

13.1 ORGANIZATIONAL STRUCTURE

Section 13.1 of the FSAR is organized as follows, based on guidance provided in NRC Regulatory Guide 1.70, Revision 2:

	Susquehanna Nuclear, LLC Management and Technical Support Organization (i.e., Off-Site Organization)	Susquehanna Nuclear, LLC Operating Organization (i.e., On-Site Organization)	Talen Energy Corporate Organization
Description of functions and responsibilities.	13.1.1	13.1.2	N/A
Position qualification requirements.	13.1.1.3	13.1.3	N/A
Résumés of incumbents.	Table 13.1-1	Table 13.1-2	N/A
Organizational chart.	Figure 13.1-2	Figure 13.1-3	Figure 13.1-1

13.1.1 MANAGEMENT AND TECHNICAL SUPPORT ORGANIZATION

This section describes the functions, responsibilities, and qualifications of personnel of the Susquehanna Nuclear, LLC off-site organization. The term “off-site organization” is used to describe those groups and personnel who do not ultimately report to the Plant Manager. Personnel belonging to the off-site organization may be physically located at the Talen Energy Corporation headquarters or at Susquehanna Steam Electric Station. The structure of the off-site organization is depicted in Figure 13.1-2.

13.1.1.1 Design and Operating Responsibilities

13.1.1.1.1 Design and Construction Activities (Project Phase) (HISTORICAL)

The principal site related engineering work, the design of the plant, site layout, development of the PSAR and FSAR, the procurement of material and equipment and construction of the plant was performed by Bechtel Power Corporation and other consultants. PPL (the original corporation responsible for the plant) formed a Nuclear Department to review and monitor design and construction activities.

13.1.1.1.2 Preoperational Activities (HISTORICAL)

In designing the Advanced Control Room for Susquehanna, PPL incorporated the results of an operability analysis performed to establish good interface between the operators and controls. NRC review of the Advanced Control Room identified no significant deficiencies.

In acquiring personnel for the plant staff, PPL selected experienced people from within PPL when possible and supplemented these personnel with nuclear-experienced personnel from outside the company. All personnel filling the plant staff positions listed in Section 13.1.3.1 met the qualification requirements of ANSI N18.1-1971 in addition to the various selections and screening processes developed and used by the company. Once selected, appropriate training programs were administered as described in Section 13.2.

The initial test organization and plans are described in Section 14.2.

The operating and maintenance procedures are described in Section 13.5.

13.1.1.1.3 Technical Support for Operations: Responsibilities and Authorities of Personnel in the Off-Site Organization

a) Chief Nuclear Officer¹

The Chief Nuclear Officer serves as the corporate officer responsible for the company's nuclear efforts, including design, maintenance, and operations. The Chief Nuclear Officer has corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety. The Chief Nuclear Officer is responsible for establishing and maintaining the off-site and on-site nuclear organizations in accordance with applicable regulations, license requirements, and Technical Specification Requirements.

The Chief Nuclear Officer is responsible for performance of those oversight functions that verify compliance with OQA Program requirements and for management of the interfaces between Susquehanna Nuclear, LLC and the principle federal and state regulators. The Chief Nuclear Officer is also responsible for the development and implementation of the Susquehanna Nuclear, LLC employee concerns program. The subordinate managers and representatives responsible for these functions are assured direct access to the Talen Energy Corporation President & CEO to preclude any potential independence conflicts they may experience as a function of their reporting relationship to the Chief Nuclear Officer.

The following positions report directly to the Chief Nuclear Officer:

- The senior executive manager
- Manager-Nuclear Oversight
- Employee Concerns Program Representative(s)

b) Senior Executive Manager

The senior executive manager is responsible for providing managerial leadership and strategic direction for the operation of Susquehanna Nuclear, LLC and for developing and implementing the Susquehanna Nuclear, LLC nuclear training programs.

c) Engineering Executive Manager

The engineering executive manager is responsible for providing leadership and strategic direction for engineering activities and their quality management. These activities include ensuring that the design basis, detailed design of the plant, and the design control program are adequate to meet Susquehanna Nuclear, LLC's commitment to safe, efficient, and reliable operation. The engineering executive manager is also responsible for design and design verification related to plant modifications, establishment of technical requirements for the procurement of systems, components and spare parts, engineering support for outage activities, procuring Nuclear Fuel, engineering safety analysis and special projects.

¹ This is the specific title for the individual responsible for "Corporate Officer" position described in Technical Specification 5.2.1.

In addition to the above responsibilities, the engineering executive manager is specifically responsible for:

- On-going planning, development, maintenance, and upgrade of information services within Susquehanna Nuclear, LLC, including hardware and software.
- Providing procedural guidance on the implementation of the Non-Process Software Quality Assurance Program.
- Providing for the procurement of materials and services in support of the safe, efficient, and reliable operation and maintenance of SSSES.
- Serving as the principal Susquehanna Nuclear, LLC contact with the Talen Energy information services support personnel relative to information services functions.
- Serving as the principal Susquehanna Nuclear, LLC contact with the Talen Energy supply chain support personnel relative to procurement, procurement engineering and warehousing functions.

d) Design Engineering

The management position responsible for Design Engineering is responsible for the design and modification of the plant in accordance with applicable codes, standards, and regulations. Nuclear Design Engineering provides engineering support to identify technological solutions to address plant problems, and to establish and implement procedures that control material and component specifications, system designs, and modification activities. The management position responsible for Design Engineering is also responsible for configuration management and oversight of the procurement engineering functions performed by the Talen Energy supply chain support personnel.

e) Nuclear Fuels

The management position responsible for Nuclear Fuels is responsible for managing the nuclear fuel cycle from acquisition of nuclear fuel to ultimate disposal of the fuel. This includes procuring, designing, disposing, and providing technical support with regard to nuclear fuel.

