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## 13.0 CONDUCT OF OPERATIONS

### 13.1 ORGANIZATIONAL STRUCTURE OF APPLICANT

#### 13.1.1 MANAGEMENT AND TECHNICAL SUPPORT ORGANIZATION

##### 13.1.1.1 Organizational Arrangements

Duke Energy Progress, LLC (DEP) provides electricity and energy services to residential, commercial, and industrial customers in North and South Carolina.

The corporate organization, which provides line responsibility for operation of DEP's nuclear generation group is shown in Figure 13.1.1-1. The responsibility for operation of DEP's nuclear generation organization rests with the Senior Vice President and Chief Nuclear Officer - Nuclear Generation. He reports, through the Executive Vice President and Chief Operating Officer Generation and Transmission, to the Chair, President and Chief Executive Officer.

#### 1. Nuclear Generation

The Nuclear Generation Senior Vice President and Chief Nuclear Officer reports, through the Executive Vice President and Chief Operating Officer Generation and Transmission, to the Chair, President and Chief Executive Officer. He is responsible for managing the company's nuclear plants and assuring they are in compliance with applicable regulations, codes, and other requirements. Refer to Figure 13.1.1-1 for the organizations reporting to the Senior Vice President. The organizations that have responsibilities specific to the Harris Nuclear Plant are summarized below:

- a. Deleted by Amendment No. 48
- b. Nuclear Site Operations

The Senior Vice President Nuclear Operations for N.C. is responsible for the oversight of station performance and conformance to the fleet operating model for the Harris Nuclear Plant. The Senior Vice President Nuclear Operations for N.C. reports, through the Nuclear Chief Operating Officer; to the Chief Nuclear Officer.

- c. Harris Nuclear Plant

The Vice President, Harris Nuclear Plant reports to the Senior Vice President Nuclear Operations for N.C. and is responsible for managing all aspects of modification installation, outage management, direct plant support functions, operation, and maintenance of the Harris Nuclear Plant. Additionally, the Harris Vice President fully supports the Fleet Operating Model and is responsible for the safe, reliable, and efficient operation of the nuclear fleet. The Vice Presidents collaborate to define a clear Nuclear Generation Department strategy to support nuclear and personnel safety, production and financial excellence. The Harris Nuclear Plant Department consists of the Organizational Effectiveness Director, Training Manager, Plant Manager, Site Engineering General Manager, and indirect support from the Director Nuclear Plant Security.

- d. Deleted by Amendment No. 48
- e. The Nuclear Engineering Department

The Senior Vice President, Nuclear Engineering reports to the Senior Vice President Nuclear Corporate and is responsible for the oversight of the Nuclear Engineering organization. This organization is accountable for protecting the design basis and ensuring timely resolution to technical issues in addition to maintaining a high degree of technical precision, rigor, accuracy and completeness. The Senior Vice President, Nuclear Engineering is responsible for effective technical direction and engineering support of the nuclear fleet. This position is also responsible for providing: nuclear fuel engineering, procurement and fabrication, component engineering, engineering program management, probabilistic safety assessment, design engineering and modification installation, configuration management, and timely resolution of the industry operating experience. Reporting to the Senior Vice President, Nuclear Engineering are: (1) General Manager, Nuclear Design Engineering, (2) General Manager, Nuclear Fuels and Analysis, (3) General Manager Plant Engineering Support, and (4) General Manager of Plant Engineering. In addition, the General Manager Site Engineering at each nuclear site indirectly reports to the Senior Vice President, Nuclear Engineering.

- f. Nuclear Oversight

The Vice President Nuclear Oversight (NOS) reports to the Nuclear Generation Senior Vice President and Chief Nuclear Officer. The Vice President Nuclear Oversight is responsible for promoting safe and efficient operation of the nuclear generating sites by providing intrusive independent oversight of all Nuclear Generation activities with uncompromising standards. The oversight organization provides input to the Chief Nuclear Officer, Chief Executive Officer, and Board of Directors as requested. Nuclear Oversight advises site and senior management, completes performance based audits/assessments, promotes a safety conscious work environment of continuous improvement through use of self-evaluation, administers the nuclear Employee Concerns Program, and maintains the Approved Suppliers List through vendor qualification and surveillance. Nuclear Oversight also provides oversight of activities conducted by Nuclear Development, Nuclear Major Projects, and Project Management and Construction. Reporting to the Vice President Nuclear Oversight are the Director of Audit and Programs and the Director of Assessments and Quality Control. They are supported by the Manager of Internal Audits, and the Managers Brunswick Nuclear Oversight, Catawba Nuclear Oversight, Harris Nuclear Oversight, McGuire Nuclear Oversight, Oconee Nuclear Oversight, and Robinson Nuclear Oversight.

During the transition period, until the position title is changed in the HNP Technical Specifications, the Manager - Nuclear Oversight Section is equivalent of the former Manager - Nuclear Assessment Section.

- g. Organizational Support

The General Manager Organizational Support reports to the Senior Vice President Nuclear Corporate. Organizational Support is led by a General Manager who is responsible for providing assistance to help improve overall fleet performance. This centralized organization includes: Nuclear Corporate Organizational Effectiveness; Nuclear Training; and Emergency Preparedness.

h. Operations Support

The Vice President for Operations Support reports to the Senior Vice President Nuclear Corporate. Operations Support provides assistance to help improve operational and outage performance. This organization includes Nuclear Projects, Nuclear Support Services, and Nuclear Protective Services.

1. Nuclear Security

Nuclear Protective Services provides Nuclear Security Services, including Access Authorization, Fitness-For-Duty, Nuclear Security Training and Nuclear Security Technical & Regulatory Support, Nuclear Plant Security, and the Nuclear Security Functional Area Manager for Nuclear Generation. The Director Nuclear Plant Security is responsible for the management of the Nuclear Security Section including site Access Authorization/Fitness-For-Duty, Training & Compliance, Security Systems & Work Interaction, and Shift Operations. These organizations are led by Supervisors and Managers reporting to the Director Nuclear Plant Security. The Director Nuclear Plant Security is responsible to the Vice President – Harris Nuclear Plant for implementation of the Nuclear Security Program at the Harris Nuclear Plant as set forth in approved security plans and security procedures, and protection of the Harris Nuclear Plant against design basis threats. The Director Nuclear Plant Security reports to the Director Nuclear Security Operations who reports to the General Manager Protective Services who reports to the Vice President Operations Support.

i. Nuclear Regulatory Affairs

The Director Nuclear Regulatory Affairs reports to the Senior Vice President Nuclear Corporate. Nuclear Regulatory Affairs has responsibility for coordinating station interfaces with regulatory agencies and for providing review of appropriate technical matters.

j. Nuclear Operations

The General Manager for Nuclear Operations reports to the executive for Nuclear Corporate. Nuclear Operations includes the group of CFAMs (Corporate Functional Area Managers) that provide the structure, responsibilities, and expectations for the Nuclear Generation Department Peer Groups.

k. Nuclear Organizational and Leadership Development

The Director of Nuclear Organizational and Leadership Development reports to the executive for Nuclear Corporate. This group has responsibility for ensuring leadership development and a strategic workforce are in place.

13.1.1.2 Qualifications

The DEP Corporate Organization is fully qualified to support the operation of the SHNPP as documented by the issuance of the Facility Operating License.

13.1.2 OPERATING ORGANIZATION\*

13.1.2.1 Introduction

The SHNPP organization is based on the considerable experience that DEP has operating its four nuclear units, Harris Unit No. 1, Robinson Unit No. 2 and Brunswick Units 1 and 2. Duke Energy Progress, Inc. will comply with ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," as indicated in Section 1.8, in the operation and administration of the Shearon Harris Nuclear Power Plant.

13.1.2.2 Personnel Functions, Responsibilities, and Authorities

13.1.2.2.1 Deleted by Amendment No. 59

13.1.2.2.2 Plant Manager - Harris Plant

The Plant Manager - Harris Plant is responsible for all phases of plant management, including administration, operation, and maintenance. He manages and controls the organization through personal contact with the unit heads and through written reports, meetings, conferences, and in-plant inspections. He is responsible for adherence to the requirements of the operating license, technical specifications, Corporate Quality Assurance Program, and Corporate Health Physics and Nuclear Safety policies. He is responsible for the establishment and approval of qualification requirements for Harris Plant Management Section staff positions; the personal review of the qualifications of specific personnel for managerial and supervisory positions in the Harris Plant Management Section; and the review of and concurrence in the plant radiation protection, fire protection, operations, and maintenance programs. He is supported in these responsibilities by (1) the Manager - Maintenance, (2) the Manager - Outage and Scheduling, (3) the Manager - Operations, (4) the Superintendent - Radiation Protection, and (5) the Superintendent - Environmental and Chemistry. He has the authority to issue procedures, standing orders, and special orders. In the absence of the Plant Manager - Harris Plant, an individual designated by the Plant Manager - Harris Plant will assume his authority and responsibilities. The Plant Manager - Harris Plant reports directly to the Harris Nuclear Plant Vice President.

