Grand Gulf Nuclear Station

Unit 3

Combined

License

Application

Part 11: Enclosures

Part 11A: Quality Assurance Program Description

Part 11B: Environmental Protection Plan

Revision 0

February 2008

Grand Gulf Nuclear Station

Unit 3

Combined

License

Application

Part 11A: Quality Assurance Program Description

Revision 0

February 2008

Quality Assurance Program Description

Title: Entergy New Nuclear Quality Assurance Program Description

Process/Program Owner: **Director Oversight**

	Version Number	Effective Date
	Revision 0	

Revision Summary

Prepared By/Date:

_____ /_____
Project Manager Quality Assurance

Reviewed By/Date:	Approved By/Date:
_____/_____ Director, Licensing and QA	_____/_____ Vice President Business Development

Entergy Nuclear

POLICY STATEMENT

Entergy (Entergy Operations, Inc. [EOI] and Corporate Support functions) shall design, procure, construct and operate new 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 Entergy New Nuclear Quality Assurance Program (QAP) is the Quality Assurance Program Description (QAPD) for new plants provided in this document and the associated implementing documents. Together they provide for control of Entergy new plant 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 Entergy'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 Entergy QAP.

Signed _____
Michael R. Kansler
Chief Executive Officer
Entergy Nuclear

Date _____

TABLE OF CONTENTS

POLICY STATEMENT ..... **i**
PART I INTRODUCTION **1**
SECTION 1 GENERAL 1
1.1 Scope / Applicability 1
PART II QAPD DETAILS **2**
SECTION 1 ORGANIZATION 2
1.1 Chief Executive Officer (CEO) 2
1.2 Senior Executives 2
1.3 Oversight & Regulatory Affairs 3
1.4 Engineering & Technical Support 3
1.5 Plant Operations 3
1.6 Project Manager Quality Assurance 3
1.7 Support & Shared Services 4
1.8 Agents & Contractors 4
1.9 Authority to Stop Work 4
1.10 Quality Assurance Organizational Independence 4
1.11 NQA-1-1994 Commitment 4
SECTION 2 QUALITY ASSURANCE PROGRAM 5
2.1 Responsibilities 6
2.2 Delegation of Work 6
2.3 ESP and COL Identification of Site Specific Safety-Related Design Basis Activities 6
2.4 Periodic Review of the Quality Assurance Program 7
2.5 Issuance and Revision to Quality Assurance Program 7
2.6 Personnel Qualifications 7
2.7 Independent Review 8
2.8 NQA-1-1994 Commitment / Exceptions 9
SECTION 3 DESIGN CONTROL 11
3.1 Design Verification 11
3.2 Design Records 12
3.3 Computer Application and Digital Equipment Software 12
3.4 Setpoint Control 12
3.5 NQA-1-1994 Commitment 12
SECTION 4 PROCUREMENT DOCUMENT CONTROL 13
4.1 NQA-1-1994 Commitment 13
SECTION 5 INSTRUCTIONS, PROCEDURES, AND DRAWINGS 15
5.1 Procedure Adherence 15
5.2 Procedure Content 15
5.3 NQA-1-1994 Commitment 15
SECTION 6 DOCUMENT CONTROL 16
6.1 Review and Approval of Documents 16
6.2 Changes to Documents 17
6.3 NQA-1-1994 Commitment 17
SECTION 7 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES 18
7.1 Acceptance of Item or Service 18
7.2 NQA-1-1994 Commitment 19
SECTION 8 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS 21

8.1 NQA-1-1994 Commitment 21
SECTION 9 CONTROL OF SPECIAL PROCESSES 22
9.1 NQA-1-1994 Commitment 22
SECTION 10 INSPECTION 23
10.1 NQA-1-1994 Commitment / Exceptions 24
SECTION 11 TEST CONTROL 25
11.1 NQA-1-1994 Commitment 25
11.2 NQA-1-1994 Commitment for Computer Program Testing 25
SECTION 12 CONTROL OF MEASURING AND TEST EQUIPMENT 26
12.1 NQA-1-1994 Commitment / Exceptions 26
SECTION 13 HANDLING, STORAGE, AND SHIPPING 27
13.1 Housekeeping 27
13.2 NQA-1-1994 Commitment / Exceptions 27
SECTION 14 INSPECTION, TEST, AND OPERATING STATUS 29
14.1 NQA-1-1994 Commitment 29
SECTION 15 NONCONFORMING MATERIALS, PARTS, OR COMPONENTS 30
15.1 Reporting Program 30
15.2 NQA-1-1994 Commitment 30
SECTION 16 CORRECTIVE ACTION 31
16.1 Reporting Program 31
16.2 NQA-1-1994 Commitment 31
SECTION 17 QUALITY ASSURANCE RECORDS 32
17.1 Record Retention 32
17.2 Electronic Records 32
17.3 NQA-1-1994 Commitment / Exceptions 32
SECTION 18 AUDITS 33
18.1 Performance of Audits 33
18.2 NQA-1-1994 Commitment 34
PART III NONSAFETY-RELATED SSC QUALITY CONTROL 35
SECTION 1 Nonsafety Related SSCs - Significant Contributors to Plant Safety 35
SECTION 2 Nonsafety-Related SSCs Credited for Regulatory Events 38
NRC Regulatory Guides and Quality Assurance Standards 39
Regulatory Guides: 39
Standards: 39

