FINAL SAFETY ANALYSIS REPORT

CHAPTER 13

CONDUCT OF OPERATIONS

13.0 CONDUCT OF OPERATIONS

This chapter of the U.S. EPR Final Safety Analysis Report (FSAR) is incorporated by reference with supplements as identified in the following sections.

13.1 ORGANIZATIONAL STRUCTURE OF APPLICANT

This section of the U.S. EPR FSAR is incorporated by reference with the following supplements.

The U.S. EPR FSAR includes the following COL Item in Section 13.1:

> A COL applicant that references the U.S. EPR design certification will provide site-specific information for management, technical support and operating organizations. The operating organization describes the structure, functions and responsibilities established to operate and maintain the plant.

This COL Item is addressed as follows:

The organizational structure, functional responsibilities, and levels of authority and interfaces are described in the following sections including the offsite and onsite functions.

Implementing documents assign more specific responsibilities and duties, and define the organizational interfaces involved in conducting activities and duties.

The organizational structure is consistent with the Human System Interface (HSI) design assumptions used in the design of the U.S. EPR as described in the U.S. EPR FSAR Chapter 18.

Sections 13.1.1 through 13.1.4 are added as a supplement to the U.S. EPR FSAR.

13.1.1 Management and Technical Support Organization

{Each of the organizations involved in the Calvert Cliffs Nuclear Power Plant Unit 3 (CCNPP Unit 3) project have excellent reputations in the power industry and have significant commercial nuclear power experience. UniStar Nuclear Energy, LLC (UNE) is owned by EDF Inc., which is an indirect subsidiary (through E.D.F. International S.A.) of Électricité de France, S. A. (EDF). Calvert Cliffs 3 Nuclear Project, LLC, as the owner and licensee, will develop and operate CCNPP Unit 3 through contractual relationships with UNE and its other subsidiaries (UNE Group) (see Figure 13.1-1). UniStar Nuclear Operating Services, LLC (UNO) will serve as the operator of CCNPP Unit 3 and is the operator licensee.

The roles of Nuclear Steam Supply System (NSSS) designer/supplier and architect engineer (AE) are combined in a Project Delivery Consortium (Consortium) formed by the collaboration of AREVA NP, Inc. (AREVA) and Bechtel Power Corporation (Bechtel). The Consortium is complemented by the turbine-generator supplier, Alstom, a major world supplier in energy and transportation equipment. Together, the Consortium has significant experience designing and constructing commercial nuclear power projects in the U.S. and throughout the world.

The information about EDF in this paragraph was provided in an earlier submission of this application and is based on information that was then current. EDF, one of the leaders in the energy market in Europe, is an integrated energy company active in generation; transmission; distribution; energy supply; and trading. EDF had a worldwide installed capacity of 128,190 megawatts, from a wide variety of energy sources including nuclear, thermal, and renewable energies (hydroelectric, wind, solar). In France, EDF had an installed capacity of 98,200 megawatts, including fifty-eight nuclear reactors with a total installed capacity of 63,130 megawatts. These nuclear units are located on 19 sites and have been built within three standardized fleets: 34 reactors of 900 megawatts, 20 reactors of 1,300 megawatts, and four reactors of 1,450 megawatts. In December 2007, the pouring of the first concrete for an EPR in Flamanville, France launched the construction of the fourth EDF fleet series.

EDF's position as a world leader in the nuclear sector is based on its unique expertise as architect, turnkey supplier and owner-operator. EDF has developed skills throughout the energy production cycle covering a power plant's entire service life from design and construction, including associated engineering, through operation of the plant and decommissioning. As a nuclear owner-operator, EDF is recognized for its excellent safety record and is ranked as a world leader in the nuclear industry.

13.1.1.1 Design, Construction and Operating Responsibilities

The UNE President, Chief Executive Officer (CEO) and Chief Nuclear Officer (CNO) has overall responsibility for functions involving design, construction, testing, and operation of CCNPP Unit 3. The highest priority and primary responsibility of the UNE Group staff is nuclear safety. Decision making is conducted in a conservative manner with the emphasis on safety regularly communicated to appropriate personnel by direct management interface, training, and company directives. Lines of authority within and among the organizations having design, construction, and operating responsibilities are clearly established.

13.1.1.1.1 Design and Construction Responsibilities

The UNE Group has engaged a Consortium to design and construct CCNPP Unit 3. The Consortium principals and their subcontractors are responsible for the site related engineering studies (such as meteorology, hydrology, seismology, demography, etc.), the design of the CCNPP Unit 3 plant and ancillary systems (including fire protection), site layout and related environmental and security provisions, and the development of safety analysis reports. Oversight of Consortium activities, including review and approval of site design features, Human Factor Engineering (HFE), and material and component specifications are performed by UNE Group personnel with relevant expertise in accordance with contracts with the Consortium.

13.1.1.1.1.1 Project Management

UniStar Nuclear Services, LLC (UNS), which is an indirect subsidiary (through UniStar Nuclear Holdings, LLC) of UNE, provides development services; regulatory affairs services, project management; and oversight of startup, testing, and commissioning for U.S. EPR projects. The Calvert Cliffs 3 Nuclear Project, LLC has contracted with UNS to act as the owner's agent to manage and provide site selection, site characterization, licensing, and project management services such as planning and scheduling for the CCNPP Unit 3 project. UNS will also provide oversight and review of the development of permits and other documentation required by state and local authorities and development and implementation of the testing and commissioning program.

Project Management, among other services:

- Provides engineering, procurement, and construction contract administration for all U.S. EPR project companies, enforcing contract terms and conditions;
- Ensures procedure and process standardization across projects for project delivery;
- Provides consistent project management and management oversight, including facilitation of technical oversight by UNO;
- Establishes and maintains consistent project controls and performance reporting within and between projects;

- Works with design and operating teams to ensure that, from a design and construction perspective, the joint objectives of high construction and operations performance are achieved;
- Ensures consistent project schedule development, management, tracking, and reporting; and
- Facilitates the collection and sharing of lessons learned and process improvements.

13.1.1.1.1.2 Engineering

UNS provides engineering functions and acts as the Calvert Cliffs 3 Nuclear Project, LLC's representative for:

- technical issues;
- conducting detailed design contract negotiations, preparation, management, and review;
- promoting design excellence by securing and applying expertise from the Flamanville, France EPR project;
- ensuring that continuity of design is preserved from design certification through commissioning;
- conducting technical reviews of suppliers' work;
- ensuring performance commitments of construction cost, timing, and use of standard tools and documentation processes are met.

UNS engineering is responsible for owner's reviews of: site-related engineering studies (meteorology, geology, hydrology, demography, environmental evaluations, etc.), design of plant systems (including fire protection), plant design features (including HFE), site layout and security provisions, safety analysis reports, and material and component specifications.

13.1.1.1.1.3 Procurement

UNS provides supply chain and engineering services to the Calvert Cliffs 3 Nuclear Project, LLC. In its procurement role, UNS is responsible for:

- contracting of services and materials including strategic procurement and management of long lead time items;
- providing necessary oversight of the EPC contract and other contract purchased construction materials and services;
- providing supplier contract terms and compliance documentation; and
- providing time and material claims processing and management.

13.1.1.1.1.4 Training

Standardized training services, including simulator training, are developed for the U.S. EPR, including CCNPP Unit 3, by UNE training. Staffing plans include hiring personnel to develop normal and emergency operating procedures and training lesson plans and associated material. Development of training material, procedures, and simulators is coordinated with the design and construction of CCNPP Unit 3 to assist in design validation, to provide experience for operating and other personnel, and to ensure trained and qualified staff is available when needed to support the safe and efficient design, construction, and testing of CCNPP Unit 3.

Training services include:

- development of initial and continuing training programs (including methods and materials) for licensed and non-licensed CCNPP Unit 3 plant personnel;
- obtaining initial Institute of Nuclear Power Operations (INPO) training accreditation during the project development phase and ensuring INPO accreditation renewal prior to initial fuel loading;
- coordination with the EDF central training authority, for development of standardized non-licensed operator training material and sharing of EPR operating experience related to training, and
- development of standardized operating procedures and guidelines for use by UNO.

13.1.1.1.1.5 UniStar Nuclear Operating Services, LLC

UNO will serve as the operator of CCNPP Unit 3 and is the operator licensee. UNO is a special purpose entity created to provide operations and maintenance services through a standardized operating structure. UNO will commission, operate, and maintain CCNPP Unit 3 by using and sharing a standardized set of services, procedures, and management practices with other EPR owners.

In the development phase of the project, services to be provided by UNO to the Calvert Cliffs 3 Nuclear Project, LLC include:

- being the project owners' agent for plant acceptance;
- being the single operations contracting entity;
- consolidating services to maximize standardization, effectiveness, and economies of scale across projects;
- providing trained manpower for the startup, test, and commissioning of the plants;
- using "lessons learned" from all operating EPRs to drive continuous improvement and maintain standard processes; and
- managing the peer review/audit process on intra-plant basis to drive learning, best practice development, and standardization across plants.

In the development phase of the project, UNO will also provide operational and maintenance input to design (including HFE design), and planning for construction, system turnover, and system testing and commissioning.

In the construction phase, UNO will provide trained and qualified station staff for operational support of system maintenance and configuration control and component and system turnover and testing. UNO will increase the operating staff to ensure a seamless transition from the construction phase, through startup testing, to commercial operation. During CCNPP Unit 3 startup and testing, UNO will provide additional operations, maintenance, and personnel to support oversight and execution of the startup testing and commissioning program and in review and evaluation of test results in support of the UNS Startup, Testing, and Commissioning organization.

UNO will also provide performance improvement and quality control oversight of the UNE Group, the AE and NSSS supplier design, procurement, and construction activities in accordance with the UniStar Quality Assurance Program (see Chapter 17). Construction Quality Assurance programs will require audits annually or at least once during the life of a specific activity.

13.1.1.1.1.6 Project Delivery Consortium

AREVA and Bechtel are collaborating in a Consortium that combines the NSSS supplier, AE and construction roles for the CCNPP Unit 3 project. AREVA and Bechtel have established an interface agreement to govern their mutual responsibilities and interactions (see Table 13.1-3). The Consortium is structured to provide management and leadership in each of the broad areas specified by the division of responsibilities (see Figure 13.1-3). In areas where specific expertise is required, such as seismology and hydrology, the Consortium will engage Specialist firms as subcontractors.

Within the Consortium, the CCNPP Unit 3 project is controlled by a Project Director (PD). The PD serves as the single point of contact for the UNE Group to ensure efficient integration of engineering, procurement, and construction throughout the project delivery lifecycle. Because of its experience in delivery of large construction projects, Bechtel provides project delivery management and leadership, including the PD for single point of accountability.

The PD is responsible for coordination of the individual project areas as determined by the interface agreement between AREVA and Bechtel. Reporting to the PD are discipline managers from both AREVA and Bechtel. The discipline managers are responsible for delivery of each project function delineated in the Consortium General Division of Responsibility (Table 13.1-3). The lead company providing the discipline managers may change over time based on the company with the preponderance of the work at that point in the project lifecycle, as determined by the PD.

The Consortium (as an entity or through its individual member companies) is responsible for the development of the detailed design of CCNPP Unit 3 including, site related engineering studies (meteorology, hydrology, geology, seismology, demography, environmental effects, etc.), design of primary and ancillary systems (including fire protection and security systems), site layout, HFE, and material and component specifications.

The Consortium will develop the startup testing and commissioning program with support and oversight of UNS engineering and startup and testing groups who provide implementation plans and procedures. Consortium personnel will provide technical support during startup of the facility and transition into the operational phase. As the construction of systems is

completed, the systems will undergo acceptance testing as required by procedure, followed by turnover to UNO by means of a project acceptance plan. The turnover will include the physical systems and corresponding design information and records. Following turnover, UNO will be responsible for system maintenance and configuration management.

The integrated AREVA-Bechtel team will evolve over time as the project needs or phases evolve. For example, detailed engineering is led by AREVA. This will transfer over to Bechtel as the activities shift to construction.

AREVA

AREVA was created in 2001 by the merger of Framatome ANP (itself a merger of the nuclear operations of Framatome and Siemens), CEA Industrie, and Cogema. AREVA is the sole supplier of next generation EPR reactors and is number one worldwide in fuel fabrication and supply, with a strong presence in Europe and the U.S. It is the only group in the world with expertise and active involvement in every sector of the nuclear power industry, including the nuclear fuel cycle, reactors, instrumentation, nuclear measurement systems, and engineering.

The information about AREVA in this paragraph was provided in an earlier submission of this application and is based on information that was then current. AREVA is a leading nuclear supplier in the United States and is a participant in the electricity transmission and distribution sector with 5500 American employees in 45 locations. AREVA has project and operational experience through the construction of 102 pressurized water reactors (PWR) and boiling water reactor (BWR) plants ranging from early French units through the digitally controlled N4 series. The company currently has four units under construction world- wide, including the first two EPRs (Generation III+ units) in Finland and France.

The information about AREVA in this paragraph was provided in an earlier submission of this application and is based on information that was then current. AREVA is a major world supplier of nuclear components with more than 50% of the global market for replacement NSSS components. Its facility in Chalon Saint Marcel has 30 years of operations fabricating reactor pressure vessels, steam generators, pressurizers, and accumulators. This facility has a 39,000 m^2 workshop. Sfarsteel (Creusot Forge) has 85,000 m^2 of workshops at four sites for heavy forging and machining. AREVA has announced development of a manufacturing facility in Newport News, Virginia for fabrication of reactor vessels and closure heads, steam generators, and pressurizers. Operations at this facility is expected to begin in 2012.

Thirty percent of U.S. nuclear plants are operating with AREVA fuel and, as part of the global nuclear energy partnership, AREVA has signed a contract with the U.S. Department of Energy (DOE) to study the development of a used nuclear fuel treatment plant and advanced generation reactor for fuel recycling.

Because of its experience and commitment to the U.S. nuclear industry (this information about AREVA was provided in an earlier submission of this application), AREVA has performed:

- License renewal engineering for more than 50% of plants extending life in the U.S.;
- Reactor coolant pump and motor refurbishment for 40% of U.S. plants, including 30% of the Westinghouse designed plants;
- Seven out of ten steam generator replacements in the U.S. since 2003; and

- All of the lower reactor head penetration repairs and 99 of 114 reactor vessel upper head nozzle repairs in the U.S. since 2000.

Bechtel Power Corporation

The information about Bechtel Power Corporation (Bechtel) in this paragraph was provided in an earlier submission of this application and is based on information that was then current.

Bechtel had 110 years of engineering and construction experience with 40,000 employees in 40 offices worldwide and was the nuclear industry's most experienced contractor. Bechtel was active on 390 projects in 46 countries. Bechtel was a leading EPC contractor with involvement in nuclear activities at 88 of the 104 U.S. plants and 150 plants worldwide. Bechtel had assisted in the development of seven combined license applications and two early site permit applications.

The information about Bechtel in this paragraph was provided in an earlier submission of this application and is based on information that was then current. Bechtel was active on engineering and/or construction projects at Qinshan, China, has completed the restart of Browns Ferry Unit 1, and was the full engineering, procurement, and construction supplier at Watts Bar Unit 2. It was also the lead contractor for the design, construction, and commissioning of the largest radioactive waste treatment plant in the world (the DOE's Waste Treatment Immobilization Plant).

The information about Bechtel in this paragraph was provided in an earlier submission of this application and is based on information that was then current. Bechtel's staff included 20,000 employees with nuclear experience, including 5,000 engineers with nuclear power experience. It has nationally and internationally recognized industry experts and technical specialists sitting on more than 200 code and industrial committees.

Bechtel has used its Labor-Management relations expertise to enter into a CCNPP Unit 3 Project Labor Agreement and will collaborate with labor in workforce training to support the project.

Alstom

The information about Alstom in this paragraph was provided in an earlier submission of this application and is based on information that was then current. Though not a direct member of the Consortium, Alstom is providing significant engineering and manufacturing support to CCNPP Unit 3 as the turbine-generator supplier. Alstom is a leading supplier of nuclear steam turbine-generators for both 50 Hz and 60 Hz markets with more than 80,000 employees in 70 countries. It had supplied more than 178 units worldwide equivalent to more than 30% of the world nuclear installed base. Alstom is one of the few vendors with an active program for supplying large, new nuclear steam turbines in Europe and the Far East. Alstom commissioned four 1550 megawatts turbines in France during the 1990s; they are currently the largest operating turbines in the world. In December 2007, Alstom announced it will invest more than $200 million in a new manufacturing facility in Chattanooga, Tennessee to manufacture turbines and other major components for U.S. power generation facilities.

The organizations reflected in this section were established to design, construct, and operate CCNPP Unit 3. Their responsibilities are either related directly to CCNPP Unit 3 or to the generic aspects of U.S. EPR development, which directly benefit CCNPP Unit 3.

13.1.1.1.2 Technical Support for Operations

CCNPP Unit 3 will be the first planned U.S. EPR to be constructed in the United States. However, two EPRs are currently under construction in Europe and two additional units are under construction in China. EPRs around the globe will have several years of operating experience by the time CCNPP Unit 3 is operational. CCNPP Unit 3 will benefit directly from this experience through technical support from the NSSS supplier (AREVA) and from the knowledge and experience of UNE Group personnel gained from Flamanville 3.

Additionally, as the CCNPP Unit 3 project progresses through design, licensing, preconstruction, construction, and testing and commissioning, support personnel are added to the project in accordance with recruiting and staffing plans and expertise is gained through project experience. UNO staffing plans take advantage of this process by providing support in the early project phases and by transitioning experienced staff from the UNE Group to UNO in the later phases culminating in testing, commissioning, and full plant operations.

Technical expertise developed and provided in support of operations by the UNE Group is described in the following paragraphs.

13.1.1.1.2.1 Engineering

During detailed design, UNS serves as the engineering design representative for CCNPP Unit 3 and the standardized aspects of subsequent U.S. EPRs. Engineering consists of personnel experienced in nuclear plant design, systems, and engineering programs including engineers from EDF who have participated in the design (and other engineering aspects) of Flamanville 3.

During detailed design, the main responsibilities of engineering are to:

- Represent UNE and CCNPP Unit 3 on technical and commercial issues with the Consortium (AREVA and Bechtel) and Alstom;
- Prepare the owner's requirements for the U.S. EPR standard design;
- Lead and coordinate discussions with vendors that involve the generic and site-specific portions of the plant;
- Perform and coordinate technical reviews for UNO with the Consortium and other suppliers;
- Challenge Consortium engineering methods and skills in design and procurement to afford the best schedule with the highest levels of safety;
- Ensure standardization; and
- Provide oversight of and support for development of operational engineering programs such as Inservice Inspection (ISI), Inservice Testing (IST), Reliability, etc.

During detailed design, UNO supports UNS engineering with plant operations input into design specifications (including maintenance requirements, Emergency Procedure Guidelines development, and HFE development) and operational review of design deliverables. During construction and testing, UNO will staff design and system engineering positions both in its corporate office and at the site. Portions of the UNE detailed design engineering staff providing

services to UNS will transition to permanent UNO engineering support positions in accordance with the UNO recruiting and staffing plan to provide technical expertise and experience during plant operation. The remaining engineering staff will continue with development and detailed design of subsequent U.S. EPR projects by UNS but is available whenever (and to whatever extent is required) to supplement and support UNO engineering during the operations phase of CCNPP Unit 3.

During operations, UNO engineering, supplemented by contractual assistance from UNS, AREVA and others, will:

- Support operations with mechanical, electrical, structural, thermo-hydraulic, materials, metallurgy, I&C and digital controls, fire protection, and HFE:
- Perform plant design changes;
- Maintain the plant design and engineering basis; and
- Perform transient and accident analyses

With the contractual assistance of AREVA, UNO reactor engineering will provide technical assistance for reactor operation, core thermal limits, and reactor thermal-hydraulic operation.

13.1.1.1.2.2 Procurement

During plant operation, the UNS procurement function serves as the supply chain organization responsible for strategic sourcing, procurement contract management, warehouse and logistics. Procurement is responsible for preparation and management of contracts for materials and services to support operations and maintenance. UNS will also provide oversight of spare parts, component and material procurement suppliers. UNS will also provide the supply chain infrastructure to support UNO procurement and purchasing personnel in day-to-day and outage procurement (including procurement of nuclear fuel).