During the transition period, until the position title is changed in the HNP Technical Specifications, the Plant Manager is equivalent of the former Plant General Manager.

13.1.2.2.3 Deleted by Amendment No. 49

13.1.2.2.4 Environmental & Chemistry Unit/Radiation Protection Unit

13.1.2.2.4.1 Environmental & Chemistry (E&C) Unit

The Superintendent - E&C is responsible for the plant environmental, chemistry, and radiochemistry programs, and for ensuring that plant activities are conducted in a manner that will protect the plant, employees, visitors, the general public, and the surrounding community. His/her primary duty is organizing, planning, and controlling chemistry resources to provide the required support while ensuring compliance with plant Technical Specifications and all applicable state and federal regulations and permit requirements. Major responsibilities include: 1) ensuring that programs and related procedures are developed and administered to meet plant needs and regulatory requirements; 2) maintaining an awareness of current and pending regulations in the areas of chemistry, radiochemistry, and environmental matters as they pertain to plant operations; and 3) providing adequate documentation of radioactive effluents, chemical control of plant systems, and environmental surveillance, and ensuring that these records are maintained in an up-to-date, retrievable manner. He/she accomplishes this through a staff of supervisors, technicians, and specialists. The Superintendent - E&C reports to the Plant Manager - Harris Plant.

13.1.2.2.4.2 Radiation Protection (RP) Unit

The Superintendent - RP is responsible for the plant health physics program and for ensuring that plant activities are conducted in a manner that will protect the plant, employees, visitors, the general public, and the surrounding community. His/her primary duty is organizing, planning, and controlling HP resources to provide the required support while ensuring compliance with plant Technical Specifications, the ALARA concept, and all applicable state and federal regulations and permit requirements. Major responsibilities include: 1) ensuring that programs and related procedures are developed and administered to meet plant needs and regulatory requirements; 2) maintaining an awareness of current and pending regulations in the area of health physics as they pertain to plant operations; and 3) providing adequate documentation of individual radiation exposures, radiation work permits, and other subunit activities, and ensuring that these records are maintained in an up-to-date, retrievable manner. The Superintendent - RP also manages and directs HP oversight of the receipt and storage at HNP of spent nuclear fuel from the Brunswick and Robinson plants, and maintains emergency response readiness at HNP for off-site accidents or events involving spent fuel shipping casks. He/she accomplishes this through a staff of supervisors, technicians, and specialists. The Superintendent - RP reports to the Plant Manager - Harris Plant.

13.1.2.2.5 Maintenance Unit

The Maintenance Unit performs corrective and preventive maintenance on plant systems and equipment. The Manager - Maintenance is responsible for corrective and preventive maintenance for the equipment of the unit and in the support facilities. This includes oversight for the development of work packages for both on-line and outage work, development of new maintenance procedures and revision of existing procedures, ensuring that the equipment and associated instrumentation and controls, mechanical, and electrical systems in the unit and support facilities are maintained at optimum dependability and operating efficiency. He is responsible for providing supervision and operation of the calibration laboratory and repair of

solid state electronic cards. He is responsible for the coordination of these functions and for approval of working procedures and standards. He is also responsible for the training and qualification of personnel within the Maintenance Unit. He is responsible for directing the maintenance support and annual inspection of the DEP owned spent fuel shipping casks and railcars, control of the work schedule for the fuel handling building operating floor, and fuel offload activities related to the spent fuel casks. He is assisted by the Superintendent - Mechanical Maintenance, Superintendent - I&C/Electrical Maintenance, Superintendent - Facilities, and Superintendent - Work Execution, Supervisors, I&C Technicians, Mechanics, and others. The Manager - Maintenance reports to the Plant Manager - Harris Plant.

The Superintendent - Mechanical Maintenance ensures that mechanical systems, equipment, instrumentation, controls, and electrical systems under his control are maintained at optimum dependability, safety, and operating efficiency to comply with plant technical specifications, QA, Security, Radiation Control and plant procedures, and regulatory requirements. He accomplishes this by planning, directing, and controlling a trained staff, inspecting maintenance work, providing effective maintenance procedures and standards, and recommending improvements in the Preventive and Corrective Maintenance Program. He is assisted in these functions by a staff of Supervisors, I&C Technicians, and Mechanics. The Superintendent - Mechanical Maintenance reports to the Manager - Maintenance Unit.

The Superintendent - I&C/Electrical Maintenance ensures that equipment, instrumentation, controls, and electrical systems under his control are maintained at optimum dependability, safety, and operating efficiency to comply with plant technical specifications, QA, Security, Radiation Control and plant procedures, and regulatory requirements. He accomplishes this by planning, directing, and controlling a trained staff, inspecting maintenance work, providing effective maintenance procedures and standards, and recommending improvements in the Preventive and Corrective Maintenance Program. He is assisted in these functions by a staff of I&C Supervisors and I&C Technicians. The Superintendent - I&C/Electrical Maintenance reports to the Manager - Maintenance Unit.

The Superintendent - Facilities is responsible for the supervision of site craft personnel utilized for modification installation, outage support and other miscellaneous work of a temporary nature. This craft may include pipe fitters, welders, electricians, carpenters, sheet metal workers, etc., as necessary. He is responsible for the training, qualifications and supervision of site personnel involved with decontamination, housekeeping and facilities maintenance/renovation.

He is also responsible for implementing and tracking the Maintenance Corrective Action Subprogram. He is assisted by a staff of Analysts, Supervisors, Mechanics, I&C/Electrical Technicians, contract personnel, and others. The Superintendent - Facilities reports to the Manager Maintenance Unit.

The Superintendent - Work Execution provides an avenue for equipment maintenance needs identified in the work management system to be planned, prepared, preparation verified and properly synchronized within the online and outage scheduling process. The Work Execution subunit includes several scope elements. These include Fix-It-Now (FIN) teams, Single Point of Contact (SPOC) teams or Shift Maintenance Support, Planning and Online and Outage Coordination. Fix-It-Now (FIN) teams are multi-discipline and split by Mechanical and I&C/Electrical.



#### 13.1.2.2.6 Operations Unit

The Operations Manager ensures the safe and efficient operation of the unit and required support facilities. He is responsible for primary and secondary system performance and the timely completion of the scheduled periodic tests, and for adherence to the requirements of the operating license and technical specifications. The Manager - Operations or his designee shall grant approval prior to each usage of Technical Specification 3.0.4 to allow entry into an operational mode when the conditions for the LCO are not met. The purpose of this approval is to ensure that:

1. The remedial measures prescribed by the applicable Technical Specification Action Requirements provide a sufficient level of protection to permit operational mode changes and safe long-term operation consistent with the licensing basis as described in the FSAR, and
2. It will be the exception when plant startup commences to have important safety features inoperable.

The Operations Manager is responsible for orderly and safe operations, turnovers, and compliance with operating instructions. The Operations Manager shall meet one of the following: (1) hold a (SRO) Senior Reactor Operator License, or (2) have held a Senior Reactor Operator License for a similar unit, or (3) have been certified for equivalent senior operator knowledge for a similar unit. If the Operations Manager does not hold a Senior Reactor Operator License, an off-shift Operations Superintendent who reports directly to the Operations Manager and holds a Senior Reactor Operator License shall be designated to supervise shift work and licensed activities. The Senior SRO Licensed Operator on each shift (known as a Superintendent - Shift Operations or Shift Manager) reports to an individual that holds an SRO license at Harris. The Operations Manager has the authority to issue Standing Instructions. The Operations Manager is supported in these responsibilities by a staff consisting of: Nuclear Operations Online Manager, Nuclear Operations Support Manager, Manager Shift Operations, and Nuclear Operations Outage Manager. The Operations Manager reports to the Plant Manager - Harris Plant.

Any plant documents referencing the Manager - Shift Operations position, will be construed such that those duties and responsibilities will be fulfilled by the Operations Manager or a designated off-shift Operations superintendent with an SRO license.

The Harris Plant Operations Unit will have shift operating crews assigned to provide 24 hour coverage of plant activities. Each shift operating crew will be staffed in accordance with Technical Specification Table 6.2 1.

Each Shift Operating Crew in the Harris Plant Operations Unit shall meet the following requirements:

1. When the unit has fuel in the reactor core, there shall be a Shift Manager with an SRO license on site at all times.
2. When the unit has fuel in the core, there shall be a licensed operator in the control room at all times.