The management position responsible for Nuclear Fuels is also responsible for fuel engineering safety analysis and risk assessment.

f) Manager-Nuclear Oversight Responsibilities²

The Manager-Nuclear Oversight reports to the Chief Nuclear Officer and, if conditions warrant, has direct access to the Talen Energy Corporation President & CEO. The Manager-Nuclear Oversight is responsible for the following functions:

- Independent audit/assessment of Susquehanna Nuclear, LLC activities.
- Independent Technical Review functions in response to NUREG-0737.
- Administration of the Operational Quality Assurance (OQA) Program.
- Quality control activities, including of receipt inspection.
- Vendor oversight activities.

² This is the specific title for the individual responsible for “performing quality assurance functions” as described in Technical Specification 5.2.1.

- The nondestructive examination (NDE) program and the functions of the corporate NDE-Level III.

The individuals who perform quality assurance functions shall have sufficient organizational freedom to ensure their independence from operating pressures.

g) Station Engineering

The management position responsible for Station Engineering is responsible for providing the engineering necessary to support operations and maintenance at SSES by optimizing plant system and equipment performance. This is accomplished by monitoring system and equipment performance, anticipating, defining, and preventing problems, identifying and implementing improvements, and resolving unexpected problems. The management position responsible for Station Engineering is also responsible for providing procedural guidance on the implementation of the Process Software Quality Assurance program, maintaining the welding program, and ASME Section XI code repair. Sub-functions include:

- Computer Systems
- Power and Generation
- Safety and Support
- Equipment Reliability
- Fire Protection
- Programs and Testing

h) Nuclear Training³

The management position responsible for Nuclear Training is responsible for the management and control of training and qualification for all personnel (except those in Nuclear Security) who support Susquehanna, and for making sure all programs are current and accredited. The management position responsible for Nuclear Training is responsible for providing training to support other Susquehanna Nuclear, LLC management positions in the task of ensuring that subordinates are knowledgeable of the policies, programs, procedures, principles, skills, tools, equipment handling capabilities, and other information necessary to competently, safely, and efficiently accomplish their assigned tasks. The individuals who train the operating staff shall have sufficient organizational freedom to ensure their independence from operating pressures.

i) Nuclear Regulatory Affairs

The management position responsible for Nuclear Regulatory Affairs is responsible for managing the interfaces between Susquehanna Nuclear, LLC and the principal state and federal nuclear regulatory agencies, directing the licensing aspects of SSES including updating the FSAR, and coordinating the preparation and issuance of correspondence to the NRC.

³ This is the description for the individual that fulfills the responsibilities for "training the operating staff" as described in Technical Specification 5.2.1.

The management position responsible for Nuclear Regulatory Affairs is responsible for the administration of the Susquehanna corrective action, self-assessment and operating experience programs. This includes development and maintenance of trending, tracking, and reporting activities associated with these programs.

j) Nuclear Security

The management position responsible for Nuclear Security is responsible for providing physical security for SSES. This includes preventing radiological sabotage or other acts that would endanger public health or safety, and protecting against the commission of acts contrary to law and/or company policy.

The management position responsible for Nuclear Security is responsible for providing security coverage around the clock; specific staffing is described in the SSES Security Plan.

k) Emergency Planning

The management position responsible for Emergency Planning is responsible for approving Emergency Plan changes, managing the drill and exercise program.

The management position responsible for Emergency Planning is responsible for providing emergency response organization coverage around the clock; staffing is described in the SSES Emergency Plan.

l) Records Management/Document Control

The management position responsible for Records Management and Document Control is responsible for developing and implementing a records management/document control system for SSES that meets requirements of the OQA Program.

The management position responsible for Records Management and Document Control is responsible for the administrative functions to facilitate Susquehanna Operations.

13.1.1.2 Organizational Arrangement: Off-Site Organization

The structure of the off-site organization is depicted in Figure 13.1-2.

13.1.1.3 Qualification Requirements for Personnel in the Off-Site Organization

Personnel selected for the off-site positions listed on the matrix below shall meet the experience, education, and/or certification requirements presented in the referenced section of the applicable standard, as endorsed by the associated Regulatory Guide (where applicable).

Off-Site Organization Position Title	Applicable Standard (Assoc. Reg. Guide)	Standard Position Title (Section Reference)
Engineering Executive Manager	ANSI/ANS 3.1-2014 (Reg. Guide 1.8, Rev. 4)	Senior Manager - Engineering (4.2.4)
Manager-Nuclear Oversight	ANSI/ANS 3.1-1993 (Reg. Guide 1.8, Rev. 3)	Quality Assurance (4.3.7)

The section below describes the minimum experience, education, and qualification requirements for personnel in Susquehanna Nuclear, LLC's off-site organization.

- *ANSI/Regulatory Guide requirements, if any, are presented in italics. Deviations from commitments to ANSI/Regulatory Guide requirements are not permitted without prior approval from the NRC.*
- Requirements imposed by Susquehanna Nuclear, LLC are presented in regular font, and are more restrictive than the ANSI requirements, if any, applicable to the position. Deviations from requirements imposed by Susquehanna Nuclear, LLC may be authorized by the senior management personnel at or above the Executive Manager level (as applicable to the subject subordinate personnel) when, in their judgment, the combined education, experience, and managerial competency of a particular individual are sufficient to ensure adequate performance of assigned responsibilities. Such exceptions will be documented in writing and will not be used as a means to degrade the overall qualifications of the nuclear staff.

Résumés of key personnel in the off-site organization are accessible per the instructions found in Table 13.1-1.

a) Chief Nuclear Officer

Education: Shall hold a recognized baccalaureate or higher degree in science or engineering in a field associated with power production.

Experience: Shall have ten years experience associated with power plant design and operation of which at least five years must be nuclear-related experience.

b) Senior Executive Manager

Education: Shall hold a recognized baccalaureate or higher degree in science or engineering in a field associated with power production.

Experience: Shall have ten years experience associated with power plant design and operation of which at least five years must be nuclear-related experience.

c) Engineering Executive Manager

Education, experience, and special requirements shall meet ANSI/ANS 3.1-2014.

d) Management Position Responsible for Nuclear Design Engineering

Education: Shall hold a recognized baccalaureate or higher degree in engineering or a related physical science.

