, responsible for management of fuel manufacturing and material recovery operations, including preparation of operating procedures, development and maintenance of essential material controls and inventories, and the review, initiation, and implementation of plant safety procedures. (1990-1993)
- Manager, Materials and Scheduling, responsible for production scheduling, uranium management, hardware planning and procurement, procurement of operating supplies and services, production control activities, receiving and warehousing, logistics, traffic and shipping. (1993-present)

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**11.3.11 Manager, Master Scheduling and Uranium Management - S. F. Kuick****Education**

BS	Chemistry	1978	University of Michigan
MBA	Finance	1980	University of Michigan

**Experience****1980-1983**

Employed by Exxon Corporation, N.Y., N.Y.

- Financial analyst responsible for earnings reporting and analysis.

**1983-Present**

Employed by Siemens Power Corporation, Richland WA.

- Senior Accountant 1983-1987. Responsible for manufacturing accounting, tax accounting, and German affiliate matters.
- Cost model and estimating analyst from 1987-1990. Responsible for cost estimates for bids and proposals and special cost studies and other types of economic analyses.
- Project Manager from 1990-1992. Technical coordinator and project manager for several foreign customers in Germany, Sweden, and Japan.
- Manager, Master Scheduling and Uranium Management 1992 to present. Responsible for manufacturing planning and scheduling and management of uranium supplies and inventory.

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**11.3.13 Manager, Safety, Security, and Licensing - R. E. Vaughan****Education**

MS	Systems Management	1975	University of Southern California
BS	Marine Engineering	1963	U.S. Naval Academy

**Experience****1963-1983**

U.S. Navy

Regular Commissioned Submarine Warfare Officer (nuclear power) assigned to progressively more responsible positions in operational, technical, production and executive level management positions including command at sea.

**1983-1992**

Employed by ABB-Combustion Engineering Nuclear Power Businesses in the designing, manufacturing, testing and servicing of nuclear steam supply systems and commercial power plant nuclear fuels.

- Manager, Nuclear Startup, responsible for the organization and direction of a 70-member multi-disciplinary engineering staff providing a wide range of engineering services at nuclear power plant projects. Directed the establishment and administration of the C-E Site Startup offices at projects in which the Nuclear Steam Supply System (NSSS) was supplied by C-E. (1983-1986 and 1988)
- Project Manager, Technology Transfer, Korea; assigned to the NSSS Project's Department throughout the contract negotiation phase for Korea Nuclear Units 11 and 12. Responsible for preparing, resolving and coordinating all technical, commercial and legal terms leading to award of two Technology Transfer Agreements. Concurrently assigned full responsibility, including profit-loss, for award and execution of a contract for NSSS System Designers Training. (1986-1987)
- C-E Nuclear Fuels Independent Task Force, assigned to an Independent Task Force established by the President, Nuclear Power Businesses with the authority and responsibility for conducting an audit of C-E's nuclear fuel manufacturing facilities. Audit results determined the status of Nuclear Fuel Department's compliance with all applicable licensing conditions and regulatory requirements of NRC, EPA, OSHA, DOT and state agencies. (1988-1989)

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- Operations Manager, Nuclear Fuel Manufacturing, responsible for daily direction and overall coordination of the activities of the manufacturing process of C-E nuclear products. Assigned as Emergency Director for the Nuclear Fuel Manufacturing facilities and Product Development laboratories. (1989)
- Plant Manager, ABB-Combustion Engineering Nuclear Fuel Manufacturing, responsible for all aspects of the safe operation of the NRC licensed manufacturing facilities producing finished nuclear fuel assemblies and related components to the commercial nuclear power industry. (1990-1992)
- Project Director, ABB Combustion Engineering Windsor Site Remediation, responsible for the safe and cost effective characterization and environmental remediation of the ABB Windsor site areas contaminated under AEC contact. Provided liaison with DOE, NRC, EPA, and Connecticut DEP. (1992)

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**11.3.14 Supervisor, Safety - T. C. Probasco****Education**

BS	Microbiology	1970	Oregon State University
BS	Military Science	1970	Oregon State University
	Certified Safety Professional	1982	Board of Certified Safety Professionals

**Experience****1970-1972**

Highway Engineering Technician for the Oregon State Highway Department.

**1972-1975**

Employed by a food processing company.

- Supervised chemical and bacteriological laboratories in the Quality Assurance Department. (1972-1973)
- Safety Engineer. (1973-1975)

**1975-Present**

Employed by Siemens Power Corporation.

- Plant Safety Engineer. (1975-1984)
- Plant Criticality Safety Engineer. (1975-1984)
- Supervisor, Radiological and Industrial Safety, responsible for supervising Health Physics Technicians, Radiological Safety Specialist, and Industrial Hygiene Specialist. (1985-1989)
- Supervisor, Safety, responsible for supervising Criticality Safety Specialist, Health Physics Specialist, Radiological Safety Specialist, Health Physics Technicians, and the Health Records Clerk. (1990-Present)



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**11.3.15 Criticality Safety Specialist - C. D. Manning****Education**

BS Nuclear Option of General Engineering 1982 Idaho State University

**Experience****1976-1984**

Employed by Union Pacific Railroad.

**1984-'985**

Employed by Newport News Reactor Services as a Radiological Control Engineer.

- Training HPT technicians and Operators
- Shielding and dosimetry requirements
- Auditing Radiological Control Program Compliance

**1985-1987**

Employed by Rockwell Hanford Company as a Criticality Safety Engineer.

- Criticality Safety Analyses
- Auditing Criticality Safety Program Compliance

**1987-1990**

Employed by Westinghouse Hanford Company as a Nuclear Safety Engineer.

- Cognizant Safety Engineer for the Plutonium Metal Production Line.
- Event Investigation Team Leader
- Plant Criticality Safety Approval Authority

**1990-Present**

Employed by Siemens Power Corporation as a Criticality Safety Specialist. Engineer responsible for all aspects of the criticality safety program.

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**11.3.16 Health Physicist - R. K. Burklin**Education

BS	Physics	1969	State University College Plattsburgh, NY
MS	Physics	1972	University of Tennessee Knoxville, TN
	Public Health	1985-89	University of South Carolina Columbia, SC

Experience1973-1975

Employed by Virginia Electric Power Company at the Surry plant as a Reactor Health Physicist for Surry Units 1 and 2. In charge of external dosimetry and effluent release programs. Also hosted NRC inspections and supervised radioactive shipments.

1975-1990

Employed by Westinghouse Commercial Nuclear Fuel Division in Columbia, SC as a Senior Engineer. In charge of bioassay and internal dosimetry program, respiratory protection program, air sampling, training, external dosimetry, and the ALARA program.

1990-1992

Employed by Precision Castparts in Portland, OR as Manager of Health Physics. In charge of all aspects of health physics including external dosimetry, internal dosimetry, bioassay, air sampling, respiratory protection, environmental monitoring, contamination control, and waste disposal. Also in charge of ALARA and training programs.

1992-Present

Employed Siemens Power Corporation in Richland, WA as a Health Physics Specialist responsible for assuring compliance with the health physics requirements of the license and current regulations for a uranium fuel fabrication facility.

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**PART II - SAFETY DEMONSTRATION**

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**11.3.17 Supervisor, Radiological Safety - E. L. Foster****Education**

High School Diploma	1960	Richland, Washington
General Studies	1962	Columbia Basin College Pasco, WA
Nuclear Weapons Technician School	1964	U.S. Air Force

Technical courses completed:

- Radiation Technician Chemistry
- Radiation Dosimetry
- Biological Effects of Radiation
- Radioactive Waste Disposal
- Environmental Monitoring
- Elementary Nuclear Physics
- Mathematics in Radiation Protection
- Ionizing Radiation Measurements
- Radiation Protection Techniques
- Air Sampling Principles and Evaluations
- Radioactive Decontamination Principles
- Radiation Exposure Records
- Disaster Monitoring
- Respiratory Protection at Nuclear Power Plants. (1985)
- Radiation Safety Officer. (1986)
- Air Sampling. (1986)
- NVLAP Accreditation. (1987)
- Hot Particle Dosimetry. (1987)
- Radiation Detection and Measurement. (1989)
- Fundamentals of Internal Dose Assessment (1990)

**Experience****1967-1971**

Employed by Battelle Northwest in Richland, WA as a Radiation Monitor in the development and application of health physics programs for radioactive chemical separations plants, multi-curie laboratory operations, and nuclear fuel manufacturing.

- Performed monitoring duties during major cleanup and modification of plutonium hot cells and gloveboxes.

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- Direct participation in surveillance of effluent from plutonium facilities while assigned to an environmental monitoring group.
- Direct participation in setting up routine health physics program for PRTR.
- Completed special assignment involving modification of plant air monitoring program.

1971-Present

Employed by Siemens Power Corporation.

- Health Physics Technician involved primarily in all phases of the radiological safety program throughout the entire plant site. (1971-1976)
- Technician Specialist, Radiological Safety. (1977)
- Radiological Safety Assistant. (1980)
- Radiation Safety Officer for Washington State License. (1984)
- Radiological Safety Specialist responsible for implementation of radiological safety training program, dosimetry program, bioassay program, writing of Radiation Work Procedures, reporting of radiological conditions to plant supervision. (1985)
- Direct participation in decommissioning of four facilities for unconditional release.

Mixed Oxide Fuel Fabrication in 1986  
 Centrifuge Test Facility in 1987  
 "Old" Reactor Services Building in 1989  
 Plutonium Storage Vault in 1990

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**11.3.18 Manager, Regulatory Compliance - L. J. Maas****Education**

BS Environmental Health 1973 University of Washington

**Experience****1974-1992**

Employed by Hanford Environmental Health Foundation, Richland, WA

- Supervisor, Air and Water Surveillance Programs, Environmental Health Sciences Division. Provided environmental surveillance consultation and technical services to support environmental programs of operating contractors on the U.S. Department of Energy Hanford Site. Typical service areas included ambient air surveillance, air pollutant source testing and water quality monitoring. (1974-1980)
- Manager, Site Support Services, Environmental Health Sciences Division. Provided direct technical and administrative supervision of a staff of industrial hygienists, environmental scientists, and technicians providing industrial hygiene and environmental consultation and technical services. Primary clients were individuals responsible for the health, safety, and environmental programs of the U.S. Department of Energy and its Hanford contractors, although services were also provided outside the DOE sector to private industry, academic institutions, and other governmental agencies. (1981-1986)
- Director, Environmental Health Sciences Division. Managed overall operation of a multi-disciplinary division providing comprehensive environmental health services to contractors on a major U.S. Department of Energy (DOE) nuclear material production, waste management, and R&D Site. Through a DOE Use Permit, provided similar services to non-DOE clients including private industry, academic institutions, and other governmental agencies. Key technical service areas included industrial hygiene, environmental surveillance, hazardous waste, analytical chemistry, training/chemical information, and emergency preparedness. Responsible for all aspects of divisional planning, budgeting, personnel actions, and technical services. Division employed approximately sixty personnel including industrial hygienists, environmental scientists, chemists, technicians, and supporting clerical staff. (1986-1992)

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1992-present

Employed by Siemens Power Corporation.

- **Manager, Regulatory Compliance.** Provide overall management of Regulatory Compliance programs in the areas of Licensing, Nuclear Materials Safeguards, Environmental Protection and Industrial Hygiene. Includes responsibility for assuring that the SPC Engineering Manufacturing Facility attains, maintains, and complies with all required licenses and operating permits, including the NRC site license; properly accounts for all special nuclear materials; and consistently complies with regulations aimed at protecting the health of its workers and minimizing the environmental impacts of its operations.

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## PART II - SAFETY DEMONSTRATION

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**11.3.19 Staff Engineering - Licensing - J. B. Edgar****Education**

BS	Physics	1965	Whitworth College
MBA	Business Administration - Finance	1970	University of Washington

**Experience****1965-1967**

Employed by Douglas United Nuclear, Richland, WA.

- Process Physicist - Performed physics calculations and advised, from a reactor physics standpoint, on the operation of a Hanford production reactor.

**1967-1970**

Employed by Battelle Northwest Laboratories, Richland, WA.

- Reactor Engineer - Supervised two technicians in the operation, maintenance, and data collection for experiments in Plutonium Recycle Critical Facility. Also assisted in analysis of data. (1967-1969)
- Nuclear Safety Specialist - Provided guidance for Battelle Northwest operating components and performed audits, reviews, and wrote manuals and safety analyses in the area of nuclear safety. Interfaced with AEC on nuclear safety questions. (1969-1970)

**1970-1973**

Employed by Westinghouse Hanford, Richland, WA.

- Supervisor, Materials Management - Supervised three engineers, one technician, and two clerks in a nuclear materials accountability function for Westinghouse Hanford. Provided expertise in packaging and shipping of radioactive materials. Criticality safety specialist for three laboratories, including preparation of safety analysis reports and criticality safety specifications and auditing for compliance with applicable limits.

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1973-Present

Employed by Siemens Power Corporation.

