

VIRGINIA ELECTRIC
AND
POWER COMPANY
OPERATIONAL QUALITY ASSURANCE PROGRAM
TOPICAL REPORT
VEP-1-5A
(UPDATED)

Amendment Five
June, 1986
(Updated 4/91)

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PDR ADOCK 05000280
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LIST OF AMENDMENTS

<u>Amendment No.</u>	<u>TITLE</u>	<u>AMENDMENT DATE</u>
Original		07-01-75
One		12-30-75
Two		09-27-76
Three		03-01-77
Four		10-01-82
Four (Updated)		08-30-85
Five		06-30-86
Five (Updated)		03-23-87
Five (Updated)		06-21-88
Five (Updated)		06-21-89
Five (Updated)		06-21-90
Five (Updated)		06-28-91

ABSTRACT

This topical report describes Virginia Electric and Power Company's, hereafter referred to as the Company, quality assurance program for the operational phase of its nuclear power stations. The report is organized as, and is generically used for, Chapter 17, part 2 - Quality Assurance (Operations) - of the Company's Updated Final Safety Analysis Reports. The Company quality assurance program conforms to applicable regulatory requirements such as 10 CFR 50, Appendix B and to approved industry standards as endorsed therein. Included is a point-by-point comparison of the program with the 18 criteria of 10 CFR 50, Appendix B. This topical report is intended to be a comprehensive up-to-date description of the Company's Operational Quality Assurance Program for nuclear power generating stations.

17.2 QUALITY ASSURANCE DURING THE OPERATIONS PHASE

17.2.0 General

It is the policy of the Company to establish and maintain a formal quality assurance program for the operational phase of nuclear power generating stations. This program is described by written policies, standards, and procedures. The application of this program accomplishes two important objectives: (1) to provide orderly, uniform administrative and managerial procedures to assure safe, reliable, and economic operation of nuclear power stations and (2) to assure compliance with regulations promulgated by the U.S. Nuclear Regulatory Commission.

17.2.0.1 Topical Report

This topical report is written in the format of a Safety Analysis Report (SAR) Chapter 17, part 2, "Quality Assurance During the Operations Phase", in accordance with the NRC's "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants" (Nov. 1975) and subsequent NRC guidelines. The quality assurance program described herein is applicable to all Company nuclear power stations as referenced by Chapter 17 of the stations' UFSARs.

Subsequent changes to the Company's Operational Quality Assurance Program will be incorporated as applicable in this topical report. The topical report is intended to be a comprehensive description of the Company's Operational Quality Assurance Program for nuclear power stations.

17.2.0.2 Quality Assurance Standards and Guides

The Company Operational Quality Assurance Program conforms to Appendix B of 10 CFR 50 as amended and complies with the regulatory positions of the Regulatory Guides indicated in table 17.2.0, as modified or clarified in that table.

TABLE 17.2.0
Conformance of the Company's Operational Quality Assurance Program
To NRC Regulatory Guides and ANSI Standards

The ANSI standards, and other documents (i.e., other standards, codes, regulations, or appendices) that are required to be included as a part of this quality assurance program are either identified in Table 17.2.0 or they are described herein. Although this table includes references to ANSI Standards and Regulatory Guides that are required to be a part of this quality assurance program, the table is not intended to be a complete list of all NRC Regulatory Guides (etc.) to which the Company is committed. The specific applicability or acceptability of these listed standards, codes, regulations, or appendices is either covered in this program or such documents are not considered as quality assurance program requirements; although they may be used as guidance. When sections of ANSI Standards and other documents are referenced within this program, it is understood that the Company will comply with the referenced sections as clarified in Table 17.2.0.

GENERIC STATEMENTS WITH REGARDS TO TABLE 17.2.0
AND THE OPERATIONAL QUALITY ASSURANCE PROGRAM

For operations phase maintenance and modification activities which are comparable in nature and extent to similar activities conducted during the construction phase, the Company shall control these activities under this Operational Quality Assurance Program. When this Operational Quality Assurance Program is used, the Company shall comply with the Regulatory Position established in the guides listed herein in that quality assurance programmatic/administrative requirements included therein (subject to the clarification in this table) shall apply to these maintenance and modification activities even though such requirements may not have been in effect originally. Technical requirements associated with the maintenance or modification shall be the original requirements or better (e.g., code requirements, material properties, design margins, manufacturing processes, and inspection requirements).

Definitions in the referenced standards in this table which are not included in ANSI N45.2.10 will be used as clarified in the Company's commitment to Regulatory Guide 1.74.

Standard, Requirement or Guide

Regulatory Guide 1.8 - "Personnel Qualifications and Training" (Second Proposed Revision 2, 9/80) Endorses ANSI/ANS-3.1 (Draft 12/79)

The applicability of this guide/standard to other personnel in the Company organization is addressed in other sections of the UFSAR and the Technical Specifications of the individual nuclear facility.

The Company's Position	Conformance Status	Justification
<p>Conforms to Regulatory Guide 1.8 with one (1) exception, one (1) clarification and three (3) alternatives. They are:</p> <p>(1) <u>Exception:</u> With regard to Section 4.2.2 of ANS 3.1 (Draft 12/79) titled <u>Operations Manager, Paragraph C, Training:</u> The Operations Manager will have or have held a senior operator license.</p> <p>(2) <u>Clarification:</u> With regard to the term "Bachelor's Degree" as used in the draft the following qualifications may be considered equivalent to a Bachelor's Degree:</p> <p>A. 6 years of applied engineering experience at a nuclear facility in the area for which qualification is sought,</p> <p>B. 6 years of operational or technical experience/training related to engineering in nuclear power, and</p> <p>C. In addition, experience and training requirements shall be met as delineated.</p>	<p>Clarification and Alternative meet or exceed applicable guides and standards.</p>	<p>For Exception: NRC License Amendment Nos. 142 and 125 dated December 4, 1990 for North Anna and NRC License Amendment Nos. 151 and 148 dated December 31, 1990 for Surry approved revisions to the Technical Specifications granting relief from Section 4.2.2 of ANS 3.1 (Draft 12/79). The exception allows the Superintendent - Operations to hold or have previously held a Senior Reactor Operator License for the facility or a similar designed Pressurized Water Reactor plant. The Supervisor Shift Operations will fulfill the Operations Manager requirements of ANS 3.1 (Draft 12/79). This change allows the Superintendent Operations to perform management functions and examine training programs.</p> <p>For Clarification: ANSI/ANS - 3.1 (Draft 12/79) does not provide a clear alternative to formal educational requirements, but does provide guidance. This guidance was utilized to develop clarification to qualify non-degree holding personnel.</p>

Standard, Requirement or Guide

The Company's Position	Conformance Status	Justification
(3) <u>Alternative:</u> With regard to Section 4.4.5 of ANSI/ANS 3.1 (Draft 12/79) titled <u>Quality Assurance</u> .		For Alternative: ANSI/ANS-3.1 1978. Paragraph 4.4.5 (b) is considered to be consistent with the Company experience requirements which are delineated in other areas of this report. Further, the 1978 requirement is considered more conservative than the Draft 12/79 ANSI/ANS Requirement.
The Company will comply with Paragraph 4.4.5 as originally stated in ANSI/ANS-3.1 - 1978.		

Standard, Requirement or Guide

The Company's Position

Conformance Status

Justification

(4) Alternative: With regard to Section 4.3.2, Supervisors Not Requiring NRC License, Paragraph b.; Experience: At the time of appointment to the position; the supervisor shall have 4 years experience in the craft or discipline he supervises or an equivalent number of years nuclear plant experience in a supervisory position with a Senior Reactor Operator's License.

(5) Alternative: With regard to Section 5.3.3 of ANSI/ANS 3.1 (Draft 12/79) titled Training for Shift Technical Advisor with Bachelor Degree without an NRC Senior Operator License, Sect: 3). The Shift Technical Advisors will observe control manipulations on the simulator as appropriate.