Experience: Shall have ten years related experience including five years nuclear-related experience in responsible supervisory positions.

e) Management Position Responsible for Nuclear Fuels

Education: Shall hold a recognized baccalaureate or higher degree in engineering or a related physical science.

Experience: Shall have ten years experience in progressively more responsible roles, of which 5 years must be nuclear-related experience. He/she shall have knowledge of the nuclear fuel cycle, nuclear fuel analyses, safety and licensing requirements, and nuclear fuel procurement and contracting practices. Experience in core management is desirable.

f) Management Position Responsible for Nuclear Regulatory Affairs

Education: Shall hold a recognized baccalaureate degree.

Experience: Shall have ten years related experience, including a minimum of 5 years nuclear-related experience in responsible supervisory positions.

g) Manager-Nuclear Oversight

Education: Baccalaureate in engineering or related science.

Experience: Related experience (4 years) which shall include Nuclear Power Plant (2 years) and Supervisory or Management (1 year).

Individuals who do not possess the formal educational and experience requirements specified above will not be eliminated automatically when other factors provide sufficient demonstration of their abilities. These other factors are to be evaluated on a case-by-case basis and approved and documented by the Chief Nuclear Officer. However, the individual assigned to this position is to meet the special requirements specified below.

Special Requirement: Management and supervisory skills (leadership, interpersonal communication, management responsibilities and limits, motivation of personnel, problem analysis and decision making and administrative policies and procedures).

Special Requirement: Shall have 1 year of experience performing quality verification activities. The term "quality verification" is defined as "The act of reviewing, inspecting, testing, checking, auditing, or otherwise determining and documenting whether items, processes, services, or documents conform to specified requirements integral to the QA Program."

h) Management Position Responsible for Station Engineering

Education: Shall hold a baccalaureate or higher degree in engineering or the physical sciences.

Experience: Shall have ten years of experience related to engineering or the physical sciences, including five years nuclear-related experience that includes participation in the activities of an operating nuclear power plant.

i) Management Position Responsible for Nuclear Security

Education: Shall hold a high school diploma or equivalent.

Experience: Should have eight years experience in management or supervisory positions, two of those years should be in security related fields.

j) Management Position Responsible for Nuclear Training

Education: Shall hold a recognized baccalaureate degree.

Experience: Shall have eight years in responsible positions, of which three years shall be nuclear power plant experience. A maximum of four years of the remaining five years of experience may be fulfilled by satisfactory completion of academic training.

13.1.2 OPERATING ORGANIZATION

This section describes the functions and responsibilities of personnel of the Susquehanna Nuclear, LLC on-site organization. The term “on-site organization” is used to describe those groups and personnel who ultimately report to the Plant Manager. In general, personnel of the on-site organization are physically located at Susquehanna Steam Electric Station.

NOTE: Talen Energy provides on-site support at Susquehanna for various functions including financial/business services, health services, information services, supply chain (sourcing and logistic services), human resources, etc. Talen Energy also provides some maintenance/labor support.

NOTE: PPL Electric Utilities provides resources in support of switchyard and transmission activities via a Transition Services Agreement.

13.1.2.1 Plant (On-Site) Organization

The structure of the on-site organization is depicted in Figure 13.1-3.

13.1.2.2 Plant (On-Site) Personnel Responsibilities and Authorities

The chain of command/line of succession for nuclear operations as described in 13.1.2.2.c (2) is as follows:

- Chief Nuclear Officer
- Senior Executive Manager
- Plant Manager (or Duty Manager as assigned)
- Management Position Responsible for Nuclear Operations
- Assistant Operations Management Position Responsible for Shift Operations
- Shift Manager
- On-Shift Crew

Descriptions of the on-site organization follow.

a) Plant Manager⁴

The Plant Manager is responsible for overall safe operation of the plant and shall have control over those on-site activities necessary for safe operation and maintenance of the plant. The Plant Manager shall delegate in writing the succession to this responsibility during his/her absence. This responsibility is implemented in such a fashion as to ensure safe, efficient, and reliable operation of SSES. Responsibilities include:

- Ensuring protection of plant personnel and the public from radiation exposure and/or consequences of an accident at the plant.
- Operating and maintaining SSES in compliance with the applicable requirements of the Nuclear Regulatory Commission and other Regulatory agencies, and in full compliance with the facility Operating License, the Technical Specifications, the FSAR, and the OQA Program including its implementing documents.
- Approving, prior to implementation, each proposed test, experiment, or modification to systems or equipment that affect nuclear safety.
- Developing and implementing administrative procedures to limit the working hours of unit staff who perform safety-related functions (e.g., licensed Senior Reactor Operators, licensed Reactor Operators, health physicists, auxiliary operators, and key maintenance personnel), in accordance with Tech Spec 5.2.2.e.
- Managing the interface with the Institute of Nuclear Power Operations (INPO).

The following positions report directly to the Plant Manager:

- Management Position Responsible for Nuclear Operations
- Management Position Responsible for Nuclear Maintenance
- Management Position Responsible for Radiation Protection
- Management Position Responsible for Plant Chemistry/Environmental
- Management Position Responsible for Work Management (Online)

⁴ This is the specific title for the individual responsible for the "plant manager" position described in Technical Specification 5.2.1.