13.1.1.1.2.3 Regulatory Affairs

The UNS Regulatory Affairs group is responsible for the interface with regulators regarding licensing issues including changes, amendments, compliance reviews, or related industry interactions. Personnel experienced in NRC requirements, state and local permitting requirements, and environmental requirements within Regulatory Affairs support the initial siting and environmental analysis of the project, regulatory and environmental aspects of the site layout, and reviews of safety analysis and other reports and documentation. These reviews include traffic studies, area demography, and other aspects of the project pertaining to the construction and operation phases of the project as well as the licensing phase. UNO provides support to Regulatory Affairs by providing plant operational input and guidance during the licensing phase.

Expertise and experience gained by UNS Regulatory Affairs during this period is available to UNO during the testing, startup, and commercial operations phases of the project by providing supplemental personnel support prior to completion of full staffing of UNO and by providing matrixed support to the UNO licensing staff once commercial operations begin.

13.1.1.1.2.4 Project Management

The integration of the multiple aspects of the CCNPP Unit 3 project development from initial siting to testing and commissioning is the responsibility of UNS project management. Project management personnel maintain the project controls (schedules, cost estimates, etc.) and project performance indicators. Project management provides integration of the local, state, and national permitting activities, coordinates various contract services for environmental studies, geotechnical services, hydrology and meteorology studies, etc. Project management serves as the principal owner's agent for oversight of construction planning and execution.

Project management:

- Provides Engineering, Procurement and Construction contract (IPC Contract) administration for U.S. EPR project companies, enforcing contract terms and conditions;
- Ensures procedure and process standardization across projects for project delivery;
- Provides consistent project management and management oversight, including facilitation of technical oversight by UNO;
- Establishes and maintains consistent project controls and performance reporting within and between projects;
- Ensures consistent project schedule development, management, tracking, and reporting; and
- Facilitates the collection and sharing of lessons learned and process improvements.

UNS support to UNO is provided for scheduling of activities necessary to support preparations for plant operations (including procedure development and training schedules) and integration of these activities with those required to design, construct, and test the plant. Project management also provides the project controls needed to ensure staffing and training is conducted when required to ensure proper staffing levels to support material development such as procedures, system acceptance testing and turnover, and plant startup testing and commissioning.

13.1.1.1.2.5 Startup, Testing, and Commissioning

System completion, turnover of systems, and turnover of facility areas will be conducted according to processes under development by UNS. This will occur on a schedule that coordinates with EPC Contract requirements and is in line with NRC requirements and those of other regulatory agencies governing the CCNPP Unit 3 project. Commissioning and startup will include some portions of the overall inspections, tests, analyses, and acceptance criteria (ITAAC). The commissioning and startup program will include construction inspections and tests to verify that structures, systems and components have been installed in conformance with design specifications, drawings and other design documents.

UNS includes a startup, testing, and commissioning group to provide oversight and confirmation of system, structure, and component testing (including ITAAC). This group ensures system turnover and testing procedures and boundaries are complete, accurate, and sufficiently clear to allow for the safe and efficient turnover of systems to UNO. This group also

provides direct support to UNO for system turnover and plant testing to ensure requirements are met.

As CCNPP Unit 3 progresses to integrated system testing, custody and control of these activities will pass from UNS to UNO with support from the UNS startup, testing, and commissioning group. At the completion of plant commissioning, a percentage of the startup, testing, and commissioning staff will transition to full time technical positions within UNO to integrate the experience and expertise within the permanent operating organization. The remaining UNS startup, testing, and commissioning personnel will transition to other U.S. EPR projects to provide expertise and lessons learned to these subsequent projects.

13.1.1.1.2.6 Training

UNE training will be responsible for development and implementation of training programs that meet regulatory requirements and industry standards for standardized initial and continuing training of operations, maintenance, technical support, emergency response and other personnel for U.S. EPRs, including CCNPP Unit 3. These standardized services will include:

- Development of training standards, methodologies, examinations, materials, and training aids;
- Initial and continuing training for operators (licensed and non-licensed);
- Initial and continuing training for engineering, maintenance, work management, chemistry, and radiological protection personnel;
- General personnel, safety, security, and plant administrative training;
- Operating, managing, and maintaining training facilities, the ANS 3.5 simulator, and part-task simulators;
- Training and deployment of site training staff to the site training facilities; and
- Developing, deploying and updating standardized training materials, advanced learning methodologies, comprehensive learning management system, and programs that are used at the central and site training facilities

In addition to training material development, to gain experience and knowledge of the U.S. EPR design, training personnel will work with the Consortium to develop standardized operating procedures.

UNE training will work closely with UNO to provide comprehensive, integrated, standardized training. Though site training will be standardized through the use of a common training program, training methodologies, and materials, the deployed UNE training staff will be accountable and responsible to site line management for the integration of both standardized and local specific training that meets site needs.

Staffing plans include increasing staffing levels by hiring experienced and non-experienced personnel who will be writing procedures and training curriculum and then transition to become instructors, operators, and maintenance workers in UNO. Experienced workers will be writing emergency operating procedures and supervise the development of training curriculum, and then become operators and instructors. Non-experienced workers will be hired

with priority to their ability in their future assignment as operators and maintenance workers. UNE training staff will gain valuable knowledge about the U.S. EPR while completing assigned procedure and training curriculum development. In addition, this work will satisfy U.S. NRC requirements of gaining experience that is required for licensed operators. Transferees to UNO will have an average of 2 years experience with the U.S. EPR design.

13.1.1.1.2.7 Information Technology

UNE is developing a comprehensive, integrated Information Technology (IT) platform to provide the business process infrastructure required to support the full lifecycle of the U.S. EPR fleet as well as the day-to-day operations of the UNE Group. The IT technical services provided to support operations include:

- Providing accessibility to all data gathered or generated during all phases of the plant lifecycle, from licensing through decommissioning;
- Efficient, integrated processes for planners, maintenance workers, support staff, plant operators, managers, and others;
- Providing the ability to quickly, accurately, and securely store and retrieve design and licensing basis information needed; and
- Protecting sensitive data with appropriate cyber-security regulatory compliance to meet critical infrastructure protection requirements

Additionally, UNE provides information technology systems and support, including the enterprise software infrastructure necessary to ensure efficient transmittal of documents and information between the AE and NSSS vendors and the UNE Group to support design, construction, and operation of CCNPP Unit 3.

13.1.1.1.2.8 Quality Assurance

The quality assurance aspects of CCNPP Unit 3 design, construction, testing, and operation are governed by the Quality Assurance Program Description (QAPD) described in Chapter 17. Quality Assurance (QA) activities include:

- Audit, surveillance, and evaluation of safety related activities, including vendors supplying safety related components, products, and services;
- Coordinating development of audit and surveillance schedules;
- Performance of supplier audits and commercial grade surveys;
- Approval of third party audits;
- Approval of contractor QA programs;
- Review and approval of QA requirements and specifications in procurement contracts;
- Oversight of Quality Control (QC) inspection and testing activities; and
- Maintenance of the QAPD.

The UNE Director of Quality and Performance Improvement reports directly to the UNE President, CEO and CNO until the position of Senior Vice President and Chief Nuclear Officer of UNO is filled.

13.1.1.1.2.9 Safety Review

Oversight of CCNPP Unit 3 programs, procedures, and activities is performed by an Independent Review Body. Details of the composition and activities of this committee are described in Section 13.1.2.2.1.5, Chapter 17 and the QAPD.

13.1.1.1.2.10 UniStar Nuclear Operating Services, LLC

UNO is the operator licensee and is comprised of corporate and site managers, functional managers, supervisors, and technical personnel with sufficient knowledge, training, and experience to perform functions necessary for safe plant operation. In certain cases, as previously described, functions may be supplied or supported by personnel from other members of the UNE Group through contractual or other arrangements. Staffing plans are developed to ensure adequate staff is present to support construction, testing, and operation functions.

13.1.1.1.2.10.1 UNO Plant Engineering

UNO plant engineering is responsible for design engineering activities in support of plant operations as well as support of reactor engineering, programs engineering such as ISI, IST, and Maintenance Rule, safety and engineering analysis, probabilistic risk assessment (PRA), and fuel engineering. Design changes are performed by UNS to ensure standardization is maintained to the extent practicable among the various EPRs. The UNO plant engineering function also includes system engineering functions related to plant support and integration of systems information from other EPRs.

Site engineering includes system engineering for CCNPP Unit 3, site design basis engineering support, PRA, and engineering programs. The site engineering staff will also include the reactor engineering function.

UNO plant engineering supports plant operations in the areas of nuclear, mechanical, structural, electrical, thermal-hydraulic, metallurgy and materials, and instrumentation and control, and fire protection engineering. Expertise in the engineering area may be supplemented by UNS as described above. Additional engineering support is available through contract relationships with outside vendors including AREVA.

13.1.1.1.2.10.2 UNO Plant Chemistry

A chemistry program is established to monitor and control the chemistry of plant systems to minimize degradation, including corrosion, of piping and components, to minimize the spread of contamination, and to keep radiation dose during operations and maintenance activities from byproducts of corrosion as-low-as-reasonably-achievable (ALARA).

The Radiation Protection/Chemistry Manager is responsible for chemistry program implementation and is supported by a staff of technicians, supervisors, and other support personnel trained and qualified in chemistry monitoring and control.

13.1.1.1.2.10.3 UNO Radiation Protection

A radiation protection (RP) program, including a program to maintain radiation dose to personnel ALARA, is established to protect the health and safety of plant staff and the public. The RP program is described in Chapter 12. The RP program includes:

- Respiratory protection;
- Dosimetry;
- Bioassay;
- Radioactive source control;
- Effluent and environmental monitoring and assessment;
- Radiation and contamination monitoring and surveys; and
- Radiation work permits

The RP staff consists of trained and qualified radiation protection technicians and other qualified support personnel reporting to the UNO Radiation Protection and Chemistry Manager.

13.1.1.1.2.10.4 UNO Fuel and Refueling Operation Support

Initial fueling of the reactor and subsequent refueling are performed at UNO by a combination of site personnel including operations, maintenance, RP, reactor engineering, etc. Support may be obtained, as needed, from AREVA, the NSSS supplier, or other contract service suppliers. Fueling and refueling operations are performed under the direction and control of the plant Operations department and are supervised by individuals holding Senior Reactor Operator licenses.

13.1.1.1.2.10.5 UNO Maintenance Support

Maintenance activities at UNO are supported by planners, schedulers, maintenance personnel, engineers, and operators who participate in the development of work packages, obtain necessary parts, safely clear equipment for maintenance, and monitor outcomes. Maintenance is integrated into an overall plant work schedule and evaluated for operational and shutdown risk to ensure nuclear and personnel safety and efficiency.

13.1.1.1.2.10.6 UNO Operations Support

Within the UNO Operations Support department, a support staff provides work control and equipment clearance support, outage planning support, surveillance testing support, procedure support, and activities for operations performance improvement. Fire protection support is also provided by a Fire Marshall responsible for fire brigade training support, drill evaluation, and fire brigade equipment. The Operations Support department is made up of both licensed and non-licensed personnel and can supplement shift operations, if needed.

13.1.1.1.2.10.7 Fire Protection

The UNO Site Vice President - CCNPP Unit 3 is responsible for implementing the fire protection program described in Section 9.5. The site fire protection engineer and Fire Marshall will administer the program including the development of fire protection procedures and pre-fire plans, fire brigade and station personnel training, and inspections, testing, and maintenance of fire protection systems. The fire protection engineer will have overall program responsibility, including fire protection system performance and monitoring. The Fire Marshall is responsible for fire brigade training and readiness, fire brigade equipment readiness, and coordination with UNO Emergency Planning personnel for drills involving offsite response.

13.1.1.1.2.10.8 Emergency Coordination

The site emergency response organization is described in the Emergency Plan. The organization supporting the Emergency Plan is matrixed from various site departments. UNO Emergency Response personnel have the experience, training (including drills), and ability to implement the actions required to protect the health and safety of the public in the event of an emergency. The UNO Emergency Planning personnel is responsible for ensuring required numbers of qualified personnel are available to respond to plant emergencies, that emergency facilities are maintained and available, and that adequate equipment and supplies are available. Additionally, UNO Emergency Planning personnel is responsible for coordination with offsite agencies participating in emergency responses (including the necessary agreements) and for coordinating onsite with the Fire Marshall for fire brigade activities.

13.1.1.1.2.10.9 Outside Contractual Assistance

In the event that specific, high levels of expertise are needed or certain skills and knowledge are better obtained under vendor contracts (such as major turbine maintenance), the services of outside consultants or contractors will be used, with proper UNO oversight and control, to provide or supplement the technical staff.

13.1.1.2 Organizational Arrangement

Figure 13.1-4 shows the UNE corporate management structure. Figure 13.1-5 shows the planned UNO site organization structure.

UNE Group personnel are initially staffed at UNE. Staffing plans transition experienced staff from UNE to UNO and other subsidiaries as development of CCNPP Unit 3 progresses. Recruiting and staffing plans are subject to change over time due to variations in construction and testing schedules and the availability of personnel for hire with the requisite qualifications.

Though located on a contiguous site with CCNPP Units 1 & 2 (CCNPP Units 1 & 2), CCNPP Unit 3 is owned and operated by separate entities. Organizations are not shared. To the extent that certain minimal resources are shared, the interaction is governed by service level agreements or other similar contractual mechanisms.

13.1.1.2.1 Corporate Organization

The framework necessary to develop, design, license, finance, contract for construction, prepare for ownership, and operate CCNPP Unit 3 is made up of a group of affiliated companies, each with clearly delineated responsibilities and lines of accountability for specific phases of the CCNPP Unit 3 project. The UNE Group is managed as a single, cohesive entity with clear management expectations for maintaining the highest levels of safety and quality throughout

all phases of the project. Figure 13.1-1 shows the ownership structure for the Calvert Cliffs 3 Nuclear Project, LLC (owner licensee of CCNPP Unit 3) in the UNE Group.

As shown in Figure 13.1-2, the ultimate parent holding company for UNE is EDF. UNE has implemented a CCNPP Unit 3 Negation Action Plan (FSAR Appendix 1A) to provide requirements and guidance to ensure negation of potential foreign ownership, control or domination over the CCNPP Unit 3 license held by Calvert Cliffs 3 Nuclear Project LLC and UNO. Figure 13.1-1 also depicts the UNE Group organizational structure for items and issues related to nuclear safety, security, and reliability, pursuant to the Negation Action Plan. Separate from the Negation Action Plan, EDF has publicly indicated that it will seek a suitable, qualified U.S. owned partner for CCNPP Unit 3 prior to issuance of the CCNPP Unit 3 license.

The current key UNE positions are:

13.1.1.2.1.1 UNE President, CEO and CNO

This position is responsible for all aspects of operations and governance of UNE nuclear operations. The UNE President, CEO, and CNO is also responsible for managing the technical and administrative support provided by UNE and its affiliated companies, and non-affiliated contractors. This includes overall corporate policy, overall implementation of the Quality Assurance Program, executive direction and guidance for the UNE Group, and corporate policy.

The position has overall responsibility for the UNE Group activities related to siting, design, fabrication, construction, and safe reliable operation of CCNPP Unit 3, including management oversight and support of the day-to-day station operations and day-to-day issues related to nuclear safety, security, and reliability. This is the senior executive responsible for setting and implementing policies, objectives, expectations, and priorities to ensure activities are performed in accordance with the highest levels of safety, the quality assurance program, and other requirements.

The President, CEO and CNO provides direction through the structure described in the following paragraphs.

13.1.1.2.1.2 UNE Senior Vice President - Projects

This position reports to the UNE President, CEO and CNO, and is responsible for managing services provided by UNS including the siting, construction, and preoperational testing, during these phases of project delivery. Actual design, fabrication, and construction activities, including preparation of design and construction documents and construction itself are the responsibility of the Consortium under the management and oversight of this position.

The UNE Senior Vice President - Projects is the executive level manager responsible for management of the CCNPP Unit 3 (and other UNE plants) project including contractor management; safety, cost, and schedule performance; support organization coordination; project finances; cost estimates, and construction planning.

During the development phase of CCNPP Unit 3, the UNE Senior Vice President - Projects is responsible for UNS Services coordinating activities needed to ready the site for construction. This includes interfacing with state and local permitting agencies for site reviews, coordination of site access for Consortium personnel to perform site characterization studies and site preparation activities, and monitor safety, cost, and schedule performance of personnel with access to the site. The UNE Senior Vice President - Projects is also responsible for coordinating

with the management and staff of the existing units (CCNPP Units 1 & 2) where necessary and keeping them informed of activities adjacent to their units.

During the construction phase of CCNPP Unit 3, the Senior Vice President - Projects is responsible for monitoring the activities of the constructor primarily to verify compliance with safety and quality requirements but also with contractual obligations for schedule and cost performance. The UNS Project Management staff works closely with the Startup, Testing, and Commissioning staff to ensure schedules are met and turnover packages are complete for system acceptance by the operational staff of UNO.

The Senior Vice President - Projects will draw upon a staff of project managers, estimators, schedulers, and other support personnel from the UNE Group to assist in and support these activities.

13.1.1.2.1.2.1 UNE Vice President - Startup, Testing, and Commissioning

Prior to start-up, testing and commissioning, the Vice President - Startup, Testing, and Commissioning position will be staffed and report to the UNE Senior Vice President - Projects. The UNE Vice President - Startup, Testing, and Commissioning is also the executive level manager responsible for the development (in conjunction with the Consortium) and management of the CCNPP Unit 3 startup, testing, and commissioning program.

Working closely with Consortium personnel responsible for testing and system turnover, commissioning program development personnel develop procedures describing organizational responsibilities and interfaces between the Consortium, UNE testing personnel, and the UNO operational staff who will be accepting system turnover, maintaining configuration control, manipulating controls during testing, and reviewing test results.

Planning and scheduling personnel will ensure testing schedules are aligned with construction and turnover schedules and that the proper organizational resources are available when needed. Detailed monitoring of testing performance is conducted to ensure problems are quickly identified and corrected and to ensure that proper and timely notification of ITAAC performance is made to parties, including the U.S. NRC.

Oversight and coordination of actual startup, testing, and commissioning activities will be performed by UNS Startup, Testing, and Commissioning personnel located at the site under the direction of the UNO Site Commissioning Manager, described in Table 13.1-1 and FSAR Chapter 14.

13.1.1.2.1.3 UNE Senior Vice President - Regulatory Affairs and Engineering

The UNE Senior Vice President - Regulatory Affairs and Engineering reports to the UNE President, CEO and CNO and is responsible for engineering by UNS for UNE projects (including CCNPP Unit 3) throughout the design and construction phases. As the UNE chief engineer, the UNE Senior Vice President - Regulatory Affairs and Engineering is responsible for review and approval of design and construction documentation, component specifications, construction techniques and methods, HFE, and associated plans and schedules. These responsibilities are performed through a staff of engineers and specialists experienced in nuclear plant design and construction. Design and construction knowledge is augmented by information and experience obtained from Flamanville 3 for incorporation into UNE engineering activities.

As CCNPP Unit 3 proceeds through startup testing and commissioning to operation, the Senior Vice President - Regulatory Affairs and Engineering will manage engineering support and expertise to UNO.

In addition, the UNE Senior Vice President - Regulatory Affairs and Engineering is responsible for UNS activities related to licensing and regulatory affairs and providing organizational support and management oversight of the facilities to ensure prompt and proper disposition of regulatory issues, and developing regulatory positions. Other responsibilities include developing policies and standardized processes and procedures for the maintenance of the licensing basis, the preparation of submittals to the U.S. NRC and other regulatory organizations.

13.1.1.2.1.3.1 UNE Vice President - Procurement

The UNE Vice President - Procurement reports to the UNE President, CEO and CNO and is responsible for initiating, monitoring, and managing services and procurement contracts for the UNE Group (including CCNPP Unit 3) throughout the design and construction phases. During the operations phase, the UNE Vice President - Procurement will provide supply chain services and management through UNS in support of UNO.

