

**DUKE ENERGY CORPORATION**  
**TOPICAL REPORT**  
**Quality Assurance Program Description**  
**Operating Fleet**

DUKE-QAPD-001 -A-



## QUALITY ASSURANCE PROGRAM POLICY STATEMENT

Duke Energy Corporation (DEC) designs, procures, constructs and operates its nuclear plants in a manner that ensures the health and safety of the public and workers. These activities are 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 applicable Quality Assurance Program (QAP) is the Quality Assurance Program Description (QAPD) contained or referenced in each nuclear plant's (Updated) Final Safety Analysis Report and the associated implementing documents. Together they provide for control of DEC activities that affect the quality of safety-related nuclear plant structures, systems, and components (SSCs) and include all planned and systematic activities necessary to provide adequate confidence that such SSCs will perform satisfactorily in service. The QA Program 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 DEC's overall philosophy regarding achievement and assurance of quality. Implementing documents assign detailed responsibilities and requirements and define the organizational interfaces involved in conducting activities within the scope of the QAP. Compliance with the QAP is mandatory for individuals involved directly or indirectly with its implementation.

DEC personnel have authority commensurate with their responsibility, including the authority to stop work that does not conform to established requirements. This stop work authority may be exercised in accordance with established nuclear system procedures.

  
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Lynn Good  
President and CEO  
Duke Energy

Date 8-6-13

**Figure 17-1, Duke Energy Corporation Quality Assurance Policy Statement**

## CONTENTS

17 Quality Assurance .....	11
17.1 QA During Design and Construction .....	11
17.2 Operational QA .....	11
17.3 Quality Assurance Program Description.....	11
17.3.1 Management .....	23
17.3.1.1 Methodology .....	23
17.3.1.2 Organization.....	24
17.3.1.3 Responsibility.....	28
17.3.1.4 Authority.....	28
17.3.1.5 Personnel Training and Qualification.....	28
17.3.1.6 Corrective Action.....	29
17.3.1.7 Regulatory Commitments.....	29
17.3.2 Performance/Verification .....	31
17.3.2.1 Methodology .....	31
17.3.2.2 Design Control .....	31
17.3.2.3 Design Verification .....	32
17.3.2.4 Procurement Control.....	33
17.3.2.5 Procurement Verification.....	34
17.3.2.6 Identification and Control of Items.....	34
17.3.2.7 Handling, Storage, and Shipping.....	35
17.3.2.8 Test Control .....	35
17.3.2.9 Measuring and Test Equipment Control .....	35
17.3.2.10 Inspection, Test, and Operating Status .....	36
17.3.2.11 Special Process Control.....	37
17.3.2.12 Inspection .....	37
17.3.2.13 Corrective Action.....	38
17.3.2.14 Document Control .....	38
17.3.2.15 Records .....	39
17.3.3 Self-Assessment.....	42
17.3.3.1 Methodology .....	42
17.3.3.2 Independent Review .....	42
17.3.3.3 Independent Assessment.....	42
17.3.4 Administrative Controls Relocated From Technical Specifications.....	47
17.3.4.1 Technical Reviews .....	47

17.3.4.2 10 CFR 50.59 Reviews .....	47
17.3.4.3 Record Retention .....	48
17.3.4.4 Audit Types and Frequencies .....	48
17.3.4.5 On-Site Review Committee .....	48
17.3.4.6 Reportable Event Action .....	48
17.3.4.7 Independent Safety Engineering Group Functions .....	48
Attachment A, Brunswick Specific QAPD .....	A-1
A17. BNP SPECIFIC QUALITY ASSURANCE .....	A-2
A17.1 BNP QA DURING DESIGN AND CONSTRUCTION .....	A-2
A17.2 OPERATIONAL QA .....	A-2
A17.3 BNP QUALITY ASSURANCE PROGRAM (QAP) DESCRIPTION .....	A-2
A17.3.1 Management .....	A-18
A17.3.1.1 Methodology .....	A-18
A17.3.1.2 Organization .....	A-18
A17.3.1.3 Responsibility .....	A-18
A17.3.1.4 Authority .....	A-18
A17.3.1.5 Personnel Training and Qualification .....	A-18
A17.3.1.6 Corrective Action .....	A-18
A17.3.1.7 Regulatory Commitments .....	A-19
A17.3.2 Performance/Verification .....	A-19
A17.3.2.1 Methodology .....	A-19
A17.3.2.2 Design Control .....	A-19
A17.3.2.3 Design Verification .....	A-19
A17.3.2.4 Procurement Control .....	A-19
A17.3.2.5 Procurement Verification .....	A-19
A17.3.2.6 Identification and Control Of Items .....	A-20
A17.3.2.7 Handling, Storage, and Shipping .....	A-20
A17.3.2.8 Test Control .....	A-20
A17.3.2.9 Measuring and Test Equipment Control .....	A-20
A17.3.2.10 Inspection Test and Operating Status .....	A-21
A17.3.2.11 Special Process Control .....	A-21
A17.3.2.12 Inspection .....	A-21
A17.3.2.13 Corrective Action .....	A-21
A17.3.2.14 Control of Documents .....	A-21

A17.3.2.15 Records .....	A-21
A17.3.2.16 Record Retention .....	A-21
A17.3.3 Assessment .....	A-22
A17.3.3.1 Methodology .....	A-22
A17.3.3.2 Independent Review .....	A-22
A17.3.3.3 Independent Assessment .....	A-24
A17.3.4 Review And Audit .....	A-25
A17.3.4.1 Procedures, Tests, and Experiments .....	A-25
A17.3.4.2 Modifications .....	A-25
A17.3.4.3 Operating License/BNP Technical Specifications .....	A-25
A17.3.4.4 10CFR 50.59 Evaluations And Independent Review Control .....	A-26
A17.3.4.5 Nuclear Reviewers .....	A-26
A17.3.4.6 Plant Nuclear Safety Committee .....	A-26
Attachment B, Harris Specific QAPD .....	B-1
B17. Quality Assurance .....	B-2
B17.1 QA During Design and Construction .....	B-2
B17.2 Operational QA .....	B-2
B17.3 HNP Quality Assurance Program (QAP) Description .....	B-2
B17.3.1 Management .....	B-30
B17.3.1.1 Methodology .....	B-30
B17.3.1.2 Organization .....	B-30
B17.3.1.3 Responsibility .....	B-30
B17.3.1.4 Authority .....	B-30
B17.3.1.5 Personnel Training And Qualification .....	B-30
B17.3.1.6 Corrective Action .....	B-30
B17.3.1.7 Regulatory Commitments .....	B-31
B17.3.2 Performance/Verification .....	B-31
B17.3.2.1 Methodology .....	B-31
B17.3.2.2 Design Control .....	B-31
B17.3.2.3 Design Verification .....	B-31
B17.3.2.4 Procurement Control .....	B-31
B17.3.2.5 Procurement Verification .....	B-31
B17.3.2.6 Identification and Control of Items .....	B-31

B17.3.2.7 Handling, Storage, and Shipping.....	B-32
B17.3.2.8 Test Control .....	B-32
B17.3.2.9 Measuring and Test Equipment Control.....	B-32
B17.3.2.10 Inspection, Test, and Operating Status .....	B-33
B17.3.2.11 Special Process Control.....	B-33
B17.3.2.12 Inspection .....	B-33
B17.3.2.13 Corrective Action.....	B-33
B17.3.2.14 Control of Documents .....	B-33
B17.3.2.15 Records .....	B-33
B17.3.3 Assessment.....	B-33
B17.3.3.1 Methodology .....	B-33
B17.3.3.2 Independent Review .....	B-34
B17.3.4 Administrative Controls.....	B-37
B17.3.4.1 10CFR50.59 and technical reviews .....	B-37
B17.3.4.2 Plant Nuclear Safety Committee (PNSC).....	B-38
B17.3.4.3 HNP Nuclear Oversight Section Independent Review Program.....	B-40
B17.3.4.4 Independent Safety Engineering Group.....	B-40
B17.3.4.6 Procedure Review Requirements .....	B-41
Attachment C, Robinson Specific QAPD .....	C-1
C17. Quality Assurance.....	C-2
C17.1 QA During Design and Construction .....	C-2
C17.2 Operational QA.....	C-2
C17.3 Quality Assurance Program (QAP) Description .....	C-2
C17.3.1 Management.....	C-16
C17.3.1.1 Methodology .....	C-16
C17.3.1.2 Organization .....	C-16
C17.3.1.3 Responsibility .....	C-16
C17.3.1.4 Authority .....	C-16
C17.3.1.5 Personnel Training and Qualification .....	C-16
C17.3.1.6 Corrective Action .....	C-16
C17.3.1.7 Regulatory Commitments .....	C-17
C17.3.2 Performance/Verification .....	C-17
C17.3.2.1 Methodology .....	C-17

C17.3.2.2 Design Control.....	C-17
C17.3.2.3 Design Verification.....	C-17
C17.3.2.4 Procurement Control.....	C-17
C17.3.2.5 Procurement Verification.....	C-17
C17.3.2.6 Identification and Control of Items.....	C-17
C17.3.2.7 Handling, Storage, and Shipping .....	C-18
C17.3.2.8 Test Control.....	C-18
C17.3.2.9 Measuring and Test Equipment Control.....	C-18
C17.3.2.10 Inspection, Test, and Operating Status .....	C-18
C17.3.2.11 Special Process Control.....	C-19
C17.3.2.12 Inspection .....	C-19
C17.3.2.13 Corrective Action .....	C-19
C17.3.2.14 Control of Documents .....	C-19
C17.3.2.15 Records .....	C-19
C17.3.3 Assessment .....	C-19
C17.3.3.1 Methodology .....	C-19
C17.3.3.2 Independent Review .....	C-20
C17.3.3.3 Independent Assessment .....	C-22
C17.3.4 Review and Audit .....	C-23
C17.3.4.1 Procedures, Tests, and Experiments .....	C-23
C17.3.4.2 Modifications.....	C-24
C17.3.4.3 RNP Technical Specifications and License Changes .....	C-25
C17.3.4.4 Review of RNP Technical Specifications Violations.....	C-25
C17.3.4.5 10CFR 50.59 Review Qualification.....	C-25
C17.3.4.6 Plant Nuclear Safety Committee (PNSC) .....	C-25
C17.3.4.7 Nuclear Oversight Section Independent Review Program.....	C-27
C17.3.4.8. (Deleted) .....	C-27
C17.3.4.9. Outside Agency Inspection And Audit Program.....	C-27
C17.3.4.10. Reportable Event Action.....	C-27
C17.3.4.11. Safety Limit Violation.....	C-28
C17.3.4.12. Record Retention .....	C-28
Attachment D, Catawba, McGuire, and Oconee Specific QAPD.....	D-1
D17. Quality Assurance.....	D-1

D17.1 QA During Design and Construction .....	D-1
D17.2 Operational QA.....	D-1
D17.3 Quality Assurance Program (QAP) Description .....	D-1
D17.3.1 Management.....	D-12
D17.3.1.1 Methodology.....	D-12
D17.3.1.2 Organization .....	D-12
D17.3.1.3 Responsibility .....	D-12
D17.3.1.4 Authority .....	D-12
D17.3.1.5 Personnel Training and Qualification .....	D-12
D17.3.1.6 Corrective Action .....	D-12
D17.3.1.7 Regulatory Commitments .....	D-12
D17.3.2 Performance/Verification .....	D-13
D17.3.2.1 Methodology.....	D-13
D17.3.2.2 Design Control.....	D-13
D17.3.2.3 Design Verification.....	D-13
D17.3.2.4 Procurement Control .....	D-14
D17.3.2.5 Procurement Verification .....	D-15
D17.3.2.6 Identification and Control of Items .....	D-15
D17.3.2.7 Handling, Storage, and Shipping .....	D-16
D17.3.2.8 Test Control.....	D-16
D17.3.2.9 Measuring and Test Equipment Control.....	D-17
D17.3.2.10 Inspection, Test, and Operating Status.....	D-18
D17.3.2.11 Special Process Control .....	D-18
D17.3.2.12 Inspection.....	D-18
D17.3.2.13 Corrective Action .....	D-19
D17.3.2.14 Document Control.....	D-20
D17.3.2.15 Records.....	D-20
D17.3.3 SELF ASSESSMENT.....	D-21
D17.3.3.1 Methodology.....	D-21
D17.3.3.2 Independent Review Committee.....	D-21
D17.3.3.3 Independent Assessment .....	D-23
D17.3.4 Administrative Controls Relocated From Technical Specifications .....	D-24
D17.3.4.1 Technical Reviews.....	D-24
D17.3.4.2 10 CFR 50.59 Reviews.....	D-24
D17.3.4.3 Record Retention.....	D-24
D17.3.4.4 Audit Types and Frequencies .....	D-25



D17.3.4.5 On-Site Review Committee .....	D-25
D17.3.4.6 Reportable Event Action .....	D-25
D17.3.4.7 Independent Safety Engineering Group Functions.....	D-26

**LIST OF FIGURES:**

Figure 17-1, Duke Energy Corporation Quality Assurance Policy Statement.....2

**LIST OF TABLES**

Table 17-1. Conformance with QA Regulatory Guides and Industry Standards.....15  
Table 17-2. Site Specific Response to Regulatory Guides and Industry Standards.....21

## **17 QUALITY ASSURANCE**

### **17.1 QA DURING DESIGN AND CONSTRUCTION**

NOTE: Not included, this description of the Quality Assurance Program follows Standard Review Plan Section 17.3 for format and content.

### **17.2 OPERATIONAL QA**

NOTE: Not included, this description of the Quality Assurance Program follows Standard Review Plan Section 17.3 for format and content.

### **17.3 QUALITY ASSURANCE PROGRAM DESCRIPTION**

#### **INTRODUCTION**

The Duke Energy Corporation Quality Assurance Program (QAP) Policy Statement, issued by the President and Chief Executive Officer, in Figure 17-1 describes the corporate policy and assigns responsibility for implementation of the QAP.

Duke Energy Corporation maintains full responsibility for assuring its nuclear power plants are designed, constructed, tested and operated in conformance with good engineering practices, applicable regulatory requirements and specified design bases and in a manner to protect the public health and safety. To this end Duke Energy Corporation has established and implemented a Quality Assurance Program which conforms to the criteria established in Appendix B to Title 10 Code of Federal Regulations (10 CFR), Part 50, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants" published June 27, 1970 (35 F. R. 10499), amended September 17, 1971 (36 F. R. 18301), amended January 20, 1975 (40 F. R. 3210D), and amended August 28, 2007 (72 F. R. 49505).

This document follows the format and content guidance of NUREG-0800, "Standard Review Plan For The Review of Safety Analysis Reports for Nuclear Power Plants", Section 17.3, "Quality Assurance Program Description," except that the Duke Energy Corporation QAP is based on ANSI N18.7 and the ANSI N45.2 series standards in lieu of ANSI/ASME NQA-1 and NQA-2. This document is applicable to Duke Energy Corporation operating nuclear power stations as referenced by Chapter 17 of each station's UFSAR for those systems, components, items, and services that have been determined to be nuclear safety related.

This document is organized with a generic description of the organization and overview of the QAP in the main body of the document. Site specific details for the Quality Assurance Program Description along with conformance to the regulatory positions of the NRC QA Regulatory Guides are addressed in separate attachments as follows:

- Attachment A, Brunswick Specific QAPD
- Attachment B, Harris Specific QAPD
- Attachment C, Robinson Specific QAPD
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD

Each Attachment follows the section numbering in the main body of the document. The Brunswick, Harris, and Robinson attachments contain the conformance to the QA related Regulatory Guides, identified in Table 17-1, transferred from Chapter 1 of each respective UFSAR. Each attachment also contains supplemental descriptions, with approved changes, transferred from each respective UFSAR Chapter 17, Section 17.3 when detail was included

beyond the generic text in the main body. Attachment D contains the conformance to the QA related Regulatory Guides, identified in Table 17-1, transferred from Amendment 40 of the Duke Energy Carolinas Topical Report Quality Assurance Program. Attachment D also contains supplemental descriptions, with approved changes, from Amendment 40 of Duke Energy Carolinas Topical Report Quality Assurance Program when detail was included beyond the generic text in the main body.

As discussed herein, the Quality Assurance Program (QAP) includes the description contained in this document and the controlled documents providing implementation of the requirements of this document, including the requirements of industry standards to the degree identified in Table 17-1, Conformance with QA Regulatory Guides and Industry Standards, and Table 17-2, Site Specific Response to Regulatory Guides and Industry Standards. The QAP provides a method of applying graded controls to certain non-safety related systems, components, items, and services (such as fire protection and radioactive waste structures, systems, and components).

Subsequent changes to the Duke Energy Corporation QAP are incorporated in this document as identified in Section 17.3.1.7. The QAP controlled implementing procedures and documents are used and updated as necessary to assure the nuclear generating units are managed such that they will be operated and maintained in a safe manner.

## DEFINITIONS

The following definitions are applicable to terms used in this report. Refer to ANSI N45.2.10, "Quality Assurance Terms and Definitions" for definition of terms not included below.

Audit – The following modifications are applied to the definition in ANSI N45.2.10:

Internal Audit - An activity to determine through investigation the adequacy of, and adherence to, established procedures, instructions, specifications, codes, and licensing requirements, and the effectiveness of implementation of the Duke Energy Corporation QAP.

Supplier Audit - A documented activity performed in accordance with written procedures or checklists to verify, by examination and evaluation of objective evidence, that applicable elements of the supplier's QA program has been developed, documented and implemented in accordance with specified requirements.

Basic Component – See 10 CFR Part 21.

Commercial Grade Items - See 10 CFR Part 21.

Deficiency - Any condition considered to be adverse to quality including inadequacies of personnel, procedures, systems, methods, or items.

Engineering Change (Modification) - A planned change in plant design accomplished in accordance with the requirements and limitations of applicable codes, standards, specifications, licenses and predetermined safety restrictions.

Hold Point - That point in the manufacturing, preparation, development, installation and construction, inspection, or testing process that requires witness or review by qualified personnel.

Inspector - Any individual certified to the requirements identified in Table 17-1 for Regulatory Guide 1.58 who performs required inspections, tests or examinations.

Pre-award Survey - A documented activity performed in accordance with written procedures or checklists to verify, by examination and evaluation of objective evidence, that the supplier's QA program has been developed, documented, and implemented in accordance with specified requirements.

Quality Assurance (QA) - The planned and systematic actions necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in service.

QA Records - Those records which furnish documentary evidence of the quality of items and of activities affecting quality.

QA Requirements - Those inspection, test, examination, certification and documentation requirements which are imposed to provide objective evidence of the conformance of an item or activity to established design, engineering, standards, and code requirements.

Services - The performance by a supplier of activities such as calibration, design, investigation, inspection, nondestructive examination, software applications, and installation.

## **EXPLANATION OF "QUALITY ASSURANCE"**

Quality Assurance (QA) as used in this document includes:

- 1) Performance of planned and systematic actions necessary to provide assurance of the safety and integrity of the facility.

The QAP is founded on the principle that the line organization has the primary responsibility for quality and safety. Self-assessment practices are used to ensure the desired levels of quality and safety are achieved and maintained. Each individual is responsible to ensure the plant is operated in a safe, reliable, and efficient manner.

- 2) Quality verifications performed by those independent of the performers.

When required, verification of conformance to established program requirements is accomplished by qualified individuals who do not have responsibility for performing or directly supervising the work. Nuclear Oversight (NOS) evaluates the performance, compliance, and effectiveness of plant programs, processes, and personnel. The activities of NOS are intended to detect deficiencies in the desired levels of performance and quality, communicating these conditions to those responsible for the activities, appropriate management and the Chief Nuclear Officer, and ensuring adequate action is taken to correct these conditions.

## **QA STANDARDS AND GUIDES**

The Duke Energy Corporation QAP conforms to Appendix B of 10 CFR 50. This description of the QA Program is formatted per NUREG-0800 Section 17.3, "Quality Assurance Program Description;" however, the Duke Energy Corporation QAP continues to use the ANSI N45.2 series standards in lieu of ANSI/ASME NQA-1 and NQA-2.

Table 17-1 identifies the QA program Regulatory Guides and other NRC program guidance for which conformance is addressed in this description of the QA Program. Changes to conformance for the Regulatory Guides in Table 17-1 are controlled in accordance with 10 CFR 50.54(a) and are incorporated in this document as identified in Section 17.3.1.7.

Table 17-2 identifies additional Regulatory Guides that relate to QA program implementation but where the subject matter closely relates to UFSAR technical content. Conformance for those Regulatory Guides is site specific and addressed with each site's UFSAR.

Together, Tables 17-1 and 17-2 indicate where conformance is identified for the regulatory guidance documents referenced in NUREG-0800 Section 17.3.

### **Table 17-1. Conformance with QA Regulatory Guides and Industry Standards**

Generic Exception:

Table 17-1 addresses Duke Energy Corporation's Conformance of the Quality Assurance Program to certain NRC Regulatory Guides. In so doing, specific editions of industry standards are identified for compliance with exceptions and alternatives. Those identified standards include references to other industry standards for activities. Those referenced industry standards are considered to be guidance documents for details of how activities may be accomplished. The actual standard to be used in such cases is controlled by each station's current licensing and design bases (e.g. ANSI N18.7-1976 Section 3.4.2 identifies American National Standard for Selection and Training of Nuclear Power Plant Personnel, N18.1-1971. The actual standard used is site specific as identified in Table 17-2 for Regulatory Guide 1.8.).

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#### **Regulatory Guide 1.28, Quality Assurance Program Requirements (Design And Construction)**

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.28 as identified in:

- Attachment A, Brunswick Specific QAPD
  - Attachment B, Harris Specific QAPD
  - Attachment C, Robinson Specific QAPD
  - Attachment D, Catawba, McGuire, and Oconee Specific QAPD
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#### **Regulatory Guide 1.30, Quality Assurance Requirements For The Installation, Inspection and Testing Of Instrumentation And Electric Equipment**

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.30 as identified in:

- Attachment A, Brunswick Specific QAPD
  - Attachment B, Harris Specific QAPD
  - Attachment C, Robinson Specific QAPD
  - Attachment D, Catawba, McGuire, and Oconee Specific QAPD
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#### **Regulatory Guide 1.33, Quality Assurance Program Requirements (Operation)**

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.33 as identified in:

- Attachment A, Brunswick Specific QAPD
- Attachment B, Harris Specific QAPD
- Attachment C, Robinson Specific QAPD
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD

Table 17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.37, Quality Assurance Requirements For Cleaning Of Fluid Systems And Associated Components Of Water-Cooled Nuclear Power Plants

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.37 as identified in:

- Attachment A, Brunswick Specific QAPD
- Attachment B, Harris Specific QAPD
- Attachment C, Robinson Specific QAPD
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD

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Regulatory Guide 1.38, Quality Assurance Requirements For Packaging, Shipping, Receiving, Storage And Handling Of Items For Water-Cooled Nuclear Power Plants

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.38 as identified in:

- Attachment A, Brunswick Specific QAPD
- Attachment B, Harris Specific QAPD
- Attachment C, Robinson Specific QAPD
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD

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Regulatory Guide 1.39, Housekeeping Requirements For Water-Cooled Nuclear Power Plants

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.39 as identified in:

- Attachment A, Brunswick Specific QAPD
- Attachment B, Harris Specific QAPD
- Attachment C, Robinson Specific QAPD
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD

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Regulatory Guide 1.58, Qualification Of Nuclear Power Plant Inspection, Examination And Testing Personnel

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.58 as identified in:

- Attachment A, Brunswick Specific QAPD
- Attachment B, Harris Specific QAPD
- Attachment C, Robinson Specific QAPD
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD



Table 17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.64, Quality Assurance Requirements For The Design Of Nuclear Power Plants

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.64 as identified in:

- Attachment A, Brunswick Specific QAPD
- Attachment B, Harris Specific QAPD
- Attachment C, Robinson Specific QAPD
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD

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Regulatory Guide 1.74, Quality Assurance Terms And Definitions

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.74 as identified in:

- Attachment A, Brunswick Specific QAPD
- Attachment B, Harris Specific QAPD
- Attachment C, Robinson Specific QAPD
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD

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Regulatory Guide 1.88, Collection, Storage, And Maintenance Of Nuclear Power Plant Quality Assurance Records

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The Duke Energy program for storage of records on microfilm, dual storage or in electronic format meets the preservation requirement for the retention of QA Records.

For management of electronic records, the appropriate controls on quality are summarized as follows:

- a) The Electronic Records Management (eRM) system does not allow deletion or modification of records. (NOTE: Authorized deletion of records per the Record Retention Rules is controlled.)
- b) The eRM system provides redundancy (i.e., system backup, dual storage, etc.).
- c) The legibility of each record is verified prior to acceptance into the eRM system.
- d) The media used by the eRM system is maintained to ensure the records are acceptably copied onto a new media before the manufacturer's certified useful life of the media is exceeded. This includes verification of the records so copied.
- e) Periodic random inspections of records are performed to verify that there has been no degradation of record quality.
- f) If the eRM system in use is to be replaced by new system, the records stored on the old system are acceptably converted into the new system before the old system is taken out of service. This includes verification of the records so copied.

To implement those controls, Duke Energy Corporation uses the following Nuclear Information and Records Management Association (NIRMA) standards:

- NIRMA TG 11-2011 "Authentication of Records and Media"
- NIRMA TG 15-2011, "Management of Electronic Records,"
- NIRMA TG 16-2011, "Software Quality Assurance Documentation and Records"
- NIRMA TG 21-2011, "Required Records Protection, Disaster Recovery and Business Continuation"

Table 17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.88, Collection, Storage, And Maintenance Of Nuclear Power Plant Quality Assurance Records

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.88 as identified in:

- Attachment A, Brunswick Specific QAPD
- Attachment B, Harris Specific QAPD
- Attachment C, Robinson Specific QAPD
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD

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Regulatory Guide 1.94, Quality Assurance Requirements For Installation, Inspection, And Testing of Structural Concrete And Structural Steel During The Construction Phase of Nuclear Power Plants

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.94 as identified in:

- Attachment A, Brunswick Specific QAPD
- Attachment B, Harris Specific QAPD
- Attachment C, Robinson Specific QAPD
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD

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Regulatory Guide 1.116, Quality Assurance Requirements For Installation, Inspection, And Testing Of Mechanical Equipment And Systems

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.116 as identified in:

- Attachment A, Brunswick Specific QAPD
- Attachment B, Harris Specific QAPD
- Attachment C, Robinson Specific QAPD
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD

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Regulatory Guide 1.123, Quality Assurance Requirements For Control Of Procurement Of Items And Services For Nuclear Power Plants

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Duke Energy Corporation follows Generic Letter 89-02 and EPRI NP-5652 for procurement of Commercial Grade Items and services.

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Table 17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.123, Quality Assurance Requirements For Control Of Procurement Of Items And Services For Nuclear Power Plants

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When purchasing commercial-grade calibration services from calibration laboratories that have been accredited by a recognized signatory to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) (e.g. National Voluntary Laboratory Accreditation Program (NVLAP), American Association for Laboratory Accreditation (A2LA)), the procurement documents are not required to impose a quality assurance program consistent with ANSI N45.2 or 10 CFR Part 50 Appendix B. In such cases, accreditation may be accepted in lieu of the purchaser imposing a quality assurance program consistent with ANSI N45.2, provided the following are met.

1. The accreditation is to ANSI/ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories."
2. The accrediting body is an NRC recognized signatory to the ILAC MRA.
3. The published scope of accreditation for the calibration laboratory covers the needed measurement parameters, ranges, and uncertainties.
4. The purchase documents impose additional technical and administrative requirements, as necessary, to satisfy Duke Energy Corporation's Quality Assurance Program and technical requirements, including the requirement for the calibration certificate/report to include identification of the laboratory equipment/standards used.
5. The purchase documents require reporting as-found calibration data when calibrated items are found out-of-tolerance.

When purchasing commercial-grade calibration services from an accredited calibration laboratory, verification that the supplier's accreditation meets the following shall be performed and documented:

1. The accreditation is to ANSI/ISO/IEC 17025.
2. The accrediting body is an NRC recognized signatory to the ILAC MRA.
3. The published scope of accreditation for the calibration laboratory covers the needed measurement parameters, ranges, and uncertainties.

Note: Well defined and documented measurement assurance techniques or uncertainty analysis may be used to verify the adequacy of the measurement process. If such techniques are not used, the collective uncertainty of the measurement standards shall not exceed 25% of the acceptable tolerance for each characteristic being calibrated. (This is typically referred to as the four-to-one ratio.)

The Duke Energy Corporation QAP conforms to Regulatory Guide 1.123 as identified in:

- Attachment A, Brunswick Specific QAPD
- Attachment B, Harris Specific QAPD
- Attachment C, Robinson Specific QAPD
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD

Table 17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.144, Auditing Of Quality Assurance Programs For Nuclear Power Plants

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.144 as identified in:

- Attachment A, Brunswick Specific QAPD
- Attachment B, Harris Specific QAPD
- Attachment C, Robinson Specific QAPD
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD

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Regulatory Guide 1.146, Qualification Of Quality Assurance Program Audit Personnel For Nuclear Power Plants

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.146 as identified in:

- Attachment A, Brunswick Specific QAPD
- Attachment B, Harris Specific QAPD
- Attachment C, Robinson Specific QAPD
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD

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Regulatory Guide 1.152 Criteria For Programmable Digital Computer System Software In Safety-Related Systems Of Nuclear Power Plants

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Conformance to Regulatory Guide 1.152 was not addressed during the licensing of the operating Duke Energy Corporation Nuclear plants.

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Regulatory Guide 7.10, Establishing Quality Assurance Programs For Packaging Used In The Transport Of Radioactive Material

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Duke Energy Corporation does not conform to Regulatory Guide 7.10. This QAPD is used to satisfy applicable Quality Assurance requirements for packaging and transportation of radioactive material.

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Generic Letter 89-02, Actions to Improve the Detection of Counterfeit and Fraudulently Marketed Products

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Generic Letter 89-02 endorses EPRI NP-5652, *"Guideline for the Utilization of Commercial-Grade Items in Nuclear Safety-Related Applications (NCIG-07)"*, which is used by Duke Energy Corporation.

**Table 17-2. Site Specific Response to Regulatory Guides and Industry Standards**

Table 17-2 identifies additional Regulatory Guides addressing subjects related to implementation of the QAP but the implementation is site specific and addressed with each site's UFSAR.

Regulatory Guide 1.8, Personnel Selection And Training
Personnel selection and training is site specific addressing requirements beyond nuclear safety related applications.
Regulatory Guide 1.26, Quality Group Classifications And Standards For Water-, Steam-, And Radioactive-Waste-Containing Components Of Nuclear Power Plants
Quality group classifications and standards trace to the original design and construction of the nuclear power plant and therefore are site specific.
Regulatory Guide 1.29, Seismic Design Classification
Seismic design classification trace to the original design and construction of the nuclear power plant and therefore is site specific.
Regulatory Guide 1.36, Nonmetallic Thermal Insulation For Austenitic Stainless Steel
Nonmetallic thermal insulation for austenitic stainless steel trace to the original design and construction of the nuclear power plant and therefore is site specific.
Regulatory Guide 1.54, Quality Assurance Requirements For Protective Coatings Applied To Water-Cooled Nuclear Power Plants
Requirements for protective coatings applied to water-cooled nuclear power plants trace to the original design and construction of the nuclear power plant and therefore is site specific.
Regulatory Guide 1.143, Design Guidance For Radioactive Waste Management Systems, Structures, And Components Installed In Light-Water-Cooled Nuclear Power Plants
Design of radioactive waste management systems, structures, and components installed in light-water-cooled nuclear power plants trace to the original design and construction of the nuclear power plant and therefore is site specific.
Regulatory Guide 1.155, Station Blackout
Addressing Station Blackout is site specific.

Table 17-2. Site Specific Response to Regulatory Guides and Industry Standards (Continued)

Regulatory Guide 4.15, Quality Assurance For Radiological Monitoring Programs (Normal Operations) – Effluent Streams And The Environment
Requirements for radiological monitoring program (normal operations) – effluent streams and the environment is site specific.

## **17.3.1 MANAGEMENT**

### **17.3.1.1 Methodology**

The Chief Nuclear Officer is the corporate executive responsible for quality assurance (QA) and is the highest level of management responsible for establishing Duke Energy Corporation's QA policies, goals, and objectives.

The QAP Policy Statement, shown in Figure 17-1, requires compliance with the QAP implementing documents in nuclear safety related matters. Organizations performing quality affecting activities are bound by this Policy Statement. The QAP has been developed in accordance with this Policy Statement. The QAP applies to individuals and organizations responsible for operating and supporting the nuclear plants in the performance of activities affecting quality (e.g., operation, maintenance, modification, and refueling). The implementing procedures define responsibilities and authorities, prescribe measures for the control and accomplishment of activities for the operation of nuclear safety related structures, systems, and components and requires appropriate verification of conformance to established requirements to an extent consistent with their importance to safety. The individuals who constitute Nuclear Generation have full personal and corporate responsibility to assure that nuclear power plants are designed, constructed, tested and operated in a manner to protect the public health and safety. The comprehensive program to assure this began with initial design and continues throughout the life of the station. The Duke Energy Corporation QAP assures that the necessary quality requirements for nuclear safety related structures, systems, components and materials are achieved. All special equipment, environmental conditions, skills and processes that are determined to be nuclear safety related will be provided within the scope of the QAP.

Nuclear safety related structures, systems, and components (SSCs) are specified by approved design documents. Each nuclear plant has a controlled system for identifying items and activities to which the QAP applies. Controls and responsibilities for maintaining the system are prescribed in procedures.

The QAP applies to the nuclear safety related portions of the plant. The program is applied, in whole or in part, to other selected items based on the item's or activity's importance to safety. This application includes but is not limited to control and accomplishment of activities for radioactive waste, fire protection, seismically designed/restrained SSCs whose continued functions are not required during and after a seismic event, and License Renewal non-safety-related SSCs that are subject to an aging management review. Procedures provide a graded application of this QAP to non-safety related systems, components, items, and services by prescribing measures for the control and accomplishment of activities for their operation. For example, aging effects of non-safety related SSCs that were determined to be within the scope of License Renewal Aging Management Program as identified in Chapter 18 of the applicable site UFSAR, are included in the QAP for the administrative controls, corrective actions and confirmation processes described in sections 17.3.1.6 and 17.3.2.13, Corrective Action, and 17.3.2.14, Document Control.

The QAP is founded on the principle that the line organization has the primary responsibility for quality and safety. Self-assessment practices are used to ensure the desired levels of quality and safety are achieved and maintained. This consists of each individual being involved with plant performance to ensure the plant is operated in a safe, reliable, and efficient manner. The Nuclear Oversight (NOS) Department evaluates the performance, compliance, and effectiveness of plant programs, processes, personnel, and the line organization's self-assessment.

### 17.3.1.2 Organization

This section provides a generic functional description of the organization. The actual organization in-place is defined in a controlled implementing document containing the fleet operating model.

Plant specific details for the organization responsible for the safe plant operation are described in Chapter 13 of the UFSAR for each plant and in implementing procedures. The term "line organization" refers to the production organization reporting to the Chief Nuclear Officer and the interfacing department staff supporting the Nuclear Generation as identified in Section 17.3.1.2.3, Department Interfaces. "Line organization" does not include the independent verification functions of the Nuclear Oversight organization.

#### 17.3.1.2.1 Corporate Organization

The President and Chief Executive Officer has overall responsibility for Design, Construction, Operation, and Decommissioning of generation facilities. Reporting to the President and Chief Executive Officer is the Group Executive Regulated Generation, who is responsible for nuclear operations, nuclear development and nuclear decommissioning, and project management. This Group Executive is also responsible for environmental, health and safety and non-nuclear generation activities including: fossil and hydro generation; ash basin strategic management; and fuels and system optimization. Reporting to this Group Executive is the Chief Nuclear Officer (CNO) who has the overall authority and responsibility for the QAP and Nuclear Generation, which includes the operation of the nuclear plants. Also reporting to the President and Chief Executive Officer are Group Executives responsible for providing support to Nuclear Generation for the following: electrical transmission; electrical distribution; laboratory services; switchyard maintenance and technical support; support for the emergency response communications; and Information Technology Services. The interfaces with organizations providing those activities are described in Section 17.3.1.2.3. As such, the attainment of quality rests with those assigned the responsibility of performing the activity. The verification of quality is assigned to qualified personnel independent of the responsibility for performance or direct supervision of the activity. The degree of independence varies commensurate with the activity's importance to safety.

The policies described in this document are implemented through departmental program manuals and procedures, and are, thereby, transmitted to all levels of management.

#### 17.3.1.2.2 Nuclear Generation

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

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

Nuclear Generation is organized into three divisions. The activities of each division are directed by an executive who reports to the CNO. The divisions are Nuclear Corporate, Nuclear Oversight, and Nuclear Operations.



The CNO has the organizational flexibility to reassign responsibilities, within the limits specified in the following section, between the standard divisions to provide added focus on areas determined to need increased management attention. This flexibility includes both the ability to consolidate divisions or to identify new divisions. The actual organization in-place is defined in a controlled document containing the fleet operating model.

#### a) NUCLEAR CORPORATE

The senior executive(s) reports to the CNO and is responsible for Corporate Governance and support functions to the Nuclear Sites in the following areas: Nuclear Engineering; Nuclear Major Projects; Nuclear Regulatory Affairs; Nuclear Support Services; Nuclear Protective Services; Nuclear Operations; Nuclear Corporate Organizational Effectiveness; Nuclear Training; and Emergency Preparedness.

The organizational structure for these functions may vary based on near-term activities and the strategic importance of our fleet initiatives, in our continuing efforts to set and achieve industry-leading operational and outage performance. These functions are primarily off-site located in the Nuclear General Office (NGO).

#### NUCLEAR ENGINEERING

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

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

#### NUCLEAR MAJOR PROJECTS

Nuclear major projects provides project management for select projects critical to the success of the Nuclear Generation Department. This responsibility includes detailed scope development, accurate estimation, planning and scheduling, effective project controls, timely and accurate financial reporting, contract management, management of supplemental personnel, and predictable execution of assigned projects.

#### NUCLEAR REGULATORY AFFAIRS

Nuclear regulatory affairs provides fleet support to and governance of the site regulatory affairs and licensing activities to help improve overall fleet performance.

#### NUCLEAR SUPPORT SERVICES

Nuclear support services provides fleet support to the nuclear sites for laboratory, calibration, and select maintenance and refueling activities.

## NUCLEAR PROTECTIVE SERVICES

Nuclear protective services provides access authorization support to the nuclear sites security organization. Nuclear protective services is responsible for governance of the site security functions, providing assistance to help improve overall fleet performance.

## NUCLEAR OPERATIONS

Nuclear operations is responsible for governance of the nuclear site operating organizations, providing assistance to promote improvements to overall fleet performance.

## NUCLEAR CORPORATE ORGANIZATIONAL EFFECTIVENESS

Nuclear corporate organizational effectiveness is responsible for governance of the nuclear site performance improvement organizations, providing assistance to promote improvements to overall fleet performance through the corrective action and self-assessment programs. This group also supports implementation of the corrective action and self-assessment programs by the Nuclear Corporate Organization.

## NUCLEAR TRAINING

Nuclear training is responsible for governance of the nuclear site training organizations, providing assistance to promote improvements to overall fleet performance. This group also supports implementation of the training programs by the Nuclear Corporate Organization.

## EMERGENCY PREPAREDNESS

Emergency preparedness is responsible for governance of the nuclear site emergency response organizations, providing assistance to promote improvements to overall fleet performance.

### b) NUCLEAR OVERSIGHT

The executive for Nuclear Oversight (NOS) reports to the CNO and is located in the NGO. NOS consists of both site assigned and NGO located personnel. NOS provides oversight of the NGO, Departmental Interfaces, and the nuclear sites with assessment, QA program audits, vendor quality, and quality control. In addition, NOS coordinates the off-site review board, which provides an advisory function to senior management. NOS also provides oversight of Nuclear Development and Nuclear Decommissioning through QA program audits. The NOS executive has the authority and organizational freedom to: identify quality problems, initiate, recommend or provide solutions to quality problems through designated channels, verify the implementation of solutions to quality problems, and ensure cost and schedule do not influence decision making involving quality. This includes full access to Nuclear Development and Nuclear Decommissioning and all levels of management up to and including the Chief Executive Officer.

The NOS executive has primary ownership of the department QA program description (this document) and is responsible for interpretation and resolution of QA issues.

If significant quality problems are identified, NOS personnel have the authority to stop work as discussed in Section 17.3.1.4 pending satisfactory resolution of the identified problem.

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

## c) NUCLEAR OPERATIONS

The executive for Nuclear Operations reports to the CNO and is located in the NGO. This executive is responsible for the safe operation of the nuclear stations. Reporting to this executive are the Site executives for the respective nuclear stations.

The organization structure for each site is controlled by the site's UFSAR, which may vary from the following generic description. Reporting to the site executive for each nuclear station is a Nuclear Plant Manager who is assigned the direct responsibility for the safe operation of the facility including operations, maintenance, work management, radiation protection, chemistry, and environmental services. The qualification requirements for the Nuclear Plant Manager are in accordance with the provisions of ANSI N18.1 or ANS 3.1 as presented in each site's UFSAR and Technical Specifications. Also reporting to the site executive is a site Engineering manager; a site Training manager; and an Organization Effectiveness manager, typically having responsibility for regulatory affairs, emergency preparedness, performance improvement, and procedures. Each site executive also has a Security manager and a major projects manager assigned to provide services to the site.

### 17.3.1.2.3 Department Interfaces

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

#### CORPORATE COMMUNICATIONS

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

#### ENVIRONMENTAL HEALTH AND SAFETY

Environmental, Health and Safety provides occupational safety and environmental and laboratory support services.

#### NUCLEAR FINANCE

Nuclear Finance provides support for the nuclear sites in the areas of financial planning.

#### INFORMATION TECHNOLOGY

Information Technology provides a variety of services and technical support to Nuclear Generation for information technology applications and systems such as equipment databases, applications, and infrastructure including telecommunication systems.

#### CUSTOMER OPERATIONS

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

#### NUCLEAR SUPPLY CHAIN

Nuclear Supply Chain provides procurement services including receipt inspection/testing, storage, and inventory control of materials, parts, and components.

### **17.3.1.3 Responsibility**

The primary responsibility for quality performance, including the identification and effective correction of problems potentially affecting the safe and reliable operation of the Company's nuclear facilities, resides with the line organization. The individuals who constitute Nuclear Generation have full personal and corporate responsibility to assure nuclear power plants are designed, constructed, maintained, tested and operated in a manner to protect the public health and safety; and to assure the effectiveness of the QAP.

Appropriate procedures are developed, approved by the responsible implementing manager, issued for use, and used at the location where the prescribed activity is performed, where appropriate. Managers assure that their personnel are adequately trained for their jobs and they have the experience and education required to carry out their assigned responsibilities. These managers ensure that adequate resources and procedures are available for correctly implementing the work activities. Sufficient personnel, including necessary resources, are available and trained prior to performing activities that affect quality.

Independent inspections are conducted to verify specific critical quality attributes. Individuals performing these inspections have access to necessary information to ensure that activities and equipment meet established acceptance criteria.

NOS is responsible for monitoring and assessing activities that are performed by the line organization for, or in support of, Duke Energy Corporation's Nuclear Plants and Nuclear Generation. These activities include those performed at the individual plant sites, corporate offices, and other Nuclear Generation locations. NOS performs audits to verify that applicable elements of the quality assurance and other regulatory required programs have been developed, documented and effectively implemented in accordance with specified requirements. NOS monitors supplier performance to assure implementation of the applicable quality assurance program requirements. A periodic briefing of NOS activities, along with any potential findings and recommendations, is presented to the Chief Nuclear Officer.

The Chief Nuclear Officer is responsible for ensuring that the results and effectiveness of the nuclear oversight program are regularly evaluated as discussed in Section 17.3.3.3.6, Independent Audit of QA Functions.

### **17.3.1.4 Authority**

Personnel involved in quality activities have the authority and responsibility to stop work if they discover deficiencies in quality.

Personnel performing the QA functions have the authority and responsibility to stop unsatisfactory work and to assure the item/activity is controlled to prevent further processing, delivery, installation, or use until authorized by appropriate management.

Procedures outline the methodology for resolution of disputes involving quality and nuclear safety issues arising from a difference of opinion between identifying personnel and other groups.

### **17.3.1.5 Personnel Training and Qualification**

Both on-site and off-site personnel who perform activities affecting quality (implement requirements of the QAP) are indoctrinated and trained such that they are knowledgeable and capable of performing their assigned tasks.

Training programs and reviews ensure that proficiency of personnel performing activities affecting quality is achieved and maintained by training, examining, and/or certifying, as appropriate.

Training programs are modified to reflect station engineering changes and changes in procedures.

Personnel training and qualification records are to be maintained in accordance with procedures.

Personnel within the Operating organization performing duties of a licensed operator are indoctrinated, trained, and qualified as required by 10 CFR 55 Operators' Licenses.