- Management Position Responsible for Work Management (Outage)

b) Management Position Responsible for Nuclear Maintenance

The Management Position Responsible for Nuclear Maintenance directs the plant mechanical, electrical, and instrument and controls maintenance activities and related support services. The Management Position Responsible for Nuclear Maintenance is responsible for close liaison between other station organizations to assure safe equipment operation, shutdown, startup, and functional testing, and to assure that work is performed in accordance with station radiation protection procedures which maintain worker exposures as low as reasonably achievable. Sub-functions include:

- Electrical Maintenance
- I&C Maintenance
- Mechanical Maintenance
- Maintenance Planning
- Modification Installation/Planning
- Fix-it-now (FIN) Team (includes predictive maintenance)
- Management of Refuel Floor Activities
- Project management of the Dry Fuel Storage Program
- Component Maintenance Optimization (includes predictive and component maintenance engineering functions)

The Superintendent of Maintenance Programs reports to the Management Position Responsible for Nuclear Maintenance.

c) Management Position Responsible for Nuclear Operations⁵

The Management Position Responsible for Nuclear Operations is responsible for all plant operations including routine as well as abnormal or emergency operating situations. The Management Position Responsible for Nuclear Operations is responsible to see that all operations are carried out in a safe, efficient manner, and that the plant is operated in conformance to the Operating License, Technical Specifications, and in accordance with approved written procedures. The Management Position Responsible for Nuclear Operations is responsible for ensuring that a Reactivity Management Program is in place at SSES. The Management Position Responsible for Nuclear Operations is responsible for a close liaison between other station groups to assure safe equipment operation, to assure that surveillance activities are carried out in accordance with written procedures and as specified in the Technical Specifications, to assure that other station activities do not place the plant in an unsafe condition, and to assure that all operating activities are performed with appropriate radiological safety considerations. The Management Position Responsible for Nuclear Operations is also responsible for all on-site nuclear fuel management and fuel performance programs; control of special nuclear material; planning and coordination of all core refueling and core performance testing activities; and administration of the reactivity management program. During the absence of the Management Position Responsible for Nuclear Operations, these responsibilities are delegated to the Assistant Operations Management Position

⁵ This is the description for the individual that fulfills the responsibilities of the "Operations Manager" position described in Technical Specification 5.2.2.

Responsible for Shift Operations, the on-duty Shift Manager, or other designated supervisor.

(1) Assistant Operations Management Position Responsible for Shift Operations⁶

The Management Position Responsible for Shift Operations reports to the Management Position Responsible for Nuclear Operations and is responsible for supervising day-to-day direction of Operations shift personnel. The Assistant Operations Management Position Responsible for Shift Operations is the focal point for work groups with the authority to implement station priorities in accordance with regulatory requirements.

(2) Shift Managers⁷

The Shift Managers report to the Assistant Operations Management Position Responsible for Shift Operations. They are responsible for the control room command function and are in charge of and responsible for the operations of the plant on their specific shift. The Shift Managers have the authority to shut down the plant if, in their opinion, plant conditions indicate that a nuclear safety hazard exists or approved procedures so direct. Shift Managers direct plant operations, supervise and check the performance of control room and other operators, inspect equipment when required, and respond to plant or equipment abnormalities in accordance with approved plant procedures. Additionally, Shift Managers inform station management in a timely manner of conditions which may affect public safety, plant personnel safety, plant capacity or reliability, or cause hazard to equipment. In addition, the Shift Manager, during off normal hours, assumes responsibility for all plant functions in the absence of senior plant management. The Shift Manager initially assumes the role of Emergency Director upon entry into an Emergency Plan condition. He/she is relieved of this duty when a qualified Emergency Director is prepared to assume control of the emergency.

During any absence of the Shift Manager from the control room while the unit is in Mode 1, 2, or 3, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function.

During any absence of the Shift Manager from the control room while the unit is in Mode 4 or 5, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

(3) Unit Supervisors

Unit Supervisors assist the Shift Managers in their duties and assume their direct responsibilities in the event of the unavailability of the Shift Managers. Unit Supervisors direct the manipulation of unit controls. The Shift Managers and Unit

⁶ This is the description for the individual that fulfills the "Assistant Operations Manager" position described in Technical Specification 5.2.2.

⁷ This is the description for the individual that fulfills "Shift Supervisor" position described in Technical Specifications 5.1.2 and 5.2.2.

Supervisors participate in operator training, retraining and requalification activities from the standpoint of providing guidance, direction, and instruction to shift personnel as well as pursuing academic work to keep their SRO licenses current. As assigned by the Manager-Nuclear Operations, the Shift Managers and Unit Supervisors review procedures as they apply to startup, shutdown, power operation, load changes, fuel handling, emergency situations, and surveillance activities from the standpoint of safety, accuracy, and experience gained as a result of operation.

(4) Licensed Operators

Licensed Operators perform operations directed by Unit Supervisors, manipulate the unit controls, monitor control room instrumentation, respond to plant or equipment abnormalities in accordance with approved plant procedures, direct the activities of non-licensed operators, and log plant operations, systems or equipment abnormalities, and plant data. Plant shutdowns or scrams may be initiated by these operators when observation of plant conditions and equipment indicate a nuclear safety hazard exists, or approved procedures so direct. Licensed Operators manipulate process controls as necessary to match load demand and to respond to other process changes. Licensed Operators are responsible for taking immediate operator action necessary to maintain or bring the plant to a safe condition during abnormal and/or emergency conditions. Licensed Operators participate in the training of new Licensed Operators and maintain their operator licenses by participating in the License Requalification Program detailed in Section 13.2.

(5) Non-Licensed Operators

Non-licensed Operators perform duties outside the control room as assigned and necessary for continuous, safe plant operation and are available to shift supervision for additional work assignments that arise from time to time. They assist in plant startup, shutdown, surveillance, and emergency response as directed by shift supervision. For those tasks requiring the use of checklists or procedures, such as valving for plant startup, or data sheets used on routine equipment checks, they are responsible for performing these assigned evolutions and for making accurate entries according to the applicable procedure, data sheet, or checklist. The Non-Licensed Operators are responsible for improvement and upgrading of their own performance by participating in the applicable sections of the training program detailed in Section 13.2.

(6) Shift Personnel

Shift Personnel are instructed that should conditions exceed pre-established radiation levels or exposure limits, or if conditions occur that are deemed to be unsafe or hazardous, shift supervision will be informed. Two Radiation Protection Technicians or qualified alternates will be available to each shift and, if shift supervision feels that a radiological condition exists that warrants attention and investigation by Radiation Protection, the Radiation Protection Technicians will be directed to assist as necessary. A Chemistry Technician or qualified alternate will be available to each shift to provide assistance as required.