- Senior Materials Engineer - Managed Exxon Nuclear's uranium and plutonium inventories throughout the world from the point at which title transferred to Exxon Nuclear. Administered criticality safety program for fuel fabrication facilities at Richland. Provided special nuclear material traffic expertise on state and federal regulations. (1973-1977)
- Manager, Traffic Operations - Managed the traffic and warehousing function for Exxon Nuclear Company at its Richland site. Managed the shipment of hardware, UO<sub>2</sub> pellets, and miscellaneous items from ENC-Richland to ENGmbH-Lingen in support of ENGmbH fuel fabrication. (1977-1979)
- Contract Administrator (Bellevue, WA) - Administered contracts for six reload fuel customers (four domestic and two foreign) for the sale of reload fuel, uranium, and technical services. Responsibilities included evaluation of compliance with contract commitments; contract execution including commencement of work, progress reports, invoicing management, and closeout at completion of work; and marketing interaction including proposal writing and assisting in contract negotiations. (1979-1988)
- Staff Specialist-Safeguards - Provided technical expertise on safeguards; acted as Accountability Coordinator and Measurement Control Program Coordinator; acted as working level contact with NRC on safeguards matters; conducted annual measurement review; prepared and maintained ANF's Safeguards Plan (ANF-12); provided safeguards training for plant personnel; hosted NRC safeguards audits and biennial Ad Hoc Committee review of safeguards activities; maintained knowledge of current radioactive material transport regulations; prepared and maintained Radioactive Material Shipping Standard (Chapter 5) of ANF's Safety Manual (ANF-30); reviewed radioactive material shipment for compliance with regulations; prepared and maintained ANF's SNM Physical Protection Plan (ANF-538). (1988-1991)
- Staff Engineer-Licensing - provide licensing expertise on NRC licensing issues including plant operating license and transportation-related licenses and permits; act as company contact with NRC on licensing matters; prepare and maintain Radioactive Material Shipping Standard (Chapter 5) of SPC's Safety Manual (EMF-30); review radioactive material shipment for compliance with regulations; prepare and maintain SPC's SNM Physical Protection Plan (EMF-538). (1991-Present)

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**11.3.20 Environmental Engineer - S. R. Lockhaven****Education**

BA	Biology	1974	Central Washington University
BA	Environmental Studies	1976	Central Washington University
	Industrial Hygiene Training Courses	1979-Present	

**Experience****1976-Present**

Employed by Siemens Power Corporation.

- Senior Analytical Laboratory Technician. (1976)
- Industrial Hygienist duties included scheduling environmental sampling, environmental data review, and assisting the Plant Criticality Safety Engineer. (1979)
- Plant Criticality Safety Engineer. (1986)
- Industrial Regulations Specialist. (1989-1990)
- Environmental Engineering Specialist. (1990-1991)
- Environmental Engineer (1991-Present)

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**11.3.21 Environmental Engineer - K. H. Tanaka****Education**

BS      Chemical Engineering      1969      University of Utah

**Experience****1969-1978**

Rockwell Hanford Operations

- Waste Management Process Engineer - Process control and process development in cesium ion exchange and strontium solvent extraction processing.
- Design Engineer - Design and construction of underground waste storage tanks and auxiliary systems.
- Chemical Engineer - Pilot plant development with vacuum evaporator-crystallizer and screw calciner.

**1978-Present**

Siemens Power Corporation (ENC, ANF, SNPC)

- Process and Maintenance Engineer - Day to day and long term operation and maintenance of chemical processes and related separating, drying and calcining equipment for the conversion of uranium hexafluoride to uranium dioxide in the production of nuclear fuel.
- Chemist - Analytical Laboratory in Quality Control Department, responsible for Spectroscopy instruments and analyses including Emission Spectrometer, Inductively Coupled Plasma (ICP) Spectrometer, X-ray Spectrometer and other analyzers.
- Environmental Engineer - Regulatory Compliance, responsible for the environmental monitoring and reporting of plant gaseous and liquid effluents in compliance with the NRC, federal, state and local environmental regulations and permit conditions.

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**11.3.22 Safeguards Specialist - D. L. Noss****Education**

BA Business Administration 1974 Washington State University

**Experience****1974-1976**

Employed by Rainier National Bank

- Operations Assistant - Supervised 25 tellers and new accounts. Dealt with customer problems and complaints.

**1976-1978**

Employed by Old National Bank

- Operations Supervisor - Supervision and training of tellers and new accounts. Maintain branch audit program. Deal with customer problems.

**1978-Present**

Employed by Siemens Power Corporation.

- Nuclear Materials Accounting - Maintained the plant nuclear materials records by running the Nuclear Materials Control System (NICS). Provided special assistance during the physical inventory of nuclear materials in the taking and reconciliation efforts. (1978-1980)
- Accountant for Engineering and Technology - Prepared monthly analysis letters detailing operating costs; assisted managers in the preparation of their operating budgets; prepared cost estimates from engineering and manufacturing inputs for marketing use; and provided assistance as needed in the preparation of invoices. (1980-1983)
- Nuclear Materials Accountant - Maintained the on-site perpetual inventory records of nuclear materials as required by regulations and in accordance with company standards required to provide asset control and verification. Planned and designed improvements to the Nuclear Materials Accounting System and worked with the Company's computer systems group to implement necessary changes.

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<ul style="list-style-type: none"><li>• Planned, conducted and reconciled the physical inventory of nuclear materials. Organized the efforts of the plant wide inventory and focused the reconciliation efforts of problem areas.</li><li>• Tracked and monitored the build up of uranium wastes and reported to management the progress of the Company's recovery systems. Determined and communicated the financial liability to the Company as the result of waste inventory buildups. (1983-1992)</li><li>• Safeguards Specialist - provide technical expertise on safeguards; act as Accountability Coordinator and Measurement Control Program Coordinator; act as working level contact with NRC on safeguards matters; conduct annual measurement review; prepare and maintain SPC's Safeguards Plan (EMF-12); provide safeguards training for plant personnel; host NRC safeguards audits and biennial AD Hoc Committee review of safeguards activities. (1992-Present)</li></ul>	
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**11.3.23 Vice President, Engineering, Nuclear Division - J. N. Morgan****Education**

BS	Engineering Physics	1963	University of Tulsa
MS	Nuclear Engineering	1974	University of Washington

**Experience****1964-1966**

Employed by Battelle Northwest Labs, Richland, Washington.

**1966-1969**

US Navy

**1969-1974**

Employed by Battelle Northwest Labs, Richland, Washington.

**1976-1977**

Employed by Siemens Power Corporation.

- Manager BWR Neutronics, generally the same as that designated above for the period of October 1977 to October 1979 except limited to Boiling Water Reactor fuel.

**1977-1979**

- Manager, Neutronics and Fuel Management, responsibilities included the management and technical direction of a staff which develops and applies nuclear physics methodologies in support of the companies BWR and PWR reload fuel customers. The functions of the group, in addition to methods development, included nuclear fuel bundle and reactor core design such that the company supplied fuel products would be operated safely and efficiently within the customer's Plant Technical Specification limits.

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1979-1982

- Manager, Licensing and Safety Engineering, SPC Nuclear Division, responsibilities included the management and technical direction of a staff which provides Safety Analyses and supporting documentation to support the operation of SPC manufactured nuclear fuel in SPC's customer owned reactors. Job responsibilities included the development of methodologies to be used in these analyses as well as the application, with NRC approval, to justify Plant Technical Specification fuel operating limits. The manager of Licensing and Safety Engineering, was responsible for the quality and validity of the methods developed and their application to Westinghouse, Combustion Engineering and General Electric light water reactors. The scope of these development and application projects included thermal-hydraulic design, plant transient, setpoint and large break Loss of Coolant Accident analyses.

1982-1987

- Manager, Customer Service Engineering, SPC Nuclear Division, position entailed the direction and coordination of several senior engineers to provide technical support to SPC's marketing and negotiation efforts and to maintain liaison between SPC's engineering and manufacturing projects and the contracts between SPC and its customers.

1987-1990

- Regional Sales Manager, SPC Nuclear Division, responsibilities included the development and presentation of SPC reload fuel and associated nuclear services proposals. This position has the primary responsibility for marketing strategy and contract negotiation with the U.S. Nuclear utilities assigned to the position.

1990-1991

- Manager, PWR Fuels Engineering, SPC Nuclear Division, responsibilities were the same as during the period June 1991 to July 1992 except limited to PWR fuel applications.

1991-1992

- Manager, Fuel Engineering & Licensing, SPC Nuclear Division, responsible for the management and technical direction of Fuel Management and Safety analysis in

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support of SPC's Light Water Reactor fuel customers. These analyses include, but are not limited to the following:

- Nuclear and Thermal-Hydraulic design of SPC's LWR fuel assemblies
- Nuclear and Thermal-Hydraulic design of LWR cores for which SPC has fuel management responsibility
- Development and analytical justification of Technical Specification fuel operating limits to ensure the safe and efficient operation of the reactor core. This includes transient and setpoint analysis and both large and small break Loss of Coolant Accident analyses.

1992-Present

- Vice President, Engineering, SPC Nuclear Division, responsible for the engineering aspects of nuclear fuels business including research, fuel design, neutronics and fuel management, fuel licensing and safety engineering, corporate information services and process and equipment development (in support of the fuel fabrication facilities).

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**11.3.24 Manager, Product Mechanical Engineering - A. Reparaz****Education**

BS	Aeronautical Engineering	1971	Madrid Polytechnic Institute
MS	Structural Engineering	1973	Madrid Polytechnic Institute

**Experience****1973-1976**

Employed by Gibbs & Hill Espanola, Madrid, Spain.

- Engineer in Civil Engineering Department involved in structural/seismic analysis and design of nuclear power plant facilities.

**1976-1978**

Employed by Nuclear Services Corp., Campbell, CA.

- Project Engineer involved in spent fuel storage capacity optimization and other engineering projects.
- Senior Engineer in Mechanical Engineering Dept. involved in design/analysis of spent fuel rack.

**1978-1979**

Employed by General Electric Company, Nuclear Energy Group, San Jose, CA.

- Engineer involved in nuclear fuel assembly design, fuel rod performance limits evaluation, and fuel fabrication interface.

**1979-Present**

Employed by Siemens Power Corporation, Nuclear Division, Richland WA.

- Various positions including Engineer; Manager BWR/PWR Design; Manager, Fuel Design.
- Currently Manager, Product Mechanical Engineering responsible for mechanical design, stress analysis, and parts lists for SPC product hardware as well as operation

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of Product Design Test Facility and Engineering Laboratory Operations Material Research activities.	
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**11.3.25 Manager, Manufacturing Technology - I. J. Urza****Education**

BS	Chemical Engineering	1971	University of Idaho
MS	Chemical Engineering	1972	University of Idaho

**Experience****1972-1974**

Employed by Allied Chemical Corporation, Idaho Falls, Idaho.

- Engineer responsible for conceptual and feasibility studies, economic and consequence analysis, and project design support. Served as a technical representative at Oak Ridge National Laboratory on the HTGR development program.

**1974-Present**

Employed by Siemens Power Corporation in Richland, Washington, Oak Ridge, Tennessee and Lingen, West Germany.

- Engineer, Reprocessing Process Engineering, responsible for the ENC uranium conversion development program at ORNL. Pilot plant and laboratory process equipment was designed, constructed, and tested for conversion of uranyl nitrate to  $UO_3$ ,  $UO_3$  fluorination to uranium oxide, and purification of  $UF_6$ . (1974-1977)
- Engineer, Reprocessing Process Engineering, responsible for lead process engineering for the uranium conversion portion of the ENC fuel reprocessing plant. Served as Task Leader in a DOE-sponsored advanced fuel cycle study. (1977-1978)
- Engineer, Design and Mechanical Development, responsible for design of uranium chemical operations and dye solution processing systems for the JNAI Experimental Test Facility, and conceptual studies of a commercial scale laser isotope separation plant. Directed design activities of an A/E firm. Prepared conceptual plant designs to define capital and operating costs. Prepared process flow sheets, selected and sized equipment, material of construction, layouts, etc. (1978-1981)
- Staff Engineer, Dry Conversion Process Development, responsible for the Dry Conversion Development Program including design, construction and experimental operation of a pilot plant, and a prototypical test facility. Developed and demonstrated a unique dry process for conversion of  $UF_6$  to ceramic grade  $UO_2$  (patent pending). The dry conversion process is being installed in the ANFGmbH fuel fabrication plant.

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<p>Directed and coordinated process and equipment design, equipment procurement, installation, and process development. (1981-1985)</p> <ul style="list-style-type: none"><li>• Senior Staff Engineer, Process and Equipment Engineering, responsible for supervision, planning, and technical direction for the Lingen UF<sub>6</sub> Dry Conversion project (\$8.5 million) through design, licensing, procurement, construction, and startup. Responsibilities included providing technical direction of related process and equipment development work. (1986-1989)</li><li>• Manager, Chemical and Ceramic Development, responsible for providing ongoing and long range engineering and development support to fuel production and waste management operations in the chemical and ceramic development areas. Responsibilities include development of processes which improve product quality, and reduce manufacturing costs. (1989-1990)</li><li>• Manager, Manufacturing Technology responsible for development of chemical, ceramic, welding and mechanical processes and techniques to: (a) implement step change advancements in existing manufacturing technology; (b) support the manufacture of advanced fuel; and (c) develop waste treatment processes and strategies for treatment and disposal of radioactive and hazardous wastes. (1990-Present)</li></ul>	
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**11.3.26 Manager, Product Development and Testing - R. E. Collingham****Education**

BS	Mechanical Engineering	1959	University of Washington
MS	Nuclear Engineering	1960	University of Washington
PhD	Mechanical Engineering	1968	University of Minnesota

**Experience****1960-1964**

Officer, United States Navy assigned concurrently to the Naval Reactors Division of the USAEC and the Bureau of Ships, USN. Responsible for the development, design and manufacture of primary nuclear plant components of both nuclear surface and submarine plants.

**1968-1970**

Employed by Battelle-Northwest as a Senior Engineer in its Thermal Hydraulic group, responsible for the thermal hydraulic testing associated with N Reactor.