PART I INTRODUCTION

SECTION 1 GENERAL

The Entergy New Nuclear Quality Assurance Program Description (QAPD) is the top-level policy document that establishes the quality assurance policy and assigns major functional responsibilities for ESP/COL/construction/pre-operation and/or operations activities conducted by or for Entergy. The QAPD describes the methods and establishes QAPD and administrative control requirements that meet 10 CFR 50, Appendix B and 10 CFR 52. The QAPD is based on the requirements of ASME NQA–1-1994, "Quality Assurance Requirements for Nuclear Facility Applications," Parts I and II, as specified in this document.

The QAPD is defined by the NRC approved regulatory document that describes the Quality Assurance Program (QAP) elements, along with the associated implementing documents. Procedures and instructions that control Entergy New Nuclear activities will be developed prior to commencement of those activities. 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 Entergy organizations performing those activities such 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

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

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

Safety-related systems, structures, and components, 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 Entergy 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.

PART II QAPD DETAILS

SECTION 1 ORGANIZATION

This Section describes the Entergy (Entergy Operations, Inc. (EOI)) organizational structure, functional responsibilities, levels of authority and interfaces for establishing, executing, and verifying QAPD implementation. The organizational structure includes corporate/support/offsite and onsite functions including interface responsibilities for multiple organizations performing 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 this QAPD. Management gives careful consideration to the timing, extent and effects of organizational structure changes.

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

Entergy Business Development (BD) organization is responsible for new nuclear plant licensing, engineering, procurement, construction, startup and operations development activities. There are several organizations within Entergy which implement and support the QAPD. These organizations include, but are not limited to BD; Planning, Development & Oversight, and Engineering & Technical Support.

Design, engineering and environmental services are provided to the Entergy New Nuclear Sites by a contract that identifies the Engineer and Constructor for the units. This contract will extend the quality program requirements described in this document to all applicable contractors and subcontractors.

The following sections describe the reporting relationships, functional responsibilities and authorities for organizations implementing and supporting the Entergy New Nuclear QA Program.

Organization charts for various departments/locations are contained in Chapter 13 of the respective Station Final Safety Analysis Report (FSAR) and Chapter 13 will describe organizational positions of the nuclear station and owner/applicant corporations and associated functions and responsibilities.

1.1 Chief Executive Officer (CEO)

The CEO is responsible for providing top-level direction for the safe and reliable operations of Entergy's nuclear sites. The CEO has overall responsibility for the implementation of the QAPD.

1.2 Senior Executives

The Senior Executive for Operations has responsibility for overall plant nuclear safety and takes measures needed to provide acceptable performance of the staff in operating, maintaining, and providing technical support to the plant.

The Senior Executive for Planning, Development and Oversight has responsibility for approving the QAPD and implementing quality program requirements applicable to the overall efforts associated with the activities related to the Combined License.

1.3 Oversight & Regulatory Affairs

The executive responsible for oversight is responsible for establishing the goals and objectives of the quality assurance policies, including oversight and maintenance of the QAPD in accordance with regulatory requirements. This executive has unfettered access to the CEO and the Board of Directors.

The executive responsible for oversight has the independence to conduct Quality activities without undue pressure of cost or schedule and is responsible for the following:

- Development, maintenance, and independent verification of implementation of the QAPD; making periodic reports on its effectiveness; review of selected documents which control activities within its scope; and preparation, control, and approval of the QAPD and revisions thereto;

- Identification, initiation, recommendation, or providing solutions to quality-related problems and verify the implementation and effectiveness of the solutions; and

- Independent oversight activities, including audits, independent assessments, evaluations, surveillances, and performance monitoring.

1.4 Engineering & Technical Support

The executive responsible for engineering & technical support activities is responsible for the engineering, design, and construction of new plants including establishing appropriate interface controls for implementing the QAP requirements.

1.5 Plant Operations

The manager responsible for overall plant operations and is responsible for activities related to the operation and maintenance of nuclear plants and responsible for implementing the QAP requirements.

1.6 Project Manager Quality Assurance

The Entergy Project Manager Quality Assurance (PMQA) reports functionally to the Senior Executive for Planning, Development and Oversight, and is responsible for the development and verification of implementation of the Entergy New Nuclear QAPD. The PMQA is responsible for assuring compliance with regulatory requirements and procedures through audits and technical reviews; for monitoring organization processes to ensure conformance to commitments and licensing document requirements; for ensuring that vendors providing quality services, parts, and materials to Entergy are meeting the requirements of 10 CFR 50, Appendix B through NUPIC or vendor audits. The PMQA has sufficient independence from other Entergy priorities to bring forward issues affecting safety and quality and makes judgments regarding quality in all areas necessary regarding Entergy's New Nuclear activities. The PMQA may make recommendations to Entergy management regarding improving the quality of work processes. If the PMQA disagrees with any actions taken by the Entergy organization and is unable to obtain resolution, the PMQA shall bring the matter to the attention of the Senior Executive for Planning, Development and Oversight who will determine the final disposition.