For alternative: ANSI Section 4.3.2; Individuals having the specified alternate experience possess a working knowledge of plant activities (e.g., operations, maintenance, I & C, health physics, etc.) sufficient to perform a broad range of supervisory functions. The individual's day-to-day interaction with the various plant activities has provided him with an understanding of how each activity is integrated into safe and effective plant operations. His combination of SRO training and plant experience is adequate to assure that actions performed by individuals under his supervision are both technically correct and consistent with approved programs and procedures.

For alternative: ANSI section 4.3.2 (draft 12/79): The performing of control manipulations is not considered a Shift Technical Advisor task. The primary objective of Shift Technical Advisor simulator instruction is to demonstrate plant and operator response to given conditions or events, not to develop expertise in control manipulations.

Standard, Requirement or Guide

Regulatory Guide 1.26 - "Quality Group Classification and Standards for Water, Steam, and Radioactive Waste Containing Components of Nuclear Power Plants." (Rev. 3, 2/76).

The Company's Position

Conformance Status

Justification

The Operational Quality Assurance Program complies with this guide with the following clarification:

Clarification meets or exceeds applicable guides and standards.

The Nuclear Design Control Program standards provides the methodology and procedures for determining the quality classification of components. A specific listing of these components is maintained in a document called the Q-List.

The Company does not use the specific A, B, C, and D level classification system set forth in this guide. However, the Company followed the requirements of this guide in developing the list of structures, systems, and components for which the program is applicable. The specific listing of items to which the Operational Quality Assurance Program applies is described in the UFSAR for each facility, and described in more detail in the Q-List for Surry and North Anna Power Stations.

The Company also followed the requirements of this guide in developing the ASME Section XI Class 1, 2 and 3 boundaries for the inservice inspection and testing program. These classes and boundaries are updated for each 10 year inspection interval.

Standard, Requirement or Guide

Regulatory Guide 1.29 - "Seismic Design Classification" (Rev. 3, 9/78)

The Company's Position

Conformance Status

Justification

The Operational Quality Assurance Program complies with this guide with the following clarification:

Clarification meets or exceeds applicable guides and standards.

Regulatory Guide 1.29 is primarily concerned with the design and construction phase of nuclear power plants. The Company's clarification has been formulated to provide a means of translating design and construction criteria into guidance applicable to operating nuclear power facilities.

See Generic Statement which prefaces this table with regard to construction related guides, standards and instructions.

Standard, Requirement or Guide

Regulatory Guide 1.30 - "Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment" (8/72). Endorses ANSI N45.2.4 - 1972.

The Company's Position	Conformance Status	Justification
<p>The Operational Quality Assurance Program complies with this guide with the following clarifications and alternatives:</p>	<p>Clarifications and alternatives meet or exceed applicable guides and standards.</p>	<p>These clarifications to ANSI N45.2.4 - 1972 are required to ensure that QA program continuity is maintained. In actuality these clarifications have been extracted from other standards and guides and are considered more conservative. These clarifications also insure that only one standard or guide is committed to for its applicable circumstance.</p>
<p>(1) See Generic Statement which prefaces this table with regard to construction related guides, standards, and instructions.</p>		
<p>(2) Section 2.1 - <u>Planning</u> requirements, as determined by station management, will be incorporated into maintenance and modification procedures.</p>		
<p>(3) Section 3 - <u>Preconstruction Verification</u>: (a) verification is required only for the modification(s) (b) will be implemented with the clarification that "approved instruction manuals" shall be interpreted to mean the manuals provided by the supplier as required by the procurement order. These manuals will not be reviewed and approved, per se, by the Company; (c) no special checks will be made by the person withdrawing a replacement part from the warehouse-equivalent controls are assured by compliance with ANSI N45.2.2 as set forth in this table; and (d) will be complied with, as determined by station management as part of the maintenance/modification program.</p>		

Standard, Requirement or Guide

The Company's Position

Conformance Status

Justification

Section 4 - Installation: instructions will be implemented by inclusion, as determined by station management, in the appropriate maintenance or modification procedure for safety related items. Standard Company maintenance practices require that care be exercised in the six areas listed whether a procedure is required or not.

Section 5.1 - Inspections: including subsections 5.1.1, 5.1.2, and the first sentence in 5.1.3, will be implemented as set forth in Section 17.2.10 of the Operational QA Program. The inspection program will incorporate, as determined by station management, those items listed in these subsections. The remaining sentence in 5.1.3 is covered in equivalent detail in the Company's commitment to ANSI N18.7, section 5.2.6; the requirements as set forth in that commitment will be implemented in addition to the requirements stated here.

Section 5.2 - Tests: including subsections 5.2.1 through 5.2.3, will be implemented as set forth in Sections 17.2.3 and .11 of the Operational QA Program. The test program will consider the elements outlined in this Section, as determined by station management, when developing test requirements for inclusion in maintenance and modification procedures. In some cases, testing requirements may be met by post-installation surveillance testing in lieu of a special post-installation test. Where elements of Section 5.2 are not being met they shall be documented and justified.

Standard, Requirement or Guide

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Section 6 - Post Construction Verification: is not generally considered applicable at operating facilities because of the scope of work and the relatively short interval between installation and operation. Where considered necessary by station management, the elements described in this section will be used in the development and implementation of inspection and testing programs as described in Sections 17.2.3, .10, and .11 of the Operational QA Program.

Section 6.2.1 - Equipment Tests: The last paragraph of this section deals with tagging and labeling. The Company will comply with an alternate last paragraph which reads: "Each safety-related item of process instrumentation is identified with a unique number. This number is utilized in instrument maintenance records so that current calibration status, including data such as the date of the calibration and identity of the person that performed the calibration, can be readily determined. Such information may also be contained on tags or labels which may be attached to installed instrumentation".

Section 7 - Data Analysis and Evaluation: will be implemented as stated herein after adding the clarifying phrase "when determined by station management" at the beginning of that paragraph.

Standard, Requirement or Guide

Regulatory Guide 1.33 - "Quality Assurance Requirements (Operation)" (Rev. 2, 2/78) - Endorses ANSI N18.7 - 1976.

The Company's Position	Conformance Status	Justification
<p>The Operational Quality Assurance Program complies with this guide with the following clarifications and alternatives:</p>	<p>Clarifications and alternatives meet or exceed applicable guides and standards.</p>	<p>These clarifications are required to ensure that QA program continuity is maintained; i.e., that only one standard or guide is committed to for a particular topic.</p>
<p>1) Paragraph C.3 of Regulatory Guide 1.33 (and Section 4.3.4 of ANSI N18.7 which it references) will be implemented as required by the applicable nuclear facility Technical Specifications which define "Subjects Requiring Independent Review."</p>		
<p>2) Paragraph C.4.a of Regulatory Guide 1.33 (and Section 4.5 of ANSI N18.7 which it references) will be implemented as required by the applicable nuclear facility Technical Specifications which define the "Audit Program" to be conducted. The audit program is further defined and will be implemented as required by the commitment to ANSI N45.2.12 as stated in Table 17.2.0 of the operational quality assurance program.</p>		
<p>3) Paragraph C.5a of Regulatory Guide 1.33 (and Section 4.4 of ANSI N18.7 which it references) will be implemented with the clarification that the Station Nuclear Safety and Operating Committee may perform this activity.</p>		
<p>4) Paragraph C.5.d of Regulatory Guide 1.33 (and Section 5.2.7.1 of ANSI N18.7 which it references) will be implemented by adding the clarifying phrase "When determined by</p>		

Standard, Requirement or Guide

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station management in front of the fourth sentence of the fifth paragraph. For modifications where these requirements are not considered practicable, a review in accordance with the provisions of 10CFR50.59 shall be conducted and documented.

