

## SECTION 13

### CONDUCT OF OPERATION

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## SECTION 13

### CONDUCT OF OPERATIONS

#### 13.1 ORGANIZATION STRUCTURE

The original content of this chapter as described in Regulatory Guide 1.70. Revision 3, has been modified as allowed by Regulatory Guide 1.181 in conjunction with NEI 98-03, Guidelines for Updating Final Safety Analysis Reports (see UFSAR Section 1.8.1.70).

On August 21, 2000, the operating licenses for the Salem Units 1 & 2, and for the Hope Creek station were transferred from Public Service Electric & Gas (PSE&G) to PSEG Nuclear LLC. PSEG Nuclear LLC, a limited liability company, is a subsidiary of Public Service Enterprise Group (PSEG), an investor-owned company headquartered in the State of New Jersey. PSEG Nuclear LLC is dedicated to the safe, reliable and efficient operation of the nuclear units and assumes full responsibility for meeting all license obligations. The relationship between PSEG and PSEG Nuclear LLC is shown in Figure 13.1-1.

For the Hope Creek project, Bechtel Power Corporation and Bechtel Construction, Inc. designed and constructed the plant. General Electric Company designed, supplied and provided engineering support for the Nuclear Steam Supply System (NSSS) for the Hope Creek project. For the Salem projects, PSE&G and Westinghouse Electric Corporation jointly participated in the design and construction of each unit. PSE&G provided an experienced and trained staff to support preoperational testing, core load and power ascension testing programs of the nuclear units.

Management of PSEG Nuclear LLC's nuclear program is provided by the President and Chief Nuclear Officer, Nuclear who reports to the President PSEG Power and Chief Operating Officer (Figure 13.1-2). The CNO is the chief nuclear manager on-site and is responsible for overseeing the direction, development and implementation of the nuclear program. Reporting to the CNO are the Hope Creek Vice-President (Section 13.1.1), Salem Vice President, Director-Operations Support (13.1.2), the Director-Regulatory Affairs (Section 13.1.3), the Director-Nuclear Oversight (Section 13.1.4), the Director - Corporate Services (Section 13.1.5), Director-Corporate Operations (Section 13.1.6) and select matrixed personnel providing business support and human resource services (Section 13.1.7). Table 13.1-1 provides a comparison between select PSEG Nuclear LLC terms and organization titles in the UFSAR and the corresponding terms and position titles used in Section 6.0 of the Hope Creek and Salem Technical Specifications.

#### 13.1.1.1 Hope Creek Site

The Vice President-Hope Creek is the senior manager directly responsible for the activities involving the safe, efficient and reliable operation and maintenance of the Hope Creek plant. These activities include, but are not limited to, plant operation, maintenance, work management, outage management, engineering support, training, chemistry, radiation protection, liaison activities with regulatory and other agencies, and general administration. The Vice President also ensures station commitment to the PSEG Nuclear LLC Operational QA Program by maintaining close liaison with the Director-Nuclear Oversight. The Director-Engineering, the Manager-Training, Manager-Performance Improvement, and the Plant Manager report to the Vice President. The Site Operations organization is shown in Figure 13.1-3.

##### 13.1.1.1.1 Engineering

The responsibilities of the Director-Engineering include:

- Engineering and design for plant modifications
- Thermal Performance Program
- Monitoring and trending of overall system performance.
- Coordination of system maintenance, surveillance and engineering activities.
- Timely and effective engineering support to ensure plant system readiness.
- Technical support associated with Technical Specification testing and surveillance.
- Responding to operational experience documents as appropriate.
- Preparation and revision of technical reports and procedures, and nonconformance resolution.
- Performing 50.59 evaluations of proposed design changes, temporary modifications, and abnormal operating occurrences, as required.
- Specifying or approving as required, inspections and/or tests.
- Control and maintenance of the design basis of the operating nuclear facilities
- Engineering and design for plant modifications
- Preparation and update of detailed engineering and design documents, including drawings and specifications, for all structures, systems and components (SSCs).

- Specifying applicable codes, standards, regulatory and quality requirements, acceptance standards and other design input in design documents.
- Performing design verification for SSCs covered by the Operational QA program.
- Reviewing design documents submitted by suppliers (including the NSSS supplier) and contractors.
- Analysis and resolution of steam generator issues.
- Nuclear Repair Program  
The Code Assurance Specialist shall review and approve specifications for Code Q-Listed materials, equipment and services to ensure they meet QA Program requirements.
- Inservice Inspection/Inservice Testing Programs
- Maintenance Rule Program
- Designating the "Engineer in Charge".
- Recommending engineering consultants and laboratories for procurement services and coordinating their activities.
- Specifying or approving as required, inspections and/or tests.
- Managing the development, installation and testing of plant modifications and other large projects.
- Valve programs.
- Identifying SSCs that are covered by the Operational QA Program.
- Probabilistic Risk Assessment Program.

#### 13.1.1.2 Performance Improvement

The Manager-Performance Improvement is responsible for Learning Program activities, to include:

- Operating Experience Program.
- Corrective Action Program.
- Self-Assessment Program.
- Benchmark Program
- Supporting the Nuclear Review Board, as needed.

#### 13.1.1.3 Training

The Manager-Training reports to the Vice President and is responsible for providing operations training, technical training, maintenance training, and learning support services.

#### 13.1.1.4 Plant Management

The Hope Creek Plant Manager is responsible for day-to-day operation of the Hope Creek unit, maintaining compliance with the operating licenses, ensuring the prompt reporting of unusual plant events and the implementation of effective corrective actions, and evaluating plant safety-related activities and ensuring that required support is available. Operations, Maintenance, Radiation Protection, Work Management, and Chemistry report directly to the Plant Manager thereby providing control over those activities necessary for safe operation and maintenance of the plants.

##### 13.1.1.4.1 Operations

The Operations Department is responsible for safe and efficient plant operation. The Director-Operations reports to the Plant Manager and is responsible for managing, directing and controlling the department's activities. The Director-Operations ensures that plant operation complies with the facility operating license, Technical Specifications and all governing regulations and company policies. This individual ensures that a properly trained, licensed and non-licensed staff is available to provide safe and efficient operation which, in turn, ensures plant availability and reliability. The Operations Department organization is shown in Figure 13.1-4.

Administratively, the Director-Operations is responsible for the review of conditions adverse to quality as reported in the corrective action program, reportable occurrences and other correspondence. The Director-Operations or his designee approves all operating procedures.

Reporting to the Director-Operations are the Reactor Engineering Manager, the Shift Operations Manager, the Operations Services Manager, and the Operations Support Manager.

The Reactor Engineering personnel provide technical support for safe and efficient reactor power maneuvers, and Technical Specification surveillance testing.

The Shift Operations Manager (designated by the Operations Director to oversee the performance of Technical Specification functions) is responsible for plant operations and the preparation, review and maintenance of departmental administrative, operating and emergency procedures. Reporting to the Shift Operations Manager are the Shift Managers, who provide routine direction to the operating shift.

The Operations Services Manager provides technical, special projects and administrative support for the Operations Department and the station. The responsibilities of the Operations Services Manager include:

- Reviewing conditions adverse to quality as reported in the corrective action program, reportable occurrences, departmental accident reports and other NRC correspondence.
- Reviewing tagging requests.
- Developing and maintaining systems to track and schedule departmental activities.

