Progress Energy

Serial: NPD-NRC-2013-002
February 21, 2013

10CFR52.79

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

LEVY NUCLEAR PLANT, UNITS 1 AND 2
DOCKET NOS. 52-029 AND 52-030
VOLUNTARY SUBMITTAL FOR COL APPLICATION PART 11 – ENCLOSURES – ALIGNMENT OF LEVY QAPD WITH DUKE ENERGY CORPORATE QAPD AND UPDATE TO LEVY REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 010 RELATED TO QAPD

References:
1. Memorandum, Jerry Hale (NRC) to Lawrence Burkhart (NRC), dated November 27, 2012, Subject: "Summary of a Public Conference Call with AP1000 Applicants and Licensees on November 8, 2012, Regarding Levy Units 1 and 2 Combined License Application"
2. Letter from Manny Comar (NRC) to Garry Miller (PEF), dated February 27, 2009, "Request for Additional Information Letter No. 10 Related to SRP Section 17.5 for the Levy County Nuclear Plant, Units 1 and 2 Combined License Application"
3. Letter from Garry D. Miller (PEF) to U. S. Nuclear Regulatory Commission (NRC), dated March 31, 2009, "Response to Request for Additional Information Letter No. 010 Related to Quality Assurance Program Description," Serial: NPD-NRC-2009-048
4. Letter from John Elnitsky (PEF) to U. S. Nuclear Regulatory Commission (NRC), dated May 4, 2010, "Supplement 1 to Response to Request for Additional Information Letter No. 010 Related to Quality Assurance Program Description," Serial: NPD-NRC-2010-034

Ladies and Gentlemen:

Progress Energy Florida, Inc. (PEF) hereby provides a voluntary submittal (contained in the enclosures) as discussed in a public meeting held by conference call on November 8, 2012 (Reference 1). The information provided in the enclosures to this letter will be included in a future revision of the Levy Nuclear Plant (LNP) Units 1 and 2 combined license (COL) application.

This submittal includes a revised Duke Energy Corporation (DEC) Quality Assurance Program Description (QAPD) which is applicable to LNP (see Enclosure 1). The revised QAPD is based on the DEC QAPD which was most recently submitted as part of Revision 6 of the William States Lee III Nuclear Station (WLS) Units 1 and 2 COL application in August 2012, and has been updated as necessary in order to be applicable to all three DEC COL applications (LNP, WLS, and Shearon Harris Nuclear Power Plant (HAR) Units 2 and 3). Separate submittals of the QAPD on the WLS and HAR dockets will be provided.

Progress Energy Florida, Inc.
P.O. Box 14042
St. Petersburg, FL 33733

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NRO

NRC issued Request for Additional Information (RAI) letter #10 on February 27, 2009, and Progress Energy responded to the RAI in Letter NPD-NRC-2009-048 on March 31, 2009. A supplement to that response was provided on May 4, 2010 (NPD-NRC-2010-034) which updated the LNP QAPD to employ Revision 7 of NEI 06-14 as the template for the LNP QAPD. The revised QAPD (enclosed) complies with the intent of the responses to the NRC RAI. The QAPD in this submittal is now based on NEI 06-14A rev 7 dated August 2010, which provides the basis for how the QAPD and NEI 06-14A satisfies the Operational Quality Assurance Requirement of Regulatory Guide 1.33 Revision 2 and ANSI N18.7-1976. The previous revision was based on NEI 06-14A rev 7 dated July 2009 which did not provide this approved alternative approach to satisfying these requirements.

Revisions to the LNP COLA Part 2, FSAR Chapters 1, 13, 14, and 17, Part 4, Technical Specifications, and Part 5, Emergency Plan, are also being made in order for the COLA to conform to the QAPD and the associated organizational structure. These revisions are contained in Enclosure 2.

If you have any further questions, or need additional information, please contact Bob Kitchen at (704) 382-4046, or me at (704) 382-9248.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on February 21, 2013.

Sincerely,

Christopher M. Fallon

Christopher M. Fallon
Vice President
Nuclear Development

Enclosures

cc : U.S. NRC Region II, Regional Administrator
Mr. Donald Habib, U.S. NRC Project Manager
Mr. Jerry Hale, U.S. NRC Project Manager

Duke Energy Quality Assurance Topical Report for 10 CFR Part 52 Licenses
NGGM-PM-0033

Duke Energy®

NGG PROGRAM MANUAL

NGGM-PM-0033

Revision 6

Title: Duke Energy Quality Assurance Topical Report for 10 CFR Part 52 Licenses

Lead Department: Nuclear Oversight

Revision Summary:

Revision 6 incorporate the following changes in support of DRR: 588918

The changes made in this revision merge the QAPDs previously submitted for the William S. Lee Nuclear Station Units 1 and 2; the Harris Nuclear Power Plant Units 2 and 3; and Levy Nuclear Power Plant Units 1 and 2 into a single document to be applied to all Duke Energy 10 CFR Part 52 Licenses. The William S. Lee QAPD served as the basis for this revised document. NGGM-PM-0033 was revised to incorporate the standard language consistent with the NRC endorsed industry template NEI 06-14A rev 7 dated August 2010. These changes were made in conjunction with changes in organizational descriptions to be consistent with the William S. Lee QAPD. This common QAPD will be applied to all current and future Duke Energy Corporation 10 CFR Part 52 licenses.

Specific changes included:

- Revision number changed throughout document.
- Changed Document Title throughout to reflect new company and use across all three 10 CFR Part 52 license applications.
- Changed company name throughout document to Duke Energy Corporation to reflect the overall company versus the individual companies as the document is now common.
- Changed references to Project Management and Construction to Nuclear Development throughout document.
- Revised document standard language to be consistent with NEI 06-14A rev 7 dated August 2010.
- Added William S. Lee Docket Numbers to cover page to reflect added applicability.
- Changed document prepared by job title by to match revised job position.
- Table of contents changed to reflect new section numbers, titles and pages.

- Revised Part I Section 1 to reflect changes in standard language in NEI 06-14A Rev 7 dated August 2010.
- Revised Part I Section 1.1 to add William S. Lee Nuclear Station Units 1 and 2.
- Revised Part II Section 1 to reflect standard language in NEI 06-14A rev 7, August 2010, and changed description of organizational structure to be consistent with that of QAPD submitted in the William S. Lee COLA. Changes reflect revised company organization structure post merger between Duke and Progress Energy, including revised titles and organizational alignments.
- Revised Figures II.1-1, II.1-2, and II.1-3 to reflect revised corporate, operational phase and construction phase organizations and alignments.
- Part II Sections 2 through 18 made changes to be consistent with standard approved language in NEI 06-14A rev 7 dated August 2010.
- Part IV, revised to be consistent with standard approved language in NEI 06-14A rev 7 dated August 2010.
- Part V, new section added to be consistent with standard approved language in NEI 06-14A rev 7 dated August 2010.

Duke Energy®

Quality Assurance Program Description

Title: Duke Energy Quality Assurance Topical Report for 10 CFR Part 52 Licenses

Process/Program Owner: Vice President Nuclear Oversight Department

William S. Lee III Nuclear Station Units 1 and 2 Docket Nos. 52-018 and 52-019 **Harris Nuclear Power Plants Units 2 and 3** Docket Nos. 52-022 and 52-023 **Levy Nuclear Power Plants Units 1 and 2** Docket Nos. 52-029 and 52-030	**Version Number** Revision 6	**Effective Date:**

Revision Summary:
The changes made in this revision merge the QAPDs previously submitted for the William S. Lee Nuclear Station Units 1 and 2; the Harris Nuclear Power Plant Units 2 and 3; and Levy Nuclear Power Plant Units 1 and 2 into a single uniform document applied to all Duke Energy 10 CFR Part 52 Licenses. The William S. Lee QAPD served as the basis for this revised document. See attached pages for individual changes.

Prepared By/Date:

Mike Janus - Approved Electronically 2/18/13

Nuclear Oversight, Supervisor Nuclear QA Audits

Reviewed By/Date:

Randy Ivey – Approved Electronically 2/18/13

Corporate Manager responsible for Audits and Programs

Approved By/Date:

Joe Donahue - Approved Electronically 2/18/13

Vice President -Nuclear Oversight

Dhiaa Jamil - Approved Electronically 2/19/13

Executive Vice President Nuclear Generation and Chief Nuclear Officer

Duke Energy Quality Assurance Topical Report for 10 CFR Part 52 Licenses

Duke Energy Corporation

POLICY STATEMENT

Duke Energy Corporation (DEC) shall design, procure, construct and operate nuclear plants in a manner that will ensure the health and safety of the public and workers. These activities shall be performed in compliance with the requirements of the Code of Federal Regulations (CFR), the applicable Nuclear Regulatory Commission (NRC) Facility Operating Licenses, and applicable laws and regulations of the state and local governments.

The Duke Energy Corporation Quality Assurance Program (QAP) for 10 CFR Part 52 Licenses is the Quality Assurance Program Description (QAPD) provided in this document and the associated implementing documents. Together they provide for control of Duke Energy Corporation activities that affect the quality of safety-related nuclear plant structures, systems, and components and include all planned and systematic activities necessary to provide adequate confidence that such structures, systems, and components will perform satisfactorily in service. The QAPD may also be applied to certain equipment and activities that are not safety-related, but support safe plant operations, or where other NRC guidance establishes program requirements.

The QAPD is the top-level policy document that establishes the manner in which quality is to be achieved and presents Duke Energy Corporation's overall philosophy regarding achievement and assurance of quality. Implementing documents assign more detailed responsibilities and requirements and define the organizational interfaces involved in conducting activities within the scope of the QAP. Compliance with the QAPD and implementing documents is mandatory for personnel directly or indirectly associated with implementation of the Duke Energy Corporation QAP.

Signed _____ Date 2/5/13

Jim Rogers
Chairman, President and Chief Executive Officer
Duke Energy Corporation

TABLE OF CONTENTS

PART I INTRODUCTION

SECTION 1 GENERAL

The Duke Energy Quality Assurance Topical Report for 10 CFR Part 52 Licenses is the Duke Energy Corporation Quality Assurance Program Description (QAPD) for all 10 CFR Part 52 Licenses. This is the top-level policy document that establishes the quality assurance policy and assigns major functional responsibilities for COL construction, pre-operations and operations activities conducted by or for Duke Energy Corporation. The QAPD describes the methods and establishes quality assurance (QA) and administrative control requirements that meet 10 CFR 50, Appendix B and 10 CFR 52. The QAPD is based on the requirements and recommendations of ASME NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications," Parts I, II, and III, as specified in this document.

The Quality Assurance Program is defined by the NRC approved regulatory document that describes the QA elements, along with the associated implementing documents. Procedures and instructions that control Nuclear Development will be developed prior to commencement of those activities. As the overall controlling QAPD for design, construction, and operations, this document invokes QA requirements for controlling Duke Energy Corporation performed quality-affecting activities as well as providing controls for subcontractors addressed by Part II Sections 4 and 7, to perform their assigned quality affecting activities to their own QA Programs. Policies establish high level responsibilities and authority for carrying out important administrative functions which are outside the scope of the QAPD. Procedures establish practices for certain activities which are common to all Duke Energy Corporation organizations performing those activities so that the activity is controlled and carried out in a manner that meets QAPD requirements. Site or organization specific procedures establish detailed implementation requirements and methods, and may be used to implement policies or be unique to particular functions or work activities.

1.1 Scope/Applicability

The QAPD applies to COL, construction, pre-operations and operations activities affecting the quality and performance of safety-related structures, systems, and components, including, but not limited to:

Designing	Handling	Siting	Erecting	Decommissioning
Constructing	Testing	Operating	Installing	Modifying
Procuring	Pre-operational activities	Maintaining	Repairing	Inspecting
Fabricating	(including ITAAC)	Receiving	Training	Refueling
Cleaning	Startup	Storing		Shipping

ITAAC are those Inspections, Tests, Analyses and Acceptance Criteria the applicant must satisfy as determined by the commission in accordance with 10 CFR Part 52.

This QAPD was developed to address COL activities associated with William S. Lee Nuclear Station Units 1 and 2, Harris Nuclear Power Plant Units 2 and 3, Levy Nuclear Power Plant Units 1 and 2, and any future nuclear power units pursued by Duke Energy Corporation in accordance with 10 CFR Part 52. This QAPD / Quality Assurance Topical Report does not apply to any of the

existing Duke Energy Corporation nuclear power plants.

Safety-related SSCs under the control of the QAPD, are identified by design documents. The technical aspects of these items are considered when determining program applicability, including, as appropriate, the item's design safety function. The QAPD may be applied to certain activities where regulations other than 10 CFR 50 and 10 CFR 52 establish QAPD requirements for activities within their scope.

The policy of Duke Energy Corporation is to assure a high degree of availability and reliability of its nuclear plants while ensuring the health and safety of its workers and the public. To this end, selected elements of the QAPD are also applied to certain equipment and activities that are not safety-related, but support safe, economic, and reliable plant operations, or where other NRC guidance establishes quality assurance requirements. Implementing documents establish program element applicability.

The definitions provided in ASME NQA-1-1994, Part 1, Section 1.4, apply to select terms as used in this document.

PART II QAPD DETAILS

SECTION 1 ORGANIZATION

This section describes the proposed Duke Energy Corporation organizational structure, functional responsibilities, levels of authority and interfaces for establishing, executing, and verifying QAPD implementation. The organizational structure includes corporate support, off-site and on-site functions including interface responsibilities for multiple organizations that perform quality-related functions. Implementing documents assign more specific responsibilities and duties, and define the organizational interfaces involved in conducting activities and duties within the scope of the QAPD. Management gives careful consideration to the timing, extent and effects of organizational structure changes.

Duke Energy Corporation management is responsible to size the Quality Assurance organization commensurate with the duties and responsibilities assigned.

The Duke Energy Corporation Nuclear Development organization is responsible for new nuclear plant licensing, engineering, procurement, construction, startup and operations development activities. There are several organizations within the Duke Energy Corporation that implement and support the QAPD. These organizations include, but are not limited to Nuclear Development, Nuclear Supply Chain and Nuclear Oversight.

Organization charts for various departments/locations are contained in Chapter 13 of the respective station's FSAR and describe organizational positions of the nuclear station and associated functions and responsibilities.

Design, engineering and environmental services are provided to the Duke Energy Corporation Nuclear Development organization by a contract that identifies the Engineer and Constructor and invokes the applicable quality program requirements described in this document to applicable contractors and subcontractors.

The following sections describe the reporting relationships, functional responsibilities and authorities for organizations implementing and supporting this QA Program. Figures II.1-1 and II.1-2, and II.1-3 show the organizational structures for corporate, the operations phase, and the construction phase, respectively. Figure II.1-2 shows a typical operating plant structure within Duke Energy Corporation. The detailed roles, responsibilities and organizational structure and reporting relationships for the operations phase organization is detailed in Chapter 13 of the respective plant's FSAR.

1.1 Duke Energy Corporation Corporate Organization

The Chairman, President and Chief Executive Officer has overall responsibility for Design, Construction, and Operation of generation and transmission facilities. Reporting to the Chairman, President and Chief Executive Officer is the Chief Nuclear Officer (CNO) who has the overall authority and responsibility for the QAP and directs several activities including the operation of the nuclear sites through the Senior Vice Presidents, Nuclear Operations. Also reporting to the Chairman, President and Chief Executive Officer are Group Executives responsible for providing support to Nuclear Generation for the following: electrical transmission;

electrical distribution; laboratory services; switchyard maintenance and technical support; support for the emergency response communications; Information Technology Services; document control and record management activities; support for contracts, engineering, and management related to new plant construction as requested; and administration of the Access Authorization, Fitness for Duty, and Fatigue Rule programs. The interface with organizations providing those activities are described in Section 1.3. As such, the attainment of quality rests with those assigned the responsibility of performing the activity. The verification of quality is assigned to qualified personnel independent of the responsibility for performance or direct supervision of the activity. The degree of independence varies commensurate with the activity's importance to safety.

1.2 Nuclear Generation

Nuclear Generation has direct line responsibility for all Duke Energy Corporation nuclear station operations. Nuclear Generation is responsible for achieving quality results during engineering, preoperational testing, operation, testing, maintenance and modification of the Corporation's nuclear stations and with complying with applicable codes, standards and NRC regulations. The functions of Nuclear Generation are directed by the CNO.

The CNO formulates, recommends, and carries out plans, policies, and programs related to the nuclear generation of electric power. The CNO is informed of significant problems or occurrences relating to safety and QA through established administrative procedures, and participates directly in their resolution, when necessary.

Nuclear Generation is organized into eight divisions. The activities of each division are directed by an executive who reports to the CNO. Three of those divisions are headed by the three executives of Nuclear Operations, which are discussed in the Nuclear Site description. The remaining five divisions, which comprise the Nuclear General Office (NGO), are: Nuclear Engineering, Nuclear Major Projects, Nuclear Development, Nuclear Oversight, and Corporate Governance and Operations Support.

1.2.1 Nuclear Site Organization

There are three executives of Nuclear Operations, each reporting directly to the CNO and located in the NGO. Each Senior Vice President – Nuclear Operations is responsible for oversight of the management and operation of activities associated with the efficient, safe, and reliable operation of his designated nuclear stations. Reporting to each executive are the Site executives for the respective nuclear station. Reporting to the Site executive for each nuclear station is a Nuclear Manager who is assigned the direct responsibility for the safe operation of the facility including operations, maintenance, work management, radiation protection, and chemistry. Also reporting to the Site executive is an Organizational Effectiveness manager, who is responsible for regulatory affairs, emergency preparedness, performance improvement, human performance, environmental support services, health and safety, and a Site Training manager. Each Site executive also has an Engineering manager, a Security manager, and a Major Projects manager matrixed to provide services to the site. Figure II.1.2 shows a typical operating nuclear site organization.

1.2.2 Nuclear General Office

The Site Executive in charge of each site reports directly to the respective Senior Vice President Nuclear Plant Site Group for their site. The Site Executive is directly responsible for management and direction of activities associated with the efficient, safe, and reliable operation of the nuclear station. The Site Executive is assisted in management and technical support activities by the functional managers in charge of training, plant operations and support services as shown in Figure II.1-3. The Site Executive in charge is responsible for the site Fire Protection Program through the functional Supervisor in charge of Fire Protection as described in the FSAR.

Nuclear Generation, Nuclear General Office (NGO) is organized into five divisions. The activities of each division are directed by an executive who reports to the CNO. The five divisions within the Nuclear General Office are: Nuclear Development, Nuclear Engineering, Nuclear Major Projects, Nuclear Oversight, and Corporate Governance and Operations Support.

1.2.2.1 Nuclear Development

Nuclear Development is responsible for development of the licensing actions needed in support of new nuclear site development. Responsibilities also include engineering oversight of contractors, site layout, staffing and program development. The executive in charge of Nuclear Development is assisted by a support staff and reports directly to the CNO. Nuclear Development responsibilities include the establishment and execution of a contract or contracts for the engineering, procurement, construction, and startup activities of new nuclear plants up to the transition point when a Site Executive is named to assume those responsibilities. Figure II.1.3 shows the Nuclear Development/Construction Organization. As a new nuclear plant approaches startup, the site organization transitions from the development focused organization in Figure II.1.3 to the Operating Plant Site Organization shown in Figure II.1.2.

1.2.2.2 Nuclear Engineering

The executive for Nuclear Engineering reports to the CNO. Nuclear Engineering provides broad engineering leadership and technical support to the nuclear sites with emphasis on generic issues and consistent practices, providing expertise in safety assessment with technical support in the areas of risk assessment, radiological engineering, and safety analysis; fuel management with leadership and technical support in the areas of fuel supply, spent fuel management, reactor core mechanical and thermal hydraulic analysis; the fleet electrical and procurement engineering with technical support in the areas of procurement engineering, nuclear process systems, and electrical systems and analysis; and programs and components support in the areas of steam generator inspections and maintenance, engineering programs, component engineering, material failure analysis and materials science, equipment reliability, and ASME Code inspections and testing.

Nuclear Engineering provides record storage and document management services, technology planning, project control and technical support for information technology applications and systems such as equipment databases, applications, infrastructure, and plant process information systems.

1.2.2.3 Nuclear Major Projects

The executive for Nuclear Major Projects reports to the CNO. Nuclear Major Projects is responsible for contracts, engineering and management related to fleet and nuclear site major projects.

1.2.2.4 Nuclear Oversight (NOS)

The executive for Nuclear Oversight (NOS) reports to the CNO. NOS provides oversight of the general office including Nuclear Development activities and all nuclear sites with QA program audits, performance assessments, procurement quality, supplier verification, and quality control activities. In addition, NOS provides an advisory function to senior management through the Nuclear Safety Review Board (NSRB). The NOS executive has the authority and organizational freedom to: identify quality problems, initiate, recommend or provide solutions to quality problems through designated channels, verify the implementation of solutions to quality problems, and ensure cost and schedule do not influence decision making involving quality. The executive for NOS shall have access to corporate executive management to resolve any quality or nuclear safety related concerns that cannot be resolved satisfactorily at a lower management level.

The NOS executive is delegated primary ownership of the department QA program description and is responsible for day-to-day administration of the program and resolution of QA issues. If significant quality problems are identified, NOS personnel have the authority to stop work as discussed in Section 1.5 pending satisfactory resolution of the identified problem.

Also reporting to the executive for Nuclear Oversight is Employee Concerns, which investigates concerns identified through the Employee Concerns Programs to determine their validity and initiate corrective actions as appropriate. Employee Concerns also promotes the Safety Conscious Work Environment (SCWE) Program and is sensitive to SCWE concerns during investigations performed.

1.2.2.5 Corporate Governance and Operations Support

The executive for Corporate Governance and Operations Support reports to the CNO. Corporate Governance and Operations Support provides assistance to help improve overall fleet performance. This centralized organization includes Protective Services (Security and Access Services); Regulatory Affairs; Central Training; Nuclear Support Services; Operations Support; and Organizational Effectiveness.

1.3 Department Interfaces

Departmental interfaces are identified in QAP manuals. Quality related activities performed by departments other than Nuclear Generation are identified by and conducted in accordance with approved departmental interface agreements. The following are generic descriptions of those other corporate departments and the services they provide. These generic organizations are referred to, as appropriate, within this document; however, approved departmental interface agreements establish and define the applicability of the QAP to the services they provide:

1.3.1 Corporate Communications

Corporate Communications provides support for the nuclear site's emergency response organization.

1.3.2 Environmental Services

Environmental, Health and Safety will provide environmental and laboratory support services.

1.3.3 Nuclear Finance

Nuclear Finance provides support for the nuclear sites in the areas of decommissioning, workforce planning and development.

1.3.4 Customer Operations

Customer Operations provides electrical transmission, distribution, and switchyard engineering, as well as providing electrical maintenance and testing support.

1.3.5 Human Resources

Human Resources provides support for the nuclear sites Access Authorization, FFD, and Fatigue Rule programs.

1.3.6 Information Technology

Information Technology provides a variety of services and technical support to Nuclear Generation for information technology applications and systems such as equipment databases, applications, infrastructure, and plant process information systems. They are also responsible for the development and maintenance of selected information technology services and support, including electronic document management, some of which support QA related activities.

1.3.7 Supply Chain

Nuclear Supply Chain provides procurement services, storage, inventory control, and receipt inspection/testing.

1.3.8 Project Management and Construction

Project Management and Construction is responsible for contracts, engineering, and management related to new plant construction as requested.

1.4 Agents and Contractors

Duke may contract various activities such as engineering, procurement, and construction. These contracts will identify QAP requirements that are applicable to the contractors and their subcontractors, consistent with the requirements of Part II, Sections 4 and 7.

1.5 Authority to Stop Work

Quality assurance and inspection personnel have the authority, and the responsibility, to stop work in progress which is not being done in accordance with the Quality Assurance Program requirements, approved procedures or where safety, nuclear safety[M1] or SSC integrity may be jeopardized. This extends to off-site work performed by suppliers furnishing safety-related materials and services to Duke Energy Corporation.

1.6 Quality Assurance Organization Independence

Independence shall be maintained between the organization or organizations performing the checking (quality assurance and control) functions and the organizations performing the functions. This provision is not applicable to design review/verification.

1.7 NQA-1-1994 Commitment

In establishing its organizational structure, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 1 and Supplement 1S-1.

Figure II.1-1

Duke Energy Nuclear Corporate Organization

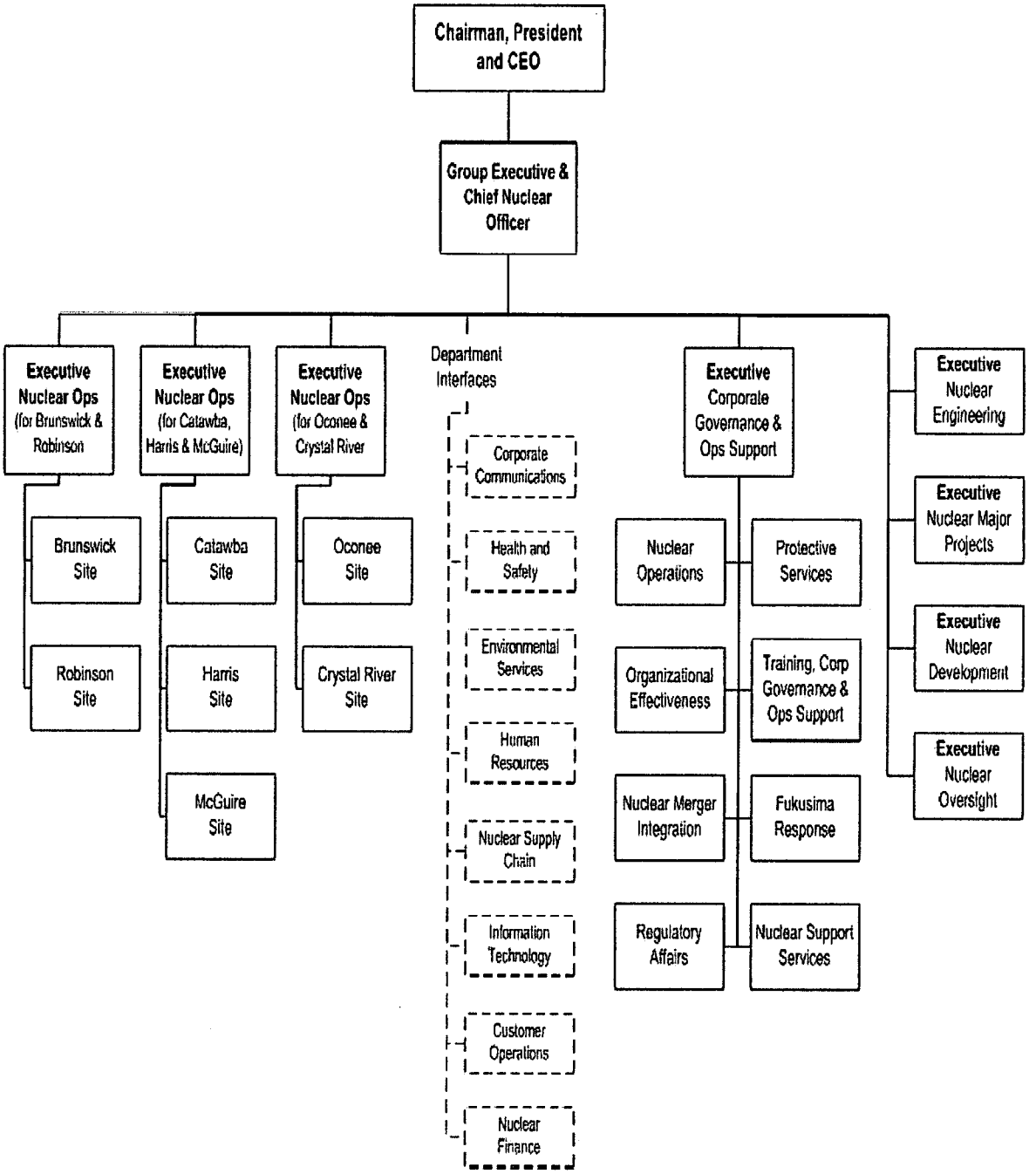
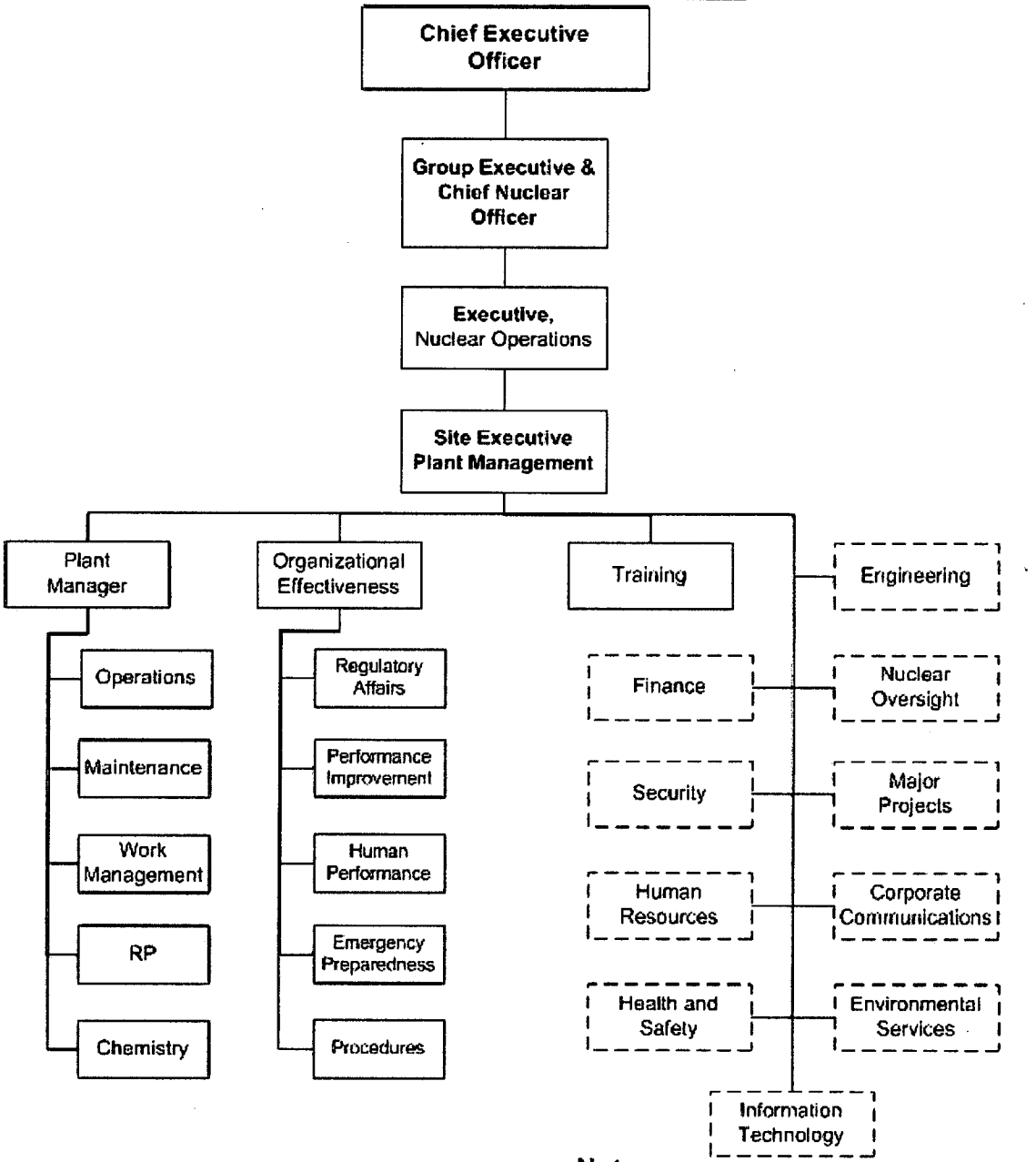


Figure II.1-2

Typical Operating Plant Site Organization

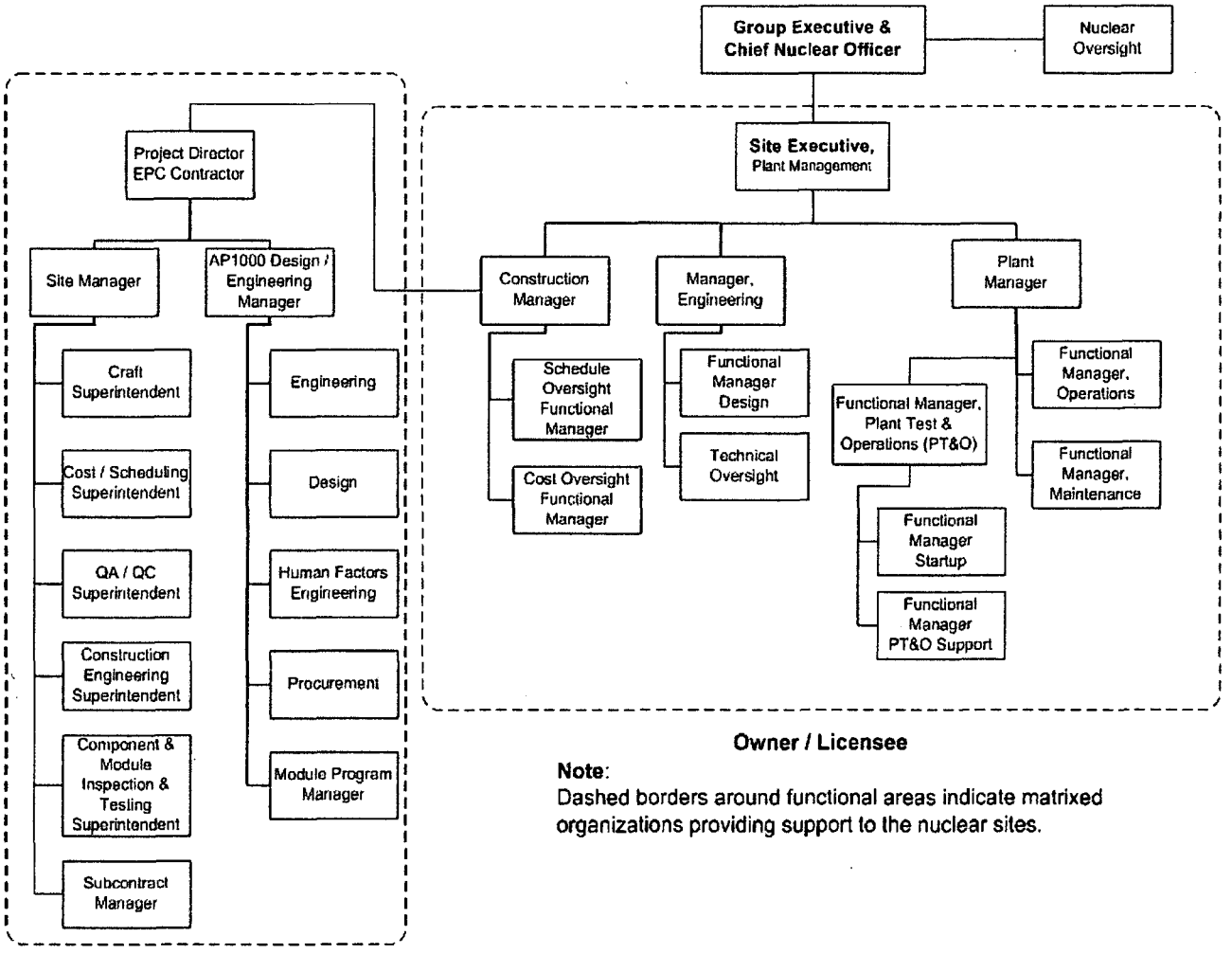


Note:
Dashed borders around functional areas indicate matrixed organizations providing support to the nuclear sites.