13.1.1.2.1.4 UNE Manager - Training

The UNE Manager - Training reports to the UNE President, CEO and CNO and is responsible for developing and maintaining accredited training methodologies, materials, and training aids for initial and continuing training of the UNE corporate and plant staffs. Disciplines of the staffs include plant operators (licensed and non-licensed), maintenance, engineering, radiation protection, and chemistry personnel; managers, supervisors, and others. Training aids include training simulators, mock ups of plant equipment and areas, training devices, and training facilities.

13.1.1.2.1.5 UNE Director - Information Technology (IT)

The UNE Director - IT reports to UNE President, CEO and CNO and is responsible for the development and implementation of UNE's information technology platform. The UNE Director - IT is responsible for providing the strategic vision, implementation, and support of the UniStar Enterprise IT platform. This is a collaborative platform, capable of supporting the electronic flow of data among those engaged in the development, design, licensing, construction, commercialization, maintenance, and operation of the plant. It will enable the collaboration necessary to manage risk and maximize operating efficiencies. Where feasible the IT platform will enable the sharing of equipment performance and operating experience among the other EPR sites and corporate support functions. The UNE Director - IT maintains the long term, integrated technology road map, governance model, and architectural standards that ensures data and process systems are available to support the safety and operational needs of CCNPP Unit 3 and to efficiently deliver to CCNPP Unit 3 the technical support provided by the UniStar corporate organization. The technology platforms provided by the UNE Director - IT supports required plant systems, such as work management, configuration management, engineering, operations, maintenance, RP, and chemistry functions with integrated tools to ensure communication, data management, and work process flow.

13.1.1.2.1.6 UNE Director - Quality and Performance Improvement

The UNE Director - Quality and Performance Improvement reports directly to the UNE President, CEO and CNO and is responsible for developing and maintaining the QAP, evaluating compliance to the program, and managing the resources providing vendor quality assurance oversight. The UNE Director - Quality and Performance Improvement also administers the Performance Improvement Programs including the Corrective Action, Self Assessment, Human Performance Monitoring, and Operating Experience programs. The functions associated with the corrective action program and performance improvement assessments report to this position.

During the design and construction phases, the UNE Director - Quality and Performance Improvement provides oversight of project management, engineering and procurement activities and conducts audits and surveillances of the Consortium and other vendors and suppliers. The UNE Director - Quality and Performance Improvement is also responsible for developing operating, maintenance, and other plant procedures and programs that will be used by plant staff. By reporting to the UNE President, CEO and CNO, the UNE Director - Quality and Performance Improvement is completely independent of the UNE Senior Vice President - Regulatory Affairs and Engineering, the UNE Senior Vice President – Projects, and the UNE Vice President - Procurement. Once the UNO Director - Quality and Performance Improvement is staffed, a similar reporting arrangement will also ensure independence of the site structure from the UNO Site Vice President – CCNPP Unit 3.

Planned UNO key executive positions are:

13.1.1.2.1.7 UNO Senior Vice President and Chief Nuclear Officer

The Senior Vice President and Chief Nuclear Officer of UNO (UNO CNO) reports to the UNE President, CEO and CNO. The UNO CNO takes responsibility for overall nuclear safety upon loading of nuclear fuel as part of the commissioning program.

The UNO CNO is responsible for overall plant nuclear safety and ensuring the UNO staff (corporate and site) provide acceptable operations, maintenance, and technical support for CCNPP Unit 3. The UNO CNO acts through his direct reports, UNO Vice President - Technical Support, UNO Vice President - Operations Support, and UNO Vice President – Administrative Services at the corporate level and the UNO Site Vice President - CCNPP Unit 3 at the site level. Independence of the performance and Quality Assurance functions is ensured by the UNO Director - Quality and Performance Improvement reporting directly to the UNO CNO.

The UNO CNO has ultimate responsibility for ensuring that nuclear and personnel safety activities, including engineering, operations, operations support, maintenance, planning, emergency preparedness, and radiation safety are conducted to high standards in accordance with station procedures.

13.1.1.2.1.7.1 UNO Vice President - Technical Support

The UNO Vice President - Technical Support reports to the UNO CNO and is responsible for engineering and technical support and oversight of site engineering activities. Responsibilities include both site specific and generic design engineering to operating plants (including CCNPP Unit 3); engineering programs support; regulatory affairs, security, and emergency preparedness support; PRA; and monitoring of system performance.

The UNO Vice President - Technical Support is also responsible for nuclear fuel and related business and technical support activities. This includes (in conjunction with the UNE Vice President - Procurement) fuel procurement, conversion, enrichment, and fabrication.

13.1.1.2.1.7.2 UNO Vice President - Operations Support

The UNO Vice President - Operations Support reports to the UNO CNO and is responsible for maintenance and operations services. Responsibilities include identifying and resolving issues; using trends, operating experience, and industry best practices to improve plant performance; coordinating the planning and execution of standard outage schedules; and maintaining standardized fleet operating procedures and programs. The UNO Vice President - Operations Support supports plant operation and maintenance through chemistry, RP, work management, maintenance, and operations personnel, including provision of maintenance services for standard equipment where appropriate.

13.1.1.2.1.7.3 UNO Vice President - Administrative Services

The UNO Vice President - Administrative Services reports to the UNO CNO and provides administrative support. Among these services are financial and accounting support, human resources, corporate communications, document control, and industrial safety.

13.1.1.2.1.7.4 UNO Director - Quality and Performance Improvement

The UNO Director - Quality and Performance Improvement reports directly to the UNO CNO and is responsible for developing and maintaining the quality assurance program, evaluating compliance to the program, and managing the resources providing fleet and vendor oversight. The functions associated with the corrective action program and performance improvement assessments report to this position.

During the design and construction phases, the UNO Director - Quality and Performance Improvement provides oversight of project management and engineering and procurement activities and conducts audits and surveillances of the Consortium and other vendors and suppliers. By reporting to the UNO CNO, the Director - Quality and Performance Improvement is completely independent of the UNO Senior Vice President - UNE Procurement and Engineering and the UNO Senior Vice President - Services. This reporting arrangement also ensures independence from the UNO corporate organization structure and the site structure under the UNO Site Vice President - CCNPP Unit 3.

13.1.1.2.1.7.5 UNO Site Vice President - CCNPP Unit 3

This onsite position reports to the UNO CNO and is described in Section 13.1.2.2.1.

13.1.1.2.2 Relationship of Nuclear Organization to the Non-Nuclear Organization

UNE is comprised of six general organizational areas: training; procurement, engineering and regulatory affairs; projects; quality and performance improvement; and administrative corporate services such as finance, legal, and human resources. In each UNE administrative area, chiefs, vice presidents or directors report to the UNE President, CEO and CNOUNO is an independent operating subsidiary and UNS is an independent services subsidiary.

Upon receipt of nuclear fuel onsite, the UNO CNO assumes primary responsibility for nuclear safety. UNO administrative support will be provided through the UNO Vice President - Administrative Services.

13.1.1.2.3 Provisions of Technical Support for Operation

The UNE Group will provide support for the design, construction, testing, and operation of CCNPP Unit 3. Primary operational responsibility will lie with UNO the operator licensee of CCNPP Unit 3. UNO will be organized at both the corporate and the site level with specific departments having clear responsibilities for operational support (see Figure 13.1-5). UNO corporate support will include engineering, work management, operations, maintenance, RP, chemistry, emergency planning, QA, and administrative services. UNO site support will include site specific resources, processes, and procedures in work management, maintenance, operations, RP, chemistry, engineering, emergency planning, and QA oversight.

Other UNE Group members will support or supplement UNO with engineering support, supply chain, training, information technology, and project management. Additional contracted resources for specific technical areas such as reactor and steam generator servicing and large component maintenance such as main turbine overhaul may be obtained as necessary.

The UNE Group may also call upon the extensive analytical and engineering expertise of the EDF Group should the need arise.

13.1.1.3 Qualifications of Technical Support Personnel

The qualifications for leadership of the technical support organization meet the qualification requirements in education and experience for those described in ANSI/ANS-3.1-1993 (ANSI, 1993), as endorsed and amended by Regulatory Guide 1.8, Revision 3 (NRC, 2000). The qualification and experience requirements of corporate personnel will be established in corporate policies and procedures. Table 13.1-1 provides a cross reference between the ANSI positions and the organization specific positions.

13.1.2 Operating Organization

Figure 13.1-6 shows the authority and lines of communication at UNO for the CCNPP Unit 3 site organization. This organization includes operations, maintenance, radiological protection, chemistry, work management, engineering, training, and quality and performance improvement. This organization will be responsible for operating and maintaining the plant, planning and scheduling work, radiation protection of plant personnel, controlling radiological releases, ensuring industrial safety, refueling, quality control and inspection of plant activities, and technical support of CCNPP Unit 3.

The UNO site organization will be responsible for ensuring quality assurance and implementation of administrative controls necessary to ensure nuclear safety, industrial safety, and radiation protection as specified in the Quality Assurance Program Description (QAPD) described in Section 17.5, and other regulatory requirements. The site organization will be responsible for reporting problems with plant equipment, facilities, and human performance in accordance with the QAPD described in Section 17.5. Rules of practice are met through the use of procedures and other administrative controls (such as policies and guidelines) and include:

- Establishment of a Quality Assurance Program for the operational phase;
- Preparation of procedures necessary to safely operate and maintain the plant and carry out an effective Quality Assurance Program;
- A program for review and audit of activities affecting plant safety; and
- Programs and procedures necessary to ensure nuclear, radiological, and personnel safety.

The site staff will include the trained personnel necessary to meet the applicable fire protection program regulatory requirements, including an on-shift fire brigade (see Section 9.5). Additionally, the Physical Security Plan provided in Part 8 of the COL Application meets the applicable requirements for a physical protection plan.

CCNPP Unit 3 does not share operating staff with CCNPP Units 1 and 2.

13.1.2.1 Plant Organization

The UNO Site Vice President - CCNPP Unit 3 has overall responsibility for station operation. The succession of responsibility for overall plant operations is provided in Section 13.1.2.2. The onsite staff reports to the Site Vice President - Unit 3. Certain positions located onsite are functionally responsible to the appropriate offsite executive management, but administratively support the UNO Site Vice President - CCNPP Unit 3.

Responsible management and supervisory personnel have the authority to delegate tasks to another qualified individual within their organization provided the designated individual possesses the required qualifications and these qualifications are documented. The delegations shall be in writing. The responsible manager or supervisor retains the ultimate responsibility and accountability for implementing the applicable requirements.

An estimate of the number of persons to be assigned to various groups for the key organization positions to satisfy ANS-3.1 requirements is provided in Table 13.1-1 and the planned UNO organizational structure is provided in Figure 13.1-6. The staffing schedule is provided in Figure 13.1-7.

13.1.2.2 Plant Personnel Responsibilities and Authorities

13.1.2.2.1 UNO Site Vice President - CCNPP Unit 3

The UNO Site Vice President - CCNPP Unit 3 will report to the UNO Senior Vice President and UNO CNO and is directly responsible for overall plant nuclear safety, implementation of the QAPD, and management and direction of the safe, efficient, and reliable operation of CCNPP Unit 3. The UNO Site Vice President - CCNPP Unit 3 is responsible for the station's compliance with its license, governmental regulations, and ASME Code requirements. Additionally, the UNO Site Vice President - CCNPP Unit 3 has overall responsibility for occupational and public radiation safety consistent with FSAR Chapter 12.

Reporting to the UNO Site Vice President - CCNPP Unit 3 are the UNO Plant General Manager - CCNPP Unit 3, the UNO Manager of Engineering, and the UNO Manager of Training. The Independent Review Body (IRB) also reports to the UNO Site Vice President - CCNPP Unit 3. During the startup period, the UNO Site Commissioning Manager, who is a matrixed report of

the UNS Manager of Commissioning Integration, is also a direct report of the UNO Site Vice President - CCNPP Unit 3 .

The succession of responsibility for overall plant management in the event of absences, incapacitation of personnel, or other circumstances requiring delegation of authority is as follows, unless otherwise delegated in writing:

1. UNO Site Vice President - CCNPP Unit 3;
2. UNO Plant General Manager - CCNPP Unit 3;
3. UNO Operations Manager; and
4. UNO Shift Manager

The succession of authority includes issuance of standing or special orders, as required.

13.1.2.2.1.1 UNO Plant General Manager - CCNPP Unit 3

The Plant General Manager reports to the UNO Site Vice President - CCNPP Unit 3 and is responsible for plant operations, maintenance, work control, radiation protection, and chemistry. The UNO Plant General Manager - CCNPP Unit 3 is responsible for the safe, reliable, and efficient operation of the plant within the constraints of applicable regulatory requirements, license, and the Quality Assurance Program by providing day-to-day direction, management, and oversight of onsite activities. The UNO Plant General Manager - CCNPP Unit 3, in carrying out the responsibility for overall safety of plant operations, is responsible for timely referral of appropriate plant matters to management and independent reviewers. Areas of responsibility also include chemistry activities, health physics/radiological protection, operations and support, work management, records management, maintenance and production planning, and related procedures and programs.

13.1.2.2.1.1.1 UNO Operations Manager

The UNO Operations Manager reports to the UNO Plant General Manager - CCNPP Unit 3 and is responsible for the day-to-day operation of the plant. The UNO Operations Manager is responsible for ensuring in-plant activities meet appropriate standards of nuclear and personnel safety and that the plant is operated reliably and efficiently within the constraints of applicable regulatory requirements. This position has the authority to remove equipment from service and to shutdown the station if it is in the interest of nuclear safety or to ensure the health and safety of the public. The UNO Operations Manager or the UNO General Supervisor - Shift Operations shall hold a Senior Reactor Operator's license and will be the senior plant license holder.

Reporting to and supporting the Operations Manager are the UNO General Supervisor - Shift Operations and the UNO General Supervisor - Operations Support. During startup and commissioning, UNO the Site Commissioning Integration Supervisor, the UNO Test Analysis and Documentation Supervisor, the UNO Mechanical Commissioning Supervisor, the UNO Electrical Commissioning Supervisor, and the I&C Commissioning Supervisor (who each report to the UNO Site Commissioning Manager) also report to and coordinate with the UNO Operations Manager to ensure startup and commissioning activities are conducted safely and in accordance with station expectations and procedures.

13.1.2.2.1.1.1.1 UNO General Supervisor - Shift Operations

The UNO General Supervisor - Shift Operations reports to the UNO Operations Manager, serves as assistant manager, may be the senior license holder, and is responsible for:

- Shift operations in accordance with the applicable regulations and requirements, the license, plant technical specifications, and written policies and procedures;
- Through the UNO Shift Managers, providing supervision of operating shift personnel for operational activities including the emergency teams and fire brigade;
- Coordinating shift activities with other functional site units;
- Ensuring proper training and qualification of shift personnel; and
- Management of programs and policies for operating activities.

The UNO Shift Managers, discussed in Section 13.1.2.3.1, report to the UNO General Supervisor – Shift Operations. The UNO General Supervisor - Shift Operations may assume the duties of the UNO Operations Manager in his absence.

13.1.2.2.1.1.1.2 UNO General Supervisor - Operations Support

The UNO General Supervisor - Operations Support reports to the UNO Operations Manager, may serve as assistant manager, and is responsible for the management of programs and policies for operating activities. Through direct reports, the UNO Supervisor - Operations Support and the UNO Supervisor - Operational Programs, the UNO General Supervisor - Operations Support is responsible for:

- Operations support activities in accordance with the applicable regulations and requirements, the license, plant technical specifications, and written policies and procedures;
- Supervision of operations support personnel and operations support activities;
- Supervision of operations procedures maintenance; and
- Maintaining and ensuring effective implementation of operational programs.

Additionally, through the Fire Marshall, the UNO General Supervisor - Operations Support is responsible for supervision and effective implementation of the plant fire brigade including maintenance of fire brigade members' qualifications, provision of proper fire safety equipment for the brigade, on-shift staffing, and drills in accordance with the Fire Protection program as described in Section 9.5.

13.1.2.2.1.1.2 UNO Work Control Manager

The UNO Work Control Manager reports to the UNO Plant General Manager - CCNPP Unit 3 and is responsible for the safe and efficient implementation of the plant work control process including planning, scheduling, and monitoring of maintenance, engineering, and related

support functions performed at the plant. The UNO Work Control Manager is also responsible for identifying and implementing improvements to the work control process.

Reporting to the UNO Work Control Manager are the UNO Work Week Managers, the UNO Scheduling Supervisor, and the UNO Outage Planning and Scheduling Supervisor.

13.1.2.2.1.1.2.1 UNO Work Week Manager

The UNO Work Week Managers are responsible for the integration and coordination of schedules, personnel, and logistics for activities scheduled for their assigned work weeks including coordination of departmental activities; preventative, corrective, and elective maintenance; parts and materials availability, etc. The UNO Work Week Manager also coordinates the daily work screening and prioritization process.

13.1.2.2.1.1.2.2 UNO Scheduling Supervisor

The UNO Scheduling Supervisor is responsible for implementation of the life-cycle maintenance scheduling process. The UNO Scheduling Supervisor is also responsible for ensuring corrective maintenance is properly scheduled in accordance with plant procedures and processes.

13.1.2.2.1.1.2.3 UNO Outage & Planning Supervisor

The UNO Outage & Planning Supervisor is responsible for maintaining standard maintenance, project, and resource planning templates for on-line and off-line work scope. The UNO Outage & Planning Supervisor coordinates with corporate outage planning to establish and implement standard outage plans and packages. The UNO Outage & Planning Supervisor is also responsible for integration of plant specific outage work into the standard outage schedule templates.

13.1.2.2.1.1.3 UNO Radiation Protection/Chemistry Manager

The UNO Radiation Protection/Chemistry Manager reports to the UNO Plant General Manager - CCNPP Unit 3 and is responsible for providing for the radiological health and safety of plant personnel (including maintaining plant staff dose as low as reasonably achievable in accordance with Chapter 12) and members of the public. The UNO Radiation Protection/ Chemistry Manager is also responsible for managing the radioactive waste programs and for the implementation of the plant chemistry and non-radiological environmental monitoring programs. The UNO Radiation Protection/Chemistry Manager functions as the Radiation Protection Manager (RPM) for purposes of ANSI/ANS-3.1-1993 (ANSI, 1993).

UNO Radiation Protection/Chemistry Manager duties include:

- Implementation of ALARA program and procedures, radiation protection program and procedures, radioactive liquid and gaseous effluent releases and associated offsite doses management programs and procedures, offsite dose calculation manual and procedures, radiological effluent technical specifications/standard radiological effluent controls program and procedures;
- Provision of radiological and chemistry input into work and design planning;
- Tracking, analysis, and correction of trends in radiation work performance;

- Scheduling and conduct of radiological surveys, contamination sample collection, and determining contamination levels;
- Managing radiological risk through radiation work permits;
- Maintenance of required records in accordance with federal and state codes;
- Maintenance of primary and secondary plant chemistry in accordance with established program requirements;
- Implementation of programs and controls for processing solid radioactive wastes (process control program); and
- Implementation of the radiological environmental monitoring program.

In this capacity as the RPM and in accordance with approved procedures, the UNO Radiation Protection/Chemistry Manager has authority to direct or delegate direction of radiation protection staff to stop work or order an area evacuated when, the radiation conditions warrant such an action and the action is consistent with plant safety.

13.1.2.2.1.1.3.1 UNO Supervisor - Chemistry Support

The UNO Supervisor - Chemistry Support reports to the Radiation Protection/Chemistry Manager and is responsible for implementation and coordination of the plant Chemistry Program, including overall operation of any laboratories and non-radiological environmental monitoring. The UNO Supervisor - Chemistry Support is also responsible for the administration and implementation of procedures and programs to ensure effective compliance with environmental regulations.

13.1.2.2.1.1.3.2 UNO Radiation Protection/Chemistry Shift Supervisors

The individuals in these positions report to the UNO Radiation Protection/Chemistry Manager and are responsible for in plant radiation protection and chemistry operations that include but are not limited to contamination control, radiation work permits, radiological surveys and surveillance activities, respiratory protection for radiological and industrial safety, the ALARA program, radiation protection job coverage, personnel external dosimetry program, personnel internal dosimetry program, radioactive effluent release monitoring, and radiological environmental monitoring activities. The UNO Radiation Protection/Chemistry Shift Supervisors and the UNO Radiation Protection Technicians and UNO Chemistry Technicians reporting to them work in a shift rotation with operations to provide radiation protection and chemistry coverage 24 hours per day.