NOTE: Either the Shift Operations Manager or the Operations Services Manager may assume the authority and responsibility of the department in the absence of the Director-Operations provided they meet the qualifications.

In the event of an unexpected contingency, the succession of authority and responsibility for the overall operation of the station is in the following order:

1. Director-Operations
2. Shift Operations Manager
3. Operations Services Manager

The Operations Support Manager provides administrative support to the Operations Department in the areas of scheduling, procedures, corrective actions and training.

#### 13.1.1.4.1.1 Operating Shift Supervision

Supervision of shift personnel is under the direction of the Shift Manager, who reports to the Shift Operations Manager. The Shift Manager is responsible for the direct operation of the generating station in accordance with station, operating license, technical specifications and approved procedures. Shift Manager responsibilities include supervision, performance management, and reviewing/responding to issues, findings, open items and requests as required to operate the plant safely.

The Shift Manager has the authority to take any action necessary, including plant shutdown, to protect equipment or personnel and to act in accordance with approved procedures. During off-normal hours, the Shift Manager assumes responsibility for all plant functions in the absence of senior plant management. The Shift Manager supervises Operations Department shift personnel and inspects equipment to ensure that operations are conducted safely and



efficiently in compliance with the facility operating license and Technical Specifications. The Shift Manager also ensures the review and approval of completed check off lists, logs and other shift data to detect abnormal trends or potential operating problems. This individual ensures the approval of removal of equipment from service and performance of safety tagging in support of plant surveillance and maintenance.

The Shift Manager is assisted by the Shift Supervisor (SS). The SS assumes the Shift Manager's responsibilities in the event of this individual's unavailability. As assigned, the SS reviews procedures which apply to startup, power operation, shutdown, emergency and abnormal operation conditions. The SS provides direct supervision of the operating crews.

Personnel qualified as Shift Technical Advisor (STA/SS) are assigned on shift. The STA's responsibilities include:

- Providing an independent objective assessment concerning plant safety.
- Providing technical assistance to shift supervision during normal and abnormal conditions.
- Comparing operating to design parameters during transient or accident conditions to determine adequate core cooling and providing recommendations to prevent loss of adequate core cooling.
- Determining critical parameters in the event of instrument failure.
- Assisting in investigations of abnormal and unusual events as assigned.

#### 13.1.1.4.1.2 Operating Shift Crews

The shift crew composition, position titles, license qualifications and number of personnel on each shift are provided in the Technical Specifications, Section 6.0, Administrative Controls and the Nuclear Administrative Procedures.

Shift staffing meets and/or exceeds that stated in Supplement No. 1 of NUREG-0737. In addition, the following adjunct requirements will be incorporated in the administrative control of shift staffing:

1. A licensed senior reactor operator will be in the main control room area at all times when the unit is in operational condition 1 through 3 (Hope Creek) or mode 1 through 4 (Salem).
2. A licensed reactor operator will be in the main control room at all times whenever there is fuel in the reactor.

3. The licensed senior reactor operator assigned to supervise core alterations during refueling may have no concurrent operational duties.
4. If the Control Room Supervisor position is not filled by an STA/SRO, a qualified shift technical advisor is required in operational condition 1 through 3 (Hope Creek) or mode 1 through 4 (Salem).
5. In addition to the Radiation Protection Technician required to be on shift whenever there is fuel in the reactor, all shift personnel will be trained in basic radiation protection.
6. Shift hours will be administratively controlled to ensure compliance with current NRC policy.

#### 13.1.1.4.1.3 Licensed Operators

Reactor Operators (RO) report to the Shift Manager through the SS and perform all shift operations from the main control room. The RO is responsible for manipulating controls for startup, changing electrical output and reactor power, and plant shutdown as required. These functions are in compliance with the facility operating license and Technical Specifications to ensure safe and efficient operations. To meet these requirements, the licensed operator must:

- Remain knowledgeable about all operating, emergency and abnormal procedures.
- Complete check off lists, logs and other required shift data.
- Routinely observe plant equipment and parameters.
- Initiate immediate action necessary to maintain the plant in a safe condition during normal, abnormal, and emergency operations and shut the reactor down when it is determined that the safety of the reactor is in jeopardy, or whenever operating parameters exceed reactor protection system setpoints and an automatic shutdown or station response fails to occur.
- Direct the activities of non-licensed operators in support of plant operation.
- Provide an adequate shift turnover to ensure continuity of safe operation.

#### 13.1.1.4.1.4 Unlicensed Operators

The non-licensed operators perform routine duties outside of the main control room that are necessary for safe, continuous operation of the plant as directed by the Reactor Operators or Shift Supervisor.

Their duties also include:

- Completing check off lists, logs, and other shift data.
- Initiating immediate actions necessary to maintain assigned equipment in a safe condition during normal, abnormal and emergency operations.
- Routinely observe assigned equipment.
- Operating auxiliary equipment as assigned to support plant operations.

Shift electricians, instrumentation and control (I&C), mechanical, and radiation protection technicians coordinate their activities with the SS. These personnel perform support functions associated with electrical, I&C, mechanical, and radiation monitoring disciplines. During normal operation, they are available to perform surveillance, preventive and corrective maintenance. When periods of emergency or abnormal operating conditions exist, they are available as part of the plant Emergency Preparedness Program for emergency response and technical assistance.

#### 13.1.1.4.2 Maintenance

The Director-Maintenance reports to the Plant Manager and is responsible for all maintenance for the nuclear units and other on-site facilities in accordance with the facility licenses and applicable regulations. Specific responsibilities include:

- Performing electrical, mechanical, and instrument and controls maintenance
- Developing installation and testing instructions for plant modifications and projects.
- Implementing plant modification installation and testing.
- Providing Preventive/Predictive maintenance programs
- Ensuring maintenance personnel are properly trained and qualified
- Providing oversight of contract maintenance services
- Providing monitoring and oversight of maintenance activities

#### 13.1.1.4.3 Chemistry

The Manager-Chemistry Radwaste and Environmental reports to the Plant Manager and is responsible for implementing programs to ensure plant chemistry, radiochemistry and plant effluents / environmental monitoring are in accordance with the facility licenses and government regulations.

Chemistry is responsible for the development and implementation of the chemistry, radiochemistry, certain environmental monitoring and liquid effluent monitoring programs. Chemistry is also responsible for operation of the condensate demineralizers, demineralized water makeup plant, service water chlorination, non-radioactive liquid waste disposal system, oil-water separator and post-accident sampling system.

Chemistry is responsible for the sampling and analysis of plant fluid systems, chemistry results reporting, calibration of chemistry instrumentation, evaluation of laboratory and chemical systems operation and techniques, operation of deep bed demineralizers, plant water and chemical control systems, and maintaining the plant fluid systems and liquid effluents within established limits.

#### 13.1.1.4.4 Radiation Protection

The Manager-Radiation Protection reports to the Plant Manager and is responsible for implementation of the plant radiological safety, industrial safety, and radioactive material control programs in accordance with the facility operating license, government regulations and the PSEG Nuclear LLC Radiation Protection Program. These programs ensure that personnel exposure to radiation and releases of radioactive material to the environment meet ALARA requirements and that industrial safety practices are consistent with applicable regulations. The Radiation Protection Program and organization are described in Section 12.5.

