

### 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:

---

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, 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 approved as a permanent change or deleted within 21 days of receiving temporary approval.
  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, Duke Energy addresses programmatic controls in Section 17.3.2.14 to continually identify procedure revisions which may be needed to ensure that procedures are appropriate for the circumstance and are maintained current.
  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.
- 

Regulatory Guide 1.37, Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants (March 1973)

---

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

---

Those areas of the QA Program applicable to onsite cleaning of materials and components, cleanliness control, and pre-operation 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 RNP commitment to Regulatory Guide 1.74.

### Attachment C, Robinson Specific QAPD

Table C17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

---

Regulatory Guide 1.37, Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants (March 1973)

---

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

---

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

---

- c) Section 1.5 titled Referenced Documents: RNP's commitment to other documents referenced in this standard shall be as stated in our commitment to that document.
- 

Regulatory Guide 1.38, Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants (March 1973)

---

ANSI Standard N45.2.2-1972, Packing, Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants

---

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 RNP commitment to Regulatory Guide 1.74.
- b) Section 1.5 titled Referenced Documents: RNP'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.
- d) Section 7.3.4 - RNP 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.



## Attachment C, Robinson Specific QAPD

Table C17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

---

Regulatory Guide 1.39, Housekeeping Requirements for Water- Cooled Nuclear Power Plants (March 1973)

---

ANSI Standard N45.2.3-1973, Housekeeping, During the Construction Phase of Nuclear Power Plants

---

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.

---

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

---

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

---

1. Section 1.2 titled Applicability: RNP 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 RNP 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 or in interface agreements for Duke Energy non-nuclear organizations providing services identified in Section 17.3.1.2.3.
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 RNP commitment to Regulatory Guide 1.74.
4. Section 2.5 titled Physical: RNP 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 RNP, none are considered necessary. RNP 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.

## Attachment C, Robinson Specific QAPD

Table C17-1. 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

---

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

---

5. Section 3 titled Qualifications: Only personnel performing NDE (such as LP, MT, UT, & RT) are required to 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: RNP will certify individual inspectors through training and experience to requirements appropriate to the specific assignment; however, except for NDE, personnel are not required to be classified by levels of capability. Inspection personnel may be qualified based on pre-established 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 once every three years. If organizations elect to utilize qualifications by levels for non-NDE inspections, 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 Section 3.5.2(1). Organizations identify in their procedures if they qualify their inspectors by Level or by task qualifications. Inspectors are only assigned functions for which they have been qualified.
- 

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 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 RNP 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.

---

### Attachment C, Robinson Specific QAPD

Table C17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

---

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 RNP 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: RNP'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.
  - 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.

## Attachment C, Robinson Specific QAPD

Table C17-1. 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 (April 1976)

---

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

---

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.

---

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

---

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.

---

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:

---

- 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 RNP commitment to Regulatory Guide 1.74.
- b) Section 1.5 titled Referenced Documents: RNP'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: RNP 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.

### **Attachment C, Robinson Specific QAPD**

Table C17-1. 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

---

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.

---

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:

---

- 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.
- 

Regulatory Guide 1.123, Quality Assurance Requirements for Control or Procurement of Items and Services for Nuclear Power Plants (July, 1977)

---

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

---

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.

---

Regulatory Guide 1.144, Auditing of Quality Assurance (January 1979)

---

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

---

RNP will follow the requirements and recommendations of Regulatory Guide 1.144 and ANSI N45.2.12 with the following clarifications:

---

1. RNP 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:  
Audits of operational phase activities, as outlined in Section 17.3.3.3.3, shall be performed at the frequencies specified therein.  
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. RNP 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."



## 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 (January 1979)

---

#### ANSI Standard N45.2.12-1977, Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants

---

RNP will follow the requirements and recommendations of Regulatory Guide 1.144 and ANSI N45.2.12 with the following clarifications:

---

3. ANSI N45.2.12 Paragraph 4.3. 1, Preaudit Conference: RNP 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.
4. ANSI N45.2.12 Paragraph 4.3.3, Post Audit Conference: RNP 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."
5. 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 practical. RNP 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 Duke Energy at the time audit report is issued. The audit report shall provide:"
  - b. RNP 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. RNP may choose not to comply with this requirement. Instead, audit reports are required to document findings.