#### **17.3.1.6 Corrective Action**

It is the policy of Duke Energy Corporation to seek improvement in each nuclear plant's performance as well as in the performance of supporting Departments. Duke Energy Corporation has established a corrective action process whereby all personnel are expected to assure conditions adverse to quality are promptly identified, controlled, and corrected. Individuals are encouraged to voluntarily report events, near misses, and potential problems. In the case of significant conditions adverse to quality, the process assures that the cause of the condition is determined and action be taken to preclude repetition. This process also provides for trending of problems to detect adverse trends in quality performance, including reporting of results to appropriate levels of management.

Management will emphasize to all levels in the organization the importance of identifying and effectively correcting situations that can adversely affect human and equipment performance. An important aspect of this program is the assignment of qualified personnel to accurately evaluate equipment/human performance problems, implement appropriate corrective actions, and verify corrective action adequacy.

Management is responsible for fostering a positive environment that encourages the self-identification of adverse conditions and trends. This includes assuring the process is administered to correct the problem rather than to establish blame or fault.

License Renewal non-safety-related SSCs that are subject to an aging management review are included in the scope of the corrective action program.

Section 17.3.2.13, Corrective Action provides additional detail.

#### **17.3.1.7 Regulatory Commitments**

The operation of nuclear plants is accomplished in accordance with the U.S. Nuclear Regulatory Commission (NRC) regulations specified in Title 10 of the U.S. Code of Federal Regulations.

The operation of the Company's nuclear power plants is in accordance with the terms and conditions of the facility operating license issued by the NRC.

The QAP provides for compliance with QA regulatory guides and the related codes and standards as identified in Table 17-1, Conformance with QA Regulatory Guides and Industry Standards.

The requirements of this section (17.3) may provide additional details for implementation of exceptions to these regulatory guides and codes and standards.

Changes to the description of the QAP contained in this document are controlled in accordance with 10 CFR 50.54(a).

Table 17-2, Site Specific Response to Regulatory Guides and Industry Standards, identifies additional Regulatory Guides that relate to implementation of the QAP but the implementation is site specific and controlled with each site's UFSAR in accordance with 10 CFR 50.59.

## **17.3.2 PERFORMANCE/VERIFICATION**

### **17.3.2.1 Methodology**

Personnel performing work activities are responsible for achieving the acceptable level of quality.

Personnel performing verification activities are responsible for verifying the achievement of acceptable quality.

Work is accomplished and verified using instructions, procedures, or appropriate means that are of a detail commensurate with the activity's complexity and importance to safety. The implementing manager is responsible to ensure instructions and procedures provide adequate detail for achieving an acceptable level of quality.

Criteria that define acceptable quality are specified in procedures and/or other documents, and verification, when required is performed against these criteria.

### **17.3.2.2 Design Control**

In order to provide for the continued safe and reliable operation of a nuclear station's nuclear safety related structures, systems and components, design control measures commensurate with those applied to the original design are implemented during the operational phase to assure that the quality of such structures, systems and components is not compromised by engineering changes.

Nuclear Engineering is responsible for design activities during the operational phase of nuclear stations to Nuclear Generation. Nuclear Engineering will assure that the organization performing design has access to pertinent background information, including an adequate understanding of the requirements and intent of the original design, and that the organization has demonstrated competence in applicable design areas.

Procedures and instructions for design control during the operational phases for nuclear safety related items provide controls to assure the design is performed in accordance with approved criteria, and that deviations and nonconformances are controlled.

Procedures identify the responsibilities of the various individuals/organizations involved in nuclear safety related engineering changes. The assignment of responsibility for the evaluation and design of a particular engineering change to a specific individual/organization is documented. Procedures addressing the control, including the review, approval, release, and distribution of engineering changes, address the communication of information between internal and external individuals/organizations and, where appropriate, require documentation of such communications.

The procedures include measures to assure that the design selected to accomplish a necessary or desirable change does not create "new" problems in off-normal modes of operation or in adjacent inter-tied systems. For each proposed nuclear safety related engineering change, the individual/organization assigned responsibility for evaluation and design of the engineering change considers the following in the design of the engineering change:

- a. Necessary design analyses, e.g., physics, stress, thermal, hydraulic, accident, etc.
- b. Compatibility of materials.
- c. Accessibility for operation, testing, maintenance, inservice inspection, etc.

- d. Necessary installation and periodic inspections and tests, and acceptance criteria therefore.
- e. The suitability of application of materials, parts, components, and processes that are essential to the function of the structure(s), system(s) and/or component(s) to be modified.
- f. Materials, parts, and equipment which are commercial grade items or which have been previously approved for a different application are evaluated for suitability prior to selection.

Engineering changes are then executed in accordance with approved checklists, instructions, procedures, drawings, etc., appropriate to the nature of the work to be performed. These checklists, instructions, procedures, drawings, etc., include criteria for determining the acceptability of the engineering change.

Any errors or deficiencies found in the design process or the nuclear safety related design itself are documented and corrected using the corrective action program.

Prior to a structure, system, or component that has been modified by engineering change being declared operable and returned to service, the procedures governing the operation are reviewed and revised as necessary. If the engineering change significantly alters the function, operating procedure, or operating equipment, then additional training is administered as necessary.

Adequate identification and retrievable documentation of station engineering changes is retained for the life of the station.

Engineering changes are reviewed to determine whether or not the modification is a change in the facility as described in the UFSAR, involves a change to the Technical Specifications, or requires a license amendment in accordance with 10 CFR 50.59(c)(2). Engineering changes which are determined to require a license amendment are reviewed by the On-Site Review Committee and must be authorized by the NRC prior to implementation.

### **17.3.2.3 Design Verification**

Procedures require that the adequacy of nuclear safety related designs and design changes be verified by the performance of design reviews, alternate calculations, or qualification testing. The control measures specified in the plan for control of design verification activities are as follows:

- a. Personnel responsible for design verification do not include the original designer or the designer's immediate supervisor unless the immediate supervisor is the only one capable of verifying the design, in which case additional requirements apply as identified below.
- b. Procedures identify the positions or organizations responsible for design verification and define their authority and responsibility. Procedures also provide guidelines as to the method of design verification to be used. Unless otherwise specified, design verification is performed by the method of independent design reviews and includes verification that UFSAR commitments have been addressed.
- c. Qualification tests to verify the adequacy of the design are performed using the most adverse specified design conditions.
- d. Design changes are reviewed to assure that design parameters are defined and that inspection and test criteria are identified.
- e. Design verification is completed prior to relying upon the component, system or structure to perform its function or before its installation becomes irreversible.



The use of the originator's immediate supervisor for verification is:

- 1) restricted and justified to special situations where the immediate supervisor is the only individual capable of performing the verification
- 2) the need is individually documented and approved in advance by the supervisor's management and
- 3) the frequency and effectiveness of the supervisor's use as design verifier are independently verified to guard against abuse.

The individuals assigned to perform the design verification of a nuclear safety related document have full authority to withhold approval of the document until every question concerning the work has been resolved. If required, the matter can be carried up to the Chief Nuclear Officer for resolution.

#### **17.3.2.4 Procurement Control**

Duke Energy Corporation maintains a program for supplier evaluation, results of supplier evaluation, surveillance of suppliers, supplier furnished records, certificates of conformance, effectiveness of supplier quality control, and the purchase of spare or replacement parts. The Duke Energy Corporation QAP requires the control of nuclear safety related items or services purchased from a supplier, subsupplier, or consultant through appropriate processes and specific procurement documents.

Procedures identify the responsibilities and requirements for the control of procurement documents and ensure that purchased material and services are of acceptable quality. Procurement of QA items is to the quality program requirements in effect at the time of purchase.

Nuclear safety related material, equipment and services procured as basic components may only be procured from qualified suppliers. Supplier qualification is accomplished by NOS evaluation of the supplier QA program. An audit or pre-award survey is performed by NOS when required. The audit or pre-award survey is carried out in accordance with a comprehensive audit checklist to determine the ability of the supplier QA program and manual(s) to meet applicable criteria of 10 CFR 50, Appendix B; 10 CFR 21; the ASME Code, when required, and any other codes and standards determined to be appropriate for the prospective scope of supply.

The above requirements apply to procurement of services and items as basic components, including obtaining a Commercial Grade Item dedicated as basic component from an approved third party dedicicator. The remainder of this section addresses alternate requirements for purchase of Commercial Grade Items or services.

When nuclear safety related items/services are not supplied as a basic component and meet the definition of Commercial Grade Item, the item may be procured without the performance of a supplier qualification audit or the existence of a documented supplier QA program. These Commercial Grade Items used in nuclear safety related applications require evaluation, dedication (consistent with industry standard EPRI NP-5652 for dedication of Commercial Grade Items) and approval by Nuclear Generation personnel. Supplier selection for Commercial Grade Items is the responsibility of the responsible engineering personnel or designated supply chain personnel as identified in procedures. These items are subject to the same verification and checking process for suitability of application as other nuclear safety related items.

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:

- The purchase documents impose any additional technical and administrative requirements, as necessary, to comply with the Duke Energy Corporation QAP and technical provisions. At a minimum, the purchase document requires that the calibration certificate/report include identification of the laboratory equipment/standard used.
- The purchase documents require reporting as-found calibration data when calibrated items are found to be out-of-tolerance.
- A documented review of the supplier's accreditation will be performed and will include a verification of the following:
  - The accreditation encompasses ANSI/ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories."
  - The accrediting body is an NRC recognized signatory to the ILAC MRA.
  - The published scope of accreditation for the calibration laboratory covers the necessary measurement parameters, range, and uncertainties.

#### **17.3.2.5 Procurement Verification**

Duke Energy Corporation procurement documents are prepared, reviewed, approved, and controlled in accordance with procedures to assure that requirements are correctly stated, inspectable, verifiable, and controllable, and there are adequate acceptance/rejection criteria. Procurement documents are reviewed by personnel knowledgeable in applicable technical and quality requirements, and documentary evidence of that review and approval is retained and available for verification.

As required by procurement criteria, in order to assure that material and equipment are fabricated in accordance with applicable requirements, supplier reviews are performed by Vendor Quality. Those reviews may include witnessing of tests, observation of fabrication checkpoints, and documentation review.

Receipt inspections are performed by qualified inspectors in accordance with procedures to assure that:

1. Materials, equipment, or components are properly identified and correspond with associated documentation.
2. Inspection records or certificates of conformance attesting to the acceptance of materials, equipment, and components are completed and are available prior to installation or use.
3. Materials, equipment, and components are inspected and judged acceptable in accordance with predetermined inspection instructions prior to installation or use.
4. Items not meeting applicable requirements are identified and controlled until proper disposition is made.

The process ensures that required documentation of compliance is received and available on site and procurement, inspection, and testing requirements are satisfied before the item is placed in service.

#### **17.3.2.6 Identification and Control of Items**

Procedures require spare or replacement parts to be subject to QAP controls, codes and standards, and technical requirements which ensure they are suitable for their intended service.

Items accepted or released are identified as to their inspection status prior to forwarding them to a controlled storage area or releasing them for installation or further work. Bulk items will not require individual accept tags; however, status of unacceptable bulk items will be so indicated.

Identification requirements for materials, parts and components important to nuclear safety are stated in specifications, drawings and purchase documents.

Control of material, parts and components is governed by approved procedures.

Following QA receipt inspection, materials, parts and components which are determined to be acceptable are assigned an identifying designation such as a unique tracking number in order to provide traceability of each item. This traceability is maintained for nuclear safety related items. In the event that the identification of an item becomes lost or illegible, the item is considered nonconforming and not utilized until proper resolution of the nonconformance.

Consumables utilized in nuclear safety related structures, systems and components are subject to appropriate controls as described in procedures.

#### **17.3.2.7 Handling, Storage, and Shipping**

Procedures utilized by suitably trained individuals define requirements for the control of the handling, storage, and shipping of safety-related items. These procedures require measures to be taken to ensure special handling, storage, cleaning, packaging, shipping, and preservation requirements are established to control these activities in accordance with design and specification requirements to preclude damage, loss or deterioration by environmental conditions such as temperature or humidity. Nuclear safety related materials, parts and components are handled, stored, issued and shipped in such a manner that the serviceability and QA traceability of an item is not impaired.

Nonconforming items are identified, segregated, or otherwise controlled in such a manner as to preclude their inadvertent substitution for and use as conforming materials parts and components.

#### **17.3.2.8 Test Control**

The QAP addresses both preoperational and periodic (surveillance) testing. The program requires that such testing associated with nuclear safety related structures, systems and components demonstrate that the items will perform satisfactorily in service. Testing activities are accomplished in accordance with approved, written procedures. Testing schedules are provided and maintained in order to assure that all necessary testing is performed and properly evaluated on a timely basis.

Modifications, repairs, and replacements are accomplished in accordance with the original design and testing requirements or acceptable alternatives.

#### **17.3.2.9 Measuring and Test Equipment Control**

The organizations performing nuclear safety related work activities have the responsibility to assure the required accuracy of tools, gauges, instruments, radiation measuring equipment, non-destructive testing equipment and other measuring and test devices affecting the proper functioning of nuclear safety related structures, systems and components and that a program of control and calibration for such devices is provided.

Procedures define requirements for the control of measuring and test equipment (M&TE) used. These procedures include requirements to establish procedures for the calibration technique

and frequency, maintenance, and control of measuring and test equipment. The requirements include the following:

- a. M&TE is assigned permanent, identifying designations. M&TE is identified and traceable to the calibration test data.
- b. M&TE is calibrated at prescribed intervals against certified equipment having known, valid relationships to nationally recognized standards or where national standards do not exist, provisions are established to document the basis for the calibration. The calibration interval is based on the applicable manufacturer's recommendations. If experience shows that the manufacturer's recommendations are not appropriate, the calibration interval is changed as necessary. One or more of the following may be used to adjust intervals: 1. Technical Specifications; 2. Required accuracy; 3. Intended use; 4. Frequency of usage; 5. Stability characteristics; 6. Other conditions affecting measurement. In lieu of specified intervals, infrequently used M&TE may be calibrated immediately before and after use.
- c. Status of calibration for M&TE is provided through the use of tags, stickers, labels, routing cards, computer programs, or other suitable means. The status indicators indicate the date recalibration is due or the frequency of recalibration.
- d. M&TE failing to meet calibration specifications is identified through the use of tags, stickers, labels, routing cards, computer programs, or other suitable means, showing the date of rejection, the reason for rejection and the identification of the individual rejecting the device. "Accepted" and "Rejected" calibration identification is sufficiently different to preclude confusion between them.
- e. Items and processes determined to be acceptable based on measurements made with M&TE that subsequently cannot be demonstrated to meet calibration specifications are re-evaluated to determine the validity of previous inspections and test results and the results of the evaluation documented.
- f. M&TE is stored under conditions which are in accordance with, or more conservative than, the applicable manufacturer's recommendations.
- g. M&TE is issued under the control of responsible personnel so as to preclude unauthorized use.
- h. M&TE is shipped in a manner that is in accordance with, or more conservative than, the applicable manufacturer's recommendations.
- i. Records are maintained for each item of M&TE identifying the device designation, the calibration frequency and specifications. Records are maintained reflecting current calibration status, the date of calibration, the date the next calibration is due, and the identification of the individual who was responsible for performing the calibration.
- j. As a rule, the calibration program achieves a minimum ratio of 4-to-1 calibration standard accuracy to measuring and test equipment accuracy is used. However, well defined and documented measurement assurance techniques or uncertainty analysis may be used to verify the adequacy of the measurement process. See site specific requirements for other exceptions to the 4:1 rule.

M&TE is selected to assure accurate measurement (i.e., to overcome inherent inaccuracies associated with environment, human error, equipment, etc.).

#### **17.3.2.10 Inspection, Test, and Operating Status**

Procedures define requirements for the identification and control of the inspection, test, and operating status of safety-related structures, systems, and components, to assure that equipment operating status is clearly evident, and to prevent inadvertent operation of nuclear

safety related structures, systems and components which, if operated, could cause damage to other equipment/systems or to personnel

These measures include the use of checklists, computer programs, logs, stickers, tags, labels, record cards, and test records to indicate the acceptable operating status of installed equipment. Where appropriate, an independent verification of the correct implementation of such identification measures is performed.

When tags, labels or stamps are utilized for the identification of equipment status, the issuance and removal thereof is documented in order to assure proper control of such identification measures. Also, procedures require that the operability of an item removed from operation for maintenance or testing be verified prior to returning the item to normal service.

Selected plant procedures and subsequent revisions receive separate technical review to ensure required inspections, tests, and other critical operations are included.

#### **17.3.2.11 Special Process Control**

Procedures define requirements for the control of special processes, such as welding, heat treating, nondestructive examination (NDE), coatings, and chemical cleaning when the performance of such processes affects the proper functioning of nuclear safety related structures, systems, and components.

Procedures require that special processes be performed by qualified personnel using proper equipment and in accordance with written qualified procedures. These personnel and procedures are to be qualified in accordance with applicable codes, standards, and specifications as described in procedures.

Qualification records of special process procedures and personnel performing special processes are maintained and available for verification.

#### **17.3.2.12 Inspection**

Procedures define requirements for an inspection program to verify conformance to performance and quality requirements specified for nuclear safety related structures, systems, and components.

Inspections are performed by personnel who are not directly responsible for performing or supervising the activity being inspected. Inspection personnel are qualified in accordance with applicable codes and standards, and their qualifications and certifications are maintained current.

Inspections are performed in accordance with procedures or other documents, which provide for the following:

1. Identification of individuals or groups responsible for performing the inspections
2. Identification of characteristics and activities to be inspected
3. Acceptance criteria
4. Inspection techniques
5. Recording the results of the inspection, review of the results, and identification of the inspector
6. Indirect control by monitoring of processing methods, equipment, and personnel when direct inspection is not possible

Mandatory inspection hold points are included in the documents addressing the activities being performed, as necessary and work does not proceed until satisfactory completion of the required inspection.

When acceptance criteria are not met, the condition will be documented in accordance with the corrective action program procedures and work does not proceed until satisfactory disposition of any item not meeting the acceptance criteria and satisfactory completion of any required re-inspection.

Modification, repairs, and replacements are inspected in accordance with the original design and inspection requirements or acceptable alternatives.

#### **17.3.2.13 Corrective Action**

Station personnel are responsible for the implementation of the QAP as it pertains to the performance of their activities. Specific to this responsibility is the requirement for informing the responsible supervisory personnel and/or for taking appropriate corrective action whenever any deficiency in the implementation of the requirements of the program is determined.

Procedures define requirements for a corrective action program that charges personnel working at or supporting the nuclear plants with the responsibility to identify adverse conditions (including conditions adverse to quality). Conditions adverse to quality are identified through inspections, assessments, tests, checks, and review of documents. Procedures require that conditions adverse to quality be corrected. In the case of significant conditions adverse to quality, the procedures assure that the cause of the condition is determined and action be taken to preclude repetition.

Significant conditions adverse to quality are reported to appropriate management for review and evaluation.

Periodic reviews and evaluations of adverse conditions are performed to identify and correct adverse trends.

#### **17.3.2.14 Document Control**

Procedures define requirements for the development, review, approval, issue, use, revision, and control of documents. These procedures define the scope of which documents are to be controlled. These activities include measures to control the issuance of documents such as, instructions, procedures, and drawings, and changes thereto, which prescribe activities affecting quality.

A document control system has been established to identify the current revision number of instructions, procedures, specifications, and drawings. This system includes provisions to ensure that superseded documents are controlled to prevent inadvertent use.

Controlled documents are to be distributed to and used by the person performing the activity in accordance with procedures. These controlled documents are distributed electronically. Hardcopy distribution, if required, is by distribution indices.

Procedures require the identification of those individuals or organizations responsible for reviewing, approving, and issuing documents and revisions thereto.

In addition to procedures and engineering documents (e.g. specifications and drawings), the following are considered to be controlled documents:

- The station Facility Operating License and Technical Specifications

- Updated Final Safety Analysis Reports
- Process Control Program
- Offsite Dose Calculation Manual
- Radiological Effluent Controls of the UFSAR, and radwaste treatment systems

Procedures established for operational phase activities include:

1. Operating Procedures
2. Alarm Responses
3. Radiation Protection Procedures
4. Maintenance Procedures
5. Instrument Procedures
6. Chemistry Procedures
7. Process Control Program Implementing Procedures
8. Periodic Test Procedures
9. Abnormal Procedures
10. Emergency Procedures
11. Emergency Response Procedures
12. License Renewal Aging Management Program

#### **17.3.2.15 Records**

Each nuclear station is required to maintain adequate identifiable and retrievable QA records. The QAP requires that sufficient records be maintained to provide documentary evidence of the quality of items and the accomplishment of activities affecting quality.

Procedures define requirements for the identification, collection, and storage of quality assurance records.

The program for storage of records on microfilm, dual storage or in electronic format meets the preservation requirement for the retention of QA Records.

Media used for retention of records include (but are not limited to): microfilm, compact disk recordable (CD-R), and magnetic media including videotape, computer tape, optical disks, and hard disk storage. Electronic records retention is an integral component of the Record Retention Program, approved by the management position responsible for Nuclear Generation Department records. The format used must be capable of producing legible, accurate, and complete documents supporting the required retention period. Electronic approval and authorization procedures are established to assure that only those persons authorized grant the required approvals.

For creation and maintenance of on-line electronic records, Duke Energy Corporation follows the Nuclear Information and Records Management Association (NIRMA) Technical Guides as identified in Table 17-1, Conformance with QA Regulatory Guides and Industry Standards.

There is no requirement to convert records stored on media including hardcopy, microfilm, compact disk recordable (CD-R), and magnetic media including videotape, computer tape, and optical disks to on-line electronic records. Those records may be maintained in their current form as long as retrieval technology and media life support the continued use of the media. If records stored on one media are to be converted to a new media, the records stored on the old system's media are acceptably converted into the new system before the old system is taken out of service. This includes verification of the records so copied are complete and accurate in the new system.

Records are identifiable and retrievable through the use of indexes and filing systems, which are required by the program.

Procedures are required to be developed to indicate responsibilities and retention periods.

The actual retention times for the various QA records are in accordance with corporate retention policies. The development of these retention policies includes consideration of applicable requirements, including those of the Code of Federal Regulations, a station's Technical Specifications, established national codes and standards, and regulatory guidance as listed in Table 17.1, Conformance with QA Regulatory Guides and Industry Standards.

The following is a list of typical QA Records retained for the operational phase:

1. Records and drawing changes reflecting facility design modifications made to systems and equipment described in the Final Safety Analysis Report. These include: drawings, design specifications, calculations, design analyses, and vendor documents for nuclear safety related structures, systems and components.
2. Records of new and irradiated fuel inventory, fuel transfers and assembly burn-up histories.
3. Radiation monitoring records, including records of radiation and contamination surveys.
4. Personnel radiation exposure records.
5. Records of radioactive releases and waste disposal, records of gaseous and liquid radioactive material released to the environs.
6. Records of component cyclic or transient limits established for the reactor coolant system, reactor vessel, and secondary coolant system
7. Records of the qualifications, experience and training of appropriate station personnel
8. Records of quality control inspections.
9. Records of reviews performed for changes made to procedures or [safety related SSCs](#) or reviews of tests and experiments pursuant to 10 CFR 50.59.
10. Completed station procedures, and changes thereto; including review and approval documentation.
11. Records of meetings of the on-site review committee.
12. Records of Independent Review. These records include off-site review committee meeting minutes.
13. Records of reactor tests and experiments.
14. Records of inservice inspections performed pursuant to Technical Specifications and 10 CFR 50.55a(g).
15. Records of the service lives of all safety-related snubbers (required by Technical Specification) including the data at which the seal service life commences and associated installation and maintenance records.
16. Records of analyses required by the Radiological Environmental Monitoring Program that would permit evaluation of the accuracy of the analysis at a later date.
17. Records of secondary water sampling and water quality.
18. Records of reviews performed for changes made to the Off-Site Dose Calculation Manual, the Process Control Program, and Radwaste Treatment Systems.
19. Isotopic and physical inventory records of special nuclear materials.
20. Nuclear safety related preoperational testing records.
21. Records such as vendor documentation packages and inspection reports, piping isometric drawings, welding records, etc. compiled during the design and construction of a nuclear station.
22. Approved purchasing documents for items requiring QA certification
23. Purchase specifications



24. Records of special processes affecting nuclear safety related structures, systems and components.
25. Records of off-site environmental surveys
26. Records of environmental qualification
27. By-product material inventory records
28. Radioactive liquid effluent, gaseous effluent, and gaseous process monitoring instrumentation alarm/trip setpoints.
29. Records of reviews performed for changes made to Radiological Effluent Controls.
30. Records of reviews performed on the Fire Protection Program and implementing procedures.
31. Audit reports and required written responses.
32. Records and logs of facility operation covering time interval at each power level, including: switchboard record, reactor operator logbook, and shift supervisor logbook
33. Records and logs of principal maintenance activities, inspections, repair and replacement of principal items of equipment related to nuclear safety.
34. Reports of all reportable and other significant events
35. Records of surveillance activities, inspections, and calibrations required by Technical Specifications.
36. Records of radioactive shipments.
37. Records of sealed source and fission detector leak tests and results.
38. Records of annual physical inventory of all sealed source material of record.
39. Calibration standard records and Measuring and Test Equipment (M&TE) calibration records.

Dry cask storage records pertaining to the design, fabrication, erection, testing, maintenance, and use of structures, systems, and components important to safety must be maintained for the life of the storage mode.

### **17.3.3 SELF-ASSESSMENT**

#### **17.3.3.1 Methodology**

Each Site Vice President and the Chief Nuclear Officer are responsible for ensuring that an environment exists for a strong assessment program at the each nuclear site and within Nuclear Generation, respectively.

The overall objective at Duke Energy Corporation is to encourage ownership, involvement, and dedication by each individual supporting Nuclear Generation. This involves continually looking for ways to improve the overall performance and safety at each plant. This approach of identifying and correcting conditions early, requires active support by management and employees.

The Duke Energy Corporation self-assessment process includes the line organization self-assessment activities, independent review activities, and an independent assessment process implemented by NOS that encompasses internal and supplier audits, in-plant reviews, and other independent assessments.

The managers of line organizations are responsible for ensuring that self-assessment activities and processes are implemented within their functions to promote continuous improvements. A process of self-assessment is an attitude by personnel that the Duke Energy Corporation Nuclear Generation is improving on a continual basis. This process, along with an effective corrective action program, ensures that conditions are identified early, corrected promptly and effectively before becoming significant quality or safety problems.

The independent review activities are discussed in Section 17.3.3.2.

The independent assessment process is to confirm to management that activities affecting quality comply with the QAP and that the QAP has been implemented effectively. The assessment activities are performed in accordance with instructions and procedures by organizations independent of the areas being assessed. Personnel performing these assessment activities are technically and performance oriented, with the primary focus on the quality of the end product and a secondary focus on procedures and processes. This process is discussed in detail in Section 17.3.3.3.

#### **17.3.3.2 Independent Review**

For Brunswick, Harris, and Robinson, the independent review function is provided by an organizational unit functioning as an independent review body. At Catawba, McGuire, and Oconee, the independent review function is provided by off-site and on-site review committees. For detailed requirements see:

- Attachment A, Brunswick Specific QAPD, Section A17.3.3.2, Independent Review
- Attachment B, Harris Specific QAPD, Section B17.3.3.2, Independent Review
- Attachment C, Robinson Specific QAPD, Section C17.3.3.2, Independent Review
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD, Section D17.3.3.2, Independent Review Committee

#### **17.3.3.3 Independent Assessment**

NOS is responsible for conducting independent assessments of functions and activities affecting the nuclear programs at Duke Energy Corporation locations. NOS independently monitors and

assesses the Company's nuclear programs on a continuing basis. As part of this continuing assessment process, NOS performs audits to verify that applicable elements of the quality assurance and other regulatory required programs have been developed, documented and effectively implemented in accordance with specified requirements. In this section, the words assess, assessment, and their various word forms are used generically to indicate the act of evaluating the performance of the line organization.

NOS monitors specific functional areas, along with the line organization management, to determine that the desired levels of performance are being achieved. Individuals assigned these duties work with each nuclear plant or corporate support organization, as appropriate, to improve implementation of Duke Energy Corporation's Nuclear Generation programs and processes to support safe and reliable operation.

The functions of NOS are to:

- 1) independently assess line organization performance including the self-assessment and corrective action process;
- 2) ensure that "lessons learned" are shared among the plants and support organizations; and
- 3) facilitate the use of industry peer evaluators to identify industry best practices.

NOS performs these functions in evaluating operations, engineering, and maintenance. NOS teams may include peers from other Duke Energy Corporation plants and from the nuclear utility industry, as appropriate, to lend expertise to the assessment process.

NOS evaluations, including the results and recommended corrective actions, are reported to senior management.

#### 17.3.3.3.1 Organization

On an exception basis, personnel in NOS may provide assistance to the line organization by participating in emergency preparedness activities, ad hoc committees or analyzing technical issues, if such assistance is deemed to be in the overall best interest of safety and is approved in advance by NOS management.

In addition, subject matter experts from the line organizations may be utilized to add specific technical expertise to the assessment team or a specific audit team. When supporting a specific audit team, the subject matter experts will work under the direction of the audit team leader and not evaluate any documentation for which they had direct responsibility.

Selection of assessment personnel is based on experience and/or training that establishes that their qualifications are commensurate with the complexity or special nature of the area being assessed. The process for qualification of personnel to perform audits and assessments is established in procedures.

#### 17.3.3.3.2 Internal Assessment Process

The internal assessment process includes gathering data, analyzing data, focusing on selected issues and identifying deficiencies to desired performance. The results of assessments are communicated to management in a manner that causes action to correct deficiencies and, as appropriate, develop action to prevent recurrence. In addition, this process should evaluate corrective measures adopted to eliminate the deficiencies identified.

Data is gathered using performance based techniques during:

- a) Observations of work activities

- b) Interviews
- c) Reviews of documents to gather information (including the use of NRC, INPO, and other agency evaluations)
- d) Audits, and
- e) Analysis of data and reports (including adverse condition reports, etc.)

Personnel performing assessments, including audits, have access to records, procedures, and personnel to gather data.

NOS conducts assessments and observations of specific activities, and processes on the basis of their impact and importance relative to safety. The schedule is flexible and dynamic to allow the overall assessment process to be changed depending on plant conditions, events, or issues raised by senior management. Assessment activities can be focused on areas most in need of improvement.

Audits are a specific independent assessment activity performed to verify that applicable elements of the quality assurance and other regulatory required programs have been developed, documented and effectively implemented in accordance with specified requirements. Independent Audit activities are selected with flexibility based on various factors. These factors include but are not limited to: importance to safety and reliability, NOS independent assessments of site work activities, time since last audit, plant management perspective, outside agency audits, and problem areas identified from industry and Duke Energy Corporation experience.

Preparation activities may include a review of performance data, relevant documentation, previous assessment data, industry experience, team member experience, and management input. These activities enable the team to focus on issues which may impact safety and reliability when analyzing data.

Audits are scheduled per the following section.

#### 17.3.3.3.3 Internal Audit Program

The Duke Energy Corporation QAP requires a comprehensive system of planned and periodic internal audits for all phases of station operations and supporting activities.

Periodic audits of activities or records of processes (e.g., welding, maintenance, development of design, record management, or system testing), to verify compliance and effectiveness of the implementation of the QAP are performed. NOS audits are performance based and scheduled based on plant performance and importance to safety but at a frequency not to exceed twenty-four months with extensions as allowed in Section 17.3.3.3.7, Audit Frequency Extensions.

The audit system is reviewed periodically and revised as necessary to assure coverage commensurate with current and planned activities. These audits encompass:

- The conformance of facility operation to provisions contained within the Technical Specifications and applicable license conditions.
- The performance, training and qualifications of the Nuclear Generation Department.
- The results of actions taken to correct deficiencies occurring in facility equipment, structures, or systems that affect nuclear safety; or method of operation that affect nuclear safety.
- The performance of activities required by the QAP to meet the criteria of Appendix B, 10 CFR 50 for activities performed by the Nuclear Generation Department and the interfacing organizations.

- Any other area of nuclear generation considered appropriate by responsible management.
- The Radiological Environmental Monitoring Program and the results thereof.
- The Offsite Dose Calculation Manual and implementing procedures.
- The Process Control Program and implementing procedures for processing and packaging of radioactive wastes.
- The acceptability of a representative sample of station procedures, including the effectiveness of the procedure review and revision program.
- Independent Spent Fuel Storage Installation Activities (reference 10 CFR Part 72).
- Packaging of Radioactive Materials for Off-Site Shipment (reference 10 CFR Part 71).

The scope of each audit is determined by the responsible Lead Auditor, under the direction of NOS management. The lead auditor is responsible for completion of audit checklists and directing the audit team in the performance of the audit. The audit is conducted in accordance with checklists; the scope may be expanded upon by the audit team during the audit, if needed. One or more persons comprise an audit team, one of whom is qualified lead auditor.

#### 17.3.3.3.3.1 Other Audits Prescribed by the Code of Federal Regulations

Other Audits prescribed by the Code of Federal Regulations are scheduled and performed per the CFR. The audit frequency extension provisions of 17.3.3.3.7 do not apply.

NOS performs the following audits under the internal audit program:

- a. Emergency Preparedness (per 10 CFR 50.54(t))
- b. Security (per 10 CFR 50.54(p) and 10 CFR Part 73)
- c. Fitness for Duty and Fatigue Rule (per 10 CFR Part 26)

The periodic review of the radiation protection program content and implementation required by 10 CFR 20.1101c may be performed by either the line organization or NOS as identified in site specific information.

#### 17.3.3.3.3.2 Independent Audit of Fire Protection Program

See Site specific requirements for Fire Protection audits.

#### 17.3.3.3.4 Results

Adverse conditions are reported in accordance with the applicable corrective action program procedure.

Independent audit results are communicated to line management to allow for timely action to address potential problems or recognize strengths and superior performance.

Independent assessment results are documented and reviewed with management personnel responsible for the areas assessed.

Results of independent assessments, special investigations, and analysis of data will be provided to NOS management, as appropriate, for review.

Follow-up is accomplished to assure that corrective action is taken as a result of the audit and that deficient areas are re-audited, when necessary, to verify implementation of adequate corrective actions.

#### 17.3.3.3.5 Supplier Oversight

Supplier QA programs are evaluated and monitored by NOS-Vendor Quality, to assure that QA requirements are met. Supplier QA programs require a system of periodic and planned supplier and sub-supplier audits conducted by persons not directly involved in the activity being audited. Supplier audits are performed on a three year frequency with extensions as allowed in Section 17.3.3.3.7, Audit Frequency Extensions.

#### 17.3.3.3.6 Independent Audit of QA Functions

As directed by the Chief Nuclear Officer, the VP NOS initiates a program audit of the QA Functions performed by NOS. These functions include the internal audit program, the NOS portions of the supplier oversight program, and maintenance of this document (Quality Assurance Program Description). This program audit is performed within a period of two years with extensions as allowed in Section 17.3.3.3.7 Audit Frequency Extensions.

This audit team consists of qualified individuals, none of which is from the area audited.

The audit is performed with pre-approved checklists, instructions, or plans.

The audit team conducts a post-audit conference with the responsible management of the areas audited to discuss the audit results, including deficiencies. The audit team prepares checklists and the audit report. The report is sent to the VP NOS.

The VP NOS and/or responsible management of the area being audited determines the need for corrective action and re-evaluation. Necessary corrective action and re-evaluation are performed as required.

Pertinent correspondence and reports related to the audit are filed.

#### 17.3.3.3.7 Audit Frequency Extensions

Except when the audit frequency is specified by regulation, the following criteria for extending audit intervals apply:

- 1) Schedules are based on the anniversary established for each audit.
- 2) A maximum extension not to exceed 25 percent of the audit interval may be allowed (e.g., audits on a two year frequency may not be extended beyond 30 months, audits on an annual frequency may not be extended beyond 15 months).
- 3) When an audit interval extension is used, the next audit for that particular audit area is scheduled from the original anniversary.
- 4) Provision 2) also applies to supplier audits and evaluations except that a total combined time interval for any three consecutive inspection or audit intervals should not exceed 3.25 times the specified inspection or audit interval.

### **17.3.4 ADMINISTRATIVE CONTROLS RELOCATED FROM TECHNICAL SPECIFICATIONS**

Consistent with NRC Administrative Letter 95-06, certain administrative controls from the original station Technical Specifications have been relocated to the Quality Assurance Program. These relocated administrative controls include technical review, 10 CFR 50.59 review, record retention, and audit requirements. This section provides references to the sections of this document where the administrative controls have been integrated with QAP controls.

#### **17.3.4.1 Technical Reviews**

This content provided requirements for technical reviews of station modifications, procedures, tests, and experiments to assure adequacy of nuclear safety related SSCs and associated activities. See Site specific Attachments for review requirements as follows:

- Attachment A, Brunswick Specific QAPD, Sections A17.3.4.1, Technical Reviews; A17.3.4.2, Modifications; and A.17.3.4.3, Operating License/BNP Technical Specifications.
- Attachment B, Harris Specific QAPD, Sections B17.3.4.1, 10CFR50.59 and Technical Reviews and B17.3.4.6, Procedure Review Requirements.
- Attachment C, Robinson Specific QAPD, Sections C17.3.4.1, Procedures, Tests, and Experiments, C17.3.4.2 Modifications, and C17.3.4.3, RNP Technical Specifications and License Changes
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD, Section D17.3.4.1, Technical Reviews.

#### **17.3.4.2 10 CFR 50.59 Reviews**

The review of station modifications, procedures, tests, and experiments against the requirements of 10 CFR 50.59 is to ensure that changes requiring prior NRC approval are submitted to and by the NRC prior to implementation. Provisions are included in Sections 17.3.2.3 Design Verification and 17.3.2.14 Document Control to amplify the need to complete these reviews.

The program for 10 CFR 50.59 reviews is in accordance with NEI 96-07, Revision 1, "Guidelines for 10 CFR 50.59 Evaluations" as endorsed by Regulatory Guide 1.187, November 2000.

This program includes provisions to ensure that individuals have appropriate qualifications prior to completing these reviews.

See Site specific Attachments as follows:

- Attachment A, Brunswick Specific QAPD, Sections A17.3.4.4, 10CFR 50.59 Evaluations And Independent Review Control and A17.3.4.5, Nuclear Reviewers.
- Attachment B, Harris Specific QAPD, Sections B17.3.4.1.3, Qualified 10CFR50.59 Reviewers, and B17.3.4.1.4, 10CFR50.59, Evaluations and Approvals
- Attachment C, Robinson Specific QAPD, Section C17.3.4.5, 10CFR 50.59 Review Qualification
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD, Section D17.3.4.2, 10 CFR 50.59 Reviews

#### **17.3.4.3 Record Retention**

The list of typical operational phase records is in Section 17.3.2.15, Records.

#### **17.3.4.4 Audit Types and Frequencies**

These are addressed in Section 17.3.3.3 Internal Audit Program.

#### **17.3.4.5 On-Site Review Committee**

See Site specific Attachments for on-site review committee requirements as follows:

- Attachment A, Brunswick Specific QAPD, Section A17.3.4.6, Plant Nuclear Safety Committee
- Attachment B, Harris Specific QAPD, Section B17.3.4.2, Plant Nuclear Safety Committee (PNSC)
- Attachment C, Robinson Specific QAPD, Section C17.3.4.6, Plant Nuclear Safety Committee (PNSC)
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD, Section D17.3.4.5, On-Site Review Committee

#### **17.3.4.6 Reportable Event Action**

Procedures are established to assure events are reviewed and notifications and reports are made as required by Regulations including, but not limited to, 10 CFR Part 21, 10 CFR 50.72, and 10 CFR 50.73.

See Site specific Attachments for additional requirements as follows:

- Attachment A, Brunswick Specific QAPD, NONE
- Attachment B, Harris Specific QAPD, NONE
- Attachment C, Robinson Specific QAPD, Sections C17.3.4.4, Review of RNP Technical Specifications Violations, C17.3.4.10, Reportable Event Action, and C17.3.4.11, Safety Limit Violation.
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD, Section D17.3.4.6

#### **17.3.4.7 Independent Safety Engineering Group Functions**

Independent Safety Engineering Group (ISEG) was addressed on a Site Specific basis for certain plants. See Site specific Attachments for additional requirements as follows:

- Attachment A, Brunswick Specific QAPD, Not Addressed.
- Attachment B, Harris Specific QAPD, Section B17.3.4.4, Independent Safety Engineering Group.
- Attachment C, Robinson Specific QAPD, Not Addressed
- Attachment D, Catawba, McGuire, and Oconee Specific QAPD, Section D17.3.4.7, Independent Safety Engineering Group



## **Attachment A, Brunswick Specific QAPD**

### **Attachment A, Brunswick Specific QAPD**

Information presented in this section is transferred from the Brunswick UFSAR with approved changes as allowed under 10 CFR 50.54(a)(3). Change bars in this section indicate changes since UFSAR Amendment 24.

Where a section contains no descriptive information beyond that in the generic text in the body of the document, a statement is made to that effect and no content is included. See A17.3.1.2, Organization for example.

## **Attachment A, Brunswick Specific QAPD**

### **A17. BNP SPECIFIC QUALITY ASSURANCE**

#### **A17.1 BNP QA DURING DESIGN AND CONSTRUCTION**

See Brunswick UFSAR Chapter 17 for historic information from the description of the QA Program for design and construction.

#### **A17.2 OPERATIONAL QA**

Deleted

(NOTE: In April 1995, NRC approved the reformatting of the description of the Brunswick QA Program to follow Standard Revision Plan Section 17.3, replacing the content of 17.2.)

#### **A17.3 BNP QUALITY ASSURANCE PROGRAM (QAP) DESCRIPTION**

##### **INTRODUCTION**

This content is not addressed in SRP Section 17.3; therefore, the Brunswick description of the QA Program did not include this section.

##### **DEFINITIONS**

There are no Brunswick specific definitions.

##### **EXPLANATION OF “QUALITY ASSURANCE”**

There is no Brunswick specific content.

##### **QA STANDARDS AND GUIDES**

The QAP Brunswick conforms to Appendix B of 10CFR 50, as discussed in Section 17, “Quality Assurance.” The QAP also conforms to applicable NRC Regulatory Guides and approved ANSI Standards, or applicable alternatives. Table A17-1 and A17-2 address QAP conformance to the referenced regulatory and program guidance contained in NUREG-0800 Section 17.3.

The content of Table A17-1 was transferred from Table 1-6 of the Brunswick UFSAR. Changes to the content of Table A17-1 are controlled in accordance with 10 CFR 50.54(a). Subsequent changes to the QAP are incorporated in this document as identified in Section 17.3.1.7.

Table A17-2 addresses additional Regulatory Guides that relate to implementation of the QAP but the implementation is site specific and controlled with the Brunswick UFSAR in accordance with 10 CFR 50.59.

## Attachment A, Brunswick Specific QAPD

**Table A17-1. Conformance with QA Regulatory Guides and Industry Standards**

Generic Exception:

Table A17-1 addresses Brunswick's Conformance of the Quality Assurance Program to certain NRC Regulatory Guides. In so doing, specific editions of industry standards are identified for compliance with exceptions and alternatives. Those identified standards include references to other industry standards for activities including, but not limited to; design, fabrication, inspection, and testing. Those included reference industry standards are considered to be guidance documents for details of how activities may be accomplished. The actual standard to be used in such cases is controlled by each station's current licensing and design bases.

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Regulatory Guide 1.28, Quality Assurance Program Requirements (Design And Construction) (Safety Guide 28 June 1972) (Rev. 0)

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ANSI Standard N45.2-1971, Quality Assurance Requirements For Nuclear Power Plants

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This guide, and the standard it endorses, have been superseded for operations activities by Regulatory Guide 1.33 and ANSI N18.7-1976, which it endorses. The Operational Quality Assurance Program complies with Regulatory Guide 1.33 and ANSI N18.7-1976 as stipulated in Appendix A to that Program; therefore, Regulatory Guide 1.28 (Safety Guide 28) and ANSI N45.2-1971, which it endorses, are not considered necessary and are not included as part of the program.

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Regulatory Guide 1.30, Quality Assurance Requirements For The Installation, Inspection, And Testing Of Instrumentation And Electrical Equipment (Safety Guide 30, Revision 0, August 1972)

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ANSI Standard N45.2.4-1972 (IEEE-336-1971), Installation, Inspection, And Testing Requirements For Instrumentation And Electrical Equipment During The Construction Of Nuclear Power Generating Stations

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BNP 1 and 2 shall comply with the provisions of Regulatory Guide 1.30, August 1972, as indicated below:

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The installation, inspection, and testing of nuclear power plant instrumentation and electrical equipment at BNP will be in accordance with the applicable requirements of ANSI N45.2.4-1972 with the following exceptions:

1. Section 1.4 titled Definitions: Definitions in this standard which are not included in ANSI N45.2.10 will be used; definitions which are included in ANSI N45.2.10 will be used as clarified in Brunswick commitment to Regulatory Guide 1.74.
2. Section 1.5 titled Reference Documents: Brunswick's commitment to other documents referenced in this standard shall be as stated in our commitment to that document.
3. Section 2.5 titled Measuring and Test Equipment: Brunswick will implement the applicable portions of this Section as follows:

The status of portable items of measuring and test equipment and reference standards shall be identified by use of status cards, computer schedules, or tags for the date recalibration is due. These items are in a calibration program which requires recalibration on a specified frequency or, in certain cases, prior to use.