(7) Shift Technical Advisors

Shift Technical Advisors provide advisory technical support to the Shift Managers in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to safe operation of the unit. Shift Technical Advisors are assigned to each operating shift and provide diagnosis of plant conditions and advise control room personnel on the status of critical plant parameters during major tests, significant plant evolutions, transients, and accidents. Shift Technical Advisors advise shift supervision on the future course of actions to terminate or mitigate the consequences of major plant transients and accidents and perform other engineering support duties as assigned.

(8) Assistant Operations Management Position Responsible for Work Control

The Assistant Operations Management Position Responsible for Work Control reports directly to the Management Position Responsible for Nuclear Operations. The Assistant Operations Management Position Responsible for Work Control is responsible for coordinating and scheduling plant work, providing general administrative support and maintaining the various programs used by the Operations organization.

d) Management Position Responsible for Radiation Protection⁸

The Management Position Responsible for Radiation Protection is responsible for implementing the SSES Radiological Protection Program, including developing radiological protection standards, monitoring the implementation of these standards, and ensuring compliance with governing regulations. The Management Position Responsible for Radiation Protection is also responsible for dosimetry, the storage of radioactive material, radwaste shipment (which includes processing and inspection), radwaste management, radiological operations, decontamination, ALARA functions and support services.

A radiation protection technician shall be on site when fuel is in the reactor. The position may be vacant for not more than two hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position. As described in the Emergency Plan, radiation protection coverage is provided around the clock.

The individuals who perform Radiation Protection program activities shall have sufficient organizational freedom to ensure their independence from operating pressures.

e) Management Position Responsible for Work Management (Online)

The Management Position Responsible for Work Management (Online) is responsible for the coordination of the process by which physical work activities are scoped, planned, scheduled, coordinated, released, and completed. The Management Position Responsible for Work Management (Online) is responsible for the interface between SSES organizations to ensure coordination of all activities associated with work at the

⁸ This is the description for the individual that fulfills the responsibilities for “carrying out health physics” as described in Technical Specification 5.2.1 and for the “Supervisor-Health Physics” position described in Technical Specification 5.3.1.

station including corrective and preventive maintenance, surveillances, modifications support, and testing.

f) Management Position Responsible for Work Management (Outage)

The Management Position Responsible for Work Management (Outage) is responsible for providing long-term outage strategy, direction, and leadership for Susquehanna Nuclear, LLC to ensure that activities can be planned, scheduled, and completed in a high quality and productive manner without compromising the safety of the public, plant personnel, or plant equipment.

g) Management Position Responsible for Plant Chemistry/Environmental

The Management Position Responsible for Plant Chemistry/Environmental is responsible for maintaining an effective plant chemistry program that preserves and protects plant components and equipment, providing an accurate and thorough analytical laboratory, and complying with the governing radiological and non-radiological environmental regulations to minimize corrosion and ensure plant, personnel, and public safety.

As described in the SSES Emergency Plan, chemistry coverage is provided around the clock.

13.1.2.3 Operating Shift Crews

SSES is staffed to address requirements specified by 10CFR50.54(m)(2)(i), Technical Specification 5.2.2.a, Technical Specification 5.2.2.g, and the Susquehanna Nuclear, LLC Emergency Plan. For normal operation of both units, the minimum shift composition consists of fifteen (15) qualified individuals as defined in the Emergency Plan Section 6.1.

A rotational schedule for six operating crews is typically maintained. For those operations that involve core alterations, direct supervision of fuel movements is provided by an individual holding an SRO License or SRO Limited to Fuel Handling. This person shall have no other concurrent responsibilities during this assignment.

Radiation Protection, Chemistry and Security coverage is provided around the clock and is discussed in Sections 13.1.2.2. e, 13.1.2.2. g and 13.1.1.1.3.j, respectively.

13.1.3 QUALIFICATION REQUIREMENTS FOR NUCLEAR PLANT (ON-SITE) PERSONNEL

13.1.3.1 Minimum Required Qualifications

Personnel selected for the on-site positions listed on the matrix below shall meet the experience, education, and/or certification requirements presented in the referenced section of the applicable standard, as endorsed by the associated Regulatory Guide (where applicable).

On-Site Organization Position Title	Applicable Standard (Assoc. Reg. Guide)	Standard Position Title (Section Reference)
Plant Manager	ANSI/ANS 3.1 – 1978	Plant Manager (4.2.1)
Management Position Responsible for Nuclear Maintenance	ANSI/ANS 3.1 – 1978	Maintenance Manager (4.2.3)
Management Position Responsible for Nuclear Operations ¹	ANSI/ANS 3.1 – 1978	Operations Manager (4.2.2)
Management Position Responsible for Radiation Protection ²	ANSI N18.1 – 1971 (Reg. Guide 1.8, Rev. 1- R)	Radiation Protection (4.4.4)
Management Position Responsible for Work Management (Online)	ANSI/ANS 3.1 – 1978	Technical Manager (4.2.4)
Management Position Responsible for Work Management (Outage)	ANSI/ANS 3.1 – 1978	Technical Manager (4.2.4)
Management Position Responsible for Plant Chemistry/ Environmental	ANSI/ANS 3.1 – 1978	Chemistry and Radiochemistry (4.4.3)
Assistant Operations Management Position Responsible for Shift Operations ¹	ANSI/ANS 3.1 – 1978	Operations Manager (4.2.2)
Assistant Operations Management Position Responsible for Work Control	ANSI/ANS 3.1 – 1978	Technical Manager (4.2.4)
Shift Manager ²	ANSI/ANS 3.1 – 1981 (Reg. Guide 1.8, Rev. 2)	Shift Supervisor (4.3.1.1)
Unit Supervisor ²	ANSI/ANS 3.1 – 1981 (Reg. Guide 1.8, Rev. 2)	Senior Operator (4.3.1.2)
Licensed Operator ²	ANSI/ANS 3.1 – 1981 (Reg. Guide 1.8, Rev. 2)	Licensed Operator (4.5.1.2)
Non-Licensed Operator	ANSI/ANS 3.1 – 1978	Operator (Non-Licensed) (4.5.1)
Shift Technical Advisor ²	ANSI/ANS 3.1 – 1981 (Reg. Guide 1.8, Rev. 2)	Shift Technical Advisor (4.4.8)
Supervisor-I&C Crews	ANSI/ANS 3.1 – 1978	Instrumentation and Control (4.4.2)