- 5) Paragraph C.5.e of Regulatory Guide 1.33 (and Section 5.2.13.4 of ANSI N18.7 which it references) will be implemented subject to the same clarifications made for ANSI N45.2.2 elsewhere in Table 17.2.0 of the Operational QA Program.
- 6) Paragraph C.5.f of Regulatory Guide 1.33 (and Section 5.2.19.(2) of ANSI N18.7 which it references) will be implemented when determined by station management.
- 7) Paragraph C.5.g of Regulatory Guide 1.33 (and Section 5.2.19.1 of ANSI N18.7 which it references) will be implemented with the addition of the modifier "normally" after each of the verbs (should) which the Regulatory Guide converts to "shall." It is the Company's intent to fully comply with the requirements of this paragraph, and any conditions which do not fully comply will be documented and approved by station management personnel. In these cases, the reason for the exception shall also be documented. The documentation shall be retained for the same period of time as the affected preoperational test.

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- 8) With regard to Section 4.2 of ANSI N18.7 - 1976 titled Program Description: Two aspects are addressed in this Section: audits and independent reviews. The independent review program is implemented as required by the Technical Specifications of the individual nuclear facility. The Company audit program will be described in accordance with and to meet the requirements of ANSI N45.2.12 as endorsed in Table 17.2.0 of the Operational QA Program, the requirements of the individual nuclear facility Technical Specifications, and Sections 17.2.16 and 17.2.18 of the Operational QA Program.
- 9) With regard to Section 4.3 of ANSI N18.7 - 1976 titled Independent Review Process: The requirements of this Section, including all of its subparts, shall be met by compliance with the Technical Specification requirements of the individual nuclear facility.
- 10) With regard to Section 5.2.7 of ANSI N18.7 - 1976 titled Maintenance and Modification: Since some emergency situations could arise which might preclude preplanning of all activities, the Company will comply with an alternate to the first sentence in the second paragraph which reads: "Except in emergency or abnormal operating conditions where immediate actions are required to protect the health and safety of the public, to protect equipment or personnel or to prevent the deterioration of plant conditions to a possibly unsafe or unstable level, maintenance or modification of equipment

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shall be preplanned and performed in accordance with written procedures. Where written procedures would be required and are not used, the activities that were accomplished shall be documented after-the-fact and receive the same degree of review as if they had been preplanned."

- 11) With regard to Section 5.2.7.1 of ANSI N18.7 - 1976 titled Maintenance Programs: The Company will comply with the requirements of the first sentence of the fifth paragraph, when determined by station management. This clarification is needed since it is not always possible to promptly determine the cause of the malfunction. In all cases, The Company will initiate proceedings to determine the cause, and will make such determinations promptly, when determined by station management.
- 12) With regard to Section 5.2.8 of ANSI N18.7 - 1976 titled Surveillance Testing and Inspection Schedule: In lieu of a "master surveillance schedule," the following requirement shall be complied with: "A surveillance testing schedule(s) shall be established reflecting the status of all in-plant surveillance tests and inspections."
- 13) With regard to Section 5.2.13.1 of ANSI N18.7 - 1976 titled Procurement Document Control: The words "the same degree of control" in the last sentence are replaced with "Engineering review."

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- 14) With regard to Section 5.2.15 of ANSI N18.7 - 1976 titled Review, Approval and Control of Procedures: The third sentence in paragraph three is interpreted to mean: Applicable procedures, as determined by Station Management, shall be reviewed following an accident, an unexpected transient, significant operator error or equipment malfunction.

The first sentence of the fourth paragraph is considered to be met via periodic reviews as described by administrative procedures.

The biennial review requirement is deleted. The procedures upgrade program provides a systematic and effective process for developing and revising procedures which encompasses the intent of the biennial review. Periodic reviews will still be conducted by extending the period to up to four years in accordance with administrative procedures. See North Anna safety evaluation 91-SE-OT-028 Revision I and Surry safety evaluation 91-128.

- 15) With regard to Section 5.2.17 of ANSI N18.7 - 1976 titled Inspections: Not all inspections will require generation of a separate inspection report. Inspection requirements may be integrated into appropriate procedures or other documents with the procedure or document serving as the record. However, records of inspections will be identifiable and retrievable.

- 16) With regard to Section 5.3.9 of ANSI N18.7 - 1976 titled Emergency Procedure: As directed by the NRC, the Company follows a format for emergency procedures which is "symptom" based as opposed to "event" based as stipulated in Section 5.3.9.1. Since the Company has these "symptom" based procedures; "event" based procedures are not normally provided.

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Standard, Requirement or Guide

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- 17) With regard to Section 5.3.9.2 of ANSI N18.7 - 1976 titled Events of Potential Emergency:
The Company will interpret item (11) to mean the natural occurrences which have been evaluated in the UFSAR for the individual nuclear facility.
- 18) With regard to Section 5.3.9.3 of ANSI N18.7 - 1976 titled Procedures for Implementing Emergency Plan: The Company's NRC accepted Emergency Plan for each nuclear facility will be implemented in lieu of the requirements in this Section.

Standard, Requirement or Guide

NRC Regulatory Guide 1.37 - "Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants" (3/73) - Endorses ANSI N45.2.1 - 1973.

The Company's Position

Conformance Status

Justification

The Operational Quality Assurance Program complies with this guide with the following clarifications:

Clarifications meet or exceed applicable guides and standards.

The four clarifications listed were generated to translate general guidance into exact commitments, and to provide alternate means to perform routine tasks.

- 1) The guide and standard are applicable to those areas of the Quality Assurance Program addressing on-site cleaning of materials and components, cleanliness control, and preoperation cleaning and layup of fluid systems.
- 2) With regard to Paragraph C.3 of Regulatory Guide 1.37: The water quality for final flushing of fluid systems and associated components shall be at least equivalent to the quality of the operating system water except for the oxygen and nitrogen content; but this does not infer that chromates or other additives, normally in the system water, will be added to the flush water.
- 3) With regard to Paragraph C.4 of Regulatory Guide 1.37: Expendable materials such as inks and related products, temperature indicating stick, tapes, gummed labels, wrapping materials (other than polyethylene), water soluble dam materials, lubricants, NDE penetrant materials and couplants, desiccants, and like materials which contact stainless steel or nickel alloy surfaces; shall not contain lead, zinc, copper, mercury, cadmium and other low melting point metals, their

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alloys or compounds as basic and essential chemical constituents. No more than 0.1 percent (1,000 ppm) halogens will be allowed where such elements are leachable or where they could be released by breakdown of the compounds under expected environmental conditions.

- 4) With regard to Section 5 of ANSI N45.2.1 - 1973 titled Installation Cleaning: The recommendation that local rusting on corrosion resistant alloys be removed by mechanical methods is interpreted to mean that local rusting may be removed mechanically, but the use of other removal means is not precluded as determined by Engineering.

Standard, Requirement or Guide

NRC Regulatory Guide 1.38 - "Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants" (Rev. 2, 5/77) - Endorses ANSI N45.2.2 - 1972.