Figure II.1-3

Nuclear Development/Construction Organization

Note 1: Initially, Nuclear Development described in QAPD Part II, Section 1.2.2, enumerated paragraph 2, is responsible for construction planning and preparation. The responsibility for construction oversight transitions to the Site Executive when that position is filled.



Note:
Dashed borders around functional areas indicate matrixed organizations providing support to the nuclear sites.

SECTION 2 QUALITY ASSURANCE PROGRAM

Duke Energy Corporation has established the necessary measures and governing procedures to implement the QAP as described in the QAPD. Duke Energy Corporation is committed to implementing the QAP in all aspects of work that are important to the safety of the nuclear plants as described and to the extent delineated in this QAPD. Further, Duke Energy Corporation ensures through the systematic process described herein that its suppliers of safety-related equipment or services meet the applicable requirements of 10 CFR 50, Appendix B. Senior management is regularly apprised of audit results evaluating the adequacy of implementation of the QAPD through the audit functions described in Part II, Section 18.

The objective of the QAPD is to assure that Duke Energy Corporation's nuclear generating plants are designed constructed and operated in accordance with governing regulations and license requirements. The program is based on the requirements of ASME NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications," as further described in this document. The QAPD applies to those quality-related activities that involve the functions of safety-related structures, systems, and components (SSCs) associated with the design (excluding Design Certification activities), fabrication, construction and testing of the SSCs of the facility and to the managerial and administrative controls to be used to assure safe operations. Examples of COL program safety-related activities include, but are not limited to, site specific engineering related to safety-related SSCs, site geotechnical investigations, site engineering analysis, seismic analysis, and meteorological analysis. A list or system that identifies SSCs and activities to which this program applies is maintained at the appropriate facility. The Design Certification Document is used as the basis for this list. Cost and scheduling functions do not prevent proper implementation of the QAPD.

As described in Part III of the QAPD, specific program controls are applied to non-safety-related SSCs, for which 10 CFR 50, Appendix B, is not applicable, that are significant contributors to plant safety. The specific program controls consistent with applicable sections of the QAPD are applied to those items in a selected manner, targeted at those characteristics or critical attributes that render the SSC a significant contributor to plant safety.

Delegated responsibilities may be performed under a supplier's or principal contractor's QAP, provided that the supplier or principle contractor has been approved as a supplier in accordance with the QAPD. Periodic audits and assessments of supplier QA programs are performed to assure compliance with the supplier's or principle contractor's QAPD and implementing procedures. In addition, routine interfaces with the supplier's personnel provide added assurance that quality expectations are met.

For the COL applications, the QAPD applies to those Nuclear Development and Duke Energy Corporation activities that can affect either directly or indirectly the safety related site characteristics or analysis of those characteristics. In addition, the QAPD applies to engineering activities that are used to characterize the site or analyze that characterization.

New nuclear plant construction will be the responsibility of Duke Energy Corporation's Nuclear Development organization. Detailed engineering specifications and construction procedures will be developed to implement the QAPD and Contractor QA programs prior to commencement of construction activities. Examples of Limited Work Authorization (LWA) activities that could impact safety-related SSCs include impacts of construction to existing facilities and, for construction of new plants, the interface between non-safety-related and safety-related SSCs and the placement

of seismically designed backfill.

In general, the program requirements specified herein are detailed in implementing procedures that are either Duke Energy Corporation implementing procedures, or supplier implementing procedures governed by a supplier quality assurance program.

A grace period of 90 days may be applied to provisions that are required to be performed on a periodic basis unless otherwise noted. Annual evaluations and audits that must be performed on a triennial basis are examples where the 90 day general period could be applied. The grace period does not allow the "clock" for a particular activity to be reset forward. The "clock" for an activity is reset backwards by performing the activity early. Audits schedules are based on the month in which the audit starts.

2.1 Responsibilities

Personnel who work directly or indirectly for Duke Energy Corporation are responsible for achieving acceptable quality in the work covered by the QAPD. This includes the activities delineated in Part I, Section 1.1. Duke Energy Corporation personnel performing verification activities are responsible for verifying the achievement of acceptable quality. Activities governed by the QAPD are performed as directed by documented instructions, procedures and drawings that are of a detail appropriate for the activity's complexity and effect on safety. Instructions, procedures and drawings specify quantitative or qualitative acceptance criteria as applicable or appropriate for the activity, and verification is against these criteria. Provisions are established to designate or identify the proper documents to be used in an activity, and to ascertain that such documents are being used. The Vice President Nuclear Oversight is responsible to verify that processes and procedures comply with QAPD and other applicable requirements, that such processes or procedures are implemented, and that management appropriately ensures compliance.

2.2 Delegation of Work

Duke Energy Corporation retains and exercises the responsibility for the scope and implementation of an effective QAPD. Positions identified in Part II, Section 1, may delegate all or part of the activities of planning, establishing, and implementing the program for which they are responsible to others, but retain the responsibility for the program's effectiveness. Decisions affecting safety are made at the level appropriate for its nature and effect, and with any necessary technical advice or review.

2.3 Site-specific Safety-Related Design Basis Activities[i2]

Site-specific safety-related design basis activities are defined as those activities, including sampling, testing, data collection and supporting engineering calculations and reports that will be used to determine the bounding physical parameters of the site. Appropriate quality assurance measures are applied to these activities.

2.4 Periodic Review of the Quality Assurance Program

Management of those organizations implementing the QA program, or portions thereof, assesses the adequacy of that part of the program for which they are responsible to assure its effective implementation at least once each year or at least once during the life of the activity, whichever is

shorter. However, the period for assessing QA programs during the operations phase may be extended to once every two years.

2.5 Issuance and Revision to Quality Assurance Program

Administrative control of the QAPD will be in accordance with 10 CFR 50.55(f) and 10 CFR 50.54(a), as appropriate. Changes to the QAPD are evaluated by the Vice President Nuclear Oversight to ensure that such changes do not degrade previously approved quality assurance controls specified in the QAPD. This document shall be revised as appropriate to incorporate additional QA commitments that may be established during the COL application development process. New revisions to the document will be reviewed, at a minimum, by the Nuclear Oversight corporate manager responsible for Audits and Programs and approved by the Vice President Nuclear Oversight, and the Executive Vice President Nuclear Generation and Chief Nuclear Officer.

Regulations require that the Final Safety Analysis Report (FSAR) include, among other things, the managerial and administrative controls to be used to assure safe operation, including a discussion of how the applicable requirements of Appendix B will be satisfied. In order to comply with this requirement, the FSAR references this QAPD and as a result, the requirements of 10 CFR 50.54(a), are satisfied by and apply to the QAPD[i3].

2.6 Personnel Qualifications

Personnel assigned to implement elements of the QAPD shall be capable of performing their assigned tasks. To this end Duke Energy Corporation establishes and maintains formal indoctrination and training programs for personnel performing, verifying, or managing activities within the scope of the QAPD to assure that suitable proficiency is achieved and maintained. Plant and support staff minimum qualification requirements are as delineated in the unit Technical Specifications. Other qualification requirements may be established but will not reduce those required by Technical Specifications. Sufficient managerial depth is provided to cover absences of incumbents. When required by code, regulation, or standard, specific qualification and selection of personnel is conducted in accordance with those requirements as established in the applicable Duke Energy Corporation procedures. Indoctrination includes the administrative and technical objectives, requirements of the applicable codes and standards, and the QAPD elements to be employed. Training for positions identified in 10 CFR 50.120 is accomplished according to programs accredited by the National Nuclear Accrediting Board of the National Academy of Nuclear Training that implement a systematic approach to training. Records of personnel training and qualification are maintained.

The minimum qualifications of the corporate manager Audits and Programs and Manager Site Nuclear Oversight at the new nuclear generating plants are that each holds an engineering or related science degree and has a minimum of four years of related experience including two years of nuclear power plant experience, one year of supervisory or management experience, and one year of the experience is in performing quality verification activities. Special requirements shall include management and supervisory skills and experience or training in leadership, interpersonal communication, management responsibilities, motivation of personnel, problem analysis and decision making, and administrative policies and procedures. Individuals who do not possess these formal education and minimum experience requirements should not be eliminated automatically when other factors provide sufficient demonstration of their abilities. These other factors are evaluated on a case-by-case basis and approved and documented by senior management.

The minimum qualifications of the individuals responsible for planning, implementing and maintaining the programs for the QAPD are that each has a high school diploma or equivalent and has a minimum of one year of related experience. Individuals who do not possess these formal education and minimum experience requirements should not be eliminated automatically when other factors provide sufficient demonstration of their abilities. These other factors are evaluated on a case-by-case basis and approved and documented by senior management.

2.7 NQA-1-1994 Commitment / Exceptions

- In establishing qualification and training programs, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 2 and Supplements 2S-1, 2S-2, 2S-3 and 2S-4, with the following clarifications and exceptions:

  - NQA-1-1994, Supplement 2S-1

    - Supplement 2S-1 will include use of the guidance provided in Appendix 2A-1 the same as if it were part of the Supplement. Either or both of the following two alternatives may be applied to the implementation of this Supplement and Appendix:

      - (1) In lieu of being certified as Level I, II, or III in accordance with NQA-1-1994, personnel that perform independent quality verification inspections, examinations, measurements, or tests of material, products, or activities will be required to possess qualifications equal to or better than those required for performing the task being verified; and the verification is within the skills of these personnel and/or is addressed by procedures. These individuals will not be responsible for the planning of quality verification inspections and tests (i.e., establishing hold points and acceptance criteria in procedures, and determining who will be responsible for performing the inspections), evaluating inspection training programs, nor certifying inspection personnel.

      - (2) A qualified engineer may be used to plan inspections, evaluate the capabilities of an inspector, or evaluate the training program for inspectors. For the purpose of these functions, a qualified engineer is one who has a baccalaureate in engineering in a discipline related to the inspection activity (such as electrical, mechanical, civil) and has a minimum of five years engineering work experience with at least two years of this experience related to nuclear facilities.

  - NQA-1-1994, Supplement 2S-2

    - In lieu of Supplement 2S-2, for qualification of nondestructive examination personnel, Duke Energy Corporation will follow the applicable standard cited in the version(s) of Section III and Section XI of the ASME Boiler and Pressure Vessel Code approved by the NRC for use at Duke Energy Corporation sites.

  - NQA-1-1994, Supplement 2S-3

    - The requirement that prospective Lead Auditors have participated in a

minimum of five (5) audits in the previous three (3) years is replaced by the following, "The prospective lead auditor shall demonstrate his/her ability to properly implement the audit process, as implemented by Duke Energy Corporation, to effectively lead an audit team, and to effectively organize and report results, including participation in at least one nuclear audit within the year preceding the date of qualification."

SECTION 3 DESIGN CONTROL

Duke Energy Corporation has established and implements a process to control the design, design changes and temporary modifications (e.g. temporary bypass lines, electrical jumpers and lifted wires, and temporary setpoints) of items that are subject to the provisions of the QAPD. The design process includes provisions to control design inputs, outputs, changes, interfaces, records and organizational interfaces within Duke Energy Corporation and with suppliers. These provisions assure that design inputs (such as design bases and the performance, regulatory, quality, and quality verification requirements) are correctly translated into design outputs (such as analyses, specifications, drawings, procedures, and instructions) so that the final design output can be related to the design input in sufficient detail to permit verification. Design change processes and the division of responsibilities for design-related activities are detailed in Duke Energy Corporation and supplier procedures. The design control program includes interface controls necessary to control the development, verification, approval, release, status, distribution, and revision of design inputs and outputs. Design changes and disposition of nonconforming items as "use as is" or "repair" are reviewed and approved by the Duke Energy Corporation design organization or by other organizations so authorized by Duke Energy Corporation.

Design documents are reviewed by individuals knowledgeable in QA to ensure the documents contain the necessary QA requirements.

3.1 Design Verification

Duke Energy Corporation design processes provide for design verification to ensure that items and activities subject to the provisions of the QAPD are suitable for their intended application, consistent with their effect on safety. Design changes are subjected to these controls, which include verification measures commensurate with those applied to original plant design.

Design verifications are performed by competent individuals or groups other than those who performed the original design but who may be from the same organization. The verifier shall not have taken part in the selection of design inputs, the selection of design considerations, or the selection of a singular design approach, as applicable. This verification may be performed by the originator's supervisor provided the supervisor did not specify a singular design approach, rule out certain design considerations, and did not establish the design inputs used in the design, or if the supervisor is the only individual in the organization competent to perform the verification. If the verification is performed by the originator's supervisor, the justification of the need is documented and approved in advance by management.

The extent of the design verification required is a function of the importance to safety of the item under consideration, the complexity of the design, the degree of standardization, the state-of-the-art, and the similarity with previously proven designs. This includes design inputs, design outputs, and design changes. Design verification procedures are established and implemented to assure that an appropriate verification method is used, the appropriate design parameters to be verified are chosen, the acceptance criteria are identified, and the verification is satisfactorily accomplished and documented. Verification methods may include, but are not limited to, design reviews, alternative calculations and qualification testing. Testing used to verify the acceptability of a specific design feature demonstrates acceptable performance under conditions that simulate the most adverse design conditions expected for item's intended use.

Duke Energy Corporation normally completes design verification activities before the design outputs are used by other organizations for design work, and before they are used to support other activities such as procurement, manufacture, or construction. When such timing cannot be achieved, the design verification is completed before relying on the item to perform its intended design or safety function.

3.2 Design Records

Duke Energy Corporation maintains records sufficient to provide evidence that the design was properly accomplished. These records include the final design output and any revisions thereto, as well as record of the important design steps (e.g., calculations, analyses and computer programs) and the sources of input that support the final output.

Plant design drawings reflect the properly reviewed and approved configuration of the plant.

3.3 Computer Application and Digital Equipment Software

The QAPD governs the development, procurement, testing, maintenance, and use of computer application and digital equipment software when used in safety-related applications and designated non-safety-related applications. Duke Energy Corporation and suppliers are responsible for developing, approving, and issuing procedures, as necessary, to control the use of such computer application and digital equipment software. The procedures require that the application software be assigned a proper quality classification and that the associated quality requirements be consistent with this classification. Each application software and revision thereto is documented and approved by authorized personnel. The QAPD is also applicable to the administrative functions associated with the maintenance and security of computer hardware where such functions are considered essential in order to comply with other QAPD requirements such as QA records.

3.4 Setpoint Control

Instrument and equipment setpoints that could affect nuclear safety shall be controlled in accordance with written instructions. As a minimum, these written instructions shall:

(1) Identify responsibilities and processes for reviewing, approving, and revising setpoints and setpoint changes originally supplied by the Design Certification Holder, the A/E, and the plant's technical staff.
(2) Ensure that setpoints and setpoint changes are consistent with design and accident analysis requirements and assumptions.
(3) Provide for documentation of setpoints, including those determined operationally.
(4) Provide for access to necessary setpoint information for personnel who write or revise plant procedures, operate or maintain plant equipment, develop or revise design documents, or develop or revise accident analyses.

3.5 NQA-1-1994 Commitment

In establishing its program for design control and verification, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 3, and Supplement 3S-1, the subsurface investigations requirements in Subpart 2.20, and the standards for computer software contained in Subpart 2.7.

SECTION 4 PROCUREMENT DOCUMENT CONTROL

Duke Energy Corporation has established the necessary measures and governing procedures to assure that purchased items and services are subject to appropriate quality and technical requirements. Procurement document changes shall be subject to the same degree of control as utilized in the preparation of the original documents. These controls include provisions such that:

- Where original technical or quality assurance requirements cannot be determined, an engineering evaluation is conducted and documented by qualified staff to establish appropriate requirements and controls to assure that interfaces, interchangeability, safety, fit and function, as applicable, are not adversely affected or contrary to applicable regulatory requirements.

- Applicable technical, regulatory, administrative, quality and reporting requirements (such as specifications, codes, standards, tests, inspections, special processes, and 10 CFR 21) are invoked for procurement of items and services. 10 CFR 21 requirements for posting, evaluating, and reporting will be followed and imposed on suppliers when applicable. Applicable design bases and other requirements necessary to assure adequate quality shall be included or referenced in documents for procurement of items and services. To the extent necessary, procurement documents shall require suppliers to have a documented QA program that is determined to meet the applicable requirements of 10 CFR 50, Appendix B, as appropriate to the circumstances of procurements (or the supplier may work under Duke Energy Corporation's approved QA program).

Reviews of procurement documents shall be performed by personnel who have access to pertinent information and who have an adequate understanding of the requirements and intent of the procurement documents.

4.1 NQA-1-1994 Commitment / Exceptions

In establishing controls for procurement, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 4 and Supplement 4S-1, with the following clarifications and exceptions:

- NQA-1-1994, Supplement 4S-1

  - Section 2.3 of this Supplement 4S-1 includes a requirement that procurement documents require suppliers to have a documented QAP that implements NQA-1-1994, Part 1. In lieu of this requirement, Duke Energy Corporation may require suppliers to have a documented supplier QAP that is determined to meet the applicable requirements of 10 CFR 50, Appendix B, as appropriate to the circumstances of the procurement.

  - With regard to service performed by a supplier, Duke Energy Corporation procurement documents may allow the supplier to work under the Duke Energy Corporation QAP, including implementing procedures, in lieu of the supplier having its own QAP.

  - Section 3 of this supplement 4S-1 requires procurement documents to be reviewed prior to bid or award of contract. The quality assurance review of

procurement documents is satisfied through review of the applicable procurement specification, including the technical and quality procurement requirements, prior to bid or award of contract. Procurement document changes (e.g., scope, technical or quality requirements) will also receive the quality assurance review.

- Procurement documents for Commercial Grade Items that will be procured by Duke Energy Corporation for use as safety-related items shall contain technical and quality requirements such that the procured item can be appropriately dedicated.

SECTION 5 INSTRUCTIONS, PROCEDURES, AND DRAWINGS

Duke Energy Corporation has established the necessary measures and governing procedures to ensure that activities affecting quality are prescribed by and performed in accordance with instructions, procedures or drawings of a type appropriate to the circumstances and which, where applicable, include quantitative or qualitative acceptance criteria to implement the QAPD as described in the QAPD. Such documents are prepared and controlled according to Part II, Section 6. In addition, means are provided to disseminate to the staff instructions of both general and continuing applicability, as well as those of short-term applicability. Provisions are included for reviewing, updating, and canceling such procedures.

5.1 Procedure Adherence

Duke Energy Corporation's policy is that procedures are followed, and the requirements for use of procedures have been established in administrative procedures. Where procedures cannot be followed as written, provisions are established for making changes in accordance with Part II, Section 6. Requirements are established to identify the manner in which procedures are to be implemented, including identification of those tasks that require: (1) the written procedure to be present and followed step-by-step while the task is being performed, (2) the user to have committed the procedure steps to memory, (3) verification of completion of significant steps, by initials or signatures or use of check-off lists. Procedures that are required to be present and referred to directly are those developed for extensive or complex jobs where reliance on memory cannot be trusted, tasks that are infrequently performed, and tasks where steps must be performed in a specified sequence.

In cases of emergency, personnel are authorized to depart from approved procedures when necessary to prevent injury to personnel or damage to the plant. Such departures are recorded describing the prevailing conditions and reasons for the action taken.

5.2 Procedure Content

The established measures address the applicable content of procedures as described in the introduction to Part II of NQA-1-1994. In addition, procedures governing tests, inspections, operational activities and maintenance will include as applicable, initial conditions and prerequisites for the performance of the activity.

5.3 NQA-1-1994 Commitment

In establishing procedural controls, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 5.

SECTION 6 DOCUMENT CONTROL

Duke Energy Corporation has established the necessary measures and governing procedures to control the preparation of, issuance of, and changes to documents that specify quality requirements or prescribe how activities affecting quality, including organizational interfaces, are controlled to assure that correct documents are being employed. The control systems (including electronic systems used to make documents available) are documented and provide for the following:

(a) identification of documents to be controlled and their specified distribution;

(b) a method to identify the correct document (including revision) to be used and control of superseded documents;

(c) identification of assignment of responsibility for preparing, reviewing, approving, and issuing documents;

(d) review of documents for adequacy, completeness, and correctness prior to approval and issuance;

(e) a method for providing feedback from users to continually improve procedures and work instructions; and

(f) coordinating and controlling interface documents and procedures.

The types of documents to be controlled include:

(a) drawings such as design, construction, installation, and as-built drawings;

(b) engineering calculations;

(c) design specifications;

(d) purchase orders and related documents;

(e) vendor-supplied documents;

(f) audit, surveillance, and quality verification/inspection procedures;

(g) inspection and test reports;

(h) instructions and procedures for activities covered by the QAPD including design, construction, installation, operating (including normal and emergency operations), maintenance, calibration, and routine testing;

(i) technical specifications; and,

(j) nonconformance reports and corrective action reports

During the operational phase, where temporary procedures are used, they shall include a designation of the period of time during which it is acceptable to use them.

6.1 Review and Approval of Documents

Documents are reviewed for adequacy by qualified persons other than the preparer. During the construction phase, procedures for design, construction, and installation are also

reviewed by Nuclear Oversight organization or a contractor quality assurance organization, as assigned by contract, to ensure quality assurance measures have been appropriately applied. The documented review signifies concurrence.

During the operations phase, documents affecting the configuration or operation of the station as described in the SAR are screened to identify those that require review by the IRB prior to implementation as described in Part V, Section 2.2.

To ensure effective and accurate procedures during the operational phase, applicable procedures are reviewed, and updated as necessary, based on the following conditions:

(a) following any modification to a system;

(b) following an unusual incident, such as an accident, significant operator error, or equipment malfunction;

(c) when procedure discrepancies are found;

(d) prior to use if not used in the previous two years; or

(e) results of QA audits are conducted in accordance with Part II, Section 18.1.

Prior to issuance or use, documents including revisions thereto, are approved by the designated authority. A listing of all controlled documents identifying the current approved revision, or date, is maintained so personnel can readily determine the appropriate document for use.

6.2 Changes to Documents

Changes to documents, other than those defined in implementing procedures as minor changes, are reviewed and approved by the same organizations that performed the original review and approval unless other organizations are specifically designated. The reviewing organization has access to pertinent background data or information upon which to base their approval. Where temporary procedure changes are necessary during the operations phase, changes that clearly do not change the intent of the approved procedure may be implemented provided they are approved by two members of the staff knowledgeable in the areas affected by the procedures. Minor changes to documents, such as inconsequential editorial corrections, do not require that the revised documents receive the same review and approval as the original documents. To avoid a possible omission of a required review, the type of minor changes that do not require such a review and approval and the persons who can authorize such a classification shall be clearly delineated in implementing procedures.

6.3 NQA-1-1994 Commitment

In establishing provisions for document control, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 6 and Supplement 6S-1.

SECTION 7 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

Duke Energy Corporation has established the necessary measures and governing procedures to control the procurement of items and services to assure conformance with specified requirements. Such control provides for the following as appropriate: source evaluation and selection, evaluation of objective evidence of quality furnished by the supplier, source inspection, audit, and examination of items or services.

7.1 Acceptance of Item or Service

Duke Energy Corporation establishes and implements measures to assess the quality of purchased items and services, whether purchased directly or through contractors, at intervals and to a depth consistent with the item's or service's importance to safety, complexity, quantity and the frequency of procurement. Verification actions include testing, as appropriate, during design, fabrication and construction activities. Verifications occur at the appropriate phases of the procurement process, including, as necessary, verification of activities of suppliers below the first tier.

Measures to assure the quality of purchased items and services include the following, as applicable:

- Items are inspected, identified, and stored to protect against damage, deterioration, or misuse.

- Prospective suppliers of safety-related items and services are evaluated to assure that only qualified suppliers are used. Qualified suppliers are audited on a triennial basis. In addition, if a subsequent contract or a contract modification significantly enlarges the scope of, or changes the methods or controls for, activities performed by the same supplier, an audit of the modified requirements is conducted, thus starting a new triennial period. Duke Energy Corporation may utilize audits conducted by outside organizations for supplier qualification provided that the scope and adequacy of the audits meet Duke Energy Corporation requirements. Documented annual evaluations are performed for qualified suppliers to assure they continue to provide acceptable products and services. Industry programs, such as those applied by ASME, Nuclear Procurement Issues Committee (NUPIC), or other established utility groups, are used as input or the basis for supplier qualification whenever appropriate. The results of the reviews are promptly considered for effect on a supplier's continued qualification and adjustments made as necessary (including corrective actions, adjustments of supplier audit plans, and input to third party auditing entities, as warranted). In addition, results are reviewed periodically to determine if, as a whole, they constitute a significant condition adverse to quality requiring additional action.

- Provisions are made for accepting purchased items and services, such as source verification, receipt inspection, pre- and post-installation tests, certificates of conformance, and document reviews (including Certified Material Test Report/Certificate). Acceptance actions/documents should be established by the Purchaser with appropriate input from the Supplier and be completed to ensure that procurement, inspection, and test requirements, as applicable, have been satisfied before relying on the item to perform its intended safety function.

- Controls are imposed for the selection, determination of suitability for intended use (critical characteristics), evaluation, receipt and acceptance of commercial-grade services or items to assure they will perform satisfactorily in service in safety-related applications.

- If there is insufficient evidence of implementation of a QA program, the initial evaluation is of the existence of a QA program addressing the scope of services to be provided. The initial audit is performed after the supplier has completed sufficient work to demonstrate that its organization is implementing a QA program.

7.2 NQA-1-1994 Commitment / Exceptions

In establishing procurement verification controls, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 7 and Supplement 7S-1, with the following clarifications and exceptions:

- NQA-1-1994, Supplement 7S-1

  - Duke Energy Corporation considers that other 10 CFR 50 licensees, Authorized Nuclear Inspection Agencies, National Institute of Standards and Technology, or other State and Federal agencies which may provide items or services to Duke Energy Corporation plants are not required to be evaluated or audited.

  - When purchasing commercial grade calibration services from a calibration laboratory, procurement source evaluation and selection measures need not be performed provided each of the following conditions are met:

    (1) The purchase documents impose any additional technical and administrative requirements, as necessary, to comply with the Duke Energy Corporation QA program and technical provisions. At a minimum, the purchase document shall require that the calibration certificate/report include identification of the laboratory equipment/standard used.

    (2) The purchase documents require reporting as-found calibration data when calibrated items are found to be out-of-tolerance.

    (3) A documented review of the supplier's accreditation will be performed and will include a verification of each of the following:

      - The calibration laboratory holds a domestic (United States) accreditation by any one of the following accrediting bodies, which are recognized by the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA):

        - National Voluntary Laboratory Accreditation Program (NVLAP), administered by the National Institute of Standards & Technology;

        - American Association for Laboratory Accreditation (A2LA);

        - ACLASS Accreditation Services (ACLASS);

- International Accreditation Services (IAS);
- Laboratory Accreditation Bureau (L-A-B);
- Other NRC approved laboratory accrediting body.

  - The accreditation encompasses ANS/ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories.
  - The published scope of accreditation for the calibration laboratory covers the necessary measurement parameters, ranges, and uncertainties.

- For Section 8.1, Duke Energy Corporation considers documents that may be stored in approved electronic media under Duke Energy Corporation or vendor control and not physically located on the plant site but which are accessible from the respective nuclear facility site as meeting the NQA-1 requirement for documents to be available at the site. Following completion of the construction period, sufficient as-built documentation will be turned over to Duke Energy Corporation to support operations. The Duke Energy Corporation records management system will provide for timely retrieval of necessary records.

- In lieu of the requirements of Section 10, Commercial Grade Items, controls for commercial grade items and services are established in Duke Energy Corporation documents using 10 CFR 21 and the guidance of EPRI NP-5652 as discussed in Generic Letter 89-02 and Generic Letter 91-05.

  - For commercial grade items, special quality verification requirements are established and described in Duke Energy Corporation documents to provide the necessary assurance an item will perform satisfactorily in service. The Duke Energy Corporation documents address determining the critical characteristics that ensure an item is suitable for its intended use, technical evaluation of the item, receipt requirements, and quality evaluation of the item.

  - Duke Energy Corporation will also use other appropriate approved regulatory means and controls to support Duke Energy Corporation commercial grade dedication activities Duke Energy Corporation will assume 10 CFR 21 reporting responsibility for all items that Duke Energy Corporation dedicates as safety-related.

SECTION 8 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS

Duke Energy Corporation has established the necessary measures and governing procedures to identify and control items to prevent the use of incorrect or defective items. This includes controls for consumable materials and items with limited shelf life. The identification of items is maintained throughout fabrication, erection, installation and use so that the item can be traced to its documentation, consistent with the item's effect on safety. Identification locations and methods are selected so as not to affect the function or quality of the item.

8.1 NQA-1-1994 Commitment

In establishing provisions for identification and control of items, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 8 and Supplement 8S-1.

SECTION 9 CONTROL OF SPECIAL PROCESSES

Duke Energy Corporation has established the necessary measures and governing procedures to assure that special processes that require interim process controls to assure quality, such as welding, heat treating, and nondestructive examination, are controlled. These provisions include assuring that special processes are accomplished by qualified personnel using qualified procedures and equipment. Personnel are qualified and special processes are performed in accordance with applicable codes, standards, specifications, criteria or other specially established requirements. Special processes are those where the results are highly dependent on the control of the process or the skill of the operator, or both, and for which the specified quality cannot be fully and readily determined by inspection or test of the final product.

9.1 NQA-1-1994 Commitment

In establishing measures for the control of special processes, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 9 and Supplement 9S-1.

SECTION 10 INSPECTION

Duke Energy Corporation has established the necessary measures and governing procedures to implement inspections that assure items, services, and activities affecting safety meet established requirements and conform to applicable documented specifications, instructions, procedures, and design documents. Inspection may also be applied to items, services and activities affecting plant reliability and integrity. Types of inspections may include those verifications related to procurement, such as source, in-process, final, and receipt inspection, as well as construction, installation, and operations activities. Inspections are carried out by properly qualified persons independent of those who performed or directly supervised the work. Inspection results are documented.

10.1 Inspection Program

The inspection program establishes inspections (including surveillance of processes), as necessary to verify quality: (1) at the source of supplied items or services, (2) in-process during fabrication at a supplier's facility or at a Company facility, (3) for final acceptance of fabricated and/or installed items during construction, (4) upon receipt of items for a facility, as well as (5) during maintenance, modification, in-service, and operating activities.

The inspection program establishes requirements for planning inspections, such as the group or discipline responsible for performing the inspection, where inspection hold points are to be applied, determining applicable acceptance criteria, the frequency of inspection to be applied, and identification of special tools needed to perform the inspection. Inspection planning is performed by personnel qualified in the discipline related to the inspection and includes qualified inspectors or engineers. Inspection plans are based on, as a minimum, the importance of the item to the safety of the facility, the complexity of the item, technical requirements to be met, and design specifications. Where significant changes in inspection activities for the facilities are to occur, management responsible for the inspection programs evaluate the resource and planning requirements to ensure effective implementation of the inspection program.

Inspection program documents establish requirements for performing the planned inspections, and documenting required inspection information such as: rejection, acceptance, and re-inspection results; and the person(s) performing the inspection.

Inspection results are documented by the inspector, reviewed by authorized personnel qualified to evaluate the technical adequacy of the inspection results, and controlled by instructions, procedures, and drawings.

10.2 Inspector Qualification

Duke Energy Corporation has established qualification programs for personnel performing quality inspections. The qualification program requirements are described in Part II, Section 2. These qualification programs are applied to individuals performing quality inspections regardless of the functional group where they are assigned.

10.3 NQA-1-1994 Commitments / Exceptions

In establishing inspection requirements, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 10, Supplement 10S-1 and Subpart 2.4, with the following clarification. In addition, Duke Energy Corporation commits to compliance with the requirements of Subparts 2.5 and 2.8 for establishing appropriate inspection requirements.

- Subpart 2.4 commits Duke Energy Corporation to IEEE 336-1985. IEEE 336-1985 refers to IEEE 498-1985. Both IEEE 336 -1985 and IEEE 498-1985 use the definition of "Safety Systems" from IEEE 603-1980. Duke Energy Corporation commits to the definition of Safety Systems in IEEE 603-1980, but does not commit to the balance of that standard. This definition is only applicable to equipment in the context of Subpart 2.4.

- An additional exception to Subpart 2.4 is addressed in Part II, Section 12.

- Where inspections at the operating facility are performed by persons within the same organization (e.g. Maintenance group), Duke Energy Corporation takes exception to the requirements of NQA-1-1994, Supplement 10S-1, Section 3.1, the inspectors report to Nuclear Oversight organization while performing those inspections.

SECTION 11 TEST CONTROL

Duke Energy Corporation has established the necessary measures and governing procedures to demonstrate that items subject to the provisions of the QAPD will perform satisfactorily in service, that the plant can be operated safely and as designed, and that the coordinated operation of the plant as a whole is satisfactory. These programs include criteria for determining when testing is required, such as proof tests before installation, pre-operational tests, post-maintenance tests, post-modification tests, in-service tests, and operational tests (such as surveillance tests required by Plant Technical Specifications), to demonstrate that performance of plant systems is in accordance with design. Programs also include provisions to establish and adjust test schedules and to maintain status for periodic or recurring tests. Tests are performed according to applicable procedures that include, consistent with the effect on safety: (1) instructions and prerequisites to perform the test, (2) use of proper test equipment, (3) acceptance criteria, and (4) mandatory verification points as necessary to confirm satisfactory test completion. Test results are documented and evaluated by the organization performing the test and reviewed by a responsible authority to assure that the test requirements have been satisfied. If acceptance criteria are not met, re-testing is performed as needed to confirm acceptability following correction of the system or equipment deficiencies that caused the failure.