1.7 Support & Shared Services

The executives responsible for support and shared services are responsible for implementing QAP requirements applicable to the following functions: supply chain, records management services and administration, and information technology and responsible for implementing QAP requirements applicable to those functions identified through interface control agreements.

1.8 Agents & Contractors

Entergy will contract the Engineering, Procurement and Construction activities for the new units. These contracts will extend the quality program requirements described in this document to all applicable contractors and subcontractors. The executive responsible for new plant construction is responsible for implementation of the QAP requirements of this document assigned to the Engineering, Construction, and Procurement contractors and subcontractors.

1.9 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 approved procedures or where safety or SSC integrity may be jeopardized. This extends to off-site work performed by suppliers furnishing safety-related materials and services to Entergy for new plants.

1.10 Quality Assurance Organizational Independence

For the COL and/or construction, 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.

1.11 NQA-1-1994 Commitment

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

SECTION 2 QUALITY ASSURANCE PROGRAM

Entergy has established the necessary measures and governing procedures to implement the QAPD as described in the QAPD. Entergy is committed to implementing the Quality Assurance Program 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, Entergy 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. This QAPD also applies to certain nonsafety-related structures, systems, components and activities to a degree consistent with their importance to safety. Senior management is regularly apprised of audit results evaluating the adequacy of implementation of the QAPD through the audit functions described in the Audit Section of this QAPD.

The objective of the QAPD is to assure that Entergy's new 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, licensing, construction and operation of new nuclear power plants as described in the ESP Site Safety Analysis Report and COL Final Safety Analysis Report. Examples of ESP/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 identifying 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.

Specific program controls are applied to non-safety related SSCs, for which 10CFR50, 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 QAPD, 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 project personnel assure that quality expectations are met.

For the ESP and/or COL applications, this QAPD applies to those Entergy activities that can affect either directly or indirectly the safety-related site characteristics or analysis of those characteristics. In addition, this 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 Entergy. Detailed engineering specifications and construction procedures will be developed to implement the QAPD and NSSS QA programs prior to commencement of ESP, Limited Work Authorization (LWA) and/or COL activities. .

In general, the program requirements specified herein are detailed in implementing procedures that are either Entergy implementing procedures, or supplier implementing procedures governed by a supplier quality 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 Entergy are responsible for the achievement of acceptable quality in the work covered by this QAPD. This includes those activities delineated in Part I, Section 1.1 of this QAPD. Entergy 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 PMQA 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

Entergy retains and exercises the responsibility for the scope and implementation of an effective QAPD. Positions identified in the Organization Section of this QAPD 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 ESP and COL Identification of Site Specific Safety-Related Design Basis Activities

COL 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. The development of the Entergy ESP and COL applications will involve site testing, data collection and calculations that may create or bound safety-related design basis data. Site testing and data collection of information pertaining to the physical characteristics of the site that have the potential to affect safety-related design will be considered safety-related. In addition, calculations and other engineering data that bounds or characterizes the site will be classified as safety-related. Entergy will develop an COL application Quality Criteria Document (QCD) identifying the sections of the application that include safety-related design basis activities. In addition the QCD will identify those sections of the application and supporting analysis that will be treated with appropriate quality requirements.

Entergy will develop annotated outlines for the COL application that will identify the sections safety classification and the regulatory requirements applicable to the section content.

2.4 Periodic Review of the Quality Assurance Program

Management of those organizations implementing the QA program or portions thereof, assess the adequacy of that part of the program for which they are responsible and assure its effective implementation at least once each year or at least once during the life of the activity, which ever 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 Entergy Project Manager, QA 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 ESP and COL application development process. New revisions to the document will be reviewed, at a minimum, by the Entergy manager responsible for quality assurance and approved by the Vice President - Business Development.

10 CFR 50.34(b)(6)(ii) requires that the 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.

2.6 Personnel Qualifications

Personnel assigned to implement elements of the QAPD shall be capable of performing their assigned tasks. To this end Entergy 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 each site's 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 Entergy 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 managers responsible for Quality Assurance & Oversight are that each holds an engineering or related science degree and has a minimum of four years or related experience (3 of the 4 years must include 2 years of nuclear power plant experience and 1 year of supervisory or management experience. One year of experience 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 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 FSAR. The Independent Review Committee (IRC) 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 FSAR. Changes to proposed tests and experiments not described in the FSAR that do require a Technical Specification change must be reviewed by the IRC prior to NRC submittal and implementation.

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 reportable events that are required to be reported to the NRC in writing within 24 hours. 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 IRC member,

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

g. Reviews the adequacy of the audit program every 24 months.

Independent Review Committee

1. An independent review committee is assigned independent review responsibilities.

2. The independent review committee reports to a management level above the plant manager.

3. The independent review committee is composed of no less the 5 persons, no more than a minority of members are from the onsite operating organization.