3. When the reactor is operating, there shall also be a licensed SRO in the control room at all times.
4. When the reactor is operating, there shall be an additional licensed operator available to provide relief for the control room operator and to perform duties outside the control room.
5. When the reactor contains fuel, there shall be an auxiliary operator in addition to the individuals required in (1) through (4) above. An additional auxiliary operator is required when the reactor is operating.
6. For all core alterations, there shall be a licensed SRO or SRO limited to Fuel Handling to directly supervise the core alteration. This SRO shall not be assigned any other concurrent operational duties.
7. The Unit Senior Control Operator shall be assigned only the minimal administrative duties required to operate his shift.

NOTE: The Superintendent Shift Operations is also referred to as the Shift Manager or Nuclear Shift Manager. The Unit Senior Control Operator also referred to as CRS, Control Room Supervisor, is an SRO.

The Shift Managers ensure the safe, dependable, and efficient operation of the plant during their assigned shift. They are responsible for adherence to the operating procedures, the operating license, and technical specifications. The Shift Manager, Unit - SCO or another licensed SRO on shift designated by the Shift Manager is responsible for reviewing surveillance tests, reviewing operating data, shift reports of equipment malfunctions or unusual system behavior, and initiating corrective action. In the event of a reactor trip or an unexplained or unscheduled power reduction, the Shift Manager or designee shall determine the circumstances, analyze the cause, and determine that operations can proceed safely before the reactor is returned to power after a trip or unexplained or unscheduled power reduction. It is the responsibility and authority of the Shift Managers to maintain the broadest perspective of operational conditions affecting the safety of the plant and to keep this as the highest priority when on duty. The Shift Manager shall hold a Senior Operator's license. During an accident, the Shift Manager, until properly relieved, remains in the Control Room to direct the activities of Control Room Operators. He may be relieved only by qualified persons holding SRO licenses. The Shift Manager is supported by and supervises the Unit Senior Control Operator, Senior Control Operators, Control Operators, Auxiliary Operators, and the Shift Technical Advisor. The Shift Manager reports to the Operations Manager or a designated off-shift Operations Superintendent who reports directly to the Operations Manager and holds an SRO license.

The Shift Manager is the designated individual in charge of the plant on back shifts unless specifically relieved of the responsibility by either the Operations Manager or the Plant Manager - Harris Plant. He is responsible for all personnel assigned on the back shifts including operators, mechanics, electricians, HP technicians, chemistry technicians, and I&C technicians.

The following personnel provide assistance to the Operations Manager in accomplishing his assigned duties as stated.

1. Licensed Operators - The licensed operators are responsible for performing shift operations in accordance with the procedures, instructions, set points, limitations, and precautions contained in the Plant Operating Manual and the Technical Specifications. They exercise continuous monitoring of plant conditions and system parameters. They manipulate the controls and equipment to start up, change output, and shut down the plant as required by operating schedules and load demands. They initiate the immediate actions necessary to maintain the plant in a safe shutdown condition during abnormal and emergency situations. They maintain required records of plant data, shift events, and performance checks. They initiate plant corrective maintenance to report and document equipment problems. The Unit Senior Control Operator has the control room command function unless he is relieved by the Shift Manager. The licensed operators and Auxiliary Operators on shift report to the Unit Senior Control Operator. The Unit Senior Control Operator reports to the Shift Manager.
2. Non-Licensed Operators - The non-licensed auxiliary operators are responsible to the Unit Senior Control Operator for assisting in the performance of assignments associated with shift operations or refueling. The non-licensed operators' duties are normally associated with the operation of auxiliary systems and equipment outside the control room. Non-licensed operators perform shift operations of the Waste Processing Systems. Non-routine operations are performed under the direction of a licensed control operator or Unit Senior Control Operator.
3. Unit Senior Control Operator (Unit SCO) - The Unit SCO's primary responsibilities include:
  - a. Maintaining the plant in a safe operating condition at all times. This responsibility includes the authority to shut down the plant as necessary to ensure safe operations and suspend or prohibit any activity during reduced inventory conditions which compromises the stability of the RCS or its support systems.
  - b. Performing shift operations in accordance with the Plant Operating Manual and Technical Specifications.
  - c. Running the day-to-day operation of the Operations unit.
  - d. Directing Main Control Room activities during normal, abnormal, and emergency conditions.

The Unit SCO is responsible to the Shift Manager.

4. Deleted by Amendment 48.
5. Fire Protection Support Personnel - Fire Protection Support Personnel are responsible for the day to day implementation of the fire protection program and the general fire safety for employees. They implement this responsibility by performing the duties assigned to them in the plant Fire Protection procedures.
6. Shift Technical Advisor - The Shift Technical Advisor provides accident assessment and technical advice concerning plant safety to shift operations personnel. He assists with reportability evaluations for shift operations personnel. He accomplishes this by

performing engineering evaluations of plant operations, maintaining and broadening his knowledge of normal and off-normal operations, and diagnosing off-normal events. The On-shift Shift Technical Advisors report to the Shift Manager.

7. Operations Support Manager. The Operations Support Manager's role includes the following: Manage the CAP process for Operations, conduct root and apparent cause evaluations, address significant INPO IERs and Areas For Improvements (AFI's) from INPO evaluations at Harris Nuclear Plant, manage the Operations budget, plan/implement improvement activities for Operations in alignment with the CFAM, and provide training liaison to support sustained performance improvement. The Operations Support Manager reports to the Operations Manager.

13.1.2.2.6.1 Assignment of On-Site Shift Operations

The Shift Manager is responsible for operating activities at the plant. The shift complement consists of one Shift Manager, one Unit Senior Control Operator (SRO), two Control Operators (RO), and a minimum of two Auxiliary Operators, and at least one technician qualified in radiation protection measures. Each shift will also have personnel fulfilling roles in Fire Protection and Radwaste Control. The Harris Plant Management will have shift operating crews assigned to provide 24 hour coverage of plant activities. Each shift operating crew will be staffed in accordance with Technical Specification Table 6.2-1 and the Harris Emergency Plan. On-call personnel will be available to support emergencies. Engineers will also be available as required, although they will normally work a regular schedule.

During core alterations there will be one Senior Reactor Operator in Reactor Containment. This Senior Reactor Operator will direct and supervise the operation and will report to the Shift Manager.

The following chart contains the minimum shift assignments of the Operation Unit:

<u>MINIMUM SHIFT CREW COMPOSITION</u>		
<u>Operating Mode</u>		
<u>LICENSE CATEGORY</u>	<u>APPLICABLE OPERATIONAL MODES</u>	
	<u>1, 2, 3, 4</u>	<u>5 &amp; 6</u>
SRO	2	1
RO	2	1
Non-Licensed	2	1

Shift crew composition, including an HP technician qualified in HP procedures, may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements. In the unlikely event an unexpected absence occurs that would involve the health physics technician on duty, it is possible this position would be covered by the individual qualified in HP procedures for short periods of time, e.g., a few hours.

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\*Does not include the licensed Senior Reactor Operator or Senior Reactor. Operator limited to Fuel Handling, supervising core alterations.

Operational Modes listed above are defined in the Technical Specifications. In the event that additional health physics personnel are required, it is projected that contract health physics services will be used. The number of contract health physics personnel required, and their ANSI qualifications will be situationally dependent.

#### 13.1.2.2.7 Outage and Scheduling Unit

The unit provides oversight for the scheduling and execution of both planned and forced outages, Long Range Planning, and for the management of planned and forced outages.

The Manager - Outage and Scheduling provides direct support to the Plant Manager - Harris Plant in the areas of monitoring of the Work Management Process, risk management, Long Range Planning and management of forced and planned outages. The On-Line Work Management Supervisor reports to the Manager - Outage and Scheduling and is responsible for scheduling surveillance tests and developing the weekly work schedule.

#### 13.1.2.2.8 Harris Engineering

The General Manager Site Engineering provides engineering leadership and oversight to ensure engineering related issues at the site are resolved to support safe, reliable and efficient plant operation, and to ensure engineering activities including system and component health trending and monitoring, and support of maintenance, operating, and surveillance activities are performed such that the plant design and licensing basis and configuration control are maintained. The General Manager Site Engineering reports directly to the Site Vice President and indirectly to the Vice President Nuclear Engineering.