#### 13.1.2 Operations Support

The Director-Operations Support reports to the President & Chief Nuclear Officer and is responsible for facility and yard maintenance, station/facilities support, repair and calibration of measuring and test equipment, projects and outage services.

### 13.1.3 Director-Regulatory Affairs

The Director-Regulatory Affairs is responsible for providing oversight and support of station licensing, regulatory and environmental activities, and managing the site environmental programs and maintaining oversight of nuclear communications. The Manager-Regulatory Compliance reports to the Director-Regulatory Affairs and is responsible for:

- Overall management of nuclear licensing and regulatory activities associated with the station.
- Managing the preparation, review and approval of licensing documents.
- Coordinating station involvement with regulatory agencies.

### 13.1.4 Nuclear Assessment

The Director-Nuclear Oversight (Director-NOS), reporting to the President and Chief Nuclear Officer, Nuclear, provides management direction and control of functions that assess the safe operation of the nuclear stations, the quality of work performed by support personnel, and compliance with the Operational QA Program, nuclear safety requirements, company policies, regulatory commitments and governmental regulations. The Director-NOS assures that an appropriate Quality Assurance Program (QAP) is established, maintained and effectively executed throughout the nuclear organization.

The Director-NOS advises PSEG Nuclear LLC management regarding the overall quality and safety of plant operations and makes recommendations for performance improvement, as appropriate. Reporting to the Director-NOS are the Manager-NOS Audits, the QA Programs Manager, the Employee Concerns Manager, and Assessment staff. The Manager-Audits is responsible for all audits performed in Nuclear.

A detailed description of the PSEG Nuclear LLC Operational Quality Assurance Program is provided in the Salem and Hope Creek Quality Assurance Topical Report (QATR).

### 13.1.5 Emergency Services

The Director - Corporate Services is responsible for providing oversight and support of Fire Protection, Emergency Preparedness, Security and the site access program including badging, background investigations and the fitness for duty program. The corporate medical department supports the medical portion of the fitness for duty program.

#### 13.1.6 Corporate Operations

The Director-Corporate Operations reports to the President and Chief Nuclear Officer and is responsible for Nuclear Fuels, BWR and PWR Fuel Procurement, Performance Improvement, Fire Protection, and Engineering Services.

#### 13.1.7 Finance and Human Resources

The Director Finance Nuclear as well as the Human Resources Manager are matrixed to the President and Chief Nuclear Officer, Nuclear. The Director Finance Nuclear provides direction to and oversight of business support functions to include: strategic planning, financial controls and services, and co-owner affairs.

The Human Resources Manager provides direction and oversight to include staffing and workforce planning, performance management, employee and labor relations.

#### 13.1.8 Personnel Qualifications

Plant personnel meet the minimum qualification requirements of Regulatory Guide 1.8, Revision 2 and ANSI/ANS 3.1-1981. Except for the following differences or clarifications:

- The individual designated as the Director-Operations who shall:
  - Hold a senior reactor operator license, or
  - Have held a senior reactor operator license for this or a similar unit (Hope Creek/BWR and Salem/PWR) or
  - Have been certified at an appropriate simulator for equivalent senior operator knowledge.
- Individuals designated as Shift Technical Advisors shall meet the experience, education and training requirements as specified in Regulatory Guide 1.8, Revision 2 and the administrative section of the Technical Specifications.
- Licensed operators shall comply with the requirements of 10 CFR Part 55
- The individual designated as the Manager-Radiation Protection shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.

The Plant Manager may authorize deviations from a qualification requirement for subordinate positions when the combined education, experience and managerial competency of an individual are judged sufficient to ensure adequate performance of designated responsibilities. Such judgment will be documented and will not be used to degrade staff overall qualification.

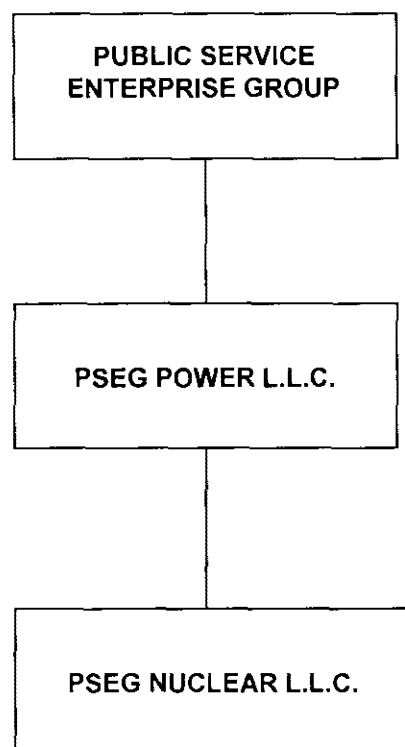
Engineering staff personnel meet the qualification requirements similar to those of major engineering firms, which consist primarily of individuals having college degrees or the equivalent experience in the appropriate science or engineering discipline. In certain instances, technicians who, by virtue of formal education, training programs, or experience, have acquired special expertise in particular areas are involved in providing technical support. In keeping with responsible management practices, the capabilities of individuals and necessary supervision are appropriately considered in making personnel assignments. Engineering managers designated as the "Engineer in Charge" meet or exceed the qualifications of ANSI/ANS 3.1-1981.

Table 13.1-1

Comparison of UFSAR Organization Titles with  
Technical Specification (Section 6.0) Position Titles

<u>UFSAR Organization Title</u>	<u>Technical Specification Position Title</u>
President and Chief Nuclear Officer, Nuclear	Senior Corporate Nuclear Officer
Plant Manager	same
Director-Operations	Operations Manager
Shift Operations Manager	Assistant Operations Manager
Shift Manager	Senior Nuclear Shift Supervisor
Shift Supervisor	Nuclear Shift Supervisor
Shift Technical Advisor	same
Nuclear Control Operator	same
Nuclear Equipment Operator	same
Manager-Radiation Protection	same
Radiation Protection Supervisor	same
Radiation Protection Technician	same
Director-Nuclear Oversight	Senior Management Position with Responsibility for Independent Nuclear and Safety Assessment Activities and Quality Program Oversight
Manager-Training	same
Fire Protection Manager	same