### Attachment C, Robinson Specific QAPD

Table C17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

---

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:

---

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 RNP 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. RNP will comply with an alternate subsection 2.2.1 which reads:  
Orientation to provide a working knowledge and understanding of the QA program, including the Regulatory Guides and ANSI standards included in the program, and Duke Energy procedures for performing audits and reporting results.
3. Section 4.1 titled Organizational Responsibility: RNP 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.
4. Section 5.3 titled Updating of Lead Auditors' Records: RNP 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).
5. Section 5.4 titled Record Retention: RNP will substitute the following sentence for this section.  
Qualification records shall be retained as required by the QA Program.
6. Section 2.3.4 titled For Audits: RNP 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.

## 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.

---

### Regulatory Guide 1.8, Personnel Selection and Training

---

Personnel selection and training is site specific.

Robinson 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.

Robinson does not address Regulatory Guide 1.26 in UFSAR Chapter 1 Section 8. Quality group classifications are addressed in UFSAR Chapter 3.

---

### 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.

Robinson 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.

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.

---

### 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.

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)

---

**Regulatory Guide 1.143, Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants**

---

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.

---

**Regulatory Guide 1.155, Station Blackout**

---

Addressing Station Blackout is site specific.

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

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.

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

## **Attachment C, Robinson Specific QAPD**

### **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**

There are no Robinson specific amplifications for this section.

### **C17.3.3.2 Independent Review**

There are no Robinson specific amplifications for this section.

### **C17.3.3.3 Independent Assessment**

There are no Robinson specific amplifications for this section.

#### **C17.3.3.3.1 Organization**

There are no Robinson specific amplifications for this section.

## **Attachment C, Robinson Specific QAPD**

### **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 Reviews Prescribed by the Code of Federal Regulations**

There are no Robinson specific amplifications for this section.

#### **C17.3.3.3.3.2 Independent Audit of Fire Protection Program**

There are no Robinson specific amplifications for this section.

### **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**

There are no Robinson specific amplifications for this section.

## **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. 10 CFR 50.59 reviews are addressed in Section 17.3.4.2.

### **C17.3.4.2 Modifications**

Content from Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 1.2 modifications are addressed in Section 17.3.2.2, Design Control.

### **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 is reviewed per Section 17.3.3.2 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 On-Site Review Committee if a plant specific safety issue is identified.

## **Attachment C, Robinson Specific QAPD**

### **C17.3.4.4 Review of RNP Technical Specifications Violations**

Addressed in Section 17.3.4.6.

### **C17.3.4.5 10CFR 50.59 Review Qualification**

Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 1.5 is addressed in Section 17.3.4.2.

### **C17.3.4.6 Plant Nuclear Safety Committee (PNSC)**

Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 1.6 is addressed in Section 17.3.3.2, Independent Review.

### **C17.3.4.7 Independent Review Program**

Robinson UFSAR Section 17.3 Appendix A, QA Program Relocated Technical Specifications Requirements, Section 1.7, Nuclear Oversight Section Independent Review Program, has been replaced by Section 17.3.3.2, Independent Review.

### **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 17.3.3.3.2, 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 is addressed in Section 17.3.4.6, Reportable Event Action.

### **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 is addressed in 17.3.4.6.

### **C17.3.4.12. Record Retention**

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



## **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 attachment was contained in the Duke Energy Carolinas Topical Report Quality Assurance Program prior to Amendment 41.

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 Report applies in its entirety to systems, components, items, and services identified as QA Condition 1.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

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 documents. 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.

QA Condition 3 includes those fire protection features (systems, components, items, and services) which are credited in addressing 10 CFR 50.48.

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 invoke the NRC approved 10CFR50 Appendix B QAP as described in this Topical Report.

### **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 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 to the QAP 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.