#### 13.1.2.2.9 Other organizations

##### 13.1.2.2.9.1 Organizational Effectiveness

Organizational Effectiveness provides staff functions to the entire plant for Licensing/Regulatory Affairs, Performance Improvement, procedure activities, and Emergency Preparedness. Organizational Effectiveness is responsible for the updating of the FSAR and Technical Specifications and serves as the primary point of contact for the NRC. The Manager Organizational Effectiveness is supported by supervisors and staff within the following units:

- a. Licensing/Regulatory Affairs. The Supervisor - Licensing is responsible for Site Regulatory Affairs activities, including: leading the site for NRC Reactor Oversight Process (ROP) activities, such as coordinating inspection activities with the NRC, ensuring the site is appropriately prepared for and responsive to NRC inspections, tracking and managing cross-cutting issues, appropriately addressing Performance Deficiencies, coordinating Significance Determination Process (SDP) activities with the NGG Probabilistic Safety Analysis (PSA) organization, ensuring that the site effectively collects, reviews, and submits NRC ROP Performance Indicator data, and maintains a tracking system for the resolution of plant safety & environmental concerns. Additionally, Site Regulatory Affairs serves as the primary interface between the site management team and NRC Region II, including the Resident Inspectors. Site Regulatory Affairs ensures that the company's interests are appropriately represented during these interfaces and that information shared during these interfaces is complete, accurate, and

timely. The Supervisor - Licensing reports to the Manager - Organizational Effectiveness.

- b. Performance Improvement. The Supervisor-Performance Improvement is responsible for the implementation and oversight of the PI programs to include the Corrective Action Program (CAP), Integrated Trending and Performance Assessment Program, Self-Assessment (SA), Benchmark (BM), Operating Experience (OE), INPO Consolidated Data Entry (CDE) and NEI 09-07 Nuclear Safety Culture. Additionally the PI organization will oversee, track and monitor process of the INPO E&A Results. The Supervisor - Performance Improvement reports to the Manager - Organizational Effectiveness.
- c. Procedures. The Superintendent - Procedures will provide direct alignment of the group to site priorities and will be part of the fleet NPG action team to participate in fleet improvement initiatives. Additionally, the Superintendent will provide direction and oversight of the OPS, ENG/EP, and CHM/RP procedure activities as well as providing document control functions and administrative support. The Superintendent - Procedures reports to the Manager - Organizational Effectiveness.
- d. Emergency Preparedness. The Supervisor - Emergency Preparedness has the following primary roles and responsibilities:
  - Coordination of the site drill schedule
  - Maintains Offsite Response Organization relationships with state and local agencies
  - Conduct Station ERO notification tests and Augmentation Drills
  - Manage station EP budget
  - Provide support to other Station's EP personnel as necessary
  - Support EP Self-Assessments, Audits and Inspections
  - Maintain adequate documentation/files to support EP activities
  - Develop 50.54(q) evaluations for changes to station specific issues (e.g., plant assessment equipment modifications, Station Specific Annex revisions, etc.)
  - Administer the Station EP CAP
  - Provide oversight of LOR DEP evaluations
  - Support other station's drill and exercise activities
  - Perform Scenario Development Team Leader activities
  - Perform Drill Evaluation Team Leader responsibilities

The Supervisor - Emergency Preparedness reports to the Manager - Organizational Effectiveness

### 13.1.2.2.9.2 The Manager - Training

The nuclear training department provides support for the design, development, and delivery of training for plant personnel in the accredited training programs. In addition, the department maintains the accredited training programs to meet industry standards and accreditation objectives. Training business unit functions include the following:

- Providing initial training for the accredited training program population,
- Providing continuing training for the accredited training program population,
- Providing initial and continuing non-accredited training for some nuclear department functions,
- Ensuring accreditation renewal support activities are effectively implemented,
- Ensuring simulator maintenance and oversight,
- Maintaining an effective NRC interface for Operations initial and continuing training,
- Providing NRC initial license exam development,

The nuclear training program is implemented by the Operations Training Manager, Technical Training Supervisor, and the Maintenance Training Supervisor all reporting to the Training Manager.

## 13.1.3 QUALIFICATION REQUIREMENTS FOR PLANT PERSONNEL\*

### 13.1.3.1 Minimum Qualifications

Minimum qualifications for plant personnel are listed in DEP's position on Regulatory Guide 1.8 in Section 1.8.

## 13.2 TRAINING

### 13.2.1 TRAINING FOR OPERATIONS PLANT STAFF

The Harris Nuclear Plant (HNP) operations plant staff training programs have been developed in accordance with the Systematic Approach to Training as prescribed by the Institute of Nuclear Power Operations (INPO). The National Academy for Nuclear Training, through a formal accreditation process, verifies that HNP training programs meet the established criteria. HNP is a branch of the National Academy and has achieved accreditation of the following programs:

- Non-licensed Operator (Auxiliary Operator (AO) and Radwaste Operator (RWO))
- Reactor Operator (RO)
- Senior Reactor Operator (SRO)

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\*Further information is contained in the TMI Appendix.

- Continuing Training for Licensed Personnel (Licensed Operator Requalification (LOR))
- Shift Manager
- Shift Technical Advisor (STA)

Training programs are designed to meet the requirements of 10CFR50, 10CFR55, Regulatory Guide 1.8, NUREG-0094, "WASH-1130" USAEC, NUREG 0737, H. R. Denton letter, NUREG 0718, ANSI/ANS 3.1-1978, Regulatory Guide 1.149.

These training programs utilize appropriate combinations of classroom training, laboratory training, and on-the-job training for both initial/replacement and continuing training. Training program requirements are identified in training procedures for each course or job classification. A summary of positions requiring SRO or RO licenses or equivalent training is provided below:

Plant Manager - Harris Plant	(Selected portions of SRO Replacements training or held SRO License at same or similar plant)
Manager - Operations	(SRO License - see Section 13.1.2.2.6)
Designated Off-Shift Supervisor	(SRO License)
Shift Manager	(SRO License)
Senior Control Operators	(SRO License)
Control Operators	(RO License)

The training programs are periodically evaluated and reviewed by management for effectiveness. Revisions are made as appropriate. Records are retained as necessary to support management information needs and to provide historical data.

13.2.1.1 Deleted by Amendment No. 48.

13.2.1.1.1 Deleted by Amendment No. 48.

13.2.1.1.2 Deleted by Amendment No. 48.

13.2.1.1.3 Deleted by Amendment No. 48.

13.2.1.1.4 Deleted by Amendment No. 48.

13.2.2 TRAINING FOR TECHNICAL PLANT STAFF

The Harris Nuclear Plant (HNP) technical plant staff training programs have been developed in accordance with the Systematic Approach to Training as prescribed by the Institute of Nuclear Power Operations (INPO). The National Academy for Nuclear Training, through a formal accreditation process, verifies that HNP training programs meet the established criteria. HNP is a branch of the National Academy and has achieved accreditation of the following programs:

- Instrumentation & Control Technician
- Mechanical Maintenance Technician
- Radiological Protection Technician (i.e., Health Physics Technicians)
- Chemistry Technician (i.e., Environmental & Chemistry Technicians)
- Engineering Support Personnel



- Maintenance Supervisor

Training programs are designed to meet the requirements of ANSI/ANS-3.1, Regulatory Guide 1.8, 10 CFR Part 50, and NUREG-0737.

These training programs utilize appropriate combinations of classroom training, laboratory training, and on-the-job training for both initial/replacement and continuing training. Training program requirements are identified in training procedures for each course or job classification (i.e., Emergency Diesel Generator Training for Maintenance personnel).

13.2.2.1 Deleted by Amendment No. 48.

13.2.2.2 Deleted by Amendment No. 48.

### 13.2.3 FIRE BRIGADE TRAINING

The Fire Brigade Training Program shall in general follow the guidelines of BTP CMEB 9.5-1 to ensure that the capability to fight potential fires is established and maintained. The program shall consist of an initial classroom instruction program followed by periodic classroom instruction, fire-fighting practice, and fire drills.

13.2.3.1 Deleted by Amendment No. 48.

13.2.3.1.1 Deleted by Amendment No. 48.

13.2.3.1.2 Deleted by Amendment No. 48.

13.2.3.1.3 Deleted by Amendment No. 48.

13.2.3.2 Deleted by Amendment No. 48.

13.2.3.2.1 Deleted by Amendment No. 48.

13.2.3.2.2 Deleted by Amendment No. 48.

13.2.3.3 Deleted by Amendment No. 48.

13.2.3.4 Deleted by Amendment No. 48.

13.2.3.5 Deleted by Amendment No. 48.

13.2.3.6 Deleted by Amendment No. 48.

### 13.2.4 GENERAL EMPLOYEE TRAINING

The General Employee Training requirements are identified in training procedures (TPP/NGGC) for this job classification. All persons regularly employed at HNP are trained in the following areas commensurate with their job duties.