## Attachment A, Brunswick Specific QAPD

Table A17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

Regulatory Guide 1.30, Quality Assurance Requirements For The Installation, Inspection, And Testing Of Instrumentation And Electrical Equipment (Safety Guide 30, Revision 0, August 1972)
ANSI Standard N45.2.4-1972 (IEEE-336-1971), Installation, Inspection, And Testing Requirements For Instrumentation And Electrical Equipment During The Construction Of Nuclear Power Generating Stations
<p>Instrumentation and electrical equipment in the categories listed below shall be in a calibration program. This program provides, by the use of status cards, computer schedules, or tags, for the date that recalibration is due and indicates the status of calibration. The identity of person(s) performing the calibration is provided on the calibration documents.</p> <ol style="list-style-type: none"><li>Instruments installed as listed in the BNP Technical Specifications</li><li>Installed instrumentation used to verify BNP Technical Specification parameters</li><li>Installed safety-related instruments and electrical equipment that provide an active function during operation or during shutdown; i.e., not a device being designated safety-related solely because the instrument is an integral part of a pressure retaining boundary.</li></ol> <p>4. Section 7 titled Data Analysis and Evaluation states in part, "Procedures shall be established for processing inspection and test data and their analysis and evaluation." At BNP 1 and 2, (data processing procedures per se have not been developed; instead, test data are recorded, processed, and analyzed in accordance with procedures and instructions in appropriate functional areas; e.g., maintenance, startup.</p>
Regulatory Guide 1.33, Quality Assurance Program Requirements (Operation) (Safety Guide 33 November 1972)
ANSI Standard N18.7-1976, Administrative Controls And Quality Assurance For The Operational Phase Of Nuclear Power Plants
<p>Comply with the provisions of Regulatory Guide 1.33, November 1972, and the requirements and recommendations for administrative controls described in ANSI N18.7-1976 except as stated below:</p> <ol style="list-style-type: none"><li>Paragraph 4.3.4(1) – The independent review body shall review written evaluations of changes in the facility as described in the BNP Final Safety Analysis Report (as updated), changes in procedures as described in the BNP Final Safety Analysis Report (as updated) and tests or experiments not described in the BNP Final Safety Analysis Report (as updated) which are completed without prior NRC approval under the provisions of 10CFR 50.59. This review is to verify that such changes, tests or experiments did not involve a change in the BNP Technical Specifications or require NRC approval pursuant to 10CFR 50.59.</li><li>Paragraph 4.3.4(2) – The independent review body shall review proposed changes in procedures, proposed changes in the facility, or proposed tests or experiments, any of which involves a change in the BNP Technical Specifications or requires NRC approval pursuant to 10CFR 50.59.</li><li>Paragraph 4.5 - Written audit reports are not formally reviewed as part of the Independent Review function.</li></ol>

## Attachment A, Brunswick Specific QAPD

Table A17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.33, Quality Assurance Program Requirements (Operation) (Safety Guide 33 November 1972)

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ANSI Standard N18.7-1976, Administrative Controls And Quality Assurance For The Operational Phase Of Nuclear Power Plants

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4. Paragraph 4.5 - The Chief Nuclear Officer will assure that an independent assessment of the overall Nuclear Oversight Program is conducted at least once every 24 months. Results of the independent assessment will be reported directly to the Chief Nuclear Officer and entered into the Corrective Action Program for resolution. For scheduling consistency, the exceptions included in paragraph 5 of this section will be used as clarification for scheduling this independent assessment.
5. Paragraph 4.5, Audit Program-Regulatory Guide 1.33 (Safety Guide 33, November 1972) endorses ANSI N18.7-1976/ANS-3.2, Section 4.5 which states that audits of selected aspects of the operational phase activities, including safety-related functions, are completed within a period of two years, with the following clarification.
  - a. Audits shall be performed at the intervals designated herein for each audit area. Schedules shall be based on the exit date of the audit.
  - b. A maximum extension not to exceed 25 percent of the audit interval shall be allowed. That is to say that, for audits on a 24-month frequency, the maximum time between specific audits shall not exceed 30 months. Likewise, audits on an annual (12-month) frequency shall not be extended beyond 15 months.
  - c. When an audit interval extension is used, the next audit for that particular audit area will be scheduled from the original anniversary exit date rather than from the exit date of the extended audit.
  - d. Item 5.b above shall also apply to supplier audits and evaluations except that a total combined time interval for any three consecutive inspection or audit intervals should not exceed 3.25 times the specified inspection or audit interval.

NOTE: This grace period will not be applied to audits of the Nuclear Emergency Response Plan to satisfy the requirements of 10CFR 50.54(t), Security Plan to satisfy the requirements of 10CFR 50.54(p), Radiation Protection to satisfy 10CFR 20.1101c, and Fire Protection to satisfy NRC Generic Letter 82-21, "BNP Technical Specifications for Fire Protection Audits." The schedule for these audits will continue to be based on the exit date and not the exit month.
6. Section 5.2.2 titled Procedure Adherence: Temporary changes to approved procedures shall be approved by persons specified in BNP UFSAR Chapter 17.
7. The applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, November 1972, shall be established, implemented, and maintained as specified in the BNP 1 and 2 BNP Technical Specifications.
8. Paragraph 5.2.7 - BNP will comply with requirements of the first sentence of the second paragraph and provides the following clarification:
  - a. "Documented Instructions" is defined as any credible information (e.g., vendor manuals, vendor recommendations, engineering direction, etc.) Used for work planning/execution which is reviewed and approved prior to use in accordance with approved procedures.
9. Paragraph 5.2.13, titled Procurement Document Control: When purchasing commercial grade calibration services from certain accredited calibration laboratories, the procurement documents are not required to impose a quality assurance program consistent with ANSI N45.2-1971. Alternate requirements described in Section 1.8 for Regulatory Guide 1.123 may be implemented in lieu of imposing a quality assurance program consistent with ANSI N45.2-1971.

## Attachment A, Brunswick Specific QAPD

Table A17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.33, Quality Assurance Program Requirements (Operation) (Safety Guide 33 November 1972)

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ANSI Standard N18.7-1976, Administrative Controls And Quality Assurance For The Operational Phase Of Nuclear Power Plants

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10. 5.2.15 states, in part: "Plant procedures shall be reviewed by an individual knowledgeable in the area affected by the procedure no less frequently than every two years to determine if changes are necessary or desirable."

BNP implements administrative and programmatic controls that ensure procedures are maintained current in accordance with 10CFR 50, Appendix B, thus meeting the intent of the biennial review.

BNP implements administrative controls to perform biennial reviews of non-routine procedures such as Emergency Operating Procedures, Abnormal Operating Procedures, Emergency Plan, Security, and other procedures that may be dictated by an event. Programmatic controls specify conditions when mandatory review of plant procedures apply, and include a requirement to review applicable procedures following an accident or transient and following any modification to a system.

BNP utilizes a pre-job briefing practice to ensure that personnel are aware of what is to be accomplished and what procedures will be used prior to beginning a job. In addition, the Procedure Adherence Policy requires that the job be stopped and the procedure be revised or the situation resolved prior to work continuing if procedures cannot be implemented as written.

Additionally, the Nuclear Oversight audit program requires the review of a representative sample of plant procedures, as part of routine audits, to ensure that existing administrative controls for procedure verification, review, and revision are effective in maintaining the quality of plant procedures. Significant QA Program deficiencies are identified in the audit reports. These deficiencies are investigated in accordance with the Corrective Action Program. The plant Self-Assessment Program also periodically reviews selected procedures and identified deficiencies and improvements through the Corrective Action Program.

11. Section 5.2.17, second to the last sentence in the last paragraph, "Deviations, their cause, and any...", to be consistent with Paragraph 5.2.11 and 10CFR 50, Appendix B, the cause of the deviation will be determined for only significant conditions adverse to safety.

12. Paragraph 5.3.5(4) last sentence - BNP interprets the review requirements for "Supporting Maintenance Documents" which have not been incorporated in a procedure, be performed in an equivalent manner as described in approved procedures.

13. Section 5.3.9.1, titled Emergency Procedure Format and Content: Emergency procedures shall be in the format as committed to in NUREG-0737, TMI Action Plan.

14. ANSI N18.7-1976, Section 5.2.16. See section A17.3.2.9 for clarification.

15. Section 5.3.10, first paragraph - The requirement "Test and inspection results shall be documented..." will be implemented as follows:

As an alternative to the records required for inspections outlined in paragraph 5.3.10, BNP shall provide the following as the method to document results of inspections.

The results of inspections will be documented in appropriate records and those records shall, as a minimum, identify a) through f) below:

- a) Item inspected
- b) Date of inspection
- c) Inspector
- d) Type of observation
- e) Results or acceptability
- f) Reference to information on action taken in connection with non-conformances.

## Attachment A, Brunswick Specific QAPD

Table A17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.37, Quality Assurance Requirements For Cleaning Of Fluid Systems And Associated Components Of Water-Cooled Nuclear Power Plants (March 1973)

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ANSI Standard N45.2.1-1973, Cleaning Of Fluid Systems And Associated Components During Construction Phase Of Nuclear Power Plants

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Those areas of the QA Program applicable to onsite cleaning of materials and components, cleanliness control, and pre-operation cleaning and layup of BNP 1 and 2 fluid systems, will be in accordance with ANSI N45.2.1-1973, with the following exceptions:

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1. At BNP 1 and 2, a classification system similar to ANSI N45.2.1-1973 has been developed and is fully implemented for cleaning of fluid systems.
  2. Section 1.4 titled Definitions: Definitions in this standard which are not included in ANSI N45.2.10 will be used; definitions which are included in ANSI N45.2.10 will be used as clarified in BNP's commitment to Regulatory Guide 1.74.
  3. Section 1.5 titled Referenced Documents: BNP's commitment to other documents referenced in this standard shall be as stated in our commitment to that document.
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Regulatory Guide 1.38, Quality Assurance Requirements For Packaging Shipping Receiving Storage And Handling Of Items For Water-Cooled Nuclear Power Plants (March 1973)

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ANSI Standard N45.2.2-1972, Packing, Shipping, Receiving, Storage, And Handling Of Items For Nuclear Power Plants

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Packaging, shipping, receiving, storage, and handling of BNP items are in accordance with applicable requirements of ANSI N45.2.2-1972 with the following specific exceptions:

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1. Section 1.4 titled Definitions: Definitions in this standard which are not included in ANSI N45.2.10 will be used; definitions which are included in ANSI N45.2.10 will be used as clarified in BNP's commitment to Regulatory Guide 1.74.
2. Section 1.5 titled Referenced Documents: BNP's commitment to other documents referenced in this standard shall be as stated in our commitment to that document.
3. Section 2.7 titled Classification of Items and Section 6.1.2 titled Levels of Storage:
  - a. Special electronic equipment and instrumentation received as assembled panels will be stored as recommended by the manufacturer and/or based on engineering evaluation to prevent damage, deterioration, or contamination, but not necessarily in a Level A storage area.
  - b. Chemicals used at BNP 1 and 2 are stored at the point of use and/or in warehouse areas that satisfy the requirement of Level B storage. These storage areas have been evaluated and determined to be adequate for the limitations established by the manufacturer.
  - c. Special nuclear materials are stored in areas specifically designed for such storage.
4. Paragraph 6.4.2, Care of Items: The following alternates are provided for indicated subparts:
  - a. Space heaters in electrical equipment shall be energized unless a documented engineering evaluation determines that such space heaters are not required.
  - b. Rotating electrical equipment, commensurate to safety or reliability, shall be given insulation resistance tests on a schedule basis, unless a documented evaluation determines that such tests are not required.
  - c. Rotating equipment, commensurate to safety or reliability, shall be evaluated for shaft rotation requirements. The degree of turn shall be established so that the parts receive a coating of lubrication where applicable, and so that the shaft does not come to rest in a previous position. (90 deg. and 450 deg. rotations are examples.)
  - d. Other maintenance requirements specified by the manufacturer's instructions shall be evaluated to determine applicability during storage of the item.

## Attachment A, Brunswick Specific QAPD

Table A17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.38, Quality Assurance Requirements For Packaging Shipping Receiving Storage And Handling Of Items For Water-Cooled Nuclear Power Plants (March 1973)

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ANSI Standard N45.2.2-1972, Packing, Shipping, Receiving, Storage, And Handling Of Items For Nuclear Power Plants

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5. Section 7.3.4 - BNP intends to comply with the requirements of this Section with the following clarification: Test loads equal to or greater than the original crane rating shall not pass over locations where special nuclear material is stored or where reactor system components or high cost equipment are located.
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Regulatory Guide 1.39, Housekeeping Requirements For Water-Cooled Nuclear Power Plants (March 1973)

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ANSI Standard N45.2.3-1973, Housekeeping, During The Construction Phase Of Nuclear Power Plants

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The applicable operational phase requirements of N45.2.3-1973 are followed at BNP within the context of the established QA Program with the following specific exception -- the zone designations of Section 2.1 of N45.2.3 and the requirements associated with each zone are considered impractical for implementation, as stated, at BNP during the operations phase. Instead, procedures or instruction for housekeeping activities, which include the applicable requirements outlined in Section 2.1 of N45.2.3, and which take into account radiation control considerations, security considerations, and cleanliness requirements, are developed on a case by case basis for work to be performed.

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Regulatory Guide 1.58, Qualification Of Nuclear Power Plant Inspection, Examination, And Testing Personnel (September 1980)

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ANSI Standard N45.2.6-1978, Qualification Of Inspection, Examination, And Testing Personnel For Nuclear Power Plants"

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BNP 1 and 2 shall comply with NRC Regulatory Guide 1.58, September 1980, which endorses ANSI N45.2.6-1978, with the following exceptions:

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1. Section 1.2 titled Applicability: BNP elects not to apply the requirements of this guide to those personnel who are involved in the daily operations of surveillance, maintenance, and certain technical and support services whose qualifications are controlled by the BNP Technical Specifications or are controlled by other QA Program commitment requirements. Only personnel in the following listed categories will be required to meet ANSI N45.2.6-1978 requirements:
  - a. Nondestructive examination (NDE) personnel
  - b. QC inspection personnel
  - c. Receipt Inspection personnel
2. The fourth paragraph of Section 1.2 requires that the Standard be imposed on personnel other than BNP employees. The applicability of the Standard to suppliers and contractors will be documented and applied, as appropriate, in the procurement documents for such suppliers and contractors.
3. Section 1.4 titled Definitions: Definitions in this Standard which are not included in ANSI N45.2.10 will be used; definitions which are included in ANSI N45.2.10 will be used as clarified in BNP's commitment to Regulatory Guide 1.74.



## **Attachment A, Brunswick Specific QAPD**

Table A17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

Regulatory Guide 1.58, Qualification Of Nuclear Power Plant Inspection, Examination, And Testing Personnel (September 1980)
ANSI Standard N45.2.6-1978, Qualification Of Inspection, Examination, And Testing Personnel For Nuclear Power Plants"
<p>4. Section 2.5 titled Physical: BNP will implement the requirements of this Section with the stipulation that, where no special physical characteristics are required, none will be specified. The converse is also true: if no special physical requirements are stipulated by BNP, none are considered necessary. BNP employees receive an initial physical examination to assure satisfactory physical condition; however, only the following listed personnel will receive an annual examination:</p> <ul style="list-style-type: none"><li>a. NDE personnel</li><li>b. QC inspection personnel</li><li>c. Receipt inspection personnel</li></ul> <p>This annual examination shall consist of the near visual acuity using the standard Jaeger's type chart or equivalent test.</p> <p>5. Section 3 titled Qualifications: Only personnel performing NDE (such as LP, MT, UT, and RT) will be grouped in levels of capability and certified as such. QC inspection personnel will be certified for inspection, review, and evaluation of inspection data, and reporting of inspection and test results.</p> <p>6. Section 3.5 titled Education &amp; Experience Recommendations: BNP will certify individual inspectors through training and experience to requirements appropriate to the specific assignment; however, except for NDE, personnel will not be classified by levels of capability. The training and experience requirements will be directed toward qualifying personnel for specific inspection and testing operations.</p>
Regulatory Guide 1.64, Quality Assurance Requirements For The Design Of Nuclear Power Plants (October 1973)
ANSI Standard N45.2.1.1-1974, Quality Assurance Requirements For The Design Of Nuclear Power Plants
<p>Those areas of the QA Program for BNP 1 and 2 applicable to design or modification of the plant are in accordance with the applicable guidance of ANSI N45.2.11-1974, with the following exception:</p> <p>1. Section 1.4 titled Definitions: Definitions in this standard which are not included in ANSI N45.2.10 will be used; definitions which are included in ANSI N45.2.10 will be used as clarified in the BNP commitment to Regulatory Guide 1.74.</p>
Regulatory Guide 1.74, Quality Assurance Terms And Definitions (February 1974)
ANSI Standard N45.2.1.0-1973, Quality Assurance Terms And Definitions
Comply with the provisions of Regulatory Guide 1.74, February, 1974.

## Attachment A, Brunswick Specific QAPD

Table A17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

---

Regulatory Guide 1.88, Collection, Storage, And Maintenance Of Nuclear Power Plant Quality Assurance Records (August 1974)

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ANSI Standard N45.2.9-1974, Collection, Storage, And Maintenance Of QA Records

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The requirements for collection, storage, and maintenance of QA records at BNP will be in accordance with ANSI N45.2.9-1974 and 17.3.2.15, with the following specific exceptions:

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See standard exception in Table 17-1 Regulatory Guide 1.88 for the appropriate controls on quality in the management of electronic records.

1. The document control facility at the BNP shall comply with the requirement of Regulatory Guide 1.88, October, 1976, Regulatory Position C.2 in that the facility has been specifically designed to protect the contents from fire in accordance with NFPA 232-1975, with the following exceptions/alternatives/comments:
  - a. Records are classified as Class 1 - Vital Records in accordance with NFPA 232-1975, Chapter 5, Section 5222; however, the records that meet this classification include those determined to be QA records as defined in ANSI N45.2.9-1974, paragraph 1.4.
  - b. The facility is constructed in accordance with NFPA 232-1975 requirements for a fire-resistive file room as defined in NFPA 232-1975, Chapter 3. The walls were designed and constructed equivalent to a four-hour barrier. The doors are four-hour rated vault doors. Penetrations for electrical service and ventilation are sealed to a rating of 3 hours to protect the vault from a fire originating outside the vault.
  - c. Due to the construction of the facility and other safety measures described herein, the statement in NFPA 232-1975, Chapter 3, Section 3022(d), "Class 1 . . . records should not be subjected to these possibilities of destruction by fire" is deemed to be inappropriate.
  - d. The facility is protected by a Halon fire extinguishing system, automatic door closures, and fire detection system.
  - e. The floor of the file room is six inches higher than the floor areas outside the file room.
  - f. The walls are reinforced concrete, ten inches thick.
  - g. The exterior walls are totally enclosed and insulated from the outside environment and elements.
  - h. The facility is constructed independently from the building.
  - i. NFPA 232-1975, Chapter 3, Sections 332 and 333 describe methods for heating and ventilation.

The facility will have penetrations in the wall for the purposes of heating and ventilation. The facility is equipped with a Heating, Ventilating and Air Conditioning system external to the file room with automatic closing dampers. "The temperature and humidity should be controlled between 65 and 75 degrees and 20 and 40 percent, respectively. Temporary operation outside this range is acceptable during extreme low outside relative humidity conditions which have shown to drop the vault humidity below 20 percent. Humidity above the upper 40 percent range is acceptable during maintenance. The above times are short in duration and the humidity change is gradual. Evaluation for out of tolerance conditions will be performed. Corrective actions or compensatory measures will be taken if required, to ensure there is no adverse impact on storage of records and to restore the vault to prescribed conditions."
  - j. 120 VAC wall outlets are provided in the file room for emergency lighting and janitorial needs. These outlets may be de-energized from a disconnect box installed on the outer wall of the records storage facility. The lighting may be disconnected outside the room and is equipped with a red pilot light.

## Attachment A, Brunswick Specific QAPD

Table A17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

---

Regulatory Guide 1.88, Collection, Storage, And Maintenance Of Nuclear Power Plant Quality Assurance Records (August 1974)

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ANSI Standard N45.2.9-1974, Collection, Storage, And Maintenance Of QA Records

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- k. BNP QA records not stored in the facility described above may be retained at off-site locations which meet the requirements (with approved exceptions as necessary) of Section 5.6, ANSI 45.2.9-1974.
2. Paragraph 1.4, Definitions: The phrase "when the document has been completed" is clarified to mean when the document has received the final review performed by the organizational element responsible for generating or collecting the records. In the case of a record package made up of several individual documents, the package will be considered to be the document for the purpose of determining when the record is complete.
3. Paragraph 3.2.1, Generation of Quality Assurance Records: The phrase "completely filled out" is clarified to mean that sufficient information is recorded to fulfill the intended purpose of the record.
4. Paragraph 4.2, Timeliness: BNP's contractual agreement with its contractors and suppliers will constitute fulfillment of the requirements of this paragraph.
5. Paragraph 5.4, Preservation: The following clarification is substituted for the current subparagraph 5.4.2: "Records shall not be stored loosely. They shall be secured for storage in file cabinets or on shelving in containers." The following clarification is substituted for the current subparagraph 5.4.3: "Appropriate provisions shall be made for special processed records (such as radiographs, photographs, negatives, microfilm and magnetic media) to prevent or minimize damage for excessive light, stacking, electromagnetic fields, temperature and humidity, etc. Manufacturer's recommendations will be considered as appropriate."
6. Paragraph 5.6, Facility: This paragraph provides no distinction between temporary and permanent facilities. To cover temporary storage, the following clarification is added: "Complete records may be stored in one-hour fire rated file cabinets until transmitted for permanent storage. In general, records shall not be maintained in temporary storage by the generating organization for more than 90 days after completion. Any exceptions to this requirement must be justified, evaluated and approved by the Document Management Supervisor and documented. A list of exceptions shall be maintained and available for NRC review. Exceptions may include records needed on a continuing basis for an extended period of time at the location of the work group responsible for generating the records and records which are cumulative in nature and could best be turned over for storage for a designated period of time.  
In addition, Document Management & Information Services will store records in one- hour rated file cabinets while the records are being processed for permanent storage.
7. See standard exception in Table 17-1 Regulatory Guide 1.88 for the appropriate controls on quality in the management of electronic records.

## Attachment A, Brunswick Specific QAPD

Table A17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

Regulatory Guide 1.94, Quality Assurance Requirements For Installation, Inspection, And Testing Of Structural Concrete And Structural Steel During The Construction Phase Of Nuclear Power Plants (Rev. 1, April 1976)
ANSI Standard N45.2.5-1974, Supplementary Quality Assurance Requirements For Installation Inspections And Testing Of Structural Steel During The Contract Phase Of Nuclear Power Plants
<p>Regulatory Guide 1.94, Revision 1, April 1976 endorses ANSI N45.2.5-1974. BNP 1 and 2 do not commit to Regulatory Guide 1.94 but do endorse parts of ANSI N45.2.5-1974 as described below.</p> <p>The original specification requirements, applicable guidance contained in ANSI N45.2.5-1974, or acceptable alternatives based on an engineering evaluation will be utilized in the event future structural work is to be performed which falls under the established requirements of the BNP QA Program.</p>
Regulatory Guide 1.116, QA Requirements For Installation, Inspection, And Testing Of Mechanical Equipment And Systems (June 1976)
ANSI Standard N45.2.8-1975, Supplementary Quality Assurance Requirements For Installation, Inspection, And Testing Of Mechanical Equipment And Systems For The Construction Phase Of Nuclear Power Plants
<p>Regulatory Guide 1.116, June 1976, endorses ANSI N45.2.8-1975. BNP 1 and 2 does not commit to Regulatory Guide 1.116 but does endorse parts of ANSI N45.2.8-1975 as described below.</p> <p>Within the context of the established QA Program, the applicable guidance contained in ANSI N45.2.8-1975 will be utilized in relation to mechanical maintenance or modification with the following exceptions:</p> <ol style="list-style-type: none"><li>1. Section 1.4 titled Definitions: Definitions in this standard which are not included in ANSI N45.2.10 will be used; definitions which are included in ANSI N45.2.10 will be used as clarified in BNP's commitment to Regulatory Guide 1.74.</li><li>2. Section 1.5 titled Referenced Documents: BNP's commitment to other documents referenced in this standard shall be as stated in our commitment to that document.</li><li>3. Section 2.8 titled Measuring and Test Equipment: BNP will implement the applicable portions of this Section as follows:<ol style="list-style-type: none"><li>a. The status of portable items of measuring and test equipment and reference standards shall be identified by use of status cards, computer schedules, or tags for the date recalibration is due. These items are in a calibration program which requires recalibration on a specified frequency or, in certain cases, prior to use.</li><li>b. Instrumentation and electrical equipment in the categories listed below shall be in a calibration program. This program provides, by the use of status cards, computer schedules, or tags, for the date that recalibration is due and indicates the status of calibration. The identity of person(s) performing the calibration is provided on the calibration documents.<ol style="list-style-type: none"><li>1) Instruments installed as listed in the BNP Technical Specifications</li><li>2) Installed instrumentation used to verify BNP Technical Specification parameters</li><li>3) Installed safety-related instruments and electrical equipment that provide an active function during operation or during shutdown; i.e., instead of being designated safety-related solely because the instrument is an integral part of a pressure retaining boundary,</li></ol></li></ol></li></ol>

## Attachment A, Brunswick Specific QAPD

Table A17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

Regulatory Guide 1.116, QA Requirements For Installation, Inspection, And Testing Of Mechanical Equipment And Systems (June 1976)
ANSI Standard N45.2.8-1975, Supplementary Quality Assurance Requirements For Installation, Inspection, And Testing Of Mechanical Equipment And Systems For The Construction Phase Of Nuclear Power Plants
4. Section 6 titled Data Analysis and Evaluation states in part, "Procedures shall be established for processing inspection and test data and their analysis and evaluation." At BNP 1 and 2, data processing procedures per se have not been developed; instead, test data are recorded, processed, and analyzed in accordance with procedures and instructions in appropriate functional areas; e.g., maintenance, startup.
Regulatory Guide 1.123, "Quality Assurance Requirement For Control Or Procurement Of Items And Services For Nuclear Power Plant"
ANSI Standard N45.2.13, "Quality Assurance Requirements For Control Or Procurement Of Items And Services For Nuclear Power Plants" (Draft 2, Rev. 4, April 1974)
BNP does not commit to Regulatory Guide 1.123; however, the applicable guidance contained in ANSI N45.2.13 (Draft 2, Revision 4, April 1974) and ANSI N18.7-1976, will be utilized in relation to procurement of items and services performed under the established requirements of the QA Program.
See standard exceptions in Table 17-1 for Regulatory Guide 1.123 for the procurement of Commercial Grade Items and Services including, purchasing commercial-grade calibration services from calibration laboratories.
Regulatory Guide 1.144, Auditing Of Quality Assurance Programs For Nuclear Power Plants (January 1979)
ANSI Standard N45.2.12-1977, Requirements For Auditing Of Quality Assurance Programs For Nuclear Power Plants
BNP will follow the requirements and recommendations of Regulatory Guide 1.144 and ANSI Standard N45.2.12, with the following clarifications:
1. BNP will follow the requirements and recommendations of Regulatory Guide 1.144, paragraphs C.1, C.2, C.3.a.2, C.3.b, and C.4. BNP's position on paragraph C.3.a.1 is as follows: Audits of operational phase activities, as outlined in Section 17.3.3.3 shall be performed at the frequencies stated in exception 5 for RG 1.33 in Table A17-1. See standard exceptions in Table 17-1 for Regulatory Guide 1.123 for the procurement of Commercial Grade Items and services including, purchasing commercial-grade calibration services from calibration laboratories.
2. (Deleted)
3. BNP will comply with the last paragraph of Section 4.4 of ANSI N45.2.12 concerning issuing audit reports, with the following clarification: "Audit reports shall be issued within thirty working days after the last day of the audit. The last day of the audit shall be considered to be the day of the post-audit conference. If a post-audit conference is not held because it was deemed unnecessary, the last day of the audit shall be considered to be the date the post-audit conference was deemed unnecessary as documented in the audit report."

## Attachment A, Brunswick Specific QAPD

Table A17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.144, Auditing Of Quality Assurance Programs For Nuclear Power Plants (January 1979)

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ANSI Standard N45.2.12-1977, Requirements For Auditing Of Quality Assurance Programs For Nuclear Power Plants

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4. ANSI N45.2.12 Paragraph 4.3.1, Preaudit Conference: BNP will comply with the requirement of this paragraph by inserting the word "Normally" at the beginning of the first sentence. This clarification is required because, in the case of certain unannounced audits or audits of a particular operation or work activity, a preaudit conference might interfere with the spontaneity of the operation or activity being audited. In other cases, persons who should be present at a preaudit conference may not always be available. Such lack of availability should not be an impediment to beginning an audit. Even in the above examples, which are not intended to be all inclusive, the material set forth in paragraph 4.3.1 will normally be covered during the course of the audit.
5. ANSI N45.2.12 Paragraph 4.3.3, Post Audit Conference: BNP will substitute and comply with the following paragraphs:

For all external audits, a post audit conference shall be held with management of the audited organization to present audit findings and clarify misunderstandings. Where no adverse findings exist, this conference may be waived by management of the audited organization. Such waiver shall be documented in the audit report. For all internal audits, unless unusual operating or maintenance conditions preclude attendance by appropriate managers/supervisors, an audit exit shall be held with managers/supervisors. If there are no adverse findings, management of the audited organization may waive the audit exit. Such waiver shall be documented in the audit report.
6. ANSI N45.2.12 Paragraph 4.4, Reporting:
  - a. This paragraph requires that the audit report be signed by the audit team leader which is not always the most expeditious route for the audit report to be issued as soon as possible. BNP will comply with Paragraph 4.4 as clarified to read:

An audit report shall be signed by the audit team leader or the leader's supervisor in the absence of the audit team leader. In cases where the audit report is not signed by the audit team leader due to the leader's absence, the record copy of the report must be signed by the audit team leader upon return. The report shall not require the audit team leader's review/concurrence/signature if the audit team leader is no longer employed by BNP at the time audit report is issued. The audit report shall provide:
  - b. BNP will comply with subparagraph 4.4.3 clarified to read: "Supervisory level personnel with whom significant discussions were held during the course of preaudit (where conducted), audit, and post audit (where conducted) activities.
  - c. Subparagraph 4.4.6 requires audit reports to include recommendations for corrective actions. BNP may choose not to comply with this requirement. Instead, BNP audit reports are required to document findings.

## Attachment A, Brunswick Specific QAPD

Table A17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.146, Qualification Of Quality Assurance Program Audit Personnel For Nuclear Power Plants (Rev. 0 August 1980)

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ANSI Standard N45.2.23-1978, Qualification Of Quality Assurance Program Audit Personnel For Nuclear Power Plants

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BNP 1 and 2 shall comply with NRC Regulatory Guide 1.146, Revision 0, which endorses ANSI N45.2.23-1978, with the following exceptions:

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1. Section 1.4 titled Definitions: Definitions in this Standard which are not included in ANSI N45.2.10 will be used; "AUDIT" which is included in ANSI N45.2.10 will be used as clarified in BNP's commitment to Regulatory Guide 1.74.
2. Section 2.2 titled Qualification of Auditors: Subsection 2.2.1 references an ANSI B45.2 which will be assumed to be N45.2. BNP will comply with an alternate subsection 2.2.1 which reads:  
Orientation to provide a working knowledge and understanding of the BNP Quality Assurance Program, including the Regulatory Guides and ANSI standards included in the Program, and BNP procedures for performing audits and reporting results.
3. (Deleted)
4. Section 4.1 titled Organizational Responsibility: BNP will comply with this Section with the substitution of the following sentence in place of the last sentence in the Section:  
Management or the Audit/NOS Team Leader shall, prior to commencing the audit, assign personnel who collectively have experience or training commensurate with the scope, complexity, or special nature of the activities to be audited.
5. Section 5.3 titled Updating of Lead Auditors' Records: BNP will substitute the following sentence for this Section:  
Records for each Lead Auditor shall be maintained and updated during the annual management assessment as defined in Section 3.2 (as clarified).
6. Section 5.4 titled Record Retention: BNP will substitute the following sentence for this Section:  
Qualification records shall be retained as required by the BNP Quality Assurance Program.
7. ANSI N45.2.23-1978, Section 2.3.4 titled Audit Participation: BNP will substitute the following for this Section:  
Prospective Lead Auditors shall demonstrate the ability to effectively implement the audit process and effectively lead an audit team. This process is described in written procedures which provide for evaluation and documentation of the results of this demonstration. In addition, the prospective Lead Auditor shall have participated in at least two Nuclear Oversight audits within the year preceding the individual's effective date of qualification. Upon successful demonstration of the ability to effectively implement the audit process and effectively lead audits, and having met the other provisions of Section 2.3 of ANSI/ASME N45.2.23-1978, the individual may be certified as being qualified to lead audits.

## Attachment A, Brunswick Specific QAPD

**Table A17-2. Site Specific Response to Regulatory Guides and Industry Standards**

Table A17-2 identifies additional Regulatory Guides addressing subjects related to implementation of the QAP but the implementation is site specific and controlled with the UFSAR in accordance with 10 CFR 50.59.

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Regulatory Guide 1.8, Personnel Selection And Training

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Personnel selection and training is site specific.

Brunswick addresses conformance with Regulatory Guide 1.8 (SAFETY GUIDE 8, MARCH 1971) in UFSAR Chapter 1 Table 1-6.

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Regulatory Guide 1.26, Quality Group Classifications And Standards For Water-, Steam-, And Radioactive-Waste-Containing Components Of Nuclear Power Plants

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Quality group classifications and standards trace to the original design and construction of the nuclear power plant and therefore are site specific.

Brunswick does not address Regulatory Guide 1.26 in UFSAR Chapter 1 Table 1-6. Quality group classifications are addressed in UFSAR Chapter 3.

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Regulatory Guide 1.29, Seismic Design Classification

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Seismic design classification trace to the original design and construction of the nuclear power plant and therefore is site specific.

Brunswick addresses conformance with Regulatory Guide 1.29 in UFSAR Chapter 1 Table 1-6.

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Regulatory Guide 1.36, Nonmetallic Thermal Insulation For Austenitic Stainless Steel

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Nonmetallic thermal insulation for austenitic stainless steel trace to the original design and construction of the nuclear power plant and therefore is site specific.

Brunswick does not address conformance with Regulatory Guide 1.36 in UFSAR Chapter 1 Table 1-6. Thermal insulation for austenitic stainless steel is addressed in UFSAR Section 5.2.

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Regulatory Guide 1.54, Quality Assurance Requirements For Protective Coatings Applied To Water-Cooled Nuclear Power Plants

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Quality assurance requirements for protective coatings applied to water-cooled nuclear power plants trace to the original design and construction of the nuclear power plant and therefore is site specific.

Brunswick addresses conformance with Regulatory Guide 1.54 in UFSAR Chapter 1 Table 1-6.



## **Attachment A, Brunswick Specific QAPD**

Table A17-2. Site Specific Response to Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.143, Design Guidance For Radioactive Waste Management Systems, Structures, And Components Installed In Light-Water-Cooled Nuclear Power Plants

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Design guidance for radioactive waste management systems, structures, and components installed in light-water-cooled nuclear power plants trace to the original design and construction of the nuclear power plant and therefore is site specific.

Brunswick does not address conformance with Regulatory Guide 1.143 in UFSAR Chapter 1 Table 1-6. Design guidance for radioactive waste management systems, structures, and components is addressed in UFSAR Chapter 11.

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Regulatory Guide 1.155, Station Blackout

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Addressing Station Blackout is site specific.

Brunswick addresses conformance with Regulatory Guide 1.155 in UFSAR Chapter 1 Table 1-6.

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Regulatory Guide 4.15, Quality Assurance For Radiological Monitoring Programs (Normal Operations) – Effluent Streams And The Environment

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Quality assurance for radiological monitoring program (normal operations) – effluent streams and the environment is site specific.

Brunswick does not address conformance to Regulatory Guide 4.15 in UFSAR Chapter 1 Table 1-6. The radiological monitoring program is addressed in UFSAR Chapter 11.

## **Attachment A, Brunswick Specific QAPD**

### **A17.3.1 MANAGEMENT**

#### **A17.3.1.1 Methodology**

There are no Brunswick specific amplifications for this section.

#### **A17.3.1.2 Organization**

There are no Brunswick specific amplifications for this section.

#### **A17.3.1.3 Responsibility**

There are no Brunswick specific amplifications for this section.

#### **A17.3.1.4 Authority**

The program and procedures require that the authority and duties of persons and organizations performing activities affecting quality functions be clearly established and delineated in writing and that these individuals and organizations have sufficient authority and organizational freedom to:

1. Identify quality, nuclear safety, and performance problems.
2. Order unsatisfactory work to be stopped and control further processing, delivery, or installation of nonconforming material.
3. Initiate, recommend, or provide solutions for conditions adverse to quality.
4. Verify implementation of solutions.

#### **A17.3.1.5 Personnel Training and Qualification**

There are no Brunswick specific amplifications for this section.

#### **A17.3.1.6 Corrective Action**

The program requires that an evaluation of adverse conditions such as conditions adverse to quality, nonconformances, failures, malfunctions, deficiencies, deviations, and defective material and equipment is conducted to determine need for corrective action.

Conditions adverse to quality are identified through inspections, assessments, tests, checks, and review of documents.

The program requires corrective action to be initiated to preclude recurrence of significant conditions adverse to quality.

Procedures require follow-up reviews, verifications, inspections, etc., to be conducted to verify proper implementation of corrective action and to close out the corrective action documentation.

The program outlines the methodology for resolution of disputes involving quality and nuclear safety issues arising from a difference of opinion between identifying personnel and other groups.

Significant conditions adverse to quality are reported to appropriate management for review and evaluation.

## **Attachment A, Brunswick Specific QAPD**

Periodic review and evaluation of adverse trends are performed by management.

### **A17.3.1.7 Regulatory Commitments**

Written procedures shall be established, implemented, and maintained to ensure implementation of the Process Control Program.

### **A17.3.2 PERFORMANCE/VERIFICATION**

#### **A17.3.2.1 Methodology**

There are no Brunswick specific amplifications for this section.

#### **A17.3.2.2 Design Control**

There are no Brunswick specific amplifications for this section.

#### **A17.3.2.3 Design Verification**

There are no Brunswick specific amplifications for this section.

#### **A17.3.2.4 Procurement Control**

Potential contractors and suppliers are evaluated prior to award of a procurement contract when needed to assure the contractor's or supplier's capability to comply with applicable technical and quality requirements.

Procurement documents, such as purchase specifications, contain or reference the following:

1. Technical, administrative, regulatory, and reporting requirements, including material and component identification requirements, drawings, specifications, codes and industrial standards, test and inspection requirements, and special process instructions.
2. Identification of the documentation to be prepared, maintained, or submitted (as applicable) to BNP for review and approval. These documents may include, as necessary, inspection and test records, qualification records, or code required documentation.
3. Identification of those records to be retained, controlled, and maintained by the supplier, and those delivered to the purchaser prior to use or installation of the hardware.

Procurement documents require suppliers to operate in accordance with QA programs which are compatible with the applicable requirements of BNP's QA Program and procedures where their services are utilized in support of plant activities.

#### **A17.3.2.5 Procurement Verification**

There are no Brunswick specific amplifications for this section.

## **Attachment A, Brunswick Specific QAPD**

### **A17.3.2.6 Identification and Control Of Items**

Procedures require that materials, parts, and components be identified and controlled to prevent the use of incorrect or defective items. These procedures also require that identification of items be maintained either on the item in a manner that does not affect the function or quality of the item, or on records traceable to the item.

Procedures implementing these requirements provide for the following:

1. Verification that items received at the plant are properly identified and can be traced to the appropriate documentation, such as drawings, specifications, purchase orders, manufacturing and inspection documents, nonconformance reports, or material test reports.
2. Verification of item identification consistent with the BNP inventory control system and traceable to documentation which identifies the proper uses or applications of the item.

### **A17.3.2.7 Handling, Storage, and Shipping**

Provisions are established to control the shelf life and storage of chemicals, reagents, lubricants, and other consumable materials.

### **A17.3.2.8 Test Control**

Test procedures incorporate or reference the following, as required:

1. Instructions and prerequisites for performing the test,
2. Use of proper test equipment,
3. Mandatory inspection hold points,
4. Acceptance criteria

Test results are documented, evaluated, and their acceptability determined by a qualified, responsible individual or group.

When the acceptance criteria are not met, affected areas are to be retested or evaluated, as appropriate.

### **A17.3.2.9 Measuring and Test Equipment Control**

Portable measuring and test equipment are calibrated by standards at least four times as accurate as the portable measuring and test equipment, unless limited by the state of the art.

Special tools such as torque wrenches, calipers, and micrometers are calibrated to be at least as accurate as the application(s) for which it is used, using standards which are at least as accurate as the special tool being calibrated.

Installed measuring and test instruments are calibrated by instruments at least as accurate as the installed, unless limited by the state of the art.

Reference and transfer standards are traceable to nationally recognized standards; or where national standards do not exist, provisions are established to document the basis for the calibration.

## **Attachment A, Brunswick Specific QAPD**

### **A17.3.2.10 Inspection Test and Operating Status**

These procedures include the application, removal, and verification of inspection and welding stamps, or other status indicators as appropriate.

Altering the sequence of required tests, inspections, and safety-related operations can only be accomplished by methods outlined in procedures.

### **A17.3.2.11 Special Process Control**

There are no Brunswick specific amplifications for this section.

### **A17.3.2.12 Inspection**

There are no Brunswick specific amplifications for this section.

### **A17.3.2.13 Corrective Action**

The primary goal of the BNP corrective action program is to improve overall plant operations and performance by identifying and correcting root causes of equipment and human performance problems.

Procedures define requirements for a corrective action program that charges personnel working at or supporting the nuclear plants with the responsibility to identify adverse conditions (including conditions adverse to quality).

Procedures include requirements for verification of the acceptability of the rework/repair of items by re- inspection and/or testing in accordance with the original inspection or test requirements or by an accepted alternative inspection and testing method.

Conditions that require rework/repairs are identified through the use of maintenance work request forms.

### **A17.3.2.14 Control of Documents**

Changes to documents are reviewed and approved by the same organization that performed the original review and approval or by other designated qualified responsible organizations.

### **A17.3.2.15 Records**

The structure in which single copy records are maintained is designed to prevent destruction, deterioration or theft. This structure ensures protection against destruction by fire, flooding, theft and deterioration by the environmental conditions of temperature and humidity.

### **A17.3.2.16 Record Retention**

A list of typical operational phase QA Records is included in 17.3.2.15.

## **Attachment A, Brunswick Specific QAPD**

### **A17.3.3 ASSESSMENT**

#### **A17.3.3.1 Methodology**

The following are Brunswick specific amplifications from prior sections 17.3.3.1 and 17.3.3.2.2.

NOS site management and Independent Review Engineers, separately, will hold periodic, but not less frequently than semi-annual (+25% for scheduling flexibility), peer review meetings to share and exchange of information among sites. These meetings will allow the use of designated alternates to attend.

#### **A17.3.3.2 Independent Review**

The Nuclear Oversight Section shall function to provide independent review of significant plant changes, tests, and procedures; verify that Reportable Events are investigated in a timely manner and corrected in a manner that reduces the probability of recurrence of such events; and detect trends that may not be apparent to a day-to-day observer.

The individuals assigned responsibility for independent reviews shall be qualified in specific disciplines. These individuals shall collectively have the experience and competence required to review activities in the following areas:

- a. Nuclear Power Plant Operations
- b. Nuclear Engineering
- c. Chemistry and Radiochemistry
- d. Metallurgy
- e. Non-destructive Testing
- f. Instrumentation and Control
- g. Radiological Safety
- h. Mechanical and Electrical Engineering
- i. Administrative Controls
- j. Seismic and Environmental
- k. Quality Assurance Practices
- l. Other Appropriate Fields

The Manager – BNP Nuclear Oversight Section shall have a bachelor's degree in an engineering or related field and, in addition, shall have a minimum of ten years related experience, of which a minimum of five years shall be in the operation and/or design of nuclear power plants.

The individuals performing independent reviews shall have a bachelor's degree in an engineering or related field or equivalent and, in addition, shall have a minimum of five years related experience.

The Manager – BNP Nuclear Oversight Section or individuals performing independent reviews who do not possess formal educational requirements shall not be automatically eliminated where other factors provide sufficient demonstration of their abilities. These other factors shall be evaluated on a case-by-case basis and approved and documented by responsible NOS management. The positive factors listed as follows may be considered in making the evaluation of an acceptable alternative to the educational requirements.

- a. High School diploma or GED.