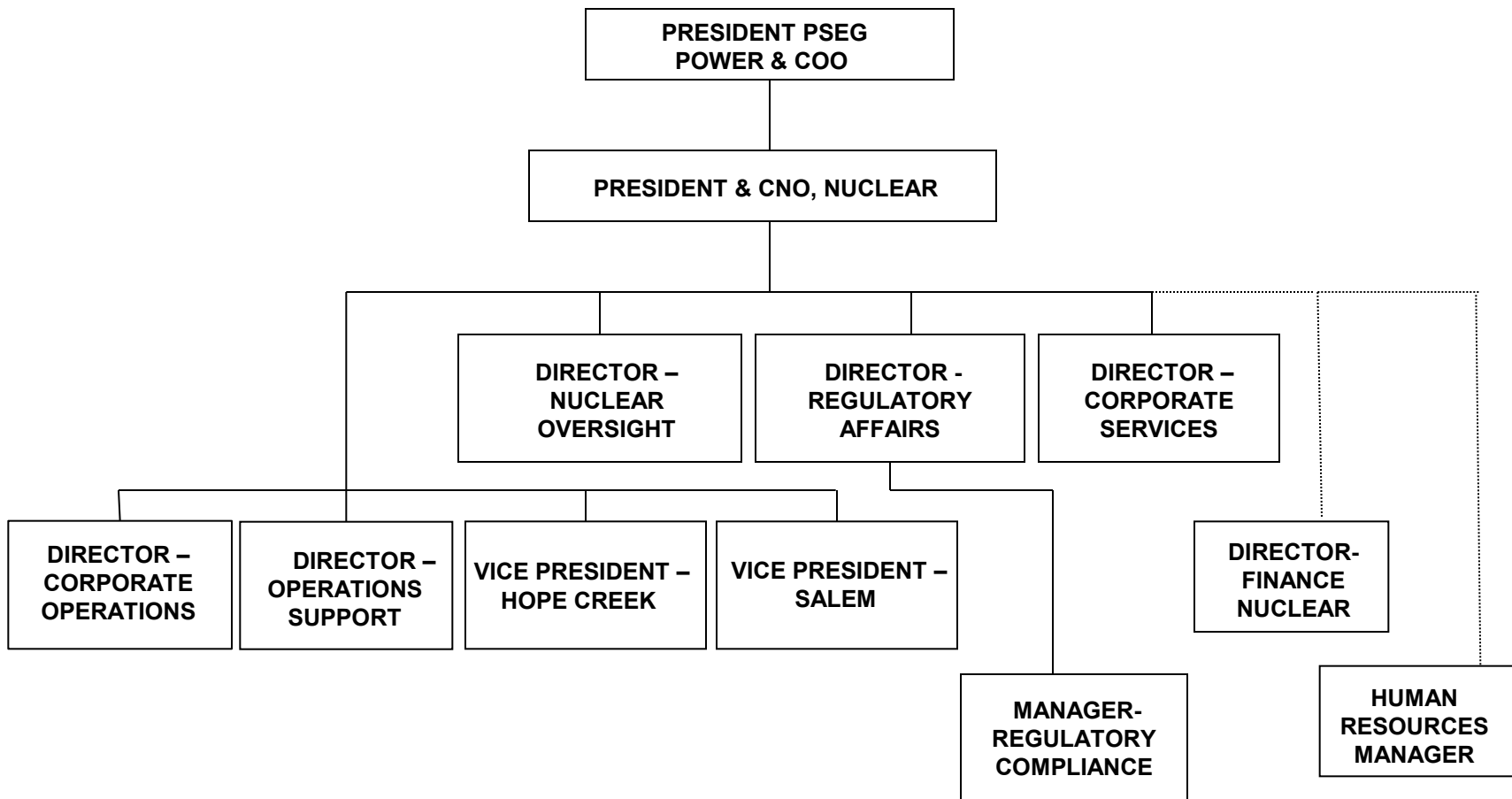




**PSEG NUCLEAR L.L.C.  
HOPE CREEK GENERATING STATION**

**RELATIONSHIP WITH PUBLIC  
SERVICE ENTERPRISE GROUP**

<b>HOPE CREEK UFSAR - REV 12</b>	<b>SHEET 1 OF 1</b>
<b>May 3, 2002</b>	<b>F13.1-1</b>