---

Regulatory Guide 1.28, Rev (2), Feb. 1979 – Quality Assurance Program Requirements (Design and Construction)

---

Duke Energy Carolinas 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 Carolinas 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.

---

Regulatory Guide 1.30, Rev 0, Quality Assurance Requirements for the Installation, Inspection and Testing of Instrumentation and Electric Equipment

---

Duke Energy Carolinas conforms to Regulatory Guide 1.30 Rev 0 and ANSI N45.2.4-1972 with the following Clarifications and Exceptions:

---

Conforms with no exceptions.

---

---

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

---

Duke Energy Carolinas 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 17.3.3.3.3, Internal Audit Program, are performance based. The schedule is 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.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

Table D17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

---

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

---

Duke Energy Carolinas conforms to Regulatory Guide 1.33 Rev 2 and ANSI N18.7-1976/ANS-3.2 with the following Clarifications and Exceptions:

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 addresses programmatic controls in Section 17.3.2.14 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.

Exception to Paragraph C.3 of Regulatory Guide 1.33 and ANSI N18.7-1976 Paragraph 4.3: Independent Review Program requirements are replaced by Section 17.3.3.2, Independent Review. This exception uses NRC Safety Evaluation dated January 13, 2005 to Nuclear Management Company (ADAMS ML050210276).

Section 5.2.2 titled Procedure Adherence first paragraph addresses temporary change to procedures, which is clarified as follows: Temporary changes to procedures, tests, or experiments may be made provided; a) such change does not change the intent of the original procedure, test, or experiment; 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; and c) the change is documented and approved as a permanent change or deleted within 14 days of implementation.

---

### **Regulatory Guide 1.37, Rev 0, Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants**

---

Duke Energy Carolinas conforms to Regulatory Guide 1.37 Rev 0 and ANSI N45.2.1-1973 with the following clarifications and exceptions:

Conforms with no exceptions.

---

### **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**

---

Duke Energy Carolinas 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)

---

Regulatory Guide 1.39, Rev (2), Sept. 1977 – Housekeeping Requirements for Water-Cooled Nuclear Power Plants

---

Duke Energy Carolinas 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.

---

---

Regulatory Guide 1.58, Rev (1), Sept. 1980 – Qualification of Nuclear Power Plant Inspection, Examination and Testing Personnel

---

Duke Energy Carolinas conforms Regulatory Guide 1.58 Rev 1 and ANSI N45.2.6-1978 with the following Clarifications and Exceptions:

---

Duke Energy Carolinas 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 consistent with the conditions identified in 10 CFR 50.55a.

---

Operational/functional testing personnel will meet the requirements of ANSI N18.1 or ANS 3.1 rather than ANSI N45.2.6. This reflects Regulatory Position C.1.

With regard to Paragraph 3 of ANSI N45.2.6-1978 titled Qualifications: Only personnel performing NDE (such as LP, MT, UT, and RT) are required to be grouped in levels of capability and certified for inspection, review, and evaluation of inspection data, and reporting of inspection and test results. In lieu of qualification by Levels, inspection personnel may be qualified based on pre-established 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 once every three years. If organizations elect to utilize qualifications by levels, 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 Section 3.5.2(1). Organizations identify in their procedures if they qualify their inspectors by Level or by task qualifications. Inspectors are only assigned functions for which they have been qualified.

---



## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

Table D17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

---

Regulatory Guide 1.64, Rev (2), June 1976 – Quality Assurance Requirements for the Design of Nuclear Power Plants

---

Duke Energy Carolinas 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.

---

---

Regulatory Guide 1.74, Rev (0), Feb. 1974 – Quality Assurance Terms and Definitions

---

Duke Energy Carolinas 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.

---

---

Regulatory Guide 1.88, Rev (2), Oct. 1976 - Collection, Storage, and Maintenance of Nuclear Power Plant Quality Assurance Records

---

Duke Energy Carolinas 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 (meeting Professional Member grade qualifications of the SFPE) will evaluate record storage areas (including satellite files) to assure records are adequately protected from damage.

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.