## **Attachment A, Brunswick Specific QAPD**

- b. Academic and related technical training.
- c. Has or have held a license as a senior reactor operator at BNP.
- d. Four years of additional experience in his area of responsibility.
- e. Four years of supervisory or management experience.
- f. Demonstrated ability to communicate clearly (orally and in writing).
- g. Certification of academic ability and knowledge by corporate management.
- h. Successful completion of the Engineer-In-Training examination.
- i. Professional Engineer license.
- j. Associate degree in Engineering or related science.

An individual may possess competence in more than one specialty area. If sufficient expertise is not available within the Nuclear Oversight Department, competent individuals from other Duke Energy organizations or outside consultants shall be utilized in performing independent reviews and investigations.

The documents submitted for independent review under Section A17.3.4 shall be reviewed by individuals meeting the requirements of this section to ensure applicable disciplines are encompassed. Multiple reviews will be conducted on documents where required to meet applicable disciplines.

Independent reviews shall be performed by individuals not directly involved with the activity under review or responsible for the activity under review.

The Nuclear Oversight independent review program shall be conducted in accordance with written, approved procedures.

The Nuclear Oversight Section shall perform reviews of the following:

- a. Written evaluations of changes in the facility as described in the BNP UFSAR changes in procedures as described in the BNP UFSAR and tests or experiments not described in the BNP UFSAR which are completed without prior NRC approval under the provisions of 10CFR 50.59. These reviews are to verify that such changes, tests, or experiments do not involve a change in the BNP Technical Specifications or require NRC approval pursuant to 10CFR 50.59. These reviews may be conducted after appropriate management approval, and implementation may proceed prior to completion of the review.
- b. Proposed changes in procedures required by BNP Technical Specifications, proposed changes in the facility, or proposed tests or experiments, any of which involve a change in the BNP Technical Specifications or require NRC approval pursuant to 10CFR 50.59 prior to implementation.
- c. Proposed changes to the BNP Technical Specifications or Operating License prior to implementation.
- d. Violations, deviations and reportable events, which require reporting to the NRC in writing, such as:
  - 1. Violations of applicable codes, regulations, orders, BNP Technical Specifications, license requirements or internal procedures or instructions having safety significance.
  - 2. Significant operating abnormalities or deviations from normal or expected performance of plant safety-related structures, systems, or components, and
  - 3. Reportable Events as specified in 10CFR 50.73.
- e. Any other matter involving safe operation of the nuclear power plant that the Manager – BNP Nuclear Oversight Section, deems appropriate for consideration or which is referred to the Manager – BNP Nuclear Oversight Section, by the on-site operating

## **Attachment A, Brunswick Specific QAPD**

organization, PNSC, or other functional organizational units within Duke Energy. Results of Nuclear Oversight independent reviews shall be documented and retained.

### **A17.3.3.3 Independent Assessment**

There are no Brunswick specific amplifications for this section.

#### **A17.3.3.3.1 Organization**

Personnel performing independent assessment activities are generally assigned to Nuclear Oversight from the line and other organizations on a rotational basis for two to five year assignments. Since these personnel are full-time assessors during this time period, they have no direct responsibilities in the areas being assessed. However, on an exception basis, personnel in Nuclear Oversight may provide assistance to the line organization by participating in emergency preparedness activities, ad hoc committees or analyzing technical issues, if such assistance is deemed to be in the overall best interest of safety and is approved in advance by Nuclear Oversight Section management.

#### **A17.3.3.3.2 Internal Assessment Process**

There are no Brunswick specific amplifications for this section.

#### **A17.3.3.3.3 Internal Audit Program**

##### **A17.3.3.3.3.1 Other Audits Prescribed by the Code of Federal Regulations**

The periodic review of Radiation Protection (per 10CFR 20.1101c) identified in 17.3.3.3.3.1 is conducted by NOS at Brunswick.

##### **A17.3.3.3.3.2 Independent Audit of Fire Protection Program**

An independent fire protection audit shall be performed at least once per 24 months utilizing either qualified offsite licensee personnel or an outside fire protection engineer.

An independent fire protection audit shall be performed at least once per 36 months by an audit team which must include an outside, qualified fire protection engineer. The outside fire protection engineer will be external to DEP and meet education and experience requirements listed for a Professional Member of the Society of Fire Protection Engineers.

#### **A17.3.3.3.4 Results**

There are no Brunswick specific amplifications for this section.

#### **A17.3.3.3.5 Supplier Oversight**

There are no Brunswick specific amplifications for this section.

#### **A17.3.3.3.6 Independent Audit of QA Functions**

There are no Brunswick specific amplifications for this section.

#### **A17.3.3.3.7 Audit Frequency Extensions**

BNP Audit Schedules are based on the exit date of the audit as identified in exceptions for Regulatory Guide 1.33.



## **Attachment A, Brunswick Specific QAPD**

### **A17.3.4 REVIEW AND AUDIT**

#### **A17.3.4.1 Procedures, Tests, and Experiments**

1. The procedures established, implemented, and maintained for the Quality Assurance Program for effluent and environmental monitoring use the guidance in Regulatory Guide 1.21, Revision 1, June 1974 and Regulatory Guide 4.1, Revision 1, April 1975.
2. Temporary changes to procedures of BNP Technical Specification 5.4.1, any other procedures that affect nuclear safety, and proposed tests or experiments may be made provided:
  - a. The intent of the original procedure, proposed test or experiment is not altered.
  - b. The change is approved by two members of the plant management staff, at least one of whom holds a Senior Reactor Operator License on the unit affected.
  - c. The change is documented, reviewed pursuant to Sections A17.3.4.4.1 and A17.3.4.2 and approved within 14 days of implementation.
3. The evaluation prepared in accordance with Sections A17.3.4.4.1.a and A17.3.4.4.1.b shall include a written determination, with basis, of whether or not the procedures, proposed tests and experiments, and changes thereto require NRC approval pursuant to 10CFR 50.59, or whether they involve a change to the BNP Technical Specifications.
4. Following the evaluation pursuant to 10CFR 50.59, the procedures required by BNP Technical Specification 5.4.1, other procedures that affect nuclear safety, proposed tests or experiments, and changes thereto (other than editorial or typographical) which have been determined to not require NRC approval pursuant to 10CFR 50.59 or involve a change to the BNP Technical Specifications shall be approved prior to implementation.

#### **A17.3.4.2 Modifications**

1. The evaluation prepared in accordance with Section A17.3.4.4.1.c shall include a written determination, with basis, of whether or not the proposed modification is a change in the facility as described in the BNP UFSAR, involves a change to the BNP Technical Specifications, or requires NRC approval pursuant to 10CFR 50.59.
2. Following the evaluation pursuant to 10CFR 50.59, proposed modifications which have been determined to not require NRC approval pursuant to 10CFR 50.59 or involve a change to the BNP Technical Specifications shall be approved by the General Manager - Brunswick Plant or his previously designated alternate.

#### **A17.3.4.3 Operating License/BNP Technical Specifications**

1. Operating License/BNP Technical Specification changes shall be processed in accordance with 10CFR 50.90.
2. Operating License/BNP Technical Specification change requests shall be reviewed by the Plant Nuclear Safety Committee (PNSC) in accordance with Section A17.3.4.6.8 and by the BNP Nuclear Oversight Section in accordance with Section A17.3.3.2.

## **Attachment A, Brunswick Specific QAPD**

3. Changes to the 61BTH Independent Spent Fuel Storage Installation (ISFSI) BNP Technical Specifications and License are processed by Transnuclear, Inc., and will only be reviewed by the PNSC if a plant-specific safety issue is identified.

### **A17.3.4.4 10CFR 50.59 Evaluations And Independent Review Control**

1. An evaluation pursuant to 10CFR 50.59 shall be prepared for each of the following:
  - a. Changes to procedures required by BNP Technical Specification 5.4.1 or changes to other procedures that affect nuclear safety with the exception of those procedures, which are exempt from review under 10CFR 50.59 in accordance with NEI 96-07, Revision 1, as endorsed by Regulatory Guide 1.187, November 2000.
  - b. Proposed tests or experiments that affect nuclear safety.
  - c. Proposed modifications to plant systems or equipment that affect nuclear safety.
2. Two reviews of the item and evaluation(s) prepared in accordance with Section A17.3.4.4.1 shall be performed prior to approval and implementation.
3. The item and associated evaluation(s) shall be examined in order to determine whether an interdisciplinary review is required in accordance with Section A17.3.4.5.5.

### **A17.3.4.5 Nuclear Reviewers**

1. Individuals shall be designated/approved by the General Manager - Brunswick Plant for performing evaluations pursuant to 10CFR 50.59.
2. Individuals designated under Section A17.3.4.5.1 shall have an academic degree in an engineering or related field or equivalent and two years related experience.
3. A list shall be maintained of individuals qualified to perform evaluations pursuant to 10CFR 50.59, including additional individuals whose expertise may be necessary during the reviews to assure that the reviewers collectively possess the background and qualifications in the disciplines necessary and important to the specific review.
4. The list specified in Section A17.3.4.5.3 shall include the disciplines for which each individual is qualified.
5. For those cases where interdisciplinary reviews are required, as many individuals as necessary shall be used to perform the nuclear review function.
6. One of the two reviewers shall be an individual other than the original preparer or the individual approving the action.

### **A17.3.4.6 Plant Nuclear Safety Committee**

1. As an effective means for the regular review, overview, evaluation, and maintenance of plant operational safety, a PNSC shall be established.
2. The PNSC shall function through the utilization of subcommittees, audits, investigations, reports, and/or performance of reviews as a group.

## **Attachment A, Brunswick Specific QAPD**

3. The PNSC shall be composed of a chairman and six to eight members. The members shall be from the following areas:
  - Operations
  - Maintenance
  - Engineering
  - Health Physics/Chemistry
  - Regulatory Affairs
4. The PNSC Chairman, alternate Chairmen, members and alternate members shall be designated in writing by the Plant General Manager.

Members shall be individuals who are unit manager level or above from the site management organization. Alternate members shall, as a minimum, meet equivalent qualification criteria as specified in Section 4.4 of ANSI N18.1-1971 for professional-technical personnel. "Equivalent qualification" is defined to meet the criteria of Sections 4.3.2 and 4.5.1 of ANSI N18.1-1971 for nontechnical personnel as it pertains to education and experience."
5. The quorum of the PNSC necessary for the performance of the activities of these BNP Technical Specifications shall consist of the Chairman (or his designated alternate) and four members (including alternates).
6. No more than two alternates shall be counted toward meeting the quorum requirement or participate as voting members of the PNSC at any one time.
7. The PNSC shall meet at least once per calendar month and as convened by the PNSC Chairman or his designated alternate.
8. The PNSC activities shall include the following:
  - a. Review of all procedures required by BNP Technical Specification 5.4.1 and changes thereto (and any other procedures and changes thereto), any of which require NRC approval pursuant to 10CFR 50.59 or involve a change to the BNP Technical Specifications, prior to implementation.
  - b. Review of all proposed tests or experiments that require NRC approval pursuant to 10CFR 50.59 or involve a change to the BNP Technical Specifications, prior to implementation.
  - c. Review of all proposed modifications that require NRC approval pursuant to 10CFR 50.59 or involve a change to the BNP Technical Specifications, prior to implementation.
  - d. Review of all proposed changes to the BNP Technical Specifications or Operating License, prior to implementation.
  - e. Review of reports on violations of BNP Technical Specifications including reports covering evaluation and recommendations to prevent recurrence to the Vice President - Brunswick Nuclear Plant.
  - f. Performance of special reviews, investigations (or analyses), and reports thereon as requested by the BNP NOS manager.
  - g. Review of all Reportable Events.
  - h. Review of facility operations to detect potential nuclear safety hazards.
  - i. Review of the Security Plan at least once per calendar year.

## **Attachment A, Brunswick Specific QAPD**

- j. Perform annual review of the Radiological Emergency Response Plan (OERP) in accordance with the approved OERP.
  - k. Review of accidental, unplanned, or uncontrolled radioactive release including the preparation of reports covering evaluation, recommendations, and disposition of the corrective action to prevent recurrence and the forwarding of these reports to the Vice President – Brunswick Nuclear Plant.
  - l. Review of changes to the Process Control Program and the Offsite Dose Calculation Manual.
9. If there is a disagreement between recommendations of a majority of the PNSC and the actions contemplated by the General Manager - Brunswick Plant, the PNSC shall provide written notification within 24 hours to the Vice President - Brunswick Nuclear Plant. The course determined by the General Manager - Brunswick Plant to be the most conservative shall be followed.
10. The PNSC shall maintain written minutes of each PNSC meeting that, at a minimum, document the results of all PNSC activities performed under the provisions of Section A17.3.4.6 requirements. Copies shall be provided to the Vice President - Brunswick Nuclear Plant and the Manager – BNP Nuclear Oversight Section.
11. Each Reportable Event shall be reviewed by the Plant Nuclear Safety Committee - Brunswick Plant and shall be submitted to the Manager – BNP Nuclear Oversight Section and the Vice President - Brunswick Nuclear Plant.

## **Attachment B, Harris Specific QAPD**

### **Attachment B, Harris Specific QAPD**

Information presented in this section is transferred from the Harris UFSAR with approved changes as allowed under 10 CFR 50.54(a)(3). Change bars in this section indicate changes since UFSAR Amendment 60.

Where a section contains no descriptive information beyond that in the generic text in the body of the document, a statement is made to that effect and no content is included. See B17.3.1.2, Organization for example.

## **Attachment B, Harris Specific QAPD**

### **B17. QUALITY ASSURANCE**

#### **B17.1 QA DURING DESIGN AND CONSTRUCTION**

See Harris UFSAR Chapter 17 for historic information from the description of the QA Program for design and construction.

#### **B17.2 OPERATIONAL QA**

Deleted

(NOTE: In April 1995, NRC approved the reformatting of the description of the Harris QA Program to follow Standard Revision Plan Section 17.3, replacing the content of 17.2.)

#### **B17.3 HNP QUALITY ASSURANCE PROGRAM (QAP) DESCRIPTION**

##### **INTRODUCTION**

This content is not addressed in SRP Section 17.3; therefore, the Harris description of the QA Program did not include this section.

##### **DEFINITIONS**

Harris specific definitions are found in Table B17.1 addressing conformance with Regulatory Guide 1.74, Quality Assurance Terms And Definitions.

##### **EXPLANATION OF “QUALITY ASSURANCE”**

There is no Harris specific content.

##### **QA STANDARDS AND GUIDES**

The Harris QAP conforms to Appendix B of 10CFR 50, as discussed in Section 17, “Quality Assurance.” The QAP also conforms to applicable NRC Regulatory Guides and approved ANSI Standards, or applicable alternatives. Table B17-1 and B17-2 address QAP conformance to the referenced regulatory and program guidance contained in NUREG-0800 Section 17.3.

The content of Table B17-1 was transferred from Section 1.8 of the Harris UFSAR. Changes to the content of Table B17-1 are controlled in accordance with 10 CFR 50.54(a). Subsequent changes to the Harris QAP are incorporated in this document as identified in Section 17.3.1.7.

Table B17-2 addresses additional Regulatory Guides that relate to implementation of the QAP but the implementation is site specific and controlled with the Harris UFSAR in accordance with 10 CFR 50.59.

## Attachment B, Harris Specific QAPD

**Table B17-1. Conformance with QA Regulatory Guides and Industry Standards**

Generic Exception:

Table B17-1 addresses Harris's Conformance of the Quality Assurance Program to certain NRC Regulatory Guides. In so doing, specific editions of industry standards are identified for compliance with exceptions and alternatives. Those identified standards include references to other industry standards for activities including, but not limited to; design, fabrication, inspection, and testing. Those included reference industry standards are considered to be guidance documents for details of how activities may be accomplished. The actual standard to be used in such cases is controlled by each station's current licensing and design bases.

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Regulatory Guide 1.28, Quality Assurance Program Requirements (Design And Construction) (Rev 0)

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ANSI N45.2-1971, Quality Assurance Program Requirements for Nuclear Power Plants

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For those activities performed under operating license, HNP shall comply with the requirements of Regulatory Guide 1.33 as specified in Harris Nuclear Plant's (HNP)'s position on Regulatory Guide 1.33. Regulatory Guide 1.28 is not considered necessary and is not included as part of the operational QA program.

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Regulatory Guide 1.30, Quality Assurance Requirements For The Installation And Testing Of Instrumentation And Electric Equipment (Rev. 0)

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HNP complies with the requirements of ANSI N45.2.4-1972), Installation, Inspection, And Testing Requirements For Instrumentation And Electrical Equipment During The Construction Of Nuclear Power Generating Stations, as it is endorsed by Regulatory Guide 1.30 with the following clarifications:

1. Paragraph 2.1, planning: requirements, as determined by responsible plant management, will be incorporated into procedures.
2. Paragraphs 2.2 and 2.3; prerequisites, procedures, and instructions: these controls will be implemented as determined by responsible plant management in approved procedures.
3. Paragraph 2.4, results, will be implemented as set forth in 17.3.2.12 and by compliance with Regulatory Guide 1.33.
4. Paragraph 2.5, measuring and test equipment, will be implemented as set forth in 17.3.2.9 in lieu of the requirements set forth in this paragraph.
5. Paragraph 3, preconstruction verification: "approved instructions" are interpreted to include vendor manuals.
6. Paragraph 4, installation, will be implemented by inclusion of requirements in modification or maintenance procedures, where such procedures are used. Standard HNP practices require that appropriate care be exercised whether a procedure is required or not.
7. Paragraph 5.1, inspections, including subparagraphs 5.1.1, 5.1.2, and the first sentence in 5.1.3, will be implemented as set forth in 17.3.2.12. The remaining sentence in 5.1.3 is covered in equivalent detail by HNP's commitment to Regulatory Guide 1.33, paragraph 5.2.6; the requirements as set forth in that commitment will be implemented in lieu of the requirements stated here.

## **Attachment B, Harris Specific QAPD**

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.30, Quality Assurance Requirements For The Installation And Testing Of Instrumentation And Electric Equipment (Rev. 0)

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HNP complies with the requirements of ANSI N45.2.4-1972), Installation, Inspection, And Testing Requirements For Instrumentation And Electrical Equipment During The Construction Of Nuclear Power Generating Stations, as it is endorsed by Regulatory Guide 1.30 with the following clarifications:

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8. Paragraph 5.2, tests, including subparagraphs 5.2.1 through 5.2.3, will be implemented as set forth in 17.3.2.8. The test program will consider the elements outlined in this paragraph when developing test requirements for inclusion in maintenance and modification procedures. In some cases, testing requirements may be met by post-installation surveillance testing in lieu of a special post-installation test.
  9. Paragraph 6, post-construction verification, is not generally considered applicable at operating facilities because of the scope of the work and the relatively short interval between installation and operation.
  10. Paragraph 6.2.1 titled equipment tests: the last paragraph of this section deals with tagging and labeling. HNP will comply with an alternate last paragraph which reads: "Each safety-related component of process instrumentation is identified with a unique number. This number is utilized in instrument maintenance records so that current calibration status, including data such as the date of the calibration and identity of person that performed the calibration, can be readily determined. Such information may also be contained on tags or labels which may be attached to installed instrumentation."
  11. Paragraph 7, data analysis and evaluation, will be implemented as stated with adding the clarifying phrase "when used" at the beginning of that paragraph. The plant shall have procedures, to the extent determined by responsible plant management, for the performance of analyzing test data, but these procedures are not referred to as data processing procedures.
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Regulatory Guide 1.33, Quality Assurance Program Requirements (Rev. 2) (Operation)

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HNP complies with this guide, which endorses ANSI N18.7-1976, Administrative Controls And Quality Assurance For The Operational Phase Of Nuclear Power Plants, with the following clarifications:

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1. Paragraph 1, "Scope", recommends that this standard applies to activities other than those associated with safety related equipment, activities, and procedures. ANSI N18.7-1976 has not fully taken into account the requirements of regulations other than 10CFR 50. Conflicts may exist between ANSI N18.7-1976 and those other regulations, such as OSHA, 10CFR 19, 20, 21, 30, 40, 70, 71, 73, and ASME. Therefore, HNP shall apply ANSI N18.7-1976 only to those plant features addressed in section 3.2 of the HNP UFSAR that are classified as safety-related and under the control of the QA program.
2. Written audit reports are not formally reviewed as part of the independent review function.
3. The Chief Nuclear Officer will assure that an independent assessment of the overall nuclear oversight program is conducted at least once every 24 months. Results of the independent assessment will be reported directly to the Chief Nuclear Officer and entered into the corrective action program for resolution. (for scheduling consistency, the exceptions included in paragraph 18 of this section will be used as clarification for scheduling this independent assessment).



## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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### Regulatory Guide 1.33, Quality Assurance Program Requirements (Rev. 2) (Operation)

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HNP complies with this guide, which endorses ANSI N18.7-1976, Administrative Controls And Quality Assurance For The Operational Phase Of Nuclear Power Plants, with the following clarifications:

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4. Paragraph 5.2.6, Equipment Control: HNP will comply with the "independent verification" requirements based on the definition of this phrase as given under the commitment to Regulatory Guide 1.74.

Since HNP sometimes uses descriptive names to designate equipment, the sixth paragraph, second sentence is replaced with: "Suitable means include identification numbers or other descriptions which are traceable to records of the status of inspections and tests.

The first sentence in the seventh paragraph will be complied with after clarifying "operating personnel" to mean trained employees assigned to, or under the control of, Duke Energy management at an operating nuclear facility.

5. Paragraph 5.2.7, Maintenance And Modification: since some emergency situations could arise which preclude preplanning of all activities, HNP will comply with an alternate to the first sentence in the second paragraph which reads:

"Except in emergency or abnormal operating conditions where immediate actions are required to protect the health and safety of the public, to protect equipment or personnel, or to prevent the deterioration of plant conditions to a possible unsafe or unstable level, maintenance or modification of equipment shall be preplanned and performed in accordance with written procedures. Where written procedures would be required and are not used, the activities that were accomplished shall be documented after the fact and receive the same degree of review as if they had been preplanned." where procedures are not available, documented instructions may be used to perform maintenance and modification activities.

"Documented instructions" are defined as any credible information (e.g., vendor manuals, vendor recommendations, engineering direction etc.) used during work planning/execution which is reviewed and approved prior to use in accordance with approved procedures.

Paragraph 5.2.7.1, Maintenance Programs: HNP will comply with the requirements of the first sentence of the fifth paragraph. This clarification is needed since it is not always possible to promptly determine the cause of the malfunction. HNP will initiate proceedings to determine the cause, and will make such determination promptly where practical. Determination of the term "promptly" and the term "practical" will be the responsibility of plant management and shall be based on the effect of the condition on the immediate health and safety of the public.

6. Paragraph 5.2.8, Surveillance Testing And Inspection Schedule: In lieu of a "master surveillance schedule," the following requirement shall be complied with: "surveillance testing schedule(s) shall be established reflecting the status of all planned in-plant surveillance tests and inspections."
7. Paragraph 5.2.9, Plant Security And Visitor Control, requires certain procedures and controls. In order to ensure that a conflict between 10CFR 73 and Regulatory Guide 1.17 and ANSI N18.17 does not exist, HNP shall not follow paragraph 5.2.9. An NRC approved security plan shall be implemented prior to fuel loading.
8. Paragraph 5.2.11, Corrective Action, requires certain activities to be performed. In order to avoid conflict between requirements, HNP shall follow the requirements in sections 17.3.1.6 and 17.3.2.13, in lieu of paragraph 5.2.11.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

---

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

---

HNP complies with this guide, which endorses ANSI N18.7-1976, Administrative Controls And Quality Assurance For The Operational Phase Of Nuclear Power Plants, with the following clarifications:

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9. Paragraph 5.2.13.1, Procurement Document Control: When purchasing commercial-grade calibration services from certain accredited calibration laboratories, the procurement documents are not required to impose a quality assurance program consistent with ANSI N45.2-1971. Alternate requirements described in this table for Regulatory Guide 1.123 may be implemented in lieu of imposing a quality assurance program consistent with ANSI N45.2-1971.

10. Paragraph 5.2.15, Review, Approval And Control Of Procedures: The third sentence in paragraph three is interpreted to mean: "Applicable procedures shall be reviewed following an accident, an unexpected transient or a significant operator error. Applicable procedures shall also be reviewed following an equipment malfunction which results in a reportable event."

Paragraph 5.2.15 states that, "Plant procedures shall be reviewed by an individual knowledgeable in the area affected by the procedure no less frequently than every two years to determine if changes are necessary or desirable. A revision to a procedure constitutes a procedure review." in lieu of these requirements, the Shearon Harris Nuclear Power Plant has programmatic controls in place to continually identify procedure revisions to routine procedures which may be needed to ensure that procedures are appropriate for the circumstance and are maintained current.

11. Paragraph 5.2.16, Measuring And Test Equipment - In order to properly address this paragraph, HNP submits the following discussion of M&TE:

IEEE Standard 498-1975 defines measuring and test equipment (M&TE) as follows:

Devices or systems used to calibrate, measure, gauge, test, inspect, or control in order to acquire research, development, test, or operational data to determine compliance with design, specifications, or other technical requirements. M&TE does not include permanently installed operating equipment or test equipment used for preliminary checks where accuracy is not required; for example, circuit checking multimeters.

Note: M&TE does not include rules, tape measures, levels, and other devices if normal commercial practices provide adequate accuracy.

There is a key distinction between installed process instruments and measuring and test equipment. A piece of measuring and test equipment may be used to calibrate a number of plant instruments. Thus, a calibration error could affect a wide variety of plant equipment. Process instruments, on the other hand, perform a single function and may be used to operate equipment, verify operability of equipment, or perform a single monitoring or trip function. In the case of measuring and test equipment, the key concern when a device is out of calibration is to identify other instruments to which this accuracy has been transferred and, secondly, to prevent recurrence. In the case of process instruments, the key emphasis is to prevent recurrence of the out-of-calibration condition.

In ANSI N18.7-1976 (and other documents), the distinction between measuring and test equipment and process instruments is not well defined.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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### Regulatory Guide 1.33, Quality Assurance Program Requirements (Rev. 2) (Operation)

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HNP complies with this guide, which endorses ANSI N18.7-1976, Administrative Controls And Quality Assurance For The Operational Phase Of Nuclear Power Plants, with the following clarifications:

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The requirements in the second and third paragraphs in section 5.2.16 will be applied to measuring and test equipment and those in the first and third paragraphs applied to process instruments with the exception that process instrumentation shall be "suitably marked or tracked to indicate calibration status" versus "suitably marked to indicate calibration status." in addition, a review of out-of-calibration process instruments will be made to determine if action is required to prevent recurrence. Such action may include modification, procedural revision, or corrective maintenance. Section 17.3.2.9 provides additional requirements for control of M&TE.

12. Paragraph 5.2.17, Inspections: As a general clarification, when inspections are not contained in a separate inspection report, inspection requirements will be integrated into appropriate procedures or other documents with the procedure or document serving as the record. Records of inspections will be identifiable and retrievable.
13. Paragraph 5.2.17, second to the last sentence in the last paragraph, "Deviations, their cause, and any . . .", to be consistent with paragraph 5.2.11, the cause of the condition will be determined for only significant conditions adverse to safety.
14. Paragraph 5.3.5(4), HNP interprets the review requirements for "supporting maintenance documents" which have not been incorporated in a procedure, be performed in an equivalent manner as described in approved procedures.
15. Paragraph 5.3.6, Radiation Control Procedures, Discusses certain control programs. As previously stated, paragraph 1, scope, of ANSI N18.7-1976 references those activities involved with being safety-related.

The radiation protection program is not considered to be in this category but rather a program required to comply with 10CFR 19, 20, 30, 70, 71, and 100. Therefore, HNP shall develop its radiation protection program as stated in section 12.5 of the HNP UFSAR.

16. Paragraph 5.3.9.3, Emergency Procedures: As directed by the NRC, HNP will follow a format for emergency procedures in accordance with 10CFR 50, Appendix E.
17. Paragraph C.3 Of Regulatory Guide 1.33 states that changes to HNP Technical Specifications or license amendments should be reviewed by the independent review body prior to their submittal to the NRC for approval. These changes will be reviewed by the independent review body prior to their implementation as required by ANSI N18.7-1976/ANS-3.2.

The requirements of the standard provide adequate assurance that items affecting safety will be reviewed before they are put into effect.

18. Paragraph C.4 Of Regulatory Guide 1.33 will be implemented with the following clarifications: In lieu of the audit program provisions contained in Regulatory Position C.4 Of Regulatory Guide 1.33, audits (assessments) of facility activities will be conducted in accordance with the Quality Assurance Program Description contained in section 17.3.3.3.3. Regulatory Position C.4 endorses ANSI N18.7-1976/ANS-3.2, section 4.5 that states that audits of selected aspects of the operational phase activities, including safety-related functions, are completed within a period of two years, with the following clarification:

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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

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HNP complies with this guide, which endorses ANSI N18.7-1976, Administrative Controls And Quality Assurance For The Operational Phase Of Nuclear Power Plants, with the following clarifications:

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- A) Audits shall be performed at the intervals designated herein for each audit area. Schedules shall be based on the exit date of the audit.
- B) A maximum extension not to exceed 25 percent of the audit interval shall be allowed. That is to say that, for audits on a 24-month frequency, the maximum time between specific audits shall not exceed 30 months. Likewise, audits on an annual (12 month) frequency shall not be extended beyond 15 months.
- C) When an audit interval extension is used, the next audit for that particular audit area will be scheduled from the anniversary exit date rather than from the exit date of the extended audit.
- D) Item B shall also apply to supplier audits and evaluations except that a total combined time interval for any three consecutive inspection or audit intervals should not exceed 3.25 times the specified inspection or audit interval.

Note: this grace period will not be applied to audits of: emergency preparedness to satisfy the requirements of 10CFR 50.54(t); security to satisfy the requirements of 10CFR 50.54(p), 73.55(g)(4) and 73 Appendix C; Radiation Protection to satisfy 10CFR 20.1101(c); and fire protection. The schedule for these assessments will continue to be based on the exit date and not the exit month.

19. Paragraph C.5.d of the Regulatory Guide 1.33 will be implemented by adding the clarifying phrase "Where practicable" in front of the fourth sentence of the fifth paragraph. The Regulatory Guide's changing of the two uses of the word "should" in this sentence to "shall" unnecessarily restricts HNP's options on repair or replacement parts. It is not always practicable to test parts prior to use. Modification review in accordance with the provisions of 10CFR 50.59 will be conducted and documented.

The words "where practical" will be determined by responsible plant management and the results documented.

20. Paragraph C.5.e of Regulatory Guide 1.33 will be implemented subject to the same clarifications made for ANSI N45.2.2.
21. Paragraph C.5.f of Regulatory Guide 1.33 will be implemented with the substitution of the word "practical" for the word "possible" in the last sentence.
22. Paragraph C.5.g of Regulatory Guide 1.33 will be implemented with the addition of the modifier "normally" after each of the verbs (should) which the regulatory guide converts to "shall". It is HNP's intent to fully comply with the requirements of this paragraph, and any conditions which do not fully comply will be documented and approved by the plant staff. In these cases, the reason for the exception shall be retained for the same period of time as the affected preoperational tests.
23. Paragraph 5.2.2, Procedure Adherence describes that for temporary changes to procedures that one of the approvers shall be the supervisor in charge of the shift and hold a senior reactor operator license. To avoid overloading the supervisor in charge of the shift with administrative tasks, any member of operation's management with a senior reactor operator license will be allowed to approve temporary changes to procedures.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

Regulatory Guide 1.33, Quality Assurance Program Requirements (Rev. 2) (Operation)
HNP complies with this guide, which endorses ANSI N18.7-1976, Administrative Controls And Quality Assurance For The Operational Phase Of Nuclear Power Plants, with the following clarifications:
<p>24. Paragraph 5.3.10 of ANSI N18.7-1976/ANS-3.2, the last sentence in the first paragraph requires "test and inspection results, shall be documented and evaluated..." also, the last sentence in the second paragraph requires "the test and inspection procedures shall require recording the date, identification of those performing the test or inspection, as-found condition, corrective actions performed, if any, and as-left condition." as an alternative to the records required for inspections outlined in paragraph 5.3.10, hnp shall provide the following as the method to document results of inspections:</p> <p>the results of inspections will be documented in appropriate records and those records shall, as a minimum, identify (A) through (H) below:</p> <ul style="list-style-type: none"><li>(A) authorized individual approving results.</li><li>(B) date of inspection.</li><li>(C) inspector/data recorder.</li><li>(D) item inspected.</li><li>(E) M&amp;TE used.</li><li>(F) reference to information on action taken in connection with non-conformances.</li><li>(G) results or acceptability.</li><li>(H) type of observation.</li></ul>
Regulatory Guide 1.37, Quality Assurance Requirements For Cleaning Fluid Systems And Associated Components Of Water-Cooled Nuclear Power Plants (Rev. 0)
HNP shall comply with the requirements of ANSI N45.2.1-1973, Cleaning Of Fluid Systems And Associated Components During Construction Phase Of Nuclear Power Plants, as it is endorsed by Regulatory Guide 1.37-March 1973, with the following clarifications:
<ul style="list-style-type: none"><li>1. Paragraph 2.5, Test Equipment, outlines control of inspection and test equipment. HNP has addressed its position relative to measuring &amp; test equipment (M&amp;TE) in 17.3.2.9.</li><li>2. Paragraph 5, Installation Cleaning: The recommendation that local rusting on corrosion resistant alloys be removed by mechanical methods is interpreted to mean that local rusting may be removed mechanically, but the use of other removal means is not precluded provided other cleaning methods are not considered detrimental as determined by responsible plant management.</li><li>3. The guide and standard are applicable to those areas of the quality assurance program addressing on-site cleaning of materials and components, cleanness control, preoperation cleaning and layup of fluid systems.</li><li>4. With regard to paragraph C.3 of Regulatory Guide 1.37: Chromates or other additives, normally in the system water, will not necessarily be added to the flush water.</li></ul>

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.37, Quality Assurance Requirements For Cleaning Fluid Systems And Associated Components Of Water-Cooled Nuclear Power Plants (Rev. 0)

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HNP shall comply with the requirements of ANSI N45.2.1-1973, Cleaning Of Fluid Systems And Associated Components During Construction Phase Of Nuclear Power Plants, as it is endorsed by Regulatory Guide 1.37-March 1973, with the following clarifications:

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5. With regard to paragraph C.4 of Regulatory Guide 1.37: Expendable materials, such as inks and related products; temperature indicating sticks; tapes; gummed labels; wrapping materials; water soluble dam materials; lubricants, NDT penetrant materials and couplants, dessicants, which contact stainless steel or nickel alloy surfaces shall be of commercial quality. Levels for halogens, sulfur, chlorides, low melting point metal, etc., for use on stainless steel and nickel alloy surfaces will be as determined by responsible technical group to limit or preclude intergranular cracking and stress corrosion cracking.
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Regulatory Guide 1.38, Quality Assurance Requirements For Packaging, Shipping, Receiving, Storage, And Handling Of Items For Water-Cooled Nuclear Power Plants (Rev. 2)

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HNP shall comply with the requirements of ANSI N45.2.2-1972, Packing, Shipping, Receiving, Storage, And Handling Of Items For Nuclear Power Plants, as it is endorsed by Regulatory Guide 1.38 with the following clarifications:

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1. Paragraph 2.1, Planning: (first sentence) the specific items to be governed by the standard shall be identified. However, the standard is part of the HNP QA program and it will, therefore, be applied to those structures, systems, and components which are included in that program.
2. Paragraph 2.3 - Results - The full requirements of this paragraph shall apply to the inspections and tests that are performed to determine the acceptability of product quality.
3. Paragraph 2.4 - those personnel that perform inspection, examination, and testing activities for verification and acceptance/rejection purposes shall be qualified in accordance with Regulatory Guide 1.58.
4. Paragraph 2.5 - Measuring And Test Equipment (2.5.2) - That equipment which measures quality of the permanent plant items shall be under the calibration and control program; whereas the equipment used to measure secondary conditions, such as warehouse temperature, humidity, etc., will be maintained in good working order and checked for proper functioning when accuracy is in doubt, but not maintained under the calibration and control program. Traceability to calibration records will be provided when it is impractical (because of size, configuration, or application) to physically mark calibration information on the item. Note: M&TE does not include rulers, tape measures, levels, and other devices if normal commercial practices provide adequate accuracy.
5. Paragraph 2.7, Classification Of Items: HNP may choose not to explicitly use the four level classification system. However, the specific requirements of the standard that are appropriate to each class will be applied unless justified and documented.
6. Paragraph 2.7.1(3) requires special nuclear material (fuel) and sources to be classified as Level A. HNP shall store new/used nuclear fuel and radioactive sources in storage locations as described in the sections 9 and 12. Radioactive sources used by HP personnel shall be stored and controlled in accordance with HP practices and procedures.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.38, Quality Assurance Requirements For Packaging, Shipping, Receiving, Storage, And Handling Of Items For Water-Cooled Nuclear Power Plants (Rev. 2)

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HNP shall comply with the requirements of ANSI N45.2.2-1972, Packing, Shipping, Receiving, Storage, And Handling Of Items For Nuclear Power Plants, as it is endorsed by Regulatory Guide 1.38 with the following clarifications:

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7. Paragraph 3.2 - Levels Of Packaging - Packaging for shipment off-site will be equal to or exceed the original packaging by the vendor, as required to assure the quality of the item is not degraded as a result of shipping or handling.
8. Paragraph 3.4, Methods Of Preservation: (first sentence) HNP will comply with these requirements subject to the clarification that the term "deleterious corrosion" means corrosion which cannot be subsequently removed and which adversely affects form, fit, or function.
9. Paragraph 3.6 - Barrier And Wrap Materials And Desiccants - The use of clear plastic in warehouses will be minimized. The guide rule is that the clear plastic shall be used only where periodic visual inspection is necessary.  
  
Plastic wrap on items supplied in accordance with a vendor's approved QA/QC program will be accepted and stored without rewapping.
10. Paragraph 3.7, Containers, Crating And Skids: In lieu of the requirements of this paragraph, HNP will use means as determined by responsible plant technical personnel needed to provide adequate protection of the items in storage.
11. Paragraph 4 - Shipping - Requirements of paragraph 4, Shipping, primarily applies to the vendor. Plant functions with regard to return shipments will meet or exceed the methods of the vendor for the item or approved alternatives.
12. Paragraph 5.2.1, Shipping Damage Inspection: Warehouse personnel will normally visually scrutinize incoming shipments for damage of the types listed in this paragraph; this activity is not necessarily performed prior to unloading. Since required items receive the item inspection of paragraph 5.2.2, separate documentation of the shipping damage inspection is not necessary. Release of the transport agent after unloading and the signing for the receipt of the shipment may be all of the action taken to document completion of the shipping damage inspection. Any nonconformances noted will be documented and dispositioned as required by 17.3.2.13. The person performing the visual scrutiny during unloading is not considered to be performing an inspection function as defined under Regulatory Guide 1.74; therefore, while he will be trained and qualified to perform this function, he may not necessarily be certified (N45.2.6) as an inspector.
13. Paragraph 5.2.2, Item Inspection: The need and extent for inspection of items will be determined by responsible plant technical personnel. Receiving inspections shall be performed in an area designated for receipt of material and shall normally be performed in the receiving building. The receiving building and the areas designated will provide adequate protection for the material, but may not comply with all of the specific requirements contained in section 6 of this standard. Material that is suspected of being compromised during the receiving process shall be evaluated by responsible technical personnel, as determined by plant management.
14. Paragraph 5.2.2(1) - Identification And Marking - Item inspection will include inspection for identification and marking required by the purchase order documents. Marking that is not quality related or which provides no traceability will not be inspected.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.38, Quality Assurance Requirements For Packaging, Shipping, Receiving, Storage, And Handling Of Items For Water-Cooled Nuclear Power Plants (Rev. 2)

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HNP shall comply with the requirements of ANSI N45.2.2-1972, Packing, Shipping, Receiving, Storage, And Handling Of Items For Nuclear Power Plants, as it is endorsed by Regulatory Guide 1.38 with the following clarifications:

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15. Paragraph 5.3.1 - Acceptable - Item acceptance status will be indicated by application of tags, stickers, ribbons, or signs. Storage areas are not designated as accept areas except for bulk items.
16. Paragraph 6.1.1 - Scope - The levels and methods of storage for items between the time of removal from the prescribed storage until placement in the installed location may be relaxed as determined by responsible plant management for short periods of time, according to the sensitivity of the item being handled and the elements of contact anticipated during this interval. Where relaxation of storage requirements of this standard are deemed appropriate, the item, conditions, precautions and follow-up inspection for assurance that quality of the item has been maintained will be documented.
17. Paragraph 6.1.2, Levels Of Storage: Subpart (2) is replaced with the following:
  - (2) Level B items shall be stored within a fire-resistant, weather-tight, and well ventilated building or equivalent enclosure. This building shall be situated and constructed so that it will not normally be subject to flooding; the floor shall be paved or equal, and well drained. If any water comes in contact with stored equipment, such equipment will be labeled or tagged nonconforming, and then the nonconformance document will be processed and evaluated. Items shall be placed on pallets, shoring, or shelves to permit air circulation. The building shall be provided with heating and temperature control or its equivalent to reduce condensation and corrosion. Minimum temperature shall be 40°F and maximum temperature shall be 140°F or less if so stipulated by a manufacturer.
18. Paragraph 6.2.1, Access To Storage Areas: Items which fall within the level d classification of the standard will be stored in areas which may be posted to limit access, but other positive controls such as fencing or guards will not normally be provided.
19. Paragraph 6.2.4, Storage Of Food And Associated Items: The sentence is replaced with the following: "The use or storage of food, drinks, and salt tablet dispensers in any storage area shall be controlled and shall be limited to designated areas where such use or storage is not deleterious to stored items."
20. Paragraph 6.2.5, Measures To Prevent Entrance Of Animals: The sentence is replaced with the following: "Warehouse personnel shall be alert to detect evidence of rodents or small animals in indoor storage areas.  
  
Consideration will be given when setting up the system to provide reasonable assurance that rodents or other small animals will not be present. If any such evidence is detected, a survey or inspection will be utilized to determine the extent of the damage; exterminators or other appropriate measures shall be used to control these animals to minimize possible contamination and mechanical damage to stored material."
21. Paragraph 6.3.3, Storage Of Hazardous Material: The sentence is replaced with the following: "Hazardous chemicals, paints, solvents, and other materials of a like nature shall be stored in approved cabinets or containers which are not in close proximity to installed safety systems required for safe shutdown."



## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.38, Quality Assurance Requirements For Packaging, Shipping, Receiving, Storage, And Handling Of Items For Water-Cooled Nuclear Power Plants (Rev. 2)

---

HNP shall comply with the requirements of ANSI N45.2.2-1972, Packing, Shipping, Receiving, Storage, And Handling Of Items For Nuclear Power Plants, as it is endorsed by Regulatory Guide 1.38 with the following clarifications:

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22. Paragraph 6.4.2, Care Of Items: The following alternates are provided for indicated subparts:

- (5) "Space heaters in electrical equipment shall be energized unless a documented engineering evaluation determines that such space heaters are not required."
- (6) "Large (greater than or equal to 50 hp) rotating electrical equipment shall be given insulation resistance tests on a scheduled basis unless a documented engineering evaluation determines that such tests are not required."
- (7) "Prior to being placed in storage, rotating equipment weighing over approximately 50 pounds shall be evaluated by engineering personnel to determine if shaft rotation in storage is required; the results of the evaluation shall be documented. If rotation is required, it shall be performed at specified intervals, and documented.

Parts will receive a coating of lubrication where applicable, so that the shaft does not come to rest in the same position occupied prior to rotation. For long shafts or heavy equipment subject to undesirable bowing, shaft orientation after rotation shall be specified and obtained."

- (8) Other maintenance requirements specified by the manufacturer's instructions shall be evaluated by responsible plant personnel to determine applicability during storage of the item.

23. Paragraph 6.5, Removal Of Items From Storage: HNP does not consider the last sentence of this paragraph to be applicable to the operations phase due to the relatively short period of time between installation and use. The first sentence of the paragraph is replaced with: "HNP will develop, issue, and implement a procedure(s) which cover(s) the removal of items from storage. The procedure(s) will assure that the inspection status of all material issued is known, controlled, and appropriately dispositioned."

When items are released and waiting at a location prior to installation, responsible plant management in accordance with plant procedures will determine and document the extent of inspection and storage requirements.

24. Paragraph 6.6, Storage Records: HNP will comply with the requirements of this section with the clarification that, for record purposes, personnel access to storage areas will not be recorded. Unloading or pick-up of material shall not be considered "access," nor shall inspection by NRC or other regulatory agents, nor shall tours by non-HNP employees who are accompanied by HNP employees.