**1970-1973**

Employed by Westinghouse HEDL as a Senior Engineer in its Thermal Hydraulic testing group, responsible for the thermal hydraulic testing associated with the fast reactors including the FFTF Reactor.

**1973-Present**

Employed by Siemens Power Corporation.

- Senior Engineer in the thermal hydraulic analysis and testing areas related to nuclear fuel supply. (1973-1975)
- Manager, Thermal Hydraulic Testing, responsible for the thermal hydraulic testing associated with reload fuel supply; the testing included steady state hydraulic, CHF/DNB, and ECCS spray cooling testing. (1975-1977)
- Manager, Safety Analysis Model Development, responsible for the model and code development of methodology for safety analyses of BWR and PWR plants. (1977-1984)

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- Manager, BWR Safety Analysis, responsible for the reload-related steady state, plant transient and LOCA/ECCS analyses of all BWR customers plants. (1984-1990)
- Manager, Product Development and Testing, responsible for product development activities including the neutronic, thermal hydraulic and mechanical evaluation of advanced BWR and PWR concepts, and responsible for all the thermal hydraulic testing related to fuel supplies. (1990-Present)

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**11.3.27 Manager, Analytical Laboratories - M. A. Law****Education**

BS	Microbiology	1973	University of Arizona
MS	Chemistry	1979	Idaho State University

**Experience****1973-1977**

Employed as Medical Technologist in hospital laboratories.

**1978-1983**

Employed by Exxon Nuclear Company as a Methods Development Chemist for nuclear fuel reprocessing process control.

**1983-1987**

Employed by American Microsystems as a semi conductor process engineer and by Martin Marietta as laser optics staff scientist.

**1987-1990**

Employed by Rockwell-INEL as Analytical Lab Supervisor for nuclear materials (depleted U) production project.

**1990-Present**

Employed by Siemens Power Corporation

- Supervisor, UO<sub>2</sub> Laboratory (1990-1991)
- Manager, Analytical Laboratories (1991-Present)

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**11.3.28 Manager, Waste Management Engineering - S. S. Koegler****Education**

BS	Chemical Engineering	1971	University of Idaho
MS	Chemical Engineering	1972	University of Idaho

**Experience****1972-1974**

Employed by Monsanto Textiles Co., Decatur, AL as a process engineer and development engineer engaged in development of textile polymers, pilot plant operation, and plant start up.

**1974-1979**

Employed by Atlantic Richfield Hanford Company/Rockwell Hanford Operations in Richland, WA as an R&D Engineer and Senior Engineer. Conducted research and development in support of the Hanford PUREX plant.

**1979-1985**

Employed by Exxon Nuclear Company as a Senior Engineer. Responsible for design and installation of the "Sphere-Pac" nuclear fuel pilot plant. Provided engineering support for Dry Conversion pilot plant.

**1985-1991**

Employed by Battelle Pacific Northwest Laboratory, Richland, WA as a Staff Engineer and as the Group Leader for the Biochemical Treatment and In Situ Vitrification Group. Directed programs for waste treatment technology development. Project Manager and Principle Investigator for several biotechnology and in situ vitrification projects.

**1991-Present**

Employed by Siemens Power Corporation.

- Staff Engineer, Manufacturing Technology supporting Dry Conversion and other chemical technology development projects. (1991-1993)
- Manager, Waste Management Engineering. (1993-Present)

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**CHAPTER 2 ORGANIZATION AND ADMINISTRATION**

The President of Siemens Power Corporation (SPC) has the ultimate responsibility for ensuring that all Company operations are conducted safely, and in full compliance with applicable Federal, State and local regulations, licenses, and permits. For the Nuclear Division of the Company such responsibilities are borne by the Senior Vice President and General Manager, Nuclear Division.

All functions which handle or store special nuclear material authorized by this License reside within the Manufacturing, Engineering, and Quality Divisions of the Nuclear Division of the Company. The relationship of those segments of the organization which contain a significant safety or licensing responsibility is depicted in Figure I-2.1. The organization of Safety, Security, and Licensing, which contains the responsible safety specialists and professionals, is depicted in Figure I-2.2.

**2.1 Organizational Responsibilities and Authority**

**2.1.1 President and Chief Executive Officer**

In connection with his ultimate safety responsibility, the President shall assure that adequate manpower, funding, and resources are made available within the Company to achieve the capabilities committed to in this Application. Additionally, he is responsible for assuring that there is a sound, consistent safety philosophy throughout the Company.

**2.1.2 Senior Vice President and General Manager, Nuclear Division**

The Senior Vice President and General Manager, Nuclear Division reports directly to the President and has the responsibility for ensuring that the safety-related functions of the Nuclear Division are carried out while meeting Division production and engineering goals.

**2.1.3 Richland Plant Manager**

The Richland Plant Manager is responsible for the fabrication of nuclear fuels and the safety-related functions of manufacturing, maintenance, plant support engineering, transportation, materials handling and storage, licensing and industrial, radiological and nuclear safety for the Engineering and Manufacturing Facility. He reports directly to the Senior Vice President and General Manager, Nuclear Division. In this capacity the Richland Plant Manager is the Senior Site Representative and has the full authority and responsibilities of the position.



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**2.1.4 Manager, Manufacturing Engineering**

The Manager, Manufacturing Engineering is responsible for all plant maintenance activities and for engineering assistance for all process, utility and safety systems. This position reports directly to the Richland Plant Manager and discharges day-to-day responsibilities through the Manager, Plant Engineering, Manager, Process Engineering, Manager, Waste Management Engineering, and Manager, Manufacturing Technology.

He has the full authority to discharge his responsibilities for furnishing direct maintenance and engineering support to all plant activities.

**2.1.5 Manager, Process Engineering**

Process engineering activities are directed by the Manager, Process Engineering who reports to the Manager, Manufacturing Engineering.

The Manager, Process Engineering is responsible for providing process engineering support to the fuel fabrication plant. This includes the preparation of process parameter operating limits and process specifications. He provides technical support for welding operations and for developing improved welding methods. These activities are conducted within licensing and safety requirements.

He has the necessary authority to carry out the responsibilities of this position.

**2.1.6 Manager, Plant Engineering**

The Manager, Plant Engineering is responsible for all plant maintenance activities and the necessary associated engineering support. This position reports directly to the Manager, Manufacturing Engineering.

In addition to common maintenance activities, the Manager, Plant Engineering is responsible for establishing and conducting preventative maintenance and inspection programs for all safety-related equipment and systems, and for alerting the plant management of deteriorating and/or substandard conditions of safety-related equipment and systems.

He is responsible for maintaining and calibrating radiation protection instruments and equipment, the criticality accident alarm system, and the fire detection and alarm system in accordance with established programs. He is also responsible for establishing and conducting tests of safety and emergency-related equipment as required by established programs.

The Manager, Plant Engineering is also responsible for the design and/or modification of new and existing equipment and facilities. This includes equipment and systems installed

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to maintain personnel exposures to radiation and radioactive materials, as well as releases of radioactive materials to the environment, as low as is reasonably achievable.

**2.1.7 Manager, Manufacturing Technology**

The Manager, Manufacturing Technology, reports to the Manager, Manufacturing Engineering and is responsible for development of chemical, ceramic, welding and mechanical processes and techniques to: implement step change advancements in existing manufacturing technology; support the manufacture of advanced fuel; develop processes and strategies for treatment and disposal of radioactive and hazardous wastes. Other responsibilities include training, preparation of operating procedures, and supervision of all activities involving radioactive materials within the chemical, process, ceramic, and mechanical development laboratory portions of the ELO facility.

**2.1.8 Manager, Waste Management Engineering**

The Manager, Waste Management Engineering reports to the Manager, Manufacturing Engineering and is responsible for implementing projects and recommending process changes to support waste treatment and environment compliance. He gives direction and provides equipment engineering for waste treatment processes and provides engineering support for environment compliance activities.

**2.1.9 Manager, Plant Operations**

The operation of the fuel manufacturing facilities are directed by the Manager, Plant Operations who reports to the Richland Plant Manager.

The safe operation and control of plant activities, including the safety of the environs as influenced by the conducted activities, are the responsibility of the Manager, Plant Operations. Other responsibilities include preparation of detailed operating procedures, training of employees, special nuclear materials safeguards control, supervision of all activities involving radioactive materials within the Gd scrap recovery area of the ELO facility, membership in the Plant Emergency Response Management Team (PERMT) and membership in the ALARA Committee.

The Manager, Plant Operations has the full authority required to discharge his responsibilities for safe operation of his plant.

**2.1.10 Manager, Materials and Scheduling**

The Manager, Materials and Scheduling reports to the Richland Plant Manager and is responsible for overall manufacturing scheduling, uranium planning, purchasing, and for shipment, receipt and storage of materials used in the manufacturing process.

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**2.1.11 Manager, Master Scheduling and Uranium Management**

The Manager, Master Scheduling and Uranium Management reports to the Manager, Materials and Scheduling and is responsible for developing uranium utilization plans and monitoring receipt, usage and shipment of nuclear material to assure that plant inventories do not exceed authorized possession limits.

**2.1.12 Supervisor, Traffic and Warehousing**

The nuclear material traffic activities for SPC facilities located at Richland are directed by the Supervisor, Traffic and Warehousing who reports to the Manager, Materials and Scheduling. The responsibilities of the Supervisor, Traffic and Warehousing include shipping, receiving and warehousing of nuclear materials and maintaining nuclear material transfer records.

**2.1.13 Manager, Safety, Security, and Licensing**

The Manager, Safety, Security, and Licensing reports to the Richland Plant Manager and is responsible for developing, administering, and auditing the licensing, industrial safety and health, health physics, criticality safety, environmental surveillance, ALARA, security, and safeguards programs for all SPC facilities located at Richland.

The Manager, Safety, Security, and Licensing is wholly independent with no manufacturing responsibility, and has direct access to the upper management of the Company.

If the Manager, Safety, Security, and Licensing judges any operation as unsafe, he has the authority to request management to shut down the affected operation. In the event of disagreement between line management and the Manager, Safety, Security, and Licensing, the operation shall be immediately shut down, and the issue promptly brought to the attention of the Richland Plant Manager. Actions following from this authority are subject to review and approval solely by the President of the Company.

**2.1.14 Supervisor, Safety**

The Supervisor, Safety, who reports to the Manager, Safety, Security, and Licensing, directs the activities of industrial safety and health, criticality safety, health physics, and radiological safety personnel in conformance with approved Company policies and programs in direct support of plant operations.

If the Supervisor, Safety judges any operation as unsafe, he has the authority to request management to shut down the affected operation. In the event of disagreement between line management and the Supervisor, Safety, the operations shall be immediately shut

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down, and the issue promptly brought to the attention of the cognizant department manager.

**2.1.15 Industrial Safety and Health Component**

The Industrial Safety and Health Component resides within the Safety organization. The general responsibilities of the Industrial Safety and Health Component are to provide information, advice and assistance to the Company operating and engineering components such that personnel safety and environmental protection are maximized, and to keep adequate records documenting conditions. Specific responsibilities of the Industrial Safety and Health Component include the following:

1. Establishing and administering industrial safety and health programs in accordance with criteria and standards provided by the Manager, Regulatory Compliance. Such programs include confined space monitoring, hazardous chemical monitoring, noise surveys, ergonomic programs and associated records systems.
2. Reviewing established programs and evaluating their effectiveness.
3. Providing industrial safety and health analyses of proposed operational modifications.
4. Preparing and updating the Industrial Safety Standards section of the Company Safety Manual (EMF-30).
5. Performing compliance inspections.
6. Membership in the Plant Emergency Response Management Team (PERMT).