- Fitness for Duty

- General Plant Description
- Job Related Procedures and Instructions
- Radiological Protection
- Emergency Preparedness
- Industrial Safety
- Fire Protection
- Security
- Quality Assurance

#### 13.2.5 OTHER TRAINING PROGRAMS

Responsible managers ensure that personnel performing quality-related activities receive indoctrination and training to ensure that adequate proficiency is achieved and maintained.

#### 13.2.6 APPLICABLE NRC DOCUMENTS

The applicable portions of the NRC regulations, Regulatory Guides (RG), and reports listed below will be used in providing guidance in the training of plant personnel.

1. 10CFR50, "Licensing of Production and Utilization Facilities"
2. 10CFR55, "Operators' Licenses"
3. Regulatory Guide 1.8, "Personnel Selection and Training"
4. ANSI/ANS 3.1-1978, "American National Standards for Selection and Training of Nuclear Power Plant Personnel"
5. Utility Staffing and Training for Nuclear Power, "WASH-1130", revised June 1973
6. NRC Operator Licensing Guide, NUREG-0094, July 1976
7. NUREG 0737 "Clarification of TMI Action Plan Requirements"
8. CMEB 9.5-1, Branch Technical Position attached to SRP Section 9.5.1, "Fire Protection"
9. Letter from H. R. Denton, NRC, to All Power Reactor Applicants and Licensees, dated March 28, 1980
10. NUREG-0718, "Licensing Requirements for Pending Applications for Construction Permits and Manufacturing License"
11. Regulatory Guide 1.149, "Nuclear Power Plant Simulator for use in Operator Training"
12. Training procedures (TPP/NGGC)

#### 13.3 EMERGENCY PLANNING

The description of plans for coping with radiological emergencies at SHNPP is contained in the SHNPP Emergency Plan.

An implementation schedule for emergency response facilities was submitted to the NRC on April 15, 1983 in conformance with Supplement 1 to NUREG-0737.

#### 13.4 REVIEW AND AUDIT

##### 13.4.1 ON-SITE REVIEW

SHNPP shall adopt measures to assure that plant management conducts reviews of:

- a) Unplanned events that have operational safety significance.
- b) Modifications to existing systems, structures, and components which are important to nuclear safety.
- c) Procedures as required by Appendix A, Regulatory Guide 1.33-1978 (Rev. 2) and changes thereto.

The review activities of the on-site operating organizations shall be in accordance with Section 4.4 of ANSI N18.7-1976 as endorsed by Regulatory Guide 1.33-1978 (Rev. 2), paragraph C.5.a.

The administrative program for review, approval, and control of procedures shall be in accordance with Section 5.2.15 of ANSI N18.7-1976.

##### 13.4.2 INDEPENDENT REVIEW

The description of the Independent Review Program is contained in Section 17.3.4.1.3 "Nuclear Oversight Section Independent Review Program" of the FSAR.

##### 13.4.3 ASSESSMENT PROGRAM

The description of the Independent Assessment Program for SHNPP is contained in Section 17.3.3 of the FSAR, "Assessment."

#### 13.5 PLANT PROCEDURES\*

##### 13.5.1 ADMINISTRATIVE PROCEDURES

The Plant Manager - Harris Plant has overall responsibility for the development and implementation of the administrative and operating procedures necessary to ensure safe operation of the plant within the limits set by the facility license and Technical Specifications. These procedures assign responsibilities and delegate authorities to the SHNPP staff. These procedures provide control measures for the preparation, review, approval, revision, and use of procedures which govern quality - and safety-related plant activities. Plant Procedure PLP-114 Relocated Technical Specifications and Design Basis Requirements identifies and controls regulatory requirements previously contained in the Shearon Harris Technical Specifications. The relocation of those requirements to the attachments contained in this procedure has been

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\*Further information is contained in the TMI appendix.

approved by the NRC through the issuance of license amendments. Any future changes to PLP-114 will require a 10CFR50.59 evaluation.

#### 13.5.1.1 Conformance with Regulatory Guide 1.33

Section 1.8 describes DEP's position on conformance to Regulatory Guide 1.33.

#### 13.5.1.2 Preparation of Procedures

Safety-related plant activities are conducted in accordance with detailed written and approved procedures, consistent with requirements of ANSI 18.7 and Reg. Guide 1.33.

Plant procedures, which govern the safety-related activities of the plant staff, and the plant operating, maintenance, technical, and surveillance procedures are prepared by experienced and technically qualified personnel within the appropriate functional units of the plant organization. Procedures are reviewed in accordance with programmatic procedures and recommendations made to the functional unit manager under whose authority they were prepared. The procedures are issued following approval by the designated approval authority. In case of procedures affecting activities in more than one functional unit, the concurrence of the affected units will be obtained.

#### 13.5.1.3 Procedures.

1. Standing Order to Operations: The responsibilities and authorities of plant personnel are delineated through standing orders to Shift Manager and shift crews. In addition, corporate management periodically issues directives which emphasize that the primary management responsibility of the Superintendent - Shift Operations is to ensure safe operation of the plant during the shift, which clearly establishes the S - SO command duties.
  - a. Authority and Responsibility of Reactor Operator: The reactor operator has the responsibility and authority for manipulating controls which directly or indirectly affect core reactivity and/or the manipulation of apparatus and mechanisms other than controls which may affect the reactivity or power level of a reactor, including tripping the reactor should it be deemed necessary. The reactor operator is responsible for knowing the limits and setpoints associated with safety related equipment and systems contained in the Technical Specifications and in the operating procedures.
  - b. Authority and Responsibility of Senior Reactor Operator: The Shift Manager, who is a licensed senior reactor operator, has, in addition to the authority and responsibility assigned to the reactor operator, the overall responsibility for licensed activities on the Unit under S - SO command. S - SO fundamental and primary responsibility on shift is to maintain at all times a broad perspective on operational conditions affecting plant safety. The Shift Manager shall remain in the Control Room at all times during emergency situations to direct the activities of control operators. Pursuant to 10CFR50.54(m), the Shift Manager shall be present at the facility during initial startup and approach to power, recovery from an unplanned or unscheduled shutdown or significant reduction in power, refueling, or as otherwise prescribed in the facility license.

The Shift Manager shall not engage in administrative functions that detract from the overall responsibility for assuring safe operation of the Unit under S - SO command. The Shift Manager (or a designated SRO qualified individual) is responsible for directing the licensed activities of licensed operators, pursuant to 10CFR50.54(1).

- c. Manipulation of Controls: Administrative control procedures state that no one is permitted to manipulate facility controls which affect reactivity if they are not a licensed reactor operator or senior reactor operator, except for license trainees operating under the direction of a licensed operator or senior operator, pursuant to 10CFR50.54(i).
- d. Operations Affecting Reactivity: Administrative control procedures require that personnel operating plant apparatus and mechanisms other than controls, which may affect the reactivity or power level of the Unit, notify and obtain permission of the control room operator prior to initiating such action, pursuant to 10CFR50.54(j).
- e. Presence of Licensed Operator at Controls: A licensed reactor operator or senior reactor operator is required by administrative procedure to be present "at the controls" at all times during the operation of the Unit, pursuant to 10CFR50.54(k). Figure 13.5.1-1 indicates the area of the Control Room which is designated "at the controls."

Due to the arrangement of the control panels, parts of the main control board are not visible to an operator located at panel AEP-1. Administrative procedures define the area adjacent to AEP-1 as a "limited time area" to allow necessary manipulation of controls and alarm verification. Time spent in this area by an operator assigned to the "at the controls area" is to be minimized. Additionally, when the operator assigned to the "at the controls area" needs to enter the "limited time area" either an SRO or RO assigned to the current control room shift remains "at the controls" area within view of the main control board. Implementation of the "limited time area" is in accordance with Section C.1.2 of Regulatory Guide 1.114, "Guidance to Operators at the Controls and to Senior Operators in the Control Room of a Nuclear Power Unit," Rev. 2.

- f. Shift and Relief Turnover: Administrative control procedures provide a formal means of assuring that the oncoming operating shift has the necessary knowledge of critical plant status information and system availability. The procedures include checklists to be completed and signed by the offgoing shift personnel and reviewed and signed by the oncoming shift personnel. In addition, provision is made for periodic review to evaluate the effectiveness of turnover between the oncoming and offgoing shifts.
- g. Control Room Access: Administrative control procedures establish the authority and responsibility of the Superintendent - Shift Operations for limiting access to the Control Room. In general, access is limited to those individuals responsible for the direct operation of the Unit, to technical advisors required or requested to support operations such as maintenance or other personnel required to perform work or complete testing within the Control Room area.