25. Paragraph 7.3 - Hoisting Equipment - The load chart for each crane includes the model number for that crane. This load chart is considered to be "certification" by the manufacturer for that crane as required by paragraph 7.3.1. Likewise, forklifts are considered certified by the manufacturer's literature giving maximum capacity as required by paragraph 7.3.2.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.38, Quality Assurance Requirements For Packaging, Shipping, Receiving, Storage, And Handling Of Items For Water-Cooled Nuclear Power Plants (Rev. 2)

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HNP shall comply with the requirements of ANSI N45.2.2-1972, Packing, Shipping, Receiving, Storage, And Handling Of Items For Nuclear Power Plants, as it is endorsed by Regulatory Guide 1.38 with the following clarifications:

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Paragraph 7.3, Hoisting Equipment: Rerating of hoisting equipment will be considered only when absolutely necessary. Prior to performing any lift above the load rating, the equipment manufacturer will be contacted for his approval and direction. The manufacturer will be requested to supply a document granting approval for a limited number of lifts at the new rating and any restrictions involved, such as modifications to be made to the equipment, the number of lifts to be made at the new rating, and the test lift load. At all times, the codes governing rerating of hoisting the equipment will be complied with.

If rerating of hoisting equipment is necessary and HNP cannot or does not contact the equipment manufacturer as described above, the test weight used in temporarily rerating hoisting equipment for special lifts will be at least equal to 110 percent of the lift weight. A dynamic load test over the full range of the lift using a weight at least equal to the lift weight will be performed.

26. Paragraph 7.4 - Inspection Of Equipment And Rigging - Nondestructive examinations will be performed by QC personnel qualified in accordance with Regulatory Guide 1.58 (except as amended by safety analysis report position). Operators will be trained in the operation and maintenance inspections of their assigned equipment.

27. Appendix A.3.5.1 - Caps And Plugs; A.3.5.2, Tapes And Adhesives; And A.3.6.3, Desiccants - Plugs, caps, tapes, adhesives, desiccants, markers and other temporary items will be of commercial quality. Levels for halogens, sulfur, chlorides, low melting point metal, etc., for use on stainless steel and nickel alloy surfaces will be as determined by the responsible technical group to limit or preclude intergranular cracking and stress corrosion cracking.

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Regulatory Guide 1.39, Housekeeping Requirements For Water Cooled Nuclear Power Plants (Rev. 2)

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HNP complies with the requirements of ANSI N45.2.3-1973, Housekeeping, During The Construction Phase Of Nuclear Power Plants, as endorsed by Regulatory Guide 1.39, September 1977, with the following clarifications for:

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1. Paragraph 2.1, Planning: The zone designations provided in the standard will be used as a guide in developing plant procedures; however, plant areas will not necessarily be divided into zones I through V. Equivalent controls will be maintained as prescribed in approved procedures.
2. Paragraph 3.5, Surveillance, Inspection, And Examinations: Subparagraph (1) is not applicable during normal operations but will be implemented if large items are to be moved or handled.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.58, Qualification Of Nuclear Power Plant Inspection, Examination And Testing Personnel (Rev. 1)

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HNP shall comply with NRC Regulatory Guide 1.58, Revision 1, which endorses ANSI N45.2.6-1978, Qualification Of Inspection, Examination, And Testing Personnel For Nuclear Power Plants, with the following clarifications:

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1. With regard to paragraph 1.2 of ANSI N45.2.6-1978 titled Applicability: HNP elects not to apply the requirements of this guide to those personnel who are involved in the daily operations of surveillance, maintenance, and certain technical and support services whose qualifications are controlled by 17.3 or are controlled by other QA program commitment requirements. Only personnel in the following listed categories will be required to meet ANSI N45.2.6-1978 requirements: (1) nondestructive examination (NDE) personnel (2) QC inspection personnel, and (3) receipt inspection personnel.
2. The fourth paragraph of paragraph 1.2 requires that the standard be imposed on personnel other than HNP employees. The applicability of the standard to suppliers and contractors will be documented and applied as specified in the procurement documents for each supplier and contractor.
3. With regard to paragraph 2.5 of ANSI N45.2.6-1978 titled Physical: HNP will implement the requirements of this section with the stipulation that, where no special physical characteristics are required, none will be specified. The converse is also true: if no special physical requirements are stipulated by HNP, none are considered necessary. HNP employees receive an initial physical examination to assure satisfactory physical condition; however, only the following listed personnel will receive an annual examination: (1) NDE personnel (2) QC inspection personnel, and (3) receipt inspection personnel. This annual examination shall consist of the near visual acuity using the standard Jaeger's type chart or equivalent test.
4. With regard to paragraph 3 of ANSI N45.2.6-1978 titled Qualifications: Only personnel performing NDE (such as LP, MT, UT, and RT) will be grouped in levels of capability and certified for inspection, review, and evaluation of inspection data, and reporting of inspection and test results. Inspection personnel are qualified based on preestablished experience, education, on-the-job training, written examinations and proficiency tests associated with the specific activity. Proficiency tests are given to personnel performing independent QC inspections and documented acceptance criteria are developed to determine if individuals are properly trained and qualified. Certificates of qualification delineate the functions personnel are qualified to perform. Qualification records are maintained and performance evaluations conducted at least on an every three year basis.
5. With regard to paragraph 3.5 of ANSI N45.2.6-1978 titled Education & Experience Recommendations: HNP will certify individual inspectors through training and experience to requirements appropriate to the specific assignment; however, except for NDE, personnel will not be classified by levels of capability. The training experience requirements will be directed toward qualifying personnel for specific inspection and testing operations.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.64, Quality Assurance Requirements For The Design Of Nuclear Power Plants (Rev. 2)

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HNP shall comply with NRC Regulatory Guide 1.64, Rev. 2, which endorses ANSI standard N45.2.11-1974, Quality Assurance Requirements For The Design Of Nuclear Power Plants, with the following clarification:

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Paragraph C.2(1): For the exceptional circumstance in which the designer's immediate supervisor is the only technically qualified individual available, this review can be conducted by the supervisor, provided that: i) the other provisions of the regulatory guide are satisfied, ii) the justification is individually documented and approved in advance by the supervisor's management, and iii) quality assurance audits cover frequency and effectiveness of the use of supervisors as design verifiers to guard against abuse.

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Regulatory Guide 1.74, Quality Assurance Terms And Definitions (Rev. 0)

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Regulatory Guide 1.74 endorses ANSI N45.2.10-1973, Quality Assurance Terms And Definitions. The HNP project complies with this guide as described below:

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HNP complies with the requirements of this guide with the following clarifications:

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1. HNP reserves the right to define additional words or phrases which are not included in this standard. Such additional definitions will be documented in appropriate procedures, manuals, etc.
2. In addition to the standard's definition of "inspection," HNP will use the following:  
"Inspection (when used to refer to activities that are not performed by quality organization personnel) - examining, viewing closely, scrutinizing, looking over or otherwise checking activities. Personnel performing these functions are not necessarily certified to ANSI N45.2.6."  
  
When HNP intends for inspection to be performed in accordance with the QA program by personnel certified as required by that program and for activities defined by "Inspection" in ANSI N45.2.10, appropriate references to the plant quality organization which will perform the activity and/or to quality procedures to be used for performing the activity will be made. If such references are not made, inspections are considered under the additional definition given above.
3. In addition to the standard's definition of "procurement documents," HNP will utilize the definitions given in ANSI N45.2.13 and in Regulatory Guide 1.74. The compound definition, procurement documents-contractually binding documents that identify and define the requirements which items or services must meet in order to be considered acceptable by the purchaser. They include documents which authorize the seller to perform services or supply equipment, material or facilities on behalf of the purchaser (e.g. contracts, letters of intent, work orders, purchase orders, or proposals and their acceptance, drawings, specifications, or instructions which define requirements for purchase).
4. "Quality assurance program requirements" (not defined in ANSI N45.2.10, but used and defined differently in ANSI N45.2.13) - those individual requirements of the QA program which, when invoked in total or in part, establish the requirements to the quality assurance program for the activity being controlled. Although not specifically used in the operational QA program, ANSIN45.2 may be imposed upon HNP's suppliers.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

Regulatory Guide 1.74, Quality Assurance Terms And Definitions (Rev. 0)
Regulatory Guide 1.74 endorses ANSI N45.2.10-1973, Quality Assurance Terms And Definitions. The HNP project complies with this guide as described below:
<ol style="list-style-type: none"><li>5. "Independent Verification" - Verification that required actions have been completed by an individual other than the person who performed the operation or activity being verified. Such verification will not require confirmation of the identical action when other indications provide assurance or indication that the prescribed activity is in fact complete. Examples include, but are not limited to: verification of a breaker opening by observing remote breaker indication lights; verification of a set point (made with a voltmeter or ammeter for example) by observing the actuation of status or indicating lights are the required panel-meter indicated value; verification that a valve has been positioned by observing the starting or stopping of flow on meter indications or by remote valve position indicating lights.</li><li>6. "Audit" (will be a modification of the word - to allow the use of subjective evidence if available - as defined in paragraph 1.4 of ANSI N45.2.12-1977 and paragraph 1.4.3 of ANSI N45.2.23-1978 as opposed to the definition given in ANSI N45.2.10-1973) - A documented activity performed in accordance with written procedures or checklists to verify, by examination and evaluation of objective evidence where available, that applicable elements of the quality assurance program have been developed, documented, and effectively implemented in accordance with specified requirements. An audit should not be confused with surveillance or inspection for the sole purpose of control or product acceptance.</li></ol>
Regulatory Guide 1.88, Collection, Storage And Maintenance Of Nuclear Power Plant Quality Assurance Records (Rev. 2)
HNP shall comply with NRC Regulatory Guide 1.88, Rev. 2, which endorses ANSI N45.2.9-1974, Collection, Storage, And Maintenance Of QA Records, with the following clarifications:
See standard exception in Table 17-1 Regulatory Guide 1.88 for the appropriate controls on quality in the management of electronic records.
<ol style="list-style-type: none"><li>1. Appendix A of ANSI N45.2.9 is not considered to be a mandatory list. This list will be used as a guideline for classifying those documents that need to be maintained as QA records. Whether a particular type of document needs to be classified as a QA record and its appropriate retention period is determined in accordance with records management procedures.</li><li>2. Paragraph 1.4, Definitions: The phrase "When the document has been completed" is clarified to mean when the document has received the final review performed by the organizational element responsible for generating or collecting the records. In the case of a record package (plant change request, equipment qualification, etc.) made up of several individual documents, the package will be considered to be the document for the purpose of determining when the document is complete.</li><li>3. Paragraph 3.2.1, Generation Of Quality Assurance Records: The phrase "Completely filled out" is clarified to mean that sufficient information is recorded to fulfill the intended purpose of the record.</li><li>4. Paragraph 3.2.2, Index: The storage location will be delineated in procedures in lieu of in the index. The specific location of a record "within a storage area" is delineated by a computerized indexing system plus a storage area labeling system which provides information by record type and storage medium.</li></ol>

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.88, Collection, Storage And Maintenance Of Nuclear Power Plant Quality Assurance Records (Rev. 2)

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HNP shall comply with NRC Regulatory Guide 1.88, Rev. 2, which endorses ANSI N45.2.9-1974, Collection, Storage, And Maintenance Of QA Records, with the following clarifications:

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5. Paragraph 4.2, Timeliness: HNP 's contractual agreement with its contractors and suppliers will constitute fulfillment of the requirements of this paragraph.
6. Paragraph 5.4, Preservation: The following clarification is substituted for the current subparagraph 5.4.2: "Records shall not be stored loosely. They shall be secured for storage in file cabinets or on shelving in containers." the following clarification is substituted for the current subparagraph 5.4.3: "appropriate provisions shall be made for special processed records (such as radiographs, photographs, negatives, microfilm, and magnetic media) to prevent or minimize damage from excessive light, stacking, electromagnetic fields, temperature and humidity, etc. Manufacturer's recommendations will be considered as appropriate."
7. Paragraph 5.5, Safekeeping: Routine general office and nuclear site security systems and access controls are provided. No special security systems are required to be established for record storage areas.
8. Paragraph 5.6, Facility: This paragraph provides no distinction between temporary and permanent facilities. To cover temporary storage, the following clarification is added: "complete records may be stored in one-hour fire rated file cabinets until transmitted for permanent storage. In general, records shall not be maintained in temporary storage for more than ninety days after completion.

Any exceptions to this requirement must be justified, evaluated and approved by the supervisor document services or designee and documented. A list of exceptions shall be maintained and available for nrc review. Exceptions may include records needed on a continuing basis for an extended period of time at the location of the work group responsible for generating the records and records which are cumulative in nature and could best be turned over for storage for a designated period of time.

9. Paragraph 5.6, subparagraph 3, is clarified to require a two-hour minimum fire rating to be consistent with the 1979 version of the standard and NRC Criteria For Record Storage Facilities (Guidance - ANSI N45.2.9, section 5.6) issued 7/1/80.
10. Paragraph 5.6, subparagraph 9, is clarified to read: "No pipes or penetrations except those providing fire protection, lighting, temperature/humidity control or communications are to be located within the facility. All such penetrations shall be sealed or dampened to comply with a minimum two-hour fire protection rating."
11. Additional clarification for QA records is provided in 17.3.2.15
12. See standard exception in Table 17-1 Regulatory Guide 1.88 for the appropriate controls on quality in the management of electronic records.
13. See standard exception in Table 17-1 Regulatory Guide 1.88 for the appropriate controls on quality in the management of electronic records.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.94, Quality Assurance Requirements For Installation, Inspection And Testing Of Structural Concrete And Structural Steel During The Construction Phase Of Nuclear Power Plants (Rev. 1)

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HNP complies with the requirements and guidance of ANSI N45.2.5-1974, Supplementary Quality Assurance Requirements For Installation Inspections And Testing Of Structural Steel During The Contract Phase Of Nuclear Power Plants, as it is referenced in Regulatory Guide 1.94, Rev. 1, with the following clarifications:

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- A) Paragraph 2.1, Planning: Requirements, as determined by responsible plant management, will be incorporated into procedures.
  - B) Paragraph 2.3, Results, Will be implemented as set forth in sections 17.3.2.12, 17.3.2.8, and 17.3.2.15 and Regulatory Guide 1.33.
  - C) Paragraph 2.5 of ANSI N45.2.5, Measuring & Test Equipment, Requires certain controls over this type of equipment. The equipment listed shall be included in the calibration control program; however, the basis and control of measuring and test equipment is that stated in section 17.3.2.9.
  - D) The cement test frequency for standard physical and chemical properties is in accordance with ASTM C 183, on the basis of one test per daily production at the cement plant, reference ANSI N45.2.5, Table B. Table B also lists a test frequency for ASTM C 235 which has been discontinued by ASTM. HNP plans to discontinue testing in accordance with ASTM C 235. Acceptance of aggregates for durability/hardness will be in accordance with ASTM C 131 OR C 535, Los Angeles Abrasion Test.
  - E) Gradation - In addition to the gradations listed in ASTM C-33, an aggregate designated 78-M (State Of North Carolina designation) is used in special areas such as around major penetrations or in reinforcing steel congested areas, with the approval of the engineers. This aggregate meets all other qualifications of ASTM C-33, with the exception of gradation analyses. The results during preliminary concrete mix design have been satisfactory and in accordance with the requirements of ASME Section III, Division 2/ACI-359 code.
  - F) Paragraph 5.4, High Strength Bolting: Bolting connection points will be visually inspected in accordance with ANSI N45.2.5-1974 except that bolt length will be checked to ensure bolts are long enough as indicated by the point of the bolts being flush with or outside the face of the nuts in accordance with ANSI N45.2.5-1978.
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Regulatory Guide 1.116, Quality Assurance Requirements For Installation, Inspection, And Testing Of Mechanical Equipment And Systems, (Rev. 0-R)

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HNP complies with the requirements of ANSI N45.2.8-1975, Supplementary Quality Assurance Requirements For Installation, Inspection, And Testing Of Mechanical Equipment And Systems For The Construction Phase Of Nuclear Power Plants, as it is endorsed by Regulatory Guide 1.116, Revision O-R, June 1976, with the following clarifications:

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- 1. Paragraph 2.1, Planning: Requirements, as determined by responsible plant management, will be incorporated into procedures.
- 2. Paragraph 2.3, results, will be implemented as set forth in Section 17.3.2.12 and by compliance with RG 1.33.
- 3. Paragraph 2.8, Measuring And Test Equipment - HNP has addressed this requirement for the operational phase of the plant in section 17.3.2.9.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.116, Quality Assurance Requirements For Installation, Inspection, And Testing Of Mechanical Equipment And Systems, (Rev. 0-R)

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HNP complies with the requirements of ANSI N45.2.8-1975, Supplementary Quality Assurance Requirements For Installation, Inspection, And Testing Of Mechanical Equipment And Systems For The Construction Phase Of Nuclear Power Plants, as it is endorsed by Regulatory Guide 1.116, Revision O-R, June 1976, with the following clarifications:

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4. Paragraph 2.9, Prerequisites, References requirements of other standards. HNP has addressed applicable standards in the appropriate sections of the HNP UFSAR in lieu of the requirements of this paragraph. The extent to which this paragraph applies will be determined by responsible plant management based on end use and complexity of the item.
  5. Paragraph 3.3, Processes And Procedures: "Approved instructions" are interpreted to include vendor manuals.
  6. Paragraph 4.6, Care Of Items: This will be done as outlined in the position on Regulatory Guide 1.38.
  7. Paragraph 5, including subparagraphs 5.1 through 5.4, Installed Systems, Inspections And Tests: Responsible plant management will determine the extent to which the elements in this paragraph are applied when developing test requirements for inclusion in modification procedures. In some cases, testing requirements may be met by post-installation surveillance testing in lieu of a special post-installation test.
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Regulatory Guide 1.123, Quality Assurance Requirements For Control Or Procurement Of Items And Services For Nuclear Power Plants, (Rev. 1)

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HNP shall comply with the requirements of ANSI N45.2.13-1976, Quality Assurance Requirements For Control Or Procurement Of Items And Services For Nuclear Power Plants, as it is endorsed by Regulatory Guide 1.123 with the following clarifications:

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1. Paragraph 1.2.2, Purchaser's Responsibilities: Item C is one of the options which may be used by HNP to assure quality; however, any of the options given in 10CFR50, Appendix B, Criterion VII as implemented by 17.3 may also be used. Evaluation of supplier's QA program will be conducted as determined depending on complexity and end use of item.
2. Paragraph 3.1, Procurement Document Preparation, Review And Control Change: The changed document may not always be as reviewed by the originator; however, at least an equivalent level shall review and approve any changes.
3. Paragraphs 3.2.3, 3.2.4, and 3.2.6 - HNP does not consider that these paragraphs or vendor qualifications apply for the procurement of off-the-shelf items. Off-the-shelf items (which include original as well as spare and replacements) are Commercial Grade Items which are defined in 10CFR 21.

Special quality verification requirements shall be determined, as necessary, by responsible technical group to assure acceptability of the item. The responsible technical organization will review purchase requisitions of items classified as "commercial grade" to assure proper application of the 10CFR 21 criteria.

See standard exceptions in Table 17-1 for Regulatory Guide 1.123 for the procurement of Commercial Grade Items and services including, purchasing commercial-grade calibration services from calibration laboratories.



## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.123, Quality Assurance Requirements For Control Or Procurement Of Items And Services For Nuclear Power Plants, (Rev. 1)

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HNP shall comply with the requirements of ANSI N45.2.13-1976, Quality Assurance Requirements For Control Or Procurement Of Items And Services For Nuclear Power Plants, as it is endorsed by Regulatory Guide 1.123 with the following clarifications:

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4. Paragraph 3.3 requires procurement documents to be reviewed prior to bid or award of contract. The documented review of procurement documents is provided through review of the procurement specification and purchase requisition by the responsible technical organization prior to bid or award of contract.
5. Paragraph 3.4, Procurement Document Control: HNP will meet the requirements of 17.3 in lieu of the requirements specified in this paragraph.
6. Paragraph 4.2, Selection Measures, Outlines certain methods acceptable for the selection of suppliers. HNP's history of using similar methods has proven adequate in the procurement of items; therefore, HNP wishes to replace paragraph 4.2(a), (b), and (c) with the following selection methods:
  - 1) The supplier's quality assurance capabilities as determined by a direct survey of his facilities and personnel, and the implementation of his quality assurance program.
  - 2) Evaluating the supplier's history of providing a product which performs satisfactorily in actual use. One or more of the following information shall be evaluated:
    - (i) Experience of users of identical or similar products of the same prospective supplier.
    - (ii) HNP's records that have been accumulated in connection with previous procurement actions and product operating experience. Historical data should be representative of the supplier's current capability. If there has been no recent experience with the supplier, or if he is a new supplier, the prospective supplier shall be requested to submit information on a similar item or service for evidence of his current capabilities.
    - (iii) Evaluating the supplier's current quality records supported by documented qualitative and quantitative information which can be objectively evaluated.

This would include review and evaluation of the supplier's quality assurance program manual and procedures, as appropriate, to ensure that the applicable requirements of 10CFR 50, Appendix B, "Quality Assurance Criteria For Nuclear Power Plants" are met.

- (iv) Verification that the supplier holds an active certificate of authorization from the ASME to supply or manufacture materials or the item(s) described in the purchase requisition. A supplier may be considered acceptable, without a survey, to supply off-the-shelf items. An inspection shall be performed to assure that the correct item was received and no damage exists.

Verification that the supplier is listed in the current NUPIC (Nuclear Procurement Issues Committee) database. However, the audit report which formed the basis for listing the supplier in the NUPIC database must be obtained and reviewed for applicability to the procurement. All deficiencies which could degrade the procured item must be resolved prior to the procurement. This review shall be documented and, together with the audit report, be retained.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.123, Quality Assurance Requirements For Control Or Procurement Of Items And Services For Nuclear Power Plants, (Rev. 1)

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HNP shall comply with the requirements of ANSI N45.2.13-1976, Quality Assurance Requirements For Control Or Procurement Of Items And Services For Nuclear Power Plants, as it is endorsed by Regulatory Guide 1.123 with the following clarifications:

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- 3) See standard exceptions in Table 17-1 for Regulatory Guide 1.123 for the procurement of Commercial Grade Items and services including, purchasing commercial-grade calibration services from calibration laboratories.
7. Paragraphs 5.2 and 5.3 shall be applied to the extent determined by responsible plant management based on complexity of the item and its end use. It is not intended that these paragraphs be applied to spares or replacement parts that do not change original design intent.
8. Paragraph 6.1, General, Outlines methods for monitoring and evaluating supplier performance. HNP wishes to replace paragraph 6.1(a), (b), (c), (d), and (e) with the following methods for monitoring and evaluating supplier performance:
  - A. Reviewing documents generated or processed during activities fulfilling procurement requirements.
  - B. Reviewing LER'S.
  - C. Periodic audits.
  - D. Annual evaluations.
  - E. Those controls specified 17.3.
9. Paragraph 6.4, Control Of Changes In Items Or Services: Since ANSI N45.2 does not apply to the operational phase, equivalent controls outlined in ANSI N18.7-1976 will be used in lieu of the requirements of ANSI N45.2, section 7.
10. Paragraph 7.4, Measuring And Test Equipment, Outlines certain measures to be taken. HNP for the operating phase has addressed the topic of measuring and test equipment in 17.3.2.9 in lieu of the requirements in this paragraph.
11. Paragraph 8 provides guidance for purchaser review and disposition of vendor nonconformances. HNP, as purchaser, requires as a minimum deviations to procurement documents and previously approved supplier documents that cannot be brought into conformance prior to shipment of the material to be submitted to dep for approval. Such deviations, when approved by purchaser, are required to be submitted along with shipment of the material. Additionally, paragraph 8.2, disposition: the third sentence of item b is revised to read:

Nonconformances to the contractual procurement requirements or purchaser approved documents which consist of one or more of the following shall be submitted to the purchaser for approval of the recommended disposition prior to shipment, when the nonconformance could adversely affect the end use of a module or shippable component relative to safety, interchangeability, operability, reliability, integrity, or maintainability:

  - A. Technical or material requirement is violated;
  - B. Requirement in supplier documents, which have been approved by the purchaser, is violated;

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.123, Quality Assurance Requirements For Control Or Procurement Of Items And Services For Nuclear Power Plants, (Rev. 1)

---

HNP shall comply with the requirements of ANSI N45.2.13-1976, Quality Assurance Requirements For Control Or Procurement Of Items And Services For Nuclear Power Plants, as it is endorsed by Regulatory Guide 1.123 with the following clarifications:

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- C. Nonconformance cannot be corrected by continuation of the original manufacturing process or by rework; and/or
- D. The item does not conform to the original requirement, even though the item can be restored to a condition such that the capability of the item to function is unimpaired.

A module is any assembly of interconnected components which constitute an identifiable device, instrument, or piece of equipment. A module can be disconnected, removed as a unit, and replaced with a spare. It has definable performance characteristics which permit it to be tested as a unit. A module could be a card or other subassembly of a larger device, provided it meets the requirements of this definition.

12. Regulatory Position C.3 indicates that purchaser should verify the implementation of the supplier's corrective action systems when such a system is required, but this verification need not be included as part of the purchaser's corrective action measures.

HNP interprets this statement to mean that once corrective action has been verified by purchaser on nonconforming vendor items, the items can be released for use in its intended application.

The cause and action to preclude recurrence of deficiencies is the responsibility of the vendor, and independent verification of such vendor action by purchaser or vendor notification of such action to purchaser, is not required on the basis that the vendor's QA program has been accepted by the purchaser. The QA program provides for determining cause and action to preclude recurrence on significant deficiencies, and purchaser audits are conducted to ensure vendor's compliance with his accepted qa program commitments. In addition, HNP will provide overview of those causes and corrective action activities associated with items of high volume and which are considered significant to safety in cases where vendor's recent performance has appeared marginal.

13. Paragraph 10.2a: HNP will comply with this paragraph to the extent that for non-code items, certificates of compliance will be traceable only to the purchase order and not to the specific item.

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Regulatory Guide 1.144, Auditing Of Quality Assurance Programs For Nuclear Power Plants (Rev. 0)

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HNP shall comply with requirements of Regulatory Guide 1.144, January 1979, which endorses ANSI N45.2.12-1977, Requirements For Auditing Of Quality Assurance Programs For Nuclear Power Plants, with the following clarifications.

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- 1. C.3.(B)(2): The concepts of when audits are required, i.e., annually, triennially, will be complied with; however, such audits would only be required of the vendor if the vendor is involved with an active contract/procurement document. This concept is as discussed in paragraphs 3.5.3.1 and 3.5.3.2 of ANSI N45.2.12-1977.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.144, Auditing Of Quality Assurance Programs For Nuclear Power Plants (Rev. 0)

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HNP shall comply with requirements of Regulatory Guide 1.144, January 1979, which endorses ANSI N45.2.12-1977, Requirements For Auditing Of Quality Assurance Programs For Nuclear Power Plants, with the following clarifications.

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See standard exceptions in Table 17-1 for Regulatory Guide 1.123 for the procurement of Commercial Grade Items and services including, purchasing commercial-grade calibration services from calibration laboratories.

2. Paragraph 2.3, Training: The training of HNP audit personnel will be accomplished as described in HNP's position on Regulatory Guide 1.146.
3. Paragraph 2.4, Maintenance Of Proficiency: The maintenance of proficiency of HNP audit personnel will be accomplished as described in HNP's position on Regulatory Guide 1.146.
4. Paragraph 3.2.2 indicates that objective evidence is to be examined and evaluated. HNP believes that the use of subjective evidence is also an important element of the audit program. See paragraph 4.3.2 clarifications below.
5. Paragraph 3.3, Essential Elements Of The Audit System; HNP will comply with subparagraph 3.3.5 as it was originally written (subparagraph 3.2.5) in ANSI N45.2.12, Draft 3, Revision 4:

"Provisions for reporting on the effectiveness of the quality assurance program to the responsible management." for the audited organization, effectiveness is reported as required by the HNP UFSAR and by assessment procedures. Other than audit reports, HNP may not directly report on the effectiveness of the quality assurance programs to the audited organization, when such organizations are outside of Duke Energy.

Subparagraph 3.3.7 requires verification of effective corrective action on a "timely basis". Timely basis is interpreted to mean within the period of time that is accepted by the organization. Each finding requires a response and a corrective action completion date. These dates are subject to revision and must be escalated to higher authority when there is a disagreement between the audited and the auditing organization on what constitutes "timely corrective action."

6. Paragraph 4.3.1, Preaudit Conference: HNP will comply with the requirement of this paragraph by inserting the word "normally" at the beginning of the first sentence. This clarification is required because, in the case of certain unannounced audits or audits of a particular operation or work activity, a preaudit conference might interfere with the spontaneity of the operation or activity being audited. In other cases, persons who should be present at a preaudit conference may not always be available. Such lack of availability should not be an impediment to beginning an audit. Even in the above examples, which are not intended to be all inclusive, the material set forth in paragraph 4.3.1 will normally be covered during the course of the audit.
7. Paragraph 4.3.2, Audit/Assessment Process:
  - A. Subparagraph 4.3.2.2 could be interpreted to limit auditors to the review of only objective evidence. Sometimes objective evidence may not be available; therefore, HNP will comply with an alternate sentence which reads: "When available, objective evidence shall be examined for compliance with quality assurance program requirements. If subjective evidence is used (e.g., personnel interviews, direct observations by the auditor), then the audit report or checklist must indicate how the evidence is obtained."

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.144, Auditing Of Quality Assurance Programs For Nuclear Power Plants (Rev. 0)

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HNP shall comply with requirements of Regulatory Guide 1.144, January 1979, which endorses ANSI N45.2.12-1977, Requirements For Auditing Of Quality Assurance Programs For Nuclear Power Plants, with the following clarifications.

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- B. Subparagraph 4.3.2.4 is modified as follows to take into account the fact that some nonconformances are virtually "obvious" with regards to the needed corrective action. As a result of this, HNP proposes the following alternate words: "When a nonconformance or quality assurance program deficiency is identified as a result of an audit, unless the apparent cause, extent, and corrective action is readily evident, further investigations shall be conducted by the audited organization in an effort to identify the cause and effect and to determine the extent of the corrective action required."
  - C. Subparagraph 4.3.2.5 contains a statement "acknowledged by a member of the audited organization". This is clarified to mean that "A member of the audited organization has been informed to the findings. Agreement or disagreement with a finding may be expressed in the response from the audited organization."
  - D. Subparagraph 4.3.2.6 is modified as follows to account for the fact that immediate notification is not always possible: "Conditions requiring immediate corrective action (i.e., those which are so severe that any delay would be undesirable) shall be reported as immediately as practical to management of the audited organization."
8. Paragraph 4.3.3, Post Audit Conference: HNP will substitute and comply with the following paragraphs: "For all external audits, a postaudit conference shall be held with management of the audited organization to present audit findings and clarify misunderstandings. Where no adverse findings exist, this conference may be waived by management of the audited organization. Such waiver shall be documented in the audit report. For all internal assessments unless unusual operating or maintenance conditions preclude attendance by appropriate managers/supervisors, an assessment debrief shall be held with managers/supervisors. If there are no adverse findings, management of the internal assessed organization may waive the assessment debrief. Such waiver shall be documented in the assessment report."
9. Paragraph 4.4, Reporting:
- A. This paragraph requires that the audit report shall be signed by the audit team leader which is not always the most expeditious route for the audit report to be issued as soon as practical. HNP will comply with paragraph 4.4 as clarified by the following words: "An audit report, which shall be signed by the unit team leader, or his supervisor in the absence of the audit team leader shall provide:" in cases where the audit report is not signed by the lead auditor due to his absence, the record copy of the report must be signed by the lead auditor upon his return. The report shall not require the lead auditor's review/concurrence/signature if the lead auditor is no longer employed by HNP at the time audit report is issued.
  - B. HNP will comply with subparagraph 4.4.3 clarified to read: "Supervisory level personnel with whom significant discussions were held during the course of preaudit (where conducted), audit, and postaudit (where conducted) activities.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.144, Auditing Of Quality Assurance Programs For Nuclear Power Plants (Rev. 0)

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HNP shall comply with requirements of Regulatory Guide 1.144, January 1979, which endorses ANSI N45.2.12-1977, Requirements For Auditing Of Quality Assurance Programs For Nuclear Power Plants, with the following clarifications.

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- C. Audit reports may not necessarily contain an evaluation statement regarding the effectiveness of the quality assurance program elements which were audited, as required by subparagraph 4.4.4, but they will provide an effectiveness summary of the audited areas."
  - D. Subparagraph 4.4.6 - Nuclear Oversight section management will determine the need for audit reports to include recommendations for corrective actions.
  - E. HNP will comply with the last paragraph of section 4.4 of ANSI N45.2.12 concerning issuing audit reports with the following clarification: "Audit reports shall be issued within thirty working days after the last day of the audit. The last day of an audit shall be considered to be the day of the post-audit conference. If a post-audit conference is not held because it was deemed unnecessary, the last day of the audit shall be considered to be the date the post-audit conference was deemed unnecessary as documented in the audit report."
10. Paragraph 4.5.1, By Audited Organization: HNP will comply with the following clarification of this paragraph:
- "Management of the audited organization or activity shall review and investigate all adverse audit findings, as necessary, (cause, etc.) To determine and schedule appropriate corrective action including action to prevent recurrence. They shall respond, in writing, within thirty days after the date of receipt of the audit report. The response shall clearly state the corrective action taken or planned to prevent recurrence and the results of the investigation if conducted. In the event that corrective action is not completed by the time the response is submitted, the audited organization's response shall include a scheduled date for completion of planned corrective action. A follow-up response shall be provided stating the corrective action was completed.
- If corrective actions are verified as satisfactorily completed by the quality organization prior to the scheduled completion date or when completion of corrective action can be verified during a follow-up audit, no follow-up response is required. The audited organization shall take appropriate action to assure that corrective action is accomplished as scheduled."
11. Paragraph 5 - audit checklists are not considered QA records. HNP believes that actual audit reports provide sufficient detail to substantiate the results of the audit, and the checklist is maintained as an audit "tool" versus a QA record. Additionally, the audit checklist need only document objective evidence examined to support the audit findings.

## Attachment B, Harris Specific QAPD

Table B17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.146, Qualification of QA Program Audit Personnel For Nuclear Power Plants (Rev. 0, 8/80)

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HNP shall comply with requirements of Regulatory Guide 1.146, August 1980, which endorses ANSI N45.2.23-1978, Qualification Of Quality Assurance Program Audit Personnel For Nuclear Power Plants with the following clarifications.

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1. Paragraph 2.2, Qualification Of Auditors: subparagraph 2.2.1 references an "ANSI B45.2" (presumed to be N45.2); therefore, HNP will comply with an alternate subparagraph 2.2.1 which reads:

"Orientation to provide working knowledge and understanding of the HNP QA program, including the ANSI standards and Regulatory Guides included in the program, and Duke Energy's procedures for implementing audits and reporting results."

2. Paragraph 4.1, Organization Responsibility: HNP will comply with this paragraph with the substitution of the following sentence in place of the last sentence in the paragraph.

"The NOS manager or the audit team leader shall, prior to commencing the audit, assign personnel who collectively have experience or training commensurate with the scope, complexity, or special nature of the activities to be audited."

3. Paragraph 5.3, Updating Of Lead Auditor's Records: HNP will substitute the following sentence for this paragraph:

"Records for each lead auditor shall be maintained and updated during the period of the annual management assessment. This annual management assessment shall be as defined in the clarification for paragraph 3.2 noted above."

4. ANSI N45.2.23, paragraph 2.3.4 states, "The prospective lead auditor shall have participated in a minimum of five (5) quality assurance audits within a period of time not to exceed three (3) years prior to the date of qualification, one audit of which shall be a nuclear quality assurance audit within the year prior to qualification."

HNP substitutes the following instead of the cited sentence of ANSI N45.2.23, paragraph 2.3.4:

"Prospective lead auditors shall demonstrate the ability to effectively implement the audit process and effectively lead an audit team. This process is described in written procedures that provide for evaluation and documentation of the results of this demonstration. In addition, the prospective lead auditor shall have participated in at least two nuclear quality assurance audits within the year preceding the individual's effective date of qualification. Upon successful demonstration of the ability to effectively implement the audit process and effectively lead audits, and having met the other provisions of section 2.3 of ANSI N45.2.23-1978, the individual may be certified as being qualified to lead audits."

## Attachment B, Harris Specific QAPD

**Table B17-2. Site Specific Response to Regulatory Guides and Industry Standards**

Table B17-2 identifies additional Regulatory Guides addressing subjects related to implementation of the QAP but the implementation is site specific and controlled with the UFSAR in accordance with 10 CFR 50.59.

Regulatory Guide 1.8, Personnel Selection And Training
Personnel selection and training is site specific.  Harris addresses conformance with Regulatory Guide 1.8 in UFSAR Chapter 1 Section 8.
Regulatory Guide 1.26, Quality Group Classifications And Standards For Water-, Steam-, And Radioactive-Waste-Containing Components Of Nuclear Power Plants
Quality group classifications and standards trace to the original design and construction of the nuclear power plant and therefore are site specific.  Harris addresses conformance with Regulatory Guide 1.26 in UFSAR Chapter 1 Section 8.
Regulatory Guide 1.29, Seismic Design Classification
Seismic design classification trace to the original design and construction of the nuclear power plant and therefore is site specific.  Harris addresses conformance with Regulatory Guide 1.29 in UFSAR Chapter 1 Section 8.
Regulatory Guide 1.36, Nonmetallic Thermal Insulation For Austenitic Stainless Steel
Nonmetallic thermal insulation for austenitic stainless steel trace to the original design and construction of the nuclear power plant and therefore is site specific.  Harris addresses conformance with Regulatory Guide 1.36 in UFSAR Chapter 1 Section 8.
Regulatory Guide 1.54, Quality Assurance Requirements For Protective Coatings Applied To Water-Cooled Nuclear Power Plants
Quality assurance requirements for protective coatings applied to water-cooled nuclear power plants trace to the original design and construction of the nuclear power plant and therefore is site specific.  Harris addresses conformance with Regulatory Guide 1.54 in UFSAR Chapter 1 Section 8.



## **Attachment B, Harris Specific QAPD**

Table B17-2. Site Specific Response to Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.143, Design Guidance For Radioactive Waste Management Systems, Structures, And Components Installed In Light-Water-Cooled Nuclear Power Plants

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Design guidance for radioactive waste management systems, structures, and components installed in light-water-cooled nuclear power plants trace to the original design and construction of the nuclear power plant and therefore is site specific.

Harris addresses conformance with Regulatory Guide 1.143 in UFSAR Chapter 1 Section 8.

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Regulatory Guide 1.155, Station Blackout

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Addressing Station Blackout is site specific.

Harris addresses conformance with Regulatory Guide 1.155 in UFSAR Chapter 1 Section 8.

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Regulatory Guide 4.15, Quality Assurance For Radiological Monitoring Programs (Normal Operations) – Effluent Streams And The Environment

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Quality assurance for radiological monitoring program (normal operations) – effluent streams and the environment is site specific.

Harris does not address conformance to Regulatory Guide 4.15 in UFSAR Chapter 1 Section 8. The radiological monitoring program is addressed in UFSAR Chapter 11.

## **Attachment B, Harris Specific QAPD**

### **B17.3.1 MANAGEMENT**

#### **B17.3.1.1 Methodology**

There are no Harris specific amplifications for this section.

#### **B17.3.1.2 Organization**

There are no Harris specific amplifications for this section.

#### **B17.3.1.3 Responsibility**

There are no Harris specific amplifications for this section.

#### **B17.3.1.4 Authority**

The program and procedures require that the authority and duties of persons and organizations performing activities affecting quality be clearly established and delineated in writing and that these individuals and organizations have sufficient authority and organizational freedom to:

1. Identify quality, nuclear safety, and performance problems.
2. Order unsatisfactory work to be stopped and control further processing, delivery, or installation of nonconforming material.
3. Initiate, recommend, or provide solutions for conditions adverse to quality.
4. Verify implementation of solutions.

#### **B17.3.1.5 Personnel Training And Qualification**

There are no Harris specific amplifications for this section.

#### **B17.3.1.6 Corrective Action**

The program requires that an evaluation of adverse conditions such as conditions adverse to quality, nonconformances, failures, malfunctions, deficiencies, deviations, and defective material and equipment is conducted to determine need for corrective action. Conditions adverse to quality are identified through inspections, assessments, tests, checks, and review of documents.

The program requires corrective action to be initiated to preclude recurrence of significant conditions adverse to quality.

For significant conditions adverse to quality, procedures require follow-up reviews, verifications, inspections, etc., to be conducted to verify proper implementation of corrective action and to close out the corrective action documentation.

The program outlines the methodology for resolution of disputes involving quality and nuclear safety issues arising from a difference of opinion between identifying personnel and other groups.

Significant conditions adverse to quality are reported to appropriate management for review and evaluation.

Periodic review and evaluation of adverse trends are performed by management.

## **Attachment B, Harris Specific QAPD**

### **B17.3.1.7 Regulatory Commitments**

There are no Harris specific amplifications for this section.

### **B17.3.2 Performance/Verification**

#### **B17.3.2.1 Methodology**

There are no Harris specific amplifications for this section.

#### **B17.3.2.2 Design Control**

Controls are applied to the development, content and use of computer codes to ensure (1) the codes are developed, documented, verified and certified for use per approved procedures; (2) the codes are properly controlled to preclude use of outdated or obsolete codes; (3) that proper instructions concerning the use of the codes are provided; and (4) adequate QA provisions are implemented for the procurement of computer codes.

#### **B17.3.2.3 Design Verification**

There are no Harris specific amplifications for this section.

#### **B17.3.2.4 Procurement Control**

Potential contractors and suppliers are evaluated prior to award of a procurement contract when needed to assure the contractor's or supplier's capability to comply with applicable technical and quality requirements.

Procurement documents, such as purchase specifications, contain or reference the following:

1. Technical, administrative, regulatory, and reporting requirements, including material and component identification requirements, drawings, specifications, codes and industrial standards, test and inspection requirements, and special process instructions.
2. Identification of the documentation to be prepared, maintained, or submitted (as applicable) to HNP for review and approval. These documents may include, as necessary, inspection and test records, qualification records, or code required documentation.
3. Identification of those records to be retained, controlled, and maintained by the supplier, and those delivered to the purchaser prior to use or installation of the hardware.

Procurement documents require suppliers to operate in accordance with QA programs which are compatible with the applicable requirements of the HNP QA Program and procedures where their services are utilized in support of plant activities.

#### **B17.3.2.5 Procurement Verification**

There are no Harris specific amplifications for this section.

#### **B17.3.2.6 Identification and Control of Items**

Procedures require that materials, parts, and components be identified and controlled to prevent the use of incorrect or defective items.

## **Attachment B, Harris Specific QAPD**

These procedures also require that identification of items be maintained either on the item in a manner that does not affect the function or quality of the item, or on records traceable to the item.

Procedures implementing these requirements provide for the following:

1. Verification that items received at the plant are properly identified and can be traced to the appropriate documentation, such as drawings, specifications, purchase orders, manufacturing and inspection documents, nonconformance reports, or material test reports.
2. Verification of item identification consistent with the HNP inventory control system and traceable to documentation which identifies the proper uses or applications of the item.
3. Verification of correct identification of material, parts and components prior to fabrication, assembly installation or use, and results documented.

### **B17.3.2.7 Handling, Storage, and Shipping**

Provisions are established to control the shelf life and storage of chemicals, reagents, lubricants, and other consumable materials.

### **B17.3.2.8 Test Control**

Test procedures incorporate or reference the following, as required:

1. Instructions and prerequisites for performing the test.
2. Use of proper test equipment.
3. Mandatory inspection hold points.
4. Acceptance criteria.

Test results are documented, evaluated, and their acceptability determined by a qualified, responsible individual or group.

When the acceptance criteria is not met, affected areas are to be retested or evaluated, as appropriate.

### **B17.3.2.9 Measuring and Test Equipment Control**

Portable measuring and test equipment is calibrated by standards which are at least four times as accurate as the portable measuring and test equipment, unless limited by the state of the art. In cases where the accuracy is not achievable or is limited by the state of the art, an engineering evaluation or other appropriate justification is performed and documented to justify acceptability of the M&TE in question. The evaluation is reviewed in accordance with approved procedures.

Calibration of installed plant devices shall be against M&TE having sufficient accuracy, greater than the device being calibrated, to assure that the system containing the device is within the specified system tolerance. The basis for determining the "greater than accuracy" shall be documented.

Reference and transfer standards are traceable to nationally recognized standards; or where national standards do not exist, provisions are established to document the basis for the calibration.

## **Attachment B, Harris Specific QAPD**

### **B17.3.2.10 Inspection, Test, and Operating Status**

These procedures include the application, removal, and verification of inspection and welding stamps, or other status indicators as appropriate.

Altering the sequence of required tests, inspections, and other operations important to safety can only be accomplished by methods outlined in procedures.

### **B17.3.2.11 Special Process Control**

There are no Harris specific amplifications for this section.

### **B17.3.2.12 Inspection**

There are no Harris specific amplifications for this section.

### **B17.3.2.13 Corrective Action**

The primary goal of the corrective action program is to improve overall plant operations and performance by identifying and correcting root causes of equipment and human performance problems.

Procedures define requirements for a corrective action program that charges personnel working at or supporting the nuclear plants with the responsibility to identify adverse conditions (including conditions adverse to quality).

Procedures include requirements for verification of the acceptability of the rework/repair of items by reinspection and/or testing in accordance with the original inspection or test requirements or by an accepted alternative inspection and testing method.

Conditions that require rework/repairs are identified through the use of maintenance work request forms.