   For example, at least 3 of the 5 members must be from offsite if there are 5 members on the committee. A minimum of the chairman or alternative chairman and 2 members must be present for all meetings.

4. During the period of initial operation, meetings are conducted no less frequently than once per calendar quarter. Afterwards meetings are conduced no less than twice a year.

5. Results of the meeting are documented and recorded.

6. The Independent Review Committee is responsible for performing the functions outlined in 2.7 Independent Review above.

7. Consultants and contractors are used for the review of complex problems beyond the expertise of the offsite/onsite independent review committee.

8. Persons on the independent review committee are qualified as follows:

   a. Supervisor or Chairman of the Independent Review Committee
      - Education: baccalaureate in engineering or related science
      - Minimum experience: 6 years combined managerial and technical support

   b. Independent Review Committee members

   Education: Baccalaureate in engineering or related science for those Independent review personnel who are required to review problems in
   - nuclear power plant operations,
   - nuclear engineering,
   - chemistry and radiochemistry,
   - metallurgy,
   - nondestructive testing,
   - instrumentation and control,
   - radiological safety,
   - mechanical engineering, and electrical engineering.

2.8 NQA-1-1994 Commitment / Exceptions

In establishing qualification and training programs, Entergy 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. 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 performing 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, Entergy 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 Entergy 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 Entergy, 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

Entergy 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 this QAPD. The design process includes provisions to control design inputs, outputs, changes, interfaces, records and organizational interfaces within Entergy 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 Entergy 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 Entergy design organization or by other organizations so authorized by Entergy.

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

3.1 Design Verification

Entergy design processes provide for design verification to ensure that items and activities subject to the provisions of this 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 the item’s intended use.

Entergy 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

Entergy 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 shall govern the development, procurement, testing, maintenance, and use of computer application and digital equipment software when used in safety-related applications and designated nonsafety-related applications. Entergy and suppliers shall be responsible for developing, approving, and issuing procedures, as necessary, to control the use of such computer application and digital equipment software. The procedures shall 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 shall be documented and approved by authorized personnel. This QAPD shall also be 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 procedures shall:

(1) Identify responsibilities and processes for reviewing, approving, and revising setpoints and setpoint changes originally supplied by the NSSS supplier, 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, Entergy commits to compliance with NQA-1-1994, Basic Requirement 3, and Supplement 3S-1, the subsurface investigations requirements contained in Subpart 2.20 and the standards for computer software contained in Subpart 2.7.

SECTION 4 PROCUREMENT DOCUMENT CONTROL

Entergy 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 the Entergy 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

In establishing controls for procurement, Entergy 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, Entergy 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, Entergy procurement documents may allow the supplier to work under the Entergy 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 Entergy 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

Entergy 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 of this QAPD. In addition, means are provided for dissemination to the staff of 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

The Entergy 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 of this QAPD. 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, Entergy commits to compliance with NQA-1-1994, Basic Requirement 5.

SECTION 6 DOCUMENT CONTROL

Entergy 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 system (including electronic systems used to make documents available) shall be documented and shall provide for (a) through (f) below:

(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.

(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 this QAPD including design, construction, installation, operating (including normal and emergency operations), maintenance, calibration, and routine testing

(i) Technical Specifications

(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 shall be reviewed for adequacy by qualified persons other than the preparer. During the construction phase, procedures for design, construction, and installation shall also be reviewed by the organization responsible for quality verification 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 FSAR shall be screened to identify those that require review by the IRC prior to implementation as described in Section 2 of this QAPD.

To ensure effective and accurate procedures during the operational phase, applicable procedures shall be 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;

(e) QA audits conducted in accordance with Section 18.1 of this QAPD.

Prior to issuance or use, documents including revisions thereto, shall be 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, shall be reviewed and approved by the same organizations that performed the original review and approval unless other organizations are specifically designated. The reviewing organization shall have 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, Entergy commits to compliance with NQA-1-1994, Basic Requirement 6 and Supplement 6S-1.

SECTION 7 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

Entergy has established the necessary measures and governing procedures to control the procurement of items and services to assure conformance with specified requirements. Such control shall provide 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

Entergy 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. Entergy may utilize audits conducted by outside organizations for supplier qualification provided that the scope and adequacy of the audits meet Entergy requirements. Documented annual evaluations or continuous 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

In establishing procurement verification controls, Entergy 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

  – Entergy 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 Entergy 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 Entergy 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 shall be performed and shall include a verification of each of the following:

      - The calibration laboratory holds a domestic accreditation by the National Voluntary Laboratory Accreditation Program (NVLAP) or by the American Association for Laboratory Accreditation (A2LA) as recognized by NVLAP through the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA).

      - The accreditation is based on ANS/ISO/IEC 17025.

      - The published scope of accreditation for the calibration laboratory covers the necessary measurement parameters, ranges, and uncertainties.

- For Section 8.1, Entergy considers documents that may be stored in approved electronic media under Entergy 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 Entergy to support operations. The Entergy 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 Entergy 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 Entergy documents to provide the necessary assurance an item will perform satisfactorily in service. The Entergy 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.