The initial start-up test program is planned and scheduled to permit safe fuel loading and start-up; to increase power in safe increments; and to perform major testing at specified power levels. If tests require the variation of operating parameters outside of their normal range, the limits within which such variation is permitted will be prescribed. The scope of the testing demonstrates, insofar as practicable, that the plant is capable of withstanding the design transients and accidents. For new facility construction, the suitability of facility operating procedures is checked to the maximum extent possible during the pre-operational and initial start-up test programs.

Tests are performed and results documented in accordance with applicable technical and regulatory requirements including those described in the Technical Specifications and SAR. Test programs ensure appropriate retention of test data in accordance with the records requirements of the QAPD. Personnel that perform or evaluate tests are qualified in accordance with the requirements established in Part II, Section 2.

11.1 NQA-1-1994 Commitment

In establishing provisions for testing, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 11 and Supplement 11S-1.

11.2 NQA-1-1994 Commitment for Computer Program Testing

Duke Energy Corporation establishes and implements provisions to assure that computer software used in applications affecting safety is prepared, documented, verified and tested, and used such that the expected output is obtained and configuration control maintained. To this end Duke Energy Corporation commits to compliance with the requirements of NQA-1-1994, Supplement 11S-2, and Subpart 2.7 to establish the appropriate provisions.

SECTION 12 CONTROL OF MEASURING AND TEST EQUIPMENT

Duke Energy Corporation has established the necessary measures and governing procedures to control the calibration, maintenance, and use of measuring and test equipment (M&TE) that provides information important to safe plant operation. The provisions of such procedures cover equipment such as indicating and actuating instruments and gages, tools, reference and transfer standards, and nondestructive examination equipment. The suppliers of commercial-grade calibration services are controlled as described in Part II, Section 7.

12.1 Installed Instrument and Control Devices

For the operations phase of the facilities, Duke Energy Corporation has established and implements procedures for the calibration and adjustment of instrument and control devices installed in the facility. The calibration and adjustment of these devices is accomplished through the facility maintenance programs to ensure the facility is operated within design and technical requirements. Appropriate documentation will be maintained for these devices to indicate the control status, when the next calibration is due, and identify any limitations on use of the device.

12.2 NQA-1-1994 Commitment / Exceptions

In establishing provisions for control of measuring and test equipment, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 12 and Supplement 12S-1 with the following clarification and exception:

- The out of calibration conditions described in paragraph 3.2 of Supplement 12S-1 refers to when the M&TE is found out of the required accuracy limits (i.e. out of tolerance) during calibration.

- Measuring and test equipment are not required to be marked with the calibration status where it is impossible or impractical due to equipment size or configuration (such as the label will interfere with operation of the device) provided the required information is maintained in suitable documentation traceable to the device. This exception also applies to the calibration labeling requirement stated in NQA-1-1994, Subpart 2.4, Section 7.2.1 (ANSI/IEEE Std. 336-1985).

SECTION 13 HANDLING, STORAGE, AND SHIPPING

Duke Energy Corporation has established the necessary measures and governing procedures to control the handling, storage, packaging, shipping, cleaning, and preservation of items to prevent inadvertent damage or loss, and to minimize deterioration. These provisions include specific procedures, when required to maintain acceptable quality of the items important to the safe operations of the plant. Items are appropriately marked and labeled during packaging, shipping, handling and storage to identify, maintain, and preserve the item's integrity and indicate the need for special controls. Special controls (such as containers, shock absorbers, accelerometers, inert gas atmospheres, specific moisture content levels and temperature levels) are provided when required to maintain acceptable quality.

Special or additional handling, storage, shipping, cleaning and preservation requirements are identified and implemented as specified in procurement documents and applicable procedures. Where special requirements are specified, the items and containers (where used) are suitably marked.

Special handling tools and equipment are used and controlled as necessary to ensure safe and adequate handling. Special handling tools and equipment are inspected and tested at specified time intervals and in accordance with procedures to verify that the tools and equipment are adequately maintained.

Operators of special handling and lifting equipment are experienced or trained in the use of the equipment. During the operational phase, Duke Energy Corporation establishes and implements controls over hoisting, rigging and transport activities to the extent necessary to protect the integrity of the items involved, as well as potentially affected nearby structures and components. Where required, Duke Energy Corporation complies with applicable hoisting, rigging and transportation regulations and codes.

13.1 Housekeeping

Housekeeping practices are established to account for conditions or environments that could affect the quality of structures, systems and components within the plant. This includes control of cleanliness of facilities and materials, fire prevention and protection, disposal of combustible material and debris, control of access to work areas, protection of equipment, radioactive contamination control and storage of solid radioactive waste. Housekeeping practices help assure that only proper materials, equipment, processes and procedures are used and that the quality of items is not degraded. Necessary procedures or work instructions, such as for electrical bus and control center cleaning, cleaning of control consoles, and radioactive decontamination are developed and used.

13.2 NQA-1-1994 Commitment / Exceptions

In establishing provisions for handling, storage and shipping, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 13 and Supplement 13S-1. Duke Energy Corporation also commits, during the construction and pre-operational phase of the plant, to compliance with the requirements of NQA-1-1994, Subpart 2.1, Subpart 2.2, and Subpart 3.2, Appendix[i4] 2.1, with the following clarifications and exceptions:

NQA-1-1994, Subpart 2.1

- Subpart 2.1, Section 3.1 and 3.2 establish criteria for classifying items into cleanness classes and requirements for each class. Instead of using the cleanness level system of Subpart 2.1, Duke Energy Corporation may establish cleanness requirements on a case by case basis, consistent with the other provisions of Subpart 2.1. Duke Energy Corporation establishes appropriate cleanliness controls for work on safety-related equipment to minimize introduction of foreign material and maintain system/component cleanliness throughout maintenance or modification activities, including documented verification of absence of foreign material prior to system closure. [NOTE: Optional clarification/alternative to QA requirements that only applies to operation programs.]

NQA-1-1994, Subpart 2.2

- Subpart 2.2, Section 2.2 establishes criteria for classifying items into protection levels. Instead of classifying items into protection levels during the operational phase, Duke Energy Corporation may establish controls for the packaging, shipping, handling, and storage of such items on a case-by-case basis with due regard for the item's complexity, use, and sensitivity to damage. Prior to installation or use, the items are inspected and serviced as necessary to assure that no damage or deterioration exists which could affect their function. [NOTE: Optional clarification/alternative to QA requirements that only applies to operational programs.]

- Subpart 2.2, section 6.6, "Storage Records:" This section requires written records be prepared containing information on personnel access. As an alternative to this requirement, Duke Energy Corporation documents establish controls for storage areas that describe those authorized to access areas and the requirements for recording access of personnel. However, these records of access are not considered quality records and will be retained in accordance with the administrative controls of the applicable plant.

- Subpart 2.2, section 7.1 refers to Subpart 2.15 for requirements related to handling of items. The scope of Subpart 2.15 includes hoisting, rigging and transporting of items for the nuclear power plants during construction.

NQA-1-1994, Subpart 2.3

- Subpart 2.3, Section 2.3 requires the establishment of five zone designations for housekeeping cleanliness controls. Instead of the five-level zone designation, Duke Energy Corporation bases its control over housekeeping activities on a consideration of what is necessary and appropriate for the activity involved. The controls are implemented through procedures or instructions which, in the case of maintenance or modification work, are developed on a case-by-case basis. Factors considered in developing the procedures and instructions include cleanliness control, personnel safety, fire prevention and protection, radiation control and security. The procedures

and instructions make use of standard janitorial and work practices to the extent possible. [**NOTE**: Optional clarification/alternative to QA requirements that only applies to operational programs.]

NQA-1-1994, Subpart 3.2

- Subpart 3.2, Appendix 2.1: Only Section 3 precautions are being committed to in accordance with RG 1.37. In addition, a suitable chloride stress-cracking inhibitor should be added to the fresh water used to flush systems containing austenitic stainless steels

SECTION 14 INSPECTION, TEST, AND OPERATING STATUS

Duke Energy Corporation has established the necessary measures and governing procedures to identify the inspection, test, and operating status of items and components subject to the provisions of the QAPD in order to maintain personnel and reactor safety and avoid inadvertent operation of equipment. Where necessary to preclude inadvertent bypassing of inspections or tests, or to preclude inadvertent operation, these measures require the inspection, test or operating status be verified before release, fabrication, receipt, installation, test or use. These measures also establish the necessary authorities and controls for the application and removal of status indicators or labels.

In addition, temporary design changes (temporary modifications), such as temporary bypass lines, electrical jumpers and lifted wires, and temporary trip-point settings, are controlled by procedures that include requirements for appropriate installation and removal, independent/concurrent verifications and status tracking.

Administrative procedures also describe the measures taken to control altering the sequence of required tests, inspections, and other operations. Review and approval for these actions is subject to the same control as taken during the original review and approval of tests, inspections, and other operations.

14.1 NQA-1-1994 Commitment

In establishing measures for control of inspection, test and operating status, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 14.

SECTION 15 NONCONFORMING MATERIALS, PARTS, OR COMPONENTS

Duke Energy Corporation has established the necessary measures and governing procedures to control items, including services, that do not conform to specified requirements to prevent inadvertent installation or use. Controls provide for identification, documentation, evaluation, segregation when practical, and disposition of nonconforming items, and for notification to affected organizations. Controls are provided to address conditional release of nonconforming items for use on an at-risk basis prior to resolution and disposition of the nonconformance, including maintaining identification of the item and documenting the basis for such release. Conditional release of nonconforming items for installation requires the approval of the designated management. Nonconformances are corrected or resolved prior to depending on the item to perform its intended safety function. Nonconformances are evaluated for impact on operability of quality structures, systems, and components to assure that the final condition does not adversely affect safety, operation, or maintenance of the item or service. Nonconformances to design requirements dispositioned repair or use-as-is are subject to design control measures commensurate with those applied to the original design. Nonconformance dispositions are reviewed for adequacy, analysis of quality trends, and reports provided to the designated management. Significant trends are reported to management in accordance with Duke Energy Corporation procedures, regulatory requirements, and industry standards.

15.1 Interface with the Reporting Program

Duke Energy Corporation has appropriate interfaces between the QAP for identification and control of nonconforming materials, parts, or components and the non-QA Reporting Program to satisfy the requirements of 10 CFR 52, 10 CFR 50.55(e) and/or 10 CFR 21 during COL design and construction and 10 CFR 21 during operations.

15.2 NQA-1-1994 Commitment

In establishing measures for nonconforming materials, parts, or components, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 15, and Supplement 15S-1.

SECTION 16 CORRECTIVE ACTION

Duke Energy Corporation has established the necessary measures and governing procedures to promptly identify, control, document, classify and correct conditions adverse to quality. Duke Energy Corporation procedures assure that corrective actions are documented and initiated following the determination of conditions adverse to quality in accordance with regulatory requirements and applicable quality standards. Duke Energy Corporation procedures require personnel to identify known conditions adverse to quality. When complex issues arise where it cannot be readily determined if a condition adverse to quality exists, Duke Energy Corporation documents establish the requirements for documentation and timely evaluation of the issue. Reports of conditions adverse to quality are analyzed to identify trends. Significant conditions adverse to quality and significant adverse trends are documented and reported to responsible management. In the case of a significant condition adverse to quality, the cause is determined and actions to preclude recurrence are taken.

In the case of suppliers working on safety-related activities, or other similar situations, Duke Energy Corporation may delegate specific responsibilities for corrective actions but Duke Energy Corporation maintains responsibility for the effectiveness of corrective action measures.

16.1 Interface with the Reporting Program

Duke Energy Corporation has appropriate interfaces between the QAP for corrective actions and the non-QA Reporting Program to satisfy the requirements of 10 CFR 52, 10 CFR 50.55(e) and or 10 CFR 21 during the COL design and construction, and 10 CFR 21 during operations.

16.2 NQA-1-1994 Commitment

In establishing provisions for corrective action, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 16.

SECTION 17 QUALITY ASSURANCE RECORDS

Duke Energy Corporation has the necessary measures and governing procedures to ensure that sufficient records of items and activities affecting quality are developed, reviewed, approved, issued, used, and revised to reflect completed work. The provisions of such procedures establish the scope of the records retention program for Duke Energy Corporation and include requirements for records administration, including receipt, preservation, retention, storage, safekeeping, retrieval, access controls, user privileges, and final disposition.

17.1 Record Retention

Measures are established that ensure that sufficient records of completed items and activities affecting quality are appropriately stored. Records of activities for design, engineering, procurement, manufacturing, construction, inspection and test, installation, pre-operation, startup, operations, maintenance, modification, decommissioning, and audits and their retention times are defined in appropriate procedures. The records and retention times are based on Regulatory Position C.2 and Table 1, of Regulatory Guide 1.28, Revision 3 for design, construction, and initial startup. Retention times for operations phase records are based on construction records that are similar in nature. In all cases where state, local, or other agencies have more restrictive requirements for record retention, those requirements will be met.

17.2 Electronic Records

When using optical disks for electronic records storage and retrieval systems, Duke Energy Corporation complies with NRC guidance Generic Letter 88-18, "Plant Record Storage on Optical Disks." Duke Energy Corporation will manage the storage of QA Records in electronic media consistent with the intent of RIS 2000-18 and associated NIRMA Guidelines TG 11-1998, TG15-1998, TG16-1998, and TG21-1998.

17.3 NQA-1-1994 Commitment / Exceptions

In establishing provisions for records, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 17 and Supplement 17S-1, with the following clarifications and exceptions:

- NQA-1-1994, Supplement 17S-1
  - Supplement 17S-1, Section 4.2(b) requires records to be firmly attached in binders or placed in folders or envelopes for storage in steel file cabinets or on shelving in containers. For hard-copy records maintained by Duke Energy Corporation, the records are suitably stored in steel file cabinets or on shelving in containers, except that methods other than binders, folders or envelopes may be used to organize the records for storage.

SECTION 18 AUDITS

Duke Energy Corporation has established the necessary measures and governing procedures to implement audits to verify that activities covered by the QAPD are performed in conformance with the requirements established. The audit programs are themselves reviewed for effectiveness as a part of the overall audit process.

18.1 Performance of Audits

Internal audits of selected aspects of licensing, design, construction phase and operating activities are performed with a frequency commensurate with safety significance and in a manner which assures that audits of safety-related activities are completed. During the early portions of the new nuclear plant development activities, audits will focus on areas including, but not limited to, site investigation, procurement, and corrective action. Functional areas of an organization's QA program for auditing include, at a minimum verification of compliance and effectiveness of implementation of internal rules, procedures (e.g., operating, design, procurement, maintenance, modification, refueling, surveillance, test, security, radiation control procedures, and the emergency plan), Technical Specifications, regulations and license conditions, programs for training, retraining, qualification and performance of operating staff, corrective actions, and observation of performance of operating, refueling, maintenance and modification activities, including associated record keeping.

The audits are scheduled on a formal preplanned audit schedule. The audit system is reviewed periodically and revised as necessary to assure coverage commensurate with current and planned activities. Additional audits may be performed as deemed necessary by management. The scope of the audit is determined by the quality status and safety importance of the activities being performed. These audits are conducted by trained personnel not having direct responsibilities in the area being audited and in accordance with preplanned and approved audit plans or checklists, under the direction of a qualified lead auditor and the cognizance of the Nuclear Oversight corporate manager responsible for Audits and Programs and the Manager Site Nuclear Oversight

Duke Energy Corporation is responsible for conducting periodic internal and external audits. Internal audits are conducted to determine the adequacy of programs and procedures (by representative sampling), and to determine if they are meaningful and comply with the overall QAPD. External audits determine the adequacy of supplier and contractor quality assurance program.

The results of each audit are reported in writing to the Executive Vice President Nuclear Generation and Chief Nuclear Officer, or designee, as appropriate. Additional internal distribution is made to other concerned management levels in accordance with approved procedures.

Management responds to all audit findings and initiates corrective action where indicated. Where corrective action measures are indicated, documented follow-up of applicable areas through inspections, review, re-audits, or other appropriate means is conducted to verify implementation of assigned corrective action.

Audits of suppliers of safety-related components and/or services are conducted as described in Part II, Section 7.1.

18.2 Internal Audits

Internal audits of organization and facility activities, conducted prior to placing the facility in operation, should be performed in such a manner as to assure that an audit of all applicable QA program elements is completed for each functional area at least once each year or at least once during the life of the activity, whichever is shorter.

Internal audits of activities, conducted after placing the facility in operation, should be performed in such a manner as to assure that an audit of all applicable QA program elements is completed for each functional area within a period of two years. Internal audit frequencies of well established activities, conducted after placing the facility in operation, may be extended one year at a time beyond the above two-year interval based on the results of an annual evaluation of the applicable functional area and objective evidence that the functional area activities are being satisfactorily accomplished. The evaluation should include a detailed performance analysis of the functional area based upon applicable internal and external source data and due consideration of the impact of any functional area changes in responsibility, resources, or management. However, the internal audit frequency should not exceed a maximum of four years. If an adverse trend is identified in the applicable functional area, the extension of the internal audit frequency should be rescinded and an audit scheduled as soon as practicable.

During the operations phase audits are performed at a frequency commensurate with the safety significance of the activities and in such a manner to assure audits of all applicable QA program elements are completed within a period of two years. These audits will include, as a minimum, activities in the following areas:

(1) The conformance of facility operation to provisions contained within the Technical Specifications and applicable license conditions including administrative controls.

(2) The performance, training, and qualifications of the facility staff.

(3) The performance of activities required by the QAPD to meet the criteria of 10 CFR 50, Appendix B.

(4) The Fire Protection Program and implementing procedures. A fire protection equipment and program implementation inspection and audit is conducted utilizing either a qualified offsite licensed fire protection engineer or an outside qualified fire protection consultant.

(5) Other activities and documents considered appropriate by Nuclear Development, Nuclear Operations, or the CNO.

Audits may also be used to meet the periodic review requirements of the code for the Security, Emergency Preparedness, and Radiological Protection programs within the provisions of the applicable code.

Internal audits include verification of compliance and effectiveness of the administrative controls established for implementing the requirements of the QAPD; regulations and license provisions; provisions for training, retraining, qualification, and performance of personnel performing activities covered by the QAPD; corrective actions taken following abnormal occurrences; and, observation

of the performance of construction, fabrication, operating, refueling, maintenance and modification activities including associated record keeping.

18.3 NQA-1-1994 Commitment

In establishing the independent audit program, Duke Energy Corporation commits to compliance with NQA-1-1994, Basic Requirement 18 and Supplement 18S-1.

PART III NON-SAFETY-RELATED SSC QUALITY CONTROL

SECTION 1 Nonsafety-Related SSCs - Significant Contributors to Plant Safety

Specific program controls are applied to non-safety related SSCs, for which 10 CFR 50, Appendix B is not applicable, that are significant contributors to plant safety. The specific program controls consistent with applicable sections of the QAPD are applied to those items in a selected manner, targeted at those characteristics or critical attributes that render the SSC a significant contributor to plant safety.

The following clarify the applicability of the QA Program to the non-safety-related SSCs and related activities, including the identification of exceptions to the QA Program described in Part II, Sections 1 through 18 taken for non-safety-related SSCs.

1.1 Organization

The verification activities described in this part may be performed by the Duke Energy Corporation line organization. The QA organization described in Part II is not required to perform these functions.

1.2 QA Program

Duke Energy Corporation QA requirements for non-safety-related SSCs are established in the QAPD and appropriate procedures. Suppliers of these SSCs or related services describe the quality controls applied in appropriate procedures. A new or separate QA program is not required.

1.3 Design Control

Duke Energy Corporation has design control measures to ensure that the contractually established design requirements are included in the design. These measures ensure that applicable design inputs are included or correctly translated into the design documents, and deviations from those requirements are controlled. Design verification is provided through the normal supervisory review of the designer's work.

1.4 Procurement Document Control

Procurement documents for items and services obtained by or for Duke Energy Corporation include or reference documents describing applicable design bases, design requirements, and other requirements necessary to ensure component performance. The procurement documents are controlled to address deviations from the specified requirements.

1.5 Instructions, Procedures, and Drawings

Duke Energy Corporation provides documents such as, but not limited to, written instructions, plant procedures, drawings, vendor technical manuals, and special instructions in work orders, to direct the performance of activities affecting quality.

The method of instruction employed provides an appropriate degree of guidance to the personnel performing the activity to achieve acceptable functional performance of the SSC.

1.6 Document Control

Duke Energy Corporation controls the issuance and change of documents that specify quality requirements or prescribe activities affecting quality to ensure that correct documents are used. These controls include review and approval of documents, identification of the appropriate revision for use, and measures to preclude the use of superseded or obsolete documents.

1.7 Control of Purchased Items and Services

Duke Energy Corporation employs measures, such as inspection of items or documents upon receipt or acceptance testing, to ensure that all purchased items and services conform to appropriate procurement documents.

1.8 Identification and Control of Purchased Items

Duke Energy Corporation employs measures where necessary, to identify purchased items and preserve their functional performance capability. Storage controls take into account appropriate environmental, maintenance, or shelf life restrictions for the items.

1.9 Control of Special Processes

Duke Energy Corporation employs process and procedure controls for special processes, including welding, heat treating, and nondestructive testing. These controls are based on applicable codes, standards, specifications, criteria, or other special requirements for the special process.

1.10 Inspection

Duke Energy Corporation uses documented instructions to ensure necessary inspections are performed to verify conformance of an item or activity to specified requirements or to verify that activities are satisfactorily accomplished. These inspections may be performed by knowledgeable personnel in the line organization. Knowledgeable personnel are from the same discipline and have experience related to the work being inspected.

1.11 Test Control

Duke Energy Corporation employs measures to identify required testing that demonstrates that equipment conforms to design requirements. These tests are performed in accordance with test instructions or procedures. The test results are recorded, and authorized individuals evaluate the results to ensure that test requirements are met.

1.12 Control of Measuring and Test Equipment (M&TE)

Duke Energy Corporation employs measures to control M&TE use, and calibration and adjustment at specific intervals or prior to use.

1.13 Handling, Storage, and Shipping

Duke Energy Corporation employs measures to control the handling, storage, cleaning, packaging, shipping, and preservation of items to prevent damage or loss and to minimize deterioration. These measures include appropriate marking or labels, and identification of any special storage or handling requirements.

1.14 Inspection, Test, and Operating Status

Duke Energy Corporation employs measures to identify items that have satisfactorily passed required tests and inspections and to indicate the status of inspection, test, and operability as appropriate.

1.15 Control of Nonconforming Items

Duke Energy Corporation employs measures to identify and control items that do not conform to specified requirements to prevent their inadvertent installation or use.

1.16 Corrective Action

Duke Energy Corporation employs measures to ensure that failures, malfunctions, deficiencies, deviations, defective components, and nonconformances are properly identified, reported, and corrected.

1.17 Records

Duke Energy Corporation employs measures to ensure records are prepared and maintained to furnish evidence that the above requirements for design, procurement, document control, inspection, and test activities have been met.

1.18 Audits

Duke Energy Corporation employs measures for line management to periodically review and document the adequacy of the process, including taking any necessary corrective action. Audits independent of line management are not required. Line management is responsible for determining whether reviews conducted by line management or audits conducted by any organization independent of line management are appropriate. If performed, audits are conducted and documented to verify compliance with design and procurement documents, instructions, procedures, drawings, and inspection and test activities. Where the measures of this part (Part III) are implemented by the same programs, processes, or procedures as the comparable activities of Part II, the audits performed under the provisions of Part II may be used to satisfy the review requirements of this Section (Part III, Section 1.18).

SECTION 2 Non-safety-Related SSCs Credited for Regulatory Events

The following criteria apply to fire protection (10 CFR 50.48), anticipated transients without scram (ATWS) (10 CFR 50.62), the station blackout (SBO) (10 CFR 50.63) SSCs that are not safety related.

- Duke Energy Corporation implements quality requirements for the fire protection system in accordance with Regulatory Position 1.7, "Quality Assurance," in Regulatory Guide 1.189, "Fire Protection for Operating Nuclear Power Plants" as identified in FSAR Chapter 1.

- Duke Energy Corporation implements the quality requirements for ATWS equipment in accordance with Part III, Section 1.

- Duke Energy Corporation implements quality requirements for SBO equipment in accordance with Part III, Section 1. Regulatory Guide 1.155, is not applicable for the AP1000 design in accordance with the certified design as shown in DCD Appendix 1A. Regulatory Guide 1.155 relates to the availability of safety related functions supported by AC power. Since AC power is not required to support the availability of safety-related functions, the guidance is not applicable.

PART IV REGULATORY COMMITMENTS

NRC Regulatory Guides and Quality Assurance Standards

This section identifies the NRC Regulatory Guides (RG) and the other quality assurance standards which have been selected to supplement and support the Duke Energy Corporation QAPD. Duke Energy Corporation complies with these standards to the extent described or referenced. Commitment to a particular RG or standard does not constitute a commitment to other RGs or standards that may be referenced therein.

Regulatory Guides:

Regulatory Guide 1.8, Rev. 3, May 2000 - Qualification and Training of Personnel for Nuclear Power Plants

Regulatory Guide 1.8 provides guidance that is acceptable to the NRC staff regarding qualifications and training for nuclear power plant personnel.

Duke Energy Corporation identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in FSAR Chapter 1, Appendix 1AA.

Regulatory Guide 1.26, Revision 4, March 2007 - Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants

Regulatory Guide 1.26 defines classification of systems and components.

Duke Energy Corporation identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in FSAR Chapter 1, Appendix 1AA.

Regulatory Guide 1.28, Rev. 3, August 1985 - Quality Assurance Program Requirements (Design and Construction)

Regulatory Guide 1.28 describes a method acceptable to the NRC staff for complying with the provisions of Appendix B with regard to establishing and implementing the requisite quality assurance program for the design and construction of nuclear power plants.

Duke Energy Corporation identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in FSAR Chapter 1, Appendix 1AA.

Regulatory Guide 1.29, Revision 4, March 2007 - Seismic Design Classification

Regulatory Guide 1.29 defines systems required to withstand a safe shutdown earthquake (SSE).

Duke Energy Corporation identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in FSAR Chapter 1, Appendix 1AA

Regulatory Guide 1.33, Rev. 2, February 1978 - Quality Assurance Program Requirements (Operations)

Regulatory Guide 1.33 describes a method acceptable to the NRC staff for complying with the Commission's regulations with regard to overall quality assurance program requirements for the operation phase of nuclear power plants.

Duke Energy Corporation identifies conformance and exceptions for the applicable regulatory position guidance provided in the regulatory guide in the following paragraphs:

- This Regulatory Guide endorses ANSI N18.7-1976/ANS-3.2 for complying with the quality assurance program requirements for the operation phase of nuclear power plants, subject to five regulatory positions. Attachment 2 to NEI 06-14, Rev. 8 provides a comparison of QA requirements established within NQA-1-1994 and the template to provide an alternate method of meeting 10 CFR 50, Appendix B during the operational phase in lieu of committing to the requirements of ANSI N18.7-1976/ANS-3.2.
- Regulatory Position C.1 addresses "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors." QAPD Part II, Sections 5 and 6, and Part V, Section 3 address requirements for procedures consistent with requirements addressed in SRP 17.5 section II.F and ANSI N18.7-1976.
- In meeting the intent of Regulatory Position C.2, Duke's commitment to Regulatory Guides governing QA is specified in Part II, IV, and V.
- Regulatory Position C.3 identifies a position related to Independent Review. The QAPD provides an alternative for this position by addressing Independent Review requirements specifically in Part V, Section 2.2 consistent with SRP 17.5 Section II.W rather than referencing ANSI N18.7. Item 2.2 c. specifically relates to the concern of this regulatory position.
- In meeting the intent of Regulatory Position C.4, Duke describes the internal audit function, scheduling and frequency in Part II, Section 18. The audit scheduling process takes into consideration the need for increased auditing in areas that indicate ineffective performance.
- Regulatory Position C.5 identifies concerns of the NRC with the usage of the verbs "should" and "shall" in ANSI N18.7-1976. The QAPD provides an alternative to this position by providing adequate guidance for establishing a quality assurance program that complies with Appendix B to 10 CFR Part 50 by using ASME NQA standard NQA-1994, as supplemented by the QAPD provisions in NEI 06-14, Rev. 8.

Regulatory Guide 1.37, Revision 1, March 2007 – Requirements for Cleaning of Fluid Systems[i5] and Associated Components of Water-Cooled Nuclear Power Plants.

Regulatory Guide 1.37 provides guidance on specifying water quality and precautions related to the use of alkaline cleaning solutions and chelating agents.

Duke Energy Corporation identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in FSAR Chapter 1, Appendix 1AA.

Standards:

ASME NQA-1-1994 Edition - Quality Assurance Requirements for Nuclear Facility Applications

Duke Energy Corporation commits to NQA-1-1994, Parts I, II, and III as described in Parts II and V of this document.

Nuclear Information and Records Management Association, Inc. (NIRMA) Technical Guides (TGs)

Duke Energy Corporation commits to NIRMA TGs as described in Part II, Section 17.

PART V ADDITIONAL QUALITY ASSURANCE AND ADMINISTRATIVE CONTROLS FOR THE PLANT OPERATIONAL PHASE

Duke includes the requirements of Part V that follow when establishing the necessary measures and governing procedures for the operations phase of the plant.

SECTION 1 DEFINITIONS

Duke uses the definitions of terms as provided in Section 4 of the Introduction of NQA-1-1994 in interpreting the requirements of NQA-1-1994 and the other standards to which the QAPD commits. In addition, definitions are provided for the following terms not covered in NQA-1-1994:

administrative controls: rules, orders, instructions, procedures, policies, practices and designations of authority and responsibility.

experiments: performance of plant operations carried out under controlled conditions in order to establish characteristics or values not previously known.

independent review: review completed by personnel not having direct responsibility for the work function under review regardless of whether they operate as a part of an organizational unit or as individual staff members (see review).

nuclear power plant: any plant using a nuclear reactor to produce electric power, process steam or space heating.

on-site operating organization: on-site personnel concerned with the operation, maintenance and certain technical services.

operating activities: work functions associated with normal operation and maintenance of the plant, and technical services routinely assigned to the on-site operating organization.

operational phase: that period of time during which the principal activity is associated with normal operation of the plant. This phase of plant life is considered to begin formally with commencement of initial fuel loading, and ends with plant decommissioning.

review: a deliberately critical examination, including observation of plant operation, evaluation of assessment results, procedures, certain contemplated actions, and after-the-fact investigations of abnormal conditions.

supervision: direction of personnel activities or monitoring of plant functions by an individual responsible and accountable for the activities they direct or monitor.

surveillance testing: periodic testing to verify that safety related structures, systems, and components continue to function or are in a state of readiness to perform their functions.

system: an integral part of nuclear power plant comprising components which may be operated or used as a separate entity to perform a specific function.

SECTION 2 REVIEW OF ACTIVITIES AFFECTING SAFE PLANT OPERATION

2.1 Onsite Operating Organization Review

The Duke onsite organization employs reviews, both periodic and as situations demand, to evaluate plant operations and plan future activities. The important elements of the reviews are documented and subjects of potential concern for the independent review described below are brought to the attention of the Nuclear Station Manager. The reviews are part of the normal duties of plant supervisory personnel in order to provide timely and continuing monitoring of operating activities in order to assist the Nuclear Station Manager in keeping abreast of general plant conditions and to verify that day-to-day operations are conducted safely in accordance with the established administrative controls. The Nuclear Station Manager ensures the timely referral of the applicable matters discussed in the reviews to appropriate management and independent reviewers.

2.2 Independent Review

Activities occurring during the operational phase shall be independently reviewed on a periodic basis. The independent review program shall be functional prior to initial core loading. The independent review function performs the following:

a. Reviews proposed changes to the facility as described in the safety analysis report (SAR). The independent review function also verifies that changes do not adversely affect safety and if a technical specification change or NRC review is required.

b. Reviews proposed tests and experiments not described in the SAR prior to implementation. Verifies the determination of whether changes to proposed tests and experiments not described in the SAR require a technical specification change or license amendment.

c. Reviews proposed technical specification changes and license amendments relating to nuclear safety prior to NRC submittal and implementation, except in those cases where the change is identical to a previously approved change.

d. Reviews violations, deviations, and events that are required to be reported to the NRC. This review includes the results of investigations and recommendations resulting from such investigations to prevent or reduce the probability of recurrence of the event.

e. Reviews any matter related to nuclear safety that is requested by the Site Vice President, Site Director, Plant Manager, or any independent review program member.

f. Reviews corrective actions for significant conditions adverse to quality.

g. Reviews internal audit reports.

h. Reviews the adequacy of the internal audit program every 24 months.

Independent Review Body

A group may function as an independent review body (IRB). In discharging its review responsibilities, the IRB keeps 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 SAR 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 SAR 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 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 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 outside consultants or organizations as necessary to ensure the team has the requisite expertise and competence.

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

d. Management periodically consider issues they determine 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 determines the scheduling and scope of review and the composition of the team performing the review.

SECTION 3 OPERATIONAL PHASE PROCEDURES

The following is a description of the various types of procedures used by Duke to govern the design, operation, and maintenance of its nuclear generating plants. Duke follows the guidance of Appendix A to Regulatory Guide 1.33 in identifying the types of activities that should have procedures or instructions to control the activity. Each procedure shall be sufficiently detailed for a qualified individual to perform the required function without direct supervision, but need not provide a complete description of the system or plant process.

3.1 Format and Content

Procedure format and content may vary from one location to the other. However, procedures include the following elements as appropriate to the purpose or task to be described.

- **Title/Status**

  Each procedure is given a title descriptive of the work or subject it addresses, and includes a revision number and/or date and an approval status.

  - **Purpose/Statement of Applicability/Scope**

    The purpose for which the procedure is intended is clearly stated (if not clear from the title). The systems, structures, components, processes or conditions to which the procedure applies are also clearly described.

  - **References**

    Applicable references, including reference to appropriate Technical Specifications, are required. References are included within the body of the procedure when the sequence of steps requires other tasks to be performed (according to the reference) prior to or concurrent with a particular step.