2. Special Orders of a Transient Nature: From time to time, management issues special orders to the plant staff to conduct (or not to conduct) certain activities which require no changes or additions to existing procedures and/or instructions. These special orders are of a temporary or transient nature with limited duration. Typically, these special orders appear in the form of Night Orders to the Operating Shifts.
3. Equipment Control Procedures: A clearance procedure or an equipment tagging process is utilized for the purpose of protecting plant equipment and personnel. Equipment that is unsatisfactory for service or in an off normal configuration, will be controlled by use of a clearance or other plant approved configuration control instructions and documentation. These procedures are administratively controlled to include applicable regulatory requirements.
4. Control of Maintenance and Modifications The requirements for controlling plant maintenance and modifications are set forth in DEP's Corporate Quality Assurance Manual.
  - a. Maintenance: Procedures and instructions are applied to control maintenance of safety related items. Maintenance procedures and instructions include the following information, as appropriate:
    - 1) Requirements for indoctrination, training, and skills.
    - 2) Prerequisites for special environments, equipment, tools, and material preparation.
    - 3) Provisions for data collection and reporting.
    - 4) Instructions for documentation of work performed.
    - 5) Requirements for verification of functional capability and quality by inspection, witnessing, examination, including specifications of mandatory holdpoints and verification procedures or instructions.
    - 6) Quantitative and qualitative criteria for determining important steps or functions have been satisfactorily accomplished.

Procedures utilized for maintenance of safety-related structures, systems, or components are reviewed as provided for in Section 17.3.4.2 of the FSAR. This review ensures that the equipment is returned to a state of quality at least equivalent to that specified originally.

The administrative control of plant maintenance is provided by Station Administrative Controls. These controls define priorities and documentation for maintenance and repair work. The work priority established is based on urgency, and proper QA/QC considerations are given to the work.

- b. Modifications: Plant modifications and changes to defined setpoints are developed in accordance with approved procedures. These procedures assure necessary activities associated with the modifications 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 analysis are developed or the as-built design documents are utilized. Based on the information in the design documents, a written evaluation is prepared in accordance with 10 CFR 50.59. This evaluation contains the technical data, supporting evaluations, and the review questions considered and analyzed that form the bases for determining whether the modification does or does not require a license amendment to implement. Separate reviews are conducted by individuals knowledgeable in both technical and QA requirements to verify the adequacy of the design effort. The final modification package is reviewed in accordance with the provisions of Section 17.3 of the FSAR. The purpose of this review is to assess the potential degradation of plant quality as a result of the proposed modification.

In particular, the 10 CFR 50.59 evaluation, conclusions, and any proposed procedure changes are checked and it is determined if the modification involves a license amendment per 10 CFR 50.59. Proposed modifications which involve a license amendment or a change to Technical Specifications are handled in the form of proposed license amendments.

5. Surveillance Testing: Surveillance testing at Shearon Harris is administratively controlled in accordance with the requirements of the Technical Specifications.
6. Procedures for Log Book Usage and Control: Administrative procedures provide guidance and direction in the control and usage of log books. The administrative procedures provide guidance as to who maintains the narrative logs, the type of information to be logged, and the disposition of the logs when completed.

The narrative log is a chronological record of plant activities that allow for the following:

- a. Transfer of information from shift to shift
- b. Plant performance and equipment evaluation
- c. Operational performance evaluation
- d. Safety and transient analyses
- e. Review of the conduct of important evolutions
- f. Method of problem area tracking

Examples of the types of log entries necessary to accomplish the above include the following (this is not an all-inclusive list):

- a. Plant status, reactor status, mode changes
- b. Changes in generator output or power level
- c. Starting and stopping major components

- d. Performance of surveillance or periodic testing
  - e. Instrument and equipment malfunctions
  - f. Temporary modifications
  - g. Starting and stopping of gaseous or liquid releases
7. Special Procedures: Special procedures may be issued for the performance of activities which are of an infrequent or nonrecurring nature. Such activities may include:
- a. Direction of operations during testing, refueling, maintenance, and modifications.
  - b. Guidance in unusual situations not within the scope of the normal procedures.
  - c. Ensuring orderly and uniform operations for short periods when the plant, a system, or equipment is performing in a manner not covered by existing procedures.

Limitations on the usage of special procedures is stated in the procedures. Special procedures affecting plant safety are reviewed and approved as described in Section 13.5.1.2.

## 13.5.2 OPERATING AND MAINTENANCE PROCEDURES

### 13.5.2.1 Control Room Operating Procedures

System operating activities performed by licensed operators in the Control Room are conducted in accordance with approved, written procedures. These procedures provide detailed, preplanned instructions for performing operations in order to eliminate errors resulting from inconsistent or arbitrary manipulation of systems and components. Procedures are sufficiently detailed so that qualified operators can perform the required functions without direct supervision.

- a) System Operating Procedures - System operating procedures provide instructions for starting, securing, and placing systems in various modes for operation. The following is a list of systems requiring operating procedures:
  - 1) Auxiliary Feedwater System
  - 2) Auxiliary Steam System
  - 3) Boron Recycle System
  - 4) Boron Thermal Regeneration System
  - 5) Chemical and Volume Control System
  - 6) Circulating Water System
  - 7) Component Cooling Water System



- 8) Condensate and Feed Water System
- 9) Main Condenser System
- 10) Containment Ventilation and Vacuum Relief System
- 11) Containment Spray System
- 12) Control Room Area Ventilation System
- 13) Cooling Tower System
- 14) Emergency Diesel Generator System
- 15) Plant Electrical Distribution System
- 16) Essential Services Chilled Water System
- 17) Fire Protection/Detection System
- 18) Generator, Exciter, and Isolated Phase Bus System
- 19) Generator Gas, Generator and Exciter Mechanical Support System
- 20) Gross Failed Fuel Detection System
- 21) Reactor Coolant System
- 22) Primary Sampling System
- 23) Primary Makeup System
- 24) Reactor Control and Protection System
- 25) Rod Control System
- 26) Ex-Core Instrumentation System
- 27) In-Core Instrumentation System
- 28) Safety Injection System
- 29) Residual Heat Removal System
- 30) Fuel Handling System
- 31) Spent Fuel Pool Cooling and Cleanup System
- 32) Radiation Monitoring System
- 33) Metal Impact Monitoring System

- 34) Waste Processing System
- 35) Oily Waste Collection and Separation System
- 36) Post-Accident Hydrogen System
- 37) Steam Generator, Main Steam, Extraction Steam and Steam Dump System
- 38) Steam Generator Blowdown System
- 39) Steam Generator Chemical Addition System
- 40) Compressed Air System
- 41) Circulating Water Treatment System
- 42) Condensate Polishers and Demineralizers System
- 43) Feedwater Heaters, Vents, and Drains System
- 44) Service Water System
- 45) Reservoir Complex System
- 46) Demineralized Water System
- 47) Caustic and Acid System
- 48) Waste Process Building Component Cooling Water System
- 49) Waste Process Non-Essential Chilled Water System
- 50) Essential Services Chilled Water System
- 51) Hydrogen Seal Oil System
- 52) Off-Site Power System
- 53) Plant Lighting System
- 54) Communications System
- 55) Secondary Waste Treatment System
- 56) Filter Backwash System
- 57) Spent Resin Transfer and Storage System
- 58) Solid Waste Processing System

- 59) Waste Holdup and Evaporation System
  - 60) Gaseous Waste Processing System
  - 61) Radioactive Equipment Drains System
  - 62) Radioactive Floor Drains System
  - 63) Laundry and Hot Shower System
  - 64) Moisture Separator Reheater System
  - 65) Turbine and Generator Lube Oil System
  - 66) Gland Sealing System
  - 67) Digital Electro - Hydraulic Control System
  - 68) Heat Trace and Freeze Protection System
  - 69) Cathodic Protection System
  - 70) Compressed Gas System
    - a) Nitrogen Supply
    - b) Hydrogen Supply
    - c) Oxygen Supply
    - d) Carbon Dioxide Supply
  - 71) Seismic Monitoring System
  - 72) Containment Cooling System
  - 73) Fuel Handling Building HVAC System
  - 74) Waste Process Building HVAC System
  - 75) Reactor Auxiliary Building HVAC System
  - 76) Turbine Building HVAC System
  - 77) Diesel Generator Building HVAC System
- b) General Operating Procedures - The General Operating Procedures are the instructions for performing major integrated plant evolutions involving multiple systems such as plant start-up, and shutdown. These procedures provide a coordinated means of tying system operating procedures together and for changing the overall mode of plant operation. The following is a list of plant evaluations requiring General Operating Procedures:

- 1) Reactor Coolant System Fill and Vent Mode 5
  - 2) Normal Plant Heatup from Cold Solid to Hot Subcritical Mode 5 to Mode 3
  - 3) Reactor Startup (Mode 3 to Mode 2)
  - 4) Power Operation (Mode 2 to Mode 1)
  - 5) Normal Plant Shutdown from Power Operation to Hot Standby (Mode 1 to Mode 3)
  - 6) Normal Plant Cooldown (Mode 3 to Mode 5)
  - 7) Draining the Reactor Coolant System
  - 8) Refueling Cavity Fill, Refueling and Drain of the Refueling Cavity Modes 5-6-5
- c) Emergency Operating Procedure - Emergency operating procedures specify operator actions, including manipulation of plant controls for:
- 1) Reducing the consequences of an accident of potentially hazardous condition which has already occurred or,
  - 2) Implementing the emergency plan.