13.1.2.2.1.1.3.3 UNO Supervisor - Radiation Protection Support

The UNO Supervisor - Radiation Protection Support reports to the UNO Radiation Protection/ Chemistry Manager and is responsible for ALARA planning, work package reviews in support of work control, RP input to proposed design changes, and maintenance of RP programs and procedures.

13.1.2.2.1.1.3.4 UNO Supervisor - Materials Processing

The UNO Supervisor - Materials Processing reports to the UNO Radiation Protection/Chemistry Manager and is responsible for processing, sorting, packaging, storage, and shipment of low-level radioactive wastes to disposal sites or storage facilities, and shipment of radioactive materials and equipment to waste processors and equipment manufacturers for maintenance in accordance with applicable federal, state, and local regulations.

13.1.2.2.1.1.4 UNO Maintenance Manager

The UNO Maintenance Manager reports to the UNO Plant General Manager - CCNPP Unit 3 and is responsible for implementation of the maintenance programs and processes including performance of preventative and corrective maintenance, equipment tests and surveillances for which maintenance is responsible, and implementation of approved modifications in accordance with applicable standards, codes, specifications, and procedures. The UNO Maintenance Manager is supported by discipline supervisors and their staffs in the performance of mechanical, electrical, I&C, and digital control maintenance and testing. Each discipline supervisor is responsible for coordination with other plant staff organizations to facilitate safe and effective maintenance.

13.1.2.2.1.1.4.1 UNO General Supervisor - Maintenance Support

The UNO General Supervisor - Maintenance Support reports to the UNO Maintenance Manager and is responsible for maintenance programs such as non-destructive examination (NDE), equipment reliability, predictive maintenance, etc. The UNO General Supervisor - Maintenance Support is also responsible for component analysis and maintenance through a staff of materials and test equipment personnel and component engineers including the day-to-day implementation of a testing, calibration, and maintenance program for instruments and controls, measuring and test equipment as described in the Quality Assurance Program Description.

The UNO General Supervisor - Maintenance Support assists work management in the planning of future maintenance efforts and in the planning and scheduling of preventive and corrective maintenance and surveillance testing.

13.1.2.2.1.1.4.2 UNO General Supervisor - Shift Maintenance

The UNO General Supervisor - Shift Maintenance reports to the UNO Maintenance Manager and supervises teams of multidiscipline maintenance technicians trained and skilled in mechanical, electrical, and basic I&C maintenance. These technicians are formed into shifts, which will rotate with operations to provide 24 hour maintenance. Preventative, elective, and corrective maintenance planned and scheduled by Work Management with the support of the UNO General Supervisor - Maintenance Support and the UNO General Supervisor - Shift Maintenance is performed by shift maintenance technicians on the rotating shifts. Additionally, emergent maintenance meeting the criteria for the plant "fix it now" process can be planned and executed by the maintenance shift technicians under the direction of the UNO Maintenance Shift Supervisors with the review and concurrence of the UNO Shift Manager or his designee.

13.1.2.2.1.1.4.3 UNO Supervisor - Digital Controls/IT

The UNO Supervisor - Digital Controls/IT reports to the UNO Maintenance Manager and is responsible for the testing; troubleshooting; and elective, preventative, and corrective maintenance of the digital controls. UNO Digital Control/IT Technicians performing digital control maintenance are grouped in a separate discipline with a discipline specific supervisor due to the unique skills and training required for troubleshooting and repair of digital and computerized hardware and software systems. The UNO Supervisor - Digital Controls/IT and staff will also support troubleshooting and repair of the basic plant IT systems.

13.1.2.2.1.2 UNO Manager of Engineering

The UNO Manager of Engineering reports to the UNO Site Vice President - CCNPP 3 and functionally to the UNO Vice President - Technical Support (corporate) and is responsible for site engineering activities related to operations, maintenance, and design change implementation activities. The UNO Manager of Engineering directs the UNO General Supervisor - System Engineering and engineering support in day-to-day engineering activities including engineering programs, equipment reliability, system engineering, PRA, design engineering, and configuration management.

13.1.2.2.1.2.1 UNO General Supervisor - System Engineering

The UNO General Supervisor - System Engineering reports to the UNO Manager of Engineering and is responsible for supervising a technical staff of engineers and other engineering specialists. These individuals coordinate their work with that of other groups. They are responsible for balance of plant, electrical, mechanical, I&C, and reactor systems focusing on day to day equipment and operational issues. These individuals monitor system performance to ensure and improve equipment reliability and assist in conducting the operational tests and analyzing the results. The UNO General Supervisor - System Engineering coordinates with corporate engineering to evaluate system performance data for U.S. EPRs for the early detection and, if necessary, correction of performance trends. Reporting to the UNO General Supervisor – System Engineering are the UNO Supervisor - Balance of Plant Systems and UNO Supervisor - Nuclear Systems each with responsibility for system performance in their specific area.

13.1.2.2.1.2.2 UNO General Supervisor - Engineering Support

The UNO General Supervisor - Engineering Support reports to the UNO Manager of Engineering and is responsible for, through a staff of technical staff of engineers and supervisors, implementing and maintaining the engineering programs, reliability engineering, PRA, on-site design engineering functions, and configuration management.

The engineering function related to support of the Fire Protection Program is also provided by the UNO General Supervisor - Engineering Support in close coordination with the Fire Marshall to ensure adequate implementation of the Fire Protection Program.

13.1.2.2.1.3 UNO Manager of Training

The UNO Manager of Training reports to the UNO Site Vice President - CCNPP Unit 3 and functionally to the senior UNE executive for training. The UNO Manager of Training is responsible for implementation and evaluation of the plant's training programs in accordance

with UNE standard training, regulatory requirements, and accreditation standards. Training responsibilities include determining the need for training based on information provided by the various groups, developing performance based training programs, implementing training programs to support employee and facility needs, evaluating training programs, and maintaining training and qualification records. The UNO Manager of Training ensures proper training program maintenance implementation through training supervisors, instructors, and support personnel with responsibility for specific training disciplines. Training disciplines include accredited training areas such as licensed operator initial and continuing training, maintenance training, engineering training and non-accredited training areas such as general employee access training (GET), emergency plan and emergency response organization training, security training.

The UNO Manager of Training reports directly to the UNO Site Vice President - CCNPP Unit 3 to provide for independence from operating pressures and to enable the ability to hold line managers accountable for the specific training needs of their personnel. The UNO Manager of Training reports functionally to the senior UNE executive responsible for training to ensure standardization of training material is maintained for U.S. EPRs.

13.1.2.2.1.4 UNO Site Director - Quality and Performance Improvement

The UNO Site Director - Quality and Performance Improvement reports to the UNO Director - Quality and Performance Improvement and functionally reports to the UNO Site Vice President - CCNPP Unit 3 with matrix reporting to the UNE Director - Quality and Performance Improvement. This reporting relationship will ensure independence from operational pressures and line responsibilities.

A staff of Performance Improvement personnel report to the UNO Site Director - Quality and Performance Improvement. The UNO Site Director - Quality and Performance Improvement will also be responsible for administration of Performance Improvement Programs, including the Corrective Action, Self-Assessment, Human Performance Monitoring, and Industry Operating Experience Programs.

The following responsibilities are included for startup testing and operations:

- QA Technical Support;
- Quality Engineering support of startup organization;
- Oversight of startup activities;
- QA selected reviews and oversight of programs developed for operations including, but not limited to, the identification of QA Level 1 SSCs and any changes thereto, their performance, and verifying and maintaining the facility design basis;
- QA selected reviews and oversight of operations, including maintenance, testing and modification procedures;
- Review and concurrence of changes to the identified QA Level 1 items that could affect their function;
- QA Oversight of operations procedure implementation;

- Quality Control (QC) Inspection certification process; and
- Applicable discipline QC inspections of modifications to QA Level 1 components.

13.1.2.2.1.5 Independent Review Body

During the operational phase, an independent review body (IRB) will be established to serve in an advisory capacity on matters related to nuclear safety. In discharging its review responsibilities, the IRB will keep safety considerations paramount when opposed to cost or schedule considerations. One or more organizational units may collectively perform this function.

1. IRB reviews are supplemented as follows:

    a. A qualified person, independent of the preparer, reviews proposed changes in the procedures as described in the FSAR prior to implementation of the change to determine if a technical specification change or NRC approval is required.

    b. Audits of selected changes in the procedures described in the FSAR are performed to verify that procedure reviews and revision controls are effectively implemented.

    c. Competent individual(s) or group(s) other than those who performed the original design but who may be from the same organization verify that changes to the facility do not result in a loss of adequate design or safety margins.

2. The results of IRB reviews of matters involving the safe operation of the facility are to be periodically independently reviewed. This review is intended to support management in identifying and resolving issues potentially affecting safe plant operation. This review supplements the existing corrective action programs and audits.

    a. The review is to be performed by a team consisting of personnel with experience and competence in the activities being reviewed, but independent from cost and schedule considerations and from the organizations responsible for those activities. The IRB supervisor or chairman has a minimum six (6) years combined managerial and technical support experience. The members of the IRB should have a minimum of five years of experience in their own area of responsibility as applicable to the activities being reviewed (i.e., a minimum of five years of experience in one of the twelve areas listed below:

        (1) Nuclear power plant operations

        (2) Nuclear engineering

        (3) Chemistry and radiochemistry

        (4) Metallurgy

        (5) Nondestructive testing

        (6) Instrumentation and control

        (7) Radiological safety

(8) Mechanical engineering

(9) Electrical engineering

(10) Administrative control and quality assurance practices

(11) Training

(12) Emergency plans and related procedures and equipment).

b. The review is supplemented by reports from outside consultants or organizations as necessary to ensure the IRB has the requisite expertise and competence.

c. Results of the review are documented and reported to responsible management.

d. UNO management periodically will consider issues that an IRB determines warrant special attention, such as deficient plant programs, declining performance trends, employee concerns, or other issues related to safe plant operations and determine what issues warrant the review.

e. Management will determine the scheduling and scope of review and the composition of the IRB performing the review.

13.1.2.2.1.6 Other Programmatic Reviews and Controls

Programmatic controls and processes (such as plant operations review committees, plant review boards, safety review committees, work planning and controls, corrective action and reporting programs, etc.) are established to assess and manage potential adverse safety and security issues and trends to ensure that emergent and planned operations or activities are identified, reviewed, approved, monitored, and documented as appropriate. These programmatic controls include reviews of proposed changes to the facility as described in the FSAR; reviews of violations, deviations, and reportable events; results of investigations; review of corrective actions; and reviews of audits to ensure that safety issues and issues involving physical protection, including the safety/security interface, will be appropriately addressed (NRC, 2009). The results of these programmatic controls and processes may be used as inputs to the IRB function in accordance with Section 13.1.2.2.1.5.2.b.

13.1.2.2.2 Site Commissioning Manager

The UNO Site Commissioning Manager reports to the UNS Manager of Commissioning Integration and functionally reports to the UNO Site Vice President - CCNPP Unit 3. The UNO Site Commissioning Manager is responsible for oversight and proper implementation of the preoperational and startup test program, including providing technical advice to people conducting the tests, briefing personnel responsible for operation of the plant during the tests, ensuring that the tests are performed in accordance with the applicable procedures, and reviewing test results and analyses.

The UNO Site Commissioning Manager executes these responsibilities through supervisors and technical personnel for mechanical, electrical, and I&C commissioning as well as overall integration of commissioning testing and test analysis and documentation. The supervisors in these areas functionally report to the UNO Operations Manager to ensure efficient integration of commissioning staff with the plant operational staff for the testing and commissioning phase.

13.1.2.3 UNO Operating Shift Crews

Table 13.1-2 defines the position titles, license requirements and minimum shift staffing for various modes of operation. The operating shift staffing meets or exceeds the requirements of NUREG-0737, Action Plan Items I.A.1.1 and I.A.1.3 (NRC, 1980), and 10 CFR 50.54(m) (CFR, 2008).

In addition, radiation protection coverage is provided by a qualified UNO Radiation Protection Technician assigned to the shift and fire protection coverage is provided by the Fire Brigade Team members.

Plant administrative procedures implement the required shift staffing and establish crews with sufficient qualified plant personnel to staff the operational shifts for normal, abnormal, and emergency operational conditions. Work schedules are established that minimize overtime for plant staff performing safety related activities in accordance with applicable regulatory requirements and plant procedures. Shift crew alignments and staffing may be modified during outages in accordance with regulatory work hour limitation requirements and plant administrative procedures.

13.1.2.3.1 UNO Shift Manager

The UNO Shift Manager is a licensed Senior Reactor Operator reporting to the UNO General Supervisor - Shift Operations responsible for overall control room management and has direct responsibility for the conduct of operations. The Shift Manager has the authority to direct the activities of personnel on-site as required to protect the health and safety of the public; protect the health and safety of site personnel; prevent damage to site systems, structures, and components; and comply with applicable regulatory requirements and the license.

The UNO Shift Manager acts as the Emergency Director and in the event of a potential or actual emergency, until properly relieved in accordance with the Emergency Plan and has the authority to activate the Emergency Response Organization, to make the necessary notifications to federal, state, and local officials and to direct plant personnel to report to plant to provided necessary technical support.

This UNO Shift Manager is responsible for the training and qualification of his shift personnel and participates in operator training, retraining, and requalification by providing guidance, direction, and instruction to shift and training personnel.

In the absence of the UNO Site Vice President - CCNPP Unit 3, the UNO Plant General Manager, and the UNO Operations Manager, the on-shift Shift Manager assumes responsibility for plant functions as described in Section 13.1.2.2.1.

13.1.2.3.2 UNO Control Room Supervisor

The UNO Control Room Supervisor (CRS) is a licensed SRO reporting to the Shift Manager. The UNO CRS is responsible for the administrative functions of the shift such that the Shift Manager's command and control function is not overburdened. In this capacity, he directly supervises the licensed and non-licensed shift personnel and provides direct oversight of control room operations. The UNO CRS provides:

- Direct supervision of changes to reactor power level by Reactor Operators, including plant startup and shutdown;

- Initiation of immediate actions required by normal, abnormal, or emergency operating procedures in any plant upset situation;
- Adherence to plant technical specification requirements;
- Assignment of qualified shift personnel to scheduled work;
- Oversight of maintenance and testing;
- Review of routine operating data for trends and anomalies; and
- Assignment of administrative tasks such as work package reviews, procedure reviews, and clearance preparation.

13.1.2.3.3 UNO Senior Reactor Operator

The Senior Reactor Operators report to the Shift Manager and shall have a Senior Operator's license (SRO). The Senior Reactor Operator assists the Shift Manager, and is normally in charge of the Reactor Operators on shift. Normally, the Senior Operator stands watch in the control room as the CRS; however, the Senior Reactor Operator may leave the control room provided the requirements for control room manning are met.

13.1.2.3.4 UNO Shift Technical Advisor

In accordance with NUREG 0737 TMI Action Plan item I.A.1.1, each shift will have a UNO Shift Technical Advisor (STA) reporting to the UNO Shift Manager to provide technical assistance to the operating shift during normal and abnormal conditions.

13.1.2.3.5 UNO Reactor Operator

UNO Reactor Operators are licensed personnel who perform their duties under the direction of the UNO CRS or UNO Shift Manager. They are responsible for routine plant operations and performance of major evolutions, including direct manipulation of the controls affecting reactor power level. UNO Reactor Operator duties include responding to normal, abnormal, and emergency conditions in accordance with approved plant procedures; directing the activities of UNO Auxiliary Operators; monitoring plant parameters and indications; reviewing routine plant operating data to ensure proper equipment operation; identifying potential adverse equipment conditions or plant trends; effecting changes to plant power level, including plant startup and shutdown, and adhering to the plant's technical specifications.

13.1.2.3.6 Auxiliary Operator

UNO Auxiliary Operators serve at the direction of the UNO Reactor Operator, UNO Senior Reactor Operator, and UNO Shift Manager performing duties outside of the control room to ensure safe plant operation. They assist in plant startups and shutdowns, perform surveillance activities outside of the control room, make routine in-plant checks of equipment operation, perform abnormal and emergency operations outside of the control room in accordance with applicable plant procedures, and operate in-plant equipment including placing it in service or removing it from service as directed from the main control room.}

13.1.3 Qualifications of Nuclear Plant Personnel

13.1.3.1 Qualification Requirements

Table 13.1-1 identifies the specific positions identified in ANSI/ANS-3.1-1993 (ANSI, 1993), the corresponding plant specific title, and the corresponding titles from the plant-specific organization. Plant personnel will meet the minimum qualification requirements for education and experience as described in ANSI/ANS-3.1-1993 as endorsed by Regulatory Guide 1.8, Revision 3 (NRC, 2000), except for the following clarifications or differences.

Licensed operators shall comply with the requirements of 10 CFR 55.

- {For a non-licensed applicant (an instant candidate) for a SRO license, Regulatory Guide 1.8, Revision 3, requires at least six months of the responsible nuclear power plant experience to be at the plant for which the instant candidate seeks a license. The CCNPP Unit 3 candidates for an SRO license will not meet this requirement. The basis for this exception is provided in NEI 06-13A, App. A, (NEI, 2009) as discussed in Section 13.2.

- For an applicant for a Reactor Operator license, Regulatory Guide 1.8, Revision 3, requires at least one year of the power plant experience be at the plant for which an applicant seeks a license. The CCNPP Unit 3 candidates for a Reactor Operator license will not meet this requirement. The basis for this exception is provided in NEI 06-13A, App. A, (NEI, 2009) as discussed in Section 13.2.

- For an applicant for a Reactor Operator license, ANSI/ANS-3.1-1993 requires that the individual have 3 months experience as an extra person on shift in training before being assigned Reactor Operator duties. The individuals that will serve for the first cycle of plant operation will not possess this experience prior to being assigned Reactor Operator duties. The basis for this exception is provided in NEI 06-13A, App. A, (NEI, 2009) as discussed in Section 13.2.

- ANSI/ANS-3.1-1993 endorsed ANSI/ASME NQA-1-1989 (ANSI, 1989) for the qualifications criteria for Quality Control personnel, while Regulatory Guide 1.8, Revision 3, endorsed Supplement 2S-1, "Supplementary Requirements for the Qualification of Inspection and Test Personnel," of ANSI/ASME NQA-1-1983 (ANSI, 1983). The Quality Control personnel for CCNPP Unit 3 will meet the education and experience requirements of Supplement 2S-1 of ANSI/ASME NQA-1-1994 (ANSI, 1994).

- ANSI/ANS-3.1-1993 endorsed ANSI/ASME NQA-1-1989 for the qualifications criteria for Quality Assurance personnel, while Regulatory Guide 1.8, Revision 3 endorsed Supplement 2S-3, "Supplementary Requirements for the Qualification of Inspection and Test Personnel," of ANSI/ASME NQA-1-1983. The Quality Assurance personnel for CCNPP Unit 3 will meet the education and experience requirements of Supplement 2S-3 of ANSI/ASME NQA-1-1994, with the exception of the lead auditors. They will be qualified as described in of the QAPD.

- Regulatory Guide 1.8, Revision 3, provides an alternative for the formal educational and experience requirements for Quality Assurance positions. It permits other factors to be utilized to provide sufficient demonstration of their abilities. These factors are to be evaluated on a case-by-case basis and approved and documented by the plant manager. UNO will utilize this alternative; however, the incumbent's manager, with the

approval of the UNO Director - Quality and Performance Improvement, versus the plant manager, will approve the use of the alternative.}

13.1.3.2 Qualification of Plant Personnel

Upon selection of plant personnel, documentation of qualifications will be available for review.

13.1.4 References

{**ANSI, 1993**. American National Standard for Selection, Qualification, and Training of Personnel for Nuclear Power Plants, ANSI/ANS-3.1-1993, approved April 23, 1993.