- Entergy will also use other appropriate approved regulatory means and controls to support Entergy commercial grade dedication activities. One example of this is NRC Regulatory Issue Summary 2002-22. Entergy will assume 10 CFR 21 reporting responsibility for all items that Entergy dedicates as safety-related.

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

Entergy 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, Entergy commits to compliance with NQA-1-1994, Basic Requirement 8 and Supplement 8S-1.

SECTION 9 CONTROL OF SPECIAL PROCESSES

Entergy 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, Entergy commits to compliance with NQA-1-1994, Basic Requirement 9 and Supplement 9S-1.

SECTION 10 INSPECTION

Entergy 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 shall be documented.

Inspections are performed by qualified personnel other than those who performed or directly supervised the work being inspected. While performing the inspection activity the inspectors functionally report to the associated manager responsible for quality assurance or a manager responsible for materials, purchasing, and contracts as appropriate.

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, inservice, 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: reject, 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.

Inspector Qualification

Entergy has established qualification programs for personnel performing quality inspections. The qualification program requirements are described in Section 2 of this QAPD. These qualification programs are applied to individuals performing quality inspections regardless of the functional group where they are assigned.

10.1 NQA-1-1994 Commitment / Exceptions

In establishing inspection requirements, Entergy commits to compliance with NQA-1-1994, Basic Requirement 10, Supplement 10S-1 and Subpart 2.4, with the clarification that follows below. In addition, Entergy commits to compliance with the requirements of Subparts 2.5 and 2.8 for establishing appropriate inspection requirements.

- Subpart 2.4 commits Entergy 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 Equipment" from IEEE 603-1980. Entergy commits to the definition of Safety Systems Equipment 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 contained in Section 12 of this QAPD.

  Optional alternative for those Entergy sites where the reporting independence of NQA-1-1994, Supplement 10S-1, Section 3.1 may not be met. Where inspections at the operating facility are performed by persons within the same organization (e.g. Maintenance group), Entergy takes exception to the requirements of NQA-1-1994, Supplement 10S-1, Section 3.1, while performing the inspection activity.

  The inspectors functionally report to the associated manager responsible for quality assurance or a manager responsible for materials, purchasing, and contracts as appropriate.

SECTION 11 TEST CONTROL

Entergy has established the necessary measures and governing procedures to demonstrate that items subject to the provisions of this 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 for establishing and adjusting test schedules and maintaining 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, retesting 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 preoperational and initial start-up test programs.

The tests are performed and results documented in accordance with applicable technical and regulatory requirements including those described in the Technical Specifications and FSAR. The test programs ensure appropriate retention of test data in accordance with the records requirements of this QAPD. The personnel performing or evaluating tests are qualified in accordance with the requirements established in Section 2 of this QAPD.

11.1 NQA-1-1994 Commitment

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

11.2 NQA-1-1994 Commitment for Computer Program Testing

Entergy 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 Entergy 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

Entergy 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 shall be controlled as described in Section 7 of this QAPD.

Installed Instrument and Control Devices

For the operations phase of the facilities, Entergy 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.

12.1 NQA-1-1994 Commitment / Exceptions

In establishing provisions for control of measuring and test equipment, Entergy 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

Entergy 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 shall be used and controlled as necessary to ensure safe and adequate handling. Special handling tools and equipment shall be 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 shall be experienced or trained in the use the equipment. During the operational phase, Entergy 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, Entergy 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 cleanness 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, Entergy commits to compliance with NQA-1-1994, Basic Requirement 13 and Supplement 13S-1. Entergy also commits, during the construction and pre-operational phase of the plant, to compliance with the requirements of NQA-1-1994, Subpart 2.1, and Subpart 2.2 with the clarifications and exceptions shown below:

- NQA -1-1994, Subpart 2.2

  – 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, Entergy 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 nuclear power plants during construction.

SECTION 14 INSPECTION, TEST, AND OPERATING STATUS

Entergy 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 this 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.

The administrative procedures also describe the measures taken to control altering the sequence of required tests, inspections, and other operations. The 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, Entergy commits to compliance with NQA-1-1994, Basic Requirement 14.

SECTION 15 NONCONFORMING MATERIALS, PARTS, OR COMPONENTS

Entergy has established the necessary measures and governing procedures to control items, including services, which 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, shall be 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 Entergy procedures, regulatory requirements, and industry standards.

15.1 Reporting Program

Entergy will establish the necessary measures and governing procedures that implement a reporting program which conforms to the requirements of 10 CFR 52, 10 CFR 50.55(e) and/or 10 CFR 21 during ESP/COL and construction and 10 CFR 21 during operations.

15.2 NQA-1-1994 Commitment

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

SECTION 16 CORRECTIVE ACTION

Entergy has established the necessary measures and governing procedures to promptly identify, control, document, classify and correct conditions adverse to quality. Entergy 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. Entergy 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, Entergy 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, the licensee may delegate specific responsibilities of the Corrective Action program but the licensee maintains responsibility for the program's effectiveness.