**2.1.16 Criticality Safety Component**

The Criticality Safety Component resides within the Safety organization. The responsibilities of the Criticality Safety Component include the following:

1. Providing technical bases, criteria, and methods related to nuclear criticality safety.
2. Preparing and updating the Nuclear Criticality Safety Standards section of the Company Safety Manual (EMF 30).
3. Establishing criticality safety programs in accordance with criteria and standards provided by the Manager, Regulatory Compliance. Such

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<p>programs include training, fire fighting restrictions, criticality alarm coverage and associated records systems.</p> <ol style="list-style-type: none"> <li>4. Performing Criticality Safety Analyses for designs and procedures, including second-party reviews.</li> <li>5. Providing professional advice concerning matters within the component's cognizance.</li> <li>6. Membership in the Plant Emergency Response Management Team (PERMT).</li> <li>7. Performing compliance inspections.</li> <li>8. Preparing Criticality Safety Specifications and Limit Cards.</li> </ol> <p>All Criticality Safety Analyses shall be reviewed by a second party who shall be knowledgeable of the technical data and qualified in the techniques of criticality physics. Second party reviews shall be arranged by the Criticality Safety Component, and may be either from within the component or by an outside reviewer. All nuclear Criticality Safety Analyses and reviews shall be documented, and documents shall be held until six months following the termination of the processes, equipment, or facilities to which they apply.</p> <p><b>2.1.17 Health Physics Component</b></p> <p>The Health Physics Component resides within the Safety organization. The responsibilities of the Health Physics Component include the following:</p> <ol style="list-style-type: none"> <li>1. Providing technical bases, criteria, and methods related to health physics.</li> <li>2. Providing for outside sources for aid and special services related to health physics and emergencies.</li> <li>3. Preparing and updating the Radiation Protection Standards section of the Company Safety Manual (EMF-30).</li> <li>4. Establishing radiological protection programs in accordance with criteria and standards provided by the Manager, Regulatory Compliance. Such programs include air sampling, contamination and radiation surveys, bioassay in-vivo examinations, and associated records systems.</li> <li>5. Performing compliance inspections.</li> </ol>	
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<ol style="list-style-type: none"> <li>6. Membership in the Plant Emergency Response Management Team (PERMT).</li> <li>7. Membership in the ALARA Committee.</li> <li>8. Determining whole body exposure limits and frequency and types of measurements.</li> <li>9. Preparing Radiation Work Procedures.</li> <li>10. Preparing Radiological Safety Operating Procedures.</li> <li>11. Providing professional advice concerning matters within the component's cognizance.</li> </ol>	
<p><b>2.1.18 <u>Supervisor, Radiological Safety Component</u></b></p>	
<p>The Supervisor, Radiological Safety Component, who reports to the Supervisor, Safety, provides information, advice, and assistance to Company operating and engineering components such that personnel safety and environmental protection are maximized, and assures that records adequately document conditions. Specific responsibilities of the Supervisor, Radiological Safety Component include the following:</p>	
<ol style="list-style-type: none"> <li>1. Administering the plant radiological safety programs and evaluating their effectiveness.</li> <li>2. Directing the activities of the Health and Safety Technicians.</li> <li>3. Providing radiological safety analyses of proposed operational changes or modifications.</li> <li>4. Assisting in the preparation of Radiation Work Procedures.</li> <li>5. Assisting in the preparation of Radiological Safety Operating Procedures.</li> <li>6. Assisting in preparation of reports to regulatory agencies.</li> <li>7. Auditing operations for compliance with Radiation Work Procedures and license conditions.</li> <li>8. Assisting in health physics and radiation safety training.</li> <li>9. Membership in the Plant Emergency Response Team (PERT).</li> </ol>	
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<p>10. Membership in the ALARA Committee.</p> <p><b>2.1.19 Health and Safety Technicians</b></p> <p>Health and Safety Technicians, who report to the Supervisor, Radiological Safety, carry out established programs and assist in initiating new programs. Their specific responsibilities include the following:</p> <ol style="list-style-type: none"> <li>1. Providing radiation and chemical monitoring.</li> <li>2. Collecting air and effluent samples.</li> <li>3. Issuing and controlling personnel dosimeters.</li> <li>4. Maintaining all records pertaining to personnel exposure, contamination and air surveys, sampling, inspections, tests, etc.</li> <li>5. Inspecting operations and reporting violations of Radiation Work Procedures.</li> <li>6. Membership in the Plant Emergency Response Team (PERT).</li> <li>7. Providing personnel decontamination.</li> <li>8. Providing training in radiological safety practices and procedures.</li> </ol> <p>Health and Safety Technician Specialists may be assigned special duties, along with appropriate titles.</p> <p><b>2.1.20 Manager, Regulatory Compliance</b></p> <p>The Manager, Regulatory Compliance reports to the Manager, Safety, Security, and Licensing and is responsible for all safety-related licenses, permits, and amendments thereto necessary for plant operation. He is also responsible for the safeguards program. His responsibilities are carried out through issuance of appropriate Company Policies and Standards, and by approval of certain implementing procedures. He is responsible for Company interface with regulatory agencies.</p> <p><b>2.1.21 Staff Engineer, Licensing</b></p> <p>The Staff Engineer, Licensing reports to the Manager, Regulatory Compliance and is responsible for obtaining all NRC permits and licenses and amendments thereto necessary for plant operation. He is responsible for assuring that the requirements of such license and permits are appropriately implemented and that implementation is</p>	
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adequately documented. He is the Company interface with the NRC, hosts NRC inspections, and responds to inspection reports for the Company.

**2.1.22 Environmental Engineering Component**

The Environmental Engineering Component resides within the Regulatory Compliance organization and is responsible for ensuring that the sampling requirements described in Chapter 5 of this License are properly implemented; collecting all the analytical data from the environmental samples; and issuing required reports. The Environmental Engineering Component is also responsible for obtaining permits, other than those issued by the NRC and the State dealing with nuclear materials, necessary for plant operation. Both nuclear and non-nuclear environmental issues are included in the component's responsibilities, with non-nuclear constituting the larger portion. This component also has industrial hygiene responsibility.

**2.1.23 Vice President, Engineering, Nuclear Division**

The Vice President, Engineering, Nuclear Division is responsible for research and development activities in support of the fabrication of nuclear fuels, including the conduct of certain demonstrations involving special nuclear materials. The Vice President, Engineering, Nuclear Division, reports directly to the Senior Vice President and General Manager, Nuclear Division.

**2.1.24 Manager, Product Mechanical Engineering**

The Manager, Product Mechanical Engineering (PME) reports to the Vice President, Engineering, Nuclear Division and is responsible for preparation/integration of mechanical design drawings and specifications, stress analysis, and parts lists for SPC product hardware. Through the Manager, Product Development and Testing, the Manager, PME is responsible for operation of the Product Development Test Facility and the conduct of Materials Research activities within the Engineering Laboratory Operations (ELO) facility.

**2.1.25 Manager, Product Development and Testing**

The operation of the Product Development Test Facility (PDTF), where reactor-simulated flow tests involving a single fuel element are conducted, is directed by the Manager, Product Development and Testing who reports to the Manager, Product Mechanical Engineering. The Manager, Product Development and Testing is responsible for the safe operation of the PDTF within the constraints imposed by license conditions, Radiation Work Procedures, and Criticality Safety Specifications. The Manager, Product Development and Testing is also responsible for Materials Research activities conducted within the Engineering Laboratory Operations (ELO) Building. Handling of fissile materials associated with those activities must be conducted within the constraints of license-mandated safety programs.

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**2.1.26 Director, Quality**

The Director, Quality reports to the Senior Vice President and General Manager, Nuclear Division and is responsible for all aspects of Nuclear Division quality programs. The Director, Quality has overall management responsibility for both quality assurance programmatic functions and product quality control functions, including monitoring of product quality during the manufacturing process as well as approving the quality of the finished product. The product quality control functions, administered via the Manager, Quality Control, also include responsibility for the Analytical Laboratories, which in addition to product quality-related testing, provide analyses in support license-mandated safety, environmental, and safeguards/accountability programs.

**2.1.27 Manager, Quality Control**

The Manager, Quality Control reports to the Director, Quality and is responsible for monitoring product quality during the manufacturing process as well as approving the quality of the finished product. This responsibility is discharged in part by inspection and release of incoming materials and components, in-process inspection during manufacturing, and inspection and certification of the product. The Manager, Quality Control is responsible for the Analytical Laboratories.

This position has the full authority necessary to carry out the responsibilities.

**2.1.28 Manager, Analytical Laboratories**

The Manager, Analytical Laboratories reports to the Manager, Quality Control and is responsible for coordinating and supervising the activities of the analytical laboratories which provide safety-related support through analysis of environmental, process, waste discharge, and safeguards/accountability samples.

**2.2 Personnel Education and Experience Requirements**

Responsibilities and authorities of all line managers shall be provided in writing. Hiring of managers and key professionals in plant operations, health physics, and nuclear criticality safety shall be subject to approval by the Richland Plant Manager.

The Richland Plant Manager, the Manager of Plant Operations and managers in engineering and technical services functions which have responsibilities for the processing, storing, or handling of special nuclear materials, shall have a minimum of two years of experience in the nuclear industry, and a degree in science or engineering. There are certain other positions where a technical degree is not required; however in those cases, the incumbent shall have adequate job training, and technical support and overview shall be available. Specific requirements for key safety professionals whose major responsibility is in a safety field are listed below.

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<p><b>2.2.1 <u>Manager, Safety, Security, and Licensing</u></b></p> <p>The minimum qualifications of the Manager, Safety, Security, and Licensing shall be a BS degree in a technical field with 10 years experience in the nuclear energy field, of which four shall have been in positions with nuclear safety responsibility.</p> <p><b>2.2.2 <u>Manager, Regulatory Compliance</u></b></p> <p>The minimum qualification for the Manager, Regulatory Compliance shall be a Bachelor's degree in science or engineering, plus eight years experience in the nuclear or environmental safety fields.</p> <p><b>2.2.3 <u>Staff Engineer, Licensing</u></b></p> <p>The minimum qualifications shall be a Bachelor's degree in science or engineering, plus at least five years experience in the nuclear field or which three years experience shall have been in safety-related or safeguards fields requiring significant interaction with regulatory agencies.</p> <p><b>2.2.4 <u>Supervisor, Safety</u></b></p> <p>The minimum qualifications shall be a Bachelor's degree in a technical field, with five years experience in safety-related fields (industrial, radiological, health physics, or nuclear).</p> <p><b>2.2.5 <u>Supervisor, Radiological Safety</u></b></p> <p>The minimum qualifications shall be a Bachelor's degree in a technical field, with five years experience in radiation safety, or, in the absence of a degree, then 10 years experience shall be required.</p> <p><b>2.2.6 <u>Industrial Safety and Health Specialist (Industrial Hygienist)</u></b></p> <p>The minimum qualifications of at least one member of the Industrial Safety and Health Component shall be a Bachelor's degree in science or engineering with two years experience in industrial safety or health.</p> <p><b>2.2.7 <u>Criticality Safety Specialist</u></b></p> <p>The minimum qualifications of at least one member of the Criticality Safety Component, as well as for each second-party reviewer, shall be a Bachelor's degree in science or engineering with two years experience in nuclear criticality safety analysis.</p>	2-11
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**2.2.8 Health Physics Specialist (Health Physicist)**

The minimum qualifications of at least one member of the Health Physics Component shall be a Bachelor's degree in science or engineering with five years general experience in radiation protection, or at least two years of radiation protection experience allied with nuclear fuel fabrication.

**2.2.9 Health and Safety Technician Specialists**

The minimum qualifications shall be a high school diploma with ten years experience in radiation and chemical monitoring. They shall have passed the SPC Environmental Monitoring Training and Qualification Program or shall have had the equivalent prior training. They must demonstrate the ability to perform and direct all aspects of SPC's radiological and environmental safety programs and activities.

**2.2.10 Health and Safety Technicians**

The minimum qualifications of certified Health and Safety Technicians shall be a high school diploma with two years of radiation and/or chemical monitoring experience, or four years of similar experience in lieu of a high school diploma. Health and Safety Technicians shall complete a formal SPC training program, or shall have had equivalent prior training. They shall be proficient in SPC's radiological and chemical safety programs, criteria, specifications, procedures, and routines.

**2.2.11 Environmental Engineer**

The minimum qualifications of at least one member of the Environmental Engineering Component shall be a Bachelor's degree in science or engineering, and at least one year's experience in the environmental field.

**2.3 Safety Review Committees****2.3.1 Health and Safety Council**

SPC has established the Health and Safety Council which convenes monthly at SPC's fuel manufacturing plant in Richland, Washington, to review various aspects of the safety program, including:

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SPECIAL NUCLEAR MATERIAL LICENSE NO. SNM-1227, NRC DOCKET NO. 70-1257