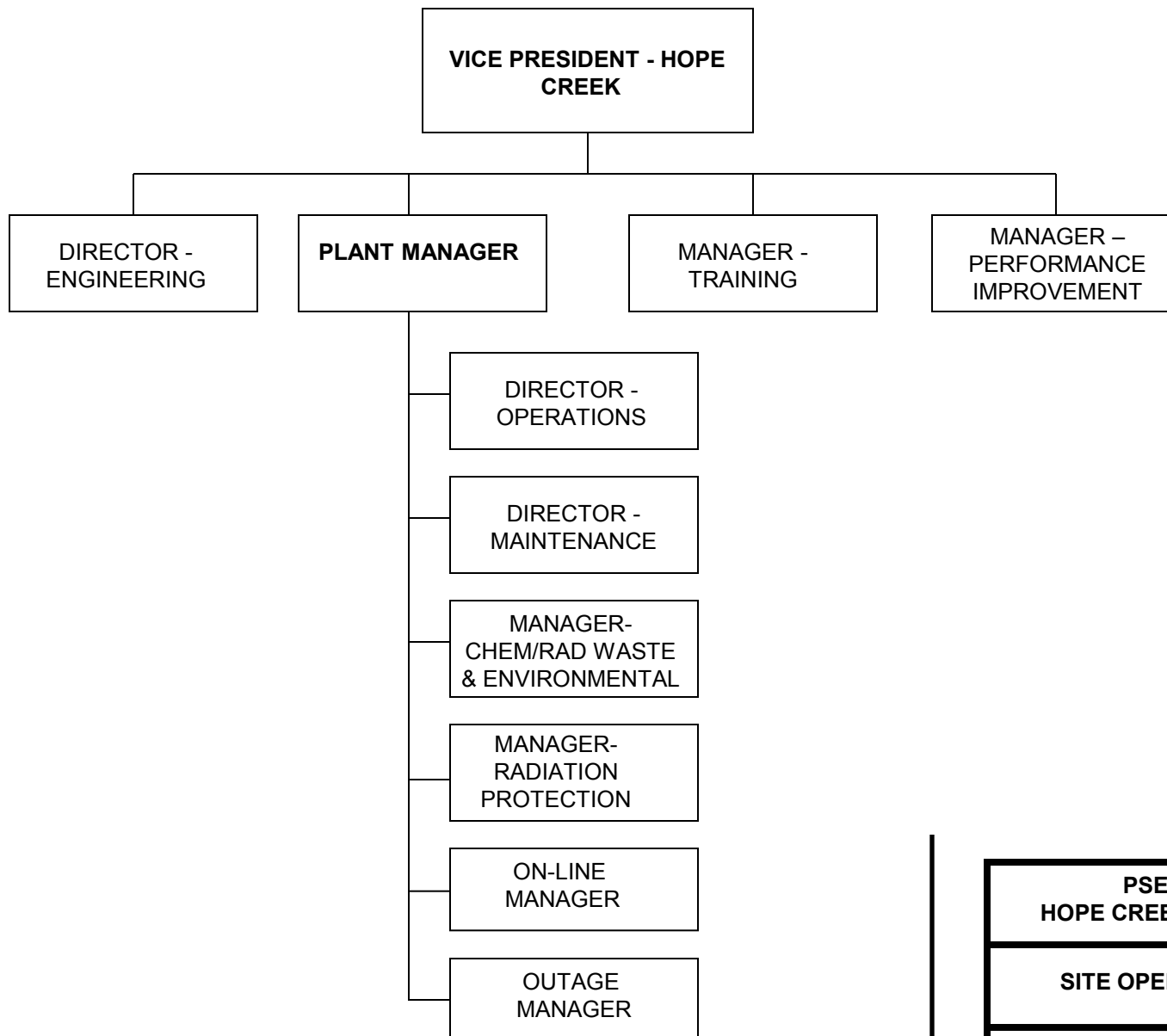


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**PSEG NUCLEAR L.L.C.  
HOPE CREEK GENERATING STATION**

**NUCLEAR ORGANIZATION**

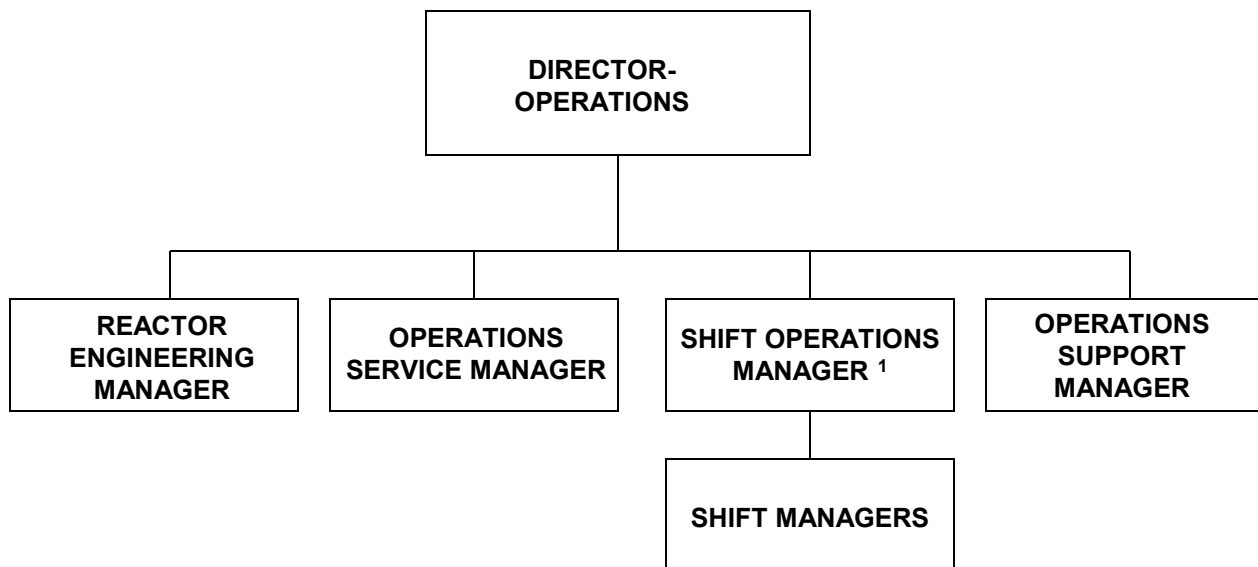
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HOPE CREEK GENERATING STATION**

**SITE OPERATIONS ORGANIZATION**

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**May 9, 2017 F13 .1-3**



NOTE (1) DESIGNATED BY THE DIRECTOR - OPERATIONS TO OVERSEE THE PERFORMANCE OF TECHNICAL SPECIFICATION FUNCTIONS.

**PSEG NUCLEAR L.L.C.  
HOPE CREEK GENERATING STATION**

**STATION OPERATIONS DEPARTMENT**

**HOPE CREEK UFSAR – REV 22 SHEET 1 OF 1**  
**May 9, 2017 F13.1-4**

## 13.2 TRAINING

The training program is formulated to provide an organization qualified to operate, maintain and support the facilities in a safe and reliable manner. The training program has been developed from a systematic analysis of job requirements using job and task analysis where available. This approach is consistent with Nuclear Regulatory Commission (NRC) regulations and the Institute of Nuclear Power Operations (INPO) recommendations for accreditation of training programs.

### 13.2.1 Accredited Training Programs

The following training programs have been accredited by INPO and are based on a Systems Approach to Training (SAT):

- \*Shift Supervisor
- Senior Reactor Operator
- \*Shift Technical Advisor
- Reactor Operator
- Nuclear Equipment Operator
- Continuing Training for Licensed Personnel
- \*Nonlicensed Operator
- Nuclear Technician - Chemistry
- \*Chemistry Technician
- Nuclear Technician - Controls
- \*Instrument and Control Technician
- \*Electrical Maintenance Personnel
- Nuclear Technician - Mechanical
- \*Mechanical Maintenance Personnel
- Nuclear Technician - Radiation Protection
- \*Radiological Protection Technician
- \*Engineering Support Personnel

\*Titles referenced in 10CFR50.120

The contents and details of these programs are contained in the Nuclear Training Manual.

### 13.2.2 Supervisory Training Program

In addition to the technical training received by department personnel, the supervisory training program offers technical and management skills training for supervision. This training follows guidelines given in applicable INPO documents.

### 13.2.3 Site Access Training

In order to be granted unescorted access to the site protected area, all personnel (including temporary maintenance and service personnel) are required to successfully complete General Employee Training (GET) and Fitness For Duty (FFD) training (10CFR26). Supervisors are required to successfully complete the supervisory portion of the FFD training. GET covers the following areas:

- General site personnel response to emergency situations
- Basic radiation protection practices
- Overview of Quality Assurance/Assessment
- Industrial safety
- Security Program requirements
- Hazardous materials

In order to be granted unescorted access to radiation and/or contaminated areas, personnel are required to successfully complete the Radiation Worker Training (RWT) program.

In order to maintain unescorted access to the site protected areas and the radiation and/or contaminated areas, personnel are required to complete the appropriate requalification program for GET and FFD and RWT. The frequency of retraining for GET and RWT is determined by following the Systematic Approach to Training (SAT) based training process. Retraining for FFD is required on an annual basis.

Program/course plans for GET, RWT and FFD are maintained with their associated training program documents.

### 13.2.4 Fire Brigade Training Program

Fire Brigade training is described in Section 9.5 and the Nuclear Training Manual.

### 13.3 EMERGENCY PLANNING

The Emergency Plan Manuals as revised describe the PSEG Nuclear LLC Emergency Preparedness Program. These manuals have been submitted as separate documents and provide a complete description of the emergency response for the Hope Creek and Salem Stations.

#### 13.4 REVIEW AND AUDIT

The independent review and audit functions are performed by the Plant Operations Review Committee (PORC), the Nuclear Oversight (NOS) organization, and the Nuclear Safety Review Board (NSRB). See the Salem and Hope Creek Quality Assurance Topical Report (QATR) for additional details.



### 13.5 PLANT PROCEDURES

Plant procedures are prepared by the plant staff, support organizations or contract organizations for applicable activities delineated in the Technical Specifications, Chapter 16, Section 6.8, at a minimum, and provide the controls necessary to comply with applicable Regulatory Guides as listed in Section 1.8 for Hope Creek and Appendix 3A for Salem. Procedures are prepared using a standard format and content, and a writer's guide, which provides human factors and style guidance.

A technical review and control process utilizing qualified reviewers functions to perform periodic or routine review of procedures. When periodic review is used as the assessment method, these controls will establish a schedule for review. Processing of Procedures and T&RMS, (AD-AA-101) and Writers Guide And Process Guide For Procedures and T&RMS, (AD-AA-101-1002) describe the review and approval process for procedures. Procedure changes that require a 10CFR50.59 evaluation are reviewed by the Plant Operations Review Committee (PORC).

Procedures are periodically reviewed and revised when changes are necessary or desirable. Similarly, procedures are reviewed and revised when necessary following the completion of system design changes or equipment modifications. Subsequent to an unexpected plant transient, significant operator error, etc., the appropriate procedure(s) receive a review. The purpose of this review is to ascertain whether the procedure may have contributed to the cause of the condition or was adequate in its capacity to mitigate the consequences.