16.1 Reporting Program

Entergy has in-place the necessary measures and governing procedures that implement a program to identify, evaluate and report defects and non-compliances in accordance with 10 CFR 50.55(e) and/or 10 CFR Part 21, as applicable. Such a reporting program applies to safety-related activities and services performed by Entergy and/or Entergy suppliers / sub-suppliers providing input to the ESP and COL application development.

16.2 NQA-1-1994 Commitment

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

SECTION 17 QUALITY ASSURANCE RECORDS

Entergy shall establish 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 Entergy 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 required to be established that ensure that sufficient records of completed items and activities affecting quality are appropriately stored. Such records and their retention times are defined in appropriate procedures. 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 electronic records storage and retrieval systems, Entergy complies with NRC guidance Generic Letter 88-18, “Plant Record Storage on Optical Disks.” Entergy 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, Entergy 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 Entergy, 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

Entergy has established the necessary measures and governing procedures to implement audits to verify that activities covered by this 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 Entergy 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 Entergy PMQA.

Entergy 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 Vice President Business Development, 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.

Internal Audits

a. 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.

b. 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 function area changes in responsibility, resources or management. However, the internal audit frequency interval 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 interval 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 utilizing either a qualified offsite licensed fire protection engineer or an outside qualified fire protection consultant.

(5) Other activities and documents considered appropriate by the appropriate executive responsible for operations.

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 this QAPD; regulations and license provisions; provisions for training, retraining, qualification, and performance of personnel performing activities covered by this 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.

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

18.2 NQA-1-1994 Commitment

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

PART III NONSAFETY-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 nonsafety-related SSCs and related activities, including the identification of exceptions to the QA Program described in Part II, Sections 1 through 18 taken for nonsafety-related SSCs.

1.1 Organization

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

1.2 QA Program

Entergy QA requirements for nonsafety-related SSCs are contained in this 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

Entergy shall establish 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 Entergy shall 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

Entergy shall provide 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 shall provide an appropriate degree of guidance to the personnel performing the activity to achieve acceptable functional performance of the SSC.

1.6 Document Control

Entergy shall establish controls for 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

Entergy shall establish 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

Entergy shall establish 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

Entergy shall establish 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

Entergy shall establish 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 personnel in the line organization through the process that utilizes knowledgeable personnel to perform the verification function.

1.11 Test Control

Entergy shall establish 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)

Entergy shall establish measures to control M&TE use, and calibration and adjustment at specific intervals or prior to use.

1.13 Handling, Storage, and Shipping

Entergy shall establish 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

Entergy shall establish 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

Entergy shall establish measures to identify and control items that do not conform to specified requirements to prevent their inadvertent installation or use.

1.16 Corrective Action

Entergy shall establish measures to ensure that failures, malfunctions, deficiencies, deviations, defective components, and nonconformances are properly identified, reported, and corrected.

1.17 Records

Entergy shall establish 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

Entergy shall establish measures for line management to periodically review and document the adequacy of the process and take 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 Nonsafety-Related SSCs Credited for Regulatory Events

The following criteria applies 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.

Entergy shall implement quality requirements to 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.”

Entergy shall implement the quality requirements to ATWS equipment in accordance with Generic Letter 85-06, “Quality Assurance Guidance for ATWS Equipment That Is Not Safety Related.”

Entergy shall implement quality requirements to SBO equipment in accordance with Regulatory Position 3.5, “Quality Assurance and Specific Guidance for SBO Equipment That Is Not Safety Related,” and Appendix A, “Quality Assurance Guidance for Non-Safety Systems and Equipment,” in Regulatory Guide 1.155, “Station Blackout.”

PART IV REGULATORY COMMITMENTS

NRC Regulatory Guides and Quality Assurance Standards

This section identifies the NRC Regulatory Guides and the other quality assurance standards which have been selected to supplement and support the Entergy QAPD. Entergy commits to compliance with these standards to the extent described herein. Commitment to a particular Regulatory Guide or other QA standard does not constitute a commitment to the Regulatory Guides or QA standards that may be referenced therein.

Regulatory Guides:

Regulatory Guide 1.26, Revision 3, February 1976 – 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.

Entergy commits to the applicable regulatory position guidance provided in this regulatory guide.

Regulatory Guide 1.29, Revision 3, September 1978 – Seismic Design Classification

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

Entergy commits to the applicable regulatory position guidance provided in this regulatory guide.

Standards:

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

Entergy commits to NQA-1-1994, Parts I and II, as described in the foregoing sections of this document.

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

Entergy commits to NIRMA TGs as described in Part II, Section 17 of this document.