On-Site Organization Position Title	Applicable Standard (Assoc. Reg. Guide)	Standard Position Title (Section Reference)
Foreman and Assistant Foreman: Electrical Repairs, Radiation Protection, I&C, Mechanical Repairs	ANSI/ANS 3.1 – 1978	Supervisors not requiring NRC licenses (4.3.2)
Technician: Radiation Protection, I&C	ANSI/ANS 3.1 – 1978	Technician (4.5.2)
Mechanic	ANSI/ANS 3.1 – 1978	Maintenance Personnel (4.5.3)
Supervisor-Reactor Engineering	ANSI/ANS 3.1 – 1978	Reactor Engineering (4.4.1)
Notes: 1. The Management Position Responsible for Nuclear Operations (Tech Spec title “Operations Manager”) <u>or</u> the Assistant Operations Management Position Responsible for Shift Operations (Tech Spec title “Assistant Operations Manager”) shall hold a Senior Reactor Operator license. (See Technical Specification 5.2.2.f) 2. See Technical Specification 5.3.1.		

The section below describes the minimum experience, education, and qualification requirements for personnel in Susquehanna Nuclear, LLC's on-site organization.

- *ANSI/Regulatory Guide requirements are presented in italics. Deviations from commitments to ANSI/Regulatory Guide requirements are not permitted without prior approval from the NRC.*
- Requirements imposed by Susquehanna Nuclear, LLC, if any, are presented in regular font, and are more restrictive than the ANSI/Regulatory Guide requirements applicable to the position. Deviations from requirements imposed by Susquehanna Nuclear, LLC may be authorized by the senior management personnel at or above the Executive Manager level (as applicable to the subject subordinate personnel) when, in their judgment, the combined education, experience, and managerial competency of a particular individual are sufficient to ensure adequate performance of assigned responsibilities. Such exceptions will be documented in writing and will not be used as a means to degrade the overall qualifications of the nuclear staff.

Résumés of key personnel in the on-site organization are accessible per the instructions found in Table 13.1-2.

a) Plant Manager

Education: Should hold a recognized baccalaureate or higher degree in an engineering or scientific field generally associated with power plants.

Experience: Shall have ten years of responsible power plant experience, of which three years shall be nuclear power plant experience. A maximum of four years of the remaining seven years of experience may be fulfilled by academic training on a one-for-one time basis. To be acceptable, this academic training shall be in an engineering or

scientific field generally associated with power plants. Also, shall have acquired the experience and equivalent training normally required to be eligible for a Senior Reactor Operator's License, whether or not the examination is taken. If one or more persons are designated as principal alternates for the plant manager, and meet the experience and training requirements established for the plant manager, the requirements for the plant manager may be reduced such that only one of his/her ten years of experience need be nuclear power plant experience and that he/she need not be eligible for NRC examination.

b) Management Position Responsible for Nuclear Operations

Education: Shall hold a high school diploma or equivalent.

Experience: Shall have eight years of responsible power plant experience of which a minimum of three years shall be nuclear power plant experience. A maximum of two years of the remaining five years of power plant experience may be fulfilled by satisfactory completion of academic or related technical training on a one-for-one time basis.

Certification: Shall meet one or more of the following: a) hold a SRO License or b) have been certified to have equivalent senior operator knowledge and the position qualification is in conjunction with the Assistant Operations Management Position Responsible for Shift Operations who holds a SRO License (in accordance with SSS Technical Specification 5.2.2.f.).

c) Management Position Responsible for Radiation Protection

Education: Shall (should) hold a recognized baccalaureate degree or the equivalent in a science or engineering subject, including some formal training in radiation protection.

Experience: Shall (should) have five years of professional experience in applied radiation protection. (A master's degree may be considered equivalent to one year of professional experience, and a doctor's degree may be considered equivalent to two years of professional experience where course work related to radiation protection is involved.) At least three years of this professional experience shall (should) be in applied radiation protection work in a nuclear facility dealing with radiological problems similar to those encountered in nuclear power stations, preferably in an actual nuclear power station.

d) Management Position Responsible for Work Management (Online)

Education: Shall hold a high school diploma or equivalent.

Experience: Shall have eight years in responsible positions related to power generation, of which three years shall be nuclear power plant experience. A maximum of four years of the remaining five years of experience may be fulfilled by satisfactory completion of academic or related technical training.

e) Management Position Responsible for Work Management (Outage)

Education: Shall hold a high school diploma or equivalent.

Experience: Shall have eight years in responsible positions related to power generation, of which three years shall be nuclear power plant experience. A maximum of four years of the remaining five years of experience may be fulfilled by satisfactory completion of academic or related technical training.

f) Management Position Responsible for Plant Chemistry/Environmental

Education: Shall hold a high school diploma or equivalent.

Experience: Shall have five years experience in chemistry of which one year shall be in radiochemistry at an operating nuclear power plant. Two years of this five years experience shall be related technical training. A maximum of four years of this five years experience may be related technical or academic training.

g) Assistant Operations Management Position Responsible for Shift Operations

Education: Shall hold a high school diploma or equivalent.

Experience: Shall have eight years of responsible power plant experience of which a minimum of three years shall be nuclear power plant experience. A maximum of two years of the remaining five years of power plant experience may be fulfilled by satisfactory completion of academic or related technical training on a one-for-one time basis.

Certification: Shall meet one or more of the following: a) hold a SRO License or b) have been certified to have equivalent senior operator knowledge and the position qualification is in conjunction with the Manager-Nuclear Operations who holds a SRO License (in accordance with SSES Technical Specification 5.2.2.f.).

h) Assistant Operations Management Position Responsible for Work Control

Education: Shall hold a high school diploma or equivalent.