Routine procedures provide the fundamental written guidance for routinely managing, operating and maintaining the plant. Routine plant procedures are assessed by users before and during use to determine if changes are necessary or desirable. Routine procedures receive an appropriate degree of scrutiny by individuals knowledgeable in the procedures, and are updated as necessary to ensure adequacy during suitably controlled activities such as normal procedure usage, development of plant modifications, industry experience reviews, licensing actions, training activities, corrective actions for nonconforming conditions, and quality assurance audits and surveillances.

Non-routine procedures are those procedures whose use is event-driven, such as Emergency Operating Procedures, Emergency Plan Implementing Procedures, Abnormal Procedures, and Alarm Response Procedures; these procedures will be reviewed every two years. However, if a non-routine procedure is fully exercised and there is a detailed scrutiny of the entire procedure as part of a documented training program, this may serve as the biennial review of the procedure.

Circumstances may develop during maintenance, operations and testing of plant systems when an existing procedure cannot be performed as written. The following prescribes the mechanisms which address these circumstances:

The On-The-Spot-Change (OTSC) Process may be used to change the content of implementing procedures provided that:

- The intent of the original procedure is not altered;
- The change is approved by two members of the unit's management staff, at least one of whom holds a Senior Reactor Operator's license holder on the unit affected and
- The change is documented and receives the same level of review and approval as the original procedure within 14 days of implementation.

The Partial Procedure Implementation Process may be used to omit procedure step(s) or section(s) (which may not be applicable or appropriate at the time of implementation) of implementing procedures provided that:

- The intent of the original procedure is not altered;
- The appropriateness of omitting the affected procedure step(s) or section(s) is reviewed by at least two members of the unit's management staff familiar with the procedure. However, for Maintenance implementing procedures, the appropriateness of omitting the affected procedure step(s) or section(s) may be reviewed by one member of the unit's management staff and one other individual, with both being familiar with the procedure.

#### 13.5.1 Administrative Procedure Hierarchy

The procedure hierarchy contains four levels of administrative documents for use:

- A. Policy documents, which contain the highest level of direction for a Functional Area.
- B. Description documents which define processes and programs that provide for the control of nuclear operations
- C. Administrative and Technical Procedures which incorporate regulatory requirements and commitments. Administrative Procedures provide direction in areas that are common to all on-site organizations. Administrative procedures also address at a minimum, those administrative procedures specified in Regulatory Guide 1.33, Appendix A, item 1. Station-Specific Administrative Procedures (SA or HC) provide direction in areas that are unique to a specific station(s).
- D. Training and Reference Materials (T&RMs) provide direction for specific activities that are within a Functional Area's scope of responsibility or between Functional Areas with similar functional responsibilities or that control administrative functions between a limited number of departments. T&RMs comply with all applicable requirements specified in procedures.

Included in this group of procedures are operationally oriented administrative procedures which provide guidelines for the Shift Managers and their shift crews as well as procedures for "Daily Orders" usage and control. These procedures meet the requirements of 10CFR50.54(i), (j) (1) and (m).

Additional topics for administrative procedures may be addressed as required, and material may be shifted between specific procedures as needed. Topics for administrative procedures are listed in Table 13.5-1.

#### 13.5.2 Operating and Maintenance Procedures

The operating and maintenance procedures meet the relevant requirements as discussed in Section 1.8 for Hope Creek and Appendix 3A for Salem of the respective UFSAR.

##### 13.5.2.1 Main Control Room Operating Procedures

The following categories delineate those procedures that are performed primarily within the main control room. Operator familiarization with these procedures is acquired through initial, re-qualification and replacement training programs. Furthermore, these procedures will be utilized in simulator training.

##### 13.5.2.1.1 System Operating Procedures

The procedures for startup, operation and shutdown of safety-related systems will be called System Operating Procedures (SOPs). SOPs will be developed to cover the operating activities listed in Regulatory Guide 1.33, Appendix A, item 4.

##### 13.5.2.1.2 General Plant Operating Procedures

The general plant operating procedures will be called integrated operating procedures (IOPs) and will include the following procedures:

- Refueling to Cold Shutdown
- Preparation for Plant Startup
- Startup from Cold Shutdown to Rated Power
- Shutdown from Rated Power to Cold Shutdown
- Cold Shutdown to Refueling
- Power Changes During Operations
- Operations from Hot Standby

#### 13.5.2.1.3 Procedures for Combating Emergencies and other Significant Events

The procedures for combating emergencies and other significant events will be broken down into two categories. The Emergency Operating Procedures (EOPs) will be developed from the BWR and PWR Owners Group Emergency Procedure Guidelines, and the Abnormal Operating Procedures (AOPs) will cover the additional items in Regulatory Guide 1.33, Appendix A, item 6. The EOPs include the procedures developed from the BWR and PWR Owners Group Emergency Procedure Guidelines and comply with NUREG-0737, Supplement 1, Section 7.0.

Abnormal Operating Procedures are listed in Table 13.5-2.

#### 13.5.2.1.4 Alarm Response Procedures

Alarm response procedures guide operators in their response to main control room alarm conditions. The alarm system consists of control room overhead annunciators, console pushbutton alarms, computer (digital) alarms and local/back panel alarms. A color code system (red, amber and white) is utilized for prioritizing control room overhead annunciators. The computer and local panel alarms are associated with an overhead annunciator. The priority of these alarms would be the same as the associated overhead alarm.

The alarm response procedures will be available in the main control room for the operators use. These procedures will be compiled in a manner which is consistent with the alarm system layout in the control room. For example, the overhead annunciator response procedures will be indexed by window box identification number.

#### 13.5.3 Additional Operating and Maintenance Procedures

The following categories delineate those procedures that are performed primarily outside the limits of the main control room.

##### 13.5.3.1 Chemistry Procedures

These procedures include chemical and radiochemical analysis, sample collection and equipment instruction. Chemistry procedures maintain coolant quality and concentrations of harmful agents within prescribed limits.

##### 13.5.3.2 Emergency Plan Procedures

The Emergency Plan procedures define emergency response actions required to ensure public health and safety. These procedures include the actions necessary to mitigate radiological incidents, abnormal operational events such as fires, as well as natural hazards and civil occurrences.

#### 13.5.3.3 Radiation Protection Procedures

Radiation protection procedures govern the implementation of the Radiation Protection Program described in Section 12.5. These procedures address access control and radiation work permits, contamination control, personnel monitoring, training and qualifications, radiological surveillance, respiratory protection, internal dose assessment, dose reduction (ALARA) and radioactive material control.

#### 13.5.3.4 Instrument and Control Procedures

Instrument and control procedures govern the required periodic calibration and testing of plant instrumentation and other instrument maintenance. These procedures have provisions for taking the instrument out of service, ensuring accuracy adequate to maintain safety parameters, recording the date, as-found condition, corrective action(s), as-left condition, restoration of the instrument to normal operating status and identity of personnel performing the test.

#### 13.5.3.5 Maintenance Procedures

Maintenance procedures provide guidelines for the maintenance of mechanical and electrical equipment in a satisfactory operational condition. This category also includes procedures for implementation of the preventive maintenance program for mechanical and electrical equipment, and the operational activities during Dry Cask Storage loading and unloading activities. In addition, they provide for calibration and testing of protective relays. These procedures have provisions for recording the date, as-found condition, corrective action(s), as-left condition and identity of personnel performing the test.