Grand Gulf Nuclear Station

Unit 3

Combined License Application

Part 11B: Environmental Protection Plan

Revision 0

February 2008

ESP PC 3.F

Table of Contents

Section **Page**

1.0 Introduction 1
2.0 Objectives of the Environmental Protection Plan 1
3.0 Environmental Protection Issues....1
3.1 Aquatic Issues....2
3.2 Terrestrial Issues....2
4.0 Consistency Requirements 2
4.1 Plant Design, Construction, and Operation Activities....2
4.2 Reporting Related to the NPDES Permits and State Certification 3
4.3 Changes Required for Compliance with Other Environmental Regulations....3
5.0 Environmental Conditions 3
5.1 Unusual or Important Environmental Events....3
5.2 Routine Environmental Monitoring 4
6.0 Administrative Procedures 4
6.1 Review and Audit 4
6.2 Records Retention 4
6.3 Changes in Environmental Protection Plan....4
6.4 Station Reporting Requirements 5

1.0 INTRODUCTION

The NRC issued an Early Site Permit (ESP), Number ESP–002 (Docket No. 52-009), to SERI for the GGNS ESP Site on April 5, 2007. The ESP, under permit condition number 3.F, required that an EPP be prepared as part of the COL Application. The specific ESP requirement reads as follows:

> *An applicant for a CP or COL referencing this ESP shall develop an Environmental Protection Plan (EPP) for construction and operation of the proposed reactor and include the EPP in the application. The portion of the EPP directed to operation shall include any environmental conditions derived in accordance with 10 CFR 50.36b.*

This EPP has been prepared for GGNS Unit 3 in accordance with the requirement of the ESP cited above.

2.0 OBJECTIVES OF THE ENVIRONMENTAL PROTECTION PLAN

The purpose of the EPP is to provide for the protection of nonradiological environmental resources during construction and operation of GGNS Unit 3. The principal objectives of the EPP are as follows:

(1) Verify that the facility is constructed and operated in an environmentally acceptable manner, as established by the ESP Final Environmental Impact Statement (FEIS), COL FEIS, and other NRC environmental impact assessments.

(2) Coordinate NRC requirements and maintain consistency with other Federal, State and local requirements for environmental protection.

(3) Keep the NRC informed of adverse environmental effects of construction and operation of the facility and of the actions taken to control those adverse effects.

Environmental concerns identified in the ESP and COL FEISs that relate to water quality matters are regulated by the licensee's National Pollutant Discharge Elimination System (NPDES) permit.

3.0 ENVIRONMENTAL PROTECTION ISSUES

In the ESP FEIS dated April 2006 (NUREG-1817), the NRC staff considered the environmental impacts associated with the construction and operation of up to two (2) new units at the GGNS ESP site. In the COL FEIS dated [month year], the staff considered any environmental impacts associated with construction and operation of GGNS Unit 3 at the GGNS ESP site. The objective of this EPP is to ensure that environmental impacts associated with construction and operation of GGNS Unit 3, in accordance with the COL, will not exceed in any significant respect the impacts assessed in the ESP and COL FEISs.

Certain environmental issues were identified which required study or license conditions to resolve environmental concerns and to assure adequate protection of the environment. These issues are identified below.

3.1 AQUATIC ISSUES

No specific nonradiological aquatic impact issues were identified by NRC staff in the ESP or COL FEISs.

3.2 TERRESTRIAL ISSUES

No specific nonradiological terrestrial impact issues were identified by NRC staff in the ESP or COL FEISs.

4.0 CONSISTENCY REQUIREMENTS

The licensee shall take the mitigating actions identified in the following documents so as to avoid any unnecessary adverse impacts from construction or operation activities:

- Chapters 4 and 5 of the ESP ER
- Chapters 4 and 5 of the ESP FEIS
- Chapters 4 and 5 of the COL ER
- the COL FEIS.

4.1 PLANT DESIGN, CONSTRUCTION, AND OPERATION ACTIVITIES

The licensee may make changes in plant design or operation or perform tests or experiments affecting the environment provided such changes, tests, or experiments do not involve an unreviewed environmental question, and do not involve a change in the Environmental Protection Plan.[1] Changes in the design or operation of the plant and the performance of tests or experiments that will not affect the environment are not subject to the requirements of this EPP. Activities governed by Section 4.3 are not subject to the requirements of this section.

Before engaging in changes to construction or operational activities that may affect the environment, the licensee shall prepare and record an environmental screening review of such activity. If the screening indicates that such activity involves an unreviewed environmental question, the licensee shall provide a written evaluation of such activities and obtain prior approval from the Director, Office of Nuclear Reactor Regulation. When such activity involves a change in the EPP, that activity, and any resulting change to the EPP, may be implemented only in accordance with an appropriate license amendment, as set forth in Section 6.3 of this EPP.

A proposed change, test or experiment shall be deemed to involve an unreviewed environmental question if it concerns one of three issues. These issues are:

(1) A matter which may result in an adverse environmental impact that is significantly greater than the impacts previously evaluated in the ESP or COL FEIS, supplements to the FEIS, environmental impact appraisals, or in any decisions of the Atomic Safety and Licensing Board; or

(2) A significant change in either the effluents from the plant or the power level generated by the plant; or

(3) A matter not previously reviewed and evaluated in the documents identified in (1) of this paragraph which may have a significant adverse environmental impact.

[1] This provision does not relieve the licensee of the requirements of 10 CFR 50.59.