  - **Prerequisites/Initial Conditions**

    Prerequisites/initial conditions identify those independent actions or procedures that must be accomplished and plant conditions which must exist prior to performing the procedure. A prerequisite applicable to only a specific portion of a procedure is so identified.

  - **Precautions**

    Precautions alert the user to those important measures to be used to protect equipment and personnel, including the public, or to avoid an abnormal or emergency situation during performance of the procedure. Cautionary notes applicable to specific steps are included in the main body of the procedure and are identified as such.

- **Limitations and actions**

  Limitations on the parameters being controlled and appropriate corrective measures to return the parameter to the normal control band are specified.

- **Main body**

  The main body of the procedure contains the step-by-step instructions in the degree of detail necessary for performing the required function or task.

- **Acceptance criteria**

  The acceptance criteria provide the quantitative or qualitative criteria against which the success or failure (as of a test-type activity) of the step or action would be judged.

- **Checklists**

  Complex procedures utilize checklists which may be included as part of the procedure or appended to it.

3.2 Procedure Types

Administrative Control Procedures

These include administrative procedures, directives, policies, standards, and similar documents that control the programmatic aspects of facility activities. These administrative documents ensure that the requirements of regulatory and license commitments are implemented. Several levels of administrative controls are applied ranging from those affecting the entire Company to those prepared at the implementing group level. These documents establish responsibilities, interfaces, and standard methods (rules of practice) for implementing programs. In addition to the administrative controls described throughout this QAPD, instructions governing the following activities are provided:

- **Operating Orders/Procedures**

  Instructions of general and continuing applicability to the conduct of business to the plant staff are provided. Examples where these are applied include, but are not limited to, job turnover and relief, designation of confines of control room, definition of duties of operators and others, transmittal of operating data to management, filing of charts, limitations on access to certain areas and equipment, shipping and receiving instructions. Provisions are made for periodic review and updating of these documents, where appropriate.

- **Special Orders**

  Management instructions, which have short-term applicability and require dissemination,

are issued to encompass special operations, housekeeping, data taking, publications and their distribution, plotting process parameters, personnel actions, or other similar matters. Provisions are made for periodic review, updating, and cancellation of these documents, where appropriate.

- **Plant Security and Visitor Control**

  Procedures or instructions are developed to supplement features and physical barriers designed to control access to the plant and, as appropriate, to vital areas within the plant. Information concerning specific design features and administrative provisions of the plant security program is confidential and thus accorded limited distribution. The security and visitor control procedures consider, for example, physical provisions, such as: fences and lighting; lock controls for doors, gates and compartments containing sensitive equipment; and provisions for traffic and access control. Administrative provisions, such as: visitor sign-in and sign-out procedures; escorts and badges for visitors; emphasis on inspection, observation and challenging of strangers by operating crews; and a program of pre-employment screening for potential employees are also considered.

- **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 the normal procedures. These procedures 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 extended in such a manner that portions of existing procedures do not apply. Temporary Procedures include designation of the period of time during which they may be used and are subject to the procedure review process as applicable.

Engineering Procedures

These documents provide instructions for the preparation of engineering documents, engineering analysis, and implementation of engineering programs. This includes activities such as designs; calculations; fabrication, equipment, construction, and installation specifications; drawings; analysis and topical reports; and testing plans or procedures. They include appropriate references to industry codes and standards, design inputs, and technical requirements.

Installation Procedures

These documents provide instructions for the installation of components generally related to new construction and certain modification activities. They include appropriate reference to industry standards, installation specifications, design drawings, and supplier and technical manuals for the performance of activities. These documents include provisions, such as hold or witness points, for conducting and recording results of required inspections or tests. These documents may include applicable inspection and test instructions subject to the requirements for test and inspection procedures below.

System Procedures

These documents contain instructions for energizing, filling, venting, draining, starting up, shutting down, changing modes of operation, and other instructions appropriate for operations of systems related to the safety of the plant. Actions to correct off-normal conditions are invoked following an operator observation or an annunciator alarm indicating a condition which, if not corrected, could degenerate into a condition requiring action under an emergency procedure. Separate procedures may be developed for correcting off-normal conditions for those events where system complexity may lead to operator uncertainty. Appropriate procedures will also be developed for the fire protection program.

Start-up Procedures

These documents contain instructions for starting the reactor from cold or hot conditions and establishing power operation. This includes documented determination that prerequisites have been met, including confirmation that necessary instruments are operable and properly set; valves are properly aligned, necessary system procedures, tests and calibrations have been completed; and required approvals have been obtained.

Shutdown Procedures

These documents contain guidance for operations during controlled shutdown and following reactor trips, including instructions for establishing or maintaining hot shutdown/standby or cold shutdown conditions, as applicable. The major steps involved in shutting down the plant are specified, including instructions for such actions as monitoring and controlling reactivity, load reduction and cooldown rates, sequence for activating or deactivating equipment, requirements for prompt analysis for causes of reactor trips or abnormal conditions requiring unplanned controlled shutdowns, and provisions for decay heat removal.

Power Operation and Load Changing Procedures

These documents contain instructions for steady-state power operation and load changing. These type documents include, as examples, provisions for use of control rods, chemical shim, coolant flow control, or any other system available for short-term or long-term control of reactivity, making deliberate load changes, responding to unanticipated load changes, and adjusting operating parameters.

Process Monitoring Procedures

These documents contain instructions for monitoring performance of plant systems to assure that core thermal margins and coolant quality are maintained in acceptable status at all times, that integrity of fission product barriers is maintained, and that engineered safety features and emergency equipment are in a state of readiness to keep the plant in a safe condition if needed. Maximum and minimum limits for process parameters are appropriately identified. Operating procedures address the appropriate nature and frequency of this monitoring.

Fuel Handling Procedures

These documents contain instructions for core alterations, accountability of fuel and partial or

complete refueling operations that include, for example, continuous monitoring of neutron flux throughout core loading, periodic data recording, audible annunciation of abnormal flux increases, and evaluation of core neutron multiplication to verify safety of loading increments. Procedures are also provided for receipt and inspection of new fuel, and for fuel movements in the spent fuel storage areas. Fuel handling procedures include prerequisites to verify the status of systems required for fuel handling and movement; inspection of replacement fuel and control rods; designation of proper tools, proper conditions for spent fuel movement, proper conditions for fuel cask loading and movement; and status of interlocks, reactor trip circuits and mode switches. These procedures provide requirements for refueling, including proper sequence, orientation and seating of fuel and components, rules for minimum operable instrumentation, actions for response to fuel damage, verification of shutdown margin, communications between the control room and the fuel handling station, independent verification of fuel and component locations, criteria for stopping fuel movements, and documentation of final fuel and component serial numbers (or other unique identifiers) and locations.

Maintenance Procedures

These documents contain instructions in sufficient detail to permit maintenance work to be performed correctly and safely, and include provisions, such as hold or witness points, for conducting and recording results of required inspections or tests. These documents may include applicable inspection or test instructions subject to the requirements for test and inspection procedures below. Appropriate referencing to other procedures, standards, specifications, or supplier manuals is provided. When not provided through other documents, instructions for equipment removal and return to service, and applicable radiation protection measures (such as protective clothing and radiation monitoring) will be included. Additional maintenance procedure requirements are addressed in NQA-1-1994, Subpart 2.18, Section 2.2, Procedures.

Radiation Control Procedures

These documents contain instructions for implementation of the radiation control program requirements necessary to meet regulatory commitments, including acquisition of data and use of equipment to perform necessary radiation surveys, measurements and evaluations for the assessment and control of radiation hazards. These procedures provide requirements for monitoring both external and internal exposures of employees, utilizing accepted techniques; routine radiation surveys of work areas; effluent and environmental monitoring in the vicinity of the plant; radiation monitoring of maintenance and special work activities, and for maintaining records demonstrating the adequacy of measures taken to control radiation exposures to employees and others.

Calibration and Test Procedures

These documents contain instructions for periodic calibration and testing of instrumentation and control systems, and for periodic calibration of measuring and test equipment used in activities affecting the quality of these systems. These documents provide for meeting surveillance requirements and for assuring measurement accuracy adequate to keep safety-related parameters within operational and safety limits.

Chemical and Radiochemical Control Procedures

These documents contain instructions for chemical and radiochemical control activities and include: the nature and frequency of sampling and analyses; instructions for maintaining coolant quality within prescribed limits; and limitations on concentrations of agents that could cause corrosive attack, foul heat transfer surfaces, or become sources of radiation hazards due to activation. These documents also provide for the control, treatment and management of radioactive wastes, and control of radioactive calibration sources.

Emergency Operating Procedures

These documents contain instructions for response to potential emergencies so that a trained operator will know in advance the expected course of events that will identify an emergency and the immediate actions that are taken in response. Format and content of emergency procedures are based on NUREG and Owner's Group(s) guidance that identify potential emergency conditions and require such procedures to include, as appropriate, a title, symptoms to aid in identification of the nature of the emergency, automatic actions to be expected from protective systems, immediate operator actions for operation of controls or confirmation of automatic actions, and subsequent operator actions to return the reactor to a normal condition or provide for a safe extended shutdown period under abnormal or emergency conditions.

Emergency Plan Implementing Procedures

These documents contain instructions for activating the Emergency Response Organization and facilities, protective action levels, organizing emergency response actions, establishing necessary communications with local, state and federal agencies, and for periodically testing the procedures, communications and alarm systems to assure they function properly. Format and content of such procedures are such that requirements of each facility's NRC approved Emergency Plan are met.

Test and Inspection Procedures

These documents provide the necessary measures to assure quality is achieved and maintained for the nuclear facilities. The instructions for tests and inspections may be included within other procedures, such as installation and maintenance procedures, but will contain the objectives, acceptance criteria, prerequisites for performing the test or inspection, limiting conditions, and appropriate instructions for performing the test or inspection, as applicable. These procedures also specify any special equipment or calibrations required to conduct the test or inspection and provide for appropriate documentation and evaluation by responsible authority to assure test or inspection requirements have been satisfied. Where necessary, hold or witness points are identified within the procedures and require appropriate approval for the work to continue beyond the designated point. These procedures provide for recording the date, identification of those performing the test or inspection, as-found condition, corrective actions performed (if any), and as-left condition, as appropriate for the subject test or inspection.

SECTION 4 CONTROL OF SYSTEMS AND EQUIPMENT IN THE OPERATIONAL PHASE

Permission to release systems and equipment for maintenance or modification is controlled by designated operating personnel and documented. Measures, such as installation of tags or locks and releasing stored energy, are used to ensure personnel and equipment safety. When entry into a closed system is required, Duke has established control measures to prevent entry of extraneous material and to assure that foreign material is removed before the system is reclosed.

Administrative procedures require the designated operating personnel to verify that the system or equipment can be released and determine the length of time it may be out of service. In making this determination, attention is given to the potentially degraded degree of protection where one subsystem of a redundant safety system is not available for service. Conditions to be considered in preparing equipment for maintenance include, for example: shutdown margin; method of emergency core cooling; establishment of a path for decay heat removal; temperature and pressure of the system; valves between work and hazardous material; venting, draining and flushing; entry into closed vessels; hazardous atmospheres; handling hazardous materials; and electrical hazards.

When systems or equipment are ready to be returned to service, designated operating personnel control placing the items in service and document its functional acceptability. Attention is given to restoration of normal conditions, such as removal of jumpers or signals used in maintenance or testing, or actions such as returning valves, breakers or switches to proper start-up or operating positions from "test" or "manual" positions. Where necessary, the equipment placed into service receives additional surveillance during the run-in period.

Independent verifications, where appropriate, are used to ensure that the necessary measures have been implemented correctly. The minimum requirements and standards for using independent verification are established in company documents.

SECTION 5 PLANT MAINTENANCE

Duke establishes controls for the maintenance or modification of items and equipment subject to this QAPD to ensure quality at least equivalent to that specified in original design bases and requirements, such that safety-related structures, systems and components are maintained in a manner that assures their ability to perform their intended safety function(s). Maintenance activities (both corrective and preventive) are scheduled and planned so as not to unnecessarily compromise the safety of the plant.

In establishing controls for plant maintenance, Duke commits to compliance with NQA-1-1994, Subpart 2.18, with the following clarifications:

- Where Subpart 2.18 refers to the requirements of ANS-3.2, it shall be interpreted to mean the applicable standards and requirements established within the Duke Energy Carolinas QAPD

- Section 2.3 requires cleanliness during maintenance to be in accordance with Subpart 2.1. The commitment to Subpart 2.1 is described in the Duke Energy Carolinas QAPD, Part II, Section 13.2.

CONFORMING COLA CHANGES TO ALIGN WITH ENCLOSURE 1 QAPD (PART 2, CHAPTERS 1, 13, 14, 17, PART 4, PART 5)

Part 2 Chapter 1 Conforming Changes
(3 pages including this page)

Table 1.6-201 (Sheet 2 of 2)
Additional Material Referenced

	Author/ Report Number[a]	Title	Revision	FSAR Section	Document Transmittal	ADAMS Accession Number
LNP SUP 1.6-1	Security Plans	Safeguards Contingency Plan	4	13.6	June 2011	(b)
	Cyber Security	Cyber Security Plan	2	13.6	September 2011	(b)
	QAPD	Duke Energy Quality Assurance Topical Report for 10 CFR Part 52 Licenses	6	17.5	February 2013	TBD

STD SUP 1.6-1

a) The NRC-accepted NEI documents identified by the A in the document number include the accepted template, the NRC safety evaluation, and corresponding responses to the NRC Requests for Additional Information. Only the accepted template is incorporated by reference. The remainder of the document is referenced but not incorporated into the FSAR.

LNP SUP 1.6-3

b) These documents are withheld from public disclosure.

(A) Denotes NRC approved document.

	Criteria Section	Referenced Criteria	FSAR Position	Clarification/ Summary Description of Exceptions
STD COL 1.9-1	C.4		Conforms	

Regulatory Guide 1.30, Rev. 0, 8/72 – Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment

Conformance for DCD scope of work is as stated in the DCD. Conformance for remaining scope is documented below.

General	Exception	Quality assurance requirements utilize the more recently NRC endorsed NQA-1 in lieu of the identified outdated standards.

Regulatory Guide 1.32, Rev. 3, 03/04 – Criteria for Power Systems for Nuclear Power Plants

Conformance of the design aspects with Revision 2 of the Regulatory Guide is as stated in the DCD. Conformance with Revision 3 of this Regulatory Guide for programmatic and/or operational aspects is documented below.

General	Conforms	

LNP COL 1.9-1

Regulatory Guide 1.33, Rev. 2, 2/78 – Quality Assurance Program Requirements (Operation)

General	Exception	The QAPD identified in Section 17.5 follows NQA-1 and NEI 06-14A, August 2010, rather than the older standards referenced in Regulatory Guide 1.33.

STD COL 1.9-1

Regulatory Guide 1.37, Rev. 1, 3/07 – Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water Cooled Nuclear Power Plants

Conformance of the design aspects with Revision 0 of the Regulatory Guide is as stated in the DCD. Conformance with Revision 1 of this Regulatory Guide for programmatic and/or operational aspects is documented below.

General	Conforms	

Regulatory Guide 1.38, Rev. 2, 5/77 – Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage and Handling of Items for Water-Cooled Nuclear Power Plants

Part 2, Chapter 13 Conforming Changes
(79 pages including this page)

Levy Nuclear Plant Units 1 and 2
COL Application
Part 2, Final Safety Analysis Report

CHAPTER 13

CONDUCT OF OPERATIONS

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CHAPTER 13

CONDUCT OF OPERATIONS

13.1 ORGANIZATIONAL STRUCTURE OF APPLICANT

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

STD DEP 1.1-1

DCD Subsection 13.1.1, Combined License Information, is renumbered in this FSAR section to 13.1.4.

LNP COL 13.1-1

This section describes organizational positions of a nuclear power station and owner/applicant corporations and associated functions and responsibilities. The position titles used in the text are generic and describe the function of the position.

Table 13.1-201, Generic Position/Site Specific Position Cross Reference, provides a cross-reference to identify the corresponding site-specific position titles. Changes to the organization described herein are reviewed under the provisions of 10 CFR 50.54 (a) to ensure that any reduction in commitments in the QAPD (as accepted by the NRC) are submitted to and approved by the NRC, prior to implementation.

STD DEP 1.1-1

13.1.1 MANAGEMENT AND TECHNICAL SUPPORT ORGANIZATION

Duke Energy has over 40 years of experience in the design, construction, and operation of nuclear generating stations. Duke Energy operates twelve nuclear units on seven sites: McGuire Units 1 and 2; Catawba Units 1 and 2; Oconee Units 1, 2 and 3; Harris Nuclear Plant Unit 1; Brunswick Nuclear Plant Units 1 and 2; Robinson Nuclear Plant Unit 2; and Crystal River Nuclear Plant Unit 3. The Nuclear Generation organization includes, but is not limited to, nuclear engineering, nuclear operations, corporate governance and operations support, nuclear major projects, nuclear development, and nuclear oversight.

13.1.1.1 Design, Construction, and Operating Responsibilities

The Duke Energy chief executive officer (CEO) has overall responsibility for functions involving design, construction, and operation of Duke Energy's nuclear plants. Line responsibilities for those functions are assigned to the group executive – Nuclear Generation's group chief nuclear officer (CNO). The CNO directs the executives for each nuclear site group in the operation of his applicable unit(s): executive – nuclear engineering, executive – corporate governance and operations support, executive – nuclear major projects, executive – nuclear development, and executive – nuclear oversight in the support of the nuclear fleet. The CNO directs the executive – nuclear

development in the preparation and integration of new plants into the Nuclear Generation operating fleet.

The first priority and responsibility of each member of the nuclear staff throughout the life of the plant is nuclear safety. Decision making for station activities is performed in a conservative manner with expectations of this core value regularly communicated to appropriate personnel by management interface, training, and station directives.

Lines of authority, decision making, and communication are clearly and unambiguously established to enable the understanding of the various project members, including contractors, that utility management is in charge and directs the project.

Key executive and corporate management positions, functions, and responsibilities are discussed in Subsection 13.1.1.3.1. Corporate and construction management organizations are shown in Figures 13.1-203 and 13AA-201. The management and technical support organization for design, construction, and preoperational activities is addressed in Appendix 13AA.

13.1.1.2 Provisions for Technical Support Functions

Before beginning preoperational testing, the executive – nuclear development, executive – corporate governance and operations support, and the executive – nuclear engineering establish the organization of managers, functional managers, supervisors, and staff sufficient to perform required functions for support of safe plant operation. These functions include the following:

- Nuclear, mechanical, structural, electrical, thermal-hydraulic, metallurgical and material, and instrumentation and controls engineering
- Safety review
- Quality assurance, audit, and surveillance
- Plant chemistry
- Radiation protection and environmental support
- Fueling and refueling operations support
- Training
- Maintenance support
- Operations support
- Fire protection
- Emergency planning organization

- Outside contractual assistance

In the event that station personnel are not qualified to deal with a specific problem, the services of qualified individuals from other functions within the company or an outside consultant are engaged. For example, major contractors, such as the reactor technology vendor or turbine generator manufacturer, provide technical support when equipment modifications or special maintenance problems are considered. Special studies, such as environmental monitoring, may be contracted to qualified consultants.

Figure 13.1-201 illustrates the management and technical support organizations supporting operation of the plant. Section 13.1.2 describes the responsibilities and authorities of management positions for organizations providing technical support. Table 13.1-201 shows the estimated number of positions required for each function.

Multiple layers of protection are provided to preserve unit integrity, including organization. Organizationally, operators and other shift members are assigned to a specific unit. In addition, station procedures and programs provide operating staff with methods to minimize human error, including tagging programs, procedure adherence requirements, and training.

13.1.1.2.1 Nuclear Engineering

The nuclear engineering department consists of plant engineering, design engineering, engineering programs, nuclear fuel management, and safety and engineering analysis. These groups are responsible for performing the classical design activities as well as providing engineering expertise in other areas of new plant sites and license renewal at the current plant sites. They are also responsible for probabilistic safety assessment and other safety issues, plant system reliability analysis, performance and technical support, core management and periodic reactor testing, and for programs, such as inservice inspection/inservice testing (ISI/IST), fire protection, snubbers, and valves.

Each of the engineering groups has a functional manager who reports to the executive – nuclear engineering (Figure 13.1-203).

The nuclear engineering department is responsible for:

- Support of plant operations in the engineering areas of mechanical, structural, electrical, thermal-hydraulic, metallurgy and materials, electronic, instrument and control, and fire protection. Priorities for support activities are established based on input from the plant manager with emphasis on issues affecting safe operation of the plant.
- Engineering programs.
- Major engineering projects for the nuclear fleet.

- Support of procurement, chemical and environmental analysis, and maintenance activities in the plant as requested by the plant manager.
- Performance of design engineering of plant modifications.
- Maintenance of the design basis by updating the record copy of design documents as necessary to reflect the actual as-built configuration of the plant.
- Accident and transient analyses.
- Human Factors Engineering design process.

Reactor engineering, led by the functional manager in charge of nuclear fuels and analysis engineering, provides technical assistance in the areas of core design, core operations, core thermal limits, and core thermal hydraulics.

Engineering work may be contracted to and performed by outside companies in accordance with the quality assurance program description (QAPD).

Engineering resources are shared between units. A single management organization oversees the engineering work associated with the station units. Physical separation of units helps to minimize wrong-unit activities.

13.1.1.2.2 Nuclear Safety Assurance

The nuclear oversight section provides independent oversight of the nuclear plant activities, maintains the Quality Assurance Program Manual, and administers the employee concerns program. Review and audit activities are covered in Chapter 17 and the QAPD. The executive – nuclear oversight reports directly to the CNO Nuclear Generation on all matters related to the independent monitoring and assessing of activities during new nuclear plant construction.

The nuclear safety assurance (NSA) organization, through the licensing department, is the normal contact point for the station with the Nuclear Regulatory Commission (NRC) in matters concerning licensing and is responsible for addressing NRC bulletins and orders. Typical duties include:

- Developing licensee event reports (LERs) and responding to notices of violations.
- Writing/submitting operating license and technical specification amendments and updating the FSAR.
- Tracking commitments and answering generic letters.
- Analyzing operating experience data and monitoring industry issues.

- Preparing station for special NRC inspections, interfacing with NRC inspectors, and interpreting NRC regulations.

- Maintaining the licensing basis.

The organizational effectiveness organization administers the corrective action program and the station's emergency preparedness program.

Personnel resources of the NSA organization are shared between units. A single management organization oversees the NSA organization for the station units.

Oversight of safety review of station programs, procedures, and activities is performed by a plant safety review committee, a corporate safety review committee, and the NSA organization. Review and audit activities are addressed in Chapter 17.

13.1.1.2.3 Quality Assurance

Safety-related activities associated with the operation of the plant are governed by QA direction established in Chapter 17 of the FSAR and the QAPD. The requirements and commitments contained in the QAPD apply to activities associated with structures, systems, and components which are safety-related and are mandatory and must be implemented, enforced, and adhered to by individuals and organizations. QA requirements are implemented through the use of approved procedures, policies, directives, instructions, or other documents which provide written guidance for the control of quality-related activities and provide for the development of documentation to provide objective evidence of compliance. QA is a corporate function under the manager in charge of nuclear QA oversight and includes:

- Maintenance of the QAPD.

- Coordination of the development of audit schedules.

- Audit, surveillance, and evaluation of nuclear division suppliers.

- Quality control (QC) inspection/testing activities.

- General quality assurance indoctrination and training for the nuclear station personnel.

QA/QC management is independent of the station management line organization. Onsite personnel resources of the QA/QC organization are shared between units. QA and QC personnel report to the functional manager in charge of nuclear oversight at LNP. The functional manager in charge of nuclear oversight at LNP reports directly to the executive – nuclear oversight.

13.1.1.2.4 Chemistry

The corporate governance and operations support organization provides the standardization and support of the chemistry program at each site. A chemistry department is established to monitor and control the chemistry of various plant systems such that corrosion of components and piping is minimized and radiation from corrosion byproducts is kept to levels that allow operations and maintenance with radiation doses as low as reasonably achievable.

The functional manager in charge of environmental and chemistry is responsible to the plant general manager for maintaining chemistry programs and for monitoring and maintaining the water chemistry of plant systems. The staff of the chemistry department consists of laboratory technicians, support personnel, and supervisors who report to the functional manager in charge of environmental and chemistry.

Personnel resources of the chemistry organization are shared between units. A single management organization oversees the chemistry group for the station units.

13.1.1.2.5 Radiation Protection

The corporate governance and operations support organization provides the standardization and support of the radiation protection programs at each site. A radiation protection program is established to protect the health and safety of the surrounding public and personnel working at the plant. The radiation protection program is described in Chapter 12 of the FSAR. The program includes:

- Respiratory Protection
- Personnel Dosimetry
- Bioassay
- Survey Instrument Calibration and Maintenance
- Radioactive Source Control
- Effluents and Environmental Monitoring and Assessment
- Radioactive Waste Shipping
- Radiation Work Permits
- Job Coverage
- Radiation Monitoring and Surveys

The radiation protection department is staffed by radiation protection technicians, support personnel, and supervisors who report to the functional

manager in charge of radiation protection. To provide sufficient organizational freedom from operating pressures, the functional manager in charge of radiation protection reports directly to the plant manager.

Personnel resources of the radiation protection organization are shared between units. A single management organization oversees the radiation protection group for both units.

13.1.1.2.6 Fueling and Refueling Support

The corporate governance and operations support organization provides the standardization and support of the refueling programs at each site. The function of fueling and refueling is performed by a combination of personnel from various departments including operations, maintenance, radiation protection, engineering, and reactor technology vendor or other contractor staff. Initial fueling and refueling operations are a function of the work control organization. The functional manager in charge of outage and scheduling is responsible for planning and scheduling outages and for refueling support and reports to the plant manager.

Personnel resources of the work control organization are shared between units. A single management organization oversees the work control associated with both units.

13.1.1.2.7 Training and Development

The corporate governance and operations support organization provides the standardization and support of the training programs at each site. The training department is responsible for providing training programs that are established, maintained, and implemented in accordance with applicable plant administrative directives, regulatory requirements, and company operating policies so that station personnel can meet the performance requirements of their jobs in operations, maintenance, technical support, and emergency response. The objective of training programs is to provide qualified personnel to operate and maintain the plant in a safe and efficient manner and to provide compliance with the license, technical specifications, and applicable regulations. The training department's responsibilities encompass operator initial license training, requalification training, and plant staff training, as well as the plant access training (general employee training) and radworker training. The functional manager in charge of training at LNP is independent of the operating line organization to provide for independence from operating pressures. Nuclear plant training programs are described in Section 13.2 of the FSAR.

Personnel resources of the training department are shared between units. A single management organization provides oversight of station training activities.

13.1.1.2.8 Maintenance Support

The corporate governance and operations support organization provides the standardization and support of the maintenance programs at each site. In support of maintenance activities, planners, schedulers, and parts specialists prepare work packages, acquire proper parts, and develop procedures that provide for the successful completion of maintenance tasks. Maintenance tasks are integrated into the station schedule for evaluation of operating or safe shutdown risk elements and to provide for efficient and safe performance. Personnel of the maintenance support organization receive direction from the functional manager in charge of maintenance who reports to the plant manager.

Personnel of the maintenance support organization are shared between units. A single management organization oversees the function of maintenance support for the station units.

13.1.1.2.9 Operations Support

The corporate governance and operations support organization provides the standardization and support of the operations programs at each site. The operations support function is provided under the direction of the functional manager in charge of operations. Operations support includes the following programs:

- Operations procedures
- Operations surveillances
- Equipment tagging
- Fire protection testing and surveillance
- Radwaste system operation

13.1.1.2.10 Fire Protection

LNP COL 9.5-1

The station is committed to maintaining a fire protection program as described in DCD Subsection 9.5.1. The site executive in charge of plant management is responsible for the fire protection program. Assigning the responsibilities at that level provides the authority to obtain the resources and assistance necessary to meet fire protection program objectives, resolve conflicts, and delegate appropriate responsibility to fire protection staff. The relationship of the site executive in charge of plant management to other staff personnel with fire protection responsibilities is shown on Figure 13.1-201. Fire protection for the facility is organized and administered by the engineer in charge of fire protection. The site executive in charge of plant management, through the engineer in charge of fire protection, is responsible for development and implementation of the fire protection program including development of fire protection procedures

and inspections of fire protection systems and functions. Fire brigade training, drills, and practice are organized by the functional supervisor in charge of emergency preparedness in consultation with the engineer in charge of fire protection. Fire protection trainers are qualified to perform classroom instruction or practical training as discussed in FSAR Subsection 9.5.1.8.2.2. The engineer in charge of fire protection reports to the site executive in charge of plant management through engineering department management and coordinates operations related fire protection program activities with the manager in charge of operations. Functional descriptions of position responsibilities are included in appropriate procedures. Station personnel are responsible for adhering to the fire protection/prevention requirements detailed in DCD Subsection 9.5.1. The site executive in charge of plant management has the lead responsibility for the overall site fire protection during construction of new units.

Personnel resources that implement the fire protection program are shared between units. A single management organization oversees the fire protection program for the station units.

13.1.1.2.11 Emergency Organization

LNP COL 13.1-1 The corporate governance and operations support organization provides the standardization and support of the emergency response programs at each site. The emergency organization is a matrixed organization composed of personnel who have the experience, training, knowledge, and ability necessary to implement actions to protect the public in the case of emergencies. Managers and station personnel assigned positions in the emergency organization are responsible for supporting the emergency preparedness organization and emergency plan as required. The staff members of the emergency planning organization orchestrate drills and training to maintain qualification of personnel and develop procedures to guide and direct the emergency organization during an emergency. The functional supervisor in charge of emergency preparedness reports to the functional manager in charge of organizational effectiveness. The site emergency plan organization is described in the Emergency Plan.

Resources of the emergency planning group are shared between units. A single management organization oversees the emergency planning group for the station units.

13.1.1.2.12 Outside Contractual Assistance

Contract assistance with vendors and suppliers of services not available from organizations established as part of utility staff is provided by the materials, purchasing, and contracts organization. Personnel in the materials, purchasing, and contracts organization perform the necessary functions to contract vendors of special services to perform tasks for which utility staff does not have the

experience or equipment required. The functional manager in charge of Nuclear Generation - supply chain reports to the vice president – supply chain.

Resources of the materials, purchasing, and contracts organization are shared between units. A single management organization oversees the materials, purchasing, and contracts group for the station units.

13.1.1.3 Organizational Arrangement

13.1.1.3.1 Executive Management Organization

Executive management is ultimately responsible for execution of activities and functions for the nuclear generating plants owned by the utility. Executive management establishes expectations such that a high level of quality, safety, and efficiency is achieved in aspects of plant operations and support activities through an effective management control system and an organization selected and trained to meet the above objectives. The nuclear executive organization is shown in Figure 13.1-203. A high-level chart of the Duke Energy corporate organization showing the relationship of the nuclear division to the rest of the corporate organization is illustrated in Figure 13.1-204. Executives and managers with direct line of authority for activities associated with operation of the plant are shown in Figure 13.1-201. Responsibilities of those executives and managers are specified below.

13.1.1.3.1.1 President and CEO

The Duke Energy president and CEO has the ultimate responsibility for the safe and reliable operation of each nuclear station owned and/or operated by the utility. The CEO is responsible for the overall direction and management of the corporation and the execution of the company policies, activities, and affairs. The CEO is assisted by the CNO and other executive staff in the Nuclear Generation and energy supply departments of the corporation.

13.1.1.3.1.2 Group Executive – Nuclear Generation / Chief Nuclear Officer (CNO)

The group executive Nuclear Generation is the CNO. The CNO reports to the CEO of Duke Energy. The CNO has responsibility for overall plant nuclear safety and takes the measures needed to provide acceptable performance of the staff in operating, maintaining, and providing technical support to the nuclear plants. The CNO delegates authority and responsibility for the operation and support of the sites to the executive – nuclear operations for each site group. It is the responsibility of the CNO to provide guidance and direction such that safety-related activities including engineering, construction, operations, maintenance, and planning are performed following the guidelines of the QA program. The Independent Nuclear Oversight Committee reports directly to the CNO. The CNO has no ancillary responsibilities that might detract attention from nuclear safety matters.

13.1.1.3.1.3 Executive - Nuclear Operations (Specified Duke Sites)

The executive(s) in charge of nuclear operations is responsible for oversight of operations at each of the stations under his purview. The sites are divided among three executives in charge of nuclear operations as follows: one responsible for Oconee and Crystal River nuclear stations; one responsible for Catawba, McGuire, and Shearon Harris nuclear stations; and one responsible for Brunswick and Robinson nuclear stations. Reporting to each executive - nuclear operations are the site executives for the respective nuclear stations. The executives - nuclear operations report to the CNO.

13.1.1.3.1.4 Site Executive(s) – Nuclear Operations (McGuire, Catawba, Oconee, Harris, Brunswick, Crystal River, Robinson, and Future LNP Site)

The site executive in charge of nuclear operations reports to the executives(s) in charge of nuclear operations. The site executive in charge of nuclear operations is directly responsible for management and direction of activities associated with the efficient, safe, and reliable operation of the nuclear station, except for those functions delegated to the executive – corporate governance. The site executive in charge of plant management is assisted in management and technical support activities by the plant manager and managers in charge of organizational effectiveness, engineering, training, security, nuclear oversight, major projects, human resources, corporate communications, and finance. The site executive in charge of plant management is responsible for the site fire protection program through the engineer in charge of fire protection and engineering management.

13.1.1.3.1.5 Executive - Nuclear Development

The executive in charge of nuclear development is responsible for development of the licensing actions needed in support of new nuclear site development. Responsibilities also include engineering oversight of contractors, licensing, construction, site layout, staffing, and program development. The executive in charge of nuclear development is assisted by a support staff and reports directly to the CNO. This position is supported by the functional managers in charge of engineering, licensing, project management, and operational readiness.

13.1.1.3.1.6 Executive - Major Projects

The executive in charge of major projects provides project management, engineering, and vendor oversight for selected large projects at the nuclear sites. Providing oversight for these significant projects provides more focus and continuity for upgrades and eliminates distractions for site management. Nuclear major projects is responsible for contracts, engineering, and management related to fleet and nuclear site major projects. The executive in charge of major projects reports to the CNO.