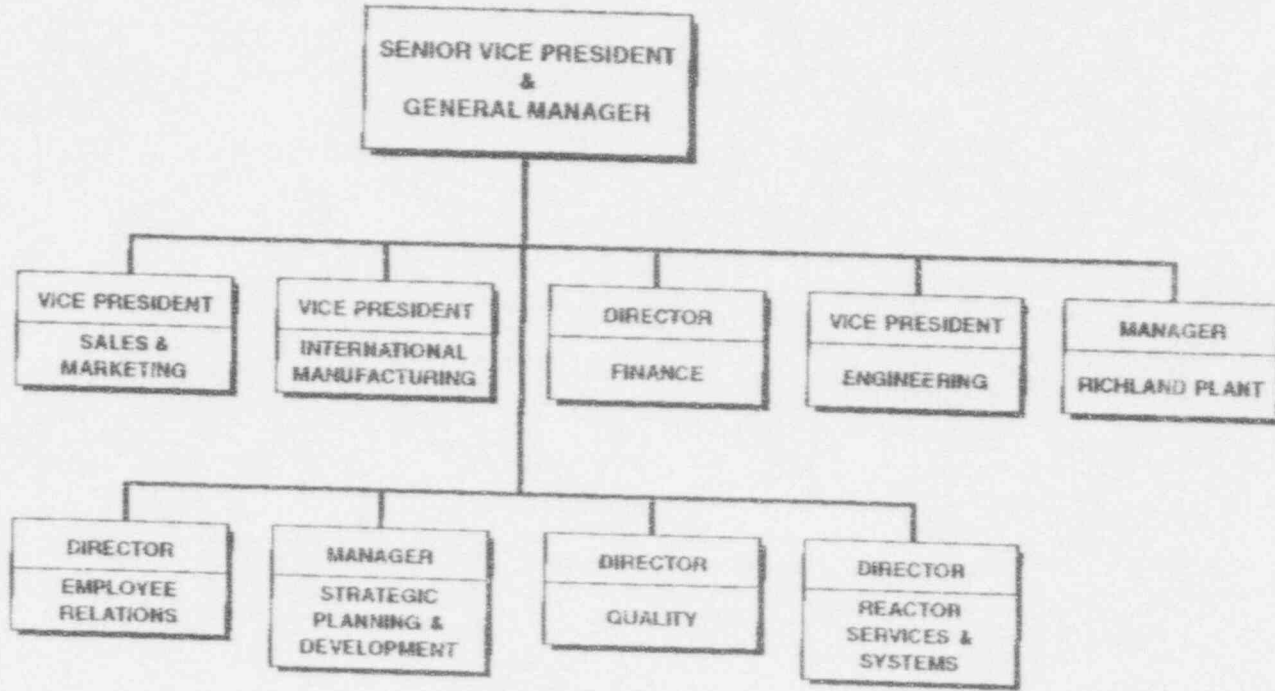
EMF-2

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FIGURE I-2.1

### Siemens Power Corporation - Nuclear Division



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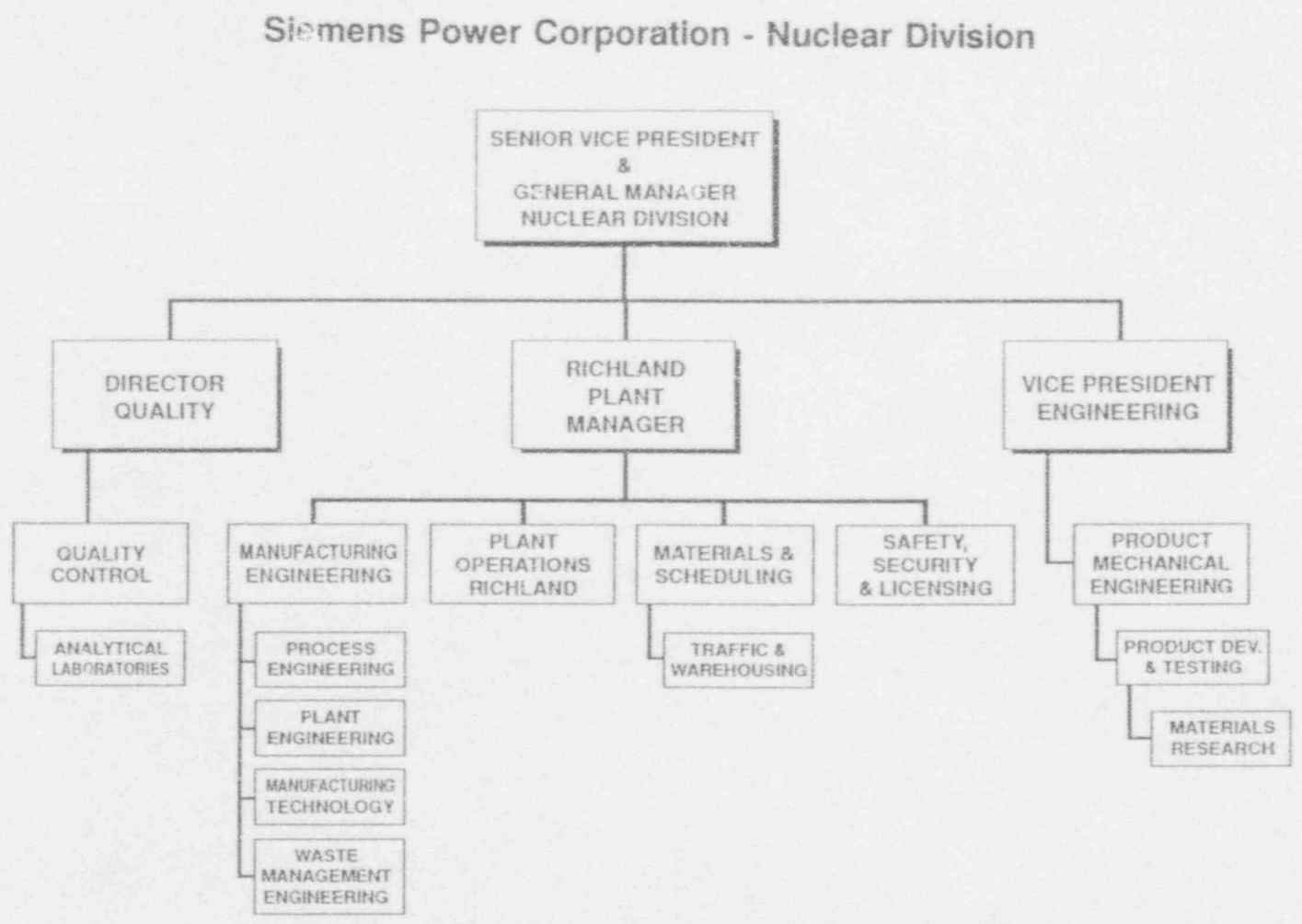
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FIGURE II-9.1



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**CHAPTER 11 ORGANIZATION AND PERSONNEL****11.1 Organizational Responsibilities**

It is the policy of SPC to conduct its business in a manner so as to assure that its facilities are safe from radiation and other nuclear hazards, that its operations will not be detrimental to the environs, and to assure that personnel (both in-plant and off-site) radiation exposures are maintained as low as is reasonably achievable (ALARA). In providing this assurance, conditions of applicable NRC licenses are complied with and full regard is given to applicable NRC Regulatory Guides.

Responsibility for establishing and assuring adherence to this policy rests with the President of SPC and is exercised through the Senior Vice President and General Manager, Nuclear Division; the Vice President, Engineering, Nuclear Division; the Director, Quality; and the Richland Plant Manager. This policy is implemented through appropriate delegations to managers responsible for particular facilities processing or otherwise handling radioactive and nuclear materials. Each responsible manager is required to know, understand and carry out the provisions of this policy and the procedures for its implementation.

**11.2 Functions of Key Personnel**

The organization at the Corporate level is depicted in Figure II-9.1.

The function and responsibilities of the various safety-related positions are described in Chapter 2 with the flow of responsibility depicted in Figures I-2.1 and I-2.2. During the absence of key individuals, another individual is delegated, in writing, to assume his responsibilities. In the case of a plant emergency, the SPC Emergency Plan lists alternates to the Emergency Director.

**11.3 Education and Experience of Key Personnel**

Resumés of personnel who currently occupy key safety-related positions are listed in this section.

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**11.3.1 President and Chief Executive Officer - R. B. Stephenson****Education**

BS	Mechanical Engineering	1965	Purdue University
MS	Nuclear Engineering	1970	University of Michigan
MBA	Business/Finance	1972	University of Michigan

**Experience****1965-1970**

Various capacities as a commissioned officer in the U.S. Navy Nuclear Power Program, including service aboard a nuclear-powered, attack-class submarine.

**1972-1985**

Employed by Siemens Power Corporation.

- Manager, Test Facilities, responsible for operations and operations support for the Atomic Vapor Laser Isotope Separation Research and Development Program. (1972-1975)
- Manager, Methods Engineering, responsible for industrial engineering for the light water reactor fuels manufacturing division. (1975-1976)
- Manager, Plant Engineering, responsible for all equipment and facilities engineering related to operation, maintenance, and improvement for fuels manufacturing. (1976-1977)
- Manager, UO<sub>2</sub> Shop Operations, responsible for manufacturing operations for pressurized water and boiling water fuel assembly production. (1977-1980)
- Managing Director and Manager, Manufacturing, for Advanced Nuclear Fuels GmbH in Lingen, West Germany, responsible for all logistics, manufacturing, engineering, security, and health physics for European manufacturing operations. (1980-1983)
- Manager, Marketing Analysis, responsible for market environment and competitor analysis supporting sales. (1983-1984)
- Regional Sales Manager responsible for fuel sales to approximately one-fourth of the U.S. nuclear utilities. (1984-1985)

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1985-1987

- Employed by Exxon Enterprises as President, Chief Executive Officer, and Chairman of the Board of EPID, Inc., responsible for general management of an enterprise engaged in the development, manufacturing, and sales of computer components. (1985-1986)
- Vice President, Administration. (1986)
- Vice President, Commercial Division. (1986-1987)

1988 - 1991

- President and Chief Executive Officer, Director, Siemens Nuclear Power Corporation (SNP); Director, Advanced Nuclear Fuels International (ANFI); Director, Universal Testing Laboratory (UTL).

1991

- President and Chief Executive Officer, Director, SNP; Director, ANFI; Director, Siemens Nuclear Power Services (SNPS).

1991 - Present

- President and Chief Executive Officer, Director, SPC; Director, ANFI; Director, SPCS; President and Chief Executive Officer, Director Siemens KWU, Inc.; President and Chief Executive Officer, Director, Siemens Power Corporation.



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11.3.2 Senior Vice President and General Manager, Nuclear Division - D. G. McAleesEducation

BS	Aeronautical Engineering	1965	Rensselaer Polytechnic Institute
MS	Nuclear Engineering	1971	University of Wisconsin
PhD	Nuclear Engineering	1974	University of Wisconsin

Experience1972-1974

Instructor & Research Assistant, Nuclear Engineering - U of Wisconsin

1974-Present

Employed by Siemens Power Corporation

- Physicist/Engineer, Fusion Energy Division, ORNL, Oak Ridge, TN. (1974-1976)
- Manager, Experimental Development, Laser Enrichment. (1977-1978)
- Manager, Program Development, Laser Enrichment. (1978-1980)
- Sr. Planning Advisor, Finance/Planning. (1980)
- Sr. Staff Planner, Uranium Operations. (1980-1982)
- Manager, Plant Operations, Plant Operations. (1982-1985)
- Manager, Fuel Engineering & Technical Services, Engineering & Production. (1985)
- Manager, Regional Sales, U.S. Marketing. (1985)
- Vice President, U.S. Marketing. (1985-1986)
- Vice President, Commercial Division and Director - Advanced Nuclear Fuels; President and Director, Advanced Nuclear Fuels International. (1988-1991)

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<b>PART II - SAFETY DEMONSTRATION</b>	REV.
<ul style="list-style-type: none"><li>• Vice President, Commercial Division and Director, Siemens Nuclear Fuels Corporation; Vice President and Director, Advanced Nuclear Fuels Corporation; President and Director ANFI; President and Director, Siemens Nuclear Power Services. (1991-1992)</li><li>• Senior Vice President and General Manager - Nuclear Division, Siemens Power Corporation; Vice President and Director, Advanced Nuclear Fuels Corporation; President and Director ANFI; President and Director, Siemens Nuclear Power Services. (1992-Present)</li></ul>	
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**11.3.3 Director, Quality - C. M. Powers**Education

BA	Mathematics/Physics	1971	Willamette University
MS	Nuclear Engineering	1973	University of Washington

Experience1972-1980

Employed by General Electric Company, San Jose, CA.

- Held various positions (Nuclear Engineer, Lead Startup Engineer) involved with nuclear fuel cycle economic evaluation, nuclear fuel and core design, as well as a progression of leadership positions in the startup of five commercial nuclear power plants.

1980-1993

Employed by Washington Public Power Supply System, Richland, WA.

- Assistant Plant Manager, Reactor Engineering Supervisor, Senior Engineer - various individual contributor and supervisory positions with project/program management responsibilities (1980-1985).
- Plant Manager - WNP-2 Nuclear Plant, reporting to the Assistant Managing Director - Operations (1985-1990).
- Director of Engineering, reporting to the Managing Director (1990-1993).

1993-Present

Employed by Siemens Power Corporation, Nuclear Division, Richland, WA.

- Senior Staff Engineer reporting to the Vice President, Engineering, Nuclear Division.
- Director, Quality reporting to the Senior Vice President and General Manager, Nuclear Division (May 1993).

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**PART II - SAFETY DEMONSTRATION**

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**11.3.4 Richland Plant Manager - B. N. Femreite**

Education

BS	Metallurgical Engineering	1966	University of Idaho
MS	Metallurgical Engineering	1967	University of Idaho
Post-Graduate	MBA Studies	1974	University of Washington

Experience

1967-1970

Employed by United Nuclear in Richland, Washington as a Senior Process Development Engineer responsible for manufacturing process and materials development for defense reactor fuels.

1970 - Present

Employed by Siemens Power Corporation.

- Senior Engineer, Research and Engineering, responsible for process development, materials evaluation, and process support for UO<sub>2</sub> and MOX commercial fuels.
- Manager, Shop Operations, responsible for manufacturing operations for UO<sub>2</sub> and MOX fuels.
- Manager, European Projects, responsible for planning, staffing, training, and initial startup of the European Fuel Plant.
- Manager, Uranium Waste Project, responsible for process development, design, installation, and startup of liquid and solid waste recovery systems in Richland manufacturing plant.
- Manager, Richland Employee Relations, responsible for Human Resources function for Richland site.
- Manager, Plant Operations, responsible for design criteria, staffing, training, and startup of manufacturing operations for a DOE plant at the Idaho National Engineering Laboratory.
- Manager, Corporate Employee Relations, responsible for corporate Human Resources function in U.S. and Europe.