The Company's Position	Conformance Status	Justification
<p>The operational quality assurance program complies with this guide with the following clarifications and alternatives:</p>	<p>Clarifications and alternatives meet or exceed applicable guides and standards.</p>	<p>The clarifications in this section are proposed only to translate general guidance into specific requirements.</p>
<p>1) With regard to Section 2.1 of ANSI N45.2.2 - 1972 titled <u>Planning</u>: (First sentence.) The specific items to be governed by the Standard shall be identified in Administrative Procedures.</p>		<p>The proposed alternatives are provided to reflect current Company practices which are distilled from over ten years of experience gained at operational nuclear facilities.</p>
<p>2) With regard to Section 2.3 of ANSI N45.2.2 - 1972 titled <u>Results</u>: The specific methods for performing and documenting tests and inspections are given in Sections 17.2.10 and 17.2.11 of the Operational QA Program. The requirements in these Sections will be implemented in lieu of the general requirements here.</p>		
<p>3) With regard to Section 2.7 of ANSI N45.2.2 - 1972 titled <u>Clarification of Items</u>: The Company may choose not to explicitly use the four level classification system. However, the specific requirements of the Standard that are appropriate to each class are applied to the items suggested in each classification and to similar items as determined by station management.</p>		
<p>4) With regard to Section 3.2.1 of ANSI N45.2.2 - 1976 titled <u>Level A Items</u>: As an alternate to the requirements for packaging and containerizing items in storage to control contaminants (Items (4) and (5)), the Company may choose</p>		

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a storage atmosphere which is free of harmful contaminants in concentrations that could produce damage to stored items as determined by station management. Similarly (for Item (7)) the Company may obviate the need for caps and plugs, as determined by station management, with an appropriate storage atmosphere, and may choose to protect weld-end preparations and threads by controlling the manner in which the items are stored. These clarifications apply whenever items (4), (5) or (7) are subsequently referenced and to Section 3.5.1 titled Caps and Plugs and Section 3.4 titled Methods of Preservation.

- 5) With regard to Section 3.2.3 of ANSI N45.2.2 - 1972 titled Level C Items: (Subpart 2) states "Items shall be packaged with a waterproof enclosure . . .," as an alternative, the company may choose appropriate packaging when the storage environment prevents harmful contaminants in concentrations that could produce damage to stored items as determined by Station mgmt.
- 6) With regard to Section 3.3 of ANSI N45.2.2 - 1972 titled Cleaning: (Third sentence) the Company interprets "documented cleaning methods" to allow generic cleaning procedures to be written which are implemented, as necessary, by trained personnel. Each particular cleaning operation shall have an individual cleaning procedure or reference a generic procedure. The generic procedures will specify methods of cleaning or which type(s) of solvent may be used in a particular application.

Standard, Requirement or Guide

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- 7) With regard to Section 3.4 of ANSI N45.2.2 - 1972 titled Methods of Preservation: (First sentence) the Company will comply with these requirements subject to the clarifications of Section 3.2.1, (4) and (5) above, and the definition of the phrase "deleterious corrosion" to mean that corrosion which cannot be subsequently removed and which adversely affects form, fit or function.
- 8) With regard to Section 3.6 of ANSI N45.2.2 - 1972 titled Barrier and Wrap Material and Desiccants: This section requires the use of nonhalogenated materials in contact with austenitic stainless steel. Refer to Regulatory Guide 1.37 above for the Company position.
- 9) With regard to Section 3.7.1 of ANSI N45.2.2 - 1972 titled Containers: Cleated, sheathed boxes may be used up to 1,000 lbs. rather than 500 lbs. as specified in 3.7.1(1). This type of box is safe for, and has been tested for, loads up to 1,000 lbs. Other national standards allow this (see Federal Specification PPP-B-601). Special qualifications testing shall be required for loads above 1,000 lbs.
- 10) With regard to Section 3.7.2 of ANSI N45.2.2 - 1972 titled Crates and Skids: Skids or runners will normally be used on containers with a gross weight of 100 lbs. or more. Skids or runner will normally be fabricated from 4 x 4 inch nominal lumber size, minimum, and laid flat except where this is impractical because of the small dimensions of the container. If forklift handling is required, minimum floor clearance for forklift tines will be provided.

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11) With regard to Sections 4.3, 4.4 and 4.5 of ANSI N45.2.2 - 1972 titled, respectively, Precautions During Loading and Transit, Identification and Marking, and Shipment from Countries Outside the United States: the Company will comply with the requirements of these Sections subject to the clarifications taken to other Sections which are referenced herein.

12) With regard to Section 5.2.1 of ANSI N45.2.2 - 1972 titled Shipping Damage Inspection: Warehouse personnel will normally visually scrutinize incoming shipments for damage of the types listed in this Section; this activity is not necessarily performed prior to unloading. Since all required items receive the Item Inspection of Section 5.2.2, separate documentation of the Shipping Damage Inspection is not necessary. Release of the transport agent after unloading and signing for receipt of the shipment may be all of the action taken to document completion of the Shipping Damage Inspection. Any nonconformance noted will be documented and dispositioned as required by Section 17.2.15 of the Operational QA Program.

The person performing the visual scrutiny during unloading is not considered to be performing an inspection function as defined under Regulatory Guide 1.74; therefore, while he will be trained to perform this function he may not necessarily be certified (N45.2.6) as an Inspector.

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The Company's Position	Conformance Status	Justification
<p>13) With regard to Section 5.2.2 of ANSI N45.2.2 - 1972 titled <u>Item Inspection</u>: The second division of this subsection requires six additional inspection activities if an item was not inspected or examined at the source. Procurement Engineering shall determine and document the extent of receipt inspection based on consideration of Paragraph 5.2.2.</p>		
<p>14) With regard to Section 5.4 of ANSI N45.2.2 - 1972 titled <u>Status Indicating System</u>: The Section states in part "Tags shall be securely affixed to the items and displayed in an area that is readily accessible." As an alternative, the company may choose to use Labels or Tags to identify items.</p>		
<p>15) With regard to Section 6.1.2 of ANSI N45.2.2 - 1972 titled <u>Levels of Storage</u>: Subpart (2) is replaced with the following:</p>		
<p>(2) Level B items shall be stored within a fire resistant, weather-tight, and well ventilated building or equivalent enclosure in which measures have been taken against vandalism. This building shall be situated and constructed so that it will not normally be subject to flooding; the floor shall be paved or equal, and well drained. If any outside waters should come in contact with stored equipment, such equipment will be labeled or tagged nonconforming, and then the nonconformance document will be processed and evaluated in accordance with Section</p>		

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<p>17.2.15. Items shall be placed on pallets, shoring or shelves to permit air circulation. The building shall be provided with uniform heating and temperature control or its equivalent to prevent condensation and corrosion. Minimum temperature shall be 40°F and maximum temperature shall be 140°F or less if so stipulated by a manufacturer.</p>		
<p>16) With regard to Section 6.2.1 of ANSI N45.2.2 - 1972 titled <u>Access to Storage Areas</u>: Items which fall within the Level D classification of the standard will be stored in an area which may be posted to limit access, but other positive controls such as fencing or guards will not normally be provided.</p>		
<p>17) With regard to Section 6.2.4 of ANSI N45.2.2 - 1972 titled <u>Storage of Food and Associated Items</u>: The sentence is replaced with the following: "The use or storage of food, drinks and salt tablet dispensers in any storage area shall be controlled and shall be limited to designated areas where such use or storage is not deleterious to stored items where station management deems appropriate.</p>		
<p>18) With regard to Section 6.2.5 of ANSI N45.2.2 - 1972 titled <u>Measures to Prevent Entrance of Animals</u>: The sentence is replaced with the following: "Exterminators or other appropriate measures shall be used to control animals to minimize possible contamination and mechanical damage to stored material."</p>		

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19) With regard to Section 6.3.4 of ANSI N45.2.2 - titled Identification: The section states "All items and their containers shall be plainly marked so that they are easily identified without excessive handling or unnecessary opening of crates and boxes." The company shall substitute "All items (or, if in containers, their containers) shall be plainly marked so that they are easily identified without excessive handling or unnecessary opening of crates and boxes."

20) With regard to Section 6.4.2 of ANSI N45.2.2 - 1972 titled Care of Items: The following alternatives are provided for the indicated subpart:

- (5) "Space heaters in electrical equipment shall be energized unless a documented engineering evaluation determines that such space heaters are not required."
- (6) "Large (greater than or equal to 50HP) rotating electrical equipment shall be given insulation resistance tests on a scheduled basis unless a documented engineering evaluation determines that such tests are not required."
- (7) Within thirty days of having been placed in storage, rotating equipment weighing over approximately 50 pounds shall be evaluated by engineering personnel to determine if shaft rotation in storage is required: The results of the evaluation shall be documented. If rotation

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is required, it shall be performed at specific intervals, be documented, and be conducted so that parts receive a coating of lubrication where applicable and so that the shaft does not come to rest in the same position occupied prior to rotation. For long shafts or heavy equipment subject to undesirable bowing, shaft orientation after rotation shall be specified and obtained.