### **B17.3.2.14 Control of Documents**

Changes to documents are reviewed and approved by the same organization that performed the original review and approval or by other designated qualified responsible organizations.

### **B17.3.2.15 Records**

The structure in which single copy records are maintained is designed to prevent destruction, deterioration, or theft. This structure ensures protection against destruction by fire, flooding, theft, and deterioration by the environmental conditions of temperature and humidity.

## **B17.3.3 Assessment**

### **B17.3.3.1 Methodology**

The following are Harris specific amplifications from prior sections 17.3.3.1 and 17.3.3.2.2.

NOS site management and Independent Review Engineers, separately, will hold periodic, but not less frequently than semi-annual (+25% for scheduling flexibility), peer review meetings to share and exchange information among sites. These meetings will allow the use of designated alternates to attend.

## **Attachment B, Harris Specific QAPD**

### **B17.3.3.2 Independent Review**

#### **B17.3.3.2.1 Function**

The HNP Nuclear Oversight Section shall function to provide independent review of plant changes, tests, and procedures; verify that reportable events are investigated in a timely manner and corrected in a manner that reduces the probability of recurrence of such events; and detect trends that may not be apparent to a day-to-day observer.

#### **B17.3.3.2.2 Organization**

The individuals assigned responsibility for independent reviews shall be technically qualified in a specified technical discipline or disciplines. These individuals shall collectively have the experience and competence required to review activities in the following areas:

- a) Nuclear power plant operations,
- b) Nuclear engineering,
- c) Chemistry and radiochemistry,
- d) Metallurgy,
- e) Nondestructive testing,
- f) Instrumentation and control,
- g) Radiological safety,
- h) Mechanical and electrical engineering,
- i) Administrative controls,
- j) Seismic and environmental,
- k) Quality assurance practices, and
- l) Other appropriate fields.

#### **B17.3.3.2.3 Requirements**

- a) The Manager - HNP Nuclear Oversight Section shall have a bachelor degree in an engineering or related field, and in addition, shall have a minimum of 10 years' related experience, of which a minimum of 5 years shall be in the operation and/or design of nuclear power plants.
- b) The individuals performing independent reviews shall have a bachelor degree in an engineering or related field or equivalent, and in addition, shall have a minimum of 5 years' related experience.
- c) An individual may possess competence in more than one specialty area. If sufficient expertise is not available within the Nuclear Oversight Section, competent individuals from other Duke Energy organizations or outside consultants shall be utilized in performing independent reviews and investigations.
- d) The documents submitted under B17.3.3.2.4 shall be reviewed by individuals meeting the requirements of B17.3.3.2.2 and paragraph b) to ensure disciplines are encompassed. Multiple reviews will be conducted on documents where required to meet applicable disciplines of Section B17.3.3.2.2.
- e) Independent reviews shall be performed by individuals not directly involved with the activity under review or responsible for the activity under review.

## **Attachment B, Harris Specific QAPD**

- f) The Nuclear Oversight Section independent review program shall be conducted in accordance with written, approved procedures.
- g) Individuals who do not possess the formal educational requirements specified in paragraphs a) and b) shall not be automatically eliminated where other factors provide sufficient demonstration of their abilities. These other factors shall be evaluated on a case-by-case basis and approved and documented by the responsible NOS management.

The positive factors listed as follows may be considered in making the evaluation of an acceptable alternative to the educational requirements:

- 1) High school diploma or GED.
- 2) Academic and related technical training.
- 3) Has or has held a license as a senior reactor operator at HNP.
- 4) Four years of additional experience in Nuclear Oversight or related field (i.e., Quality Assurance, Performance Evaluation, or Nuclear Assessment).
- 5) Four years of supervisory or management experience.
- 6) Demonstrated ability to communicate clearly (orally and in writing).
- 7) Certification of academic ability and knowledge by corporate management.
- 8) Successful completion of the Engineer-In-Training examination.
- 9) Professional Engineer License.
- 10) Associate Degree in Engineering or related science.

### **B17.3.3.2.4 Review**

The Nuclear Oversight Section shall perform reviews of the following:

- a) Written 10CFR50.59 evaluations of changes in the facility as described in the Safety Analysis Report, changes in procedures as described in the Safety Analysis Report, and tests or experiments not described in the Safety Analysis Report which are completed without prior NRC approval under the provisions of 10CFR50.59. These reviews are to verify that such changes, tests, or experiments do not involve a change in the HNP Technical Specifications or require a license amendment as defined in 10CFR50.59. These reviews may be conducted after appropriate management approval, and implementation may proceed prior to completion of the review.
- b) Proposed changes in procedures required by the HNP Technical Specifications, proposed changes in the facility, or proposed tests or experiments, any of which involve a change in the HNP Technical Specifications or require a license amendment pursuant to 10CFR50.59 prior to implementation.
- c) Proposed changes to the HNP Technical Specifications or the operating license prior to implementation.
- d) Violations, deviations, and reportable events, which required reporting to the NRC in writing, such as:
  - 1) Violations of applicable codes, regulations, orders, HNP Technical Specifications, license requirements, or internal procedure or instructions having safety significance,
  - 2) Significant operating abnormalities or deviations from normal or expected performance of plant safety-related structures, systems, or components, and
  - 3) Reportable events, as specified in 10CFR50.73.

## **Attachment B, Harris Specific QAPD**

- e) Any other matter involving safe operation of the nuclear power plant that the Manager - HNP Nuclear Oversight Section, deems appropriate for consideration or which is referred to the Manager - HNP Nuclear Oversight Section, by the on-site operating organization, Plant Nuclear Safety Committee (PNSC), or by other functional organizational units within Duke Energy.

### **B17.3.3.2.5 Records**

Results of HNP Nuclear Oversight Section independent reviews shall be documented and retained.

### **B17.3.3.3 Independent Assessment**

There are no Harris specific amplifications for this section.

#### **B17.3.3.3.1 Organization**

Personnel performing independent assessment activities are generally assigned to Nuclear Oversight from the line and other organizations on a rotational basis for two to five year assignments. Since these personnel are full-time assessors during this time period, they have no direct responsibilities in the areas being assessed.

The Vice President - Harris Nuclear Plant, working with the Vice President - Nuclear Oversight, also ensures that assessment personnel are assigned from line and other organizations on a rotational basis to the HNP Nuclear Oversight organization.

#### **B17.3.3.3.2 Internal Assessment Process**

There are no Harris specific amplifications for this section.

#### **B17.3.3.3.3 Internal Audit Program**

##### **B17.3.3.3.3.1 Other Audits Prescribed by the Code of Federal Regulations**

The periodic review of Radiation Protection (per 10CFR 20.1101c) identified in 17.3.3.3.3.1 is conducted by NOS at Harris.

##### **B17.3.3.3.3.2 Independent Audit of Fire Protection Program**

- An independent fire protection assessment shall be performed at least once per 36 months using an outside (external to DEP) qualified (meeting Member grade qualifications of the SFPE) fire protection engineer.
- Copies of the audit reports and responses to them shall be forwarded to the Site Vice President and the site NOS manager.

#### **B17.3.3.3.4 Results**

There are no Harris specific amplifications for this section.

#### **B17.3.3.3.5 Supplier Oversight**

There are no Harris specific amplifications for this section.

#### **B17.3.3.3.6 Independent Audit of QA Functions**

There are no Harris specific amplifications for this section.

#### **B17.3.3.3.7 Audit Frequency Extensions**

HNP Audit Schedules shall be based on the exit date of the audit as identified in exceptions for Regulatory Guide 1.33.



## **Attachment B, Harris Specific QAPD**

### **B17.3.4 ADMINISTRATIVE CONTROLS**

This section was added to the HNP UFSAR description of the QA Program to relocate certain administrative controls from HNP Technical Specifications. These relocated administrative controls include Review and Audit, Procedure Review Requirements, and Record Retention.

#### **Review and Audit**

##### **B17.3.4.1 10CFR50.59 and technical reviews**

###### **B17.3.4.1.1 General program control**

A 10CFR50.59 and a technical evaluation shall be prepared for each of the following:

- a) All procedures and programs required by HNP Technical Specification 6.8, other procedures that affect nuclear safety, and changes thereto, with the exception of those procedures which are exempt from review under 10CFR50.59 in accordance with NEI 96-07, Revision 1, as endorsed by Regulatory Guide 1.187, November 2000:
- b) All proposed tests and experiments that are not described in the HNP Final Safety Analysis Report; and
- c) All proposed changes or modifications to plant systems or equipment that affect nuclear safety.

###### **B17.3.4.1.2 Technical evaluations**

- a) Technical evaluations will be performed by personnel qualified in the subject matter and will determine the technical adequacy and accuracy of the proposed activity. If interdisciplinary evaluations are required to cover the technical scope of an activity, they will be performed.
- b) Technical review personnel will be identified by the responsible manager or his designee for a specific activity when the review process begins.

###### **B17.3.4.1.3 Qualified 10CFR50.59 Reviewers**

The Plant Manager shall designate those individuals who will be responsible for performing 10CFR50.59 reviews described in Section B17.3.4.1.4. These individuals shall have a baccalaureate degree in an engineering or related field or equivalent, and 2 years of related experience. Such designation shall include the disciplines or procedure categories for which each individual is qualified. Qualified individuals or groups not on the plant staff may be relied upon to perform 10CFR50.59 reviews if so designated by the Plant Manager.

###### **B17.3.4.1.4 10CFR50.59 Evaluations and Approvals**

- a) The 10CFR50.59 evaluation prepared in accordance with Section B17.3.4.1.1 shall include a written determination, with basis, of whether or not the procedures or changes thereto, proposed tests and experiments and changes thereto, and modifications require a license amendment in accordance with 10CFR50.59, or whether they involve a change to the HNP Final Safety Analysis Report, the HNP Technical Specifications, or the operating license.
- b) The 10CFR50.59 evaluation shall be prepared by a qualified individual. The 10CFR50.59 evaluation shall be reviewed by a second qualified individual.
- c) A 10CFR50.59 evaluation and subsequent review that conclude that the subject action may require a license amendment, a change to the HNP Technical Specifications, or a

## **Attachment B, Harris Specific QAPD**

change to the operating license, will be referred to the Plant Nuclear Safety Committee (PNSC) for their review in accordance with Section B17.3.4.2.5. If the PNSC recommendation is that an item requires a license amendment, a change to the HNP Technical Specifications, or a change to the operating license, the action will be referred to the commission for approval prior to implementation. Implementation may not proceed until after review by the Nuclear Oversight Section in accordance with Section B17.3.4.3.4.

- d) If a 10CFR50.59 evaluation and subsequent review conclude that the subject action does not require a license amendment, a change to the HNP Technical Specification, or a change to the operating license, the action may be approved by the Plant Manager or his designee, or as applicable, by the manager of the primary functional area affected by the action. The individual approving the action shall assure that the reviewers collectively possess the background and qualification in all of the disciplines necessary and important to the specific review for both safety and technical aspects.
- e) A 10CFR50.59 evaluation and subsequent review that conclude that the modifications, procedures, tests or experiments which constitute a change to the facility as described in the HNP Final Safety Analysis Report shall be referred to the Nuclear Oversight Section for review in accordance with Section B17.3.4.3.4, but implementation may proceed prior to the completion of that review.
- f) The individual approving the procedure, tests, or experiment or change thereto shall be other than those who prepared the 10CFR50.59 evaluation or performed the 10CFR50.59 review.

### **B17.3.4.2 Plant Nuclear Safety Committee (PNSC)**

#### **B17.3.4.2.1 Function**

The PNSC shall function to advise the Plant Manager on all matters related to nuclear safety.

#### **B17.3.4.2.2 Composition**

- a) The PNSC will be composed of six to eight members. Members and the Chairman shall be designated in writing by the Plant Manager. The members shall represent the engineering, operations, maintenance, health physics, chemistry, and licensing/regulatory programs functions. The Plant Manager may designate in writing additional non-voting members from additional site functional areas as deemed appropriate (e.g., Training, Organizational Effectiveness, and/or Outage and Scheduling). Non-voting members shall not be considered in the establishment of a quorum except when designated as Acting Chairman.
- b) The Plant Manager may designate in writing other regular or non-voting members who may serve as Acting Chairman of PNSC meetings. The Chairman shall have a bachelor's degree in an engineering or science field or equivalent, and in addition shall have 10 years of power plant experience of which 3 years shall be nuclear power plant experience.

The other regular members (and any alternates) and non-voting members shall have a bachelor's degree in an engineering or science field or equivalent and in addition shall have a minimum of 5 years technical experience of which a minimum of 3 years

shall be in one or more of the areas listed above. Members without an applicable bachelor's degree shall have a minimum of 10 years technical experience, of which a minimum of 3 years

## **Attachment B, Harris Specific QAPD**

shall be in one or more of the areas listed above. No more than two alternates shall participate as voting members in PNSC activities at any one time.

### **B17.3.4.2.3 Meeting frequency**

The PNSC shall meet at least once per calendar month and as convened by the PNSC Chairman or his designated alternate. The PNSC must meet in session to perform its function under the HNP UFSAR.

### **B17.3.4.2.4 Quorum**

The quorum of the PNSC necessary for the performance of the PNSC responsibility and authority provisions of the HNP UFSAR shall consist of the Chairman or his designated alternate and four members including alternates.

### **B17.3.4.2.5 Responsibilities**

The PNSC shall be responsible for:

- a) Review of proposed procedures or changes thereto that have been initially determined to require a license amendment or involve an unreviewed change to the HNP Technical Specification;
- b) Review of all proposed tests and experiments that affect nuclear safety and that have been initially determined to appear to require a license amendment or involve an unreviewed change to the HNP Technical Specifications;
- c) Review of all proposed changes to Appendix A HNP Technical Specifications;
- d) Review of all proposed changes or modifications to unit systems or equipment that affect nuclear safety and that have been initially determined to appear to require a license amendment as defined in 10CFR50.59 or involve a change to the HNP Technical Specifications;
- e) Investigation of all violations of the HNP Technical Specifications, including the preparation and forwarding of reports covering evaluation and recommendations to prevent recurrence, to the Vice President - Harris Nuclear Plant;
- f) Review of all reportable events;
- g) Review of unit operations to detect potential hazards to nuclear safety;
- h) Performance of special reviews, investigations, or analyses and reports thereon as requested by the Plant General Manager or the Manager - Nuclear Oversight Section;
- i) Review of the Security Plan;
- j) Review of the Emergency Plan;
- k) Review of any accidental, unplanned, or uncontrolled radioactive release including the preparation of reports covering evaluation, recommendations, and disposition of the corrective action to prevent recurrence and the forwarding of these reports to the Vice President - Harris Nuclear Plant;
- l) Review, prior to implementation, of changes to the Off-Site Dose Calculation Manual, the Process Control Program, the Radwaste Treatment Systems, and the HNP Technical Specification Equipment List Program.

## **Attachment B, Harris Specific QAPD**

### **B17.3.4.2.6 Requirements**

The PNSC shall:

- a) Render determinations in writing with regard to whether or not each item considered under Section B17.3.4.2.5.a. through e. requires a license amendment; and
- b) Provide written notification within 24 hours to the Vice President - Harris Nuclear Plant of disagreement between the PNSC and the Plant Manager. However, the Plant Manager shall have responsibility for resolution of such disagreements pursuant to HNP Technical Specification 6.1.1.

### **B17.3.4.2.7 Records**

The PNSC shall maintain written minutes of each PNSC meeting that, at a minimum, document the results of all PNSC activities performed under the responsibility provisions of the HNP UFSAR. Copies shall be provided to the Vice President - Harris Nuclear Plant and the Manager - Nuclear Oversight Section.

### **B17.3.4.3 HNP Nuclear Oversight Section Independent Review Program**

This section content moved to B17.3.3.2

### **B17.3.4.4 Independent Safety Engineering Group**

#### **B17.3.4.4.1 Organization**

The Independent Safety Engineering Group (ISEG) functions of improving licensee safety performance and ability to respond to accidents by providing onsite technical support and continuous evaluation and feedback of lessons learned from operating experience are performed by a combination of different groups through the performance of their normal activities.

#### **B17.3.4.4.2 Activities**

Key ISEG activities are outlined below with the groups that currently perform these activities:

1. Examination of Unit Operating Characteristics:
  - HNP has an established Corrective Action Program that includes processes for the identification, classification, trending and correcting of conditions adverse to quality.
  - The Nuclear Oversight Section at HNP is charged with the responsibility for the independent monitoring and assessment of activities as defined in section B17.3.3.3.
  - HNP has implemented a Maintenance Rule Program that provides reasonable assurance that structures, systems, trains, and components are capable of fulfilling their intended safety significant functions.
  - Harris Engineering Section has implemented a program that provides for the systematic trending of system and component performance to determine the effectiveness of system/component maintenance
  - A corporate Probabilistic Safety Assessment Unit has been established with the mission of maintaining and updating plant specific risk models and risk based tools that are used to provide risk insights and tools to: support on-line maintenance and outage risk assessments; support the Maintenance Rule Program; evaluate proposed plant changes for risk impact; monitor the risk

## **Attachment B, Harris Specific QAPD**

effectiveness of plant on-line maintenance activities; and support other regulatory activities.

2. Examination of NRC Issuances, Industry Advisories, and Licensee Event Reports and other Sources of Unit Design Information which May Indicate Areas of Improving Unit Safety:
  - HNP has implemented an Operating Experience (OE) Program that provides for the receipt, processing, status reporting, screening, reviewing, evaluating, and taking preventive/corrective actions in response to OE information.
  - The Nuclear Oversight organization independently evaluates the use of OE and the evaluation of relevant design information assessments of the stations OE Program, implementation of INPO SOER recommendations, and in each functional area assessment.
  - HNP Nuclear Oversight reviews License Event Reports developed pursuant to 10CFR50.73 as part of the Independent Safety Review process defined in section B17.3.4.3.
3. Review of Plant Operations, Modifications, Maintenance, and Surveillances to Verify Independently that these Activities are Performed Safely and Correctly and that Human Errors are Reduced as Much as Practical:
  - The Nuclear Oversight Section assessments defined in section B17.3.3.3 and the Independent Review Program defined in section B17.3.4.3 accomplish this function.

### **B17.3.4.5 Outside agency inspection and audit program**

The fire protection audit is addressed in Section B17.3.3.3.2, Independent Audit of Fire Protection Program.

### **B17.3.4.6 Procedure Review Requirements**

#### **B17.3.4.6.1 Procedure revisions**

Each procedure of HNP Technical Specification 6.8.1, and changes thereto, shall be reviewed and approved in accordance with Section B17.3.4.1 prior to implementation and reviewed periodically as set forth in administrative procedures.

#### **B17.3.4.6.2 Temporary changes**

Temporary changes to procedures of HNP Technical Specification 6.8.1 may be made provided:

- a) The intent of the original procedure is not altered;
- b) The change is approved by two members of the plant management staff, at least one of whom holds a Senior Operator license on the unit affected; and
- c) The change is documented, reviewed in accordance with Section B17.3.4.1, and approved within 14 days of implementation by the Plant Manager or by the manager of the functional area affected by the procedure.

#### **B17.3.4.7 Record Retention**

A list of typical operational phase QA Records is included in 17.3.2.15.

## **Attachment C, Robinson Specific QAPD**

### **Attachment C, Robinson Specific QAPD**

Information presented in this section is transferred from the Robinson UFSAR with approved changes as allowed under 10 CFR 50.54(a)(3). Change bars in this section indicate changes since UFSAR Amendment 26.

Where a section contains no descriptive information beyond that in the generic text in the body of the document, a statement is made to that effect and no content is included. See C17.3.1.2, Organization for example.

## **C17. QUALITY ASSURANCE**

### **C17.1 QA DURING DESIGN AND CONSTRUCTION**

See Robinson UFSAR Chapter 17 for historic information from the description of the QA Program for design and construction.

### **C17.2 OPERATIONAL QA**

Deleted

(NOTE: In April 1995, NRC approved the reformatting of the description of the Robinson QA Program to follow Standard Revision Plan Section 17.3, replacing the content of 17.2.)

### **C17.3 QUALITY ASSURANCE PROGRAM (QAP) DESCRIPTION**

#### **INTRODUCTION**

This content is not addressed in SRP Section 17.3; therefore, the Robinson description of the QA Program did not include this section.

#### **DEFINITIONS**

There are no Robinson specific definitions.

#### **EXPLANATION OF “QUALITY ASSURANCE”**

There is no Robinson specific content.

#### **QA STANDARDS AND GUIDES**

The Robinson QAP conforms to Appendix B of 10CFR 50, as discussed in Section 17, “Quality Assurance.” The QAP also conforms to applicable NRC Regulatory Guides and approved ANSI Standards, or applicable alternatives. Table C17-1 and C17-2 address QAP conformance to the referenced regulatory and program guidance contained in NUREG-0800 Section 17.3.

The content of Table C17-1 was transferred from Section 1.8 of the Robinson UFSAR. Changes to the content of Table C17-1 are controlled in accordance with 10 CFR 50.54(a). Subsequent changes to the Robinson QAP are incorporated in this document as identified in Section 17.3.1.7.

Table C17-2 addresses additional Regulatory Guides that relate to implementation of the QAP but the implementation is site specific and controlled with the Robinson UFSAR in accordance with 10 CFR 50.59.

## Attachment C, Robinson Specific QAPD

**Table C17-1. Conformance with QA Regulatory Guides and Industry Standards**

Generic Exception:

Table C17-1 addresses Robinson's Conformance of the Quality Assurance Program to certain NRC Regulatory Guides. In so doing, specific editions of industry standards are identified for compliance with exceptions and alternatives. Those identified standards include references to other industry standards for activities including, but not limited to; design, fabrication, inspection, and testing. Those included reference industry standards are considered to be guidance documents for details of how activities may be accomplished. The actual standard to be used in such cases is controlled by each station's current licensing and design bases.

The content of Table C17-1 was transferred from H. B. Robinson (RNP) UFSAR Section 1.8. As identified therein, Regulatory Guides (originally called Safety Guides) have been published beginning in late 1970. Since H. B. Robinson (RNP) was licensed for operation prior to that time, they were not addressed. Applicable QA Regulatory Guides which have been addressed during the operating phase are discussed below.

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Regulatory Guide 1.28, Quality Assurance Program Requirements (Design And Construction) (Rev. 0)

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ANSI Standard N45.2-1971, Quality Assurance Requirements For Nuclear Power Plants

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This guide and the standard it endorses have been superseded for operations activities by Regulatory Guide 1.33 and ANSI N18.7-1976 which it endorses. The Operational Quality Assurance Program complies with Regulatory Guide 1.33 and ANSI N18.7-1976 as stipulated in Appendix A to that program; therefore, Regulatory Guide 1.28 (Safety Guide 28) and ANSI N45.2-1971 which it endorses are not considered necessary and are not included as part of the program.

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Regulatory Guide 1.30, Quality Assurance Requirements For The Installation, Inspection, And Testing Of Instrumentation And Electrical Equipment (Revision 0) (August, 1972)

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ANSI standard N45.2.4-1972, (IEEE-336-1971), Installation, Inspection, And Testing Requirements For Instrumentation And Electrical Equipment During The Construction Of Nuclear Power Generating Stations

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RNP shall comply with the provisions of Regulatory Guide 1.30, August 1972, as indicated below:

The installation, inspection, and testing of nuclear power plant instrumentation and electrical equipment at RNP will be in accordance with the applicable requirements of ANSI N45.2.4-1972 with the following exceptions:

- a) Section 1.4 titled Definitions: Definitions in this standard which are not included in ANSI N45.2.10 will be used; definitions which are included in ANSI N45.2.10 will be used as clarified in Duke Energy Progress, Inc.'s (DEP) commitment to Regulatory Guide 1.74.
- b) Section 1.5 titled Referenced Documents: DEP's commitment to other documents referenced in this standard shall be as stated in our commitment to that document.
- c) Section 2.5 titled Measuring and Test Equipment: DEP will implement the applicable portions of this Section as follows:

The status of portable items of measuring and test equipment and reference standard shall be identified by use of tags, stickers, labels, routing cards, computer programs, or other suitable means for the date recalibration is due or the frequency of recalibration. These items are in a calibration program which requires recalibration on a specified frequency or, in certain cases, prior to use.



### Attachment C, Robinson Specific QAPD

Table C17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.30, Quality Assurance Requirements For The Installation, Inspection, And Testing Of Instrumentation And Electrical Equipment (Revision 0) (August, 1972)

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ANSI standard N45.2.4-1972, (IEEE-336-1971), Installation, Inspection, And Testing Requirements For Instrumentation And Electrical Equipment During The Construction Of Nuclear Power Generating Stations

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Instrumentation and electrical equipment in the categories listed below shall be in a calibration program. This program provides, by the use of status cards, computer schedules, or tags, for the date that recalibration is due and indicates the status of calibration. The identity of person(s), performing calibration is provided on the calibration documents.

- 1) Instruments installed as listed in the RNP Technical Specifications
  - 2) Installed instrumentation used to verify RNP Technical Specification parameters, and
  - 3) Installed safety-related instruments and electrical equipment that provide an active function during operation or during shutdown; i.e., not a device being designated safety-related solely because the instrument is an integral part of a pressure retaining boundary.
- d) Section 7 titled Data Analysis and Evaluation states in part, "Procedures shall be established for processing inspection and test data and their analysis and evaluation." At RNP, data processing procedures per se have not been developed; instead, test data are recorded, processed, and analyzed in accordance with procedures and instructions in appropriate functional areas; e.g., maintenance, startup.
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Regulatory Guide 1.33, Quality Assurance Program Requirements (Operation) Revision 2, February 1978

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ANSI Standard N18.7-1976, Administrative Controls And Quality Assurance Requirements For The Operational Phase Of Nuclear Power Plants

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Comply with the provisions of Regulatory Guide 1.33, Rev. 2 February 1978, and the requirements and recommendations for administrative controls described in ANSI N18.7-1976, except as stated below:

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1. Paragraph C.3 of Regulatory Guide 1.33 states that changes to RNP Technical Specifications or license amendments should be reviewed by the independent review body prior to their submittal to the NRC for approval. Changes to RNP Technical Specifications or license amendments shall receive independent review prior to their implementation as required by ANSI N18.7-1976. The requirements of the standard provide adequate assurance that items affecting safety will be reviewed before they are put into effect. Independent review prior to NRC submittal is not part of the commitment. See Section C17.3.3.2 for independent review requirements.
2. In lieu of the audit program provisions contained in Regulatory Position C.4 of Regulatory Guide 1.33, audits of facility activities will be conducted in accordance with Section 17.3.3.3.3.
3. Paragraph 4.5 - Written audit reports are not formally reviewed as part of the Independent Review function.
4. Paragraph 4.5 - The Chief Nuclear Officer will assure that an independent assessment of the overall Nuclear Oversight program is conducted at least once every 24 months. Results of the independent assessment will be reported directly to the Chief Nuclear Officer and entered into the Corrective Action Program for resolution. (For scheduling consistency, the exceptions included in paragraph 5 of this section will be used as clarification for scheduling this independent assessment).

## Attachment C, Robinson Specific QAPD

Table C17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

---

Regulatory Guide 1.33, Quality Assurance Program Requirements (Operation) Revision 2, February 1978

---

ANSI Standard N18.7-1976, Administrative Controls And Quality Assurance Requirements For The Operational Phase Of Nuclear Power Plants

---

Comply with the provisions of Regulatory Guide 1.33, Rev. 2 February 1978, and the requirements and recommendations for administrative controls described in ANSI N18.7-1976, except as stated below:

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5. Paragraph 4.5 - Audit Programs - RG 1.33 (Safety Guide 33, November 1972) endorses ANSI N18.7-1976/ANS-3.2, Section 4.5, that states that audits of selected aspects of the operational phase activities, including safety-related functions, are completed within a period of two years, with the following clarification:
  - a) Audits shall be performed at the intervals designated herein for each audit area. Schedules shall be based on the exit date of the audit.
  - b) A maximum extension not to exceed 25 percent of the audit interval shall be allowed. That is to say that, for audits on a 24-month frequency, the maximum time between specific audits shall not exceed 30 months. Likewise, audits on an annual (12 month) frequency shall not be extended beyond 15 months.
  - c) When an audit interval extension is used, the next audit for that particular audit area will be scheduled from the anniversary exit date rather than from the exit date of the extended audit.
  - d) Item b shall also apply to supplier audits and evaluations except that a total combined time interval for any three consecutive inspection or audit intervals should not exceed 3.25 times the specified inspection or audit interval.

NOTE: This grace period will not be applied to audits of the Nuclear Emergency Response Plan to satisfy the requirements of 10CFR 50.54(t), Security Plan to satisfy the requirements of 10CFR 50.54(p), Radiation Protection to satisfy 10CFR 20.1101c, and Fire Protection to satisfy GL 82-21. The schedule for these audits will continue to be based on the exit date and not the exit month.

6. Section 5.2.16 titled Measuring and Test Equipment: See Section 17.3.2.9 for clarification.
7. The applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, Rev. 2, February 1978, shall be established, implemented, and maintained as specified in the RNP Technical Specifications.
8. Section 5.2.17 titled Inspections: The second to the last sentence in the last paragraph, "Deviations, their cause, and any," to be consistent with Paragraph 5.2.11 and 10CFR50, Appendix B, the cause of the deviation will be determined for only significant conditions adverse to safety.
9. Section 5.3.9.1 titled Emergency Procedure Format and Content: Emergency procedures shall be in the format as committed to in NUREG-0737, TMI Action Plan.
10. Section 5.2.2 titled Procedure Adherence: Temporary changes to approved procedures shall be approved by persons specified in Section C17.3.4.1.2.
11. Section 5.2.15 titled Review, Approval and Control of Procedures, states that, "Plant procedures shall be reviewed by an individual knowledgeable in the area affected by the procedure no less frequently than every two years to determine if changes are necessary. A revision to a procedure constitutes a procedure review." In lieu of this commitment, H. B. Robinson Steam Electric Plant, Unit No. 2 has programmatic controls in place to continually identify procedure revisions which may be needed to ensure that procedures are appropriate for the circumstance and are maintained current.

## Attachment C, Robinson Specific QAPD

Table C17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.33, Quality Assurance Program Requirements (Operation) Revision 2, February 1978

---

ANSI Standard N18.7-1976, Administrative Controls And Quality Assurance Requirements For The Operational Phase Of Nuclear Power Plants

---

Comply with the provisions of Regulatory Guide 1.33, Rev. 2 February 1978, and the requirements and recommendations for administrative controls described in ANSI N18.7-1976, except as stated below:

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12. Paragraph 5.2.13.1, Procurement Document Control: When purchasing commercial-grade calibration services from certain accredited calibration laboratories, the procurement documents are not required to impose a quality assurance program consistent with ANSI N45.2-1971. Alternate requirements described in Section 1.8 for Regulatory Guide 1.123 may be implemented in lieu of imposing a quality assurance program consistent with ANSI N45.2-1971.
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Regulatory Guide 1.37, Quality Assurance Requirements For Cleaning Of Fluid Systems And Associated Components Of Water-Cooled Nuclear Power Plants (March 1973)

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ANSI Standard N45.2.1-1973, Cleaning Of Fluid Systems And Associated Components During Construction Phase Of Nuclear Power Plants

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Those areas of the QA Program applicable to onsite cleaning of materials and components, cleanliness control, and preoperation cleaning and layup of RNP fluid systems, will be in accordance with ANSI N45.2.1-1973, with the following exceptions:

- a) At RNP a classification system similar to ANSI N45.2.1-1973 has been developed and is fully implemented for cleaning of fluid systems.
  - b) Section 1.4 titled Definitions: Definitions in this standard which are not included in ANSI N45.2.10 will be used; definitions which are included in ANSI N45.2.10 will be used as clarified in DEP commitment to Regulatory Guide 1.74.
  - c) Section 1.5 titled Referenced Documents: DEP's commitment to other documents referenced in this standard shall be as stated in our commitment to that document.
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Regulatory Guide 1.38, Quality Assurance Requirements For Packaging, Shipping, Receiving, Storage, And Handling Of Items For Water-Cooled Nuclear Power Plants (March 1973)

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ANSI Standard N45.2.2-1972, Packing, Shipping, Receiving, Storage, And Handling Of Items For Nuclear Power Plants

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Packaging, shipping, receiving, storage, and handling of RNP items are in accordance with applicable requirements of ANSI N45.2.2-1972 with the following specific exceptions:

- a) Section 1.4 titled Definitions: Definitions in this standard which are not included in ANSI N45.2.10 will be used; definitions which are included in ANSI N45.2.10 will be used as clarified in DEP commitment to Regulatory Guide 1.74.
- b) Section 1.5 titled Referenced Documents: DEP's commitment to other documents referenced in this standard shall be as stated in our commitment to that document.
- c) Section 2.7 titled Classification of Items and Section 6.1.2 titled Levels of Storage:
  - 1) Special electronic equipment and instrumentation received as assembled panels will be stored as recommended by the manufacturer and/or based on engineering evaluation to prevent damage, deterioration, or contamination, but not necessarily in a Level A storage area.
  - 2) Chemicals used at RNP are stored at the point of use and/or in warehouse areas that satisfy the requirement of Level B storage. These storage areas have been evaluated and determined to be adequate for the limitations established by the manufacturer.
  - 3) Special nuclear materials are stored in areas specifically designed for such storage.

## **Attachment C, Robinson Specific QAPD**

Table C17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.38, Quality Assurance Requirements For Packaging, Shipping, Receiving, Storage, And Handling Of Items For Water-Cooled Nuclear Power Plants (March 1973)

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ANSI Standard N45.2.2-1972, Packing, Shipping, Receiving, Storage, And Handling Of Items For Nuclear Power Plants

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Packaging, shipping, receiving, storage, and handling of RNP items are in accordance with applicable requirements of ANSI N45.2.2-1972 with the following specific exceptions:

- d) Section 7.3.4 - DEP intends to comply with the requirements of this section with the following clarification: Test loads equal to or greater than the original crane rating shall not pass over locations where special nuclear material is stored or where reactor system components or high cost equipment are located.
- e) Section 6.4.2 of ANSI N45.2.2 - 1972, titled Care, sub-items (5), (6), and (7) are clarified as follows:
  - 1) Sub-item (5), space heaters in electrical equipment shall be energized, unless a documented engineering evaluation determines that such space heaters are not required.
  - 2) Sub-item (6). large rotating electrical equipment (i.e. greater than or equal to 50 horsepower) shall be given insulation resistance tests on a scheduled basis, unless a documented engineering evaluation determines such tests are not needed.
  - 3) Sub-item (7). prior to being placed in storage, rotating equipment weighing over approximately 50 lbs. shall be evaluated and documented by engineering personnel to determine if shaft rotation during storage is required. If rotation is required the degree of turn shall be such that the parts receive lubrication where applicable and the shaft does not come to rest in a previous position. Required rotation shall be performed at the necessary intervals and documented.

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Regulatory Guide 1.39, Housekeeping Requirements For Water- Cooled Nuclear Power Plants (March 1973)

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ANSI Standard N45.2.3-1973, Housekeeping, During The Construction Phase Of Nuclear Power Plants

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The applicable requirements of ANSI N45.2.3-1973 are followed at Robinson 2 within the context of the established QA Program with the following specific exception -- the zone designations of Section 2.1 of ANSI N45.2.3 and the requirements associated with each zone are considered impractical for implementation, as stated, at Robinson 2 during the operations phase. Instead, procedures or instruction for housekeeping activities, which include the applicable requirements outlined in Section 2.1 of ANSI N45.2.3 and which take into account radiation control considerations, security considerations, and cleanliness requirements are developed on a case basis for work to be performed.

## Attachment C, Robinson Specific QAPD

Table C17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.58, Qualification Of Nuclear Power Plant Inspection, Examination, And Testing Personnel (September, 1980)

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ANSI Standard N45.2.6-1978, Qualification Of Inspection, Examination, And Testing Personnel For Nuclear Power Plants

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RNP shall comply with NRC Regulatory Guide 1.58, September 1980 which endorses ANSI N45.2.6-1978, with the following exceptions:

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1. Section 1.2 titled Applicability: DEP elects not to apply the requirements of this guide to those personnel who are involved in the daily operations of surveillance, maintenance, and certain technical and support services whose qualifications are controlled by the RNP Technical Specifications or are controlled by other QA Program commitment requirements. Only personnel in the following listed categories will be required to meet ANSI N45.2.6-1978 requirements:
  - a. Nondestructive examination (NDE) personnel
  - b. QC inspection personnel
  - c. Receipt inspection personnel
2. The fourth paragraph of Section 1.2 requires that the Standard be imposed on personnel other than DEP employees. The applicability of the Standard to suppliers and contractors will be documented and applied, as appropriate, in the procurement documents for such suppliers and contractors.
3. Section 1.4 titled Definitions: Definitions in this Standard which are not included in ANSI N45.2.10 will be used; definitions which are included in ANSI N45.2.10 will be used as clarified in DEP commitment to Regulatory Guide 1.74.
4. Section 2.5 titled Physical: DEP will implement the requirements of this Section with the stipulation that, where no special physical characteristics are required, none will be specified. The converse is also true: if no special physical requirements are stipulated by DEP, none are considered necessary. DEP employees receive an initial physical examination to assure satisfactory physical condition; however, only the following listed personnel will receive an annual ( $\pm$  2 months) examination:
  - a. NDE personnel
  - b. QC inspection personnel
  - c. Receipt inspection personnelThis annual examination shall consist of the near visual acuity using the standard Jaeger's type chart or equivalent test.
5. Section 3 titled Qualifications: Only personnel performing NDE (such as LP, MT, UT, & RT) will be grouped in levels of capability and certified as such. Personnel performing inspection will be certified for inspection, review and evaluation of inspection data, and reporting of inspection and test results.
6. Section 3.5 titled Education & Experience Recommendations: DEP will certify individual inspectors through training and experience to requirements appropriate to the specific assignment; however, except for NDE, personnel will not be classified by levels of capability. The training and experience requirements will be directed toward qualifying personnel for specific inspection and testing operations.

## Attachment C, Robinson Specific QAPD

Table C17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

Regulatory Guide 1.64, Quality Assurance Requirements For The Design Of Nuclear Power Plants (October 1973)
ANSI Standard N45.2.11-1974, Quality Assurance Requirements For The Design Of Nuclear Power Plants
Those areas of the QA Program for RNP applicable to design or modification of the plant are in accordance with the applicable guidance of ANSI N45.2.11-1974, with the following exception: a) Section 1.4 titled <u>Definitions</u> : Definitions in this standard which are not included in ANSI N45.2.10 will be used; definitions which are included in ANSI N45.2.10 will be used as clarified in DEP commitment to Regulatory Guide 1.74.
Regulatory Guide 1.74, Quality Assurance Terms And Definitions (February, 1974)
ANSI Standard N45.2.10-1973, Quality Assurance Terms And Definitions
The quality assurance terms and definitions of ANSI N45.2.10-1973 and Regulatory Guide 1.74 are being complied with for use in describing and implementing the Robinson 2 QA Program.
Regulatory Guide 1.88 , Requirements For Collection, Storage, And Maintenance Of Quality Assurance Records For Nuclear Power Plants
ANSI Standard N45.2.9-1979 , "Requirements For Collection, Storage, And Maintenance Of Quality Assurance Records For Nuclear Power Plants"
As documented in DEP Letter to the NRC dated March 23, 1993, RNP is no longer committed to Regulatory Guide 1.88 "Collection, Storage, and Maintenance of Nuclear Power Plant Quality Assurance Records," August 1974.
See standard exception in Table 17-1 Regulatory Guide 1.88 for the appropriate controls on quality in the management of electronic records. The requirements for collection, storage, and maintenance of QA records at RNP will be in accordance with ANSI N45.2.9-1979 and Section 17.3.2.15, subject to the following: 1. Section 1.5 titled Referenced Documents: DEP's commitment to other documents referenced in this standard shall be as stated in our commitment to that document. 2. Section 5.4 Item 2 "Records shall be firmly attached in binders or placed in folders or envelopes for storage in steel file cabinets or on shelving in containers." RNP complies with this requirement except for periods when records are in the receipt process. 3. Section 5.6 states: "Records shall be stored in facilities constructed and maintained in a manner which minimizes the risk of damage or destruction from the following: a. Natural disasters such as winds, floods, or fires. b. Environmental conditions such as high and low temperatures and humidity. c. Infestation of insects, mold, or rodents." Records are stored in permanent and temporary facilities as follows: 1) One hour UL-rated fireproof file cabinets are utilized for temporary storage of hardcopy records. These file cabinets are located at work locations throughout the plant and will contain the records until the records are transmitted to the appropriate Document Control Center. Records being processed in Document Control Centers will be stored in fireproof cabinets when they are not being processed and until they are sent to the vault. In addition, records that are generated and authenticated electronically are afforded protection as described in N45.2.9-(1979) prior to conversion to permanent storage media. 2) Permanent storage of QA records will be in the plant vault constructed to meet the requirements of this ANSI standard, and via electronic means which also meet applicable provisions of this standard, in addition to those delineated below.

### Attachment C, Robinson Specific QAPD

Table C17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.88 , Requirements For Collection, Storage, And Maintenance Of Quality Assurance Records For Nuclear Power Plants

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ANSI Standard N45.2.9-1979 , "Requirements For Collection, Storage, And Maintenance Of Quality Assurance Records For Nuclear Power Plants"

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As documented in DEP Letter to the NRC dated March 23, 1993, RNP is no longer committed to Regulatory Guide 1.88 "Collection, Storage, and Maintenance of Nuclear Power Plant Quality Assurance Records," August 1974.

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- 3) Selected records may be stored off-site by a QA Records Storage supplier provided that supplier meets the applicable sections of this ANSI standard.
  4. Section 6.2 states: "Storage systems shall provide for retrieval of information in accordance with planned retrieval times based upon the record type." Retrieval of records at RNP is via a random access computer system using key words and document identification numbers, or through a manual index for records completed prior to 1982. The manual system is keyed to Plant Systems.
  5. Section 7.3.3 states: "Various regulatory agencies have requirements concerning records that are within the scope of this Standard. The most stringent requirements shall be used in determining the retention period."
  6. RNP will continue to adhere to the recommendations of Appendix A of ANSI N45.2.9-1974, or with the most stringent requirement with respect to records retention.
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Regulatory Guide 1.94, Quality Assurance Requirements For Installation, Inspection, And Testing Of Structural Concrete And Structural Steel During The Construction Phase Of Nuclear Power Plants (April 1976)

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ANSI Standard N45.2.5-1974, Supplementary Quality Assurance Requirements For Installation, Inspections, And Testing Of Structural Concrete And Structural Steel During The Construction Phase Of Nuclear Power Plants

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The original specification requirements, applicable guidance contained in Regulatory Guide 1.94, or acceptable alternatives based on an engineering evaluation will be utilized in the event future structural work is to be performed which falls under the established requirements of the Robinson 2 QA Program.

Future field production welding acceptance criteria will be based on NCIG-01, "Visual Weld Acceptance Criteria for Structural Welding at Nuclear Power Plants," Revision 2, dated May 7, 1985, Prepared by the Nuclear Construction Issues Group (NCIG) for structural safety-related and non-safety related pipe, conduit, cable tray, duct, and equipment supports where welding is specified to be in accordance with AWS D1.1.

This will be implemented through appropriate RNP specifications.

## Attachment C, Robinson Specific QAPD

Table C17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.116, QA Requirements For Installation, Inspection, And Testing Of Mechanical Equipment And Systems (June, 1976)

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ANSI Standard N45.2.8-1975, Supplementary Quality Assurance Requirements For Installation, Inspection, And Testing Of Mechanical Equipment And Systems For The Construction Phase Of Nuclear Power Plants

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Regulatory Guide 1.116, June, 1976, endorses ANSI N45.2.8-1975. RNP does not commit to Regulatory Guide 1.116 but does endorse parts of ANSI N45.2.8-1975 as described below.

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Within the context of the established QA Program, the applicable guidance contained in ANSI N45.2.8-1975 will be utilized in relation to mechanical maintenance or modification with the following exception:

a) Section 1.4 titled Definitions: Definitions in this standard which are not included in ANSI N45.2.10 will be used; definitions which are included in ANSI N45.2.10 will be used as clarified in DEP commitment to Regulatory Guide 1.74.

b) Section 1.5 titled Referenced Documents: DEP's commitment to other documents referenced in this standard shall be as stated in our commitment to that document.

c) Section 2.8 titled Measuring and Test Equipment: DEP will implement the applicable portions of this section as follows:

The status of portable items of measuring and test equipment and reference standards shall be identified by use of tags, stickers, labels, routing cards, computer programs, or other suitable means for the date recalibration is due or the frequency of recalibration. These items are in a calibration program which requires recalibration on a specified frequency or, in certain cases, prior to use.

Instrumentation and electrical equipment in the categories listed below shall be in a calibration program. This program provides, by the use of status cards, computer schedules, or tags, for the date that recalibration is due and indicates the status of calibration. The identity of person(s) performing the calibration is provided on the calibration documents.