13.1.1.3.1.7 Executive – Corporate Governance and Operations Support

The executive in charge of corporate governance and operations support has the responsibility for support functions including licensing, quality assurance and oversight, technical services, emergency planning, performance improvement, and workforce in-processing. The functional manager of nuclear operations, the functional manager of protective services, the functional manager of organizational effectiveness, the functional manager of training for corporate governance and operations support, the functional manager of Fukushima responses, the functional manager of regulatory affairs, the functional manager of nuclear merger integration, and the functional manager of nuclear support services report to the executive in charge of corporate governance and operations support. Corporate governance and operations support provides assistance to help improve overall fleet performance. This centralized organization includes protective services (security and access services); regulatory affairs; central training; nuclear support services; operations support; and organizational effectiveness. The executive in charge of corporate governance and operations support reports to the CNO.

13.1.1.3.1.8 Executive – Nuclear Engineering

The executive in charge of nuclear engineering provides support to the stations in severe accident analysis, safety analysis, nuclear design, core mechanical and thermal hydraulic analysis, fuel management, switchyard support, metallurgical laboratory services, material aging program, steam generator maintenance, ISI program support, QC inspector training and certification, procurement engineering, welding, and radiological engineering.

The executive - nuclear engineering reports to the CNO. Nuclear engineering provides broad engineering leadership and technical support to the nuclear sites, with emphasis on generic issues and consistent practices. This includes providing expertise in safety assessment with technical support in the areas of risk assessment, radiological engineering, and safety analysis; fuel management with leadership and technical support in the areas of fuel supply, spent fuel management, and reactor core mechanical and thermal hydraulic analysis; fleet electrical and procurement engineering with technical support in the areas of procurement engineering, nuclear process systems, and electrical systems and analysis; and programs and components support in the areas of steam generator inspections and maintenance, engineering programs, component engineering, material failure analysis and materials science, equipment reliability, and ASME code inspections and testing.

Nuclear engineering provides record storage and document management services, technology planning, project control, and technical support for information technology applications and systems such as equipment databases, applications, infrastructure, and plant process information systems.

13.1.1.3.1.9 Executive - Nuclear Oversight

The executive in charge of nuclear oversight provides support and leadership to the general office and stations with QA program audits, performance assessment, procurement quality, supplier verification, and QA, QC, NDE, and ISI, as applicable. In addition, nuclear oversight provides an advisory function to senior management through the NSRB. The executive - nuclear oversight has the authority and organizational freedom to identify quality problems; initiate, recommend, or provide solutions to quality problems through designated channels; verify the implementation of solutions to quality problems; and ensure cost and schedule do not influence decision-making involving quality. The executive - nuclear oversight has unfettered access to the CNO to communicate QA program concerns and issues.

The executive - nuclear oversight is delegated primary ownership of the department QA program description and is responsible for day-to-day administration of the program and resolution of QA issues. If significant quality problems are identified by nuclear oversight personnel, the executive - nuclear oversight or designee has the responsibility and authority to stop work pending satisfactory resolution of the identified problem. The executive - nuclear oversight reports directly to the CNO. The executive - nuclear oversight is responsible for providing oversight of the Nuclear Generation and new nuclear plant construction; administration of the employee concerns program; and maintenance of the Quality Assurance Program Manual. Assisting the executive - nuclear oversight is the functional manager in charge of corporate nuclear oversight and the functional manager(s) in charge of nuclear oversight for each nuclear plant site.

13.1.1.3.1.10 Additional Direct Reports to the CNO

There are two additional direct reports to the CNO. One is the functional director of nuclear policy and support. The other position is the functional director for the U.S. nuclear industry for Fukushima responses.

13.1.1.3.1.11 Functional Director - Nuclear Protective Services

The functional director in charge of nuclear protective services is responsible for providing guidance and direction to the functional manager – security at each site on the nuclear security, access authorization, and fitness for duty programs. The director - nuclear protective services reports to the executive – corporate governance and operations support.

13.1.1.3.2 Site Support Organization

13.1.1.3.2.1 The Functional Manager - Engineering

The functional manager in charge of engineering reports to the executive - nuclear engineering. The functional manager in charge of engineering is responsible for engineering activities related to the operation or maintenance of

the plant and design change implementation support activities and other functions described in Subsection 13.1.1.2.1.

The functional manager in charge of engineering directs functional discipline engineers responsible for system engineering, design engineering, and engineering programs.

A single management organization oversees the engineering support for the station units.

13.1.1.3.2.1.1 Functional Manager - Plant Engineering

The functional manager in charge of plant engineering reports to the functional manager in charge of engineering and supervises a technical staff of engineers and other engineering specialists and coordinates their work with that of other groups. System engineering staff includes reactor engineering as discussed in Subsection 13.1.1.2.1. The functional manager in charge of plant engineering is responsible for providing direction and guidance to system engineers as follows:

- Monitoring the efficiency and proper operation of balance of plant and reactor systems.
- Planning programs for improving equipment performance, reliability, or work practices.
- Conducting operational tests and analyzing the results.
- Providing safety-related software services, including the maintenance, testing, and configuration control of plant digital I&C systems.
- Identification of plant spare parts for systems.

13.1.1.3.2.1.2 Functional Manager - Design Engineering

The functional manager in charge of design engineering reports to the functional manager in charge of engineering and is responsible for:

- Resolution of design issues.
- Onsite development of design related change packages and plant modifications.
- Implementation of effective project management methods and procedures, including cost controls, for implementation of modifications and construction activities.
- Management of contractors who may perform modification or construction activities.
- Maintaining configuration control program.

13.1.1.3.2.1.3 Functional Manager – Engineering Programs

The functional manager in charge of engineering programs reports to the functional manager in charge of engineering and is responsible for programs such as:

- Valve engineering
- Maintenance rule tracking and trending
- Fire protection
- Piping erosion/corrosion
- Inservice testing
- Equipment reliability engineering.

13.1.1.3.2.2 Functional Manager Organizational Effectiveness

The functional manager in charge of organizational effectiveness is responsible for those functions described in Subsection 13.1.1.2.2 and reports to the site executive in charge of plant management. The responsibilities of the manager in charge of nuclear safety assurance are fulfilled through the functional supervisors in charge of plant licensing and regulatory compliance, corrective actions and performance improvement, emergency preparedness.

13.1.1.3.2.2.1 Functional Supervisor in Charge of Plant Licensing and Regulatory Compliance

The responsibility of the functional supervisor in charge of plant licensing and regulatory compliance is to provide a coordinated focus for interface with the NRC and technical direction and administrative guidance for the licensing staff for those activities listed in Subsection 13.1.1.2.2. The functional supervisor in charge of plant licensing and regulatory compliance reports directly to the functional manager in charge of organizational effectiveness.

13.1.1.3.2.2.2 Functional Supervisor in Charge of Corrective Actions and Performance Improvement

The responsibilities of the functional supervisor in charge of corrective actions and performance improvement includes establishing processes and procedures to facilitate identification and correction of conditions adverse to quality and implement corrective actions. The functional supervisor in charge of corrective actions and performance improvement reports directly to the functional manager in charge of organizational effectiveness.

13.1.1.3.2.2.3 Functional Supervisor in Charge of Emergency Preparedness

The functional supervisor in charge of emergency preparedness is responsible for:

- Coordinating and implementing the plant emergency response plan with state and local emergency plans.
- Developing, planning, and executing emergency drills and exercises including coordination of fire brigade training exercises with the engineer in charge of fire protection.
- Emergency action level development.
- NRC reporting associated with 10 CFR 50.54(q).

The functional supervisor in charge of emergency preparedness reports directly to the functional manager in charge of organizational effectiveness.

13.1.1.3.2.2.4 Additional Organizational Effectiveness Support

A functional supervisor in charge of procedures develops quality site procedures and reports to the organizational effectiveness manager. In addition, a functional supervisor in charge of human performance works with the site to improve human performance on behalf of the organizational effectiveness manager.

13.1.1.3.2.3 Functional Manager – Finance

The manager in charge of finance is responsible for planning, scheduling, and implementing special projects and financial programs, and for providing oversight of accounting and payroll processes for the site. The manager in charge of finance reports to the site executive in charge of plant management.

13.1.1.3.2.4 Functional Manager - Training and Development

LNP COL 18.10-1 The functional manager in charge of training and development is responsible for training programs required for the safe and proper operation and maintenance of the plant including:

- Operations training programs
- Plant staff training programs
- Plant access training
- Emergency plan training
- Radiation worker training

The functional manager in charge of training may seek assistance from other departments within the company or outside specialists, such as educators and manufacturers. The manager in charge of training supervises a staff of training supervisors who coordinate the development, preparation, and presentation of training programs for nuclear plant personnel and reports to the site executive in charge of plant management.

LNP COL 13.1-1

13.1.1.3.2.5 Functional Manager in Charge of Security

The functional manager in charge of security is responsible for:

- Implementation and enforcement of security directives, procedures, and instructions received from appropriate authorities.
- Day-to-day supervision of the security guard force.
- Administration of the security program.

The functional manager in charge of security reports directly to the functional director - nuclear protective services and indirectly to the site executive - nuclear operations.

13.1.1.4 Qualifications of Technical Support Personnel

LNP COL 18.6-1

The qualifications of managers and supervisors of the technical support organization meet the qualification requirements in education and experience for those described in ANSI/ANS-3.1-1993 (Reference 201) as endorsed and amended by Regulatory Guide 1.8. For positions that do not have a cross-reference section in ANSI/ANS-3.1 the most comparable section of ANSI/ANS-3.1 is used for guidance in establishing experience and education requirements. The qualification and experience requirements of headquarters staff is established in corporate policy and procedure manuals.

13.1.2 OPERATING ORGANIZATION

LNP COL 13.1-1

13.1.2.1 Plant Organization

The plant management, technical support, and plant operating organizations are shown in Figure 13.1-201. The on-shift operating organization is presented in Figure 13.1-202, which shows those positions requiring NRC licenses. Additional personnel are required to augment normal staff during outages.

Nuclear plant employees are responsible for reporting problems with plant equipment and facilities. They are required to identify and document equipment problems in accordance with the QA Program. QA Program requirements, as they apply to the operating organization, are described in FSAR Chapter 17. The guidelines of Regulatory Guide 1.33 for the operating organization, onsite review,

and rules of practice are implemented at the site via administrative procedure or standing order and include:

- Establishment of a quality assurance program for the operational phase.
- Preparation of procedures necessary to carry out an effective quality assurance program. See FSAR Section 13.5 for description of the station procedure program.
- A program for review and audit of activities affecting plant safety. See FSAR Section 17.5 for description of station review and audit programs.
- Programs and procedures for rules of practice as described in Section 5.2 of ANSI/ANS-3.2-1988 (Reference 203).

Managers and supervisors within the plant operating organization are responsible for establishing goals and expectations for their organization and to reinforce behaviors that promote radiation protection. Specifically, managers and supervisors are responsible for the following, as applicable to their position within the plant organization:

- Interface directly with radiation protection staff to integrate radiation protection measures into plant procedures and design documents and into the planning, scheduling, conduct, and assessment of operations and work.
- Notify radiation protection personnel promptly when radiation protection problems occur or are identified, take corrective actions, and resolve deficiencies associated with operations, procedures, systems, equipment, and work practices.
- Train site personnel on radiation protection, and provide periodic retraining, in accordance with 10 CFR Part 19 so that they are properly instructed and briefed for entry into restricted areas.
- Periodically observe and correct, as necessary, radiation worker practices.
- Support radiation protection management in implementing the radiation protection program.
- Maintain exposures to site personnel ALARA.

13.1.2.1.1 Plant Manager

The plant manager reports to the site executive in charge of plant management, is responsible for overall safe operation of the plant, and has control over those on-site activities necessary for safe operation and maintenance of the plant including the following:

- Operations
- Maintenance and modification
- Chemistry and radiochemistry
- Outage management
- Scheduling and activity coordination

Additionally, the plant manager has overall responsibility for occupational and public radiation safety. Radiation protection responsibilities of the plant manager are consistent with the guidance in Regulatory Guide 8.8 and Regulatory Guide 8.10 including the following:

- Provide management radiation protection policy throughout the plant organization.
- Provide an overall commitment to radiation protection by the plant organization.
- Interact with and support the manager in charge of radiation protection on implementation of the radiation protection program.
- Support identification and implementation of cost-effective modifications to plant equipment, facilities, procedures and processes to improve radiation protection controls and reduce exposures.
- Establish plant goals and objectives for radiation protection.
- Maintain exposures to site personnel ALARA.
- Support timely identification, analysis and resolution of radiation protection problems (e.g., through the plant corrective action program).
- Provide training to site personnel on radiation protection in accordance with 10 CFR Part 19.
- Establish an ALARA Committee with delegated authority from the plant manager that includes, at a minimum, the managers in charge of operations, maintenance, engineering, and radiation protection to help provide for effective implementation of line organization responsibilities for maintaining worker doses ALARA.

The line of succession of authority and responsibility for overall operations in the event of unexpected events of a temporary nature is:

a. Manager in charge of operations

b. Manager in charge of plant maintenance

c. Assistant manager in charge of operations

As described in Subsection 13.1.2.1.2.4, the manager in charge on-shift is the plant manager's direct representative for the conduct of operations. The succession of authority includes the authority to issue standing or special orders as required.

13.1.2.1.1.1 Functional Manager – Maintenance

Maintenance of the plant is performed by the maintenance department mechanical, electrical, and instrumentation and control disciplines. The functions of this department are to perform preventive and corrective maintenance, equipment testing, and implement modifications as necessary.

The manager in charge of maintenance is responsible for the performance of preventive and corrective maintenance and modification activities required to support operations, including compliance with applicable standards, codes, specifications, and procedures. The manager in charge of maintenance reports to the plant manager and provides direction and guidance to the maintenance discipline functional managers and maintenance support staff.

13.1.2.1.1.2 Maintenance Discipline Functional Managers

The functional managers of each maintenance discipline (mechanical, electrical, and instrumentation and control) are responsible for maintenance activities within their discipline including plant modifications. They provide guidance in maintenance planning and craft supervision. They establish the necessary manpower levels and equipment requirements to perform both routine and emergency type maintenance activities, seeking the services of others in performing work beyond the capabilities of the plant maintenance group. Each discipline functional manager is responsible for liaison with other plant staff organizations to facilitate safe operation of the station. These functional managers report to the manager in charge of plant maintenance.

13.1.2.1.1.3 Maintenance Discipline Supervisors

The maintenance discipline supervisors (mechanical, electrical, and instrumentation and control) supervise maintenance activities, assist in the planning of future maintenance efforts, and guide the efforts of the craft within their discipline. The maintenance discipline supervisors report to the appropriate maintenance discipline functional manager.

13.1.2.1.1.4 Functional Manager – Work Control

The functional manager in charge of work control is responsible for planning, scheduling, and coordinating maintenance, modification, and testing activities during power operations and shutdown periods. This includes taking necessary measures to minimize risk to the plant and personnel during the above activities.

The functional manager in charge of work control reports to the plant manager.

13.1.2.1.1.5 Functional Manager – Radiation Protection

The functional manager in charge of radiation protection has the responsibility for providing adequate protection of the health and safety of personnel working at the plant and members of the public during activities covered within the scope and extent of the license. Radiation protection responsibilities of the functional manager in charge of radiation protection are consistent with the guidance in Regulatory Guide 8.8 and Regulatory Guide 8.10. They include:

- Manage the radiation protection organization.
- Establish, implement, and enforce the radiation protection program.
- Provide radiation protection input to facility design and work planning.
- Track and analyze trends in radiation work performance and take necessary actions to correct adverse trends.
- Support the plant emergency preparedness program and assign emergency duties and responsibilities within the radiation protection organization.
- Delegate authority to appropriate radiation protection staff to stop work or order an area evacuated (in accordance with approved procedures) when, in his or her judgment, the radiation conditions warrant such an action and such actions are consistent with plant safety.

The functional manager in charge of radiation protection reports to the plant manager and is assisted by the supervisors in charge of radiation protection.

The functional manager in charge of radiation protection reports indirectly to and receives support from the corporate functional manager in charge of nuclear support.

13.1.2.1.1.6 Functional Supervisor(s) in Charge of Radiation Protection

The functional supervisors in charge of radiation protection are responsible for carrying out the day-to-day operations and programs of the radiation protection department as listed in Subsection 13.1.1.2.5.

Supervisors in charge of radiation protection report to the functional manager in charge of radiation protection.

13.1.2.1.1.7 Radiation Protection Technicians

Radiation protection technicians (RPTs) directly carry out responsibilities defined in the radiation protection program and procedures. In accordance with technical

specifications an RPT is on-site whenever there is fuel in the vessel. See Table 13.1-202.

The following are some of the duties and responsibilities of the RPTs:

- As delegated authority by the functional manager in charge of radiation protection, stop work or order an area evacuated (in accordance with approved procedures) when, in his or her judgment, the radiation conditions warrant such an action and such actions are consistent with plant safety.
- Provide coverage and monitor radiation conditions for jobs potentially involving significant radiation exposure.
- Conduct surveys, assess radiation conditions and establish radiation protection requirements for access to and work within restricted, radiation, high radiation, very high radiation, airborne radioactivity areas, and areas containing radioactive materials.
- Provide control over the receipt, storage, movement, use, and shipment of licensed radioactive materials.
- Review work packages, proposed design modifications, and operations and maintenance procedures to facilitate integration of adequate radiation protection controls and dose-reduction measures.
- Review and oversee implementation of plans for the use of process or other engineering controls to limit the concentrations of radioactive materials in the air.
- Provide personnel monitoring and bioassay services.
- Maintain, prescribe, and oversee the use of respiratory protection equipment.
- Perform assigned emergency response duties.

13.1.2.1.1.8 Functional Manager - Chemistry

The functional manager in charge of chemistry is responsible for development, implementation, and direction and coordination of the chemistry, radiochemistry, and nonradiological environmental monitoring programs. The chemistry department has charge of overall operation of the hot lab, cold lab, emergency off-site facility lab, and nonradiological environmental monitoring. The functional manager in charge of chemistry is responsible for the development, administration, and implementation of procedures and programs which provide for effective compliance with environmental regulations. The functional manager in charge of chemistry reports to the plant manager and directly supervises the chemistry supervisors and chemistry technicians as assigned. The functional

manager in charge of chemistry reports indirectly to and receives support from the corporate located functional manager in charge of nuclear support services. Three functional supervisors over chemistry disciplines assist the functional manager in charge of chemistry.

13.1.2.1.2 Operations Department

All operations activities are conducted with safety of personnel, the public, and equipment as the overriding priority. The operations department is responsible for:

- Operation of station equipment.
- Monitoring and surveillance of safety and non-safety related equipment.
- Fuel handling.
- Providing the nucleus of emergency and fire-fighting teams.

The operations department maintains sufficient licensed and senior licensed operators to staff the control room continuously using a crew rotation system. The operations department is under the direction of the manager in charge of operations, who through the assistant manager in charge of operations directs the day-to-day operation of the plant.

Specific duties, functions, and responsibilities of key shift members are discussed in Subsections 13.1.2.1.2.4 through 13.1.2.1.2.8 and in plant administrative procedures and the technical specifications. The minimum shift manning requirements are shown in Table 13.1-202.

Some resources of the operations organization are shared between units. Administrative and support personnel perform their duties on either unit. Additional operations staff is required to fill the on-shift staffing requirements of the additional units. To operate, or supervise the operation of more than one unit, a senior reactor operator (SRO) or reactor operator (RO) must hold an appropriate, current license for each unit. A single management organization oversees the operations group for the station units. See Table 13.1-201 for estimated number of staff in the operations department for a single unit. Positions required for operation of the second unit are also shown.

The operations support section is staffed with sufficient personnel to provide support activities for the operating shifts and overall operations department. The following is an overview of the operations organization.

13.1.2.1.2.1 Functional Manager – Operations

The functional manager in charge of operations has overall responsibility for the day-to-day operation of the plant. The functional manager in charge of operations reports to the plant manager and is assisted by the assistant functional manager

in charge of operations and assistant functional manager in charge of operations support. The functional manager in charge of operations receives support from the engineer in charge of fire protection for coordination of operations related fire protection activities. The functional manager in charge of operations or the assistant functional manager of operations is SRO licensed.

13.1.2.1.2.2 Assistant Functional Manager –Operations

The assistant functional manager in charge of operations, under the direction of the functional manager in charge of operations, is responsible for:

- Shift plant operations in accordance with the operating license, technical specifications, and written procedures.
- Providing supervision of operating shift personnel for operational shift activities including those of emergency and firefighting teams.
- Coordinating with the assistant functional manager in charge of operations support and other plant staff sections.
- Verifying that nuclear plant operating records and logs are properly prepared, reviewed, evaluated, and turned over to the assistant functional manager in charge of operations support.

The assistant functional manager in charge of operations is assisted in these areas by the managers in charge on-shift who direct the operating shift personnel. The assistant functional manager in charge of operations reports to the functional manager in charge of operations and in the absence of the manager in charge of operations or assistant functional manager in charge of operations support may assume the duties and responsibilities of either of these positions.

13.1.2.1.2.3 Assistant Functional Manager in Charge of Operations Support

The assistant functional manager in charge of operations support, under the direction of the functional manager in charge of operations, is responsible for:

- Directing and guiding plant operations support activities in accordance with the operating license, technical specifications, and written procedures.
- Providing supervision of operating support personnel, for operations support activities, and coordination of support activities.
- Providing for nuclear plant operating records and logs to be turned over to the nuclear records group for maintenance as quality assurance records.

The assistant functional manager in charge of operations support is assisted by

the supervisors of work management, operations procedures group, and other support personnel. In the absence of the functional manager in charge of operations or assistant functional manager in charge of operations, the assistant functional manager in charge of operations support may assume the duties and responsibilities of either of these positions.

13.1.2.1.2.4 Manager in Charge On-Shift

The manager in charge on-shift is a licensed SRO responsible for the control room command function, and is the plant manager's direct management representative for the conduct of operations. As such, the manager in charge on-shift has the responsibility and authority to direct the activities and personnel on-site as required to:

- Protect the health and safety of the public, the environment, and personnel on the plant site.
- Protect the physical security of the plant.
- Prevent damage to site equipment and structures.
- Comply with the operating license.

The manager in charge on-shift retains this responsibility and authority until formally relieved of operating responsibilities by a licensed SRO. Additional responsibilities of the manager in charge on-shift include:

- Directing nuclear plant employees to report to the plant for response to potential and real emergencies.
- Seeking the advice and guidance of the shift technical advisor and others in executing the duties of the manager in charge on-shift whenever in doubt as to the proper course of action.
- Promptly informing responsible supervisors of significant actions affecting their responsibilities.
- Participating in operator training, retraining, and requalification activities from the standpoint of providing guidance, direction, and instruction to shift personnel.

The manager in charge on-shift is assisted in carrying out the above duties by the supervisors in charge on shift and the operating shift personnel. The manager in charge on-shift reports to the assistant functional manager in charge of operations.

13.1.2.1.2.5 Supervisors in Charge On-Shift

The supervisor in charge on-shift is a licensed SRO. The primary function of the supervisor in charge on-shift is to administratively support the manager in charge

on-shift such that the "command function" is not overburdened with administrative duties and to supervise the licensed and non-licensed operators in carrying out the activities directed by manager in charge on-shift. Other duties include:

- Being aware of maintenance and testing performed during the shift.
- Shutting down the reactor if conditions warrant this action.
- Informing the manager in charge on-shift and other station management in a timely manner of conditions which may affect public safety, plant personnel safety, plant capacity or reliability, or cause a hazard to equipment.
- Initiating immediate corrective action as directed by the manager in charge on-shift in any upset situation until assistance, if required, arrives.
- Participating in operator training, retraining, and requalification activities from the standpoint of providing guidance, direction, and instruction to shift personnel.

The supervisor in charge on-shift reports directly to the manager in charge on-shift.

13.1.2.1.2.6 Reactor Operator

The ROs are licensed reactor operators and report to the supervisor in charge on-shift. They are responsible for routine plant operations and performance of major evolutions at the direction of the supervisor in charge on-shift. The RO duties include:

- Monitoring control room instrumentation.
- Responding to plant or equipment abnormalities in accordance with approved plant procedures.
- Directing the activities of non-licensed operators.
- Documenting operational activities, plant events, and plant data in shift logs.
- Initiating plant shutdowns or scrams or other compensatory actions when observation of plant conditions indicates a nuclear safety hazard exists or when approved procedures so direct.

Whenever there is fuel in the reactor vessel, at least one reactor operator is in the control room monitoring the status of the unit at the main control panel. The RO assigned to the main control panel is designated the "operator at the controls" and conducts monitoring and operating activities in accordance with the

guidance set forth in Regulatory Guide 1.114, which is further described in Subsection 13.1.2.1.3, Conduct of Operations.

13.1.2.1.2.7 Non-Licensed Operator

The non-licensed operators perform routine duties outside the control room as necessary for continuous, safe plant operation including:

- Assisting in plant startup, shutdown, surveillance, and emergency response by manually or remotely changing equipment operating conditions, placing equipment in service, or securing equipment from service at the direction of the reactor operator.
- Performing assigned tasks in procedures and checklists such as valve manipulations for plant startup or data sheets on routine equipment checks, and making accurate entries according to the applicable procedure, data sheet, or checklist.
- Assisting in training of new employees and for improvement and upgrading of their own performance by participating in the applicable sections of the training program.

Non-licensed operators include auxiliary operators as shown in Figure 13.1-202.

13.1.2.1.2.8 Shift Technical Advisor

The station is committed to meeting NUREG-0737 TMI Action Plan item I.A.1.1 for shift technical advisors. The shift technical advisor (STA) reports directly to the manager in charge on-shift and provides advanced technical assistance to the operating shift complement during normal and abnormal operating conditions. The STA's responsibilities are detailed in plant administrative procedures as required by TMI Action Plan I.A.1.1 and NUREG-0737 Appendix C. These responsibilities include:

- Activities to monitor core power distribution and critical parameters.
- Activities to assist the operating shift with technical expertise during normal and emergency conditions.
- Evaluation of technical specifications, special reports, and procedural issues.

The STA is to primarily contribute to maximizing safety of operations by independently observing plant status and advising shift supervision of conditions that could compromise plant safety. During transients or accident situations, the STA independently assesses plant conditions and provides technical assistance and advice to mitigate the incident and minimize the effect on personnel, the environment, and plant equipment.

A senior reactor operator on shift who meets the qualifications for the combined SRO/STA position specified for Option 1 of Generic Letter 86-04 (Reference 202) may also serve as the STA. If this option is used for a shift, then the separate STA position may be eliminated for that shift.

13.1.2.1.2.9 Engineer – Fire Protection

LNP COL 9.5-1

The engineer in charge of fire protection and the fire protection program staff are responsible for the following:

- Fire protection program requirements, including consideration of potential hazards associated with postulated fires, knowledge of building layout, and system design.
- Post-fire shutdown capability.
- Design, maintenance, surveillance, and quality assurance of fire protection features (e.g., detection systems, suppression systems, barriers, dampers, doors, penetration seals, and fire brigade equipment).
- Fire prevention activities (administrative controls and training).
- Fire brigade organization and oversight of fire brigade training.
- Pre-fire planning including review and updating of pre-fire plans at least every two years.

The engineer in charge of fire protection reports through engineering department management to the site executive in charge of plant management who has ultimate responsibility for fire protection of the plant. Additionally, the engineer in charge of fire protection works with the manager in charge of operations to coordinate activities and program requirements with the operations department. In accordance with Regulatory Guide 1.189 the engineer in charge of fire protection is a graduate of an engineering curriculum of accepted standing and has completed not less than six years of engineering experience, three of which were in a responsible position in charge of fire protection engineering work. The engineer in charge of fire protection is trained and experienced in nuclear plant safety or has available personnel who are trained and experienced in nuclear plant safety.

LNP COL 13.1-1

13.1.2.1.2.10 Radwaste Operations Lead

The Radwaste Operations Lead is responsible for development, implementation, direction, and coordination of radwaste activities. The Radwaste Operations Lead reports to the operations manager in charge on-shift.

The Radwaste Operations Lead supervises radwaste operators assigned to the radwaste area.

13.1.2.1.3 Conduct of Operations

Station operations are controlled and/or coordinated through the control room. Maintenance activities, surveillances, and removal from/return to service of structures, systems, and components affecting the operation of the plant may not commence without the approval of senior control room personnel. The rules of practice for control room activities, as described by administrative procedures, which are based on Regulatory Guide 1.114, address the following:

- Position/placement of operator at the controls workstation and the expected area of the control room where the majority of the supervisor/manager in charge on-shift's time should be spent.
- Definition and outline of "surveillance area" and requirement for continuous surveillance by the operator at the controls.
- Relief requirements for operator at the controls and the supervisor/manager in charge on-shift.

In accordance with 10 CFR 50.54:

- Reactivity controls may be manipulated only by licensed reactor operators and senior reactor operators except as allowed for training under 10 CFR Part 55.
- Apparatus and mechanisms other than controls which may affect reactivity or power level of the reactor shall be operated only with the consent of the operator at the controls or the manager/supervisor in charge on-shift.
- During operation of the facility in modes other than cold shutdown or refueling, a senior operator shall be in the control room and a licensed reactor operator or senior reactor operator shall be present at the controls.

13.1.2.1.4 Operating Shift Crews

Plant administrative procedures implement the required shift staffing. These procedures establish crews with sufficient qualified plant personnel to staff the operational shifts and be readily available in the event of an abnormal or emergency situation. The objective is to operate the plant with the required staff and to develop work schedules that minimize overtime for plant staff members who perform safety-related functions. Work hour limitations and shift staffing requirements defined by TMI Action Plan I.A.1.3 are retained in station procedures. When overtime is necessary the provisions in the technical specifications and the plant administrative procedures apply. Shift crew staffing

plans may be modified during refueling outages to accommodate safe and efficient completion of outage work in accordance with the proceduralized work hour limitations.

The minimum composition of the operating shift crew is contingent upon the unit operating status. Position titles, license requirements and minimum shift manning for various modes of operation are contained in Technical Specifications, administrative procedures, and Table 13.1-202, and illustrated in Figure 13.1-202.

13.1.2.1.5 Fire Brigade

The station is designed and the fire brigade organized to be self-sufficient with respect to fire fighting activities. The fire brigade is organized to deal with fires and related emergencies that could occur. It consists of a fire brigade leader and a sufficient number of team members to be consistent with the equipment that must be put in service during a fire emergency. A sufficient number of trained and physically qualified fire brigade members are available on-site during each shift. The fire brigade consists of at least five members on each shift. Members of the fire brigade are knowledgeable of building layout and system design. The assigned fire brigade members for any shift does not include the manager in charge on-shift nor any other members of the minimum shift operating crew necessary for safe shutdown of the unit. Nor does it include any other personnel required for other essential functions during a fire emergency. Fire brigade members for a shift are designated in accordance with established procedures at the beginning of the shift.

13.1.3 QUALIFICATIONS OF NUCLEAR PLANT PERSONNEL

13.1.3.1 Qualification Requirements

LNP COL 18.6-1
LNP COL 13.1-1

Qualifications of managers, supervisors, operators, and technicians of the operating organization meet the qualification requirements in education and experience for those described in ANSI/ANS-3.1-1993 (Reference 201), as endorsed and amended by Regulatory Guide 1.8. For positions that do not have a cross-reference section in ANSI/ANS-3.1 the most comparable section of ANSI/ANS-3.1 is used for guidance in establishing experience and education requirements.

13.1.3.2 Qualification of Plant Personnel

Resumes and/or other documentation of qualification and experience of initial appointees to appropriate management and supervisory positions are available for review by regulators upon request after position vacancies are filled.

STD DEP 1.1-1

13.1.4 COMBINED LICENSE INFORMATION ITEM

LNP COL 13.1-1 | This COL item is addressed in Subsections 13.1, 13.1.1.2.11, 13.1.2, 13.1.2.1.3, 13.1.4, and Appendix 13AA.

Add the following information after renumbered DCD Subsection 13.1.4:

13.1.5 REFERENCES

201. American Nuclear Society, "American National Standard for Selection, Qualification, and Training of Personnel for Nuclear Power Plant," ANSI/ ANS -3.1-1993.

202. U.S. Nuclear Regulatory Commission, "Generic Letter 86-04, Policy Letter, Engineering Expertise on Shift."

203. American Nuclear Society, "American National Standard for Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," N18.7-1976/ANS-3.2.