The emergency operating procedure network is an integrated procedure network which is only entered when the entry conditions of either a reactor trip or safety injection have been met. The emergency operating procedure network is always entered at a common point and transitions between various emergency operating procedures are directed so that the operator is given clear, consistent direction on which emergency operating procedure to implement. The following is a listing of Emergency Operating procedures:

- 1) Reactor Trip or Safety Injection
- 2) Loss of Reactor or Secondary Coolant
- 3) Steam Generator Tube Rupture
- 4) Loss of all AC Power
- 5) Loss of all AC Power Recovery without SI Required
- 6) Loss of all AC Power Recovery with SI Required
- 7) Reactor Trip Response
- 8) Natural Circulation Cooldown

- 9) Natural Circulation Cooldown with Steam Void in Vessel with RVLIS
- 10) Natural Circulation Cooldown with Steam Void in Vessel without RVLIS
- 11) SI Termination
- 12) Post-LOCA Cooldown and Depressurization
- 13) Transfer to Cold Leg Recirculation
- 14) Transfer to Hot Leg Recirculation
- 15) Faulted Steam Generator Isolation
- 16) Post-SGTR Cooldown Using Backfill
- 17) Post-SGTR Cooldown Using Blowdown
- 18) Post-SGTR Cooldown Using Steam Dump
- 19) Loss of Emergency Coolant Recirculation
- 20) Uncontrolled Depressurization of all Steam Generators
- 21) Steam Generator Tube Rupture with Loss of Reactor Coolant: Subcooled Recovery
- 22) Steam Generator Tube Rupture with Loss of Reactor Coolant: Saturated Recovery
- 23) Steam Generator Tube Rupture without Pressurizer Pressure Control
- 24) Response to Nuclear Power Generation/ATWS
- 25) Response to Loss of Core Shutdown
- 26) Response to Inadequate Core Cooling
- 27) Response to Degraded Core Cooling
- 28) Response to Saturated Core Cooling
- 29) Response to Loss of Secondary Heat Sink
- 30) Response to Steam Generator Overpressure
- 31) Response to Steam Generator High Level
- 32) Response to Loss of Normal Steam Release Capability
- 33) Response to Steam Generator Low Level

- 34) Response to Imminent Pressurized Thermal Shock
  - 35) Response to Anticipated Pressurized Thermal Shock
  - 36) Response to High Containment Pressure
  - 37) Response to Containment Flooding
  - 38) Response to High Containment Radiation Level
  - 39) Response to High Pressurizer Level
  - 40) Response to Low Pressurizer Level
  - 41) Response to Void in Reactor Vessel
  - 42) Critical Safety Function Status Trees
  - 43) Rediagnosis
- d) Abnormal Operating Procedures - Abnormal operating procedures specify operator actions, including manipulation of plant controls for:
- 1) Restoring an operating variable to its normal controlled value when it departs from its range or,
  - 2) restoring normal operating conditions following a perturbation or,
  - 3) reducing the consequences of a potentially hazardous condition which has already occurred or,
  - 4) implementing the emergency plan or,
  - 5) preparing for possible hazardous natural occurrences.

The following is a list of conditions or malfunctions requiring Abnormal Operating Procedures:

- 1) Malfunction of Rod Control and Indication Systems
  - a) Failure of a control bank to move
  - b) Continuous insertion of a control bank
  - c) Continuous withdrawal of a control bank
  - d) Dropped Control Rod
  - e) Misaligned Control Rod
  - f) Malfunctioning rod position indicator

- 2) Emergency Boration
- 3) Malfunction of Reactor Makeup Control
- 4) Safe Shutdown in Case of Fire or Control Room Inaccessibility
- 5) Radiation Monitoring System
- 6) Turbine-Generator Trouble
- 7) Accidental Release of Liquid Waste
- 8) Accidental Release of Gaseous Waste
- 9) Feedwater Malfunctions
- 10) Partial Loss of Condenser Vacuum
- 11) Fuel Handling Accident
- 12) Loss of Component Cooling Water
- 13) Secondary Load Rejection
- 14) Excessive Primary Plant Leakage
- 15) Loss of Instrument Air
- 16) Reactor Coolant Pump Abnormal Conditions
- 17) Malfunction of RCS Pressure Control
- 18) Loss of RCS Inventory or Residual Heat Removal While Shutdown
- 19) Seismic Disturbances
- 20) Loss of Service Water
- 21) Loss of Containment Integrity
- 22) Loss of Uninterruptible Power Supply
- 23) Loss of Emergency AC Bus (6.9 kV) or One Emergency DC Bus (125V)
- 24) Loss of Essential Service Chilled Water System
- 25) Response to Acts Against Plant Equipment
- 26) Low Voltage Operation
- 27) Low Frequency Operation

- 28) Metal Impact Monitoring System Trouble
  - 29) Loss of Refueling Cavity Integrity
  - 30) High RCS Activity
  - 31) Primary/Secondary Chemistry Out of Tolerance
  - 32) Deleted
  - 33) Main Transformer Trouble
  - 34) Loss of Main Control Room Annunciator
- e) Annunciator Procedures - Annunciator procedures specify operator actions necessary to respond to an abnormal condition as indicated by an alarm. The Annunciator Procedures are organized according to their respective annunciator panel numbers and the annunciator's location in that panel.
  - f) Temporary Operating Procedures - Temporary operating procedures provide instructions for plant operations which are of a nonrecurring nature such as: The direction of activities during special testing or maintenance; guidance in unusual situations not within the scope of normal procedures; assuring orderly and uniform operations for short periods of time when the Unit, a system, or component is performing in a manner not covered by existing procedures; or when modifications are made such that portions of the existing procedures do not apply.

#### 13.5.2.2 Other Procedures

Maintenance and other activities which may affect the proper functioning of the station's safety-related structures, systems, or components are performed in accordance with approved written procedures. These procedures provide a preplanned method of conducting activities in order to eliminate errors. They are sufficiently detailed so that qualified individuals can perform the required function without direct supervision. However, written procedures cannot cover all contingencies and therefore must contain a certain degree of flexibility. The general character and objectives of these procedures are described below. Responsibility for each type of procedure is determined by programmatic procedures.

- a) Plant Radiation Protection Procedures - Information concerning these procedures is presented in Section 12.5.
- b) Emergency Preparedness Procedures - Information concerning these procedures is presented in Section 13.3.
- c) Instrument Calibration Procedures - Instrument calibration procedures provide detailed instructions for the proper maintenance, testing, and adjustment of safety-related instrumentation and control system, and the calibration of measuring and test equipment used in activities affecting the quality of these



safety-related systems. They ensure measurement accuracies adequate to maintain plant safety-related parameters within operational and safety limits.

- d) Chemistry Procedures - Chemistry procedures provide instructions for monitoring plant systems for proper chemical and radio-chemical characteristics. Included in these procedures are such instructions as: the systems, methods and frequency of sampling and analysis to be performed; treatment and control of system chemistry within required limits, and laboratory analytical procedures.
- e) Radioactive Waste Management Procedures - Procedures for the operation of the radwaste processing systems provide for the control, treatment, and management of on-site radioactive wastes.
- f) Maintenance Procedures - Maintenance procedures provide instructions which ensure that electrical and mechanical maintenance work is performed safely and correctly.
- g) Material Control Procedures - Information concerning these procedures is presented in Section 17.3.
- h) Plant Security Procedures - Information concerning these procedures is presented in Section 13.6.

## 13.6 SECURITY

### 13.6.1 PRELIMINARY PLANNING

Not applicable for FSAR submittal.