ANSI, 1994. ANSI/ASME NQA-1-1994, Supplement 2S-1, "Supplementary Requirements for the Qualification of Inspection and Test Personnel," and Supplement 2S-3, "Supplementary Requirements for the Qualification of Quality Assurance Program Audit Personnel."

CFR, 2008. Conditions of Licenses, Title 10, Code of Federal Regulations, Section 50.54, U.S. Nuclear Regulatory Commission, 2008.

NEI, 2009. NEI 06-13A, Template for an Industry Training Program Description, Rev. 1, Nuclear Energy Institute, March 2009.

NRC, 1978. Quality Assurance Program Requirements (Operation), Regulatory Guide 1.33, Revision 2, U.S. Nuclear Regulatory Commission, February 1978.

NRC, 1980. Clarification of TMI Action Plan Requirements, NUREG-0737, U.S. Nuclear Regulatory Commission, November 1980.

NRC, 1985. Policy Statement on Engineering Expertise on Shift, 50 FR 43621, U.S. Nuclear Regulatory Commission, October, 28, 1985.

NRC, 2000. Qualification and Training of Personnel for Nuclear Power Plants, Regulatory Guide 1.8, Revision 3, U.S. Nuclear Regulatory Commission, May 2000.

NRC, 2009. Managing the Safety/Security Interface, Regulatory Guide 5.74, U.S. Nuclear Regulatory Commission, June 2009}

Table 13.1-1 — {Generic Position/Site Specific Position Cross Reference}

(Page 1 of 5)

Nuclear Function	Function Position (ANS-3.1-1993 section)	Nuclear Plant Position (Site-Specific)	Estimated Numbers of Full Time Equivalents			
			Design Review Phase	Construction phase	Pre-op Phase	Operational Phase
Executive Management (corporate)	Chief Nuclear Officer (n/a)	UNO Senior Vice President & CNO	0	1	1	1
	Site Executive (n/a)	UNO Site Vice President - CCNPP Unit 3	0	1	1	1
	Functional Manager (QAPD)(10)	UNO Director - Quality and Performance Improvement	1	1	1	1
Nuclear Support	Executive, Operations Support (n/a)	UNO Vice President - Operations Support	0	1	1	1
	Executive, Construction (n/a)	UNE Senior Vice President - Projects	1	1	1	1
	Executive, Engineering and Technical Services (n/a)	UNO Vice President - Technical Support	0	1	1	1
	Executive, Engineering and Technical Services (n/a)	UNE Senior Vice President - Regulatory Affairs and Engineering	1	1	1	1
Plant Management (Site-Specific)	Plant Manager (4.2.1)	UNO Plant General Manager	0	0	1	1
Operations	Operations Manager (4.2.2)	UNO Operations Manager	0	0	1	1
Operations, Plant	Operations Middle Manager (4.3.8)	UNO General Supervisor, Shift Operations	0	0	1	1
Operations, Administration	Operations Middle Manager (4.3.8)	UNO General Supervisor, Operations Support	0	0	1	1
Operation, Administration	Senior Operator First Line Supervisor (4.4.2)	UNO Supervisor, Operations Support	0	0	1	1
Operation, Administration	Senior Operator First Line Supervisor (4.4.2)	UNO Supervisor, Operations Programs	0	0	1	1
Operations, (on-shift)	Operation Shift Supervisor (4.4.1)	UNO Shift Manager(1)	0	0	5	5

Table 13.1-1 — {Generic Position/Site Specific Position Cross Reference}

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Nuclear Function	Function Position (ANS-3.1-1993 section)	Nuclear Plant Position (Site-Specific)	Estimated Numbers of Full Time Equivalents			
			Design Review Phase	Construction phase	Pre-op Phase	Operational Phase
	Senior Operator First Line Supervisor (4.4.2)	UNO Control Room[1] Supervisor	0	0	6	6
	Senior Operator First Line Supervisor (4.4.2)	UNO Senior Reactor Operator[1]	0	0	6	6
	Shift Technical Advisor (4.6.2)	UNO Shift Technical Advisor	0	0	6	6
	Reactor Operator (4.5.1)	UNO Reactor Operator	0	0	17	17
	Operator (4.5.2)	UNO Auxiliary Operator	0	10	17	17
Engineering	Technical Manager (4.2.4)	UNO Manager of Engineering	0	1	1	1
Engineering Systems	Engineering Support Middle Manager (4.3.9)	UNO General Supervisor, System Engineering	0	1	1	1
	Engineering Support First Line Supervisor (4.4.10)	UNO Supervisor, Nuclear Systems	0	0	1	1
	Engineering Support First Line Supervisor (4.4.10)	UNO Supervisor, BOP Systems	0	0	1	1
	System Engineer (4.6.1)	UNO System Engineer	0	5	14	14
Engineering, Support	Engineering Support Middle Manager (4.3.9)	UNO General Supervisor - Engineering Support	0	1	1	1
	Engineering Support First Line Supervisor (4.4.10)	UNO Supervisor - Programs/Reliability Engineering	0	0	1	1
	Engineering Support First Line Supervisor (4.4.10)	UNO Supervisor - Design Engineering	0	0	1	1
	System Engineer (4.6.1)	UNO Programs, PRA, Design Engineers	0	5	12	12
Chemistry	Chemistry Middle Manager (4.3.2)	UNO Radiation Protection/Chemistry Manager[3]	0	1	1	1
	Chemistry First Line Supervisor (4.4.5)	UNO RP/Chemistry Shift Supervisor[4]	0	1	5	5

Table 13.1-1 — {Generic Position/Site Specific Position Cross Reference}

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Nuclear Function	Function Position (ANS-3.1-1993 section)	Nuclear Plant Position (Site-Specific)	Estimated Numbers of Full Time Equivalents			
			Design Review Phase	Construction phase	Pre-op Phase	Operational Phase
	Chemistry First Line Supervisor (4.4.5)	UNO Supervisor - Chemistry Support	0	0	1	1
	Chemistry Technician (4.5.3.1)	UNO Chemistry Technician	0	2	12	12
Radiation Protection (RP)	RP Middle Manager (4.3.3)	UNO Radiation Protection and Chemistry Manager(3)	0	1	1	1
	RP First Line Supervisor (4.4.6)	UNO RP/Chemistry Shift Supervisor(4)	0	0	5	5
	RP First Line Supervisor (4.4.6)	UNO Supervisor - RP Support	0	0	1	1
	RP First Line Supervisor (4.4.6)	UNO Supervisor - Materials Processing	0	0	1	1
	RP Technician (4.5.3.2)	UNO RP Technician(5)	0	4	19	19
Maintenance	Maintenance Manager (4.2.3)	UNO Maintenance Manager	0	0	1	1
Instrumentation and Control	Instrumentation & Control First Line Supervisor (4.4.7)	UNO Supervisor - Digital Controls/IT	0	1	1	1
	Instrumentation & Control Technician (4.5.3.3)	UNO Digital Control/IT Technician	0	0	15	15
Mechanical	Mechanical Maintenance Middle Manager (4.3.6)	UNO General Supervisor - Shift Maintenance(6)	0	0	1	1
	Mechanical Maintenance First Line Supervisor (4.4.9)	UNO Maintenance Shift Supervisor(7)	0	0	5	5
	Mechanical Maintenance Technician (4.5.7.2)	UNO Maintenance Technician(8)	0	8	45	45
Electrical	Electrical Maintenance Middle Manager (4.3.5)	UNO General Supervisor - Shift Maintenance(6)	0	0	1	1

Table 13.1-1 — {Generic Position/Site Specific Position Cross Reference}

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Nuclear Function	Function Position (ANS-3.1-1993 section)	Nuclear Plant Position (Site-Specific)	Estimated Numbers of Full Time Equivalents			
			Design Review Phase	Construction phase	Pre-op Phase	Operational Phase
	Electrical Maintenance First Line Supervisor (4.4.8)	UNO Maintenance Shift Supervisor(7)	0	0	5	5
	Electrical Maintenance Technician (4.5.7.1)	UNO Maintenance Technician(8)	0	8	45	45
Quality Assurance	Manager (QAPD)(10)	UNO Site Director - Quality and Performance Improvement	0	1	1	1
	Manager (QAPD)(10)	UNO Quality and Performance Improvement Manager	0	0	1	1
	Quality Verification and Inspection & Performance Assessment (QAPD)(10)	UNO Quality Assurance and Control Personnel	0	12	16	16
Training	Training Middle Manager (4.3.1)	UNO Manager - Training and Performance Improvement	0	0	1	1
	Training First Line Supervisor (4.4.4)	UNO Training Supervisor	0	0	1	1
	Operator Instructor (4.5.4)	UNO Instructor	0	0	7	7
	Technical and Maintenance Instructor (4.5.4)	UNO Instructor	0	-	7	7
Security	Manager (4.3)	UNO Security Manager	0	1	1	1
	First Line Supervisor (4.4)	UNO Security Supervisor	0	10	10	10
	Security Officer (n/a)	UNO Security Officer	0	Withheld from Public Disclosure		
Preoperational and Startup Testing	Manager (4.2.4)	UNO Site Commissioning Manager	0	1	1	1
	Preoperational Test Engineer (4.4.11)	UNO Site Commissioning Integration Supervisor(9)	0	1	1	0

Table 13.1-1 — {Generic Position/Site Specific Position Cross Reference}

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Nuclear Function	Function Position (ANS-3.1-1993 section)	Nuclear Plant Position (Site-Specific)	Estimated Numbers of Full Time Equivalents			
			Design Review Phase	Construction phase	Pre-op Phase	Operational Phase
	Preoperational Test Engineer (4.4.11)	UNO Test Analysis and Documentation Supervisor(9)	0	1	1	0
	Preoperational Test Engineer (4.4.11)	UNO Mechanical Commissioning Supervisor(9)	0	1	1	0
	Preoperational Test Engineer (4.4.11)	UNO Electrical Commissioning Supervisor(9)	0	1	1	0
	Preoperational Test Engineer (4.4.11)	UNO I&C Commissioning Supervisor(9)	0	1	1	0
	Startup Testing Engineer (4.4.12)	UNO Site Commissioning Integration Supervisor(9)	0	1	1	0
	Startup Testing Engineer (4.4.12)	UNO Test Analysis and Documentation Supervisor(9)	0	1	1	0
	Startup Testing Engineer (4.4.12)	UNO Mechanical Commissioning Supervisor(9)	0	1	1	0
	Startup Testing Engineer (4.4.12)	UNO Electrical Commissioning Supervisor(9)	0	1	1	0
	Startup Testing Engineer (4.4.12)	UNO I&C Commissioning Supervisor(9)	0	1	1	0

Notes

1. These positions may fulfill the Fuel Handling position (ANSI/ANS-3.1-1993, section 4.4.3).
2. Not Used.
3. The UNO Radiation Protection and Chemistry Manager is a dual function.
4. The UNO Radiation Protection/Chemistry Shift Supervisors is a dual function with one Radiation Protection/Chemistry Shift Supervisor per shift.
5. Includes the ALARA function.
6. The UNO General Supervisor, Shift Maintenance is a dual function.
7. The UNO Maintenance Shift Supervisors is a dual function with one Maintenance Shift Supervisor per shift.
8. The UNO Maintenance Technicians are trained and qualified for both electrical and mechanical maintenance.
9. The UNO Site Commissioning Integration Supervisor, the UNO Test Analysis and Documentation Supervisor, the UNO Mechanical Commissioning Supervisor, the UNO Electrical Commissioning Supervisor, and the UNO I&C Commissioning Supervisor are trained and qualified as both Preoperational Test Engineers and Startup Test Engineers.
10. The qualification requirements for these position are specified with the exceptions in Section 13.1.3.

Table 13.1-2 — {Minimum Shift Crew Composition} (4) (5)

	Position	Number (1)
Unit Shutdown	Shift Manager (SRO License)	1
	Senior Reactor Operator (SRO License)(2)	0
	Shift Technical Advisor	0
	Reactor Operator (RO License)	1
	Auxiliary Operator	1
Unit Operating (3)	Shift Manager (SRO License)	1
	Senior Reactor Operator (SRO License)	1
	Shift Technical Advisor	1
	Reactor Operator (RO License)	2
	Auxiliary Operator	2

Notes:

(1) Temporary deviations from the numbers required by this table shall be in accordance with criteria established in the Technical Specifications.

(2) During alteration of the core of a nuclear power unit (including fuel loading or transfer), a person holding an SRO license or an SRO license limited to fuel handling for the unit shall be present to directly supervise the activity. During this time, this person shall not be assigned any other duties.

(3) For the purpose of this table, a nuclear power unit is considered to be operating when it is in a mode other than cold shutdown or refueling as defined by the Technical Specifications.

(4) A site fire brigade of at least five members (may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence provided immediate action is taken to fill the required positions) shall be maintained on site at all times. The site fire brigade shall not include the Shift Manager and other members of the minimum shift crew necessary for safe shutdown of the unit and any personnel required for other essential functions during a fire emergency.

(5) Additional staffing requirements are discussed in the CCNPP Unit 3 Emergency Response Plan and Technical Specification 5.2.2.

Table 13.1-3 — {Consortium General Division of Responsibilities}

CONSORTIUM ENGINEERING LEAD: BETCHEL							
	U.S. EPR Standard Design						CCNPP Unit 3 Specific Design
Major Design Areas	Nuclear Island		I&C	Turbine Island		BOP Standard	BOP specific
	NSSS	BNI		TG	BTI		
Detailed Design Engineering Services	AREVA	AREVA	AREVA	Alstom	Bechtel	Bechtel	Bechtel
Schedule & Project Controls	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel
Procurement	AREVA	AREVA with Bechtel	AREVA	Alstom	Bechtel	Bechtel	Bechtel
Construction	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel	Bechtel

Notes:
NSSS is Nuclear Steam Supply System
BNI is Balance of Nuclear Island
TG is turbine-generator
BTI is Balance of Turbine Island
BOP is Balance of Plant
I&C is Instrumentation and Controls

Figure 13.1-1 — {UniStar Ownership}

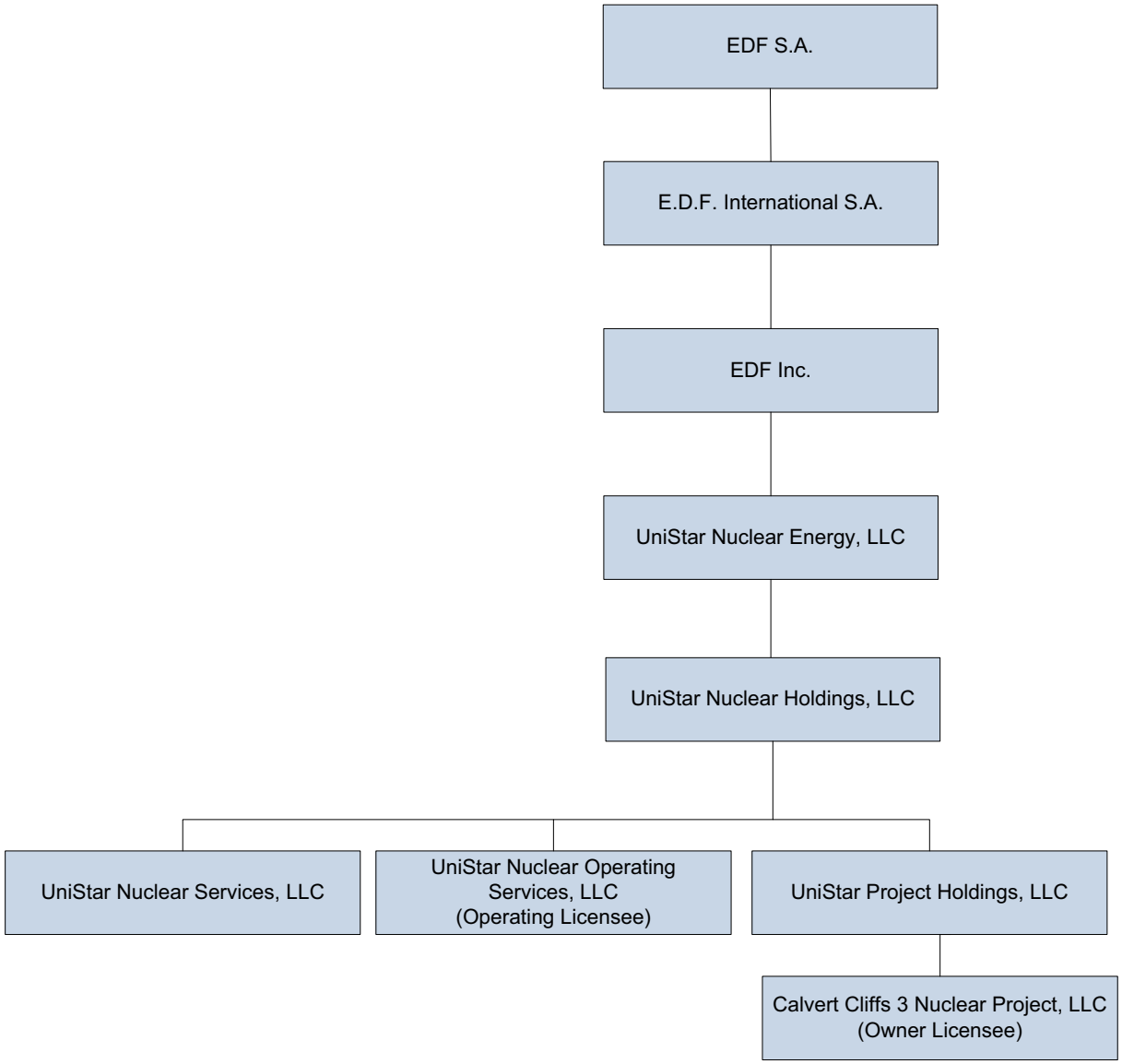


Figure 13.1-2 — Organizational Structure for Items and Issues Related to Nuclear Safety, Security and Reliability, Pursuant to the Negation Action Plan