- 21) With regard to Section 6.5 of ANSI N45.2.2 - 1972 titled Removal of Items from Storage: The Company does not consider the last sentence of this Section to be applicable to the operations phase due to the relatively short period of time between installation and use. The first sentence of the Section is replaced with: "the Company will develop, issue, and implement a procedure(s) which cover(s) the removal of items from storage. The procedure(s) will assure that the inspection status of all material issued is known, controlled and appropriately dispositioned."

- 22) With regard to Section 6.6 of ANSI N45.2.2 - 1972 titled Storage Records: The Company will comply with the requirements of this Section with the clarification that, for record purposes, only the access of personnel not specifically authorized such by station management into indoor storage areas shall be recorded. Unloading or pick-up of material shall not be considered "access," nor shall inspection by QA/QC personnel, authorized contractors, NRC or other regulatory agents, nor shall tours by non-employees who are accompanied by Company employees.

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<p>23) With regard to Section 7.3 of ANSI N45.2.2 - 1972 titled <u>Hoisting Equipment</u>: Rerating of hoisting equipment will be considered only when absolutely necessary. Prior to performing any lift above the load rating, the equipment manufacturer must be contacted for his approval and direction. The manufacturer must be requested to supply a document granting approval for a limited number of lifts at the new rating and any restrictions involved, such as modifications to be made to the equipment, the number lifts to be made at the new rating, and the test lift load. At all times, the codes governing rerating of hoisting equipment must be observed.</p> <p>If rerating hoisting equipment is necessary and the Company cannot or does not contact the equipment manufacturer as described above, the test weight used in temporarily rerating hoisting equipment for special lifts will be at least equal to 110% of the lift weight. A dynamic load test over the full range of the lift using a weight at least equal to the lift weight shall be performed.</p> <p>24) With regard to Section A3.9 of ANSI N45.2.2 - 1972 titled <u>Marking</u>: As an alternative to the requirements in Subpart 4, the Company may choose to mark containers with waterproof ink or paint with legible characters. Additionally, the requirements of Subpart 6 shall only apply to shipment of items. Items in storage shall be affixed with labels or tags with sufficient information to preserve the item's identity.</p>		

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NRC Regulatory Guide 1.39 - "Housekeeping Requirements for Water-Cooled Power Plants" (Rev. 2, 9/77) - Endorses ANSI N45.2.3 - 1973.

The Company's Position	Conformance Status	Justification
<p>The Operational Quality Assurance program complies with this guide with the following clarifications:</p>	<p>Clarifications meet or exceed applicable guides and standards.</p>	<p>These clarifications are proposed to perform a twofold function.</p>
<p>See Generic Statement which prefaces this table.</p>		<p>A) To translate construction criteria to operating plant oriented requirements.</p>
<p>1) Additional clarifications for ANSI N45.2.3 - 1973 are indicated below for specific Sections.</p>		<p>B) To reflect experience gained at operational nuclear facilities.</p>
<p>Section 2.1 <u>Planning</u>: The Company may choose not to utilize the five-level zone designation system, but will utilize standard janitorial and work practices to maintain a level of cleanliness as delineated in the Company's Accident Prevention Manual which is equivalent to the requirements contained in the referenced section.</p>		<p>It should be noted that where the Company does not specifically implement requirements as delineated herein, the proposed alternatives are reflected in written procedures and policy and contain all necessary elements to assure quality is maintained.</p>
<p>Cleanliness will be maintained, consistent with the work being performed, so as to prevent the entry of foreign material into safety-related systems. This will include, as a minimum, documented cleanliness inspections which will be performed prior to system closure.</p>		
<p>As determined by station management, (e.g., the size of the opening would permit entry of the tools being used) control of personnel,</p>		

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tools, equipment, and supplies will be established when the reactor system is opened for inspection, maintenance or repair.

Additional housekeeping requirements will be implemented as required for control of radioactive contamination.

Section 2.2 - Procedures and Instructions:
Appropriate procedures will be written and implemented.

Section 3.2 - Control of Facilities:
The Company may choose not to utilize the five-level zone designation system, but will utilize the Company's Accident Prevention Manual policies and procedures to maintain a level of cleanliness commensurate with the requirements of this section.

Cleanliness will be maintained, consistent with the work being performed, so as to prevent the entry of foreign material into safety-related systems. This will include, as a minimum, documented cleanliness inspections which will be performed prior to system closure. As necessary, (e.g., the size of the opening would permit entry of the tools being used) control of personnel, tools, equipment, and supplies will be established when major portions of the reactor system are opened for inspection, maintenance or repair.

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Additional housekeeping requirements will be implemented as required for control of radioactive contamination.

Section 3.3 - Materials and Equipment: See Generic Statement which prefaces this table.

Section 3.4 - Construction Tools, Supplies and Equipment: See Generic Statement which prefaces this table.

Section 3.5 - Surveillance, Inspections and Examination: Subparagraph (1) See Generic Statement which prefaces this table.

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NRC Regulatory Guide 1.58 - Qualification of Nuclear Power Plant Inspection, Examination and Testing Personnel" (Rev. 1, 9/80) - Endorses ANSI N45.2.6 - 1978.

The Company's Position	Conformance Status	Justification
<p>The Operational QA Program complies with this guide with the following clarifications:</p>	<p>Clarifications meet or exceed applicable guides and standards.</p>	<p>The proposed clarifications reflect Company practices and are provided here to assure that QA program continuity with other delineated standards and guides is maintained.</p>
<p>1) With regard to Section 1.2 of ANSI N45.2.6 - 1978 titled <u>Applicability</u>: The third paragraph requires that the Standard be used in conjunction with ANSI N45.2; the Company no longer specifically commits to ANSI N45.2 in the Operational QA Program. The fourth paragraph requires that the Standard be imposed on personnel other than Company employees; the applicability of the Standard to suppliers will be documented and applied, as appropriate, in the procurement documents for such suppliers.</p>		
<p>2) With regard to Section 1.4 of ANSI N45.2.6 - 1978 titled <u>Definitions</u>: Definitions in this Reg. Guide 1.58 which are not included in ANSI N45.2.10 will be used; all definitions which are included in ANSI N45.2.10 will be used as clarified in the Company's commitment to Regulatory Guide 1.74.</p>		
<p>3) With regard to Section 2.5 of ANSI N45.2.6 - 1978 titled <u>Physical</u>: The Company 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 the Company, none are considered necessary.</p>		

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4) With regard to Section 3.1 of ANSI N45.2.6 - 1978 titled <u>General</u> : The Company will implement the requirements of this Section with the stipulation that, Level III inspectors are not a specific requirement of the Company's inspection program.		

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NRC Regulatory Guide 1.64 - "Quality Assurance Requirements for the Design of Nuclear Power Plants" (Rev. 2, 6/76) -
Endorses ANSI N45.2.11 - 1974.

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<p>The Operational Quality Assurance Program complies with this guide with the following clarification:</p> <p>See Generic Statement which prefaces this table.</p>	<p>Clarification meets or exceeds applicable guides and standards.</p>	<p>Clarification is considered an acceptable alternative to that proposed in the referenced standard in that all quality elements have been maintained.</p>
<p>1) With regard to Paragraph C.2(1) of Regulatory Guide 1.64: If in an exceptional circumstance the designer's immediate Supervisor is the only technically qualified individual available, this review may be conducted by the Supervisor, providing that: (a) the other provisions of the Regulatory Guide are satisfied, and (b) the justification is individually documented and approved in advance by the Supervisor's management, and (c) quality assurance audits cover frequency and effectiveness of use of Supervisors as design verifiers to guard against abuse.</p>		

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NRC Regulatory Guide 1.74 - "Quality Assurance Terms and Definitions" (2/74) - Endorses ANSI N45.2.10 - 1973.