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<b>PART II - SAFETY DEMONSTRATION</b>		REV.
<ul style="list-style-type: none"><li>• Manager, Operations-Richland, responsible for manufacturing, quality control, and maintenance for Richland operations.</li><li>• Manager, Manufacturing Engineering, responsible for Process and Plant Engineering for Richland Operations.</li><li>• Richland Plant Manager, responsible for manufacturing operations at the Engineering and Manufacturing facility in Richland.</li></ul>		
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<p><b>11.3.5 <u>Manager, Manufacturing Engineering</u> - M. K. Valentine</b></p> <p><b><u>Education</u></b></p> <table border="0"> <tr> <td style="width: 10%;">BS</td> <td style="width: 40%;">Chemical Engineering</td> <td style="width: 15%;">1969</td> <td style="width: 35%;">Montana State University</td> </tr> <tr> <td>MBA</td> <td>Business Administration</td> <td>1974</td> <td>University of Idaho</td> </tr> </table> <p><b><u>Experience</u></b></p> <p><u>1969-1972</u></p> <p>Employed by Idaho Nuclear Corporation at Idaho Falls, Idaho as a Research Engineer in the Planning and Cash Flow Analysis section. Activities included:</p> <ul style="list-style-type: none"> <li>• Long range planning of fuel reprocessing activities, conceptual design of process improvements/budget planning, and preparation of funding packages for major new additions for presentation to the AEC.</li> <li>• Development of a computer program simulating nuclear fuel reprocessing operations, integrating new processes and case flows.</li> <li>• Conceptual design, program management, and preparation of a safety analysis report for a neptunium purification, recovery and packaging process.</li> </ul> <p><u>1972-1977</u></p> <p>Employed by Allied Chemical Corporation at Idaho Falls, Idaho as a Senior Research Engineer in the Process Technology Branch. Activities included:</p> <ul style="list-style-type: none"> <li>• Pilot-plant development of a reprocessing method for the High Temperature Gas-Cooled Reactor Program.</li> <li>• Development of a fluidized-bed method for classifying microspheres of nuclear fuel particles from HTGR fuel and assisted in the development of a fluidized-bed graphite burner for the same program.</li> <li>• AS Supervisor of the Safety Analysis Group of the Operational and Environmental Safety Office, activities involved the preparation of a safety review document covering all aspects of the multiple-headend Idaho Chemical Processing Plant, nuclear fuel reprocessing facility. Supervision of three other chemical engineers in preparing the SAR. The analysis included detailed process and equipment</li> </ul>			BS	Chemical Engineering	1969	Montana State University	MBA	Business Administration	1974	University of Idaho
BS	Chemical Engineering	1969	Montana State University							
MBA	Business Administration	1974	University of Idaho							
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descriptions, fault-tree analysis, consequence analysis, and environmental impacts.

1977-Present

Employed by Siemens Power Corporation

- Plant Chemical Engineer in July 1977.
- Manager, Maintenance Engineering in November 1977.
- Manager, Process and Maintenance Engineering in March 1979.
- Manager, Fuel Testing in December 1982.
- Manager, Operations Planning and Scheduling in July 1983.
- Manager, Plant Operations in January 1985.
- Manager, Fuel Warranty and Site Services in May 1988.
- Sales Manager in October 1991.
- Manager, Manufacturing Engineering in July 1992.

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**11.3.6 Manager, Process Engineering - R. B. McLees****Education**

BS	Ceramic Engineering	1959	Clemson University
MS	Ceramic Engineering	1960	Clemson University

**Experience****1960-1969**

Employed by Y-12 Plant, Oak Ridge, TN as a Development Engineer engaged in materials research and development.

**1969-1975**

Employed by General Electric, Wilmington, NC as an Equipment Engineer responsible for equipment installation and startup.

**1975-1976**

Employed by General Atomic Plant, San Diego, CA as a Staff Engineer responsible for the liaison with A/E on design of HTGR fuel fabrication plant.

**1976-Present**

Employed by Siemens Power Corporation.

- Equipment Engineer. (1976-1977)
- Supervisor, Chemical Conversion Operation. (1977-1978)
- Lead Engineer, Incremental Plant Expansions. (1978-1980)
- Project Engineer, 550 MTU Plant Expansion and Lingen Pelletizing Project. (1981-1985)
- Manager, Process Engineering. (1985-Present)



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11.3.7 Manager, Plant Engineering - J. W. HeltonEducation

BS	Mechanical Engineering	1955	Colorado State University
MS	Nuclear Engineering	1963	University of Washington
	Professional Engineer License		State of Washington

Experience1955 - 1970

Employed by General Electric Company in a variety of positions.

- Various engineering assignments in Richland, WA including reactor operator training, inspection, piping design engineer, and engineering supervisor. (1955-1965)
- Manager, Construction Engineering, responsible for administration of a construction subcontractor involved in the construction completion, repairs, and alterations of the Saturn V Test Facility. (1965-1967)
- Resident Manager, Monticello Nuclear Power Plant, site manager for construction of the Turnkey Power plant (1967-1970).

1970 - Present

Employed by Siemens Power Corporation.

- Manager, Manufacturing Engineering, responsible for the determination, engineering, installation and maintenance of production equipment for the fuels plant. (1970-1972)
- Project Engineer responsible for project modifications and additions to facilities and process equipment for fuels plant. (1972-1975)
- Project Manager responsible for project design, licensing, construction, and startup of nuclear fuels plant in Lingen, West Germany. (1975-1978)
- Manager, Construction, responsible for all construction activities by construction contractors during major plant additions and modifications. (1978-1982)

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<b>PART II - SAFETY DEMONSTRATION</b>	REV.
<ul style="list-style-type: none"><li>• Project Engineer responsible for project activities associated with facility and process equipment additions and/or modifications for fuels plant. (1982-1985)</li><li>• Project Manager responsible for addition of pelletizing equipment and facilities in the Lingen, West Germany fuels plant. (1985-1987)</li><li>• Staff Engineer responsible for all construction activities for fuels plant. (1987-1990)</li><li>• Manager, Plant Engineering, responsible for the engineering and maintenance of all process equipment, facilities, and facility equipment for the Richland fuels plant. (1990-Present)</li></ul>	
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**11.3.8 Manager, Plant Operations - B. F. Bentley****Education**

BS	Ceramic Engineering	1965	Alfred University
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**Experience****1965 - 1993**

Employed by General Electric.

- Manufacturing Management Program (1965-1968) Three year training program that included graduate level business/management courses with job rotation every 6 months, location rotation every 3 months.
- Manufacturing Engineer (1968-1972) Neutron Devices St. Petersburg,
- Manufacturing Engineer (1972-1973) Nuclear Fuel Department Wilmington NC.
- Process Control Engineer (1973-1976) Nuclear Fuel Department Wilmington NC.
- Manager Production Operations 1976-1993.

**1993 - Present**

Employed by Siemens Power Corporation as Manager, Plant Operations.

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## PART II - SAFETY DEMONSTRATION

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**11.3.9 Manager, Quality Control - D. J. Hill****Education**

BS    Chemistry and Physics                      1971                      Whitworth College

**Experience****1971-1973**

Employed by Teledyne Isotopes Company, Inc., as Assistant Scientist and Laboratory Supervisor in a low background radioisotope counting laboratory. Activities included development of special low background counting systems and gas purification and analysis systems.

**1973-1976**

Employed by Hanford Environmental Health Foundation in Richland, WA as Industrial Hygienist. Activities included nuclear facility safety/industrial hygiene inspections, environmental monitoring, and methods development.

**1976-1984**

Employed by Exxon Nuclear Company, Inc., as a Chemist in the UO<sub>2</sub> Analytical Laboratory, and later as Supervisor of the UO<sub>2</sub> Laboratory. Responsibilities included Quality Control analyses of nuclear fuel components, methods development, and testing and analyses in support of engineering studies.

**1984-1987**

Employed by Exxon Nuclear Idaho Company, Idaho Falls, Idaho, as Manager of Quality Control. This position involved development and management of inspection, quality engineering, and analytical support for a classified government manufacturing activity.

**1987-1990**

Employed by Rockwell-INEL as Director, Quality Operations. This position included Quality Assurance, Quality Engineering, and Quality Control management for the SMC project in Idaho Falls, ID.

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1990-Present

Employed by Siemens Power Corporation as Manager, Quality Control. This position directs the activities of inspection, analytical and quality engineering functions in support of the SPC nuclear fuel fabrication activities.

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11.3.10 Manager, Materials and Scheduling - R. L. FeuerbacherEducation

BS	Nuclear Engineering	1974	Oregon State University
MS	Nuclear Engineering	1984	University of Washington
MBA	Business Administration	1989	University of Washington

Experience1974 - 1975

Employed by General Atomic Company in two engineering positions in LaJolla, CA.

- Nuclear Engineer, Core Physics Section, performing fuel design and reactor core development for the high temperature gas-cooled reactor. (1974)
- Engineer, Fusion Engineering, performing structural and thermal hydraulic flow analyses for a Tokamak fusion test facility. (1975)

1975 - Present

Employed by Siemens Power Corporation.

- Nuclear Engineer, BWR Neutronics, performing fuel design and in-core fuel management for boiling water reactor (BWR) nuclear power plants. (1975-1977)
- Nuclear Engineer, PWR Neutronics, performing fuel design and in-core fuel management for pressurized water reactor (PWR) nuclear power plants, including on-site support for power plant startups. (1977-1979)
- Lead Engineer, PWR Neutronics, providing technical support for marketing efforts and proposals, including custom designs and economic analyses, and supporting research and development efforts for PWR fuel designs from a neutronics standpoint. (1979-1981)
- Unit Manager, PWR Neutronics, responsible for supervising a group of engineers performing nuclear fuel design and fuel management for PWR nuclear power plants, including technical support for proposals. (1982-1983)

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- Manager, In-core Monitoring Software Applications, responsible for managing a technical group performing design and installation of a software system to monitor in-core operation at BWR nuclear power plants. Technical support included development, testing, documentation, customer interfacing, and marketing support. (1983-1985)
- Senior Staff Planner, Planning and Uranium Operations, responsible for coordination of corporate-wide planning efforts, including preparation of executive presentation material for Board review meetings and conducting various business analysis studies. Supervised a planning analyst who maintained a commercial data base. (1985-1990)
- Commercial Coordinator, Universal Testing Laboratories, Inc., responsible for supporting integration of newly acquired subsidiary into parent company. Responsibilities included preparation of a business plan for subsidiary. (1990)
- Manager, Plant Operations, responsible for management of fuel manufacturing and material recovery operations, including preparation of operating procedures, development and maintenance of essential material controls and inventories, and the review, initiation, and implementation of plant safety procedures. (1990-1993)
- Manager, Materials and Scheduling, responsible for production scheduling, uranium management, hardware planning and procurement, procurement of operating supplies and services, production control activities, receiving and warehousing, logistics, traffic and shipping. (1993-present)



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**11.3.11 Manager, Master Scheduling and Uranium Management - S. F. Kuick**Education

BS	Chemistry	1978	University of Michigan
MBA	Finance	1980	University of Michigan

Experience1980-1983

Employed by Exxon Corporation, N.Y., N.Y.

- Financial analyst responsible for earnings reporting and analysis.

1983-Present

Employed by Siemens Power Corporation, Richland WA.

- Senior Accountant 1983-1987. Responsible for manufacturing accounting, tax accounting, and German affiliate matters.
- Cost model and estimating analyst from 1987-1990. Responsible for cost estimates for bids and proposals and special cost studies and other types of economic analyses.
- Project Manager from 1990-1992. Technical coordinator and project manager for several foreign customers in Germany, Sweden, and Japan.
- Manager, Master Scheduling and Uranium Management 1992 to present. Responsible for manufacturing planning and scheduling and management of uranium supplies and inventory.

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11.3.12 Supervisor, Traffic and Warehousing - L. D. WeaverEducation

Diploma    1971                          Hoguam High School

Experience1973-1977

Carpenter, General Foreman CHG International

1977 - Present

Employed by Siemens Power Corporation in Plant Operations.

9/1/86 - 8/1/89	Shift Supervisor, Chemical Operations
8/1/89 - 1/1/92	Dayshift Supervisor, Chemical Operations
1/1/92 - 8/24/92	General Supervisor, Plant Support Operations
8/24/92 - Present	Supervisor Traffic & Warehousing

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**11.3.13 Manager, Safety, Security, and Licensing - R. E. Vaughan****Education**

MS	Systems Management	1975	University of Southern California
BS	Marine Engineering	1963	U.S. Naval Academy

**Experience****1963-1983**

## U.S. Navy

Regular Commissioned Submarine Warfare Officer (nuclear power) assigned to progressively more responsible positions in operational, technical, production and executive level management positions including command at sea.

**1983-1992**

Employed by ABB-Combustion Engineering Nuclear Power Businesses in the designing, manufacturing, testing and servicing of nuclear steam supply systems and commercial power plant nuclear fuels.

- Manager, Nuclear Startup, responsible for the organization and direction of a 70-member multi-disciplinary engineering staff providing a wide range of engineering services at nuclear power plant projects. Directed the establishment and administration of the C-E Site Startup offices at projects in which the Nuclear Steam Supply System (NSSS) was supplied by C-E. (1983-1986 and 1988)
- Project Manager, Technology Transfer, Korea; assigned to the NSSS Projects Department throughout the contract negotiation phase for Korea Nuclear Units 11 and 12. Responsible for preparing, resolving and coordinating all technical, commercial and legal terms leading to award of two Technology Transfer Agreements. Concurrently assigned full responsibility, including profit-loss, for award and execution of a contract for NSSS System Designers Training. (1986-1987)
- C-E Nuclear Fuels Independent Task Force, assigned to an Independent Task Force established by the President, Nuclear Power Businesses with the authority and responsibility for conducting an audit of C-E's nuclear fuel manufacturing facilities. Audit results determined the status of Nuclear Fuel Department's compliance with all applicable licensing conditions and regulatory requirements of NRC, EPA, OSHA, DOT and state agencies. (1988-1989)

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<b>PART II - SAFETY DEMONSTRATION</b>	REV.
<ul style="list-style-type: none"><li>• Operations Manager, Nuclear Fuel Manufacturing, responsible for daily direction and overall coordination of the activities of the manufacturing process of C-E nuclear products. Assigned as Emergency Director for the Nuclear Fuel Manufacturing facilities and Product Development laboratories. (1989)</li><li>• Plant Manager, ABB-Combustion Engineering Nuclear Fuel Manufacturing, responsible for all aspects of the safe operation of the NRC licensed manufacturing facilities producing finished nuclear fuel assemblies and related components to the commercial nuclear power industry. (1990-1992)</li><li>• Project Director, ABB Combustion Engineering Windsor Site Remediation, responsible for the safe and cost effective characterization and environmental remediation of the ABB Windsor site areas contaminated under AEC contact. Provided liaison with DOE, NRC, EPA, and Connecticut DEP. (1992)</li></ul>	
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11.3.14 Supervisor, Safety - T. C. ProbascoEducation

BS	Microbiology	1970	Oregon State University
BS	Military Science	1970	Oregon State University
	Certified Safety Professional	1982	Board of Certified Safety Professionals

Experience1970-1972

Highway Engineering Technician for the Oregon State Highway Department.