- 1) Instruments installed as listed in the RNP Technical Specifications,
- 2) Installed instrumentation used to verify RNP Technical Specification parameters, and
- 3) Installed safety-related instruments and electrical equipment that provide an active function during operation or during shutdown; i.e., not a device being designated safety-related solely because the instrument is an integral part of a pressure retaining boundary.

d) Section 6 titled Data Analysis and Evaluation states in part, "Procedures shall be established for processing inspection and test data and their analysis and evaluation." At H. B. Robinson 2 data processing procedures per se have not been developed; instead, test data are recorded, processed, and analyzed in accordance with procedures and instructions in appropriate functional areas; e.g., maintenance, startup.

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Regulatory Guide 1.123, Quality Assurance Requirements For Control Or Procurement Of Items And Services For Nuclear Power Plants (July, 1977)

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ANSI Standard N45.2.13, Quality Assurance Requirements For (Draft 2, Rev. 4, April, 1974) Control Or Procurement Of Items And Services For Nuclear Power Plants

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RNP does not commit to Regulatory Guide 1.123; however, the applicable guidance contained in ANSI N45.2.13-1974, Draft 2, Rev. 4, and ANSI N18.7-1976 will be utilized in relation to procurement of items and services performed under the established requirements of the RNP QA Program.

See standard exceptions in Table 17-1 for Regulatory Guide 1.123 for the procurement of Commercial Grade Items and services including, purchasing commercial-grade calibration services from calibration laboratories.



## Attachment C, Robinson Specific QAPD

Table C17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

Regulatory Guide 1.144, Auditing Of Quality Assurance
ANSI Standard N45.2.12-1977, Requirements For Auditing Of Quality Assurance Programs For Nuclear Power Plants
DEP will follow the requirements and recommendations of Regulatory Guide 1.144 and ANSI N45.2.12 with the following clarifications:
<ol style="list-style-type: none"><li>1. DEP will follow the requirements and recommendations of Regulatory Guide 1.144 paragraphs C.1, C.2, C.3.a.2, C.3.b, and C.4. Our position on paragraph C.3.a.1 is as follows:<p>Audits of operational phase activities, as outlined in Section 17.3.3.3.3, shall be performed at the frequencies specified therein.</p><p>See standard exceptions in Table 17-1 for Regulatory Guide 1.123 for the procurement of Commercial Grade Items and services including, purchasing commercial-grade calibration services from calibration laboratories.</p></li><li>2. DEP will comply with the last paragraph of Section 4.4 of ANSI N45.2.12 concerning issuing audit reports with the following clarification: "Audit reports shall be issued within thirty working days after the last day of the audit. The last day of an audit shall be considered to be the day of the post-audit conference. If a post-audit conference is not held because it was deemed unnecessary, the last day of the audit shall be considered to be the date the post-audit conference was deemed unnecessary as documented in the audit report."</li><li>3. ANSI N45.2.12 Paragraph 4.3. 1, Preaudit Conference: DEP will comply with the requirement of this paragraph by inserting the word "Normally" at the beginning of the first sentence. This clarification is required because, in the case of certain unannounced audits or audits of a particular operation or work activity, a preaudit conference might interfere with the spontaneity of the operation or activity being audited. In other cases, persons who should be present at a preaudit conference may not always be available. Such lack of availability should not be an impediment to beginning an audit. Even in the above examples, which are not intended to be all inclusive, the material set forth in Paragraph 4.3.1 will normally be covered during the course of the audit.</li><li>4. ANSI N45.2.12 Paragraph 4.3.3, Post Audit Conference: DEP will substitute and comply with the following paragraphs: "For all external audits, a post audit conference shall be held with management of the audited organization to present audit findings and clarify misunderstandings.<p>Where no adverse findings exist, this conference may be waived by management of the audited organization. Such waiver shall be documented in the audit report. For all internal audits, unless unusual operating or maintenance conditions preclude attendance by appropriate managers/supervisors, an audit exit shall be held with managers/supervisors. If there are no adverse findings, management of the audited organization may waive the audit exit. Such waiver shall be documented in the audit report."</p></li><li>5. ANSI N45.2.12 Paragraph 4.4, Reporting:<ol style="list-style-type: none"><li>a. This paragraph requires that the audit report be signed by the audit team leader which is not always the most expeditious route for the audit report to be issued as soon as practical. DEP will comply with Paragraph 4.4 as clarified to read:<p>"An audit report shall be signed by the audit team leader or the leader's supervisor in the absence of the audit team leader. In cases where the audit report is not signed by the audit team leader due to the leader's absence, the record copy of the report must be signed by the audit team leader upon return . The report shall not require the audit team leader's review/concurrence/signature if the audit team leader is no longer employed by DEP at the time audit report is issued. The audit report shall provide:"</p></li></ol></li></ol>

## Attachment C, Robinson Specific QAPD

Table C17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

Regulatory Guide 1.144, Auditing Of Quality Assurance
ANSI Standard N45.2.12-1977, Requirements For Auditing Of Quality Assurance Programs For Nuclear Power Plants
DEP will follow the requirements and recommendations of Regulatory Guide 1.144 and ANSI N45.2.12 with the following clarifications:
<ul style="list-style-type: none"><li>b. DEP will comply with subparagraph 4.4.3 clarified to read: "Supervisory level personnel with whom significant discussions were held during the course of preaudit (where conducted) , audit, and post audit (where conducted) activities.</li><li>c. Subparagraph 4.4.6 requires audit reports to include recommendations for corrective actions. DEP may choose not to comply with this requirement. Instead, DEP audit reports are required to document findings.</li></ul>
Regulatory Guide 1.146, Qualification Of QA Program Audit Personnel For Nuclear Power Plants (Revision 0) (August, 1980)
ANSI Standard N45.2.23-1978, Qualification Of Quality Assurance Program Audit Personnel For Nuclear Power Plants
RNP shall comply with NRC Regulatory Guide 1.146, Revision 0, which endorses ANSI N45.2.23-1978, with the following exceptions:
<ul style="list-style-type: none"><li>1. Section 1.4 titled <u>Definitions</u>: Definitions in this Standard which are not included in ANSI N45.2.10 will be used; definitions which are included in ANSI N45.2.10 will be used as clarified in DEP commitment to Regulatory Guide 1.74.</li><li>2. Section 2.2 titled <u>Qualification of Auditors</u>: Subsection 2.2.1 references an ANSI B45.2, which will be assumed to be N45.2. DEP will comply with an alternate subsection 2.2.1 which reads: Orientation to provide a working knowledge and understanding of the DEP QA program, including the Regulatory Guides and ANSI standards included in the program, and DEP procedures for performing audits and reporting results.</li><li>3. Section 4.1 titled <u>Organizational Responsibility</u>: DEP will comply with this Section with the substitution of the following sentence in place of the last sentence in the Section. NOS Management or the Audit Team Leader shall, prior to commencing the audit, assign personnel who collectively have experience or training commensurate with the scope, complexity, or special nature of the activities to be audited.</li><li>4. Section 5.3 titled <u>Updating of Lead Auditors' Records</u>: DEP will substitute the following sentence for this Section: Records for each Lead Auditor shall be maintained and updated during the annual management assessment as defined in Section 3.2 (as clarified).</li><li>5. Section 5.4 titled <u>Record Retention</u>: DEP will substitute the following sentence for this section. Qualification records shall be retained as required by the DEP QA Program.</li><li>6. Section 2.3.4 titled <u>For Audits</u>: DEP will substitute the following instead of the cited sentence. Prospective Lead Auditors shall demonstrate the ability to effectively implement the audit process and effectively lead an audit team. This process is described in written procedures, which provide for evaluation and documentation of the results of this demonstration. In addition, the prospective Lead Auditor shall have participated in at least two Nuclear Oversight audits within a one-year period preceding the individual's effective date of qualification. Upon successful demonstration of the ability to effectively implement the audit process and effectively lead audits, and having met other provisions of section 2.3 of ANSI/ASME N45.2.23-1978, the individual may be certified to lead audits.</li></ul>

## Attachment C, Robinson Specific QAPD

**Table C17-2. Site Specific Response to Regulatory Guides and Industry Standards**

Table C17-2 identifies additional Regulatory Guides addressing subjects related to implementation of the QAP but the implementation is site specific and controlled with the UFSAR in accordance with 10 CFR 50.59.

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Regulatory Guide 1.8, Personnel Selection And Training

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Personnel selection and training is site specific.

Robinson addresses conformance with Regulatory Guide 1.8 in UFSAR Chapter 1 Section 8.

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Regulatory Guide 1.26, Quality Group Classifications And Standards For Water-, Steam-, And Radioactive-Waste-Containing Components Of Nuclear Power Plants

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Quality group classifications and standards trace to the original design and construction of the nuclear power plant and therefore are site specific.

Robinson does not address Regulatory Guide 1.26 in UFSAR Chapter 1 Section 8. Quality group classifications are addressed in UFSAR Chapter 3.

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Regulatory Guide 1.29, Seismic Design Classification

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Seismic design classification trace to the original design and construction of the nuclear power plant and therefore is site specific.

Robinson addresses conformance with Regulatory Guide 1.29 in UFSAR Chapter 1 Section 8.

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Regulatory Guide 1.36, Nonmetallic Thermal Insulation For Austenitic Stainless Steel

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Nonmetallic thermal insulation for austenitic stainless steel trace to the original design and construction of the nuclear power plant and therefore is site specific.

Robinson does not address conformance with Regulatory Guide 1.36 in UFSAR Chapter 1 Section 8. See UFSAR Chapters 5 and 6 for insulation of austenitic stainless steel.

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Regulatory Guide 1.54, Quality Assurance Requirements For Protective Coatings Applied To Water-Cooled Nuclear Power Plants

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Quality assurance requirements for protective coatings applied to water-cooled nuclear power plants trace to the original design and construction of the nuclear power plant and therefore is site specific.

Robinson addresses conformance with Regulatory Guide 1.54 in UFSAR Chapter 1 Section 8.

### **Attachment C, Robinson Specific QAPD**

Table C17-2. Site Specific Response to Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.143, Design Guidance For Radioactive Waste Management Systems, Structures, And Components Installed In Light-Water-Cooled Nuclear Power Plants

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Design guidance for radioactive waste management systems, structures, and components installed in light-water-cooled nuclear power plants trace to the original design and construction of the nuclear power plant and therefore is site specific.

Robinson does not address conformance with Regulatory Guide 1.143 in UFSAR Chapter 1 Section 8. Design guidance for radioactive waste management systems, structures, and components is addressed in UFSAR Chapter 11.

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Regulatory Guide 1.155, Station Blackout

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Addressing Station Blackout is site specific.

Robinson addresses conformance with Regulatory Guide 1.155 in UFSAR Chapter 1 Section 8.

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Regulatory Guide 4.15, Quality Assurance For Radiological Monitoring Programs (Normal Operations) – Effluent Streams And The Environment

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Quality assurance for radiological monitoring program (normal operations) – effluent streams and the environment is site specific.

Robinson addresses Regulatory Guide 4.15 in UFSAR Chapter 1 Section 8.

## **Attachment C, Robinson Specific QAPD**

### **C17.3.1 MANAGEMENT**

#### **C17.3.1.1 Methodology**

There are no Robinson specific amplifications for this section.

#### **C17.3.1.2 Organization**

There are no Robinson specific amplifications for this section.

#### **C17.3.1.3 Responsibility**

There are no Robinson specific amplifications for this section.

#### **C17.3.1.4 Authority**

The program and procedures require that the authority and duties of persons and organizations performing activities affecting quality functions be clearly established and delineated in writing and that these individuals and organizations have sufficient authority and organizational freedom to:

1. Identify quality, nuclear safety, and performance problems.
2. Order unsatisfactory work to be stopped and control further processing, delivery, or installation of nonconforming material.
3. Initiate, recommend, or provide solutions for conditions adverse to quality.
4. Verify implementation of solutions.

#### **C17.3.1.5 Personnel Training and Qualification**

There are no Robinson specific amplifications for this section.

#### **C17.3.1.6 Corrective Action**

The program requires that an evaluation of adverse conditions such as conditions adverse to quality, nonconformances, failures, malfunctions, deficiencies, deviations, and defective material and equipment is conducted to determine need for corrective action.

Conditions adverse to quality are identified through inspections, assessments, tests, checks, and review of documents.

The program requires corrective action to be initiated to preclude recurrence of significant conditions adverse to quality.

Procedures require follow-up reviews, verifications, inspections, etc., to be conducted to verify proper implementation of corrective action and to close out the corrective action documentation.

The program outlines the methodology for resolution of disputes involving quality and nuclear safety issues arising from a difference of opinion between identifying personnel and other groups.

Significant conditions adverse to quality are reported to appropriate management for review and evaluation.

Periodic review and evaluation of adverse trends are performed by management.

## **Attachment C, Robinson Specific QAPD**

### **C17.3.1.7 Regulatory Commitments**

There are no Robinson specific amplifications for this section.

### **C17.3.2 PERFORMANCE/VERIFICATION**

#### **C17.3.2.1 Methodology**

There are no Robinson specific amplifications for this section.

#### **C17.3.2.2 Design Control**

There are no Robinson specific amplifications for this section.

#### **C17.3.2.3 Design Verification**

There are no Robinson specific amplifications for this section.

#### **C17.3.2.4 Procurement Control**

Potential contractors and suppliers are evaluated prior to award of a procurement contract when needed to assure the contractor's or supplier's capability to comply with applicable technical and quality requirements.

Procurement documents, such as purchase specifications, contain or reference the following:

1. Technical, administrative, regulatory, and reporting requirements, including material and component identification requirements, drawings, specifications, codes and industrial standards, test and inspection requirements, and special process instructions.
2. Identification of the documentation to be prepared, maintained, or submitted (as applicable) to RNP for review and approval. These documents may include, as necessary, inspection and test records, qualification records, or code required documentation
3. Identification of those records to be retained, controlled, and maintained by the supplier, and those delivered to the purchaser prior to use or installation of the hardware.

Procurement documents require suppliers to operate in accordance with QA programs which are compatible with the applicable requirements of RNP's QA Program and procedures where their services are utilized in support of plant activities.

#### **C17.3.2.5 Procurement Verification**

There are no Robinson specific amplifications for this section.

#### **C17.3.2.6 Identification and Control of Items**

Procedures require that materials, parts, and components be identified and controlled to prevent the use of incorrect or defective items. These procedures also require that identification of items be maintained either on the item in a manner that does not affect the function or quality of the item, or on records traceable to the item.

## **Attachment C, Robinson Specific QAPD**

Procedures implementing these requirements provide for the following:

1. Verification that items received at the plant are properly identified and can be traced to the appropriate documentation, such as drawings, specifications, purchase orders, manufacturing and inspection documents, nonconformance reports, or material test reports.
2. Verification of item identification consistent with the RNP inventory control system and traceable to documentation which identifies the proper uses or applications of the item.

### **C17.3.2.7 Handling, Storage, and Shipping**

Provisions are established to control the shelf life and storage of chemicals, reagents, lubricants, and other consumable materials.

### **C17.3.2.8 Test Control**

Test procedures incorporate or reference the following, as required:

1. Instructions and prerequisites for performing the test,
2. Use of proper test equipment,
3. Mandatory inspection hold points,
4. Acceptance criteria

Test results are documented, evaluated, and their acceptability determined by a qualified, responsible individual or group.

When the acceptance criteria is not met, affected areas are to be retested or evaluated, as appropriate.

### **C17.3.2.9 Measuring and Test Equipment Control**

Portable measuring and test equipment are calibrated by standards at least four times as accurate as the portable measuring and test equipment, unless limited by the state of the art.

Special tools such as torque wrenches, calipers, and micrometers are calibrated to be at least as accurate as the application(s) for which it is used, using standards which are at least as accurate as the special tool being calibrated.

Installed measuring and test instruments are calibrated by instruments at least as accurate as the installed, unless limited by the state of the art.

Reference and transfer standards are traceable to nationally recognized standards; or where national standards do not exist, provisions are established to document the basis for the calibration.

### **C17.3.2.10 Inspection, Test, and Operating Status**

These procedures include the application, removal, and verification of inspection and welding stamps, or other status indicators as appropriate.

## **Attachment C, Robinson Specific QAPD**

Altering the sequence of required tests, inspections, and safety-related operations can only be accomplished by methods outlined in procedures.

### **C17.3.2.11 Special Process Control**

There are no Robinson specific amplifications for this section.

### **C17.3.2.12 Inspection**

There are no Robinson specific amplifications for this section.

### **C17.3.2.13 Corrective Action**

The primary goal of the RNP corrective action program is to improve overall plant operations and performance by identifying and correcting root causes of equipment and human performance problems.

Procedures define requirements for a corrective action program that charges personnel working at or supporting the nuclear plants with the responsibility to identify adverse conditions (including conditions adverse to quality).

Procedures include requirements for verification of the acceptability of the rework/repair of items by reinspection and/or testing in accordance with the original inspection or test requirements or by an accepted alternative inspection and testing method.

Conditions that require rework/repairs are identified through the use of maintenance work request forms.

### **C17.3.2.14 Control of Documents**

Changes to documents are reviewed and approved by the same organization that performed the original review and approval or by other designated qualified responsible organizations.

### **C17.3.2.15 Records**

The structures in which certain records are maintained are designed to prevent destruction, deterioration, or theft. These structures ensure protection against destruction by fire, flooding, theft, and deterioration by the environmental conditions of temperature and humidity.

## **C17.3.3 ASSESSMENT**

### **C17.3.3.1 Methodology**

The following are Robinson specific amplifications from previous sections 17.3.3.1 and 17.3.3.2.2.

NOS site management and Independent Review Engineers, separately, will hold periodic, but not less frequently than semi-annual (+25% for scheduling flexibility), peer review meetings to share and exchange information among sites. These meetings will allow the use of designated alternates to attend.



## **Attachment C, Robinson Specific QAPD**

### **C17.3.3.2 Independent Review**

Content from Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 1.7, Nuclear Oversight Section Independent Review Program, follows:

#### **C17.3.3.2.1 Function**

RNP Nuclear Oversight Section shall function to provide independent review of plant changes, tests, and procedures. In addition, the independent review function will verify that reportable events are investigated in a timely manner and corrected in a manner that reduces the probability of recurrence of such events and detect trends that may not be apparent to a day-to-day observer.

#### **C17.3.3.2.2 Organization**

1. The individuals assigned responsibility for independent reviews shall be qualified in specific disciplines. These individuals shall collectively have the experience and competence required to review activities in the following areas:
  - a) nuclear power plant operations
  - b) nuclear engineering
  - c) chemistry and radiochemistry
  - d) metallurgy
  - e) nondestructive testing
  - f) instrumentation and control
  - g) radiological safety
  - h) mechanical and electrical engineering
  - i) administrative controls
  - j) seismic and environmental
  - k) quality assurance practices
  - l) other appropriate fields
2. The Manager – RNP Nuclear Oversight Section shall have a bachelor's degree in an engineering or related field and, in addition, shall have a minimum of ten years' related experience, of which five years shall be in the operation and/or design of nuclear power plants.
3. The individuals performing independent safety reviews shall have a bachelor's degree in an engineering or related field or equivalent and, in addition, shall have a minimum of five years' related experience.
4. An individual may possess competence in more than one specialty area. If sufficient expertise is not available within Nuclear Oversight Section, competent individuals from other DEP organizations or outside consultants shall be utilized in performing independent reviews and investigations.
5. The documents submitted under paragraph C17.3.3.2.3 shall be reviewed by individuals meeting the requirements of items 1 and 3 in this listing to ensure all applicable disciplines are encompassed. Multiple reviews will be conducted on documents where required to meet applicable disciplines of item 1.

## **Attachment C, Robinson Specific QAPD**

6. Independent safety reviews shall be performed by individuals not directly involved with the activity under review or responsible for the activity under review.
7. The Nuclear Oversight Section Independent Safety Review Program shall be conducted in accordance with written, approved procedures.
8. Individuals who do not possess the formal educational requirements specified in items 2 and 3 above shall not be automatically eliminated where other factors provide sufficient demonstration of their abilities. These other factors shall be evaluated on a case-by-case basis and approved and documented by the responsible NOS management. The positive factors listed as follows may be considered in making the evaluation of an acceptable alternative to the educational requirements.
  - a. High school diploma or GED.
  - b. Academic and related technical training.
  - c. Has or have held a license as a senior reactor operator at RNP, Unit No. 2
  - d. Four years of additional experience in Nuclear Oversight or related field (i.e., Quality Assurance, Performance Evaluation, or Nuclear Assessment).
  - e. Four years of supervisory or management experience.
  - f. Demonstrated ability to communicate clearly (orally and in writing).
  - g. Certification of academic ability and knowledge by corporate management.
  - h. Successful completion of the Engineer-In-Training examination.
  - i. Professional Engineer License.
  - j. Associate Degree in Engineering or related science.

### **C17.3.3.2.3 Review**

RNP Nuclear Oversight Section shall perform reviews of the following:

- a. Written safety evaluations of changes in the facility as described in the RNP UFSAR, changes in procedures as described in the RNP UFSAR, and tests or experiments not described in the RNP UFSAR which are completed without prior NRC approval under the provisions of 10CFR 50.59(c)(1).

These reviews are to verify that such changes, tests, or experiments do not involve a change in the RNP Technical Specifications or a license amendment pursuant to 10CFR 50.59(c)(2). These reviews may be conducted after appropriate management approval, and implementation may proceed prior to completion of the review.
- b. Proposed changes in procedures required by RNP Technical Specifications, proposed changes in the facility, or proposed tests or experiments, any of which involve a change in the RNP Technical Specifications or a license amendment pursuant to 10CFR 50.59(c)(2) prior to implementation.
- c. Proposed changes to the RNP Technical Specifications or Operating License for the 10CFR50 License and the 10CFR 72 7P-ISFSI License prior to implementation.

## **Attachment C, Robinson Specific QAPD**

- d. Violations, deviations, and reportable events, which require reporting to the NRC in writing, such as:
  - 1). Violations of applicable codes, regulations, orders, RNP Technical Specifications, license requirements, or internal procedures or instructions having safety significance;
  - 2). Significant operating abnormalities or deviations from normal or expected performance of plant safety-related structures, systems, or components; and
  - 3). Reportable events, as specified in 10CFR 50.73.
- e. Any other matter involving safe operation of the nuclear power plant that the Manager – RNP Nuclear Oversight Section deems appropriate for consideration or which is referred to the Manager – RNP Nuclear Oversight Section by the on-site operating organization, PNSC, or by other functional organizational units within DEP.

### **C17.3.3.2.4. Records**

Results of Nuclear Oversight Section independent safety reviews shall be documented and retained.

### **C17.3.3.3 Independent Assessment**

There are no Robinson specific amplifications for this section.

#### **C17.3.3.3.1 Organization**

Personnel performing independent assessment activities are generally assigned to Nuclear Oversight from the line and other organizations on a rotational basis for two to five year assignments.

Since these personnel are full-time assessors during this time period, they have no direct responsibilities in the areas being assessed. However, on an exception basis, personnel in Nuclear Oversight may provide assistance to the line organization by participating in emergency preparedness activities, ad hoc committees or analyzing technical issues, if such assistance is deemed to be in the overall best interest of safety and is approved in advance by Nuclear Oversight Section management.

#### **C17.3.3.3.2 Internal Assessment process**

There are no Robinson specific amplifications for this section.

#### **C17.3.3.3.3 Internal Audit Program**

##### **C17.3.3.3.3.1 Other Audits Prescribed by the Code of Federal Regulations**

The periodic review of Radiation Protection (per 10CFR 20.1101c) identified in 17.3.3.3.3.1 is conducted by NOS at Robinson.

##### **C17.3.3.3.3.2 Independent Audit of Fire Protection Program**

An independent fire protection and loss prevention inspection and audit shall be performed at least once per 24 months utilizing either qualified offsite personnel or an outside fire protection firm.

An independent fire protection audit shall be performed at least once per 36 months by an audit team that must include an outside qualified, fire protection engineer. (This

## **Attachment C, Robinson Specific QAPD**

individual will be external to DEP and meet education and experience requirements listed for a Professional Member of the Society of Fire Protection Engineers.)

### **C17.3.3.3.4 Results**

There are no Robinson specific amplifications for this section.

### **C17.3.3.3.5 Supplier Oversight**

There are no Robinson specific amplifications for this section.

### **C17.3.3.3.6 Independent Audit of QA Functions**

There are no Robinson specific amplifications for this section.

### **C17.3.3.3.7 Audit Frequency Extensions**

RNP Audit Schedules shall be based on the exit date of the audit as identified in exceptions for Regulatory Guide 1.33.

## **C17.3.4 REVIEW AND AUDIT**

### **C17.3.4.1 Procedures, Tests, and Experiments**

Content from Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 1.1 follows:

1. The procedures established, implemented, and maintained for the Quality Assurance Program for effluent and environmental monitoring use guidance from Regulatory Guide 4.15. RNP is not committed to specific guidance within Regulatory Guide 4.15 or to a specific revision to the Regulatory Guide.
2. Temporary changes to procedures, tests, or experiments may be approved by two members of the plant staff, at least one of whom holds a Senior Reactor Operator License if such change does not change the intent of the original procedure, test, or experiment. Temporary changes shall be documented and, within 21 days of receiving temporary approval, be reviewed in accordance with paragraphs C17.3.4.1.3, C17.3.4.1.4, and C17.3.4.1.5 and incorporated as a permanent change or deleted.
3. A 10CFR 50.59 review shall be prepared for all procedures, tests, and experiments covering the activities identified in RNP Technical Specification 5.4.1 and procedures that affect nuclear safety, with the exception of those procedures exempt from review under 10CFR 50.59 in accordance with NEI 96-07, Revision 1, as endorsed by Regulatory Guide 1.187, November 2000. The 10CFR 50.59 review shall include a written determination of whether or not the procedure, test, or experiment is a change in the facility as described in the RNP UFSAR, involves a change to the RNP Technical Specification, or requires a license amendment in accordance with 10CFR 50.59(c)(2). This analysis constitutes a first review and may be accomplished by the individual who prepared the document.
4. Prior to approval, a second 10CFR 50.59 review shall be performed on all procedures, tests, or experiments that affect nuclear safety. This review shall be performed by an individual other than the individual who was the original preparer.
5. Following the 10CFR 50.59 review, procedures, tests, and experiments and permanent changes thereto (other than editorial or typographical) that affects nuclear safety which have been determined neither to involve a license amendment in accordance with 10CFR 50.59(c)(2), nor a change to the RNP Technical Specifications, shall be approved prior to implementation.

## **Attachment C, Robinson Specific QAPD**

The individual approving the procedure, test, or experiment or change thereto shall be other than those who performed the required reviews.

The Plant General Manager - Robinson Nuclear Plant or other designated manager approving the review activities of the 10CFR 50.59 review shall assure that the reviewers collectively possess the background and qualifications to all of the disciplines necessary and important to the specific review. To assure that the individuals selected for the 10CFR 50.59 review are qualified and have the background necessary, the Plant General Manager - Robinson Nuclear Plant shall approve and maintain a list of qualified persons. Included in this list will be individuals in addition to the first and second reviewer whose expertise may be necessary during the review to assure that the reviewers collectively possess the background and qualifications in the disciplines necessary and important to the specific review. The list will include the disciplines for which each person is qualified.

6. Those procedures, tests, or experiments and changes thereto that require a license amendment, or involve a change to RNP Technical Specifications, shall be reviewed by the Plant Nuclear Safety Committee and submitted to the NRC for approval prior to implementation. All such procedures, tests, or experiments and changes shall be reviewed by the Nuclear Oversight Section prior to implementation.
7. Procedures, tests, or experiments, which constitute a change to the facility as described in the RNP UFSAR, shall also be reviewed by the RNP Nuclear Oversight Section. These reviews may be conducted after plant management approval, and implementation may proceed prior to completion of the review

### **C17.3.4.2 Modifications**

Content from Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 1.2 follows:

1. A 10CFR 50.59 review shall be prepared for all modifications that affect nuclear safety. The analysis shall include a written determination of whether or not the modification is a change in the facility as described in the RNP UFSAR, involves a change to the RNP Technical Specifications, or requires a license amendment in accordance with 10CFR 50.59(c)(2). This analysis constitutes a first party safety review and may be accomplished by the individual who prepared the modification.
2. Prior to approval, a second 10CFR 50.59 review shall be performed on all modifications that affect nuclear safety. This review shall be performed by a qualified individual other than the individual who was the original preparer.
3. The individual approving these modifications shall be other than those who performed the required reviews.
4. The Plant General Manager - Robinson Nuclear Plant or other designated manager approving the review activities of the 10CFR 50.59 review shall assure that the reviewers collectively possess the background and qualifications in all of the disciplines necessary and important to the specific review. To assure that the individuals selected for the 10CFR 50.59 review are qualified and have the background necessary, the Plant General Manager - Robinson Nuclear Plant shall approve and maintain a list of qualified persons. Included in this list will be individuals in addition to the first and second reviewers whose expertise may be necessary during the review to assure that the reviewers collectively possess the

## **Attachment C, Robinson Specific QAPD**

background and qualifications in the disciplines necessary and important to the specific review. The list will include the disciplines for which each person is qualified.

5. Modifications that are determined to either require a license amendment in accordance with 10CFR 50.59(c)(2), or a change to the RNP Technical Specifications, shall be reviewed by the Plant Nuclear Safety Committee and submitted to the NRC for approval prior to implementation. All such modifications shall be reviewed by the RNP Nuclear Oversight Section prior to implementation.
6. Modifications which constitute changes to the facility as described in the RNP UFSAR shall also be reviewed by the RNP Nuclear Oversight Section. This review may be conducted after plant management approval, and implementation may proceed prior to completion of review.

### **C17.3.4.3 RNP Technical Specifications and License Changes**

Content from Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 1.3 follows:

Each proposed RNP Technical Specification or Operating License change for the 10CFR 50 license and 7P-ISFSI license shall be reviewed by the Plant Nuclear Safety Committee and submitted to the NRC for approval. The 24P ISFSI RNP Technical Specifications and License are processed by Transnuclear, Inc., and will only be reviewed by the Plant Nuclear Safety Committee if a plant specific safety issue is identified.

### **C17.3.4.4 Review of RNP Technical Specifications Violations**

Content from Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 1.4 follows:

All violations of RNP Technical Specifications shall be investigated and a report prepared that evaluates the event and that provides recommendations to prevent recurrence. Such reports shall be reviewed by the Plant Nuclear Safety Committee and approved by the Plant General Manager or his designee and submitted to the Vice President - Robinson Nuclear Plant and to the Manager – RNP Nuclear Oversight Section.

### **C17.3.4.5 10CFR 50.59 Review Qualification**

Content from Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 1.5 follows:

Individuals shall be designated by the Plant General Manager - Robinson Nuclear Plant for the 10CFR 50.59 reviews of paragraphs C17.3.4.1.3, C17.3.4.1.4, C17.3.4.2.1, and paragraph C17.3.4.2.2.

These reviewers shall have a Bachelor of Science in engineering or related field or equivalent and two years related experience.

### **C17.3.4.6 Plant Nuclear Safety Committee (PNSC)**

Content from Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 1.6 follows:

## **Attachment C, Robinson Specific QAPD**

As an effective means for the regular overview, evaluation, and maintenance of plant operational safety, a Plant Nuclear Safety Committee (PNSC) is established.

The committee shall function, through the utilization of subcommittees, audits, investigations, reports, and/or performance of reviews as a group, to advise the General Manager on all matters related to nuclear safety.

The PNSC shall be composed of a Chairman and at least six (6) members. The members shall be from the following functional areas:

- Operations
- Maintenance
- Engineering
- Radiation Control
- Chemistry
- Licensing/Regulatory Programs

The PNSC Chairman, alternate Chairmen, members, and alternate members shall be designated in writing by the Plant General Manager. Members shall be individuals who are unit manager level or above from the site management organization. Alternate members shall, as a minimum, meet equivalent qualification criteria as specified in Section 4.4 of ANSI N18.1-1971 for professional-technical personnel. Alternate members for the Engineering and Licensing/Regulatory Programs functional areas shall have a minimum Bachelor's Degree in Engineering or Physical Sciences and two years experience in their associated discipline. Alternate members for the Operations functional area shall, as a minimum, meet the qualification criteria of Section 4.3.1 of ANSI N18.1-1971.

Alternate for the Maintenance or other functional areas, except for Instrumentation and Control, shall have a minimum of five years of experience in one or more disciplines, of which six months shall be in a nuclear power plant. A maximum of four years of this five years experience may be fulfilled by related technical or academic training.

The quorum of the PNSC necessary for the performance of the activities in this section shall consist of the Chairman (or his designated alternate) and four members (including alternates).

No more than two alternates shall be counted toward meeting the quorum requirement or participate as voting members of the PNSC at any one time.

The PNSC shall meet at least once per calendar month and as convened by the PNSC Chairman or his designated alternate.

The PNSC activities shall include the following:

- a) Perform an overview of RNP Technical Specifications 5.4.1 and section 1.2 of the RNP UFSAR to assure that processes are effectively maintained.
- b) Performance of special reviews, investigations, and reports thereon requested by the Manager – RNP Nuclear Oversight Section.
- c) Annual review of the Security Plan and Emergency Plan.
- d) Perform reviews of paragraphs C17.3.4.1.6, C17.3.4.2.5, C17.3.4.3, and paragraph C17.3.4.4.

## **Attachment C, Robinson Specific QAPD**

- e) Perform review of all reportable events.
- f) Review of facility operations to detect potential nuclear safety hazards.
- g) Review of every unplanned on site release of radioactive material to the environs including the preparation and forwarding of reports covering evaluation, recommendations and disposition of the corrective action to prevent recurrences to the Vice President - Robinson Nuclear Plant.
- h) Review of changes to the Process Control Program and the Offsite Dose Calculation Manual.
- i) Review of major changes to radioactive liquid, gaseous, and solid waste treatment systems.
- j) Review of changes to the CORE OPERATING LIMITS REPORT.
- k) Annual review of the Fire Protection Program, including Program changes.

In the event of disagreement between the recommendations of the Plant Nuclear Safety Committee and the actions contemplated by the General Manager, the course determined by the General Manager to be more conservative will be followed. The Vice President - Robinson Nuclear Plant will be notified within 24 hours of the disagreement and subsequent actions.

The PNSC shall maintain written minutes of each meeting that, at a minimum, document the results of all PNSC activities performed under the provisions of Section 1.6 requirements; and copies shall be provided to the Vice President - Robinson Nuclear Plant and to the Manager – RNP Nuclear Oversight Section.

### **C17.3.4.7 Nuclear Oversight Section Independent Review Program**

Content from Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 1.7, Nuclear Oversight Section Independent Review Program, has been moved to Section C17.3.3.2.

### **C17.3.4.8. (Deleted)**

There was no content in Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 1.8.

### **C17.3.4.9. Outside Agency Inspection And Audit Program**

Content from Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 1.9 is reflected in Section C17.3.3.3.2, Independent Audit of Fire Protection Program.

### **C17.3.4.10. Reportable Event Action**

Content from Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 2.0 follows:

Each reportable event requiring notification per 10CFR 50.72, shall be reviewed in accordance with paragraph 1.6.6 and submitted to the Manager – RNP Nuclear Oversight Section, and the Vice President - Robinson Nuclear Plant.

Each reportable event requiring a Licensee Event Report per 10CFR 50.73, shall be reviewed in accordance with paragraph 1.6.6 and submitted to the Manager – RNP Nuclear Oversight Section, and the Vice President - Robinson Nuclear Plant.



## **Attachment C, Robinson Specific QAPD**

### **C17.3.4.11. Safety Limit Violation**

Content from Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 3.0 follows:

The Following Actions shall be taken in the event a safety limit is violated:

- a. The safety limit violation shall be reported to the NRC Region II within one hour and the Vice President - Robinson Nuclear Plant within 24 hours.
- b. The Safety Limit Violation Report shall be submitted to the NRC, Vice President - Robinson Nuclear Plant, and the Manager – RNP Nuclear Oversight Section within 14 days of the violation.

### **C17.3.4.12. Record Retention**

A list of typical operational phase QA Records is included in 17.3.2.15.

**End of Robinson Specific QAPD**

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

### **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

The term 'Duke Energy Carolinas' as used in this document means Catawba, McGuire, and Oconee Nuclear Plants. If content is specific to a single nuclear plant, that nuclear plant will be identified by name. See Table D17-2 addressing Regulatory Guide 1.8 for example.

Information presented in this section is transferred from the Duke Energy Carolinas Topical Report Quality Assurance Program with approved changes as allowed under 10 CFR 50.54(a)(3). Change bars in this section indicate changes since Amendment 40.

Where a section contains no descriptive information beyond that in the generic text in the body of the document, a statement is made to that effect and no content is included. See D17.3.1.2, Organization for example.

## **D17. QUALITY ASSURANCE**

### **D17.1 QA DURING DESIGN AND CONSTRUCTION**

Deleted

### **D17.2 OPERATIONAL QA**

Deleted

(NOTE: In August 1992, Amendment 15 of the Duke Energy Carolinas Topical Report reformatted the description of the QA Program to follow Standard Revision Plan Section 17.3, replacing the content of 17.1 and 17.2.)

### **D17.3 QUALITY ASSURANCE PROGRAM (QAP) DESCRIPTION**

#### **INTRODUCTION**

As discussed herein, the Quality Assurance Program (QAP) includes the description contained in this document and the procedures providing implementation of the requirements of this document, including the requirements of industry standards to the degree identified in Table 17-1. This Topical Report describes the QAP for those systems, components, items, and services which have been determined to be nuclear safety related. The QAP provides a method of applying graded controls to certain non-nuclear safety related systems, components, items, and services (such as fire protection and radioactive waste structures, systems, and components) through implementing documents.

Duke Energy Carolinas may use QA Conditions as a method for identifying applicability of the QAP, where implementing documents define a Quality Assurance (QA) "Condition" for each level of QA required. These will be designated as "QA Condition \_\_\_\_". The quality of systems, components, items, and services within the scope of QA Conditions is assured through implementing documents commensurate with the system's, component's, item's, or service's importance to safety.

In this approach, QA Condition 1 identifies those systems and their attendant components, items, and services which have been determined to be nuclear safety related. These systems are detailed in the Safety Analysis Report applicable to each nuclear station. The Topical

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

Report applies in its entirety to systems, components, items, and services identified as QA Condition 1.

QA Condition 5 covers those systems, components, items, and services which are important to the mitigation of design basis and other selected events as defined in applicable procedures and directives. QA Condition 5 only applies to Oconee Nuclear Station.

QA Conditions 2, 3, 4, and others are defined in implementing procedures. These address SSCs and related functions important to the management and containment of liquid, gaseous, and solid radioactive waste, important to fire protection, seismic interaction, etc.

Quality assurance program requirements for Oconee, McGuire, and Catawba dry cask storage activities are performed in accordance with applicable 10CFR72.212 reports for each site which invokes the NRC approved 10CFR50 Appendix B QAP as described in this Topical Report.

This Topical Report also provides the basis for the control and performance of safety related and quality related activities associated with new Duke Energy Carolinas nuclear plants until the NRC approves a QA Program Description specific to the new units and the associated implementing procedures are in place.

### **DEFINITIONS**

There are no Duke Energy Carolinas specific definitions.

### **EXPLANATION OF "QUALITY ASSURANCE"**

There is no Duke Energy Carolinas specific content.

### **QA STANDARDS AND GUIDES**

Table D17-1 and D17-2 address Catawba, McGuire, and Oconee conformance to the referenced regulatory and program guidance contained in NUREG-0800 Section 17.3.

Changes to the content of Table D17-1 are controlled in accordance with 10 CFR 50.54(a). Subsequent changes are incorporated in this document as identified in Section 17.3.1.7.

Table D17-2 addresses additional Regulatory Guides that relate to implementation of the QAP but the implementation is site specific and controlled with each site's UFSAR.

## Attachment D, Catawba, McGuire, and Oconee Specific QAPD

**Table D17-1. Conformance with QA Regulatory Guides and Industry Standards**

Generic Exception:

Table D17-1 addresses Duke Energy Carolinas Conformance of the Quality Assurance Program to certain NRC Regulatory Guides. In so doing, specific editions of industry standards are identified for compliance with exceptions and alternatives. Those identified standards include references to other industry standards for activities including, but not limited to; design, fabrication, inspection, and testing. Those included reference industry standards are considered to be guidance documents for details of how activities may be accomplished. The actual standard to be used in such cases is controlled by each station's current licensing and design bases.

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Regulatory Guide 1.28, Rev (2), Feb. 1979 – Quality Assurance Program Requirements (Design And Construction)

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The Duke Energy Carolinas QAP conforms to Regulatory Guide 1.28 Rev (2) and ANSI N45.2-1977 with the clarifications and exceptions noted below.

Exception to ANSI N45.2 Section 5. Duke Energy Corporation procurement documents shall require suppliers to provide a quality assurance program consistent with the pertinent requirements of 10 CFR Part 50 Appendix B instead of ANSI N45.2-1977.

Alternate requirements for purchase of Commercial Grade Items are described in this table addressing compliance for Regulatory Guide 1.123.

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Regulatory Guide 1.30, Rev 0, Quality Assurance Requirements For The Installation, Inspection and Testing Of Instrumentation And Electric Equipment

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The Duke Energy Carolinas QAP conforms to Regulatory Guide 1.30 Rev 0 and ANSI N45.2.4-1972 with the following Clarifications and Exceptions:

Conforms with no exceptions.

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Regulatory Guide 1.33, Rev 2, Quality Assurance Program Requirements (Operation)

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The Duke Energy Carolinas QAP conforms to Regulatory Guide 1.33 Rev 2 and ANSI N18.7-1976/ANS-3.2 with the following Clarifications and Exceptions:

Regulatory position C.4 modifies the audit frequencies in Section 4.5 of ANSI N18.7. Duke Energy Carolinas takes exception to this regulatory position. The audits of selected aspects of operational phase activities as identified in Section 17.3.3, Self Assessment, are performance based and scheduled based on plant performance and importance to safety but at a frequency not to exceed twenty-four months with extensions as allowed in Section 17.3.3.3.6, Audit Frequency Extensions. Schedules shall be based on the month in which the audit starts.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

Table D17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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### **Regulatory Guide 1.33, Rev 2, Quality Assurance Program Requirements (Operation)**

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Exception to ANSI N18.7-1976, Section 5.2.15, Review, Approval and Control of Procedures, which states in part that, "Plant procedures shall be reviewed by an individual knowledgeable in the area affected by the procedure no less frequently than every two years to determine if changes are necessary. A revision to a procedure constitutes a procedure review." In lieu of this paragraph, Duke Energy Carolinas has programmatic controls in place to continually identify procedure revisions which may be needed to ensure that procedures are appropriate for the circumstance and are maintained current.

When purchasing commercial-grade calibration services from certain accredited calibration laboratories, the procurement documents are not required to impose a QAP consistent with ANSI N45.2-1977. Alternate requirements described in the QA Topical Report for Regulatory Guide 1.123 may be implemented in lieu of imposing a QAP consistent with ANSI N45.2-1977.

A person with nondestructive testing experience is not required on the off-site independent review committee as required by section 4.3.1 of ANSI N18.7-1976. The technical experience requirements for off-site independent review committee members were transferred from each site's technical specifications and did not include a person with nondestructive testing experience. The transfer of off-site independent review committee requirements from each site's Technical Specification to the QA Topical Report was approved by an SER dated October 22, 1998 for amendment 23.

The independent review of Technical Specification changes and license amendments shall be performed by the on-site review committee. Review and approval of Technical Specification changes and license amendment changes by the off-site independent review committee is not required.

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### **Regulatory Guide 1.37, Rev 0, Quality Assurance Requirements For Cleaning Of Fluid Systems And Associated Components Of Water-Cooled Nuclear Power Plants**

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The Duke Energy Carolinas QAP conforms to Regulatory Guide 1.37 Rev 0 and ANSI N45.2.1-1973 with the following clarifications and exceptions:

Conforms with no exceptions.

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### **Regulatory Guide 1.38, Rev 2, May 1977 – Quality Assurance Requirements For Packaging, Shipping, Receiving, Storage And Handling Of Items For Water-Cooled Nuclear Power Plants**

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The Duke Energy Carolinas QAP conforms to Regulatory Guide 1.38 Rev 2 and ANSI N45.2.2-1972 with the following Clarifications and Exceptions:

Container markings shall be marked on at least one side (A.3.9(1)) and shall be applied with waterproof ink or paint in characters of a legible size, and caps and plugs for pipe and fittings are required unless specified by Engineering, and off-site inspection, examination, and testing is monitored by personnel qualified to ANSI N45.2.12 in lieu of ANSI N45.2.6.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

Table D17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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### Regulatory Guide 1.39, Rev (2), Sept. 1977 – Housekeeping Requirements For Water-Cooled Nuclear Power Plants

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.39 Rev 2 and ANSI N45.2.3-1973 with the following clarifications and exceptions.

Personnel accountability for personnel entering housekeeping zones I, II, and III without materials shall be maintained by housekeeping logs or alternate methods such as radiation work permits, confined space permits, work requests or other accepted methods capable of assuring personnel accountability.