---

---

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

---

Duke Energy Carolinas 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)

---

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

Table D17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

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
Duke Energy Carolinas conforms to Regulatory Guide 1.116 Rev (0-R) and ANSI N45.2.8-1975 with the following Clarifications and Exceptions:
Conforms
Regulatory Guide 1.123, Rev (1), July 1977 – Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants
Duke Energy Carolinas 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.
Regulatory Guide 1.144, Rev (1), Sept. 1980 - Auditing of Quality Assurance Programs for Nuclear Power Plants
Duke Energy Carolinas 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 Regulatory Position c.3.b.(2) may be extended as described in Section 17.3.3.3.7, Audit Frequency Extensions. 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.

**Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

Table D17-1. Conformance with QA Regulatory Guides and Industry Standards (Continued)

---

Regulatory Guide 1.146, Rev (0), Aug. 1980 – Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants

---

Duke Energy Carolinas 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.

---

Regulatory Guide 1.152 Criteria for Programmable Digital Computer System Software in Safety-Related Systems of Nuclear Power Plants

---

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

---

Regulatory Guide 7.10, Establishing Quality Assurance Programs for Packaging Used in the Transport of Radioactive Material

---

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.

---

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

---

See Table 17-1.

---

## 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.

---

### Regulatory Guide 1.8, Personnel Selection and Training

---

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.

---

### 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.

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.

---

### 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.

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)

---

### **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.

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.

---

### **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.

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.

---

### **Regulatory Guide 1.143, Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants**

---

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.

## **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.

#### **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

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

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.

### **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

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

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.

Control of material, parts and components is governed by approved procedures. Specific control requirements include:

- 1) Nonconforming or rejected materials, parts, or components are identified to assure that they will not be inadvertently used.
- 2) The verification of correct identification of material, parts, and components is required prior to release for assembling, shipping and installation.
- 3) 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

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

requirements/specifications. Items having limited shelf or service life are identified and controlled.

- 4) 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.

Test procedures contain the following information or require this information be documented:

- 1) Requirements and acceptance limits contained in applicable design and vendor documents.
- 2) Instructions for performing the test.
- 3) 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.
- 4) Mandatory inspection hold points.
- 5) Acceptance and rejection criteria.
- 6) Methods of documenting or recording test data and results.
- 7) 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

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

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 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.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

### **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.

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.



## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

### **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.

### **D17.3.2.14 Document Control**

There are no Duke Energy Carolinas specific amplifications for this section.

### **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 Fire Protection Engineer (meeting Professional Member grade qualifications of the SFPE) to assure the records are adequately protected from damage. The evaluation shall include the following considerations as a minimum:



## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

- a) Structural collapse.
- 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**

There are no Duke Energy Carolinas specific amplifications for this section.

#### **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 Reviews Prescribed by the Code of Federal Regulations**

There are no Duke Energy Carolinas specific amplifications for this section.

##### **D17.3.3.3.3.2 Independent Audit of Fire Protection Program**

There are no Duke Energy Carolinas specific amplifications for this section.

##### **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 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

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

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**

There are no Duke Energy Carolinas specific amplifications for this section.

## **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**

There are no Duke Energy Carolinas specific amplifications for this section.

### **D17.3.4.2 10 CFR 50.59 Reviews**

There are no Duke Energy Carolinas specific amplifications for this section.

### **D17.3.4.3 Record Retention**

There are no Duke Energy Carolinas specific amplifications for this section.

### **D17.3.4.4 Audit Types and Frequencies**

There are no Duke Energy Carolinas specific amplifications for this section.

### **D17.3.4.5 On-Site Review Committee**

There are no Duke Energy Carolinas specific amplifications for this section.

### **D17.3.4.6 Reportable Event Action**

There are no Duke Energy Carolinas specific amplifications for this section.

## **Attachment D, Catawba, McGuire, and Oconee Specific QAPD**

### **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 requirements were transferred to the this document at Amendment 23. At Amendment 36, the specific requirements for Independent Safety Engineering Group were eliminated based on duplication of functions performed by a combination of different groups through the performance of their normal activities.