1972-1975

Employed by a food processing company.

- Supervised chemical and bacteriological laboratories in the Quality Assurance Department. (1972-1973)
- Safety Engineer. (1973-1975)

1975-Present

Employed by Siemens Power Corporation.

- Plant Safety Engineer. (1975-1984)
- Plant Criticality Safety Engineer. (1975-1984)
- Supervisor, Radiological and Industrial Safety, responsible for supervising Health Physics Technicians, Radiological Safety Specialist, and Industrial Hygiene Specialist. (1985-1989)
- Supervisor, Safety, responsible for supervising Criticality Safety Specialist, Health Physics Specialist, Radiological Safety Specialist, Health Physics Technicians, and the Health Records Clerk. (1990-Present)

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<p><b>11.3.15 <u>Criticality Safety Specialist</u> - C. D. Manning</b></p> <p><u>Education</u></p> <p>BS Nuclear Option of General Engineering                      1982                      Idaho State University</p> <p><u>Experience</u></p> <p><u>1976-1984</u></p> <p>Employed by Union Pacific Railroad.</p> <p><u>1984-1985</u></p> <p>Employed by Newport News Reactor Services as a Radiological Control Engineer.</p> <ul style="list-style-type: none"> <li>• Training HPT technicians and Operators</li> <li>• Shielding and dosimetry requirements</li> <li>• Auditing Radiological Control Program Compliance</li> </ul> <p><u>1985-1987</u></p> <p>Employed by Rockwell Hanford Company as a Criticality Safety Engineer.</p> <ul style="list-style-type: none"> <li>• Criticality Safety Analyses</li> <li>• Auditing Criticality Safety Program Compliance</li> </ul> <p><u>1987-1990</u></p> <p>Employed by Westinghouse Hanford Company as a Nuclear Safety Engineer.</p> <ul style="list-style-type: none"> <li>• Cognizant Safety Engineer for the Plutonium Metal Production Line.</li> <li>• Event Investigation Team Leader</li> <li>• Plant Criticality Safety Approval Authority</li> </ul> <p><u>1990-Present</u></p> <p>Employed by Siemens Power Corporation as a Criticality Safety Specialist. Engineer responsible for all aspects of the criticality safety program.</p>	
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11.3.16 Health Physicist - R. K. BurklinEducation

BS	Physics	1969	State University College Plattsburgh, NY
MS	Physics	1972	University of Tennessee Knoxville, TN
	Public Health	1985-89	University of South Carolina Columbia, SC

Experience1973-1975

Employed by Virginia Electric Power Company at the Surry plant as a Reactor Health Physicist for Surry Units 1 and 2. In charge of external dosimetry and effluent release programs. Also hosted NRC inspections and supervised radioactive shipments.

1975-1990

Employed by Westinghouse Commercial Nuclear Fuel Division in Columbia, SC as a Senior Engineer. In charge of bioassay and internal dosimetry program, respiratory protection program, air sampling, training, external dosimetry, and the ALARA program.

1990-1992

Employed by Precision Castparts in Portland, OR as Manager of Health Physics. In charge of all aspects of health physics including external dosimetry, internal dosimetry, bioassay, air sampling, respiratory protection, environmental monitoring, contamination control, and waste disposal. Also in charge of ALARA and training programs.

1992-Present

Employed Siemens Power Corporation in Richland, WA as a Health Physics Specialist responsible for assuring compliance with the health physics requirements of the license and current regulations for a uranium fuel fabrication facility.

## PART II - SAFETY DEMONSTRATION

REV.

**11.3.17 Supervisor, Radiological Safety - E. L. Foster**Education

High School Diploma	1960	Richland, Washington
General Studies	1962	Columbia Basin College Pasco, WA
Nuclear Weapons Technician School	1964	U.S. Air Force

## Technical courses completed:

- Radiation Technician Chemistry
- Radiation Dosimetry
- Biological Effects of Radiation
- Radioactive Waste Disposal
- Environmental Monitoring
- Elementary Nuclear Physics
- Mathematics in Radiation Protection
- Ionizing Radiation Measurements
- Radiation Protection Techniques
- Air Sampling Principles and Evaluations
- Radioactive Decontamination Principles
- Radiation Exposure Records
- Disaster Monitoring
- Respiratory Protection at Nuclear Power Plants. (1985)
- Radiation Safety Officer. (1986)
- Air Sampling. (1986)
- NVLAP Accreditation. (1987)
- Hot Particle Dosimetry. (1987)
- Radiation Detection and Measurement. (1989)
- Fundamentals of Internal Dose Assessment (1990)

Experience1967-1971

Employed by Battelle Northwest in Richland, WA as a Radiation Monitor in the development and application of health physics programs for radioactive chemical separations plants, multi-curie laboratory operations, and nuclear fuel manufacturing.

- Performed monitoring duties during major cleanup and modification of plutonium hot cells and gloveboxes.

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- Direct participation in surveillance of effluent from plutonium facilities while assigned to an environmental monitoring group.
- Direct participation in setting up routine health physics program for PRTR.
- Completed special assignment involving modification of plant air monitoring program.

1971-Present

Employed by Siemens Power Corporation.

- Health Physics Technician involved primarily in all phases of the radiological safety program throughout the entire plant site. (1971-1976)
- Technician Specialist, Radiological Safety (1977)
- Radiological Safety Assistant. (1980)
- Radiation Safety Officer for Washington State License. (1984)
- Radiological Safety Specialist responsible for implementation of radiological safety training program, dosimetry program, bioassay program, writing of Radiation Work Procedures, reporting of radiological conditions to plant supervision. (1985)
- Direct participation in decommissioning of four facilities for unconditional release.

Mixed Oxide Fuel Fabrication in 1986  
 Centrifuge Test Facility in 1987  
 "Old" Reactor Services Building in 1989  
 Plutonium Storage Vault in 1990

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11.3.18 Manager, Regulatory Compliance - L. J. MaasEducation

BS Environmental Health 1973 University of Washington

Experience1974-1992

Employed by Hanford Environmental Health Foundation, Richland, WA

- Supervisor, Air and Water Surveillance Programs, Environmental Health Sciences Division. Provided environmental surveillance consultation and technical services to support environmental programs of operating contractors on the U.S. Department of Energy Hanford Site. Typical service areas included ambient air surveillance, air pollutant source testing and water quality monitoring. (1974-1980)
- Manager, Site Support Services, Environmental Health Sciences Division. Provided direct technical and administrative supervision of a staff of industrial hygienists, environmental scientists, and technicians providing industrial hygiene and environmental consultation and technical services. Primary clients were individuals responsible for the health, safety, and environmental programs of the U.S. Department of Energy and its Hanford contractors, although services were also provided outside the DOE sector to private industry, academic institutions, and other governmental agencies. (1981-1986)
- Director, Environmental Health Sciences Division. Managed overall operation of a multi-disciplinary division providing comprehensive environmental health services to contractors on a major U.S. Department of Energy (DOE) nuclear material production, waste management, and R&D Site. Through a DOE Use Permit, provided similar services to non-DOE clients including private industry, academic institutions, and other governmental agencies. Key technical service areas included industrial hygiene, environmental surveillance, hazardous waste, analytical chemistry, training/chemical information, and emergency preparedness. Responsible for all aspects of divisional planning, budgeting, personnel actions, and technical services. Division employed approximately sixty personnel including industrial hygienists, environmental scientists, chemists, technicians, and supporting clerical staff. (1986-1992)

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1992-present

Employed by Siemens Power Corporation.

- Manager, Regulatory Compliance. Provide overall management of Regulatory Compliance programs in the areas of Licensing, Nuclear Materials Safeguards, Environmental Protection and Industrial Hygiene. Includes responsibility for assuring that the SPC Engineering Manufacturing Facility attains, maintains, and complies with all required licenses and operating permits, including the NRC site license; properly accounts for all special nuclear materials; and consistently complies with regulations aimed at protecting the health of its workers and minimizing the environmental impacts of its operations.

## PART II - SAFETY DEMONSTRATION

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**11.3.19 Staff Engineering - Licensing - J. B. Edgar****Education**

BS	Physics	1965	Whitworth College
MBA	Business Administration - Finance	1970	University of Washington

**Experience****1965-1967**

Employed by Douglas United Nuclear, Richland, WA.

- Process Physicist - Performed physics calculations and advised, from a reactor physics standpoint, on the operation of a Hanford production reactor.

**1967-1970**

Employed by Battelle Northwest Laboratories, Richland, WA.

- Reactor Engineer - Supervised two technicians in the operation, maintenance, and data collection for experiments in Plutonium Recycle Critical Facility. Also assisted in analysis of data. (1967-1969)
- Nuclear Safety Specialist - Provided guidance for Battelle Northwest operating components and performed audits, reviews, and wrote manuals and safety analyses in the area of nuclear safety. Interfaced with AEC on nuclear safety questions. (1969-1970)

**1970-1973**

Employed by Westinghouse Hanford, Richland, WA.

- Supervisor, Materials Management - Supervised three engineers, one technician, and two clerks in a nuclear materials accountability function for Westinghouse Hanford. Provided expertise in packaging and shipping of radioactive materials. Criticality safety specialist for three laboratories, including preparation of safety analysis reports and criticality safety specifications and auditing for compliance with applicable limits.

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1973-Present

Employed by Siemens Power Corporation.

- Senior Materials Engineer - Managed Exxon Nuclear's uranium and plutonium inventories throughout the world from the point at which title transferred to Exxon Nuclear. Administered criticality safety program for fuel fabrication facilities at Richland. Provided special nuclear material traffic expertise on state and federal regulations. (1973-1977)
- Manager, Traffic Operations - Managed the traffic and warehousing function for Exxon Nuclear Company at its Richland site. Managed the shipment of hardware, UO<sub>2</sub> pellets, and miscellaneous items from ENC-Richland to ENGmbH-Lingen in support of ENGmbH fuel fabrication. (1977-1979)
- Contract Administrator (Bellevue, WA) - Administered contracts for six reload fuel customers (four domestic and two foreign) for the sale of reload fuel, uranium, and technical services. Responsibilities included evaluation of compliance with contract commitments; contract execution including commencement of work, progress reports, invoicing management, and closeout at completion of work; and marketing interaction including proposal writing and assisting in contract negotiations. (1979-1988)
- Staff Specialist-Safeguards - Provided technical expertise on safeguards; acted as Accountability Coordinator and Measurement Control Program Coordinator; acted as working level contact with NRC on safeguards matters; conducted annual measurement review; prepared and maintained ANF's Safeguards Plan (ANF-12); provided safeguards training for plant personnel; hosted NRC safeguards audits and biennial Ad Hoc Committee review of safeguards activities; maintained knowledge of current radioactive material transport regulations; prepared and maintained Radioactive Material Shipping Standard (Chapter 5) of ANF's Safety Manual (ANF-30); reviewed radioactive material shipment for compliance with regulations; prepared and maintained ANF's SNM Physical Protection Plan (ANF-538). (1988-1991)
- Staff Engineer-Licensing - provide licensing expertise on NRC licensing issues including plant operating license and transportation-related licenses and permits; act as company contact with NRC on licensing matters; prepare and maintain Radioactive Material Shipping Standard (Chapter 5) of SPC's Safety Manual (EMF-30); review radioactive material shipment for compliance with regulations; prepare and maintain SPC's SNM Physical Protection Plan (EMF-538). (1991-Present)

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**PART II - SAFETY DEMONSTRATION**

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**11.3.20 Environmental Engineer - S. R. Lockhaven**

Education

BA	Biology	1974	Central Washington University
BA	Environmental Studies	1976	Central Washington University
	Industrial Hygiene Training Courses	1979-Present	

Experience

1976-Present

Employed by Siemens Power Corporation.

- Senior Analytical Laboratory Technician. (1976)
- Industrial Hygienist duties included scheduling environmental sampling, environmental data review, and assisting the Plant Criticality Safety Engineer. (1979)
- Plant Criticality Safety Engineer. (1986)
- Industrial Regulations Specialist. (1989-1990)
- Environmental Engineering Specialist. (1990-1991)
- Environmental Engineer (1991-Present)

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11.3.21 Environmental Engineer - K. H. TanakaEducation

BS Chemical Engineering 1969 University of Utah

Experience1969-1978

Rockwell Hanford Operations

- Waste Management Process Engineer - Process control and process development in cesium ion exchange and strontium solvent extraction processing.
- Design Engineer - Design and construction of underground waste storage tanks and auxiliary systems.
- Chemical Engineer - Pilot plant development with vacuum evaporator-crystallizer and screw calciner.

1978-Present

Siemens Power Corporation (ENC, ANF, SNPC)

- Process and Maintenance Engineer - Day to day and long term operation and maintenance of chemical processes and related separating, drying and calcining equipment for the conversion of uranium hexafluoride to uranium dioxide in the production of nuclear fuel.
- Chemist - Analytical Laboratory in Quality Control Department, responsible for Spectroscopy instruments and analyses including Emission Spectrometer, Inductively Coupled Plasma (ICP) Spectrometer, X-ray Spectrometer and other analyzers.
- Environmental Engineer - Regulatory Compliance, responsible for the environmental monitoring and reporting of plant gaseous and liquid effluents in compliance with the NRC, federal, state and local environmental regulations and permit conditions.