Experience: Shall have eight years in responsible positions related to power generation, of which three years shall be nuclear power plant experience. A maximum of four years of the remaining five years of experience may be fulfilled by satisfactory completion of academic or related technical training.

i) Shift Manager

Shall have the education, experience, training, and certification detailed in ANSI/ANS 3.1-1981, Section 4.3.1.1, "Supervisors Requiring NRC License: Shift Supervisor."

j) Unit Supervisor

Shall have the education, experience, training, and certification detailed in ANSI/ANS 3.1-1981, Section 4.3.1.2, "Supervisors Requiring NRC License: Senior Operator."

k) Licensed Operator

Shall have the education, experience, training, and certification detailed in ANSI/ANS 3.1-1981, Section 4.5.1.2, "Licensed Operators."

l) Non-Licensed Operator

Education: Shall hold a high school diploma or equivalent.

Experience: Shall have two years of power plant experience and should possess a high degree of manual dexterity and mature judgment. One year shall be nuclear power plant experience. At least six months of the nuclear experience shall be at the plant for which he/she seeks a license unless his/her nuclear experience was acquired on a similar unit. Six months credit may be granted toward the experience requirement for individuals whose related technical training or relevant experience may warrant such credit.

m) Shift Technical Advisor

Shall have the education, experience, training, and certification detailed in ANSI/ANS 3.1-1981, Section 4.4.8, "Shift Technical Advisor." In addition, Shift Technical Advisors shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.

n) Supervisor-I&C Crews

Education: Shall hold a high school diploma or equivalent.

Experience: Shall have five years of experience in instrumentation and control, of which one year shall be in nuclear instrumentation and control at an operating nuclear power plant. Two years of this five years experience shall be related technical training. A maximum of four years of this five years experience may be fulfilled by related technical or academic training.

o) Foreman and Assistant Foreman: Electrical Repairs, Radiation Protection, I&C, Mechanical Repairs

Education: Shall hold a high school diploma or equivalent.

Experience: Shall have four years of experience in the craft or discipline he/she supervises.

p) Technician: Radiation Protection, I&C

Education: Shall hold a high school diploma or equivalent.

Experience: Shall have three years of working experience in their specialty of which one year should be related technical training. They should possess a high degree of manual dexterity and ability and should be capable of learning and applying basic skills.

q) Mechanic

Education: Shall hold a high school diploma or equivalent.

Experience: Shall have three years of working experience in one or more crafts. Should possess a high degree of manual dexterity and ability and should be capable of learning and applying basic skills in maintenance operations.

r) Management Position Responsible for Nuclear Maintenance

Education: Shall hold a high school diploma or equivalent.

Experience: Shall have seven years of responsible power plant experience, a minimum of one year of which shall be nuclear power plant experience. A maximum of two years of the remaining six years of experience may be fulfilled by academic or related technical training on a one-for-one time basis. He/she further should have nondestructive testing familiarity, craft knowledge, and an understanding of electrical, pressure vessel, and piping codes.

s) Supervisor-Reactor Engineering

Education: Shall hold a recognized baccalaureate or higher degree in engineering or a related physical science.

Experience: Shall have four years of experience or a graduate degree and three years of experience. Two of these years shall be nuclear power plant experience. The experience shall be in such areas as reactor physics, core measurements, core heat transfer, and core physics testing programs. Successful completion of a reactor engineering training program (such as the twelve-week concentrated programs offered by NSS vendors) may be equivalent to one year's nuclear power plant experience.

13.1.3.1.1 Qualifications of Personnel Who Cannot Be Directly Cross-Referenced to ANSI/ANS 3.1-1978

Personnel filling positions that cannot be directly cross-referenced to corresponding positions in ANSI/ANS 3.1-1978 have that combination of education, experience and skills commensurate with their functional level of responsibility which provides assurance that decisions and actions during normal and abnormal conditions will be such that the plant is operated in a safe and efficient manner.

13.1.3.2 Qualifications of Incumbent Plant Personnel

Résumés of key personnel in the on-site organization are accessible per the instructions found in Table 13.1-2.

Table 13.1-1
Resumes of Key Personnel In Off-Site Organization

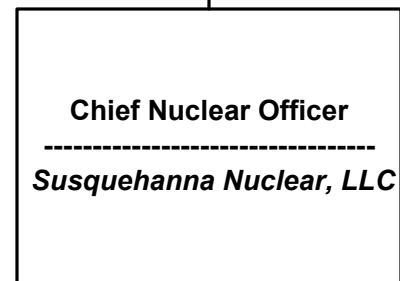
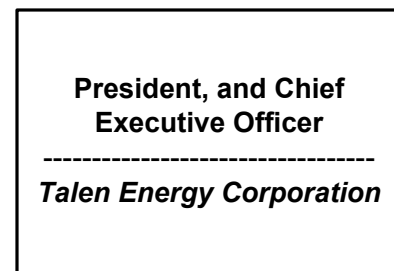
The résumés of the personnel who occupy the positions listed below are maintained as separate records. Refer to NDAP-QA-0001 to determine how to locate the desired résumé.

- ◆ Chief Nuclear Officer
- ◆ Senior Executive Manager
- ◆ Engineering Executive Manager
- ◆ Management Position responsible for Nuclear Design Engineering
- ◆ Management Position responsible for Nuclear Fuels
- ◆ Management Position responsible for Nuclear Regulatory Affairs
- ◆ Manager-Nuclear Oversight
- ◆ Management Position responsible for Station Engineering
- ◆ Supervisor-Reactor Engineering
- ◆ Management Position responsible for Special Projects
- ◆ Management Position responsible for Nuclear Security
- ◆ Management Position responsible for Nuclear Training

Table 13.1-2**Resumes of Key Plant Personnel In OnSite Organization**

The résumés of the personnel who occupy the positions listed below are maintained as separate records. Refer to NDAP-QA-0001 to determine how to locate the desired résumé.