LNP COL 18.6-1
LNP COL 13.1-1

Table 13.1-201 (Sheet 1 of 6)
Generic Position/Site-Specific Position Cross Reference

Nuclear Function	Function Position - ANSI/ANS-3.1-1993 section reference		Nuclear Plant Position (Site-Specific)	Expected Positions 1st unit	Expected additional positions 2nd unit
Executive management	chief executive officer	n/a	President and Chief Executive Officer, Duke Energy	1	-
	chief nuclear officer	n/a	Group Executive, Chief Nuclear Officer	1	-
	executive, nuclear operations	n/a	Executive, Nuclear Operations	1	-
	executive, nuclear generation and development	n/a	Executive, Nuclear Development	1	0
Nuclear support	executive, nuclear support	n/a	Executive, Corporate Governance and Operations Support	1	-
	manager	4.2.4	Manager, Nuclear Plant Support		-
Plant management	executive	n/a	Site Executive, Plant Management	1	-
	plant manager	4.2.1	Nuclear Station Plant Manager	1	-
Engineering	executive	n/a	Executive, Nuclear Engineering	1	-
	executive	n/a	Executive, Major Projects	1	-
	manager	4.2.4	Functional Manager, Engineering	1	-
	manager	4.2.4	Manager, Nuclear Support Services	1	-
system engineering	functional manager	4.3.9	Functional Manager, Plant Engineering	1	-
	system engineer	4.6.1	System Engineer	16	4
design engineering	functional manager	4.3.9	Functional Manager, Design Engineering	1	-

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LNP COL 18.6-1
LNP COL 13.1-1

Table 13.1-201 (Sheet 1 of 6)
Generic Position/Site-Specific Position Cross Reference

Nuclear Function	Function Position - ANSI/ANS-3.1-1993 section reference		Nuclear Plant Position (Site-Specific)	Expected Positions 1st unit	Expected additional positions 2nd unit
	design engineer	4.6 - staff engineer	Design Engineer	23	7
safety and engineering analysis	functional manager	4.3.9	Manager, Safety and Engineering Analysis	1	-
	programs engineer	4.6 - staff engineer	Analysis Engineer	4	-
engineering programs	functional manager	4.3.9	Functional Manager, Engineering Programs	1	-
	programs engineer	4.6 - staff engineer	Programs Engineer	20	5
reactor engineering	functional manager	4.3.9	Functional Supervisor, Reactor Engineering	1	-
	reactor engineer	4.6 - staff engineer	Reactor Engineer	3	1
Maintenance	manager	4.2.3	Manager, Maintenance	1	-
instrumentation and control	functional manager	4.3.4	Functional Manager, Instrumentation and Control	1	-
	supervisor	4.4.7	Supervisor, Instrumentation and Control	7	-
	technician	4.5.3.3	Instrumentation and Control Technician	30	17

LNP COL 18.6-1
LNP COL 13.1-1

Table 13.1-201 (Sheet 1 of 6)
Generic Position/Site-Specific Position Cross Reference

Nuclear Function	Function Position - ANSI/ANS-3.1-1993 section reference		Nuclear Plant Position (Site-Specific)	Expected Positions 1st unit	Expected additional positions 2nd unit
mechanical	functional manager	4.3.6	Manager, Mechanical	1	-
	supervisor	4.4.9	Supervisor, Mechanical	9	-
	technician	4.5.7.2	Mechanic	30	14
electrical	functional manager	4.3.5	Manager, Electrical	1	-
	supervisor	4.4.8	Supervisor, Electrical	6	4
	technician	4.5.7.1	Electrician	18	3
support	functional manager	4.3	Manager, Maintenance Support	1	-
Operations	manager	4.2.2	Manager, Operations	1	-
operations, plant	functional manager	4.3.8	Assistant Operations Manager	1	-
operations, admin	functional manager	4.3.8	Assistant Operations Manager Support	1	-
operations, radwaste	supervisor	4.4	Lead - Radwaste Operations	1	1
operations, (on-shift)	functional manager	4.4.1	Shift Manager	5	5
	supervisor	4.4.2	Shift Supervisor	5	5
	licensed operator	4.5.1	Control Room Operator	10	10
	non-licensed operator	4.5.2	Plant Equipment Operator	30	30
	shift technical advisor	4.6.2	Shift Technical Advisor	5	5
Fire protection	supervisor	4.4	Engineer, Fire Protection Program	1	-

LNP COL 18.6-1
LNP COL 13.1-1

Table 13.1-201 (Sheet 1 of 6)
Generic Position/Site-Specific Position Cross Reference

Nuclear Function	Function Position - ANSI/ANS-3.1-1993 section reference		Nuclear Plant Position (Site-Specific)	Expected Positions 1st unit	Expected additional positions 2nd unit
:adiation protection	functional manager	4.3.3	Functional Manager, Radiation Protection	1	-
	supervisor	4.4.6	Radiation Protection Functional Supervisor	3	-
	technician	4.5.3.2	Radiation Protection Technician	20	10
	ALARA specialist	n/a	ALARA Specialist	2	-
Chemistry	functional manager	4.3.2	Functional Manager, Chemistry and Environmental	1	-
	supervisor	4.4.5	Chemistry Functional Supervisor	3	-
	technician	4.5.3.1	Chemistry Technician	14	12
	radwaste operator	4.5.2	Radwaste Operator	5	4
Nuclear safety assurance	manager	4.2	Functional Manager, Organizational Effectiveness	1	-
licensing	functional manager	4.3	Manager, Plant Licensing and Regulatory Compliance	-	-
	supervisor	n/a	Functional Supervisor, Licensing and Regulatory Programs	1	0
	licensing engineer	n/a	Licensing Engineer	5	-
corrective action	functional manager	4.3	Functional Supervisor, Corrective Action and Performance Improvement	1	-

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LNP COL 18.6-1
LNP COL 13.1-1

Table 13.1-201 (Sheet 1 of 6)
Generic Position/Site-Specific Position Cross Reference

Nuclear Function	Function Position - ANSI/ANS-3.1-1993 section reference		Nuclear Plant Position (Site-Specific)	Expected Positions 1st unit	Expected additional positions 2nd unit
emergency preparedness	corrective action engineer	n/a	corrective action engineer	2	-
	functional manager	4.3	Functional Supervisor, Emergency Preparedness	1	-
	EP planner	n/a	EP Planner	2	-
Training	functional manager	4.3.1	Functional Manager, Training and Development	1	-
	supervisor ops trng	4.4.4	Training Supervisor, Operations	1	-
	ops training instructor		Ops Training Instructor	6	6

LNP COL 18.6-1
LNP COL 13.1-1

Table 13.1-201 (Sheet 1 of 6)
Generic Position/Site-Specific Position Cross Reference

Nuclear Function	Function Position - ANSI/ANS-3.1-1993 section reference		Nuclear Plant Position (Site-Specific)	Expected Positions 1st unit	Expected additional positions 2nd unit
	supervisor tech staff/maint trng	4.5.4	Supervisor Tech Staff/Maint Trng	1	-
	tech staff/maint instructors	4.4.4	Tech Staff/Maint Instructor	8	-
Purchasing, and contracts	functional manager	4.3	Functional Manager, Purchasing and Contracts	1	-
Security	functional manager	4.3	Functional Manager, Security	1	-
Planning and scheduling	functional manager	4.3	Functional Manager, Planning and Scheduling	1	-
	functional manager	4.3	Functional Manager, Outages	1	-
Quality assurance	functional manager	4.3.7	Functional Manager, Nuclear Oversight	1	-
	supervisor	4.4.13	Quality Assurance Supervisor	1	-
	QA auditor	4.5.6	QA Auditor	6	-
	supervisor	4.4.13	Quality Control Supervisor	1	-
	QC inspector	4.5.5	QC Inspector	4	2
Startup testing	supervisor	4.4.11	Startup Testing Supervisor	1	-
	startup test engineer	4.4.1	Startup Test Engineer	6	-
	supervisor	4.4.12	Preop Testing Supervisor	1	-
	preop test engineer	4.4.1	Preop Test Engineer	20	-

LNP COL 13.1-1
LNP COL 18.6-1

Table 13.1-202
Minimum On-Duty Operations Shift Organization for Two-Unit Plant

Units Operating	Two units Two Control Rooms
All Units Shutdown	1 SM (SRO) 2 RO 3 NLO
One Unit Operating[(a)]	1 SM (SRO) 2 SRO 3 RO 4 NLO
Two Units Operating[(a)]	1 SM (SRO) 2 SRO 4 RO 4 NLO

SM – Shift Manager
SRO – Licensed Senior Reactor Operator
RO – Licensed Reactor Operator
NLO – Non-Licensed Operator

a) Operating modes other than cold shutdown or refueling.

Notes:

(1) In addition, one Shift Technical Advisor (STA) is assigned per shift during plant operation. A shift manager or another SRO on shift, who meets the qualifications for the combined Senior Reactor Operator/Shift Technical Advisor position, as specified for option 1 of Generic Letter 86-04, (Reference 202) the commission's policy statement on engineering expertise on shift, may also serve as the STA. If this option is used for a shift, then the separate STA position may be eliminated for that shift.

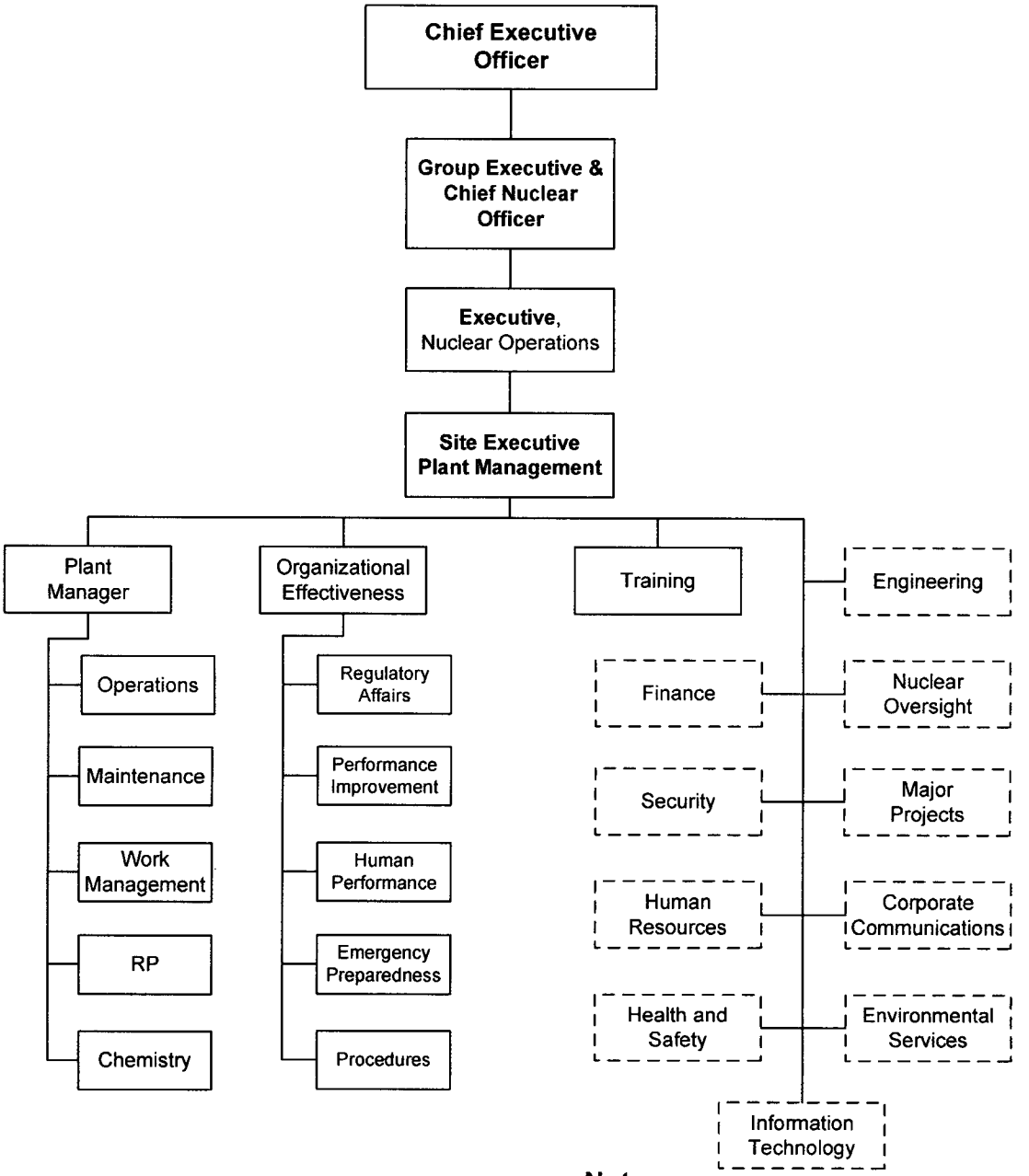
(2) In addition to the minimum shift organization above, during refueling a licensed Senior Reactor Operator or Senior Reactor Operator limited (fuel handling only) is required to directly supervise any core alteration activity.

(3) A shift manager/supervisor (SRO licensed for each unit that is fueled), shall be on-site at all times when at least one unit is loaded with fuel.

(4) A radiation protection technician shall be on-site at all times when there is fuel in a reactor.

(5) A chemistry technician shall be on-site during plant operation in modes other than cold shutdown or refueling.

(6) To operate, or supervise the operation of more than one unit, an operator (SRO or RO) must hold an appropriate, current license for each unit.



Note:
Dashed borders around functional areas indicate matrixed organizations providing support to the nuclear sites.

Progress Energy Florida
Levy Nuclear Plant
Units 1 and 2
Part 2, Final Safety Analysis Report

Site Management

FIGURE 13.1-201

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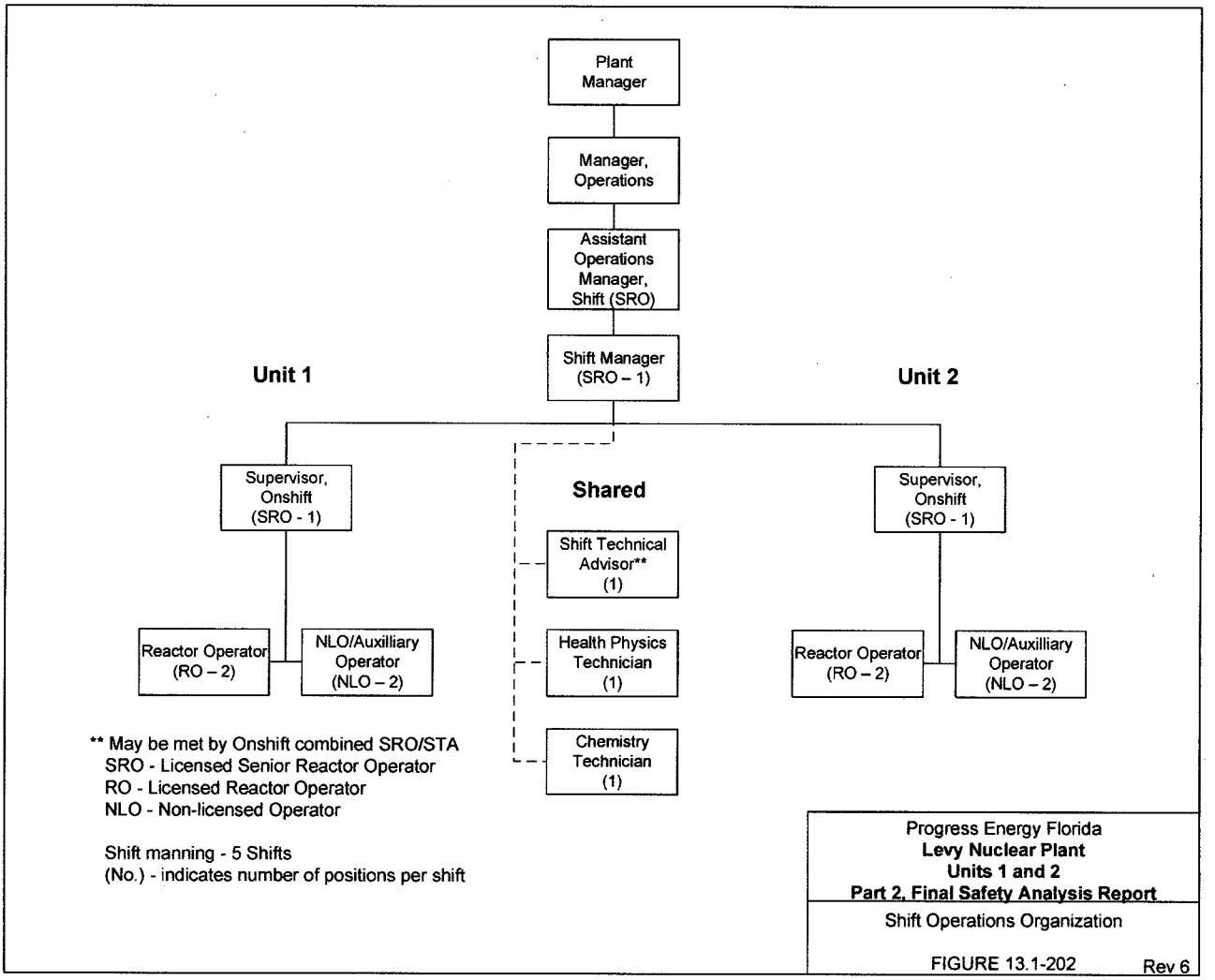
Plant Manager
Manager, Operations
Assistant Operations Manager, Shift (SRO)
Shift Manager (SRO – 1)
Unit 1
Unit 2
Supervisor, Onshift (SRO - 1)
Shared
Supervisor, Onshift (SRO - 1)
Shift Technical Advisor** (1)
Reactor Operator (RO – 2)
NLO/Auxilliary Operator (NLO – 2)
Health Physics Technician (1)
Reactor Operator (RO – 2)
NLO/Auxilliary Operator (NLO – 2)
Chemistry Technician (1)
** May be met by Onshift combined SRO/STA
SRO - Licensed Senior Reactor Operator
RO - Licensed Reactor Operator
NLO - Non-licensed Operator
Shift manning - 5 Shifts
(No.) - indicates number of positions per shift
Progress Energy Florida
Levy Nuclear Plant
Units 1 and 2
Part 2, Final Safety Analysis Report
Shift Operations Organization
FIGURE 13.1-202
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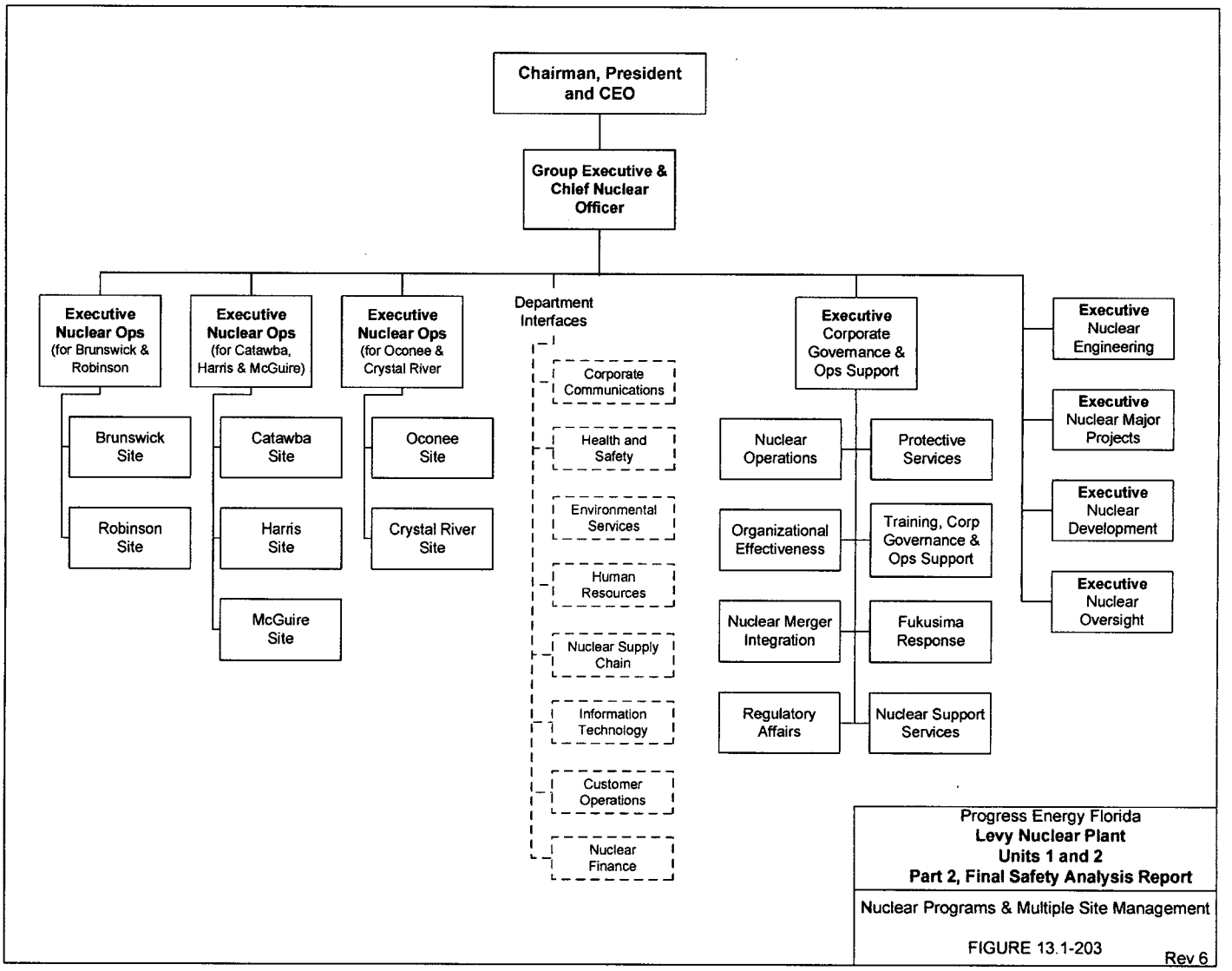

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Levy Nuclear Plant
Units 1 and 2
Part 2, Final Safety Analysis Report

Nuclear Programs & Multiple Site Management

FIGURE 13.1-203

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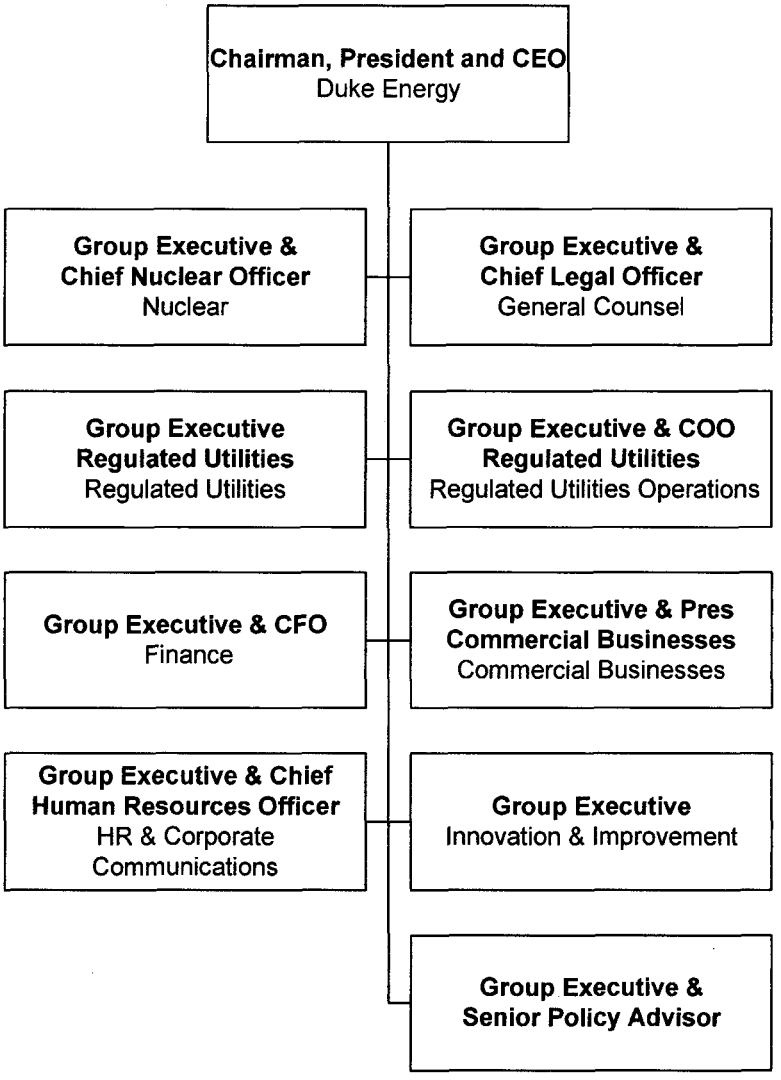

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Levy Nuclear Plant
Units 1 and 2
Part 2, Final Safety Analysis Report

Senior Management

FIGURE 13.1-204

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13.2 TRAINING

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

STD COL 13.2-1

This section incorporates by reference NEI 06-13A, Template for an Industry Training Program Description. See Table 1.6-201.

Table 13.4-201 provides milestones for training implementation.

STD COL 18.10-1

Operators involved in the Human Factors Engineering Verification and Validation (V&V) Program receive additional training specific to the task of performing V&V. A systematic approach to training is incorporated in developing this training program along with input from WCAP-14655, Designer's Input to the Training of the Human Factors Engineering Verification and Validation Personnel (Reference 201).

13.2.1 COMBINED LICENSE INFORMATION ITEM

STD COL 13.2-1

This COL Item is addressed in Section 13.2.

Add the following subsection after DCD Subsection 13.2.1:

13.2.2 REFERENCES

201. Westinghouse, "Designer's Input to the Training of the Human Factors Engineering Verification and Validation Personnel," WCAP-14655, Revision 1, August 1996.

13.3 EMERGENCY PLANNING

This section of the referenced DCD is incorporated by reference with the following departures and /or supplements.

STD COL 13.3-1

The emergency planning information is submitted to the Nuclear Regulatory Commission as a separate licensing document and is incorporated by reference. (see Table 1.6-201).

Post-72 hour support actions, as discussed in DCD Subsections 1.9.5.4 and 6.3.4, are addressed in DCD Subsections 6.2.2, 8.3, and 9.1.3. Provisions for establishing post-72 hour ventilation for the main control room, instrumentation and control rooms, and dc equipment rooms are established in operating procedures.

STD COL 13.3-2

The emergency plan describes the plans for coping with emergency situations, including communications interfaces and staffing of the emergency operations facility.

STD SUP 13.3-1

Table 13.4-201 provides milestones for emergency planning implementation.

13.3.1 COMBINED LICENSE INFORMATION ITEM

STD COL 13.3-1

This COL Item is addressed in Section 13.3.

STD COL 13.3-2

This COL Item is addressed in Section 13.3 and in the Emergency Plan.

13.4 OPERATIONAL PROGRAMS

This section of the referenced DCD is incorporated by reference with the following departures and /or supplements.

STD COL 13.4-1

Operational programs are specific programs that are required by regulations. Table 13.4-201 lists each operational program, the regulatory source for the program, the section of the FSAR in which the operational program is described, and the associated implementation milestone(s).

13.4.1 COMBINED LICENSE INFORMATION ITEM

STD COL 13.4-1

This COL Item is addressed in Section 13.4.

Add the following subsection after DCD Subsection 13.4.1:

13.4.2 REFERENCES

201. ASME Boiler and Pressure Vessel Code (B&PVC), "Section XI - Rules for Inservice Inspection of Nuclear Power Plant Components."

202. ASME "OM Code for the Operation and Maintenance of Nuclear Power Plants."

STD COL 13.4-1

Table 13.4-201 (Sheet 1 of 11)
Operational Programs Required by NRC Regulations

Item	Program Title	Program Source (Required by)	FSAR Section	Implementation Milestone	Implementation Requirement
1.	Inservice Inspection Program	10 CFR 50.55a(g)	5.2.4, 5.4.2.5, 6.6	Prior to Commercial service	10 CFR 50.55a(g), ASME XI IWA-2430(b) (Reference 201)
2.	Inservice Testing Program	10 CFR 50.55a(f); 10 CFR Part 50, Appendix A	3.9.6, 5.2.4	After generator online on nuclear heat[(a)]	10 CFR 50.55a(f), ASME OM Code (Reference 202)
3.	Environmental Qualification Program	10 CFR 50.49(a)	3.11	Prior to initial fuel load	License Condition
4.	Preservice Inspection Program	10 CFR 50.55a(g)	5.2.4, 5.4.2.5, 6.6	Completion prior to initial plant start-up	10 CFR 50.55a(g); ASME XI IWB-2200(a) (Reference 201)
5.	Reactor Vessel Material Surveillance Program	10 CFR 50.60; 10 CFR 50.61; 10 CFR Part 50, Appendix H	5.3.2.6	Prior to initial criticality	License Condition

STD COL 13.4-1

Table 13.4-201 (Sheet 2 of 11)
Operational Programs Required by NRC Regulations

Item	Program Title	Program Source (Required by)	FSAR Section	Implementation Milestone	Implementation Requirement
6.	Preservice Testing Program	10 CFR 50.55a(f)	3.9.6	Prior to initial fuel load	License Condition
7.	Containment Leakage Rate Testing Program	10 CFR 50.54(o); 10 CFR 50, Appendix A (GDC 52); 10 CFR 50, Appendix J	6.2.5.1	Prior to initial fuel load	License Condition
8.	Fire Protection Program	10 CFR 50.48	9.5.1.8	Prior to receipt of fuel onsite Prior to initial fuel load	License Condition
	(portions applicable to radioactive material)	10 CFR 30.32 10 CFR 40.31 10 CFR 70.22		Prior to initial receipt of byproduct, source, or special nuclear materials (excluding Exempt Quantities as described in 10 CFR 30.18)	10 CFR 30.32(a) 10 CFR 40.31(a) 10 CFR 70.22(a)

STD COL 13.4-1

Table 13.4-201 (Sheet 3 of 11)
Operational Programs Required by NRC Regulations

Item	Program Title	Program Source (Required by)	FSAR Section	Implementation Milestone	Implementation Requirement
9.	Process and Effluent Monitoring and Sampling Program:				
	Radiological Effluent Technical Specifications/Standard Radiological Effluent Controls	10 CFR 20.1301 and 20.1302; 10 CFR 50.34a; 10 CFR 50.36a; 10 CFR 50, Appendix I, Section II and IV	11.5	Prior to initial fuel load	License Condition
	Offsite Dose Calculation Manual	Same as above	11.5	Prior to initial fuel load	License Condition
	Radiological Environmental Monitoring Program	Same as above	11.5	Prior to initial fuel load	License Condition
	Process Control Program	Same as above	11.4	Prior to initial fuel load	License Condition

STD COL 13.4-1

Table 13.4-201 (Sheet 4 of 11)
Operational Programs Required by NRC Regulations

Item	Program Title	Program Source (Required by)	FSAR Section	Implementation Milestone	Implementation Requirement
10.	Radiation Protection Program (including ALARA principle)	10 CFR 20.1101 10 CFR 20.1406	12.1 12.5		License Condition
	• Radioactive Source Control (assignment of RP Supervisor) • Assignment of RP Supervisor • Minimization of Contamination			1. Prior to initial receipt of by-product, source, or special nuclear materials (excluding Exempt Quantities as described in 10 CFR 30.18)	
	• Personnel Dosimetry • Radiation Monitoring and Surveys • Radiation Work Permits			2. Prior to receipt of fuel onsite	
	• Assignment of RP Manager • Respiratory Protection • Bioassay • Effluents and Environmental Monitoring and Assessment • Job Coverage			3. Prior to initial fuel load	
	• Radioactive Waste Shipping			4. Prior to first shipment of radioactive waste	

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STD COL 13.4-1

Table 13.4-201 (Sheet 5 of 11)
Operational Programs Required by NRC Regulations

Item	Program Title	Program Source (Required by)	FSAR Section	Implementation Milestone	Implementation Requirement
11.	Non Licensed Plant Staff Training Program	10 CFR 50.120	13.2	18 months prior to scheduled date of initial fuel load	10 CFR 50.120(b)
	(portions applicable to radioactive material)	10 CFR 30.32 10 CFR 40.31 10 CFR 70.22		Prior to initial receipt of byproduct, source, or special nuclear materials (excluding Exempt Quantities as described in 10 CFR 30.18)	10 CFR 30.32(a) 10 CFR 40.31(a) 10 CFR 70.22(a)
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 the date the Commission makes the finding under 10 CFR 52.103(g)	10 CFR 50.54 (i-1)

STD COL 13.4-1

Table 13.4-201 (Sheet 6 of 11)
Operational Programs Required by NRC Regulations

Item	Program Title	Program Source (Required by)	FSAR Section	Implementation Milestone	Implementation Requirement
14.	Emergency Planning	10 CFR 50.47; 10 CFR 50, Appendix E	13.3	Full participation exercise conducted within 2 years of scheduled date for initial loading of fuel.	10 CFR Part 50, Appendix E, Section IV.F.2.a(ii)
				Onsite exercise conducted within 1 year before the schedule date for initial loading of fuel	10 CFR Part 50, Appendix E, Section IV.F.2.a(ii)
				Applicant's detailed implementing procedures for its emergency plan submitted at least 180 days prior to scheduled date for initial loading of fuel	10 CFR Part 50, Appendix E, Section V

STD COL 13.4-1

Table 13.4-201 (Sheet 7 of 11)
Operational Programs Required by NRC Regulations

Item	Program Title	Program Source (Required by)	FSAR Section	Implementation Milestone	Implementation Requirement
15.	Security Program:				
	Physical Protection Program (applicable to protection of special nuclear material prior to the protected area being declared operational)	10 CFR 73.1, 10 CFR 73.67	13.5.2.2.8, 13.6	Prior to initial receipt of special nuclear material	10 CFR 73.1(a), 10 CFR 73.67
	Physical Security Program	10 CFR 73.55(b); 10 CFR 73.55(c)(3); 10 CFR 73.56; 10 CFR 73.57;	13.6	Prior to receipt of fuel onsite (protected area)	10 CFR 73.55(a)(4)
	Safeguards Contingency Program	10 CFR 73.55(c)(5); 10 CFR 73.55(k); 10 CFR Part 73, Appendix C	13.6	Prior to receipt of fuel onsite (protected area)	10 CFR 73.55(a)(4)
	Training and Qualification Program	10 CFR 73.55(c)(4); 10 CFR 73.55(d)(3); 10 CFR Part 73, Appendix B	13.6	Prior to receipt of fuel onsite (protected area)	10 CFR 73.55(a)(4)

STD COL 13.4-1

Table 13.4-201 (Sheet 8 of 11)
Operational Programs Required by NRC Regulations

	Item	Program Title	Program Source (Required by)	FSAR Section	Implementation Milestone	Implementation Requirement
LNP COL 13.4-1	16.	Quality Assurance Program – Operation	10 CFR 50.54(a); 10 CFR Part 50, Appendix A (GDC 1); 10 CFR Part 50, Appendix B	17.5	30 days after COL issuance	10 CFR 50.54(a)(1)
STD COL 13.4-1	17.	Maintenance Rule	10 CFR 50.65	17.6	Prior to fuel load authorization per 10 CFR 52.103(g)	10 CFR 50.65(a)(1)
	18.	Motor-Operated Valve Testing	10 CFR 50.55a(b)(3)(ii)	3.9.6.2.2	Prior to initial fuel load	License Condition

STD COL 13.4-1

Table 13.4-201 (Sheet 9 of 11)
Operational Programs Required by NRC Regulations

Item	Program Title	Program Source (Required by)	FSAR Section	Implementation Milestone	Implementation Requirement
19.	Initial Test Program	10 CFR 50.34; 10 CFR 52.79(a)(28)	14.2	Prior to the first construction test being conducted for the Construction Test Program Prior to the first preoperational test for the Preoperational Test Program Prior to initial fuel load for the Startup Test Program	License Condition
20.	Fitness for Duty (FFD) Program for Construction (workers and first-line supervisors)	10 CFR 26.4(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 26.4(e)	13.7	Prior to initiating 10 CFR Part 26 construction activities	10 CFR Part 26, Subparts A - H, N, and O

STD COL 13.4-1

Table 13.4-201 (Sheet 10 of 11)
Operational Programs Required by NRC Regulations

Item	Program Title	Program Source (Required by)	FSAR Section	Implementation Milestone	Implementation Requirement
	FFD Program for Security Personnel	10 CFR 26.4(e)(1)	13.7	Prior to initiating 10 CFR Part 26 construction activities	10 CFR Part 26, Subparts A - H, N, and O
		10 CFR 26.4(a)(5) or 26.4(e)(1)		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 52.103(g) finding	10 CFR Part 26, Subparts A - I, N, and O
	FFD Program for FFD Program personnel	10 CFR 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, and C per licensee's discretion

STD COL 13.4-1

Table 13.4-201 (Sheet 11 of 11)
Operational Programs Required by NRC Regulations

Item	Program Title	Program Source (Required by)	FSAR Section	Implementation Milestone	Implementation Requirement
	FFD Program for persons required to physically report to the Technical Support Center (TSC) or Emergency Operations Facility (EOF)	10 CFR 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
	FFD Program for Operation	10 CFR 26.4(a) and (b)	13.7	Prior to the earlier of: A. Establishment of a protected area, or B. The 10 CFR 52.103(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
21.	Cyber Security Program	10 CFR 73.54(b); 10 CFR 73.55(b)(8); 10 CFR 73.55(c)(6)	13.6	Prior to receipt of fuel onsite (protected area)	10 CFR 73.55(a)(4)
22.	SNM Material Control and Accounting Program	10 CFR 74, Subpart B (§§ 74.11 – 74.19, excl. § 74.17)	13.5.2.2.9	Prior to receipt of special nuclear material	License Condition

a) Inservice Testing Program will be fully implemented by generator on line on nuclear heat. Appropriate portions of the program are implemented as necessary to support the system operability requirements of the technical specifications.