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11.3.22 Safeguards Specialist - D. L. NossEducation

BA Business Administration 1974 Washington State University

Experience1974-1976

Employed by Rainier National Bank

- Operations Assistant - Supervised 25 tellers and new accounts. Dealt with customer problems and complaints.

1976-1978

Employed by Old National Bank

- Operations Supervisor - Supervision and training of tellers and new accounts. Maintain branch audit program. Deal with customer problems.

1978-Present

Employed by Siemens Power Corporation.

- Nuclear Materials Accounting - Maintained the plant nuclear materials records by running the Nuclear Materials Control System (NICS). Provided special assistance during the physical inventory of nuclear materials in the taking and reconciliation efforts. (1978-1980)
- Accountant for Engineering and Technology - Prepared monthly analysis letters detailing operating costs; assisted managers in the preparation of their operating budgets; prepared cost estimates from engineering and manufacturing inputs for marketing use; and provided assistance as needed in the preparation of invoices. (1980-1983)
- Nuclear Materials Accountant - Maintained the on-site perpetual inventory records of nuclear materials as required by regulations and in accordance with company standards required to provide asset control and verification. Planned and designed improvements to the Nuclear Materials Accounting System and worked with the Company's computer systems group to implement necessary changes.



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<ul style="list-style-type: none"><li>• Planned, conducted and reconciled the physical inventory of nuclear materials. Organized the efforts of the plant wide inventory and focused the reconciliation efforts of problem areas.</li><li>• Tracked and monitored the build up of uranium wastes and reported to management the progress of the Company's recovery systems. Determined and communicated the financial liability to the Company as the result of waste inventory buildups. (1983-1992)</li><li>• Safeguards Specialist - provide technical expertise on safeguards; act as Accountability Coordinator and Measurement Control Program Coordinator; act as working level contact with NRC on safeguards matters; conduct annual measurement review; prepare and maintain SPC's Safeguards Plan (EMF-12); provide safeguards training for plant personnel; host NRC safeguards audits and biennial AD Hoc Committee review of safeguards activities. (1992-Present)</li></ul>	
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**11.3.23 Vice President, Engineering, Nuclear Division - J. N. Morgan****Education**

BS	Engineering Physics	1963	University of Tulsa
MS	Nuclear Engineering	1974	University of Washington

**Experience****1964-1966**

Employed by Battelle Northwest Labs, Richland, Washington.

**1966-1969**

US Navy

**1969-1974**

Employed by Battelle Northwest Labs, Richland, Washington.

**1976-1977**

Employed by Siemens Power Corporation.

- Manager BWR Neutronics, generally the same as that designated above for the period of October 1977 to October 1979 except limited to Boiling Water Reactor fuel.

**1977-1979**

- Manager, Neutronics and Fuel Management, responsibilities included the management and technical direction of a staff which develops and applies nuclear physics methodologies in support of the companies BWR and PWR reload fuel customers. The functions of the group, in addition to methods development, included nuclear fuel bundle and reactor core design such that the company supplied fuel products would be operated safely and efficiently within the customer's Plant Technical Specification limits.

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1979-1982

- Manager, Licensing and Safety Engineering, SPC Nuclear Division, responsibilities included the management and technical direction of a staff which provides Safety Analyses and supporting documentation to support the operation of SPC manufactured nuclear fuel in SPC's customer owned reactors. Job responsibilities included the development of methodologies to be used in these analyses as well as the application, with NRC approval, to justify Plant Technical Specification fuel operating limits. The manager of Licensing and Safety Engineering, was responsible for the quality and validity of the methods developed and their application to Westinghouse, Combustion Engineering and General Electric light water reactors. The scope of these development and application projects included thermal-hydraulic design, plant transient, setpoint and large break Loss of Coolant Accident analyses.

1982-1987

- Manager, Customer Service Engineering, SPC Nuclear Division, position entailed the direction and coordination of several senior engineers to provide technical support to SPC's marketing and negotiation efforts and to maintain liaison between SPC's engineering and manufacturing projects and the contracts between SPC and its customers.

1987-1990

- Regional Sales Manager, SPC Nuclear Division, responsibilities included the development and presentation of SPC reload fuel and associated nuclear services proposals. This position has the primary responsibility for marketing strategy and contract negotiation with the U.S. Nuclear utilities assigned to the position.

1990-1991

- Manager, PWR Fuels Engineering, SPC Nuclear Division, responsibilities were the same as during the period June 1991 to July 1992 except limited to PWR fuel applications.

1991-1992

- Manager, Fuel Engineering & Licensing, SPC Nuclear Division, responsible for the management and technical direction of Fuel Management and Safety analysis in

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support of SPC's Light Water Reactor fuel customers. These analyses include, but are not limited to the following:

- Nuclear and Thermal-Hydraulic design of SPC's LWR fuel assemblies
- Nuclear and Thermal-Hydraulic design of LWR cores for which SPC has fuel management responsibility
- Development and analytical justification of Technical Specification fuel operating limits to ensure the safe and efficient operation of the reactor core. This includes transient and setpoint analysis and both large and small break Loss of Coolant Accident analyses.

1992-Present

- Vice President, Engineering, SPC Nuclear Division, responsible for the engineering aspects of nuclear fuels business including research, fuel design, neutronics and fuel management, fuel licensing and safety engineering, corporate information services and process and equipment development (in support of the fuel fabrication facilities).

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**11.3.24 Manager, Product Mechanical Engineering - A. Reparaz****Education**

BS	Aeronautical Engineering	1971	Madrid Polytechnic Institute
MS	Structural Engineering	1973	Madrid Polytechnic Institute

**Experience****1973-1976**

Employed by Gibbs & Hill Espanola, Madrid, Spain.

- Engineer in Civil Engineering Department involved in structural/seismic analysis and design of nuclear power plant facilities.

**1976-1978**

Employed by Nuclear Services Corp., Campbell, CA.

- Project Engineer involved in spent fuel storage capacity optimization and other engineering projects.
- Senior Engineer in Mechanical Engineering Dept. involved in design/analysis of spent fuel rack.

**1978-1979**

Employed by General Electric Company, Nuclear Energy Group, San Jose, CA.

- Engineer involved in nuclear fuel assembly design, fuel rod performance limits evaluation, and fuel fabrication interface.

**1979-Present**

Employed by Siemens Power Corporation, Nuclear Division, Richland WA.

- Various positions including Engineer; Manager BWR/PWR Design; Manager, Fuel Design.
- Currently Manager, Product Mechanical Engineering responsible for mechanical design, stress analysis, and parts lists for SPC product hardware as well as operation

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of Product Design Test Facility and Engineering Laboratory Operations Material Research activities.	
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**11.3.25 Manager, Manufacturing Technology - I. J. Urza****Education**

BS	Chemical Engineering	1971	University of Idaho
MS	Chemical Engineering	1972	University of Idaho

**Experience****1972-1974**

Employed by Allied Chemical Corporation, Idaho Falls, Idaho.

- Engineer responsible for conceptual and feasibility studies, economic and consequence analysis, and project design support. Served as a technical representative at Oak Ridge National Laboratory on the HTGR development program.

**1974-Present**

Employed by Siemens Power Corporation in Richland, Washington, Oak Ridge, Tennessee and Lingen, West Germany.

- Engineer, Reprocessing Process Engineering, responsible for the ENC uranium conversion development program at ORNL. Pilot plant and laboratory process equipment was designed, constructed, and tested for conversion of uranyl nitrate to  $UO_3$ ,  $UO_3$  fluorination to uranium oxide, and purification of  $UF_6$ . (1974-1977)
- Engineer, Reprocessing Process Engineering, responsible for lead process engineering for the uranium conversion portion of the ENC fuel reprocessing plant. Served as Task Leader in a DOE-sponsored advanced fuel cycle study. (1977-1978)
- Engineer, Design and Mechanical Development, responsible for design of uranium chemical operations and dye solution processing systems for the JNAI Experimental Test Facility, and conceptual studies of a commercial scale laser isotope separation plant. Directed design activities of an A/E firm. Prepared conceptual plant designs to define capital and operating costs. Prepared process flow sheets, selected and sized equipment, material of construction, layouts, etc. (1978-1981)
- Staff Engineer, Dry Conversion Process Development, responsible for the Dry Conversion Development Program including design, construction and experimental operation of a pilot plant, and a prototypical test facility. Developed and demonstrated a unique dry process for conversion of  $UF_6$  to ceramic grade  $UO_2$  (patent pending). The dry conversion process is being installed in the ANFGmbH fuel fabrication plant.

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<p>Directed and coordinated process and equipment design, equipment procurement, installation, and process development. (1981-1985)</p> <ul style="list-style-type: none"><li>• Senior Staff Engineer, Process and Equipment Engineering, responsible for supervision, planning, and technical direction for the Lingen UF<sub>6</sub> Dry Conversion project (\$8.5 million) through design, licensing, procurement, construction, and startup. Responsibilities included providing technical direction of related process and equipment development work. (1986-1989)</li><li>• Manager, Chemical and Ceramic Development, responsible for providing ongoing and long range engineering and development support to fuel production and waste management operations in the chemical and ceramic development areas. Responsibilities include development of processes which improve product quality, and reduce manufacturing costs. (1989-1990)</li><li>• Manager, Manufacturing Technology responsible for development of chemical, ceramic, welding and mechanical processes and techniques to: (a) implement step change advancements in existing manufacturing technology; (b) support the manufacture of advanced fuel; and (c) develop waste treatment processes and strategies for treatment and disposal of radioactive and hazardous wastes. (1990-Present)</li></ul>	
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**11.3.26 Manager, Product Development and Testing - R. E. Collingham****Education**

BS	Mechanical Engineering	1959	University of Washington
MS	Nuclear Engineering	1960	University of Washington
PhD	Mechanical Engineering	1968	University of Minnesota

**Experience****1960-1964**

Officer, United States Navy assigned concurrently to the Naval Reactors Division of the USAEC and the Bureau of Ships, USN. Responsible for the development, design and manufacture of primary nuclear plant components of both nuclear surface and submarine plants.

**1968-1970**

Employed by Battelle-Northwest as a Senior Engineer in its Thermal Hydraulic group, responsible for the thermal hydraulic testing associated with N Reactor.

**1970-1973**

Employed by Westinghouse HEDL as a Senior Engineer in its Thermal Hydraulic testing group, responsible for the thermal hydraulic testing associated with the fast reactors including the FFTF Reactor.

**1973-Present**

Employed by Siemens Power Corporation.

- Senior Engineer in the thermal hydraulic analysis and testing areas related to nuclear fuel supply. (1973-1975)
- Manager, Thermal Hydraulic Testing, responsible for the thermal hydraulic testing associated with reload fuel supply; the testing included steady state hydraulic, CHF/DNB, and ECCS spray cooling testing. (1975-1977)
- Manager, Safety Analysis Model Development, responsible for the model and code development of methodology for safety analyses of BWR and PWR plants. (1977-1984)

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- Manager, BWR Safety Analysis, responsible for the reload-related steady state, plant transient and LOCA/ECCS analyses of all BWR customers plants. (1984-1990)
- Manager, Product Development and Testing, responsible for product development activities including the neutronic, thermal hydraulic and mechanical evaluation of advanced BWR and PWR concepts, and responsible for all the thermal hydraulic testing related to fuel supplies. (1990-Present)

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11.3.27 Manager, Analytical Laboratories - M. A. LawEducation

BS	Microbiology	1973	University of Arizona
MS	Chemistry	1979	Idaho State University

Experience1973-1977

Employed as Medical Technologist in hospital laboratories.

1978-1983

Employed by Exxon Nuclear Company as a Methods Development Chemist for nuclear fuel reprocessing process control.

1983-1987

Employed by American Microsystems as a semi conductor process engineer and by Martin Marietta as laser optics staff scientist.

1987-1990

Employed by Rockwell-INEL as Analytical Lab Supervisor for nuclear materials (depleted U) production project.

1990-Present

Employed by Siemens Power Corporation

- Supervisor, UO<sub>2</sub> Laboratory (1990-1991)
- Manager, Analytical Laboratories (1991-Present)

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**11.3.28 Manager, Waste Management Engineering - S. S. Koegler****Education**

BS	Chemical Engineering	1971	University of Idaho
MS	Chemical Engineering	1972	University of Idaho

**Experience****1972-1974**

Employed by Monsanto Textiles Co., Decatur, AL as a process engineer and development engineer engaged in development of textile polymers, pilot plant operation, and plant start up.

**1974-1979**

Employed by Atlantic Richfield Hanford Company/Rockwell Hanford Operations in Richland, WA as an R&D Engineer and Senior Engineer. Conducted research and development in support of the Hanford PUREX plant.

**1979-1985**

Employed by Exxon Nuclear Company as a Senior Engineer. Responsible for design and installation of the "Sphere-Pac" nuclear fuel pilot plant. Provided engineering support for Dry Conversion pilot plant.

**1985-1991**

Employed by Battelle Pacific Northwest Laboratory, Richland, WA as a Staff Engineer and as the Group Leader for the Biochemical Treatment and In Situ Vitrification Group. Directed programs for waste treatment technology development. Project Manager and Principle Investigator for several biotechnology and in situ vitrification projects.

**1991-Present**

Employed by Siemens Power Corporation.

- Staff Engineer, Manufacturing Technology supporting Dry Conversion and other chemical technology development projects. (1991-1993)
- Manager, Waste Management Engineering. (1993-Present)

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