- ◆ Plant Manager
- ◆ Management Position responsible for Maintenance
- ◆ Management Position responsible for Nuclear Operations
- ◆ Management Position responsible for-Nuclear Procurement
- ◆ Management Position responsible for Radiation Protection
- ◆ Management Position responsible for Work Management
- ◆ Management Position responsible for Plant Chemistry/Environmental
- ◆ Assistant Operations Management Position-Shift Operations
- ◆ Assistant Operations Management Position-Work Control
- ◆ Shift Managers
- ◆ Supervisor-Corrective Action and Assessment



Traditional corporate support services such as:

- Financial/business services,
 - health services,
 - information services,
- human resource services,
- supply chain services and
- some maintenance/labor support are provided through Talen Energy

Susquehanna Nuclear, LLC
(See Figures 13.1-2 and 13.1-3)

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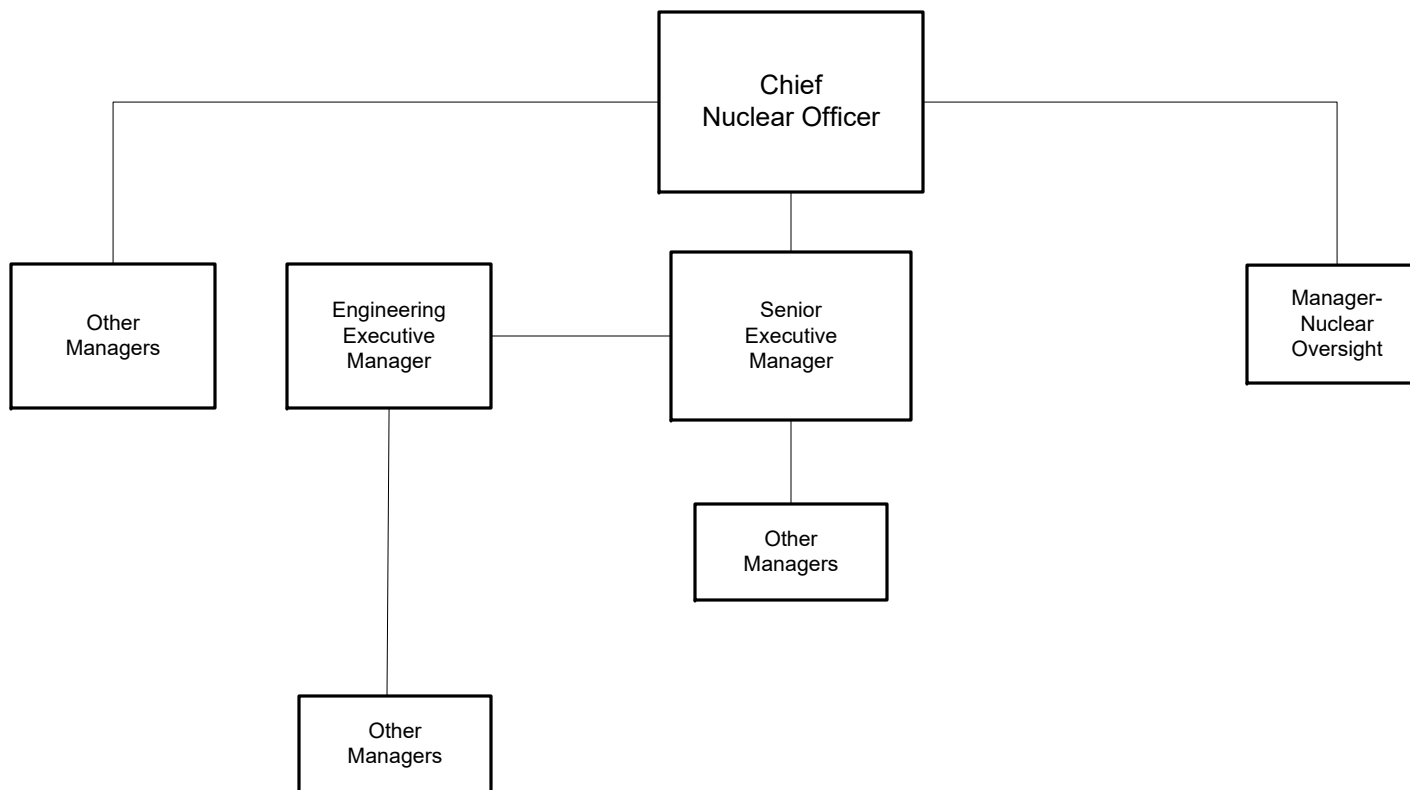
Figure Rev. 65

**SUSQUEHANNA STEAM ELECTRIC STATION
UNITS 1 AND 2
FINAL SAFETY ANALYSIS REPORT**

**TALEN ENERGY CORPORATION
MANAGEMENT ORGANIZATION
APPLICABLE TO SUSQUEHANNA SES**

FIGURE 13.1-1

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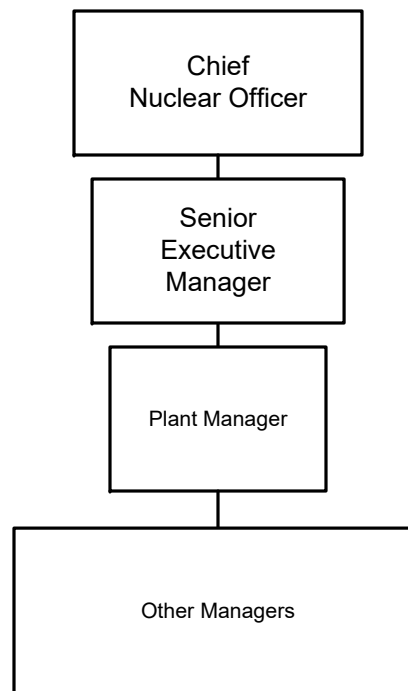
Figure Rev. 72

**SUSQUEHANNA STEAM ELECTRIC STATION
UNITS 1 AND 2
FINAL SAFETY ANALYSIS REPORT**

**SUSQUEHANNA NUCLEAR, LLC
OFF-SITE ORGANIZATION**

FIGURE 13.1-2

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Figure Rev. 71