Rev. 6

13.5 PLANT PROCEDURES

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

STD DEP 1.1-1

DCD Subsection 13.5.1, Combined License Information, is renumbered in this FSAR section to 13.5.3.

STD COL 13.5-1

This section of the FSAR describes the administrative and other procedures which are not described in the DCD that the operating organization (plant staff) uses to conduct the routine operating, abnormal, and emergency activities in a safe manner.

The Quality Assurance Program Description (QAPD), as discussed in Section 17.5, describes procedural document control, record retention, adherence, assignment of responsibilities, and changes.

Procedures are identified in this section by topic, type, or classification in lieu of the specific title and represent general areas of procedural coverage.

Procedures are issued prior to fuel load to allow sufficient time for plant staff familiarization and to develop operator licensing examinations.

The format and content of procedures are controlled by the applicable AP1000 Writer's Guideline.

Each procedure is sufficiently detailed for an individual to perform the required function without direct supervision, but does not provide a complete description of the system or plant process. The level of detail contained in the procedure is commensurate with the qualifications of the individual normally performing the function.

Procedures are developed consistent with guidance described in DCD Section 18.9, "Procedure Development" and with input from the human factors engineering process and evaluations.

13.5.1 ADMINISTRATIVE PROCEDURES

This section describes administrative procedures that provide administrative control over activities that are important to safety for the operation of the facility.

Procedures outline the essential elements of the administrative programs and controls as described in ANSI/ANS 3.2-1988 (Reference 201) and in Section 17.5. These procedures are organized such that the program elements are prescribed in documents normally referred to as administrative procedures. Regulatory and industry guidance for the appropriate format, content and typical activities delineated in written procedures is implemented as appropriate.

Administrative procedures contain adequate programmatic controls to provide effective interface between organizational elements. This includes contractor and owner organizations providing support to the station operating organization.

A Writer's Guideline promotes the standardization and application of human factors engineering principles to procedures. The Writer's Guideline establishes the process for developing procedures that are complete, accurate, consistent, and easy to understand and follow. The Writer's Guideline provides objective criteria so that procedures are consistent in organization, style, and content. The Writer's Guideline includes criteria for procedure content and format including the writing of action steps and the specification of acceptable acronym lists and acceptable terms to be used.

Procedure maintenance and control of procedure updates are performed in accordance with the QAPD, as discussed in Section 17.5.

The administrative programs and associated procedures developed in the pre-COL phase are described in Table 13.5-201 (for future designation as historical information).

The plant administrative procedures provide procedural instructions for the following:

- Procedures review and approval.
- Equipment control procedures - These procedures provide for control of equipment, as necessary, to maintain personnel and reactor safety, and to avoid unauthorized operation of equipment.
- Control of maintenance and modifications.
- Crane Operation Procedures - Crane operators who operate cranes over fuel pools are qualified and conduct themselves in accordance with ANSI B30.2 (Chapter 2-3), "Overhead and Gantry Cranes" (Reference 202).
- Temporary changes to procedures.
- Temporary procedure issuance and control.
- Special orders of a temporary or self-canceling nature.
- Standing orders to shift personnel including the authority and responsibility of the shift manager, licensed senior reactor operator in the control room, control room operator and shift technical advisor.
- Manipulation of controls and assignment of shift personnel to duty stations per the requirements of 10 CFR 50.54 (i), (j), (k), (l), and (m) including delineation of the space designated for the "At the Controls" area of the control room.

- Shift relief and turnover procedures.
- Fitness for Duty.
- Control Room access.
- Working hour limitations.
- Feedback of design, construction, and applicable important industry and operating experience.
- Shift Manager administrative duties.
- Verification of correct performance of operational activities.
- A vendor interface program that provides vendor information for safety related components is incorporated into plant documentation.
- Fire protection program implementation.
- A process for implementing the safety/security interface requirements of 10 CFR 73.58.

13.5.2 OPERATING AND MAINTENANCE PROCEDURES

13.5.2.1 Operating and Emergency Operating Procedures

This information is addressed in the DCD.

13.5.2.2 Maintenance and Other Operating Procedures

The QAPD, as described in Section 17.5, provides guidance for procedural adherence. Regulatory and industry guidance for the appropriate format, content, and typical activities delineated in written procedures is implemented as appropriate.

13.5.2.2.1 Plant Radiation Protection Procedures

The plant radiation protection program is contained in procedures. Procedures are developed and implemented for such things as: maintaining personnel exposures, plant contamination levels, and plant effluents ALARA; monitoring both external and internal exposures of workers, considering industry-accepted techniques; routine radiation surveys; environmental monitoring in the vicinity of the plant; radiation monitoring of maintenance and special work activities; evaluation of radiation protection implications of proposed modifications; establishing quality assurance requirements applicable to the radiation protection program; and maintaining radiation exposure records of workers and others.

13.5.2.2.2 Emergency Preparedness Procedures

A discussion of emergency preparedness procedures can be found in the Emergency Plan.

13.5.2.2.3 Instrument Calibration and Test Procedures

The QAPD, as discussed in Section 17.5, provides a description of procedural requirements for instrumentation calibration and testing.

13.5.2.2.4 Chemistry Procedures

Procedures provided for chemical and radiochemical control activities include the nature and frequency of sampling and analyses; instructions for maintaining fluid quality within prescribed limits; the use of control and diagnostic parameters; and limitations on concentrations of agents that could cause corrosive attack, foul heat transfer surfaces or become sources of radiation hazards due to activation.

Procedures are also provided for the control, treatment, and management of radioactive wastes and control of radioactive calibration sources.

13.5.2.2.5 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. Procedural controls are in place for radiological releases.

13.5.2.2.6 Maintenance, Inspection, Surveillance, and Modification Procedures

13.5.2.2.6.1 Maintenance Procedures

Maintenance procedures describe maintenance planning and preparation activities. Maintenance procedures are 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 contain sufficient detail to permit the maintenance work to be performed correctly and safely. Procedures include provisions for conducting and recording results of required tests and inspections, if not performed and documented under separate test and inspection procedures. References are made to vendor manuals, plant procedures, drawings, and other sources as applicable.

Instructions are included, or referenced, for returning the equipment to its normal operating status. Testing is commensurate with the maintenance that has been performed. Testing may be included in the maintenance procedure or be covered in a separate procedure.

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

13.5.2.2.6.2 Inspection Procedures

The QAPD, as discussed in Section 17.5, provides a description of procedural requirements for inspections.

13.5.2.2.6.3 Modification Procedures

Plant modifications and changes to setpoints are developed in accordance with approved procedures. These procedures 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 are developed or the as-built design documents are utilized. Separate reviews are conducted by individuals knowledgeable in both technical and QA requirements to verify the adequacy of the design effort.

Proposed modification(s) which involve a license amendment or a change to Technical Specifications are processed as proposed license amendment request(s).

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

13.5.2.2.7 Material Control Procedures

The QAPD, as discussed in Section 17.5, provides a description of procedural requirements for material control.

13.5.2.2.8 Security Procedures

A discussion of security procedures is provided in the Security Plan.

The Special Nuclear Material (SNM) Physical Protection Program describes the 10 CFR Part 70 required protection program in effect for the period of time during which new fuel as SNM is received and stored in a controlled access area (CAA), in accordance with the requirements of 10 CFR 73.67.

The New Fuel Shipping Plan addresses the applicable 10 CFR 73.67 requirements in the event that unirradiated new fuel assemblies or components are returned to the supplying fuel manufacturer(s) facility.

13.5.2.2.9 Special Nuclear Material (SNM) Material Control and Accounting Procedures

A material control and accounting system consisting of special nuclear material accounting procedures is utilized to delineate the requirements, responsibilities, and methods of special nuclear material control from the time special nuclear material 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 Special Nuclear Material (SNM) Material Control and Accounting (MC&A) Program description is submitted to the Nuclear Regulatory Commission as a separate licensing basis document.

STD DEP 1.1-1

13.5.3 COMBINED LICENSE INFORMATION ITEM

STD COL 13.5-1

Information for this COL item is addressed in Section 13.5.

13.5.4 REFERENCES

201. ANSI/ANS 3.2-1988, "Administrative Control and Quality Assurance for the Operational Phase of Nuclear Power Plants."

202. ANSI B30.2 (Chapter 2-3), "Overhead and Gantry Cranes."

Table 13.5-201
Pre-COL Phase Administrative Programs and Procedures

STD COL 13.5-1 (This table is included for future designation as historical information.)

- Design/Construction Quality Assurance Program
- Reporting of Defects and Noncompliance, 10 CFR Part 21 Program
- Design Reliability Assurance Program

13.6 SECURITY

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

STD COL 13.6-1

STD COL 13.6-5

The Security Plan consists of the Physical Security Plan, the Training and Qualification Plan, and the Safeguards Contingency Plan. The Security Plan is submitted to the Nuclear Regulatory Commission as a separate licensing document in order to fulfill the requirements of 10 CFR 52.79(a)(35) and 52.79(a)(36) and is incorporated by reference (see Table 1.6-201). The Security Plan meets the requirements contained in 10 CFR Part 73 and will be maintained in accordance with the requirements of 10 CFR 52.98. The Plan is categorized as Security Safeguards Information and is withheld from public disclosure pursuant to 10 CFR 73.21.

The Cyber Security Plan is submitted to the Nuclear Regulatory Commission as a separate licensing document to fulfill the requirements contained in 10 CFR 52.79(a)(36) and 10 CFR 73.54 and is incorporated by reference (see Table 1.6-201). The Cyber Security Plan will be maintained in accordance with the requirements of 10 CFR 52.98. The Plan is withheld from public disclosure pursuant to 10 CFR 2.390.

Table 13.4-201 provides milestones for security program and cyber security program implementation.

13.6.1 COMBINED LICENSE INFORMATION ITEM

STD COL 13.6-1

Information for the Security Plan portion of this COL item is addressed in Section 13.6.

Information for the Physical Security ITAAC portion of this COL item is addressed in Section 14.3.2.3.2.

STD COL 13.6-5

Information for the cyber security program portion of this COL item is addressed in Section 13.6.

13.6.2 REFERENCES

201. Not used.

STD DEP 1.1-1

DCD Section 13.7 is redistributed to include DCD Section 13.7 references 7, 8, and 10 with COLA FSAR Subsection 13.5.4 and DCD Section 13.7 references 2, 3, and 4 with COLA FSAR Subsection 13.6.2.

Add the following new section after DCD Section 13.6.

13.7 FITNESS FOR DUTY

STD SUP 13.7-1

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 13.4-201.

The construction FFD program is consistent with NEI 06-06 (Reference 201). 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 either NEI 06-06 following NRC endorsement or the requirements of 10 CFR Part 26.

LNP SUP 13.7-1

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 Shaw Stone & Webster (Shaw). The 10 CFR Part 26 requirements will be implemented for the construction site area based on the descriptions provided in Table 13.4-201.

- Construction Workers & First Line Supervisors (Shaw employees and subcontractors) are covered by the Duke-approved Shaw FFD Program (elements Subpart K).

- Duke employees and Duke subcontractor's construction management and oversight personnel are covered by a Duke Operations FFD Program and Shaw's employees and Shaw's subcontractors, construction management, and oversight personnel will be covered by the Duke-approved Shaw FFD Program (elements Subpart A - H, N and 0).

- Duke security personnel are covered by a Duke Operations FFD Program and Shaw's security personnel are covered by the Duke-approved Shaw

FFD Program (elements Subpart A - H, N and 0). 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.

- Duke FFD Program personnel are covered by a Duke Operations FFD Program and Shaw's FFD Program personnel will be covered by the Duke-approved Shaw FFD Program (elements Subpart A - H, N and 0, and C per licensee's discretion).
- Duke security personnel protecting fuel assemblies are covered by a Duke Operations FFD Program (elements Subpart A - I, N and 0).
- 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 Duke Operations FFD Program.

STD SUP 13.7-1 The operations phase FFD program is consistent with the applicable subparts of 10 CFR Part 26 (elements Subpart A – I, N, and O, except for individuals listed in §26.4(b), who are not subject to §§ 26.205 – 209).

13.7.1 REFERENCES

201. Nuclear Energy Institute "Fitness for Duty Program Guidance for New Nuclear Power Plant Construction Sites," NEI 06-06, Revision 5, August 2009 (ML092430016).

Add the following new appendix at the end of DCD Chapter 13.

LNP COL 13.1-1

APPENDIX 13AA CONSTRUCTION-RELATED ORGANIZATION

The information in this appendix is included for future designation as historical information. Paragraphs are numbered to be subsequent to Subsection 13.1.1.1.

13AA.1.1.1.1 Design and Construction Activities

The Westinghouse Electric Company (WEC) was selected to design, fabricate, deliver, and install the AP1000 advanced light water pressurized water reactors (PWR) and to provide technical direction for installation and startup of this equipment. DCD Subsection 1.4.1 provides detailed information regarding WEC past experience in design, development, and manufacturing of nuclear power facilities. Operating experience from design, construction, and operation of earlier WEC PWRs is applied in the design, construction, and operation of the AP1000 as described in numerous locations throughout the DCD (e.g., DCD Subsections 3.6.4.4, 3.9.4.2.1, 4.2.3.1.3).

A construction architect engineer (AE) provides the construction of the plant and additional design engineering for selected site specific portions of the plant. The AE is selected based on experience and proven technical capability in nuclear construction projects or projects of similar scope and complexity.

Other design and construction activities are generally contracted to qualified suppliers of such services. Implementation or delegation of design and construction responsibilities is described in the subsections below. Quality assurance aspects of these activities are described in Chapter 17.

13AA.1.1.1.1.1 Principal Site-Related Engineering Work

The principal site engineering activities accomplished towards the construction and operation of the plant are:

a. Meteorology

Information concerning local (site) meteorological parameters is developed and applied by station and contract personnel to assess the impact of the station on local meteorological conditions. An on-site meteorological measurements program is employed by station personnel to produce data for the purpose of making atmospheric dispersion estimates for postulated accidental and expected routine airborne releases of effluents. A maintenance program is established for surveillance, calibration, and repair of instruments. More information regarding the study and meteorological program is found in Section 2.3.

b. Geology

Information relating to site and regional geotechnical conditions is developed and evaluated by utility and contract personnel to determine if geologic conditions could present a challenge to safety of the plant. Items of interest include geologic structure, seismicity, geological history, and ground water conditions. During construction, foundations within the power block area are mapped or visually inspected and photographed. Section 2.5 provides details of these investigations.

c. Seismology

Information relating to seismological conditions is developed and evaluated by utility and contract personnel to determine if the site location and area surrounding the site is appropriate from a safety standpoint for the construction and operation of a nuclear power plant. Information regarding tectonics, seismicity, correlation of seismicity with tectonic structure, characterization of seismic sources, and ground motion are assessed to estimate the potential for strong earthquake ground motions or surface deformation at the site. Section 2.5 provides details of these investigations.

d. Hydrology

Information relating to hydrological conditions at the plant site and the surrounding area is developed and evaluated by utility and contract personnel. The study includes hydrologic characteristics of streams, lakes, shore regions, the regional and local groundwater environments, and existing or proposed water control structures that could influence flood control and plant safety. Section 2.4 includes more detailed information regarding this subject.

e. Demography

Information relating to local and surrounding area population distribution is developed and evaluated by utility and contract personnel. The data is used to determine if requirements are met for establishment of exclusion area, low population zone, and population center distance. Section 2.1 includes more detailed information regarding population around the plant site.

f. Environmental Effects

Monitoring programs are developed to enable the collection of data necessary to determine possible impact on the environment due to construction, startup, and operational activities and to establish a baseline from which to evaluate future environmental monitoring.

13AA.1.1.1.1.2 Design of Plant and Ancillary Systems

Responsibility for design and construction of systems outside the power block such as circulating water, service water, switchyard, and secondary fire protection systems are delegated to qualified contractors.

13AA.1.1.1.1.3 Review and Approval of Plant Design Features

Design engineering review and approval is performed in accordance with the reactor technology vendor QA Program and Section 17.1. The reactor technology vendor is responsible for design control of the power block. Verification is performed by competent individuals or groups other than those who performed the original design. Design issues arising during construction are addressed and implemented with notification and communication of changes to the manager in charge of Nuclear Engineering for review. As systems are tested and approved for turnover and operation, control of design is turned over to plant staff. The manager in charge of Nuclear Engineering, along with functional managers and staff, assumes responsibility for review and approval of modifications, additions, or deletions in plant design features, as well as control of design documentation, in accordance with the Operational QA Program. Design control becomes the responsibility of the manager in charge of Nuclear Engineering prior to loading fuel. During construction, startup, and operation, changes to human-system interfaces of control room design are approved using a human factors engineering evaluation addressed within Chapter 18. See Organization Charts, Figures 13.1-201 and 13AA-201 for reporting relationships.

13AA.1.1.1.1.4 Site Layout With Respect to Environmental Effects and Security Provisions

Site layout was considered when determining the expected environmental effects from construction.

The Physical Security Plan is designed with provisions that meet the applicable NRC regulations. Site layout was considered when developing the Security Plan.

13AA.1.1.1.1.5 Development of Safety Analysis Reports

Information regarding the development of the Final Safety Analysis Report is found in Chapter 1.

13AA.1.1.1.1.6 Review and Approval of Material and Component Specifications

Safety-related material and component specifications of structures, systems, and components designed by the reactor technology vendor are reviewed and approved in accordance with the reactor technology vendor quality assurance program and Section 17.1. Review and approval of items not designed by the reactor vendor are controlled for review and approval by Section 17.5 and the Quality Assurance Program Description.

13AA.1.1.1.1.7 Procurement of Materials and Equipment

Procurement of materials during construction phase is the responsibility of the reactor technology vendor and constructor. The process is controlled by the construction QA Programs of these organizations. Oversight of the inspection and receipt of materials process is the responsibility of the manager in charge of quality assurance.

13AA.1.1.1.1.8 Management and Review of Construction Activities

Overall management and responsibility for construction activities is assigned to the site executive in charge of plant management. The project director of the engineering, procurement, and construction (EPC) contractor is accountable to the site executive in charge of plant management for construction activities. See organization chart Figure 13AA-201. Construction management personnel are sufficient in number to provide effective oversight in the areas of cost, schedule, and other functions as deemed necessary by the manager in charge of construction. Table 13.1-201 provides additional information regarding the number of station personnel.

Monitoring and review of construction activities by utility personnel is a continuous process at the plant site. Contractor performance is monitored to provide objective data to utility management in order to identify problems early and develop solutions. Monitoring of construction activities verifies that the contractors are in compliance with contractual obligations for quality, schedule, and cost. Monitoring and review of construction activities is divided functionally across the various disciplines of the utility construction staff (e.g., electrical, mechanical, instrument and control) and tracked by schedule based on system and major plant components/areas.

After each system is turned over to plant staff, the construction organization relinquishes responsibility for that system. At that time they will be responsible for completion of construction activities as directed by plant staff and available to provide support for preoperational and start-up testing as necessary.
To ensure equipment operability and reliability, plant maintenance programs such as preventive and corrective maintenance are developed and made effective during pre-operation/startup phase with approved administrative procedures under the direction of the managers in charge of maintenance, engineering and work control.

Periodic assessment involving both the construction and operations organizations continues to identify SSCs that could reasonably be expected to be impacted by scheduled construction activities. Appropriate administrative and managerial controls are then established as necessary. Specific hazards, impacted SSCs, and managerial and administrative controls are reviewed on a recurring basis and, if necessary, controls are revised/developed and implemented and maintained current as work progresses on site. For example, prior to construction activities that involve the use of large construction

equipment such as cranes, managerial and administrative controls are in place to prevent adverse impacts on any operating unit(s) overhead power lines, switchyard, security boundary, etc., by providing the necessary restrictions on the use of large construction equipment.

13AA.1.1.1.2 Preoperational Activities

The plant manager reports to the site executive in charge of plant management. The plant manager, with the aid of those managers that report directly to the plant manager, is responsible for the activities required to transition the unit from the construction phase to the operational phase.
These activities include turnover of systems from construction, preoperational testing, schedule management, procedure development for tests, fuel load, integrated startup testing, and turnover of systems to plant staff.

13AA.1.1.1.2.1 Development of Human Factors Engineering Design Objectives and Design Phase Review of Proposed Control Room Layouts

Human factors engineering (HFE) design objectives are initially developed by the reactor technology vendor in accordance with Chapter 18 of the FSAR and the Design Control Document (DCD). As a collaborative team, personnel from the reactor technology vendor design staff and personnel, including, licensed operators, engineers, and instrumentation and control technicians from owner and other organizations in the nuclear industry assess the design of the control room and man-machine interfaces to attain safe and efficient operation of the plant. See Section 18.2 for additional details of HFE program management.

Modifications to the certified design of the control room or man-machine interface described in the Design Control Document are reviewed per engineering procedures, as required by Section 18.2, to evaluate the impact to plant safety. The Functional Superintendent – Design Engineering is responsible for the human factors engineering (HFE) design process and for the design commitment to HFE during construction and throughout the life of the plant as noted in Subsection 13.1.1.2.1. The HFE Program is established in accordance with the description and commitments in Chapter 18.

13AA.1.1.1.2.2 Preoperational Testing Organization

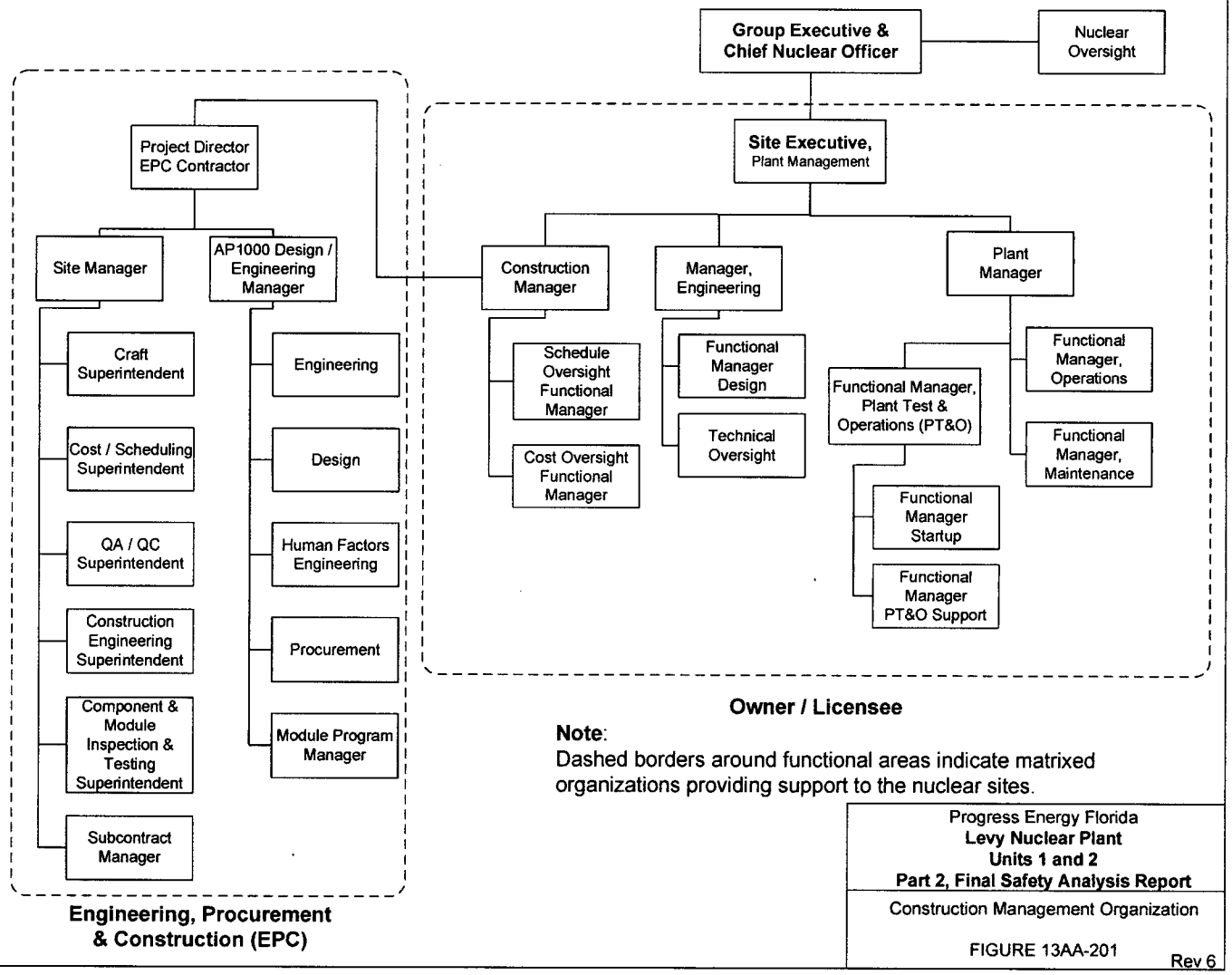
Preoperational and startup testing is conducted by the plant test and operations (PT&O) organization. The PT&O organization, functions, and responsibilities are addressed in Section 14.2. Sufficient numbers of personnel are assigned to perform preoperational and startup testing to facilitate safe and efficient implementation of the testing program. Plant-specific training provides instruction on the administrative controls of the test program. To improve operational experience, operations and technical staff are used as support in conducting the test program and in reviewing test results.

See Figure 13AA-201 for organization chart for preoperational and startup testing.

13AA.1.1.1.2.3 Development and Implementation of Staff Recruiting and Training Programs

Staffing plans are developed based on operating plant experience with input from the reactor technology vendor as determined by HFE. See Section 18.6. These plans are developed under the direction and guidance of the site executive in charge of plant management. Staffing plans are completed and manager level positions are filled prior to start of preoperational testing. Personnel selected to be licensed Reactor Operators and Senior Reactor Operators along with other staff necessary to support the safe operation of the plant are hired with sufficient time available to complete appropriate training programs, and become qualified, and licensed, if required, prior to fuel being loaded in the reactor vessel. See Figure 13AA-202 for an estimated timeline of hiring requirements for operator and technical staff relative to fuel load.

Because of the dynamic nature of the staffing plans and changes that occur over time, it is expected that specific numbers of personnel on-site will change; however, Table 13.1-201 includes the initial estimated number of staff for selected positions and the estimated number of additional positions required for a second unit. Recruiting of personnel to fill positions is the shared responsibility of the manager in charge of human resources and the various heads of departments. The training program is described in Section 13.2.



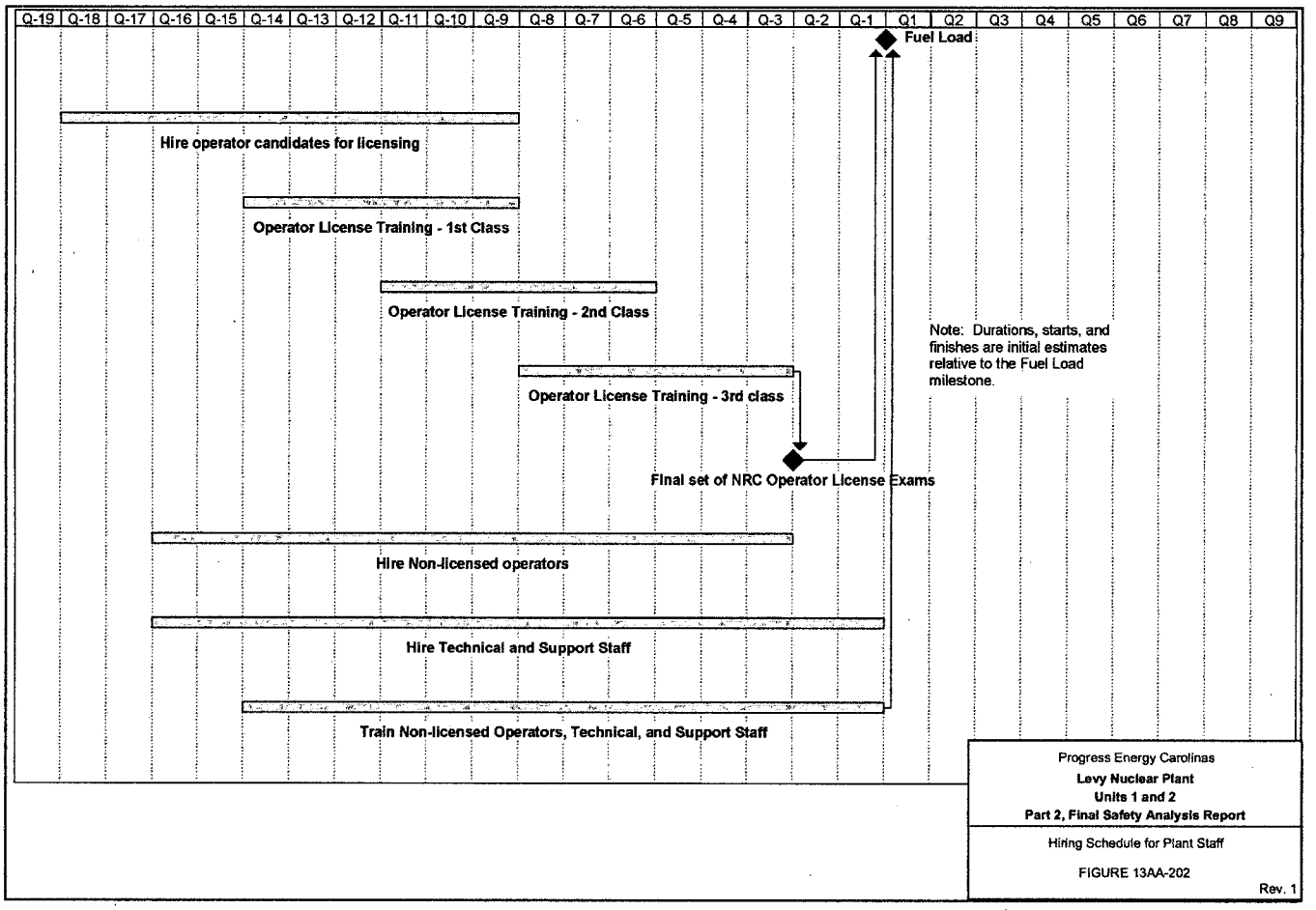
Note:
Dashed borders around functional areas indicate matrixed organizations providing support to the nuclear sites.

Progress Energy Florida
Levy Nuclear Plant
Units 1 and 2
Part 2, Final Safety Analysis Report

Construction Management Organization

FIGURE 13AA-201

Rev 6



Progress Energy Carolinas
Levy Nuclear Plant
Units 1 and 2
Part 2, Final Safety Analysis Report

Hiring Schedule for Plant Staff

FIGURE 13AA-202

Rev. 1

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(4 pages including this page)

14.2.2 ORGANIZATION, STAFFING, AND RESPONSIBILITIES

Replace the existing information in DCD Subsection 14.2.2 with the following new paragraph and subsections.

STD COL 14.4-1

The AP1000 plant test and operations (PT&O) organization is described in Subsection 14.2.2.1. The organization for operating and maintaining the AP1000 plant is described in Section 13.1.

The PT&O organization structure (organizational chart) is included in the Startup Administrative Manual.

Table 13.4-201 provides milestones for initial test program implementation.

14.2.2.1 PT&O Organization

The Initial Test Program (ITP) is the responsibility of the PT&O Organization. The ITP includes three phases of testing:

- Construction and Installation Testing
- Preoperational Testing
- Startup Testing

14.2.2.1.1 Plant Test & Operations (PT&O) Manager

The PT&O Manager reports directly to the plant manager. The manager in charge of PT&O manages the ITP. The PT&O Manager is responsible for:

- Staffing the PT&O Organization.
- Developing, reviewing, and approving the administrative and technical procedures associated with the preoperational and startup phases.
- Managing the ITP and personnel.
- Implementing the ITP schedule.
- Managing contracts associated with the ITP.

14.2.2.1.2 Plant Test & Operations Support Manager

The PT&O Support Manager reports directly to the PT&O Manager. The PT&O Support Manager plans and schedules procedure development to support

- Identifying any special or temporary equipment or services needed to support testing.
- Coordinating testing with involved groups.
- Reviewing and evaluating test results.

14.2.2.2 PT&O Organization Personnel Qualifications and Training

Procedures are prepared to confirm that test personnel have adequate training, qualification and certification. Records are kept for extent of experience, involvement in procedure and test development, training programs, and level of qualification. The training organization qualifies Test Personnel as applicable, in accordance with the requirements of the applicable Quality Assurance Program. Training is performed as agreed between Westinghouse and the Licensee. Westinghouse test personnel training is per certified design.

Acceptable qualifications of non-supervisory test engineers follow the guidance provided in Regulatory Guide 1.28 as discussed in Appendix 1AA, i.e., ASME NQA-1-1994, Appendix 2A-1, Nonmandatory Guidance on the Qualification of Inspection and Test Personnel.