### 13.6.2 SECURITY PLAN

#### 13.6.2.1 Security Plan

The Security Plan serves as the basis for the SHNPP Security Program. Contents of the plan include the functions of personnel screening, access control and biometric identity verification, security areas and physical barriers, intrusion detection systems, closed circuit television assessment and surveillance, wire and RF communication, organization, security equipment and use of force, responsibilities of the resident security force, and other matters designed to counter acts of radiological sabotage. The Security Plan is prepared by the licensee and submitted as a separate document for review and approval by the U. S. Nuclear Regulatory Commission (USNRC), in accordance with the provisions of 10CFR50.34(c) and 10CFR73.55.

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\*These procedures will vary from simple ones that are within the skill of the craftsman, to steps from a technical manual, to step by step instructions for complex procedures. The complexity of the procedure will be based upon the complexity of the task to be performed.

### 13.6.2.2 Safeguards Contingency Plan

The Safeguards Contingency Plan describes the characteristics of the design basis threats of radiological sabotage as discussed in 10CFR73.1(a)(1), and identifies plausible situations which may threaten the security of the SHNPP. Specific contingency response actions by the security organization and local law enforcement agency support are also addressed. Each identified contingency event is accompanied by an explanation of the actions necessary to cope with or otherwise counter the threat. The safeguards contingency plan also permits flexibility to adapt to contingency situations not specifically addressed. The Safeguards Contingency Plan is prepared by the licensee for review and approval by the USNRC, in accordance with the provisions of 10CFR50.34(d), 10CFR73.40(b) and 10CFR73.55(h).

### 13.6.2.3 Security Personnel Training and Qualification Plan

The Security Personnel Training and Qualification Plan establishes the selection criteria, training, equipping, and qualification of individuals assigned responsibilities of security protection for the SHNPP. The personnel training and qualification prerequisites set forth in this plan are based upon the contents of Appendix B to 10CFR73, and are designed to assure the availability of suitably trained and qualified personnel to accomplish the safeguards goals of the SHNPP Security Program. The Security Personnel Training and Qualification Plan is prepared by the licensee for review and approval by the USNRC, in accordance with the provisions of 10CFR73.55(b)(4).

The above discussed security plans contain information protected as Safeguards Information. The designation of Safeguards Information is assigned to protect sensitive security information from unauthorized disclosure pursuant to the provisions of 10CFR73.21 and DEP policies and procedures governing its control, accessibility, and dissemination.

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13.1.2-1	HARRIS NUCLEAR PLANT ORGANIZATION
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13.5.1-1	CONTROL ROOM AREA DESIGNATED "AT THE CONTROLS"

FIGURE 13.1.1-1

DUKE ENERGY NUCLEAR GENERATION DEPARTMENT

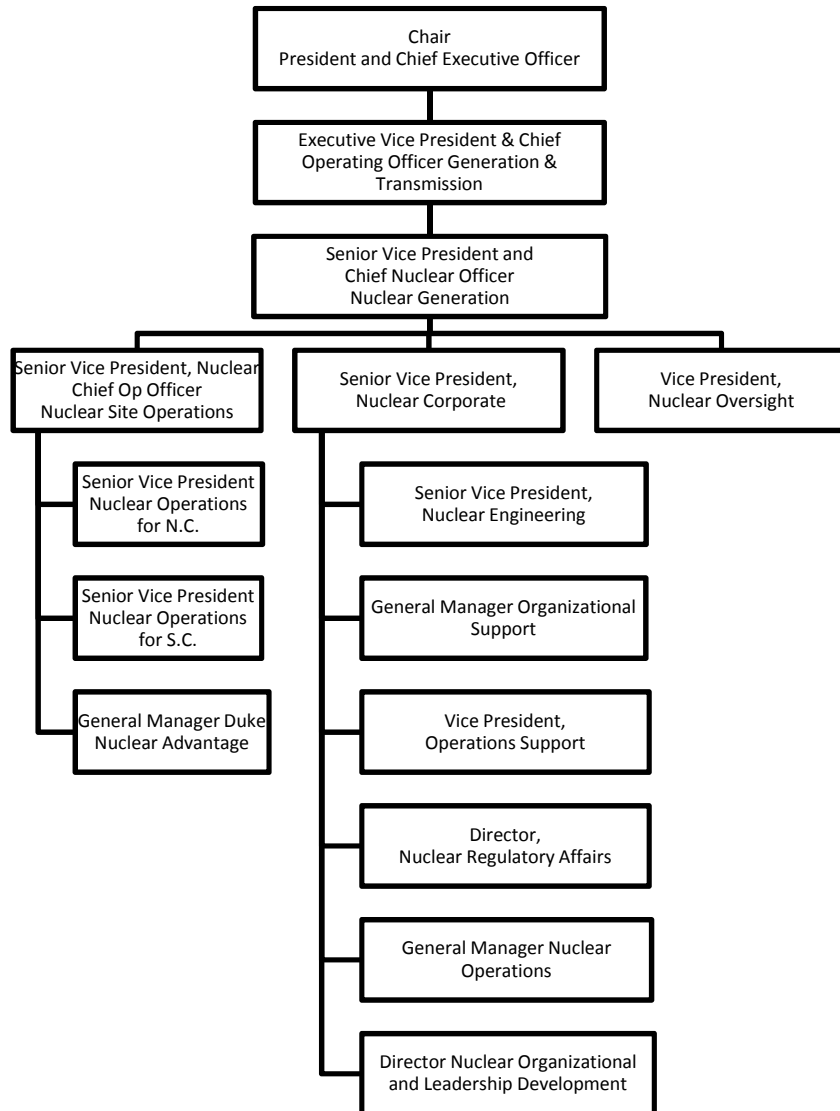


FIGURE 13.1.2-1  
HARRIS NUCLEAR PLANT ORGANIZATION

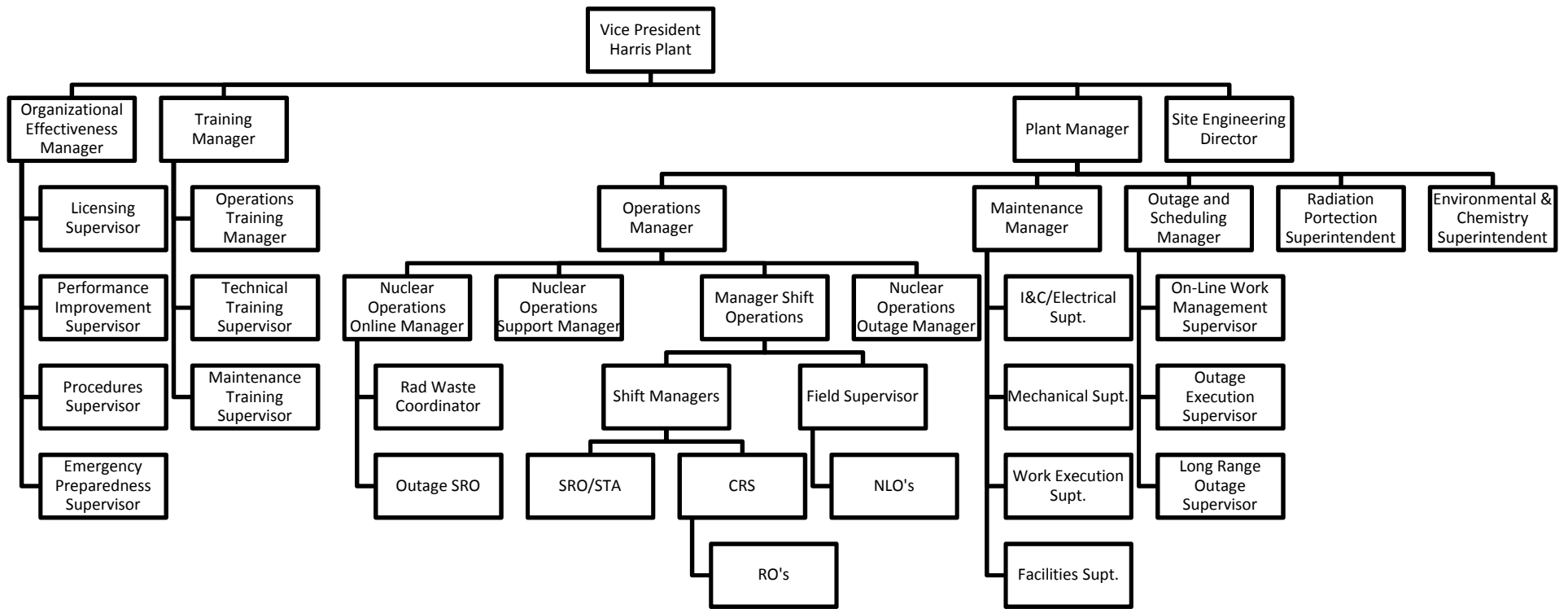


FIGURE 13.5.1-1

CONTROL ROOM AREA DESIGNATED "AT THE CONTROLS"