The licensee shall maintain records of changes in plant design or operation and of tests and experiments carried out pursuant to this Subsection of the EPP. These records shall include the written environmental screening that provides the basis for the determination that the change, test, or experiment neither involves an unreviewed environmental question nor constitute a decrease in the effectiveness of this EPP to meet the objectives specified in Section 2.0 of this EPP.

The licensee shall include as part of the Annual Environmental Operating Report (per Subsection 6.4.1) brief descriptions, analyses, interpretations, and evaluations of such changes, tests and experiments.

4.2 REPORTING RELATED TO THE NPDES PERMITS AND STATE CERTIFICATION

The NRC shall be provided with a copy of the current NPDES permit and the State water quality certification under Section 401 of the CWA (State 401 WQC) within 30 days of the issuance of the NPDES permit and the State 401 WQC. Modifications to the NPDES permit or State 401 WQC shall be reported to the NRC within 30 days of the date that the modifications are approved.

4.3 CHANGES REQUIRED FOR COMPLIANCE WITH OTHER ENVIRONMENTAL REGULATIONS

Changes in plant design or operation and performance of tests or experiments that are either regulated or mandated by other Federal, State, or local environmental regulations are not subject to requirements of Section 4.1 of this EPP. However, if any environmental impacts are not evaluated under other Federal, State, or local environmental regulations, then those impacts are subject to the requirements of Section 4.1 of this EPP.

5.0 ENVIRONMENTAL CONDITIONS

5.1 UNUSUAL OR IMPORTANT ENVIRONMENTAL EVENTS

Any occurrence of an unusual or important event that indicates, or could result in, significant environmental impact causally related to station construction or operation shall be recorded and promptly reported to the NRC Operations Center within 24 hours of the occurrence. This initial report is to be followed by a written report to the NRC, as per Subsection 6.4.2 of this EPP.

An unusual or important event is an unreviewed environmental question that occurs on a non-repeating, infrequent basis, possibly only once in the life cycle of the plant. Following are examples of potential unusual or important events:

- excessive bird impaction events,
- on-site plant or animal disease outbreaks,
- mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973,
- unusual fish kills,
- unusual increase in nuisance organisms or conditions, and
- unanticipated or emergency discharge of waste water or chemical substances.

These, and similar events, would lead to the implementation of this section. If an event is reportable under 10 CFR 50.72, then a duplicate immediate report under this section is not required. However, the follow-up, written report per Subsection 6.4.2 is still required.

Events reportable under this subsection which also require reports to other federal, state, or local agencies shall be reported in accordance with those reporting requirements, as well as in compliance with the requirements of this subsection. The NRC shall be provided with a copy of each report at the same time each report is submitted to the other agency.

No routine monitoring programs are required to implement this condition related to unusual or important environmental events.

5.2 ROUTINE ENVIRONMENTAL MONITORING

Routine environmental monitoring programs required during construction and operation of GGNS Unit 3 are not included within the purview of this EPP. Routine environmental monitoring programs required under other Federal, State, or local environmental regulatory programs are not included within the scope of this EPP.

6.0 ADMINISTRATIVE PROCEDURES

6.1 REVIEW AND AUDIT

The licensee shall provide for independent reviews and audits of compliance with the EPP. The audits shall be conducted independently of the individual or groups responsible for performing the specific activity under the EPP. A description of the organizational structure utilized to achieve the independent review and audit function, as well as the results of the audit activities, shall be maintained by the licensee and made available for inspection.

6.2 RECORDS RETENTION

Records associated with the implementation of the EPP shall be made and retained by the licensee in a manner convenient for review and inspection by the NRC. These records shall be made available by the licensee for inspection by the NRC upon request.

Records of modifications to plant structures, systems and components determined to potentially affect the continued protection of the environment shall be retained by the licensee until the date of the termination of the License. All other records relating to the implementation of the EPP shall be retained by the licensee for either five years or, where applicable, in accordance with the requirements of other agencies, whichever is greater.

6.3 CHANGES IN ENVIRONMENTAL PROTECTION PLAN

Requests for changes in the EPP shall include an assessment of the environmental impact of the proposed change and a supporting justification for that change. Implementation of such changes in the EPP shall not commence prior to NRC approval of the proposed changes in the form of a licensee amendment incorporating the appropriate revision to the EPP.

6.4 STATION REPORTING REQUIREMENTS

6.4.1 ROUTINE REPORTS

None required.

6.4.2 NON-ROUTINE REPORTS

A written report shall be submitted to the NRC within 30 days of the occurrence of any event described in Section 5.1 of this EPP. The report shall:

(1) Describe, analyze, and evaluate the event, including extent and magnitude of the impact and plant operating characteristics,

(2) Describe the probable cause of the event,

(3) Indicate the action taken to correct the reported event,

(4) Indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar components or systems in the future, and

(5) Indicate the agencies that were notified and the preliminary responses of those agencies.

Events reportable under this subsection which also require reports to other federal, state, or local agencies shall be reported in accordance with those reporting requirements, as well as in compliance with the requirements of this subsection. The NRC shall be provided with a copy of each report at the same time each report is submitted to the other agency.