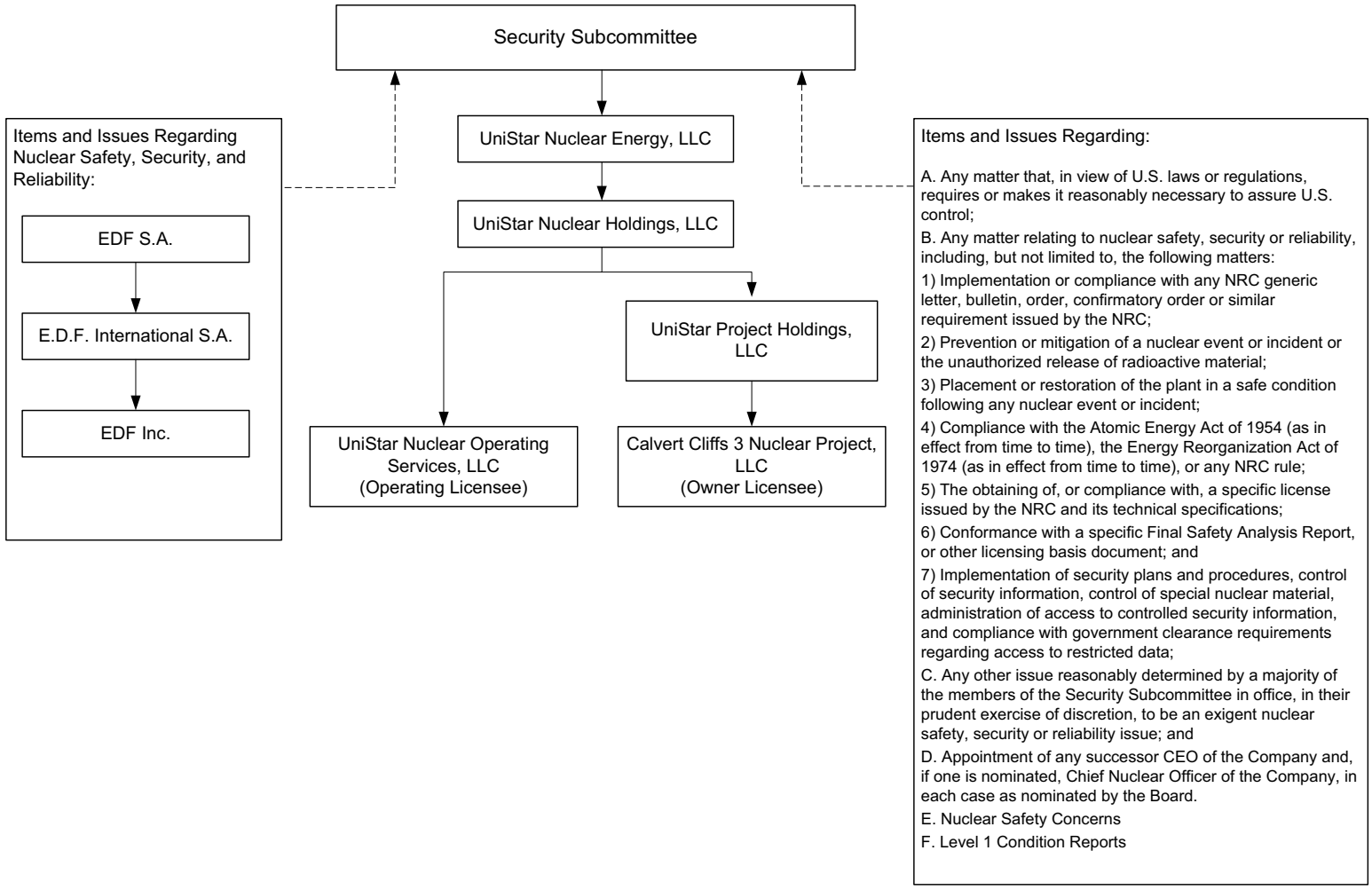


Figure 13.1-3 — {Project Delivery Organization}

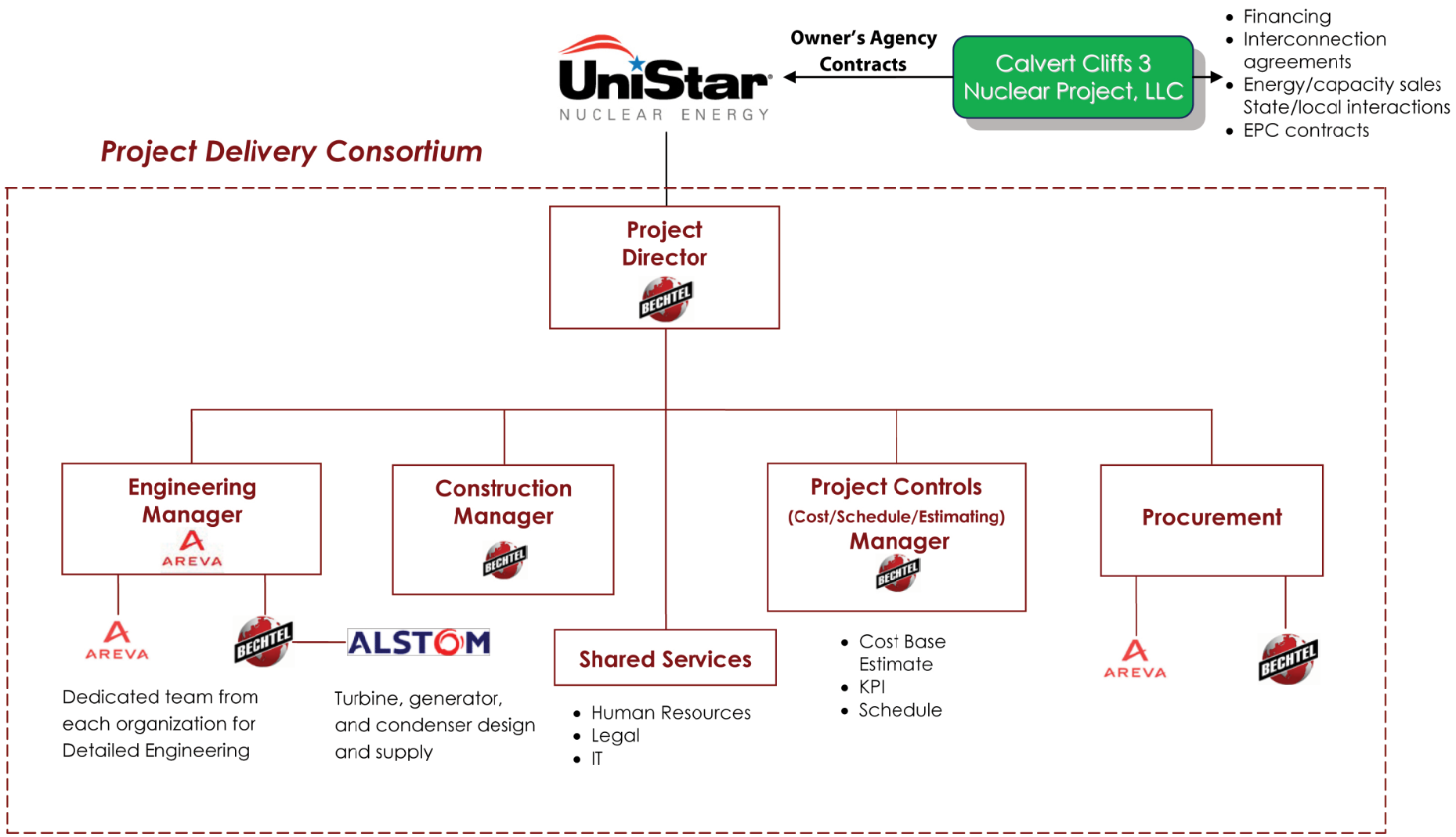


Figure 13.1-4 — {UNE Corporate Organization}

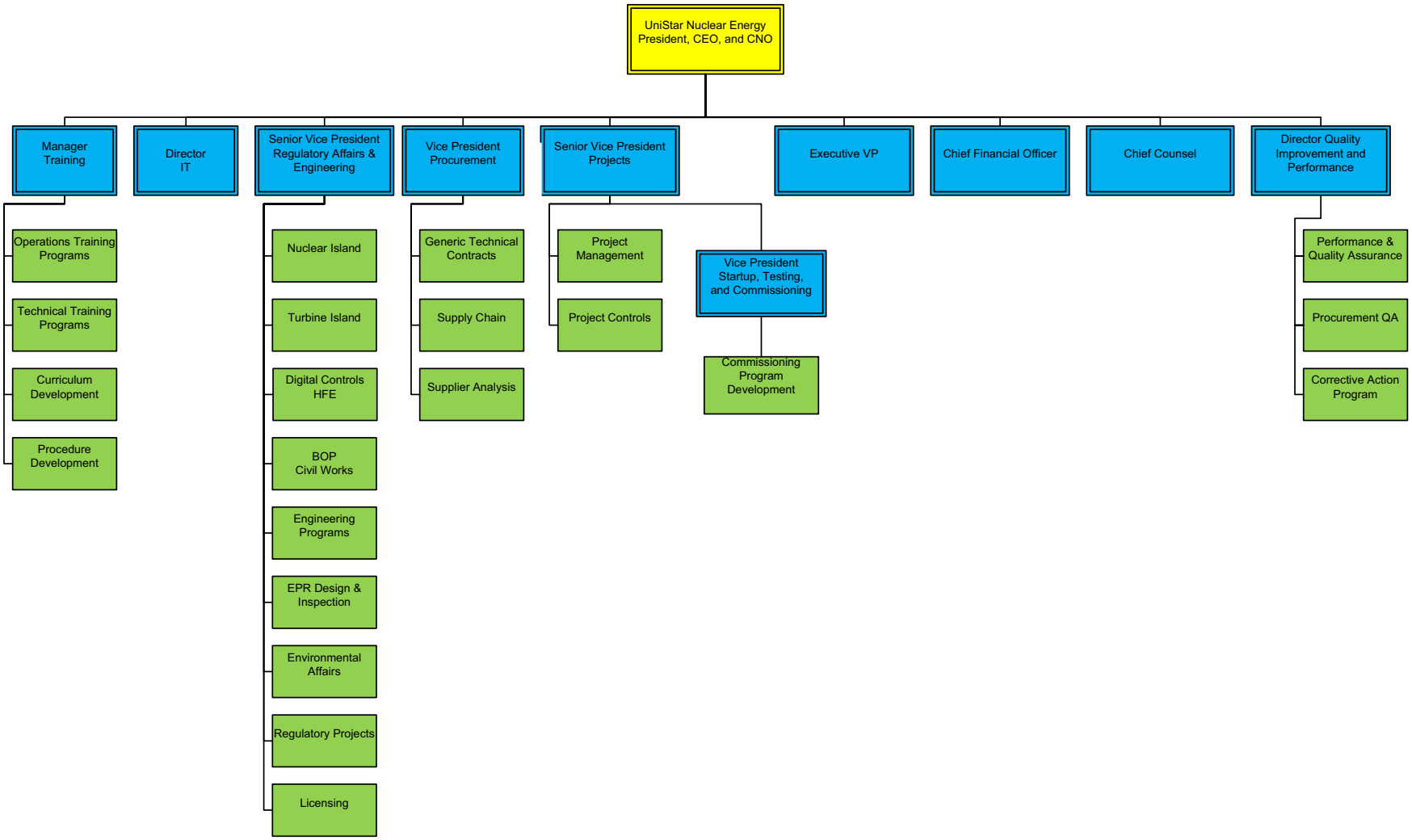


Figure 13.1-5 — {UNO Corporate Organization}

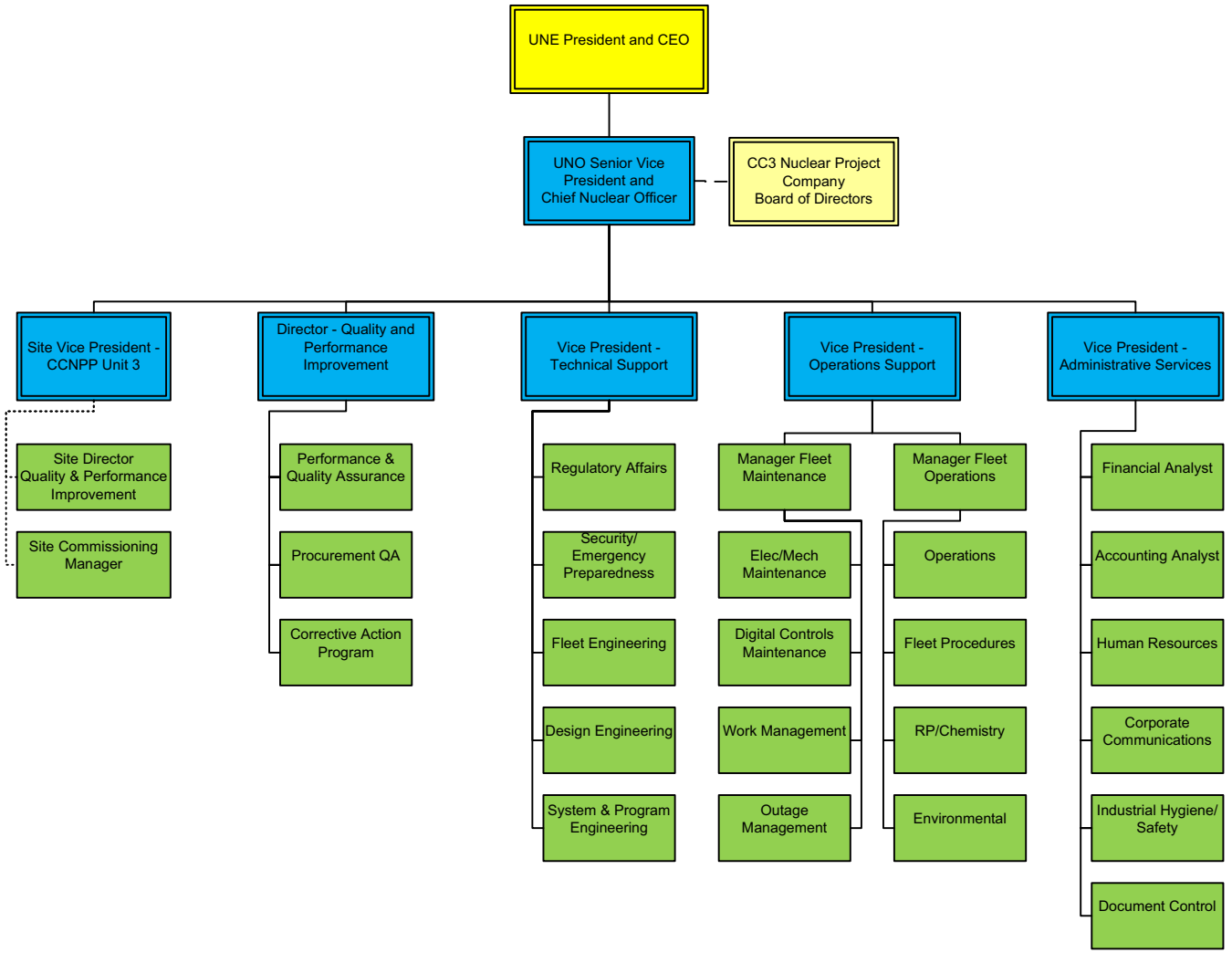


Figure 13.1-6 — {Planned UniStar Nuclear Operating Services, LLC Site Organization – Operational Phase}

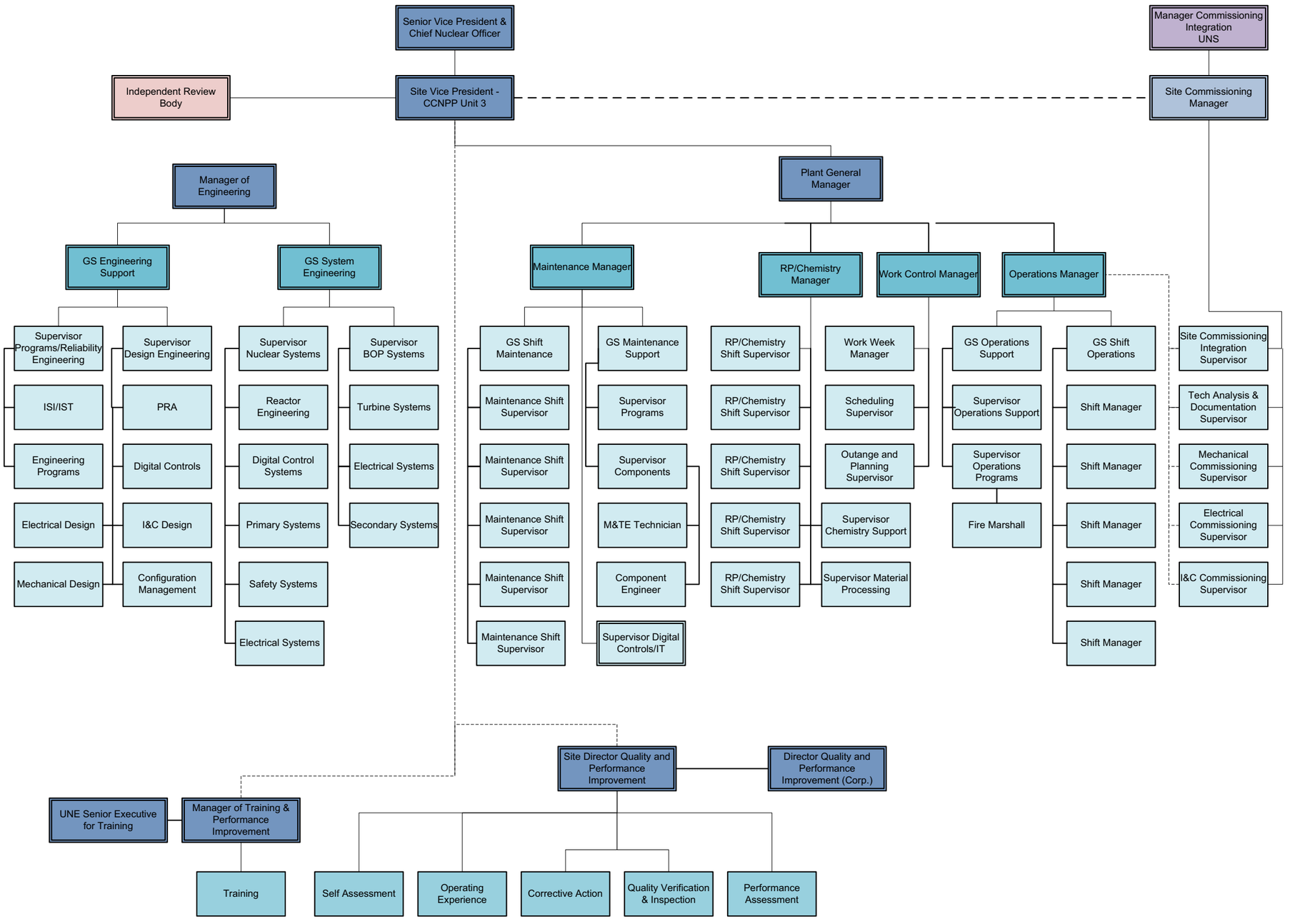
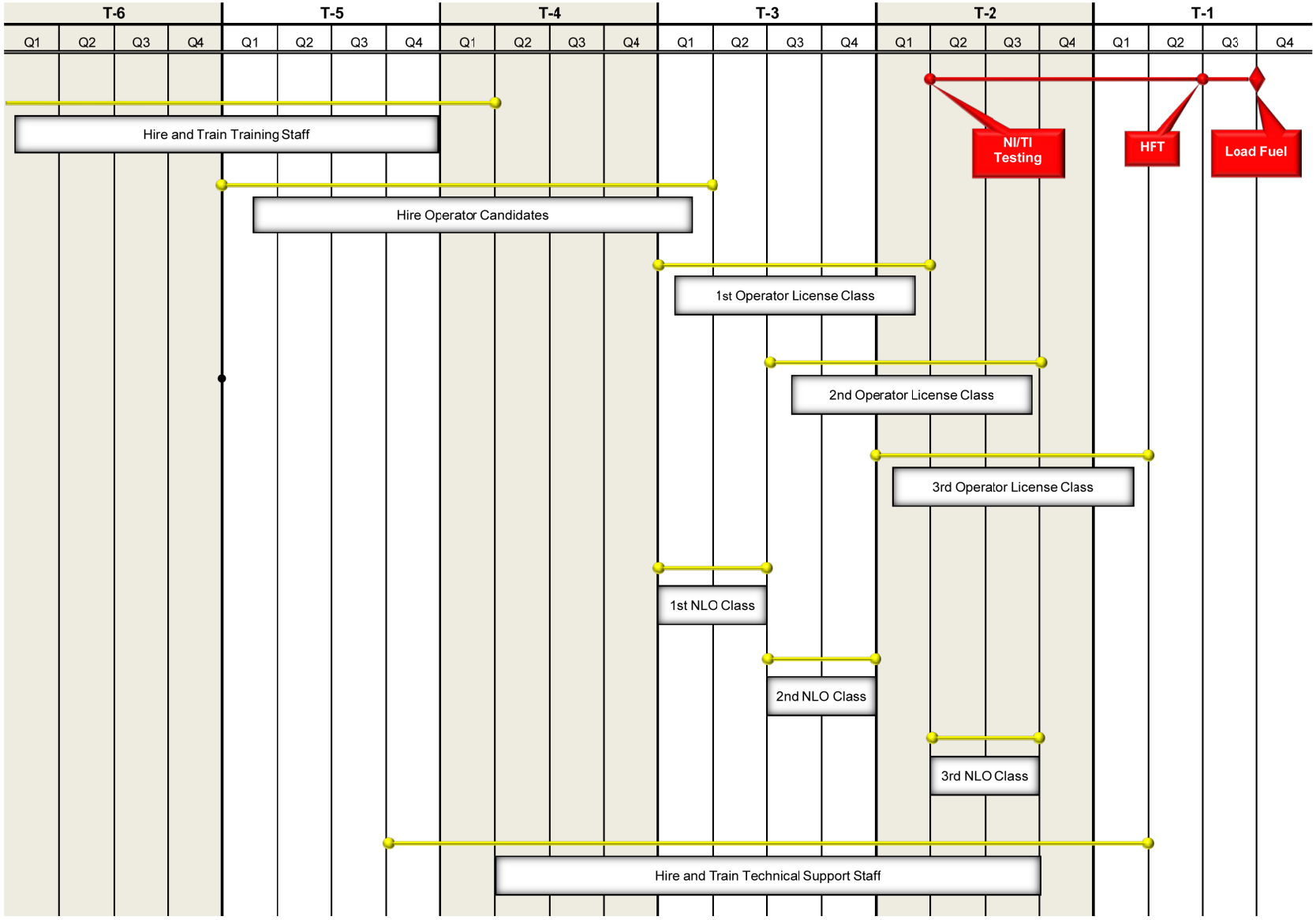


Figure 13.1-7 — {Hiring and Training Schedule for Plant Staff}



13.2 TRAINING

This section of the U.S. EPR FSAR is incorporated by reference with the following supplements.