The training program/procedures shall include:

- The education, training, experience, and qualification requirements of supervisory personnel, test personnel, and other major participating organizations responsible for managing, developing, or conducting each test phase, or development of testing, operating, and emergency procedures.
- The establishment of a training program for each organizational unit, with regard to the scheduled preoperational and initial startup testing. This training program provides meaningful technical information beyond that obtained in the normal startup test program and provide supplemental operator training. This program also satisfies the criteria described in TMI Action Plan Item I.G.1 of NUREG-0660 and NUREG-0737.

The Startup Administrative Manual (Procedure) shall include:

- The implementation of measures to verify that personnel formulating and conducting test activities are not the same personnel who designed or are responsible for satisfactory performance of the system(s) or design features(s) being tested. This provision does not preclude members of the design organization from participating in test activities. This description also includes considerations of staffing effects that could result from overlapping initial test programs at multi-unit sites.

14.2.2.3 Joint Test Working Group

Prior to initial fuel load, the results of the preoperational test phase are comprehensively reviewed by the PT&O organization and the JTWG to verify the results indicate that the required plant structures, systems, and components are capable of supporting the initial fuel load and subsequent startup testing. The plant manager approves fuel loading.

Each area of startup testing is reviewed and evaluated by the PT&O organization and the JTWG. The test results at each power ascension testing power plateau are reviewed and evaluated by the PT&O organization and the JTWG and approved by the plant manager before proceeding to the next plateau. Startup test reports are prepared in accordance with the guidance in position C.9 of Regulatory Guide 1.68, "Initial Test Programs for Water-Cooled Nuclear Power Plants."

The reactor vendor is responsible for reviewing and approving the results of the tests of supplied equipment. Architect Engineer representatives review and approve the results of the tests of supplied equipment. Other vendors' representatives review and approve the results of the tests of supplied equipment. Final approval of individual test completion is by the plant manager after approval by the Joint Test Working Group (JTWG).

14.2.3.2.2 Technical Evaluation

Each completed test package is reviewed by technically qualified personnel to confirm satisfactory demonstration of plant, system or component performance and compliance with design and license criteria.

14.2.3.3 Test Records

Add the following subsection at the end of DCD Subsection 14.2.3.3:

14.2.3.3.1 Startup Test Reports

STD COL 14.4-4 Startup test reports are generated describing and summarizing the completion of tests performed during the ITP. A startup report is submitted at the earliest of:

1) 9 months following initial criticality,
2) 90 days after completion of the ITP, or
3) 90 days after start of commercial operations. If one report does not cover all three events, then supplemental reports are submitted every three months until all three events are completed. These reports:
   - Address each ITP test described in the FSAR.
   - Provide a general description of measured values of operating conditions

Part 2 Chapter 17 Conforming Changes
(4 pages including this page)

(current revision)(Reference 201) and implemented through NGGM-PM-0030, Quality Assurance Plan for New Nuclear Plant Development and Construction Activities (Reference 202). Progress Energy oversight of the COL development activities is provided through conducting Quality Assurance audits and surveillances of the Joint Venture Team activities and processes, and by direct participation in COL development activities, including providing site-specific applicant input and review of COL application content, signing the COL application as the applicant at submittal, and working directly with the Joint Venture Team to respond to NRC requests for additional information.

The quality assurance program applied to the development of the AP1000 design is described in Section 17.3 of the DCD which is incorporated by reference.

The design and construction of the proposed AP1000 units would be a service procured by Progress Energy. This service would be performed in accordance with the supplier's quality assurance program that was evaluated and accepted by Progress Energy. Progress Energy would maintain oversight of these design and construction activities in accordance with the quality assurance program requirements of the Shearon Harris Nuclear Power Plant Unit 1 FSAR (current revision)(Reference 201) or the QAPD described in Section 17.5, depending on when these activities were performed.

Thirty days following the issuance of the first COL to Duke Energy, Progress Energy Florida will implement the Duke Energy Quality Assurance Topical Report for 10 CFR Part 52 Licenses, NGGM-PM-0033, as discussed in Section 17.5 and as provided in Part 11 of the COLA. The applicable portions of the QAPD will be utilized for activities related to the design, construction and operational phases for the new nuclear units. As stated in FSAR Table 13.4-201, full implementation of the operations phase requirements will begin no later than 30 days prior to the fuel load.

STD DEP 1.1-1

17.5 QUALITY ASSURANCE PROGRAM DESCRIPTION – NEW LICENSE APPLICANTS

LNP COL 17.5-1
STD COL 17.5-2
STD COL 17.5-4
STD COL 17.5-8

The Quality Assurance Program in place during the design, construction, and operations phases is described in the QAPD, which is maintained as a separate document. This QAPD is incorporated by reference (see Table 1.6-201). This QAPD is based on NEI 06-14A, "Quality Assurance Program Description" (Reference 206).

Conformance statements for QA-related Regulatory Guides (including Regulatory Guides 1.28, 1.30, 1.33, 1.38, 1.39, 1.94, and 1.116) are provided in Appendix 1AA. While many Regulatory Guide positions can be identified as applicable to the scope of work identified and addressed by the DCD and others can be identified as applicable to the scope of work identified and addressed by the COLA, some QA guidance related positions could be accomplished by either scope of work and thus be addressed in either the DCD or the COLA. These positions are primarily dependent on who performs the work. The DCD conformance statement indicates an exception to apply NQA-1. The COLA identifies an exception to apply NQA-1. Per DCD Section 17.3, WEC work performed up to March 15, 2007 applied a 1991 version of the standard. A 1994 version of the standard is applied for work performed after that date by WEC. If the work is performed under the applicant's COL program, the 1994 version of NQA-1 identified in the COLA QAPD is applied. Thus, DCD scope (identified in DCD Appendix 1A) and "remaining scope" differentiate the application of the guidance identified in these Regulatory Guides.

LNP COL 17.5-1

The QAPD is NGGM-PM-0033, Duke Energy Quality Assurance Topical Report for 10 CFR Part 52 Licenses.

LNP COL 17.5-1
STD COL 17.5-2
STD COL 17.5-4
STD COL 17.5-8

Table 13.4-201 provides milestones for operational quality assurance program implementation.

LNP COL 17.5-1

The Quality Assurance Program in place prior to implementation of the QAPD is described in Section 17.1.

STD DEP 1.1-1

17.8 REFERENCES

Section 17.6 of the referenced DCD is incorporated by reference with the following departures and/or supplements.

---

201. Shearon Harris Nuclear Power Plant Unit 1 Final Safety Analysis Report (current revision), Docket Number 50-400.

202. Progress Energy Program Manual NGGM-PM-0030, Quality Assurance Plan for New Nuclear Plant Development and Construction Activities.

203. Sargent & Lundy (S&L) LLC, Nuclear Quality Assurance Program, Topical Report SL-TR-1A.

204. WorleyParsons Resources & Energy, Nuclear Quality Manual, NQM-01.

205. CH2M HILL Quality Assurance Program, Nuclear Business Group Quality Manual NBG QA-02-00.

206. Nuclear Energy Institute, Technical Report NEI 06-14A, "Quality Assurance Program Description," Revision 7, August 2010.

207. Nuclear Energy Institute, "Generic FSAR Template Guidance for Maintenance Rule Program Description for Plants Licensed Under 10 CFR Part 52," NEI 07-02A, Revision 0, March 2008.

Part 4 Conforming Changes
(7 pages including this page)

Levy Nuclear Plant Units 1 and 2
COL Application
Part 4, Technical Specifications

PLANT SPECIFIC TECHNICAL SPECIFICATIONS (PSTS)

The AP1000 Generic Technical Specifications (GTS) and Bases of the referenced DCD (See FSAR Table 1.6-201) Section 16.1 are incorporated by reference into these plant specific technical specifications (PSTS) with the following departures and/or supplements. Section A addresses the completion of the bracketed information from the DCD GTS and Bases in response to COL information item 16.1-1. Section B provides a complete copy of the PSTS and Bases suitable for enclosing with the Combined License.

Section A. PSTS and Bases Differences from the DCD GTS and Bases (LNP COL 16.1-1)

1. All generic bracketed items in the GTS and Bases have been completed. Plant-specific bracketed items are addressed in Section A.2.

2. The remaining bracketed items in the GTS and Bases are plant specific and are addressed as follows. PSTS pages reflecting each PSTS change to the DCD GTS and Bases are provided in the Section B clean copy.

GTS 4.1

The bracketed information in the GTS reads:
[Not applicable to AP1000 Design Certification. Site specific information to be provided by the COL applicant.]

Replace the bracketed information in the GTS with the following:
The site for the Levy Nuclear Plant (LNP) is located in the southern part of Levy County, Florida, east of U.S. Highway 19/98 (SR 55) and near the cities and towns of Inglis, Yankeetown, and Crystal River.

Justification:
Bracketed information is replaced to establish the site location for Levy Nuclear Plant, Units 1 and 2 (LNP) consistent with the site location identified in FSAR Section 2.1.1.1.

GTS 4.1.1

The bracketed information in the GTS reads:
[This information will be provided by the combined license applicant.]

Replace the bracketed information in the GTS with the following:

The Site and Exclusion Area Boundaries are shown in Figure 4.1-1.

Justification:
Bracketed information is replaced to establish Site Boundary and Exclusion Area Boundary for LNP consistent with the descriptions identified in FSAR Sections 2.1.1.2 and 2.1.1.3.

GTS 4.1.2

The bracketed information in the GTS reads:
[This information will be provided by the combined license applicant.]

Replace the bracketed information in the GTS with the following:
The LPZ is defined by the 3 mile radius from the site center point as shown in Figure 4.1-2.

Justification:
Bracketed information is replaced to establish the LPZ for LNP consistent with the descriptions identified in FSAR Section 2.1.3.4.

GTS 5.1.1

The bracketed information in the GTS reads:
The [Plant Manager] shall be responsible for overall unit operations and shall delegate in writing the succession to this responsibility during his absence.
The [Plant Manager] or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect nuclear safety.

Replace the bracketed information in the GTS with the following:
The plant manager shall be responsible for overall unit operations and shall delegate in writing the succession to this responsibility during his absence.
The plant manager or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect nuclear safety.

Justification:
Position titles are used consistent with the FSAR organization description in Section 13.1.

GTS 5.1.2

The bracketed information in the GTS reads:
The [Shift Supervisor (SS)] shall be responsible for the control room command function. During any absence of the [SS] from the control room while the unit is in MODE 1, 2, 3, or 4, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the [SS] from the control room while the unit is in MODE 5 or 6, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

Replace the bracketed information in the GTS with the following:
The shift manager (SM) shall be responsible for the control room command function. During any absence of the (SM) from the control room while the unit is in MODE 1, 2, 3, or 4, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the (SM) from the control room while the unit is in MODE 5 or 6, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

Justification:
Position titles are used consistent with the FSAR organization description in Section 13.1.

GTS 5.2.1.a

The bracketed information in the GTS reads:
These requirements including the plant-specific titles of those personnel fulfilling the responsibilities of the positions delineated in these Technical Specifications shall be documented in the [FSAR/QA Plan].

Replace the bracketed information in the GTS with the following:
These requirements including the plant-specific titles of those personnel fulfilling the responsibilities of the positions delineated in these Technical Specifications shall be documented in the FSAR.

Justification:
Progress Energy has established that these requirements will be documented in the FSAR.

GTS 5.2.1.b

The bracketed information in the GTS reads:
The [Plant Manager] shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant.

Replace the bracketed information in the GTS with the following:
The plant manager shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant.

Justification:
Position titles are used consistent with the FSAR organization description in Section 13.1.

GTS 5.2.2

The bracketed information in the GTS reads:
REVIEWER'S NOTE – [Determination of the unit staff positions, numbers, and qualifications are the responsibility of the COL applicant. Input provided in WCAP-14694, Revision 0, for the MCR staff and WCAP-14655, Revision 1, for other than the MCR staff will be used in the determination. Each of the following paragraphs may need to be corrected to specify the plant staffing requirements.]

Remove the reviewer's note information in the GTS. There is no replacement language.

Justification:
The reviewer's note information for this specification is deleted because it is not intended to be a part of the plant specific technical specifications.

GTS 5.2.2

The bracketed information in the GTS reads:
[The unit staff organization shall include the following:
a. A non-licensed operator shall be assigned to each reactor containing fuel and an ... b., c., d., e., f... ...Policy Statement on Engineering Expertise on Shift.]

Remove the brackets and adopt the bracketed information in the GTS except that 5.2.2.d is omitted, 5.2.2.e and 5.2.2.f are renumbered as 5.2.2.d and 5.2.2.e, respectively, and reference to 5.2.2.f in 5.2.2.b is renumbered as 5.2.2.e.

Justification:
Generic TS bracketed information is applicable and adopted except for GTS 5.2.2.d which is no longer necessary due to revisions to Part 26 since the approval of the GTS. The removal of GTS 5.2.2.d is consistent with TSTF-511 identified by the NRC as an appropriate change to

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1 The plant manager shall be responsible for overall unit operations and shall delegate in writing the succession to this responsibility during his absence.

The plant manager or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect nuclear safety.

5.1.2 The shift manager (SM) shall be responsible for the control room command function. During any absence of the SM from the control room while the unit is in MODE 1, 2, 3, or 4, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the SM from the control room while the unit is in MODE 5 or 6, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.

a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements including the plant-specific titles of those personnel fulfilling the responsibilities of the positions delineated in these Technical Specifications shall be documented in the FSAR;

b. The plant manager shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant;

c. A specified corporate officer shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety; and

d. The individuals who train the operating staff, carry out health physics, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operation pressures.

5.2.2 Unit Staff

The unit staff organization shall include the following:

a. A non-licensed operator shall be assigned to each reactor containing fuel and an additional non-licensed operator shall be assigned for each control room from which a reactor is operating in MODE 1, 2, 3, or 4.

b. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.e 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.

5.2 Organization

5.2.2 Unit Staff (continued)

c. A radiation protection technician shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.

d. The operations manager or assistant operations manager shall hold an SRO license. |

e. An individual shall provide advisory technical support to the unit operations shift crew in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. This individual shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.

Part 5 Conforming Changes
(15 pages including this page)

ACRONYMS AND ABBREVIATIONS

µCi	Microcurie
AAT	Accident Assessment Team
AC	alternating current
ALARA	As Low As Reasonably Achievable
ANI	American Nuclear Insurers
ANSI	American National Standards Institute
AP1000	Westinghouse Electric Company, LLC AP1000
CDE	Committed Dose Equivalent
CFR	Code of Federal Regulations
cm	centimeter
cpm	counts per minute
CR	Control Room
CR3	Crystal River-3 Nuclear Plant
CVT	Current Value Table
DC	direct current
DCD	AP1000 Design Control Document
DDS	Data Display and Processing System
DEM	State of Florida Department of Community Affairs, Division of Emergency Management
DHBRC	Department of Health, Bureau of Radiation Control
DHS	U.S. Department of Homeland Security
DOE	U.S. Department of Energy
dpm	disintegrations per minute

ACRONYMS AND ABBREVIATIONS

MWe	megawatt electric
NLO	Non-licensed Operator
NOAA	National Oceanic and Atmospheric Administration
NRC	U.S. Nuclear Regulatory Commission
NRF	National Response Framework
SM	Shift Manager
NWS	National Weather Service
OCLAN	Operations Center Local Area Network
ODCM	Off-site Dose Calculation Manual
ORAU	Oak Ridge Associated Universities
OSC	Operations Support Center
PA	Public Address
PABX	Private Automatic Branch Exchange System
PAG	Protective Action Guide
PAR	Protective Action Recommendation
PAZ	Protective Action Zones
PE	Progress Energy
PEF	Progress Energy Florida, Inc.
PF	Protection Factor
PIP	Plant Investment Protection
PLS	Plant Control System
PMCL	Protective Measures Counterpart Link
PNSC	Plant Nuclear Safety Committee

ACRONYMS AND ABBREVIATIONS

TSC	Technical Support Center
UHF	ultra high frequency
VBS	nonradioactive ventilation system
VES	emergency habitability system
Westinghouse	Westinghouse Electric Company, LLC
WCAP	Westinghouse Commercial Atomic Power

radiological emergency response plans. DHS/FEMA Region IV will provide assistance and guidance jointly with other federal agencies.

12. Progress Energy – LNP Emergency Response Organization (ERO)

The LNP staff has the immediate and continuing responsibility for emergency response and control of emergency activities at the Site.

The LNP ERO and its functions are predefined. Personnel assignments are specified and updated on a continuous basis to provide automatic, unambiguous staffing of the LNP ERO in order to respond effectively within the designated time.

The LNP ERO is prepared to function on a 24-hour basis and performs the initial and primary emergency technical, radiological, warning, and health support response. This organization also evaluates the emergency and initiates the necessary technical actions to control it. It is also supported on a broad scale by numerous off-site organizations in the local, state, federal, and private sectors.

The Shift Manager (SM) at LNP has the responsibility and authority to declare an emergency classification and initiate appropriate actions in accordance with written procedures to mitigate the consequences of that emergency. The SM also has the responsibility to notify the Plant Manager as soon as possible after an emergency classification has been determined. The SM serves as the Emergency Coordinator (EC) until the Plant Manager, or designated alternate, arrives to assume the position of EC.

The EC is responsible for the direction of all activities at the plant site during any emergency. Should the evaluation indicate that extreme measures must be taken, the EC has the authority to direct any or all personnel to evacuate the site, to place any or all site generating units in a safe shutdown condition, and to notify all applicable agencies of the site's status. The EC ensures that appropriate actions are taken to mobilize emergency teams and to notify corporate management and other off-site supporting organizations and regulatory agencies as necessary. The EC reports to the EOF Director after the EOF is operational.

13. Citrus Memorial Hospital

Citrus Memorial Hospital in Inverness, Florida, will provide definitive medical care for serious cases of radiation exposure or

B. ON-SITE EMERGENCY ORGANIZATION

Initial staffing of the LNP Emergency Response Organization (ERO) is provided from personnel normally employed at the Site. The LNP ERO is shown in Figure B-1. If necessary, this staff will be augmented by additional Progress Energy personnel and other organizations.

General elements of the LNP organization are briefly described in Section A. This section provides additional detail and includes a description of the ERO, a discussion of command and control, and a description of ERO personnel responsibilities.

1. ON-SITE EMERGENCY ORGANIZATION

The personnel and resources of the LNP organization utilized for normal operations provide the basic capabilities that will be utilized in emergency situations. All plant activities are under the direction and control of the Plant Manager. To provide support in required areas, the normal organization is broken down into functional areas led by designated managers. As appropriate, these areas are further subdivided according to specific technical disciplines or support functions.

Table B-1 provides a full description of minimum staffing requirements for emergencies per number of units.

In addition to personnel listed in Table B-1, the full organizational complement of Chemistry, Health Physics, Maintenance, Technical Support, and Administrative personnel will be available during normal working hours.

Upon declaration of an emergency, designated members of the normal staff complement corresponding roles within the emergency response organization. For example, radiation protection personnel undertake radiation protection activities, security personnel undertake security activities, engineering personnel focus on plant assessment and technical support for operations, and operations personnel focus on plant operations.

2. EMERGENCY COORDINATOR

The Shift Manager will assume the position of Emergency Coordinator (EC) of the affected unit until relieved by the Plant Manager or designated alternate. Upon recognition of an emergency condition, the individual filling this position assumes the duties of the EC until relieved or until termination of the emergency condition, whichever comes first.

The individual filling the EC role has the responsibility and authority to initiate required emergency response actions, including notification of affected state, local, and federal authorities and provision of Protective Action Recommendations to off-site authorities.

3. EMERGENCY COORDINATOR LINE OF SUCCESSION

If the Shift Manager is rendered unable to fulfill the duties and responsibilities of the EC or becomes incapacitated for any reason, a designated alternate shall assume the position of EC. The Plant Manager or a designated alternate assumes the position of EC as soon as possible after an emergency classification has been determined.

4. EMERGENCY COORDINATOR RESPONSIBILITIES

The EC has the responsibility and authority to declare an emergency classification and to initiate appropriate actions in accordance with written procedures to mitigate the consequences of the emergency. The EC also has the responsibility to notify the Plant Manager, or the designated alternate, who shall assume the position of EC.

The EC is responsible for the direction of all activities at the LNP Site during any emergency. The EC shall also evaluate the emergency and take the necessary actions to maintain control. Should the EC's evaluation indicate that extreme measures must be taken, the EC has the authority to direct any or all personnel to evacuate the LNP Site, to direct a safe shutdown, to initiate accountability and evacuation of personnel, and to notify all applicable agencies of the plant status or required outside assistance. Should an emergency situation appear to require long-term response and support, the EC shall provide personnel assignments for continuing response. The highest level of authority for on-site emergency activities will remain with the EC who may delegate responsibilities to other personnel, as the EC deems necessary.

The EC shall not delegate the responsibility for decisions related to:

1. Emergency classification
2. Notifications of state, counties, and NRC
3. Protective action recommendations to state and local authorities responsible for off-site emergency measures
4. Approval of planned radiation exposures for LNP personnel in excess of 5 rem total effective dose equivalent (TEDE) or entry into radiation fields greater than 25 rem/hour
5. Review and approval of deviations from Technical Specifications or license conditions if the EC – TSC is a Shift Manager, or ensure that such deviations are approved by a Shift Manager
6. Authorization of the administration of potassium iodide to on-site emergency workers
7. Termination of the emergency.

When the EOF is declared operational and staffed by both Progress Energy and DEM personnel, the EOF Director will assume responsibility for protective action recommendations and notifications to state and county authorities (Items 2 and 3). The EC reports to the EOF Director.

5. PLANT EMERGENCY RESPONSE STAFF

The following sections describe the positions, titles, and major tasks of the personnel assigned to the functional areas of emergency activities. Table B-1 provides a complete summary of minimum staffing requirements for emergencies. Figures B-2 and B-3 describe augmented staffing to support activation of emergency response facilities, including minimum staffing and support positions.

5.1 ON-SITE EMERGENCY RESPONSE ORGANIZATION

In the event of an emergency, the Shift Manager assumes the role of Emergency Coordinator (EC), on the affected unit. In the event of a site-wide emergency (e.g., security event or natural phenomena), Unit 1 will take the lead, and the Shift Manager will assume the role of EC. During a classified emergency, only the TSC and OSC of the affected or lead unit will be activated.

a. Shift Manager (SM): Until an emergency is declared, the Shift Manager has the following responsibilities relating to the Emergency Plan:

1. Direct the activities of the Operations staff (Unit Supervisors, Control Room Operators, and Non-licensed Operators [NLOs]).

2. Recognize an off-normal condition as indicated by instrument readings, direct observation of plant conditions, or an on-site/off-site report of conditions that may impact the plant.

3. Implement any Emergency Operating Procedures.

4. Determine when an Emergency Action Level has been met or exceeded, declare an emergency, and assume the position of EC – Control Room (CR) until relieved by the Plant Manager or designated alternate.

b. Unit Supervisor: The Unit Supervisor is a licensed SRO whose primary function is to administratively support the SM and to supervise the licensed and non-licensed operators in carrying out actions, as directed by the SM. The Unit Supervisor reports directly to the SM. Other duties include:

1. Maintaining awareness of maintenance and testing performed during the shift.

2. Shutting down the reactor if conditions warrant.

3. Informing the SM and other plant management in a timely manner of conditions which might affect public safety, plant personnel safety, plant capacity or reliability, or cause a hazard to equipment.

4. Performing emergency response actions during a classified emergency as directed by the SM.

c. Control Room Operators: The Control Room Operators are licensed reactor operators who report to the Unit SCO. They are responsible for routine plant operations and performance of major evolutions as directed. Other responsibilities include monitoring Control Room instrumentation; responding to plant or equipment abnormalities; directing activities of non-licensed operators; and initiating plant shutdowns or scrams or other compensatory actions when observation of plant conditions indicates a nuclear safety hazard, or when directed by procedures. Control Room Operators provide support during a classified emergency as directed by the Unit SCO.

d. Non-Licensed Operators: Non-licensed operators are assigned to each shift and are responsible for operating plant equipment throughout the plant. Duties include assisting in plant startup, shutdown and surveillance activities as directed. During a classified emergency, Non-Licensed Operators are assigned to emergency repair and damage control teams or other emergency response functions, as necessary.

e. Shift Technical Advisor (STA): The STA reports directly to the SM and provides advanced technical assistance to the operating shift complement during normal and abnormal operating conditions. Responsibilities include monitoring core power distribution and critical parameters and independently observing plant status and advising shift supervision of conditions that could compromise plant safety. During a classified emergency, the STA independently assesses plant conditions and provides technical assistance and advice to mitigate the incident.

f. Emergency Coordinator – CR: The primary person assigned to the position of EC during the initial stages of an emergency is the Shift Manager. The assigned alternates are on-shift Licensed Senior Reactor Operators, as designated in accordance with operations procedures.

g. Emergency Communicator: Initially filled with on-shift personnel assigned to the Control Room, and subsequently by the Emergency Communicator assigned to the TSC. The Emergency Communicator is appointed by and reports to the EC and is responsible for communicating with the following:

   1. Local Immediate Response Organizations (e.g., medical, fire, and law enforcement), if their assistance is needed.
   2. The plant ERO when LNP emergency facilities are being activated.

3. Off-site authorities (e.g., state, counties, and the NRC) to perform required notifications of the declaration, upgrading, and termination of an emergency prior to the activation of the Technical Support Center (TSC) and EOF.

The Emergency Communicator is also responsible to ensure an open, continuous communications channel is maintained with the NRC Operations Center over the ENS and/or HPN circuits, if requested.

h. Emergency Coordinator – TSC: Once the EOF/TSC are activated, the EC – TSC is responsible for overall command and control of the on-site response to the emergency. The EC – TSC is also responsible for providing guidance to the Accident Assessment Coordinator, Radiation Controls Coordinator, Repairs Coordinator, Security Coordinator, and Communications/Report Coordinator.

Upon activation of the Technical Support Center, the EC – TSC relieves the EC – CR of the following major responsibilities:

1. Classification of the emergency.
2. Development of Protective Action Recommendations (PARs).
3. Notifications of State, counties, and NRC.
4. Establishment of on-site mission priorities in response to the emergency.
5. Approval of planned radiation exposures for on-site personnel in excess of 5 rem TEDE or entry into radiation fields greater than 25 rem/hr.
6. Review and approval of deviations from Technical Specifications or license conditions if the EC – TSC is a Shift Manager, or ensure that such deviations are approved by a Shift Manager.
7. Authorization of the administration of potassium iodide to on-site emergency workers.
8. A trained Severe Accident Management Guidelines (SAMG) decision maker whose focus is on the development and prioritization aspect of the SAMG strategy.
9. Termination of the emergency.

i. Accident Assessment Coordinator: The Accident Assessment Coordinator is located in the TSC and reports to the EC-TSC; responsible for coordinating Accident Assessment Team strategies to support accident mitigation.

e. Technical Support Coordinator: The Technical Support Coordinator is located in the EOF and reports to the EOF Director; responsible for assisting the TSC Accident Assessment Team in identifying accident mitigation activities and monitoring critical safety system functions.

f. Representatives to the State/County EOCs: The representatives to the State/County EOCs are located at the following:

FL State EOC	State Administrative Building in Tallahassee, FL
Citrus County EOC	Lecanto, FL
Levy County EOC	Bronson, FL
Marion County EOC	Ocala, FL

These representatives act as technical liaisons to facilitate communications and the coordination of information flow between the EC or EOF Director and state/local authorities. They report to the Assistant EOF Director.

g. Emergency News Center (ENC): The ENC Staff is responsible for dissemination of information to the public and the news media under the direction of the Public Information Director.

Outside organizations that support LNP in an emergency include CR3 and other organizations as described in Section A, Assignment of Responsibility (Organizational Control).

6. INTERFACES BETWEEN FUNCTIONAL AREAS

Figure A-1 illustrates the interfaces among functional areas of LNP emergency response activity, Progress Energy corporate support, and the affected state, local, and federal government response organizations.

7. CORPORATE SUPPORT FOR THE PLANT STAFF

Within the overall corporate organization, additional elements exist to directly control and support the operation of LNP. The Plant Manager and the entire LNP staff are a part of the Nuclear Generation organization. The Plant Manager reports to the Site Executive, Levy Nuclear Plant, who, in turn, reports to the Executive – Nuclear Operations Site Group. The Executive – Nuclear Operations Site Group reports to the Group Executive & Chief Nuclear Officer – Nuclear, who, in turn, reports to the Chairman, President and Chief Executive Officer – Duke Energy.

Table B-1 (Sheet 1 of 2)
Minimum Staffing Requirements for Emergencies

Functional Area	Location	Major Tasks	Emergency Positions	Minimum Shift Size (Unit 1)	Minimum Shift Size (Units 1 & 2)	Capability for Additions (from time of notification) 30 min	60 min
1. Plant Operations and Assessment of Operational Aspects	Control Room	Control Room Staff	Shift Manager (SM)[a] Unit Supervisor Control Room Operators Non-Licensed Operators	1 1 2 2[b]	1 2 4 4[b]	-- -- -- --	-- -- -- --
2. Emergency Direction and Control	Control Room EOF TSC	--	EC – CR (SM[c]) EOF Director[d] EC – TSC[d]	1 -- --	1 -- --	-- -- --	-- 1 1
3. Notification and Communication	CR/TSC/EOF	Emergency Communicator	Plant Personnel	1	2	1	2
4. Radiological Assessment	EOF	Off-site Dose Assessment	Dose Projection Team Leader	--	--	1	--
	EOF	Off-site Surveys	Radiological Monitoring Team Personnel	--	--	2	2
	OSC	On-site Surveys	Radiological Control Team Personnel	--	--	1	1
	OSC	In-plant Surveys	Radiological Control Team Personnel	1	2	1	1
	OSC	Chemistry	Chemistry Team Personnel	1	2	--	1

(Continued on next page)

NOTES:

a) After activation of the EOF and TSC.

b) One of the two non-licensed operators may be assigned to the Fire Brigade.

c) On shift responsibility prior to activation of the EOF and TSC.

d) Overall direction of facility response is assumed by the EOF Director when all facilities are activated. The direction of minute-to-minute facility operations remains with the EC – TSC.

Table E-1
Notification of Response Organizations for Each Emergency Classification

Notified Organization or Individual	Emergency Classification			
	Unusual Event	Alert	Site Area Emergency	General Emergency
LNP Personnel	X	X	X	X
Plant Manager[1]	X	X	X	X
EOF Director	X	X[2]	X[2]	X[2]
NRC[3]	X	X	X	X
State Warning Point-Tallahassee	X	X	X	X
Citrus/Levy/Marion County EOCs	X	X	X	X
Florida DHBRC[3]	X[4]	X[4]	X[4]	X[4]
Westinghouse	(5)	(5)	(5)	(5)
Medical Support Organizations	(5)	(5)	(5)	(5)
Institute of Nuclear Power Operations (INPO)		X[6]	X[6]	X[6]

NOTES:

1) If the Plant Manager has not already assumed the position of EC.

2) The EOF Director alerts/activates the EOF staff.

3) For any condition involving, or potentially involving, radioactive releases, property damage, or other specific events as indicated in emergency plan implementing procedures, NRC and DHBRC notification may be required.

4) The EC notifies the DHBRC only.

5) If the nature of the particular emergency requires specific assistance.

6) The EOF Director, or designee, notifies INPO.

Table F-1
On-site Communications

COMMUNICATIONS SYSTEM	CONTROL ROOM	TSC/OSC	SECURITY OPERATIONS CENTER	NRC RESIDENT INSPECTOR'S OFFICE (LNP)
Commercial Telephone	X	X	X	X
Voicenet System	X	X	X	X
FDLE Radio	X		X	
ESATCOM	X	X		
Emergency Notification System (ENS)	X	X		
ERDS	X			
Health Physics Network (HPN)		X		
Site Telephone Page System	X	X	X	X
Wireless Telephones	X	X	X	X
Portable UHF Radios	X(1)	X(1)	X(1)	
Evacuation Alarms	X	X	X	X
State Hot Ringdown System	X	X		
TSC/EOF Ringdown Phone		X		
Accident Assessment Ringdown	X	X		
Dose Assessment Ringdown	X	X		
Facsimile Transmittal System	X	X		
PRIMARY COMMUNICATORS	SHIFT MANAGER (2)	EMERGENCY COORDINATOR (2)	SECURITY SHIFT SUPERVISOR	RESIDENT INSPECTOR

NOTE: 1) Assigned as required by the Emergency Coordinator.
2) Or designees.

areas, and the source of directives from the state government to the county EOCs. The inter-relationship of Progress Energy with these centers and federal agencies (see implementing procedures) assures prompt emergency response and appropriate actions for all affected organizations and the general public.

4. ACTIVATION AND STAFFING OF EMERGENCY RESPONSE FACILITIES

NUREG-0654 Criterion II.B.5 states that the "licensee must be able to augment on-shift capabilities within a short period after declaration of an emergency." It further defines that short period as 30 and 60 minutes.

Progress Energy has put into place plans and procedures to ensure timely activation of the emergency response facilities. The Shift Manager, acting as Emergency Coordinator (EC), will initiate a call-out in accordance with emergency plan implementing procedures. The Emergency Response Organization (ERO) augmentation process identifies individuals who are capable of fulfilling the specific response functions that are listed in Table B-1, Minimum Staffing Requirements for Emergencies. This table was developed based on the functions listed in NUREG-0654, Table B-1. The "Capability for Additions" times shown in Table B-1, Minimum Staffing Requirements for Emergencies, are from time of notification.

Depending on the emergency, personnel with required expertise will be contacted on a priority basis, as shown in Table B-1. Additional personnel will be available to provide communications; onsite and offsite radiological assessment; repair and corrective actions; and technical support within a short period of time.

A goal of 60 minutes for minimum staffing, following the notification of an Alert has been established for the ERO personnel responding to the station emergency facilities. A goal of 60 minutes for minimum staffing, following the notification of a Site Area Emergency or higher emergency classification, has been established for the ERO personnel responding to the station emergency facilities and EOF. Additionally, plans have been developed to ensure timely functional activation and staffing of the ENC when the classification of a Site Area Emergency or higher emergency classification is declared.

It is the goal of the organization to be capable of declaring the applicable emergency response facility operational within 15 minutes of achieving minimum staffing. The facility can be declared operational when the following conditions are met:

- Minimum staffing has been achieved.
- Personnel have been briefed on the situation and a proper turnover has been conducted.
- The facility is functionally capable of performing the appropriate emergency response activity.