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### Regulatory Guide 1.58, Rev (1), Sept. 1980 – Qualification Of Nuclear Power Plant Inspection, Examination And Testing Personnel

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The Duke Energy Carolinas QAP conforms Regulatory Guide 1.58 Rev 1 and ANSI N45.2.6-1978 with the following Clarifications and Exceptions:

Duke Energy Carolinas' DEC's nondestructive examination (NDE) personnel will meet the qualification requirements of SNT TC-1A and ANSI/SNT-CP-189 as governed by the applicable ASME Section XI requirement or other code requirement.

Operational/functional testing personnel will meet the requirements of ANSI N18.1-1971 rather than ANSI N45.2.6. Also, Level I inspectors receive a minimum of 4 months experience as Level I before being certified as Level II, in lieu of one year experience recommended by ANSI N45.2.6. Inspectors are only assigned tasks for which they have been qualified.

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### Regulatory Guide 1.64, Rev (2), June 1976 – Quality Assurance Requirements For The Design Of Nuclear Power Plants

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The Duke Energy Carolinas QAP conforms to Regulatory Guide 1.64, Rev. 2 and ANSI Standard N45.2.11-1974 with the following Clarifications and Exceptions:

The use of the originator's immediate supervisor for design verification shall be restricted to special situations where the immediate supervisor is the only individual capable of performing the verification. Advance justification for such use shall be documented and signed by the supervisor's management. And the frequency and effectiveness of the supervisor's use as design verifier are independently verified to guard against abuse. The supervisor will not be the design verifier on work for which he is the actual performer / originator.

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### Regulatory Guide 1.74, Rev (0), Feb. 1974 – Quality Assurance Terms And Definitions

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.74, Rev 0 and ANSI N45.2.10-1973 with the following Clarifications and Exceptions:

The quality assurance terms and definitions contained in ANSI N45.2.10-1973 are generally used in describing and implementing the quality assurance program described in this QAPD except where terms are explicitly defined in this document.

**Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

Table D17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.88, Rev (2), Oct. 1976 - Collection, Storage, And Maintenance Of Nuclear Power Plant Quality Assurance Records

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The Duke Energy Carolinas QAP conforms to Regulatory Guide 1.88, Rev. 2 and ANSI N45.2.9-1974 with the following Clarifications and Exceptions:

The records storage facilities have a minimum 3-hour rating. A qualified Fire Protection Engineer will evaluate record storage areas (including satellite files) to assure records are adequately protected from damage. The fire protection engineer shall be a graduate of an engineering curriculum of accepted standing and shall have completed not less than 6 years of engineering attainment indicative of growth in engineering competency and achievement, 3 years of which shall have been in responsible charge of fire protection engineering work.

The Duke Energy Carolinas program for storage of records on microfilm, dual storage or in electronic format meets the preservation requirement for the retention of QA Records.

See standard exception in Table 17-1 Regulatory Guide 1.88 for the appropriate controls on quality in the management of electronic records.

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Regulatory Guide 1.94, Rev (1), Apr. 1976 – Quality Assurance Requirements For Installation, Inspection, And Testing of Structural Concrete And Structural Steel During The Construction Phase of Nuclear Power Plants

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The Duke Energy Carolinas QAP conforms to Regulatory Guide 1.94. Rev. 1 and ANSI N45.2.5-1974 with the following Clarifications and Exceptions:

the length of bolts shall be flush with the outside face of the nut.

Paragraph 5.5 requires inspection of structural steel welding to be performed in accordance with the provisions of Section 6 of the AWS D1.1. Visual Weld Acceptance Criteria (VWAC) for Structural Welding at Nuclear Power Plants, NCIG-01, Revision 2, prepared by the Nuclear Construction Issues Group (NCIG) and accepted by the NRC in their letter to the NCIG dated June 26, 1985 may be used as an alternative to AWS D1.1 for non ASME Code structural weld inspections. (July 31, 2000 J M Farley SER)

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Regulatory Guide 1.116, Rev (0-R), June 1976, (Reissued May 1977) – Quality Assurance Requirements For Installation, Inspection, And Testing Of Mechanical Equipment And Systems

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.116 Rev (0-R) and ANSI N45.2.8-1975 with the following Clarifications and Exceptions:

Conforms

**Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

Table D17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.123, Rev (1), July 1977 – Quality Assurance Requirements For Control Of Procurement Of Items And Services For Nuclear Power Plants

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The Duke Energy Corporation QAP conforms to Regulatory Guide 1.123 and ANSI N45.2.13-1976 with the following clarifications and exceptions:

Section 3.2, "Content of the Procurement Documents," Subsection 3.2.3, "QAP Requirement," Duke Energy Carolinas takes the following exception:

See standard exceptions in Table 17-1 for Regulatory Guide 1.123 for the procurement of Commercial Grade Items and services including, purchasing commercial-grade calibration services from calibration laboratories.

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Regulatory Guide 1.144, Rev (1), Sept. 1980 - Auditing Of Quality Assurance Programs For Nuclear Power Plants

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The Duke Energy Carolinas QAP conforms to Regulatory Guide 1.144, Rev 1 and ANSI N45.2.12-1977 with the following clarifications or exceptions:

Section 4.4.6. In lieu of making recommendations for correcting program deficiencies we will identify the deficiencies to the audited organization. For external audits, the results of the audit will be provided to the audited organization in lieu of the audit report. Also, the re-evaluation may be extended to 15 months and the triennial period as specified in the Reg. Guide may be extended by 3 months as described in Section 17.3.2.4, "Procurement Control." Additionally, the Duke Energy Carolinas QAP meets regulatory position C.3.b of this regulatory guide, as clarified by NRC Information Notice 86-21, Supplement 2. Internal Technical Audits shall require a response describing corrective action and implementation schedule as requested by the audit report but not to exceed sixty days of receipt of the audit report.

See standard exceptions in Table 17-1 for Regulatory Guide 1.123 for the procurement of Commercial Grade Items and services including, purchasing commercial-grade calibration services from calibration laboratories.

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Regulatory Guide 1.146, Rev (0), Aug. 1980 – Qualification Of Quality Assurance Program Audit Personnel For Nuclear Power Plants

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The Duke Energy Carolinas QAP conforms to Regulatory Guide 1.146 Rev 0 and ANSI N45.2.23-1978 with the following clarifications and Exceptions:

In lieu of prospective lead auditors participating in a minimum of five QA audits within a period of three years prior to date of certification, prospective lead auditors shall demonstrate their ability to effectively lead an audit team and shall have participated in at least one nuclear QA audit within one year preceding the individual's effective date of qualification. Upon successful demonstration of the ability to lead audits, and having met the other provisions of ANSI N45.2.23-1978, the individual may be certified as being qualified to lead audits. This process is described in approved procedures which require documentation of the evaluation and demonstration of results.



**Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

Table D17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.152 Criteria For Programmable Digital Computer System Software In Safety-Related Systems Of Nuclear Power Plants

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Conformance to Regulatory Guide 1.152 was not addressed during the licensing of the operating Duke Energy Carolinas Nuclear plants.

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Regulatory Guide 7.10, Establishing Quality Assurance Programs For Packaging Used In The Transport Of Radioactive Material

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Duke Energy Carolinas does not conform to Regulatory Guide 7.10. This QAPD is used to satisfy applicable Quality Assurance requirements for packaging and transportation of radioactive material.

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Generic Letter 89-02, Actions to Improve the Detection of Counterfeit and Fraudulently Marketed Products

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Generic Letter 89-02 endorses EPRI NP-5652, *"Guideline for the Utilization of Commercial-Grade Items in Nuclear Safety-Related Applications (NCIG-07)"*, which is used by Duke Energy Carolinas. See Regulatory Guide 1.123 for additional information.

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## Attachment D, Catawba, McGuire, and Oconee Specific QAPD

**Table D17-2. Site Specific Response to Regulatory Guides and Industry Standards**

Table D17-2 identifies additional Regulatory Guides addressing subjects related to implementation of the QAP but the implementation is site specific and controlled with each site's UFSAR in accordance with 10 CFR 50.59.

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### Regulatory Guide 1.8, Personnel Selection And Training

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Personnel selection and training is site specific.

Catawba addresses conformance with Regulatory Guide 1.8 in UFSAR Chapter 1 Section 7.

McGuire addresses conformance with Regulatory Guide 1.8 in UFSAR Chapter 1 Table 1-4.

Oconee does not address conformance with Regulatory Guide 1.8. Personnel selection and training is addressed in UFSAR Chapter 13.

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### Regulatory Guide 1.26, Quality Group Classifications And Standards For Water-, Steam-, And Radioactive-Waste-Containing Components Of Nuclear Power Plants

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Quality group classifications and standards trace to the original design and construction of the nuclear power plant and therefore are site specific.

Catawba addresses conformance with Regulatory Guide 1.26 in UFSAR Chapter 1 Section 7.

McGuire addresses conformance with Regulatory Guide 1.26 in UFSAR Chapter 1 Table 1-4.

Oconee does not address conformance with Regulatory Guide 1.26. Quality group classifications and standards are addressed in UFSAR Section 3.2.2.

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### Regulatory Guide 1.29, Seismic Design Classification

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Seismic design classification trace to the original design and construction of the nuclear power plant and therefore is site specific.

Catawba addresses conformance with Regulatory Guide 1.29 in UFSAR Chapter 1 Section 7.

McGuire addresses conformance with Regulatory Guide 1.29 in UFSAR Chapter 1 Table 1-4.

Oconee does not address conformance with Regulatory Guide 1.29. Seismic design classifications are addressed in UFSAR Section 3.2.1.

**Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

Table D17-2. Site Specific Response to Regulatory Guides and Industry Standards (Continued)

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Regulatory Guide 1.36, Nonmetallic Thermal Insulation For Austenitic Stainless Steel

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Nonmetallic thermal insulation for austenitic stainless steel trace to the original design and construction of the nuclear power plant and therefore is site specific.

Catawba addresses conformance with Regulatory Guide 1.36 in UFSAR Chapter 1 Section 7.

McGuire addresses conformance with Regulatory Guide 1.36 in UFSAR Chapter 1 Table 1-4.

Oconee does not address conformance with Regulatory Guide 1.36. Thermal insulation for austenitic stainless steel is addressed in UFSAR Section 5.4.

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Regulatory Guide 1.54, Quality Assurance Requirements For Protective Coatings Applied To Water-Cooled Nuclear Power Plants

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Quality assurance requirements for protective coatings applied to water-cooled nuclear power plants trace to the original design and construction of the nuclear power plant and therefore is site specific.

Catawba addresses conformance with Regulatory Guide 1.54 in UFSAR Chapter 1 Section 7.

McGuire addresses conformance with Regulatory Guide 1.54 in UFSAR Chapter 1 Table 1-4.

Oconee does not address conformance with Regulatory Guide 1.54. Protective coatings are addressed in UFSAR Section 6.2.1.6.

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Regulatory Guide 1.143, Design Guidance For Radioactive Waste Management Systems, Structures, And Components Installed In Light-Water-Cooled Nuclear Power Plants

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Design guidance for radioactive waste management systems, structures, and components installed in light-water-cooled nuclear power plants trace to the original design and construction of the nuclear power plant and therefore is site specific.

Catawba addresses conformance with Regulatory Guide 1.143 in UFSAR Chapter 1 Section 7.

McGuire addresses conformance with Regulatory Guide 1.143 in UFSAR Chapter 1 Table 1-4.

Oconee does not address conformance with Regulatory Guide 1.143. Design guidance for radioactive waste management systems, structures, and components is addressed in UFSAR Chapter 11.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

Table D17-2. Site Specific Response to Regulatory Guides and Industry Standards (Continued)

Regulatory Guide 1.155, Station Blackout
Addressing Station Blackout is site specific.
Catawba addresses conformance with Regulatory Guide 1.155 in UFSAR Chapter 1 Section 7.
McGuire addresses conformance with Regulatory Guide 1.155 in UFSAR Chapter 1 Table 1-4.
Oconee address conformance with Regulatory Guide 1.155 in UFSAR Chapter 8.
Regulatory Guide 4.15, Quality Assurance For Radiological Monitoring Programs (Normal Operations) – Effluent Streams And The Environment
Quality assurance for radiological monitoring program (normal operations) – effluent streams and the environment is site specific.
Catawba addresses conformance with Regulatory Guide 4.15 in UFSAR Chapter 1 Section 7.
McGuire does not address conformance to Regulatory Guide 4.15 in UFSAR Chapter 1 Table 1-4. The radiological monitoring program is addressed in UFSAR Chapter 11.
Oconee does not address conformance with Regulatory Guide 4.15. The radiological monitoring program is addressed in UFSAR Chapter 11.
Regulatory Positions 2 & 4 of Branch Technical Position CMEB 9.5-1
Quality assurance for Fire protection is site specific.
Catawba addresses fire protection in UFSAR section 9.5.1.
McGuire addresses fire protection in UFSAR section 9.5.1.
Oconee addresses fire protection in UFSAR section 9.5.1.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

### **D17.3.1 MANAGEMENT**

#### **D17.3.1.1 Methodology**

There are no Duke Energy Carolinas specific amplifications for this section.

#### **D17.3.1.2 Organization**

There are no Duke Energy Carolinas specific amplifications for this section.

#### **D17.3.1.3 Responsibility**

There are no Duke Energy Carolinas specific amplifications for this section.

#### **D17.3.1.4 Authority**

There are no Duke Energy Carolinas specific amplifications for this section.

#### **D17.3.1.5 Personnel Training and Qualification**

The following provide Duke Energy Carolinas specific amplifications for this section.

A training program is established for each nuclear station and support organization to develop and maintain an organization qualified to be responsible for operation, engineering, testing, inspection, maintenance, engineering changes and other technical aspects of the nuclear station involved. The program is formulated to provide the required training based on individual employee experience and intended position. The program is in compliance with NRC licensing requirements, where applicable. The training program is such that trained and qualified operating, maintenance, work control, engineering, inspection, testing, technical support and supervisory personnel are available in necessary numbers at the times required. In all cases, the objectives of the training program shall be to assure safe and reliable operation of the station.

A continuing effort is used after a station goes into commercial operation for training of replacement personnel and for periodic retraining, reexamining, and/or recertifying as required to assure that personnel remain proficient. Personnel receive orientation training in basic QA policies and practices.

Personnel receive additional training, as appropriate, which addresses specific topics such as NRC regulations and guides, QA procedures, auditing and applicable codes and standards. Special training of personnel in QA related matters, particularly new or revised requirements, is conducted as necessary. Training and qualification records are maintained for each employee. Documentation of training includes the objectives, content of the program, attendees, and date of attendance.

#### **D17.3.1.6 Corrective Action**

There are no Duke Energy Carolinas specific amplifications for this section.

#### **D17.3.1.7 Regulatory Commitments**

There are no Duke Energy Carolinas specific amplifications for this section.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

### **D17.3.2 Performance/Verification**

#### **D17.3.2.1 Methodology**

The following provide Duke Energy Carolinas specific amplifications for this section.

The program receives on-going review and is revised as necessary to assure its continued effectiveness.

#### **D17.3.2.2 Design Control**

Each design document is checked by another individual qualified in the same discipline and is reviewed for concept and conformity with applicable codes, standards, and other design inputs (as specified within the design documentation package). The document is approved by the individual having overall responsibility for the design function. A review of each specification is made to assure incorporation of necessary QA information. The entire review process is documented.

Computer programs are controlled in accordance with appropriate department procedures, whereby programs are certified to demonstrate their applicability and validity.

#### **D17.3.2.3 Design Verification**

Analytical models, theories, examples, tables, codes, computer programs, etc., used as bases for design must be referenced in the design document and their application verified in the design verification. Model tests, when required, to prove the adequacy of concept or design are reviewed and approved by the responsible engineer. The tests used for design verification must meet all the requirements of the designing activity. Computer programs are controlled in accordance with the applicable software QA document whereby programs are certified to demonstrate their applicability and validity.

Following completion of design and evaluation of an engineering change, the responsible individual/organization summarizes the engineering change design and identifies the design documents and information required for engineering change implementation. This information is provided for design verification. This addresses such items as:

- a) A description of the engineering change.
- b) References utilized in the evaluation and design of the engineering change, and necessary for the implementation of the engineering change.
- c) Special installation instructions.
- d) Operational, test, maintenance and inspection requirements.
- e) Materials, parts and components required in order to implement the engineering change.
- f) Drawings revised and/or requiring revision.
- g) UFSAR revision(s) and/or Technical Specifications amendment(s) necessary.
- h) Whether or not the engineering change requires a license amendment.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

### **D17.3.2.4 Procurement Control**

Procedures identify the responsibility within Nuclear Generation for the technical qualification of suppliers and control of the initial procurement of nuclear safety related items and services. Procurement requirements/specifications are prepared, checked, and approved by appropriate personnel and forwarded to Nuclear Supply Chain for procurement actions from qualified suppliers.

Technical qualifications are determined by engineering personnel. Commercial qualification is determined by Supply Chain following evaluation of bids from qualified suppliers. Bid evaluation includes evaluation of the technical, quality and commercial qualifications of the prospective suppliers.

NOS performs qualification of supplier QA programs. NOS may place a supplier on the Qualified Suppliers List following review, approval and acceptance of an audit performed by another licensed nuclear utility or joint utility audit team. Review of such third party audits shall ensure that items to be procured are within the audit scope and any unique plant quality and technical requirements are adequately addressed by such audits. When basic components and services are procured from a supplier whose quality performance has not been verified by audit, additional assurance of product quality shall be obtained by supplier surveillance, inspection or test.

Materials, parts and components shall be procured to specified technical and quality requirements at least equivalent to those applicable to the original equipment or those specified by a properly reviewed and approved revision. As required by the applicable purchase documents, suppliers furnish documentation which identifies the material and equipment purchased and the specific procurement requirements met by the items. Also, as required by the applicable purchase documents, suppliers will provide documentation which identifies any procurement requirements which have not been complied with, together with a description of any deviations and repair records.

Procurement of materials, parts, components and services associated with nuclear safety related structures, systems, and components is controlled during the operational life of the station so as to assure the suitability for their intended service and that the safety and reliability of the station are not compromised.

Procurement information for nuclear safety related materials, parts and components is reviewed to assure that QA, technical and regulatory requirements including supplier documentation requirements are adequately incorporated into the purchase document(s). Significant changes to the content of such purchasing information are reviewed and approved in a manner consistent with the original.

Critical characteristics for the dedication of Commercial Grade Items are determined by Procurement Engineering or Supply Chain technical sponsors and approved by the responsible engineering personnel based on the manufacturer's published specifications and the intended safety function for the items. Critical characteristics used for acceptance and dedication of commercial grade items are selected to provide reasonable assurance that the items will meet their catalog or manufacturer specifications and will perform the necessary safety functions in the intended applications. Verification of critical characteristic acceptability will be by manufacturer/supplier survey, source verification, receipt tests or inspections, or post installation testing. Historical data, when documented, will represent industry wide experience.

If verification of a critical characteristic is to be by supplier survey, NOS is responsible for verifying the acceptability of the supplier control of the identified critical characteristic.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

### **D17.3.2.5 Procurement Verification**

NOS Vendor Quality performs a documented on-going evaluation of each qualified supplier in order to maintain the supplier on the qualified suppliers list. The evaluation is performed to a depth consistent with the item's or service's importance to safety, complexity, and the quantity and frequency of procurement. As applicable, this evaluation takes into account (1) review of supplier-furnished documents such as certificates of conformance, nonconformance notices, and corrective actions, (2) results of previous source verifications, audits, and receiving inspections, (3) operating experience of identical or similar products furnished by the same supplier, and (4) results of audits from other sources (e.g., customer, ASME, or NRC audits). The results of the evaluations are reviewed and appropriate corrective action initiated. Adverse findings resulting from these evaluations are periodically reviewed in order to determine if, as a whole, they result in a significant condition adverse to quality and to provide input to support supplier audit activities conducted by the licensee or a third party auditing entity.

Suppliers of nuclear safety related items or services are re-evaluated by means of an audit at least triennially, if initial qualification was by audit or pre-award survey. The triennial audit schedule may be extended as identified in Section 17.3.3.3.7, Audit Frequency Extensions.

NOS is responsible for oversight when procurement documents require characteristics or processes to be witnessed, inspected or verified at the supplier shop. NOS surveillance activities assure that the supplier complies with all quality requirements outlined in the procurement document(s). The surveillance representative has the authority and responsibility to stop work when the required quality standards are not met.

### **D17.3.2.6 Identification and Control of Items**

Specific identification requirements are as follows:

- a) Materials, parts, components, assemblies, and subassemblies shall be identified either on the item or records traceable to the item to show that only correct items are received, issued and installed.
- b) Some components, such as pressure vessels are identifiable by nameplates as required by applicable codes, or Duke Energy Carolinas specifications. Materials, parts, and components are traceable from such identification to a specific purchase order to manufacturer's records and to QA records and documentation.
- c) When required by procurement documents, materials are identified by heat, batch or lot numbers which are traceable to the original material at receipt. Upon receipt, a unique tracking number is assigned to provide traceability. When several parts are assembled, a list of parts and corresponding numbers is included in the documentation.
- d) When required by specifications or codes and standards, identification of material or equipment with the corresponding mill test reports, certifications and other required documentation is maintained throughout the life of the material or equipment by a unique tracking number.
- e) Sufficient precautions will be taken to preclude identifying materials in a manner that will affect the function or quality of the item being identified.



## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

Control of material, parts and components is governed by approved procedures. Specific control requirements include:

- a) Nonconforming or rejected materials, parts, or components are identified to assure that they will not be inadvertently used.
- b) The verification of correct identification of material, parts, and components is required prior to release for assembling, shipping and installation.
- c) Upon receipt, procedures require that materials, parts or components undergo a receipt inspection to assure they are properly identified and that the supporting documentation is available as required by the procurement requirements/specifications. Items having limited shelf or service life are identified and controlled.
- d) Each organization which performs an operation that results in a change in the material, part or component is required to make corresponding revisions and/or additions to the documentation record as applicable.

When a designated item is subdivided, each subdivision is identified in accordance with the above requirements. Where physical identification of an item is impractical or insufficient, physical separation, administrative controls or other appropriate means are utilized.

### **D17.3.2.7 Handling, Storage, and Shipping**

Conforming nuclear safety related materials, parts and components are stored in controlled, segregated areas designated for the storage of such items. Inspections and examinations are performed on a periodic basis to assure that recommended shelf life of chemicals, reagents, and other consumable materials is not exceeded. Hazardous items are stored in suitable environments with controls to prevent contamination of nuclear safety related structures, systems, or components.

### **D17.3.2.8 Test Control**

Test controls include requirements on the review and approval of test procedures, and on the review and approval of changes to such procedures, as discussed in Section 17.3.2.14, "Document Control." Also, specific criteria are established with regard to procedure content. Examples of items which must be considered in the preparation and review of procedures include:

- a) References to material necessary in the preparation and performance of the procedure, including applicable design documents.
- b) Tests which are required to be completed prior to, or concurrently with, the specified testing.
- c) Special test equipment required to perform the specified testing.
- d) Limits and precautions associated with the testing.
- e) Station, unit and/or system status or conditions necessary to perform the specified testing.
- f) Criteria for evaluating the acceptability of the results of the specified testing, compatible with any applicable design specifications.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

Test procedures contain the following information or require this information be documented:

- a) Requirements and acceptance limits contained in applicable design and vendor documents.
- b) Instructions for performing the test.
- c) Test prerequisites such as calibrated instrumentation, adequate test equipment and instrumentation including their accuracy requirements, completeness of the item to be tested, suitable and controlled environmental conditions, and provisions for data collection and storage.
- d) Mandatory inspection hold points.
- e) Acceptance and rejection criteria.
- f) Methods of documenting or recording test data and results.
- g) Provisions to assure test prerequisites have been met.

Requirements are also established for verification of test completion and for determining acceptability of tests results. Test results are reviewed and accepted by the testing organization and the organization responsible for the item being tested. In the event that test results do not meet test acceptance criteria, a review of the test, test procedure and/or test results is conducted to determine the cause, required corrective action, and retest as necessary.

In addition to the above periodic testing, after maintenance to, or modification of, nuclear safety related structures, systems and components, other post maintenance testing, post modification testing, or functional verifications are performed and documented as required to verify satisfactory performance of the affected items. Post maintenance/modification functional verifications are not subject to the requirements of periodic testing described above because they are acceptable good industrial practices that are simple and straightforward. Included in these tests are such items as diesel generators, reactor control rod systems, and leak testing of appropriate pressure isolation valves.

### **D17.3.2.9 Measuring and Test Equipment Control**

Site specific content is retained for item c) as follows:

- c) The tag or records for devices that have been acceptably calibrated include the date of calibration, the date the next calibration is due, an indication that the device is within calibration specifications and the identification of the individual who was responsible for performing the calibration.

Installed instrumentation is subject to the requirements of the Technical Specification and is not subject to the tagging requirements discussed in 17.3.2.9 c) and d). The NOS-Audit section verifies implementation of the calibration program through periodic audits.

The basis for this exception on the installed Technical Specification required equipment is the Preventive Maintenance Periodic Testing (PMPT) program. This is a computerized scheduling program that automatically schedules PMPT using model work orders. When devices have been acceptably calibrated, the clock starts for the next calibration due date. The indication that the device is within calibration specifications and identification of the individual who was responsible for performing the calibration is documented within the calibration procedure for the device. If the device fails to meet calibration specifications, it will be repaired, replaced and/or engineering involvement will be requested to further evaluate. The PMPT program along with

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

the calibration procedures address all the requirements in Section 17.3.2.9 items c and d. Therefore, there is no need to place tags on the devices to identify the calibration status.

### **D17.3.2.10 Inspection, Test, and Operating Status**

Inspections and tests required by the written approved procedures which address work activities are infrequently temporarily deferred. When such a deferral does occur, a discrepancy is considered to exist and documentation of the acceptable completion of the affected work activity is not performed until the discrepancy is resolved.

Proposed tests and experiments which affect station nuclear safety and are not addressed in the Updated Final Safety Analysis Report or Technical Specifications shall be prepared and approved in a manner identical to that used for station procedures as described in Section 17.3.2.14, "Document Control." These proposed tests and experiments shall be reviewed by a knowledgeable individual/organization other than the individual/organization which prepared the proposed tests and experiments.

### **D17.3.2.11 Special Process Control**

The QAP contains or references procedures for the control of special processes such as welding, heat treating, NDE, coatings, crimping, and cleaning. These procedures shall provide for documented evidence of acceptable accomplishment of special processes using qualified procedures, equipment, and personnel.

### **D17.3.2.12 Inspection**

Independent inspections, examinations, measurements, observations, or tests of materials, products or activities are conducted, where necessary, to assure quality. If inspection of processed material or products is impossible or disadvantageous, indirect control by monitoring processing methods, equipment, and personnel is provided. Both inspection and process monitoring are provided when control is inadequate without both.

In addition to the content identified in 17.3.2.12, inspection procedures, instructions, and checklists contain the following information or require this information on inspection reports:

- a) Measuring and test equipment information
- b) Identification of required procedures, drawings, specifications, etc.

The personnel performing these inspections are examined and certified in their particular category. Current qualification and certification files are maintained for each inspector. NDE inspectors are certified in accordance with required codes and standards (See Table 17-1 Regulatory Guide 1.58). Written procedures require the test and certification of inspectors in other categories such as Mechanical, Electrical, and Structural as described in the appropriate QA manual. For cases where inspectors will perform limited functions within a category, they are tested and certified to those limitations. These inspectors are only allowed to perform inspections specifically defined in this limited certification.

For inspections of concrete containments, personnel fulfilling the role of Responsible Engineer, shall be a Registered Professional Engineer experienced in evaluating the in-service condition of structural concrete and knowledgeable of the design and construction codes and other criteria used in the design and construction of the concrete containment structure. The Responsible Engineer may also perform inspections as discussed in this section.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

The inspection criteria for performing inspections are established from codes, specifications, and standards applicable to the activity. Examples of activities subject to inspection include:

- a) Activities specified by the ASME Code Section XI
- b) Special processes
- c) Modifications
- d) Maintenance
- e) Material Receipt

After inspection data is collected and reviewed by the inspector, the reports are technically reviewed by personnel designated to perform that function.

### **D17.3.2.13 Corrective Action**

Procedures require that conditions adverse to quality be corrected. In the case of significant conditions adverse to quality, the procedures assure that the cause of the condition is determined and action be taken to preclude repetition. Performance and verification personnel are to:

- a) Identify conditions that are adverse to quality.
- b) Suggest, recommend, or provide solutions to the problems as appropriate.
- c) Verify resolution of the issue.

Additionally, performance and verification personnel are to ensure that reworked, repaired, and replacement items are to be inspected and tested in accordance with the original inspection and test requirements or specified alternatives.

Discrepancies revealed during the performance of station operation, maintenance, inspection and testing activities must be resolved prior to verification of the completion of the activity being performed. In the event of a significant malfunction of nuclear safety related structures, systems, and components, the cause of the failure is evaluated and appropriate corrective action taken. Items of the same type are evaluated to determine whether or not they can be expected to continue to function in an appropriate manner. This evaluation is documented in accordance with applicable procedures.

Nuclear safety related materials, parts and components which are determined to be nonconforming are identified, segregated or otherwise controlled (e.g. by a conditional release) in such a manner as to preclude their inadvertent substitution for and use as conforming materials, parts and components. The determination of an item's nonconformance is documented and is retained on file by Nuclear Generation and, as appropriate, by tags attached to the item. Nuclear Generation personnel are notified of any nonconformances identified in accordance with approved procedures.

Nuclear Generation maintains a listing of the status of all nonconformance documents. These reports, when complete, identify the nonconforming material, part or component; applicable inspection requirements; and the resolution, and approval thereof, of the nonconformance. Provisions are established for identifying those personnel with the responsibility and authority for approving the resolution of nonconformances. Until a determination of conformance is made, a nuclear safety related material, part or component cannot be placed in service. Tags which are placed on items to identify nonconformances are removed upon resolution.

Significant trends will be/are reported to appropriate levels of management.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

### **D17.3.2.14 Document Control**

Procedures provide appropriate administrative controls for the preparation and review of proposed changes to controlled documents. Those procedures assure that required approvals are obtained for proposed changes.

The procedure process includes controls to assure that procedures, tests, and experiments, and changes thereto, covering activities that affect nuclear safety are reviewed per applicable regulations to ensure that licensing documents are maintained current and that changes requiring prior NRC approval are submitted to and approved by the NRC prior to implementation.

Temporary changes to procedures, tests, or experiments may be made provided:

1. Such change does not change the intent of the original procedure, test, or experiment
2. The change is approved by two members of the plant management staff, at least one of whom holds a Senior Reactor Operator License on the unit affected.
3. The change is documented and approved as a permanent change or deleted within 14 days of implementation.

Duke Energy Corporation has programmatic controls in place to continually identify procedure revisions to routine procedures which may be needed to ensure that procedures are appropriate for the circumstance and are maintained current. These controls specify conditions when mandatory review of plant procedures apply, including a requirement to review applicable procedures following an accident or transient and following any modification to a system. The process includes pre job review process and a procedure adherence policy requiring that the job be stopped and the procedure be revised or the situation resolved prior to work continuing if procedures cannot be implemented as written.

Procedures are reviewed for adequacy based upon: lessons learned from normal use, audits, unusual incidents (such as an accident, unexpected transient, significant operator error, or equipment malfunction), station engineering changes, the operating experience program, root cause analysis, or the corrective action program. The procedure process includes a mechanism for procedure users to request changes to the procedures.

Maintenance, instrumentation, and modification procedures are reviewed by cognizant personnel to determine the need for quality control inspections.

The line organization performs a biennial assessment of the procedure process to assure the procedures are maintained current. This assessment includes a requirement to evaluate the procedure change process to ensure identified changes that are required to maintain the procedure current and technically accurate are being implemented in a timely manner.

### **D17.3.2.15 Records**

To the maximum extent practicable, records are stored such that they are protected from possible destruction by causes such as fire, flooding, theft, insects and rodents and from possible deterioration due to a combination of extreme variations in temperature and humidity conditions.

Record storage areas shall be evaluated by a qualified Fire Protection Engineer to assure the records are adequately protected from damage. The evaluation shall include the following considerations as a minimum:

- a) Structural collapse.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

- b) Unprotected steel (suspended floor slab or roof).
- c) Fire frequency of similar occupancies.
- d) Quantities of combustible materials.
- e) Ceiling height/Room configuration which would contribute to heat dissipation.
- f) Fire detection.
- g) Fixed fire suppression systems.
- h) On-site firefighting organizations including available equipment.

This evaluation shall be documented for each record storage area.

### **D17.3.3 SELF ASSESSMENT**

#### **D17.3.3.1 Methodology**

There are no Duke Energy Carolinas specific amplifications for this section

#### **D17.3.3.2 Independent Review Committee**

The independent review function is provided through a combination of off-site and on-site standing committees. The off-site committee is appointed by the Chief Nuclear Officer and comprised of senior department and external leaders. The on-site committee is appointed by the Site Vice President and comprised of senior plant managers.

##### **D17.3.3.2.1 Off-Site Independent Review Committee**

The Chief Nuclear Officer appoints an independent committee to serve as a nuclear safety review of the normal operating organization.

This off-site committee functions to ensure independent review of designated activities and collectively includes experience and competence to review the following areas: nuclear power plant operations, nuclear engineering, chemistry and radiochemistry, metallurgy, instrumentation and control, radiological safety, mechanical and electrical engineering, and administrative control and QA practices.

The Chair, members, and alternate members are appointed in writing by the Chief Nuclear Officer. The off-site committee is composed of at least 5 members including the Chair. Alternates (including an alternate chair) may replace Regular Members as necessary. Members of the off-site committee may be from Nuclear Generation, from other departments within the Corporation, or from external to the Corporation. Consultants are utilized as determined by the Chair to provide expert advice to the off-site committee. Staff assistance may be provided to the off-site committee in order to promote the proper, timely, and expeditious performance of its functions.

The off-site committee meets at least twice per calendar year, evaluating each operating nuclear plant. The off-site committee ensures independent reviews of and provide oversight for the following items:

- a) The evaluations for: (1) changes to procedures, equipment, or systems, and (2) tests or experiments completed under the provision of 10 CFR 50.59 to verify that such actions did not require a license amendment pursuant to 10 CFR 50.90;

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

- b) On-site review committee performance of its independent review function.
- c) Reports that describe violations of Codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance;
- d) Reports that describe significant operating abnormalities or deviations from normal and expected performance of unit equipment that affect nuclear safety;
- e) Reports that describe reportable events;
- f) Reports that describe all recognized indications of an unanticipated deficiency in some aspect of design or operation of structures, systems or components that could affect nuclear safety; and
- g) Reports of QAP audits relating to station operations and actions taken in response to these audits.

Reviews may be conducted by an organizational unit, subgroup, or member of the off-site committee. In either case the review body will collectively have requisite knowledge, experience, and competence to perform reviews in the above areas. Organizations, individuals, and or groups conducting these reviews will functionally report to the Chair of the off-site committee.

The off-site committee reports to and advises the Chief Nuclear Officer on those areas of responsibility specified in Items (a) through (g) above.

Minutes of each off-site committee meeting are prepared, approved, and forwarded to the Chief Nuclear Officer and to the Site Vice Presidents.

### **D17.3.3.2.2 On-Site Review Committee**

Each Site Vice President ensures an on-site committee exists to review selected nuclear safety related issues. The on-site committee is composed of specified senior members of the site management team most responsible for the safe and reliable operation of the station.

The on-site committee reviews and recommends approval of items requiring NRC approval prior to station approval for implementation. The reviews include:

- a) Proposed changes to procedures, equipment or systems which when evaluated under the provisions of 10 CFR 50.59 require a license amendment pursuant to 10 CFR 50.90;
- b) Proposed tests or experiments which involve a license amendment pursuant to 10CFR50.90 as defined in 10 CFR 50.59; and
- c) Proposed changes to the stations' Facility Operating Licenses, including Technical Specifications, prior to implementation except in those cases where the change is identical to a previously reviewed proposed change.

In discharging its independent review responsibilities, on-site committee keeps safety considerations paramount when opposed to cost or schedule considerations. Where a conflict of such considerations is likely or should a voting member have direct responsibility for the

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

preparation or technical review of the item requiring independent review, that member is replaced (to fill the quorum) by another voting member.

When discharging its independent review responsibilities, the on-site committee provides meeting minutes that include a detailed description of items reviewed, key discussion points with questions/responses, and recommendation, including the basis for the determination made. Copies of these meeting minutes addressing independent review requirements are forwarded to NOS for distribution to the off-site independent review committee.

See Section D17.3.4.6 for additional requirements applicable to the on-site review committee.

### **D17.3.3.3 Independent Assessment**

There are no Duke Energy Carolinas specific amplifications for this section

#### **D17.3.3.3.1 Organization**

There are no Duke Energy Carolinas specific amplifications for this section

#### **D17.3.3.3.2 Internal Assessment Process**

There are no Duke Energy Carolinas specific amplifications for this section

#### **D17.3.3.3.3 NOS Audit Program**

The following audit topic is added to the list of audit topics in 17.3.3.3.3 for Catawba, McGuire, and Oconee:

- The performance of effluent and environmental monitoring activities.

#### **D17.3.3.3.3.1 Other Audits Prescribed by the Code of Federal Regulations**

The evaluation of Radiation Protection (per 10CFR 20.1101c) identified in 17.3.3.3.3.1 was not explicitly addressed in the QATR for Duke Energy Carolinas. This evaluation may be conducted by either the line organization management or by NOS for Catawba, McGuire, and Oconee.

#### **D17.3.3.3.3.2 Independent Audit of Fire Protection Program**

Audits of the following functions are completed within a period of two (2) years:

- The Facility Fire Protection programmatic controls including the implementing procedures.
- The fire protection equipment and program implementation utilizing either a qualified offsite license fire protection engineer or an outside independent fire protection consultant. An outside independent fire protection consultant shall be used at least every third year.

#### **D17.3.3.3.4 Results**

There are no Duke Energy Carolinas specific amplifications for this section

#### **D17.3.3.3.5 Supplier Oversight**

Supplier oversight assures that supplier QA programs provide for surveillance, evaluation, and approval of sub-supplier supplying items and services. This assurance is accomplished through



## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

one or more of the following: 1) reviewing supplier audits of sub-supplier as part of the pre-bid audit, 2) making supplier control of sub-supplier work a criterion for supplier approval or disapproval, 3) making supplier surveillance of sub-supplier a requirement of the purchase requisition.

Supplier oversight performs source verification and audits on suppliers' QA programs including the activities of their suppliers and sub-suppliers, to assure that operations are in compliance with specified QA requirements. In the case of an audit of a supplier, any deficiencies noted by the auditor are clearly outlined in writing and given to the supplier's QA organization, which takes appropriate steps to resolve the deficiencies.

A re-audit is performed, if appropriate, to verify the implementation of the corrective action.

### **D17.3.3.3.6 Independent Audit of QA Functions**

There are no Duke Energy Carolinas specific amplifications for this section

### **D17.3.3.3.7 Audit Frequency Extensions**

Audit Schedules are based on the entrance of the audit as identified in exceptions for Regulatory Guide 1.33.

## **D17.3.4 ADMINISTRATIVE CONTROLS RELOCATED FROM TECHNICAL SPECIFICATIONS**

Consistent with NRC Administrative Letter 95-06, certain administrative controls from the original station Technical Specifications have been relocated to the Quality Assurance Program. These relocated administrative controls include technical review, 10 CFR 50.59 review, record retention, and audit requirements. This section identifies those requirements or provides references to the sections of this document where the administrative controls have been integrated with QAP controls.

### **D17.3.4.1 Technical Reviews**

This content provided requirements for technical reviews of station modifications, procedures, tests, and experiments to assure adequacy of nuclear safety related SSCs and associated activities. Those reviews are embedded in the QAP and its committed Standards.

### **D17.3.4.2 10 CFR 50.59 Reviews**

The review of station modifications, procedures, tests, and experiments against the requirements of 10 CFR 50.59 is to ensure that licensing documents are maintained current and that changes requiring prior NRC approval are submitted to and by the NRC prior to implementation. Provisions are included in Sections 17.3.2.3 Design Verification and 17.3.2.14 Document Control to amplify the need to complete these reviews.

The program for 10 CFR 50.59 reviews is in accordance with NEI 96-07, Revision 1, "Guidelines for 10 CFR 50.59 Evaluations" as endorsed by Regulatory Guide 1.187, November 2000.

This program includes provisions to ensure that individuals have appropriate qualifications prior to completing these reviews.

### **D17.3.4.3 Record Retention**

The list of typical operational phase records is in Section 17.3.2.15 Records.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

### **D17.3.4.4 Audit Types and Frequencies**

These are addressed in Section 17.3.3.3.3 NOS Audit and supplemented by D17.3.3.3.3.

### **D17.3.4.5 On-Site Review Committee**

The On-Site review committee was not addressed in the Catawba, McGuire, and Oconee Technical Specifications.

In addition to the requirements in Section D17.3.3.2.2, On-Site Review Committee requirements are located in each station's UFSAR as follows:

#### **Catawba On-Site Review Committee**

The requirements for the on-site review committee for Catawba Nuclear Station are found in the CNS UFSAR in section 13.4.

#### **McGuire On-Site Review Committee**

The requirements for the on-site review committee for McGuire Nuclear Station are found in the MNS UFSAR in section 13.4.

#### **Oconee On-Site Review Committee**

The requirements for the on-site review committee for Oconee Nuclear Station are found in the ONS UFSAR in section 13.4.

### **D17.3.4.6 Reportable Event Action**

Procedures are established to assure events are reviewed and notifications and reports are made as required by Regulations including, but not limited to, 10 CFR Part 21, 10 CFR 50.72, and 10 CFR 50.73.

The following considerations are transferred from section D17.3.2.13.

For significant incidents occurring during operation where a safety limit is exceeded, or which could otherwise be related to the nuclear safety of the station, the Site Vice President shall be notified and reports are generated. These reports:

- a) Contain a summary description of the circumstances and information relating to the subject incident.
- b) Contain an evaluation of the effects of the incident.
- c) Describe corrective action taken or recommended as a result of the incident.
- d) Describe, analyze and evaluate any significant nuclear safety related implications of the incident.

Such reports shall be reviewed by the Nuclear Station Manager (or for the Nuclear Station Manager by: 1) the Operations Superintendent, 2) the Maintenance Superintendent, 3) or the Work Control Superintendent, as previously designated by the Nuclear Station Manager) and approved by the Manager, Safety Assurance. Such reports shall be provided to the Site Vice President, the PORC, the NSRB, and the NRC as required by applicable regulations. Outstanding corrective action commitments made with regard to such incidents are identified

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

and periodically reviewed to assure that the identified corrective actions are properly completed and documented. An identified corrective action commitment is closed out upon written notification by a cognizant, responsible individual or other written documentation, of the satisfactory completion thereof. Closure of corrective action commitments which specifically involve other Department(s) require written notification by the other Department(s) of the satisfactory completion thereof.

All violations of Technical Specifications, safety limit violations, and all other reportable events shall be investigated and a report prepared which evaluates the occurrence and which provides recommendations to prevent recurrence. Such reports and other special reviews and investigations shall be reviewed by a knowledgeable individual/organization other than the individual/organization which prepared the report. Reports of safety limit violations shall be reviewed by the Nuclear Station Manager and the Operations Superintendent. A knowledgeable individual/organization shall review every unplanned onsite release of radioactive material to the environs and prepare reports covering evaluation, recommendations, and disposition of the corrective action to prevent recurrence. All special reviews and investigations, and the preparation of reports thereon, shall be performed by a knowledgeable individual/organization.

### **D17.3.4.7 Independent Safety Engineering Group Functions**

Technical Specifications for Catawba and McGuire included requirements for Independent Safety Engineering Group functions of improving licensee safety performance and ability to respond to accidents by providing onsite technical support and continuous evaluation and feedback of lessons learned from operating experience. Those functions are performed by a combination of different groups through the performance of their normal activities.

The following provides a cross reference for key activities to the QAP controls and other programs for those activities:

#### *Examination Of Unit Operating Characteristics:*

- Section 17.3.2.13 Corrective Action addresses identification, classification, trending and correcting of conditions adverse to quality.
- Section 17.3.3.3 Independent Assessment addresses NOS responsibility for the independent monitoring and assessment of activities.
- The Maintenance Rule Program provides reasonable assurance that structures, systems, trains, and components are capable of fulfilling their intended safety significant functions.
- Engineering provides for the systematic trending of system and component performance to determine the effectiveness of system/component maintenance

#### *Examination of NRC Issuances, Industry Advisories, and Licensee Event Reports and other Sources of Unit Design Information which May Indicate Areas of Improving Unit Safety:*

- The Operating Experience Program that provides for the receipt, processing, status reporting, screening, reviewing, evaluating, and taking preventive/corrective actions in response to OE information, including implementation of INPO SOER recommendations.
- Per Section D17.3.3.2.2, the On-Site review committee reviews License Event Reports developed pursuant to 10 CFR 50.73 as part of the independent safety review.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

*Review of Plant Operations, Modifications, Maintenance, and Surveillances to Verify Independently that these Activities are Performed Safely, and Correctly and that Human Errors are Reduced as Much as Practical:*

- The NOS functions described in Section 17.3.3.3 Independent Assessment and the independent review functions described in Section D17.3.3.2 Independent Review Committee accomplish this function.