The U.S. EPR FSAR includes the following COL Items in Section 13.2:

A COL applicant that references the U.S. EPR design certification will provide site-specific information for training programs for plant personnel.

A COL applicant that references the U.S. EPR design certification will assess their training program to demonstrate that the spent fuel pool instrumentation will be maintained available and reliable in an extended loss of AC power. Personnel shall be trained in the use and the provision of alternate power to the safety-related level instrument channels.

These COL Items are addressed as follows:

This COL Item is addressed by NEI 06-13A (NEI, 2009), "Template for an Industry Training Program Description." NEI 06-13A and Appendix A (Cold License Training Plan) of NEI 06-13A are incorporated by reference with the following supplements.

The milestone schedule for licensed and non-licensed plant staff training is provided in Table 13.4-1.

A training program will be developed and implemented to maintain the spent fuel pool instrumentation available and reliable. Personnel shall be trained in the use and the provision of alternate power to the safety-related level instrument channels. An overall integrated plan, including a description of how compliance with the requirements described in this license condition will be achieved, shall be submitted to the NRC one (1) year after issuance of the COL. An initial status report, which delineates progress made in implementing the requirements of this license condition, shall be provided to the NRC sixty (60) days following issuance of the COL and at six (6) month intervals following submittal of the overall integrated plan described above.

13.2.1 References

{NEI, 2009. NEI 06-13A, Template for an Industry Training Program Description, Rev. 2, Nuclear Energy Institute, March 2009.}

13.3 EMERGENCY PLANNING

This section of the U.S. EPR FSAR is incorporated by reference with the following supplements.

The U.S. EPR FSAR includes the following COL Item in Section 13.3:

> A COL applicant that references the U.S. EPR design certification will provide a site-specific emergency plan in accordance with 10 CFR 50.47 and 10 CFR 50 Appendix E.

This COL Item is addressed as follows:

A comprehensive Emergency Plan is provided in COLA Part 5. The schedule for emergency planning implementation is provided in Table 13.4-1.

The U.S. EPR FSAR includes the following COL Item in Section 13.3:

> A COL applicant that references the U.S. EPR design certification will address the requested information in Fukushima Recommendation 9.3 regarding Emergency Preparedness Communications and Staffing, as outlined in Enclosure 5 of the request for additional information, pursuant to the 10 CFR 50.54(f) letter dated March 12, 2012 (ML12053A340).

This COL Item is addressed as follows:

At least two (2) years prior to scheduled initial fuel load, the licensee shall have performed an assessment of the on-site and augmented staffing capability to satisfy the regulatory requirements for response to a single-unit event. The staffing assessment will be performed in accordance with NEI 12-01 (NEI, 2012), "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities."

At least two (2) years prior to scheduled initial fuel load, the licensee shall revise the Emergency Plan to include the following:

- Incorporation of corrective actions identified in the staffing assessment described above.
- Identification of how the augmented staff will be notified given degraded communications capabilities.

At least two (2) years prior to scheduled initial fuel load, the licensee shall have performed an assessment of on-site and off-site communications systems and equipment required during an emergency event to ensure communications capabilities can be maintained during prolonged station blackout conditions. The communications capability assessment will be performed in accordance with NEI 12-01 (NEI, 2012).

At least one hundred eighty (180) days prior to scheduled initial fuel load, the licensee shall complete implementation of corrective actions identified in the communications capability assessment described above, including any related emergency plan and implementing procedure changes and associated training.

13.3.1 References

NEI, 2012. NEI 12-01, Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities, Revision 0, Nuclear Energy Institute, May 2012.

13.4 OPERATIONAL PROGRAM IMPLEMENTATION

This section of the U.S. EPR FSAR is incorporated by reference with the following supplements.

The U.S. EPR FSAR includes the following COL Item in Section 13.4:

> A COL applicant that references the U.S. EPR design certification will provide site-specific information for operational programs and schedule for implementation.

This COL Item is addressed as follows:

The operational programs listed in Table 13.4-1 are those required by regulations and subject to program implementation license conditions. The table includes each of the operational programs listed in Section C.I.13.4, Operational Program Implementation, of Regulatory Guide 1.206, dated June 2007 (NRC, 2007). Table 13.4-1 lists each operational program, the regulatory source of the program, the section of the FSAR in which the operational program is described, and the associated milestones.

These operational programs and their implementation are fully described in the applicable sections of the FSAR identified in Table 13.4-1 or the associated U.S. EPR FSAR section. In some instances, operational programs may be implemented in phases and the phased implementation milestones are also provided in Table 13.4-1. For example, the Radiation Protection Program implementation milestones are based on radioactive sources on site, fuel on site, fuel load, and first shipment of radioactive waste.

13.4.1 References

{This section is added as a supplement to the U.S. EPR FSAR.

NRC, 2007. Combined License Applications for Nuclear Power Plants (LWR Edition), Regulatory Guide 1.206, Revision 0, U.S. Nuclear Regulatory Commission, June 2007.

Table 13.4-1 — {Operational Programs Required by NRC Regulations and Program Implementation}

(Page 1 of 6)

		Source	FSAR	Implementation	
Item	Program Title	(Required By)	Section	Milestones	Requirements
1	In-service Inspection Program	10 CFR 50.55a(g)	5.2.4 6.6 5.4.2.5 Note 1 Note 3	Prior to commercial service	10 CFR 50.55a(g) ASME XI IWA 2430(b)
2	In-service Testing Program	10 CFR 50.55a(f); 10 CFR Part 50, App. A	3.9.6 5.2.4 Note 1 Note 3	After generator online on nuclear heat	10 CFR 50.55a(f) ASME OM Code
3	Environmental Qualification Program	10 CFR 50.49(a)	3.11 Note 1	Prior to initial fuel load	License Condition
4	Preservice Inspection Program	10 CFR 50.55a(g)	5.2.4 6.6 5.4.2.5 Note 1	Completion prior to initial plant startup	10 CFR 50.55a(g) ASME Code Section XI IWB-2200(a)
5	Reactor Vessel Material Surveillance Program	10 CFR 50.60; 10 CFR 50, App. H	5.3.1 Note 1	Prior to initial fuel load	License Condition
6	Preservice Testing Program	10 CFR 50.55a(f)	3.9.6 5.2.4 Note 1	Prior to initial fuel load	License Condition
7	Containment Leakage Rate Testing Program	10 CFR 50.54(o); 10 CFR 50, App. A (GDC 53); 10 CFR 50, App. J	6.2.6 Note 1	Prior to initial fuel load	10 CFR50, App. J, Option B, Section III.A
8	Fire Protection Program	10 CFR 50.48	9.5.1 Note 1	Prior to initial fuel receipt for elements of the Fire Protection Program necessary to support receipt and storage of fuel onsite. Prior to initial fuel load for elements of the Fire Protection Program necessary to support fuel load and plant operation	License Condition

Table 13.4-1 — {Operational Programs Required by NRC Regulations and Program Implementation}

(Page 2 of 6)

		Source	FSAR	Implementation	
Item	Program Title	(Required By)	Section	Milestones	Requirements
9	Process and Effluent Monitoring and Sampling Program: Radiological Effluent Technical Specifications / Standard Radiological Effluent Controls Offsite Dose Calculation Manual Radiological Environmental Monitoring Program Process Control Program	10 CFR 20.1301 and 20.1302; 10 CFR 50.34a; 10 CFR 50.36a; 10 CFR 50, App. I, Sect. II and IV Same as above Same as above Same as above	Note 1 11.5 11.5 11.5 11.4	Prior to initial fuel load Prior to initial fuel load Prior to initial fuel load Prior to initial fuel load	License Condition License Condition License Condition License Condition
10	Radiation Protection Program	10 CFR 20.1101 10 CFR 20.1406	12.1 12.5 Note 1 Note 4	Prior to receipt of by-product, source, or special nuclear material (excluding Exempt Quantities as described in 10 CFR 30.18) for those elements of the Radiation Protection Program (RPP) necessary to support such receipt Prior to receipt of fuel onsite for those elements of the RPP necessary to support such receipt Prior to initial fuel load for those elements of the RPP necessary to support fuel load and plant operation Prior to first shipment of radioactive waste for those elements of the RPP necessary to support such shipment	License Condition
11	Non-licensed Plant Staff Training Program	10 CFR 50.120; 10 CFR 52.79(a)(33)	13.2	18 months prior to scheduled date of initial fuel load	10 CFR 50.120(b)

Table 13.4-1 — {Operational Programs Required by NRC Regulations and Program Implementation}

(Page 3 of 6)

		Source	FSAR	Implementation	
Item	Program Title	(Required By)	Section	Milestones	Requirements
12	Reactor Operator Training Program	10 CFR 55.13; 10 CFR 55.31; 10 CFR 55.41; 10 CFR 55.43; 10 CFR 55.45	13.2	18 months prior to scheduled date of initial fuel load	License Condition
13	Reactor Operator Requalification Program	10 CFR 50.34(b); 10 CFR 50.54(i); 10 CFR 55.59	13.2	Within 3 months after issuance of the COL or the date the Commission makes the finding under 10 CFR 52.103(g)	10 CFR 50.54(i-1)
14	Emergency Plan	10 CFR 50.47; 10 CFR 50, App. E	13.3	Full participation exercise conducted within 2 years of scheduled date for initial fuel load Onsite exercise conducted within one year of scheduled date for initial fuel load Detailed implementing procedures submitted no less than 180 days prior to scheduled date for initial fuel load A detailed analysis demonstrating that on-shift personnel assigned emergency plan implementation functions are not assigned responsibilities that would prevent the timely performance of their assigned functions as specified in the emergency plan submitted no less than 2 years prior to scheduled date for initial fuel load	10 CFR Part 50, Appendix E, Section IV. F.2a(ii) 10 CFR Part 50, Appendix E, Section IV. F.2a(ii) 10 CFR Part 50 Appendix E Section V 10 CFR Part 50, Appendix E, Section IV.A.9

Table 13.4-1 — {Operational Programs Required by NRC Regulations and Program Implementation}

(Page 4 of 6)

		Source	FSAR	Implementation	
Item	Program Title	(Required By)	Section	Milestones	Requirements
15	Security Program	10 CFR 50.34(c)	13.6	Prior to initial fuel load	License Condition
	Physical Security Program	10 CFR 73.55; 10 CFR 73.56; 10 CFR 73.57;	13.6	Prior to initial fuel load	License Condition
	Safeguards Contingency Program	10 CFR 50.34(d); 10 CFR 73, App. C	13.6	Prior to initial fuel load	License Condition
	Training and Qualification Program	10 CFR 73, App. B	13.6	Prior to initial fuel load	License Condition
	Special Nuclear Material Physical Protection Program	10 CFR 73.67(d), (e), (f), and (g)	13.5.2.2.10	Prior to initial receipt of fuel	License Condition
	Cyber Security Plan	10 CFR 73.54	13.6	Prior to initial receipt of fuel	License Condition
	Fitness for Duty (FFD) Program for Construction (workers and first-line supervisors)	10 CFR Part 26.5(f)	13.7	Prior to initiating 10 CFR Part 26 construction activities	10 CFR Part 26, Subpart K
	FFD Program for Construction (management and oversight personnel)	10 CFR Part 26.4(e)	13.7	Prior to initiating 10 CFR Part 26 construction activities	10 CFR Part 26, Subparts A-H, N, O
	FFD Program for Security Personnel	10 CFR Part 26.4(e)(1)	13.7	Prior to initiating 10 CFR Part 26 construction activities	10 CFR Part 26, Subparts A-H, N, O
		10 CFR 26.4(a)(5)		Prior to the earlier of: A. Licensee's receipt of SNM in the form of fuel assemblies, or B. Establishment of a Protected Area, or C. The 10 CFR 52.1 03(g) finding	10 CFR Part 26. Subparts A-I, N, O

Table 13.4-1 — {Operational Programs Required by NRC Regulations and Program Implementation}

(Page 5 of 6)

Item	Program Title	Source (Required By)	FSAR Section	Implementation Milestones	Implementation Requirements
	FFD Program for FFD Program personnel	10 CFR Part 26.4(g)	13.7	Prior to initiating 10 CFR Part 26 construction activities	10 CFR Part 26, Subparts A, B, D-H, N, O, C (optional)
	FFD Program for persons required to physically report to the Technical Support Center (TSC) or Emergency Operations Facility (EOF)	10 CFR Part 26.4(c)	13.7	Prior to the conduct of the first full-participation emergency preparedness exercise under 10 CFR Part 50, App.E, Section F.2.a	10 CFR Part 26, Subparts A-I, N, and O, except for §§ 26.205-209
15	FFD Program for Operation	10 CFR Part 26.4(a) and (b)	13.7	Prior to the earlier of: A. Establishment of a protected area or B. The 10 CFR 52.1 03(g) finding	10 CFR Part 26, Subparts A-I, N, and O, except for individuals listed in § 26.4(b), who are not subject to § 26.205-209
16	Quality Assurance Program - Operation	10 CFR 50.54(a); 10 CFR Part 50, App. A (GDC 1); 10 CFR Part 50, App. B	17.5	Implemented (Note 2)	N/A Note 2
17	Maintenance Rule	10 CFR 50.65	17.7	Prior to authorization to load fuel per 10 CFR 52.103(g)	10 CFR 50.65(a)(1)
18	Motor-Operated Valve Testing	10 CFR 50.55a(b)(3)(ii)	3.9.6 Note 1	Prior to initial fuel load	License Condition
19	Initial Test Program	10 CFR 50.34; 10 CFR 52.79(a)(28)	14.2 Note 1	Prior to conduct of activities described in the Initial Test Program	License Condition
20	Human Performance Monitoring (HPM)	10 CFR 50.34(f); 10 CFR 52.47(a)(1)(ii)	18.12	Prior to authorization to load fuel per 10 CFR 52.103(g)	License Condition
21	Special Nuclear Material (SNM) Material Control and Accounting System	10 CFR 74.11; 10 CFR 74.13; 10 CFR 74.15; 10 CFR 74.17; 10 CFR 74.19; 10 CFR 74.31	13.5.2.2.10	Prior to initial receipt of fuel	License Condition

Table 13.4-1 — {Operational Programs Required by NRC Regulations and Program Implementation}

(Page 6 of 6)

Item	Program Title	Source (Required By)	FSAR Section	Implementation Milestones	Implementation Requirements
Note 1 The corresponding U.S. EPR FSAR sections are incorporated by reference and include additional information regarding these programs. Note 2 The Quality Assurance Program Description covers all phases of the facility's life, including design, construction, and operation. Implementation of the Quality Assurance Program Description has occurred. As such, a schedule for delayed implementation, after COL issuance, of the Quality Assurance Program Description for the operational phase and the corresponding license condition are not required. "Construction includes those activities authorized by the issued COL or Limited Work Authorization. This does not include site preparation activities such as clearing, grubbing, excavation, demolition of existing structures, etc. Note 3 The Inservice Testing Program will be fully implemented by generator online on nuclear heat. Appropriate portions of the program are implemented as necessary to support the system operability requirements of the technical specifications. Note 4 The CCNPP Unit 1 and 2 Radiation Protection Program is responsible for establishing and maintaining controls for the life of the CCNPP Unit 1 and 2 ISFSI. The CCNPP Unit 3 Radiation Protection Program will adopt the ALARA responsibility for Unit 3 personnel when CCNPP Unit 3 is provided its radioactive material license.					

13.5 PLANT PROCEDURES

This section of the U.S. EPR FSAR is incorporated by reference with the following supplements.

The U.S. EPR FSAR includes the following COL Item in Section 13.5:

A COL applicant that references the U.S. EPR design certification will provide site-specific information for administrative, operating, emergency, maintenance and other operating procedures.

This COL Item is addressed as follows:

This section of the FSAR describes the administrative and operating procedures that the operating organization (plant staff) uses to ensure that routine operating, off-normal, and emergency activities are conducted in a safe manner. Activities affecting quality shall be prescribed by and conducted in accordance with approved procedures.

A detailed Writer's Guide will be developed which ensures each procedure is sufficiently detailed, consistently formatted and complies with Human Factors Engineering principles. The typical guidance incorporated into the Writer's Guide will include but not be limited to:

- Rigorous application of HFE guidelines to procedures associated with plant operations and testing:
  - Generic Technical Guidelines (GTG) for emergency operating procedures.
  - Plant and system operations (including startup, power, and shutdown operations).
  - Abnormal and emergency operations.
  - Alarm response.
  - Equipment testing.
- Consistency in organization, style, and content.
- Consistency with terminology, abbreviations, and the use of component coding.
- Technically accurate, comprehensive, explicit, easy to use, and validated by task analysis (i.e., the user can comply with the requirements of each step).

13.5.1 Administrative Procedures

Regulatory Guide 1.33, Revision 2 (NRC, 1978) is used as guidance for the preparation of administrative and unit procedures.

13.5.1.1 Administrative Procedures – General

This section is added as a supplement to the U.S. EPR FSAR.

{Procedures shall be reviewed, approved and controlled, according to the requirements of the QAPD. The responsible department head is charged with the preparation of procedures within

the area of activity assigned to that individual under the overall responsibility of the Vice President, CCNPP Unit 3.

The UNO Vice President - Operations Support ensures that U.S. EPR procedures are prepared, reviewed, and approved in accordance with the QAPD.

13.5.1.1.1 Procedures Review and Approval

During the Design and Construction phase, the UNE Director - Quality and Performance Improvement shall review and concur with quality related procedures (and revisions) associated with design, construction and installation.

During the Operations phase, the UNO Site Director - Quality and Performance Improvement, the UNO Plant General Manager, UNO Manager of Engineering, and UNO Manager of Training, have the responsibility to review and approve the procedures (and revisions) that cover activities under their organizational purview. These procedures shall be prepared 6 months before the start of the first licensed operator training class.}

13.5.1.1.2 Equipment Control Procedures

Instructions shall be written to specify proper methods of obtaining clearances on plant equipment for maintenance or construction and to specify procedures for control of jumper, lifted lead, and bypass control. The clearance procedure shall assign responsibility for clearance issue to the {UNO Shift Manager}. A licensed operator, after ensuring he or she is aware of the effect of the activity on the system, shall be required to authorize all maintenance, tests, and surveillances performed on plant systems. Upon completion of the item, the document shall be returned to the operator for acceptance or for the purpose of returning the system to service. The administrative procedures which control these evolutions shall provide the required explicit notification of operational personnel whenever a safety-related system is removed from and returned to service.

The clearance procedure shall also contain certain restrictions on the issuance of a clearance. The work control procedures for control of jumper, lifted lead, and bypass control shall allow temporary alterations to critical structures, systems, or components to facilitate tests, maintenance, or operations. They shall specify administrative procedures to be followed in performing such alterations. These procedures shall be prepared 18 months before initial fuel load.

13.5.1.1.3 Control of Maintenance and Modifications

Administrative procedures shall implement the review and approval requirements for maintenance and modifications. These procedures shall include the control of plant modifications and maintenance on safety-related equipment. These procedures shall establish a framework of special process and maintenance procedures. These procedures shall be prepared 18 months before initial fuel load.

13.5.1.1.4 Fire Protection Procedures

These procedures govern the implementation of the Fire Protection Program. The Fire Protection Program is described in Section 9.5.1. Fire Protection Program procedures shall be prepared 6 months before initial fuel receipt for those procedures that implement elements of the Fire Protection Program supporting fuel onsite. Fire Protection Program procedures shall be

prepared 6 months before initial fuel load for those procedures that implement elements of the Fire Protection Program supporting fuel load and plant operation.