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<p>The Operational Quality Assurance Program complies with this guide with the following clarification:</p>	<p>Clarification meets or exceeds applicable guides and standards.</p>	<p>The clarifications illuminate actual Company QA program practices and are considered to enhance the Company's commitment to quality practices.</p>
<p>1) The Company reserves the right to define additional words or phrases which are not included in this Standard. Such additional definitions will be documented in appropriate procedures and/or in attachments/appendices to a quality assurance procedures manual or in sections of the Operational QA Program.</p> <p>2) The Company intends for inspections and tests to be performed in accordance with the Operational QA Program by personnel certified as required by that program and for activities defined by "Inspection" and "Testing" in ANSI N45.2.10. Appropriate references to the organization which will perform the activity or quality procedures to be used for performing the activity will be made. If such references are NOT made, inspections or tests are to be considered under the following definition:</p> <p>"Inspection" (when used to refer to activities that are NOT performed by certified personnel) - Examining, viewing closely, scrutinizing, looking over or otherwise checking activities. Personnel performing these functions are not necessarily certified to ANSI N45.2.6. However, station management through prior procedure review shall determine the appropriate personnel qualifications and reporting relationships.</p>		

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NRC Regulatory Guide 1.74 - "Quality Assurance Terms and Definitions" (2/74) - Endorses ANSI N45.2.10 - 1973.

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"Testing" (when used to refer to activities that are not performed by certified personnel) - completion of predetermined procedure steps which determine or verify the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental, or operating conditions. Personnel performing these steps may not necessarily be certified to ANSI N45.2.6. If the completion of the procedural steps utilizes skills and knowledge which they have already obtained from applicable training and experience based programs or formal education programs. Station management through prior procedure review shall determine the appropriate personnel qualifications and reporting relationships.

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<p>3) In addition to the Standard's definition of "procurement documents," The Company will utilize the definitions given in ANSI N45.2.13 and in Regulatory Guide 1.74. The compound definition is given as follows: Procurement documents - Contractually binding documents that identify and define the requirements which items or services must meet in order to be considered acceptable by the purchaser. They include documents which authorize the seller to perform services or supply equipment, material or facilities on behalf of the purchaser (e.g., contracts, letters of intent, work orders, purchase orders or proposals and their acceptance, drawings, electronic procurement system documents, specifications or instructions which define requirements for purchase).</p>		
<p>4) "Program Deficiencies" (Not defined in ANSI N45.2.10, but used and defined differently in ANSI N45.2.12) - Failure to develop, document or implement effectively any applicable element of the Operational QA Program.</p>		
<p>5) "Quality Assurance Program Requirements" (Not defined in ANSI N45.2.10 but used and defined differently in ANSI N45.2.13) - Those individual requirements of the Operational QA Program which, when invoked in total or in part, establish the requirements of the quality assurance program for the activity being controlled. Although not specially used in the Operational QA Program, ANSI N45.2 may be imposed upon the Company's suppliers.</p>		

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<p>6) With the exception of the time intervals defined by the station Technical Specifications, the following definitions shall be applied when defining time intervals for other activities:</p> <p><u>Weekly:</u> at least once per 7 days</p> <p><u>Monthly:</u> at least once per 31 days</p> <p><u>Quarterly or every 3 months:</u> at least once per 92 days</p> <p><u>Semiannually or every 6 months:</u> at least once per 184 days</p> <p><u>Every 9 months:</u> at least once per 276 days</p> <p><u>Yearly or annually:</u> at least once per 366 days</p> <p><u>Biennial (2 years):</u> at least once per 732 days</p> <p><u>Triennial (3 years):</u> at least once per 1098 days</p>		

The above time intervals may be extended by up to 25%.

17.2-13a
June, 1986
(Updated 4/88)

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NRC Regulatory Guide 1.88 - "Collection, Storage and Maintenance of Nuclear Power Plant Quality Assurance Records" (Rev. 2, 10/76 - Endorses ANSI N45.2.9 - 1974).

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<p>The Operational Quality Assurance Program complies with this guide with the following clarifications and alternatives:</p>	<p>Clarifications and alternatives meet or exceed applicable guides and standards.</p>	<p>These proposals are the results of experience gained at operating nuclear facilities for over a decade. As with all guides and standards, additional clarity is sometimes required. Further the alternative (6) presented herein reflects the "as-built" condition of the Company's records storage facilities. These facilities were constructed prior to any regulatory position being defined, and, at the time of construction, were considered more than adequate to assure permanent records retention. The discrepancies which might exist between current guides and standards and "as-built" conditions are more than compensated for by other more stringent measures such as,</p>
<p>1) With regard to Section 3.2.2 of ANSI N45.2.9 - 1974 titled <u>Index</u>: The phrase "an index" is clarified to mean a collection of documents or indices which, when taken together, supply the information attributed to "an index" in the standard.</p> <p>The specific location of a record "within a storage area" may not be delineated (e.g., The specific location within a computer record file may not be constant. Further, the Company may utilize a computer assisted random access filing system where such location could not be readily "documented", nor would such a location be "relevant"). The storage location will be delineated, but where file locations change within time, the specific location of a record within that file may not always be documented.</p>		<p>a) constant surveillance of the facility both by monitoring devices, security patrols, and fire inspections, and</p> <p>b) Permanently installed dedicated fire suppression apparatus.</p>
<p>2) With regard to Section 4.2 of ANSI N45.2.9 - 1974 titled <u>Timeliness</u>: The Company's contractual agreement with its contractors and suppliers will constitute fulfillment of the requirements of this Section.</p>		

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- 3) With regard to Section 5.4 of ANSI N45.2.9 - 1974 titled Preservation: The following clarification is substituted for the current subsection 5.4.2: "Records shall be stored in enclosed containers, cabinets or other comparable document storage hardware".

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The following clarification is substituted for the current subsection 5.4.3 "Provisions shall be made for special processed records (such as radiographs, photographs, negatives, microfilm and magnetic media) to prevent damage as appropriate to the record type and will address the manufacturer's recommendations."

- 4) With regard to Section 5.5 of ANSI N45.2.9 - 1974 titled Safekeeping: Routine general office and nuclear site security systems and access controls are provided.
- 5) With regard to Section 5.6 of ANSI N45.2.9 - 1974 titled Facility: Records shall be forwarded to the appropriate records storage facility promptly after completion when required processing and reviews have been completed.

Paragraph 4, subsection 3 is clarified to require a two-hour minimum fire rating to be consistent with the 1979 version of the Standard and NRC Criteria for Record Storage Facilities (Guidance - ANSI N45.2.9, Section 5.6) issued 7/15/79.

Paragraph 4, subsection 9 is clarified to read: "No pipes or penetrations except those providing fire protection, lighting, temperature/humidity control, or communications are to be located within the facility and they shall comply with a minimum two-hour fire protection rating."

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- 6) The Surry Power Station facility conforms to ANSI N45.2.9 - 1974 as clarified in this Table except that it is rated at approximately 2 hours; concrete floor has no slope; doors, frames, and hardware are three-hour rated; forced-air ducting is not equipped with automatic fire stops; conduit and wiring exist for interior lighting security alarms, and fire protection. This facility is considered to meet the intent of ANSI N45.2.9 and provides adequate protection for records.