#### 13.5.3.6 Material Control Procedures

Material control procedures establish guidelines for the proper procurement, documentation, and control of materials and components associated with Q, F or R designated structures or systems. These procedures are sufficiently detailed to ensure that materials and components are purchased and handled in a controlled manner in accordance with 10CFR50, Appendix B.

#### 13.5.3.7 Radwaste Management Procedures

Radwaste procedures include operating procedures for the solid, liquid and gaseous radwaste systems, and provide administrative controls for the shipment of solid radwaste and release of liquid and gaseous radwaste. These controls include adherence to 10CFR71, and provisions that allow for liquid and gaseous radwaste releases only when required data, analyses and approvals are completed.

#### 13.5.3.8 Reactor Engineering Procedures

Reactor engineering procedures provide for the monitoring and evaluation of core thermal and hydraulic parameters. In addition, these procedures establish methods for evaluating fuel exposure, isotopic composition, core flux levels, and nuclear instrumentation setpoints as they relate to core power and flow.

#### 13.5.3.9 Records Procedures

Records procedures provide for the identification, preparation and retention of plant records. These procedures also address storage requirements and retention periods.

#### 13.5.3.10 Security Procedures

Security procedures describe and implement security requirements for the plants. These procedures include, but are not necessarily limited to, the subjects listed in Section 4.2 of ANSI N18.17-1973.

#### 13.5.3.11 Surveillance Procedures

Surveillance procedures provide for operability verification of safety-related structures and components in accordance with the Technical Specifications. Surveillances are scheduled for performance in compliance with the frequencies established in the Technical Specifications.

#### 13.5.3.12 Training Procedures

Training procedures establish guidelines to ensure that fully qualified personnel are responsible for the operation, maintenance and technical aspects of the plant. These procedures describe the training for licensed operators, licensed operator re-qualification, non-licensed personnel training and training for each discipline described in ANSI/ANS 3.1-1981.

#### 13.5.3.13 Fire Protection Procedures

Fire protection procedures cover various aspects of fire safety, such as control of combustibles, control of ignition sources, periodic inspections of fire protection equipment, fire brigade training, fire drills and control of hazardous operations. These procedures also cover fire fighting organization, activities during a fire emergency and individual responsibilities during a fire emergency.

#### 13.5.4 Technical Requirements Manual (TRM)

The Technical Requirements Manual (TRM) contains technical requirements and/or supporting information (e.g., tables and component lists) which were once contained in the HCGS Technical Specifications (TS) (i.e., Appendix A of the HCGS Facility Operating License). Removal of the TS and information is approved by the NRC through individual TS amendments. The TRM is intended to provide operational guidance and requirements for various plant conditions, actions, and testing similar to TS, however, these requirements are in accordance with licensing commitments. These changes add the TRM into the scope of procedures to be processed through the Station Qualified Reviewer (SQR) process and reviewed by PORC. Future changes to the relocated requirements and supporting information are processed in accordance with the Quality Assurance Topical Report (QATR), and are subject to 10CFR50.59 review. All non-editorial changes are reviewed by PORC.

The TRM is comprised of an index, the individual specification and bases. The manual is intended to provide a single location for the relocated TS items as a convenience for operations and other station personnel. The individual sections of the TRM contain the relocated licensing commitments, which are subject to the provisions of 10CFR50.59 described above, and are controlled in accordance with the applicable established procedure process.

TABLE 13.5-1  
ADMINISTRATIVE PROCEDURE TOPICS

- Administration Program Description
- Supplemental Workforce Program Description
- Business Planning Process Description
- Cost Management Process
- Project Evaluation and Authorization Process
- Budgeting Process Description
- Forecasting Process Description
- Salem/Peach Bottom Co-Owner Relationship
- Configuration Control Process Description
- Nonconforming Materials, Parts, or Components
- Outsourcing Engineering Work Authorization Process
- Margin Management
- Configuration Management
- Chemistry Process Description
- Environmental Program
- Environmental Management System Process
- Chemical Management Process
- Emergency Preparedness Process Description
- Equipment Reliability Process Description
- PSEG New Hire Engineer Mentoring Program
- Equipment Reliability Program Description
- Integrated Equipment Reliability Long Term Planning Process Description
- Material Degradation Management Program (MDMP)
- Regulatory Medical Testing Human Resources and Administration
- Exempt Overtime Human Resources and Administration

**Note:**

This list consists of all of the active "description documents" (which correspond to the prior Nuclear Administrative Procedures (NAPs) which were the top-level procedures from our prior procedure system).

It is a full-scale listing of the change from the old program to the new O.E.M. Program.

This list represents all of the documents in alpha-numeric order without using the document numbers themselves, since the list is by TOPICS.



TABLE 13-5-1 (Continued)

- Protected Activities and Selection Processes Human Resources And Administration
- Change Management Human Performance Policy
- Technical Human Performance Process Description
- Nuclear Cyber Security Program Description
- Nuclear Wireless Regulatory Compliance Program Description
- Licensing Process Descriptions
- Process Description - Interface with Other Outside Agencies
- Reload Control Process Description
- Special Nuclear Material Control Process Description
- Quality Assurance Topical Report (QATR)
- Nuclear Oversight Audit Process Description
- Nuclear Oversight Performance Assessment Process Description
- Nuclear Oversight Vendor Audit (NOVA) Process Description
- Independent Inspection Process Description
- Independent Safety Engineering Function Process
- Conduct of Operations Process Description
- Project Management
- Contractor Utilization
- Contractor Alliance Process
- Records Management (RM) Process Description
- Radiation Protection Process Description
- External Dose Control Program Description
- Internal Dose Control Program Description
- Respiratory Protection Program Description
- Radioactive Material Control Program Description

TABLE 13-5-1 (Continued)