13.5.1.1.5 Crane Operation Procedures

Personnel involved with crane operations over the refueling cavity and fuel pool shall be qualified and shall conduct crane operations in accordance with ASME B30.2 (ASME, 2005). These procedures shall be prepared 6 months before initial fuel load.

13.5.1.1.6 Temporary Changes to Procedures

A temporary procedure change that does not change the intent of the procedure may be made provided the change is approved by two members of the staff knowledgeable in the areas affected by the procedures. The applicable procedure shall control the process, documentation and approval of the temporary changes. The procedure that addresses the requirements for temporary changes to procedures shall be prepared 6 months before the start of the first licensed operator training class.

13.5.1.1.7 Temporary Procedures

Temporary procedures may be used to direct operations during testing, refueling, maintenance and modifications; to provide guidance in unusual situations not within the scope of normal procedures; and to ensure orderly and uniform operations for short periods when the plant, a system, or a component of a system is performing in a manner not covered by existing detailed procedures, or has been modified or affected in such manner that portions of existing procedures do not apply. Temporary procedures shall define the period of time during which they may be used. The procedure that addresses the requirements for temporary procedures shall be prepared 6 months before the start of the first licensed operator training class.

13.5.1.1.8 Special Orders of a Transient or Self-Canceling Character

Special orders can be issued, when appropriate, to provide guidance to operating shifts. When used, special orders shall be temporary. The expiration period for the special order shall be noted in the special order. When appropriate, special orders shall be incorporated into either the administrative procedure regarding Conduct of Operations or another procedure, dependent on the subject matter, if the need becomes permanent. The procedure that addresses the requirements for special orders shall be prepared 6 months before the start of the first licensed operator training class.

13.5.1.1.9 Conduct of Operations

The administrative procedures regarding the Conduct of Operations shall address the requirements regarding:

- Standing orders to shift personnel including the authority and responsibility of the {UNO Shift Manager, UNO Senior Reactor Operators}, Reactor Operators, and Shift Technical Advisor (these procedures shall be prepared 6 months before the start of the first licensed operator training class).

- Assignment of shift personnel to duty stations and the definition of "surveillance area" (these procedures shall be prepared 6 months before the start of the first licensed operator training class).

- Shift relief and turnover (these procedures shall be prepared 6 months before initial fuel load).
- Fitness for duty (FFD) (these procedures shall be prepared 6 months prior to the applicable milestone provided in Table 13.4-1).
- Control room access (these procedures shall be prepared 6 months before initial fuel load).
- Limitations on work hours (these procedures shall be prepared 6 months before initial fuel load).
- Feedback of design, construction, and applicable important industry and operating experience (these procedures shall be prepared 6 months before initial fuel load).
- {UNO Shift Manager} administrative duties (these procedures shall be prepared 6 months before initial fuel load).
- Verification of correct performance of operating activities (these procedures shall be prepared 6 months before the start of the first licensed operator training class).

13.5.2 Operating and Maintenance Procedures

13.5.2.1 Operating and Emergency Operating Procedures

The {UNO Plant General Manager - CCNPP Unit 3} is responsible for the maintenance of the operating and emergency operating procedures.

13.5.2.1.1 Emergency Operating Procedures Content

No departures or supplements.

13.5.2.1.2 Emergency Operating Procedures Development Process

No departures or supplements.

13.5.2.1.3 Procedures Generation Package

The procedure development program, as described in the procedures generation package for Emergency Operating Procedures (EOPs), shall be submitted to the NRC at least three months prior to the planned date to begin formal operator training on the EOPs.

13.5.2.1.4 EOP Development Acceptance Criteria

No departures or supplements.

13.5.2.1.5 Operating Procedure Program

This section is added as a supplement to the U.S. EPR FSAR.

Operating procedures are used by the operating organization (plant staff) to conduct routine operating, abnormal and emergency activities in a safe manner. Operating procedures shall be

developed at least six months prior to fuel load to allow sufficient time for plant staff familiarization and to allow NRC staff adequate time to review the procedures and to develop operator licensing examinations.

The Plant Operating Procedures Development plan establishes:

- A scope that includes those operating procedures which direct operator actions during normal, abnormal, and emergency operations, and considers plant operations during periods when plant systems/equipment are undergoing test, maintenance, or inspection.

- The methods and criteria for development, verification and validation, implementation, maintenance, and revision of procedures. The methods and criteria are in accordance with NUREG-0737 TMI Items I.C.1 and I.C.9 (NRC, 1980 and NRC, 1983).

The classifications of operating procedures are:

- System Operating Procedures

- General Plant Procedures

- Off-Normal Operating Procedures

- Emergency Operating Procedures

- Alarm Response Procedures

- Operations Surveillance Procedures

13.5.2.1.5.1 System Operating Procedures

These procedures shall provide instructions for energizing, filling, venting, draining, starting up, shutting down, changing modes of operation, returning to service following testing (if not given in the applicable procedure), and other instructions appropriate for operation of systems important to safety. These procedures shall provide step-by-step details for system operations with appropriate prerequisites, precautions, and limitations.

13.5.2.1.5.2 General Plant Procedures

These procedures shall provide instructions for the integrated operation of the plant, e.g., startup, shutting down, shutdown, power operation and load changing, process monitoring, and fuel handling. These procedures shall provide step-by-step details for the function or task with appropriate prerequisites, precautions, and limitations. General Operating Procedures shall refer operators to System Operating Procedures for detailed instructions regarding the operation of the involved systems during unit evolutions.

13.5.2.1.5.3 Off-Normal Operating Procedures

These procedures shall specify operator actions for restoring an operating variable to its normal controlled value when it departs from its normal range or to restore normal operating conditions following a transient. An off-normal operation is a condition that could degrade into an emergency or could violate Technical Specifications if proper action is not taken. These

procedures shall identify the symptoms of the off-normal condition, automatic actions that may occur, and the appropriate immediate and subsequent operator actions.

13.5.2.1.5.4 Emergency Operating Procedures

These procedures shall direct actions necessary for the operators to prevent or mitigate the consequences of transients and accidents. The procedures shall include symptoms of the emergency conditions, automatic actions that may or should occur, and immediate and subsequent operator actions required to prevent or lessen the consequences of an emergency, and subsequent operator actions necessary to bring the plant to a safe, stabilized condition.

13.5.2.1.5.5 Alarm Response Procedures

These procedures shall guide operator actions for responding to plant alarms. A procedure is provided for each main control board annunciator identifying the proper actions to be taken by the operator in response to an alarm. Each of these procedures shall include the annunciator identification, alarm trip and reset setpoints, and proper corrective action to be taken. When corrective actions are very detailed or lengthy, the alarm response will refer to an off-normal procedure.

13.5.2.1.5.6 Operations Surveillance Procedures

These procedures shall provide step-by-step details for system or component surveillance. These procedures shall verify the operability of the system or component in accordance with Technical Specifications.

13.5.2.2 Maintenance and Other Operating Procedures

These procedures shall control the specific activities of the various departments in support of unit operation. The responsible department head is charged with the preparation of procedures within the area of activity assigned to that individual under the overall responsibility of {the UNO Site Vice President - CCNPP Unit 3}.

Sections 13.5.2.2.1 through 13.5.2.2.9 are added as a supplement to the U.S. EPR FSAR.

13.5.2.2.1 Plant Radiation Protection Procedures

These procedures shall establish the criteria, concepts and managerial policies for implementation of the Radiation Protection Program described in Section 12.5. They shall address access control, radiation work permits, contamination control, personnel monitoring, training and qualification, radiological surveillance, respiratory protection, internal dose assessment, and radioactive material control. In addition, they shall ensure that occupational radiation exposure is maintained as low as reasonably achievable (ALARA).

13.5.2.2.2 Emergency Preparedness Procedures

The Emergency Plan provided in Part 5 of the COLA describes the procedures that are utilized to implement its requirements.

13.5.2.2.3 Instrument Calibration and Test Procedures

These procedures shall address the performance of periodic calibration, functional testing, and channel checking of safety-related plant instrumentation and all instruments used to satisfy

Technical Specification requirements. These procedures shall ensure measurement accuracies are adequate to maintain plant safety parameters within operational and safety limits. In addition, instrumentation and control procedures shall outline the periodic calibration and accuracy requirements of test equipment necessary to support the calibration of safety-related instrumentation.

13.5.2.2.4 Chemistry Procedures

These procedures shall address the routine analysis and sampling methods to ensure compliance with plant chemistry and discharge limits.

13.5.2.2.5 Radioactive Waste Management Procedures

These procedures shall address the administrative controls for the shipment of solid radioactive waste and the release of liquid or gaseous radioactive waste. The procedures for solid, liquid, and gaseous radioactive waste systems shall be included in the System Operating Procedures.

13.5.2.2.6 Maintenance Procedures

Maintenance procedures shall describe maintenance planning and preparation activities. Maintenance procedures shall be developed considering the potential impact on the safety of the plant, license limits, availability of equipment required to be operable and possible safety consequences of concurrent or sequential maintenance, testing, or operating activities. Maintenance procedures shall contain sufficient detail to permit the maintenance work to be performed correctly and safely. Procedures shall include provisions for conducting and recording results of required tests and inspections, if not performed and documented under separate test and inspection procedures. References shall be made to vendor manuals, plant procedures, drawings, and other sources, as applicable.

Instructions shall be included, or referenced, for returning the equipment to its normal operating status. Testing shall be commensurate with the maintenance that has been performed. Testing may be included in the maintenance procedure or be covered in a separate procedure. Where appropriate sections of related documents, such as vendor manuals, equipment operating and maintenance instructions, or approved drawings with acceptance criteria provide adequate instructions to perform the required work in a quality manner. The applicable sections of the related documents shall be referenced in the procedure, or may, in some cases, constitute adequate procedures in themselves. Such documents shall receive the same level of review and approval as maintenance documents.

The preventive maintenance program, including preventive and predictive procedures, as appropriate, shall prescribe the frequency and type of maintenance to be performed. An initial program based on service conditions, experience with comparable equipment and vendor recommendations shall be developed prior to fuel loading. The program shall be revised and updated as experience is gained with the equipment. To facilitate this, equipment history files shall be created and maintained. The files shall be organized to provide complete and easily retrievable equipment history.

These procedures shall address safety-related work that requires a specific technique or sequence not normally part of an individual's routine skill. They support the requirements and programs of Section 13.5.1.1.3 regarding administrative control of maintenance.

13.5.2.2.7 Modifications Procedures

Plant modifications and changes to setpoints shall be developed in accordance with approved procedures. These procedures shall control necessary activities associated with the modifications such that they are carried out in a planned, controlled, and orderly manner. For each modification, design documents, such as drawings, equipment and material specifications, and appropriate design analyses, shall be developed, or the as-built design documents shall be utilized. Separate reviews shall be conducted by individuals knowledgeable in both technical and QA requirements to verify the adequacy of the design effort.

Proposed modifications that involve a license amendment or a change to Technical Specifications shall be processed as a proposed license amendment request.

Plant procedures impacted by modifications shall be changed to reflect revised plant conditions prior to declaring the system operable and cognizant personnel who are responsible for operating and maintaining the modified equipment are adequately trained.

13.5.2.2.8 Material Control Procedures

These procedures shall address the proper procurement, documentation, and control of materials and components to ensure that only correct and accepted items (consumables, items with limited shelf life, materials, parts, and components, including partially fabricated assemblies) are used or installed. These procedures shall be sufficiently detailed to ensure that materials and components are purchased and handled in a controlled manner in accordance with the QAPD.

13.5.2.2.9 Plant Security Procedures

{The Physical Security Plan provided in Part 8 and the Cyber Security Plan provided in Part 11L of the COL application describe the procedures that are utilized to implement their requirements.}

13.5.2.2.10 Special Nuclear Material (SNM) Material Control and Accounting System

A material control and accounting system consisting of special nuclear material (SNM) accounting procedures is utilized to delineate the requirements, responsibilities, and methods of SNM control from the time SNM is received until it is shipped from the plant. These procedures provide detailed steps for SNM shipping and receiving, inventory, accounting, and preparing records and reports. The SNM Material Control and Accounting (MC&A) Program description is submitted to the NRC as a separate licensing basis document.

13.5.3 References

{This section is added as a supplement to the U.S. EPR FSAR.

ASME, 2005. Overhead and Gantry Cranes - Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist, ASME B30.2, American Society of Mechanical Engineers, 2005.

NRC, 1978. Quality Assurance Program Requirements (Operation), Regulatory Guide 1.33, Revision 2, U.S. Nuclear Regulatory Commission, February 1978.

NRC, 1980. Clarification of the TMI Action Plan Requirements, NUREG-0737, U.S. Nuclear Regulatory Commission, November 1980.

NRC, 1983. Clarification of TMI Action Plan Requirements, NUREG-0737, Supplement 1, U.S. Nuclear Regulatory Commission, January 1983.}

13.6 SECURITY

This section of the U.S. EPR FSAR is incorporated by reference with the following supplements.

The U.S. EPR FSAR includes the following COL Items in Section 13.6:

A COL applicant that references the U.S. EPR design certification will provide a security plan to the NRC to fulfill the requirements of 10 CFR 52.79(a)(35).

A COL applicant that references the U.S. EPR design certification will provide a site-specific security assessment that adequately demonstrates how the performance requirements of 10 CFR 73.55(a) are met for the initial implementation of the security program.

A COL applicant that references the U.S. EPR design certification will provide a security program, through the PSP and supporting documents such as the vital equipment list and the vital areas list that incorporates the security features listed in the U.S. EPR FSAR Tier 2, Section 13.6.

A COL applicant that references the U.S. EPR design certification will provide a cyber security plan consistent with 10 CFR 73.54.

These COL Items are addressed as follows:

The Security Plan consists of the Physical Security Plan, the Guard Force Training and Qualification Plan, the Safeguards Contingency Plan, and the Cyber Security Plan. The Security Plan, with the exception of the Cyber Security Plan, is submitted to the NRC as a separate licensing document in order to fulfill the requirements of 10 CFR 52.79(a)(35) (CFR, 2008b). The Security Plan meets the requirements contained in 10 CFR 26 (CFR, 2008a) and 10 CFR 73 (CFR, 2008d) and will be maintained in accordance with the requirements of 10 CFR 52.98 (CFR, 2008c). The Security Plan, with the exception of the Cyber Security Plan, is classified as Security Safeguards Information and is withheld from public disclosure pursuant to 10 CFR 73.21(CFR, 2008e).

A Security Plan is provided in COL Application Part 8. The schedule for security plan implementation is provided in Table 13.4-1.

{The Cyber Security Plan is consistent with the guidance in Regulatory Guide 5.71 (NRC,2010), and is provided in COL Application Part 11L. The schedule for Cyber Security Plan implementation is provided in Table 13.4-1.}

A site specific Security Assessment is provided in COL Application Part 8. The site specific Security Assessment includes vulnerability assessments and defensive analysis. It adequately demonstrates how the performance requirements of 10 CRF 73.55(a) are met for the initial implementation of the security program.

U.S. EPR security related technical reports are provided in addition to the Security Plan and site specific Security Assessment. The U.S. EPR security related reports covers identification of vital equipment, development of target sets, design features to enhance security, portions of the NRC orders applicable to the current operating plants that impact U.S. EPR design, and the other security features of the U.S. EPR that establish the security system design. These reports are categorized as Safeguards Information in accordance with 10 CFR 73.21.

A security program is provided through the PSP and supporting documents such as the vital equipment list and the vital areas list that incorporates the security features listed in the U.S. EPR FSAR Tier 2 Section 13.6.

A comprehensive Security Assessment is provided in COL Application Part 8.

13.6.1 References

{This section is added as a supplement to the U.S. EPR FSAR.

CFR, 2008a. Fitness for Duty Programs, Title 10, Code of Federal Regulations, Part 26, U.S. Nuclear Regulatory Commission, 2008.

CFR, 2008b. Contents of Applications; Technical Information in Final Safety Analysis Report, Title 10, Code of Federal Regulations, Part 52.79, U.S. Nuclear Regulatory Commission, 2008.

CFR, 2008c. Finality of Combined Licenses; Information Requests, Title 10, Code of Federal Regulations, Part 52.98, U.S. Nuclear Regulatory Commission, 2008.

CFR, 2008d. Physical Protection of Plants and Materials, Title 10, Code of Federal Regulations, Part 73, U.S. Nuclear Regulatory Commission, 2008.

CFR, 2008e. Requirements for the Protection of Safeguards Information, Title 10, Code of Federal Regulations, Part 73.21, U.S. Nuclear Regulatory Commission, 2008.

NRC, 2010. Cyber Security Programs for Nuclear Facilities, Regulatory Guide 5.71, U.S. Nuclear Regulatory Commission, January, 2010.}

13.7 FITNESS FOR DUTY

This section of the U.S. EPR FSAR is incorporated by reference with the following supplements.

The U.S. EPR FSAR includes the following COL Item in Section 13.7:

> A COL applicant that references the U.S. EPR design certification will submit a PSP to the NRC to fulfill the fitness for duty requirements of 10 CFR Part 26.

This COL Item is addressed as follows:

{The Fitness for Duty Program (FFD) is implemented and maintained in multiple and progressive phases dependent on the activities, duties, or access afforded to certain individuals at the construction site. In general, two different FFD programs will be implemented: a construction FFD program and an operations FFD program. The construction and operations phase programs are illustrated in Table 13.4-1.

The construction FFD program is consistent with NEI 06-06 (NEI, 2009). NEI 06-06 applies to persons constructing or directing the construction of safety- and security-related structures, systems, or components performed onsite where the new reactor will be installed and operated. Management and oversight personnel, as further described in NEI 06-06, and security personnel prior to the receipt of special nuclear material in the form of fuel assemblies (with certain exceptions) will be subject to the operations FFD program that meets the requirements of 10 CFR Part 26, Subparts A through H, N, and O. At the establishment of a protected area, all persons who are granted unescorted access will meet the requirements of an operations FFD program. Prior to issuance of a combined license, the construction FFD program at a new reactor construction site for those subject to Subpart K will be reviewed and revised as necessary should substantial revisions occur to NEI 06-06 following NRC endorsement.

The following site-specific information is provided:

- The construction site area is defined in the Physical Security Plan and will be under the control of UniStar Nuclear Operating Services, LLC. The 10 CFR Part 26 requirements will be implemented for the construction site area based on the descriptions provided in Table 13.4-1.

- Construction Workers & First Line Supervisors are covered by the Calvert Cliffs Unit 3 FFD Program (elements Subpart K).

- UniStar Nuclear Energy (UNE) employees and UNE subcontractor construction management and oversight personnel are covered by a Calvert Cliffs Unit 3 FFD Program. Bechtel Power Corp. employees and Bechtel Power Corp. subcontractors, construction management, and oversight personnel will be covered by the Constellation Energy Corporate Security FFD Program (elements Subpart A - H, Nand 0).

- UNE security personnel are covered by a Calvert Cliffs Unit 3 FFD Program. Bechtel Power Corp. security personnel are covered by the Calvert Cliffs Unit 3 FFD Program (elements Subpart A - H, N and O). This coverage is applicable from the start of construction activities to the earlier of (1) the receipt of SNM in the form of fuel assemblies, or (2) the establishment of a Protected Area, or (3) the 10 CFR 52.103(g) finding.

- UNE FFD Program personnel are covered by a Calvert Cliffs Unit 3 FFD Program. Bechtel Power Corp. FFD Program personnel will be covered by the Calvert Cliffs Unit 3 FFD Program (elements Subpart A - H, N and O).

- UNE security personnel protecting fuel assemblies are covered by a Calvert Cliffs Unit 3 FFD Program (elements Subpart A - I, N and O).

- Personnel required to physically report to the Technical Support Center (TSC) or Emergency Operations Facility (EOF) when that requirement is in effect are covered by a Calvert Cliffs Unit 3 FFD Program.

The operations phase FFD program is consistent with the applicable subparts of 10 CFR Part 26.}

13.7.1 References

{This section is added as a supplement to the U.S. EPR FSAR.

NEI, 2009. NEI 06-06, Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites, Revision 5, Nuclear Energy Institute, August 2009.}

13.8 REFERENCES

This section of the U.S. EPR FSAR is incorporated by reference.