The North Anna Power Station Records Vault meets the intent of Chapter 3 of NFPA No. 232-1975, subject to the following provisions:

- a) The file room is constructed with a minimum fire rating of two (2) hours.
- b) Heating, cooling and ventilation for the file room is by means of a forced air system, with all fans, filters, and heating and cooling elements located in an equipment room which is external to the file room. Ducts for this system are located on the ceiling of the file room and are provided with the standard door dampers with a minimum rating of two (2) hours where they penetrate the file room barrier to other areas of the building.
- c) The file room is provided with an early warning fire detection system and automatic fire suppression system. A protective

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signaling system is provided, with a remote alarm located at a constantly attended station.

- d) Telephone service is provided to the file room, with the wire penetration constructed and sealed in accordance with NFPA No. 232-1975.
- e) All records stored in the file room are stored in metal cabinets, which are arranged to provide adequate access and aisleways. Work not directly related to the storage, retrieval or auditing of records is not allowed in the file room. Smoking, eating, and drinking is prohibited in the file room.
- f) A wall divides the file room into two sections, with one section used as a file room and the other section used for micro-filming of records. The dividing wall has a minimum fire rating of two (2) hours, including the fire door dampers in the duct penetrating the wall.

The North Anna Power Station Training Center Vault meets the intent of Chapter 3 of NFPA No. 232-1975, subject to the following provisions:

- a) The file room is constructed with a minimum fire rating of two (2) hours.

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- b) Heating, cooling and ventilation for the file room is by means of a forced air system, with all fans, filters, and heating and cooling elements located in an equipment room which is external to the file room. Ducts for this system are located above the ceiling of the file room and are provided with accordion dampers with a minimum rating of two (2) hours where they penetrate the file room barrier to other areas of the building.
- c) The file room is provided with an early warning fire detection system and automatic fire suppression system. A protective signaling system is provided, with a remote alarm located at a constantly attended station.
- d) Telephone service is provided to the file room, with the wire penetration constructed and sealed in accordance with NFPA No. 232-1975.
- e) All records stored in the file room are stored in metal cabinets, which are arranged to provide adequate access and aisleways. Work not directly related to the storage, retrieval or auditing of records is not allowed in the file room. Smoking, eating, and drinking is prohibited in the file room.

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The Innsbrook Technical Center's Vital Records Vault for nuclear records conforms to the requirements of Section 5.6 of ANSI N45.2.9-1974 without exceptions.

The Surry Training Center training records vault (Main Building) conforms to the requirements of section 5.6 ANSI N45.2.9-1974 without exceptions.

The Surry Training Center training records vault (Simulator Building) conforms to the requirements of section 5.6 ANSI N45.2.9-1974 with the following exceptions:

- a) The door is a UL-rated three-hour fire door.
- b) The records storage vault is constructed with a minimum fire rating of two (2) hours.

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NRC Regulatory Guide 1.94 - "Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel during the Construction Phase of Nuclear Power Plants" (Rev. 1, 4/76) - Endorses ANSI N45.2.5 - 1974.

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The Operational Quality Assurance Program complies with this guide with the following clarification:

Clarification meets or exceeds applicable guides and standards.

The proposed clarification is used to translate construction oriented documents to operational regulations.

See Generic Statement which prefaces this table.

- 1) With regard to Section 2.5.1 of ANSI N45.2.5 - 1974 titled Selection: The Company complies with the requirement set forth in the first paragraph of this Section for selection of measuring and test equipment on the basis of sufficient accuracy to determine conformance to the standard's requirements: This is accomplished without the use of calibrated balances or volumetric buckets.

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NRC Regulatory Guide 1.116 - "Quality Assurance Requirements for Installation, Inspection and Testing of Mechanical Equipment and Systems" (Rev. 0-R, 6/76) - Endorses ANSI N45.2.8 - 1975.

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The Operational Quality Assurance Program complies with this guide with the following clarification:

Clarification meets or exceeds applicable guides and standards.

This clarification is proposed as a construction to operations device.

See Generic Statement which prefaces this table.

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NRC Regulatory Guide 1.123 - "Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants" (Rev. 1, 7/77) - Endorses ANSI N 45.2.13 - 1976.

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Justification

The Operational Quality Assurance Program complies with this guide with the following clarifications:

Clarifications meet or exceed applicable guides and standards.

Clarifications contained herein reflect actual Company QA Program practices. Further, these proposals assure continuity with the QA Program and other regulations or guides, and are considered to enhance the aforementioned program.

- 1) With regard to Section 1.3 of ANSI N45.2.13 - 1976 titled Definitions: With two exceptions (Procurement Document and Quality Assurance Program Requirements) definitions in this Standard which are not included in ANSI N45.2.10 will be used; all definitions which are included in ANSI N45.2.10 will be used as clarified in the Company's commitment to Regulatory Guide 1.74. The two exceptions are defined in Table 17.2.0 under Regulatory Guide 1.74.
- 2) With regard to Section 1.2.2 of ANSI N45.2.13 - 1976 titled Purchaser's Responsibilities: Item c is modified as follows: "Evaluation of the supplier's QA program shall be conducted as determined by the QA Department based on the complexity and use of the procurement."
- 3) With regard to Section 3.1 of ANSI N45.2.13 - 1976 titled Procurement Document Preparation, Review and Change Control: The phrase "the same degree of control" is stipulated to mean "equivalent level of review and approval." The changed document may not always be rereviewed by the originator; however, at least an equivalent level

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supervisor shall review and approve any changes.

- 4) With regard to Section 3.4 of ANSI N45.2.13 - 1976 titled Procurement Document Control:
The Company will meet the requirements of Sections 17.2.4 and 17.2.7 of the Operational QA Program in lieu of the requirements specified in this Section.
- 5) With regard to Section 5.3 of ANSI N45.2.13 - 1976 titled Preaward Evaluation: The Company will comply with an alternate paragraph which reads: "Except in unusual circumstances as determined and documented by station management (e.g., replacement parts are needed to preclude the development of some unsafe or undesirable condition at a nuclear facility), and except in those cases where dedication techniques that do not rely on the supplier's QA program are necessary (e.g. the sole use of special tests and inspections to verify the quality of certain commercial grade items where the supplier has no formal QA program), a preaward evaluation of the Supplier shall be performed as required by the Operational QA Program."

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- 6) With regard to Section 6.4 of ANSI N45.2.13
- 1976 titled Control of Changes in Items of Service: The phrase "the Operational QA Program" will be inserted in lieu of "ANSI N45.2, Section 7."

- 7) With regard to Section 8.2 of ANSI N45.2.13
- 1976, titled Disposition: The third sentence of item b is revised to read:

Nonconformances to the contractual procurement requirements or Purchaser approved documents and which consist of one or more of the following shall be submitted to the Purchaser for approval of the recommended disposition prior

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to shipment when the nonconformance could adversely affect the end use of a module or shippable component relative to safety, interchangeability, operability, reliability, integrity, or maintainability:

- 1) Technical or material requirement is violated;
- 2) Requirement in Supplier documents, which have been approved by the Purchaser, is violated;
- 3) Nonconformance cannot be corrected by continuation of the original manufacturing process or by rework; and/or
- 4) The item does not conform to the original requirement even though the item can be restored to a condition such that the capability of the item to function is unimpaired.

* A module is an assembled device, instrument, or piece of equipment identified by serial number or other identification code, having been evaluated by inspection and/or test for conformance to procurement requirements regarding end use. A shippable component is a part of a sub-assembly of a device, instrument, or a piece of equipment which is shipped as an individual item and which has been evaluated by inspection and/or test for conformance to procurement requirements regarding end use.

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NRC Regulatory Guide 1.144 - "Auditing of Quality Assurance Programs for Nuclear Power Plants" (Rev. 1, 9/80) - Endorses ANSI N45.2.12 - 1977.