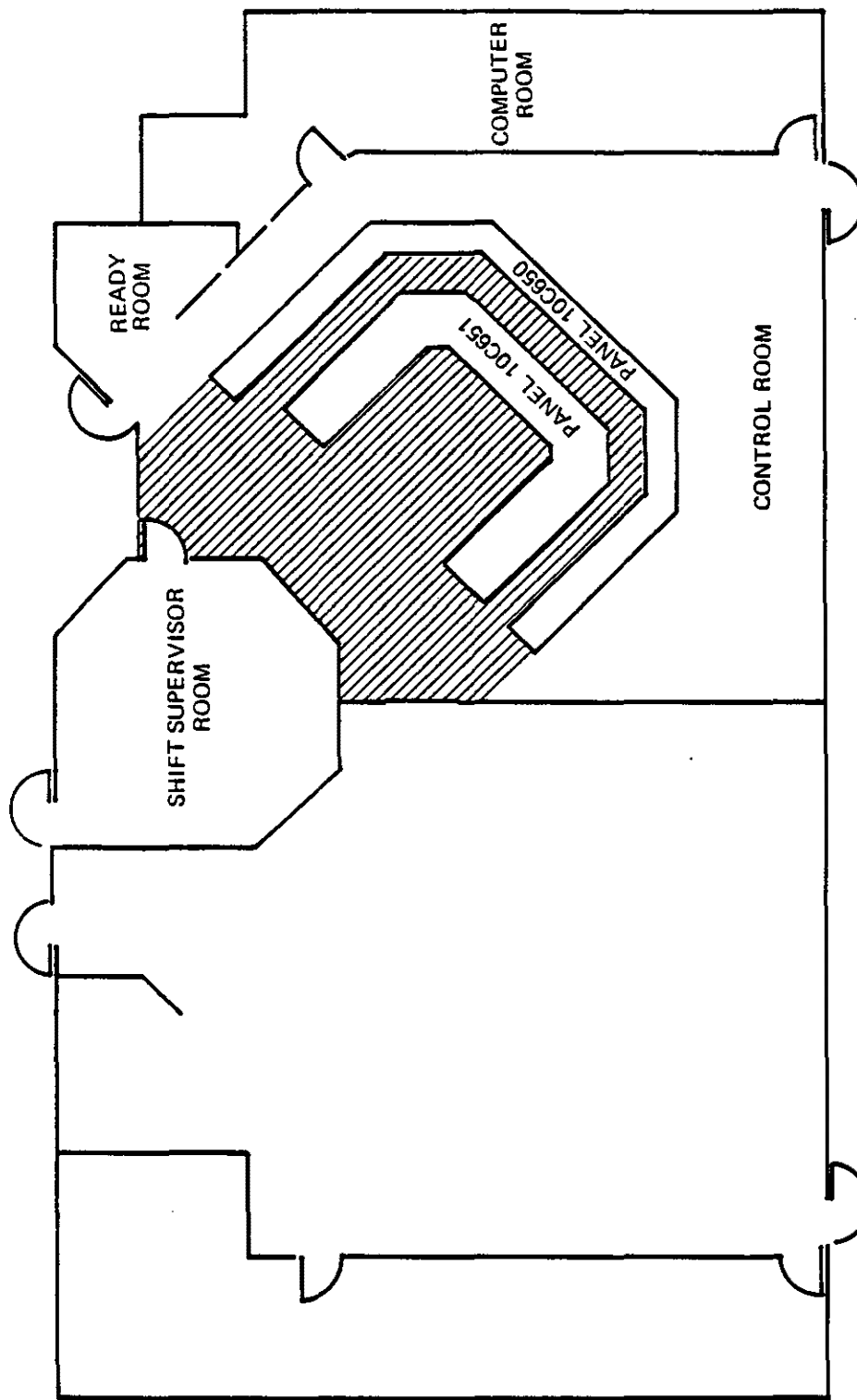
- High Radiation Area Program Description
- Radioactive Material/Waste Transportation/Disposal Program Description
- Radwaste Process Description
- Physical Protection Process Description
- Radioactive Contamination Control Program Description
- ALARA Program Description
- Radiological Instrumentation Program Description
- Radiological Posting and Labeling Program Description
- Fitness For Duty Process Description
- Access Authorization Process Description
- Training System Development Process Description
- Work Management Process Description

TABLE 13.5-2  
ABNORMAL OPERATING PROCEDURES

- Loss of Protective System Channels
- Acts of Nature
- Fire Protection System Activation - Plant Fires
- Fuel Cladding Failure
- Abnormal Release of Radioactivity
- Turbine Trip
- Generator Load Reject
- Plant Chemistry Out-of Specification
- Condenser Tube Leakage
- Dropped Control Rod
- Failed Open Safety/Pressure Relief Valve
- Control Room Evacuation
- Loss Of Electrical Power (Blackout)
- Loss of Primary Containment Integrity
- Loss of Secondary Containment Integrity (Hope Creek)
- Loss of Circulating Water
- Loss of Condenser Vacuum
- Loss of Recirculation Pump or Flow (Hope Creek)
- Loss of Generator Stator Water Cooling
- Loss of Generator Seal Oil
- Loss of Service Air

TABLE 13-5-2 (Continued)

- Loss of Instrument Air
- Loss of Shutdown Cooling
- Loss of Main Turbine Lube Oil
- Loss of Reactor Auxiliary Cooling Water (Hope Creek)
- Loss of Safety and Turbine Auxiliary Cooling Water (Hope Creek)
- Rod Control System Malfunction
- Loss of Feedwater or Feedwater Control
- Service Water System Malfunction
- Reactor Pressure Control System Malfunction
- Reactor Vessel Level Control System Malfunction (Hope Creek)
- Neutron Monitoring System Malfunction
- Fuel Pool Cooling
- Fuel Pool Cleanup System Malfunction (Hope Creek)
- Standby Liquid Control System Initiation (Hope Creek)



SHADED AREA INDICATES THE AREA  
DESIGNATED 'AT THE CONTROLS'

REVISION 0  
APRIL 11, 1988

PUBLIC SERVICE ELECTRIC AND GAS COMPANY  
HOPE CREEK NUCLEAR GENERATING STATION

"AT THE CONTROLS"  
AREA - MAIN CONTROL ROOM

UPDATED FSAR

FIGURE 13.5-1

## 13.6 PLANT RECORDS

### 13.6.1 Plant History

The records of the preoperational phase of plant operation have been compiled and filed with the station records and are available for reference. These records include the results and analysis of preoperational testing, initial fuel loading, low power level tests and power escalation tests prior to commercial operation. Following the conduct of a test using a prepared test procedure, results are maintained in the station records.

### 13.6.2 Operating Records

Records concerning facility operations are maintained in the form of logs, log sheets, charts, and other such internal reports as are needed to document pertinent operating conditions, test and inspections.

The Operations Department logs constitute an important part of the operating history. The record in these logs is regarded as the authentic record of occurrences. Entries are made promptly, accurately and completely, and the logs are initialed or signed and dated by authorized personnel or otherwise authenticated.

An automatic Data Logger provides an hourly printout of various plant parameters. A computer is available for making calculations pertaining to plant performance, core power distribution and reactor power output.

### 13.6.3 Event Records

The plant instrument recorder charts are marked to indicate unusual or significant occurrences. The records of operation are reviewed daily and unusual occurrences are noted and corrections made as required. The minimum records to be kept are identified and retained in accordance with the Technical Specifications.

#### 13.6.4 Maintenance and Testing Records

Each department maintains records to show, in detail, both preventive and corrective maintenance to all major equipment assigned to their department.

#### 13.6.5 Additional Records

In addition to the station operation, maintenance and test records, personal radiation exposure records, environmental monitoring records and chemistry records are maintained.

Records relating to radiation and radioactive materials are retained in accordance with the requirements of 10CFR20 and the New Jersey Radiation Protection Code.

Personnel radiation exposure records provide information on current exposure of personnel in controlled areas, total accumulated exposures for all site personnel, bioassay results for internal deposition of radioactive materials and other measured or calculated data in regard to exposure of personnel to radioactive materials. Radiation Protection surveys of radiation levels and radioactive contamination shall be maintained on appropriate record forms.

Releases of wastes to the environment are monitored for radioactivity and records of the results maintained.

Inspections and survey records of shipments and receipt of radioactive materials as required by the Department of Transportation are kept on file.

### 13.7 SECURITY

The Security Plan describes a comprehensive program of physical protection for the facilities. Details of the Security Plan are considered Safeguards Information and are withheld from public disclosure. The plan addresses the following topics:

1. Physical security organization
2. Physical barriers
3. Access requirements
4. Detection aids
5. Communication requirements
6. Testing and maintenance
7. Response requirements.