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The Operational Quality Assurance Program complies with this guide with the following clarifications:	Clarifications meet or exceed applicable guides and standards.	These clarifications have been proposed to maintain program continuity with other referenced standards and guides committed to in Table 17.2.9
1) With regard to Section 1.4 of ANSI N45.2.12 - 1977 titled <u>Definitions</u> : With one exception (Program Deficiencies) the definitions in this Standard which are not included in ANSI N45.2.10 will be used as clarified in the Company's commitment to Regulatory Guide 1.74. The one excepted definition and clarified definition relevant to this standard are defined in Table 17.2.0 under Regulatory Guide 1.74.		Further, where alternatives have been proposed they reflect Company QA Program practices and are considered to enhance the referenced program.
2) With regard to Section 2.2 of ANSI N45.2.12 - 1977 titled <u>Personnel Qualifications</u> : The qualification of Company audit personnel will be accomplished as described to meet the requirements of ANSI N45.2.23 - 1978 as endorsed in Table 17.2.0 and Sections 17.2.2 and 17.2.18 of the Operational QA Program.		Not all standards, guides and regulations can be considered programmatical-ly error-free, therefore, operational experience utilizing these documents and the proposed alternatives must be taken into consideration.
3) With regard to Section 2.3 (and subsections 2.3.1 through 2.3.3) of ANSI N45.2.12 - 1977 titled <u>Training</u> : The training of Company audit personnel will be accomplished as described to meet the requirements of ANSI N45.2.23 - 1978 as endorsed in Table 17.2.0 and Sections 17.2.2 and 17.2.18 of the Operational QA Program.		

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- 4) With regard to Section 2.4 of ANSI N45.2.12 - 1977 titled Maintenance of Proficiency: The maintenance of proficiency of the Company audit personnel will be accomplished as described to meet the requirement of ANSI N45.2.23 - 1978 as endorsed in Table 17.2.0 and Sections 17.2.2 and 17.2.18 of the Operational QA Program.
- 5) With regard to Section 3.3 of ANSI N45.2.12 - 1977 titled Essential Elements of the Audit System: The Company will comply with subsection 3.6.5 as it was originally written (subsection 3.2.5) in ANSI N45.2.12, Draft 3, Revision 4: "Provisions for reporting on the effectiveness of the Quality Assurance Program to the responsible management." For the auditing organization (The Company), effectiveness is reported as required by the individual nuclear facility Technical Specifications. Other than audit reports, the Company may not directly report on the effectiveness of the quality assurance programs to the audited organization when such organizations are outside of the Company.

Subsection 3.3.6 requirements are considered to be fulfilled by compliance with the organization and reporting measures outlined in the Operational QA Program and the Technical Specifications of the individual nuclear facility.

Subsection 3.3.7 requires verification of effective corrective action on a "timely

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<p>basis." Timely basis is interpreted to mean within the framework or period of time for completion of corrective action that is accepted by the QA Organization. Each finding requires a response and a corrective action completion date; these dates are subject to revision (with the approval of the QA Department) and must be escalated to higher authority when there is disagreement between the audited and the auditing organization on what constitutes "timely corrective action."</p>		
<p>6) With regard to Section 3.5 of ANSI N45.2.12 - 1977 titled <u>Scheduling</u>: Subsection 3.5.3.1 is interpreted to mean that the Company may procedurally review qualification of a contractor's or supplier's quality assurance program prior to awarding a contract or purchase order by means other than audit.</p>		
<p>7) With regard to Section 4.3.1 of ANSI N45.2.12 - 1977 titled <u>Pre-Audit Conference</u>: The Company will comply with requirements of this Section 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 pre-audit conference might interfere with the spontaneity of the operation or activity being audited. In other cases, persons who should be present at a pre-audit 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</p>		

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not intended to be all inclusive, the material set forth in Section 4.3.1 will normally be covered during the course of the audit.

8) With regard to Section 4.3.2 of ANSI N45.2.12 - 1977 titled Audit Process:

a) Subsection 4.3.2.2 could be interpreted to limit auditors to the review of only objective evidence; sometimes and for some program elements, no objective evidence may be available or subjective evidence may be more appropriate. The Company will comply with an alternate sentence which reads: "When available, objective evidence shall be examined for compliance with Quality Assurance Program requirements. When subjective evidence is used (e.g., personnel interviews, direct observations by the auditor), then the audit report must indicate how the evidence was obtained."

b) Subsection 4.3.2.4 is modified as follows to take into account the fact that some nonconformances are virtually "obvious" with respect to the needed corrective action:

"When a nonconformance or quality assurance program deficiency is identified as a result of an audit, unless the apparent cause, extent and corrective action are readily evident, further investigation shall be conducted by the audited organization in an effort to

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<p>identify the cause and effect and to determine the extent of the corrective action required."</p>		
<p>c) Subsection 4.3.2.5 contains a recommendation which is clarified with the definition of "acknowledged by a member of the audited organization" to mean that a "member of the audited organization has been informed of the findings and/or observation." Agreement or disagreement with a finding and/or observation may be expressed in the response from the audited organization.</p>		
<p>9) With regard to Section 4.3.3 of ANSI 45.2.12 - 1977 titled <u>Post-Audit Conference</u>: The Company will substitute and comply with the following paragraph: "For all external audits, a post-audit conference shall be held with management of the audited organization to present audit findings or observations and clarify misunderstandings; where no adverse findings or observations exist, this conference may be waived by management of the audited organization: such waiver shall be documented in the audit report.</p>		
<p>Unless unusual operating or maintenance conditions preclude attendance by appropriate managers/supervisors, a post-audit conference shall be held with managers/supervisors for all internal audits for the same reasons as above. Again, if there are no adverse findings or observations, management of the internal audited organization may waive the</p>		

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post-audit conference: such waiver shall be documented in the audit report."

- 10) With regard to Section 4.4. of ANSI M45.2.12 - 1977 titled Reporting:

- a) This Section requires that the audit report shall be signed by the audit team leader; this is not always the most expeditious route to take to assure that the audit report is issued as soon as practical.

The Company will comply with Section 4.4 as clarified in the following opening statement: "An audit report, which shall be signed by the audit team leader, or his supervisor in his absence, shall provide": In cases where the audit report is not signed by the Audit Team Leader due to his absence, one record copy of the report must be signed by the Audit Team Leader upon his return. The report shall not require the Audit Team Leader's review/concurrence/signature if the Audit Team Leader is no longer employed by the Company QA Department at the time the audit report is issued.

- b) The Company will comply with subsection 4.4.3 clarified to read: "Supervisory level personnel with whom significant discussions were held during the course of pre-audit (where conducted), audit, and post-audit (where conducted) activities.
- c) Subsection 4.4.6 requires audit reports to include recommendations for corrective actions; the Company may choose not to

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comply with this requirement. Instead, Audit Team Leaders are required to document all adverse findings and observations on an audit finding and observation forms.

The procedure for processing audit findings allows the Audit Team Leader to document actions which are considered necessary to correct the finding; the Audit Team Leader may also document actions which are considered unacceptable for correcting the finding: the audit finding with these "Recommendations" is then transmitted to the audited organization. In addition, the Audit Team Leader is required to review the response to the audit finding and determine if it is acceptable. Any disagreements must be escalated to higher management for resolution.

- 11) With regard to Section 4.5.1 of ANSI N45.2.12 - 1977 titled By Audited Organization: The Company will comply with the following clarification of this Section: "Management of the audited organization or activity shall review and investigate all adverse findings, and observations as necessary, (e.g., where the cause is not already known, another organization has not already investigated and found the cause, etc.) to determine and schedule appropriate corrective action including action to prevent recurrence. They shall respond, in writing, within thirty days after the date of issuance

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of the audit report. The response shall clearly state the corrective action taken or planned to prevent recurrence and the results of the investigation if conducted. In the event that corrective action is not completed by the time the response is submitted, the audited organization's response shall include a scheduled date for completion of planned corrective action: a followup response shall be provided stating the corrective action taken and the date that the action was completed.

If corrective actions are verified as satisfactorily completed by the quality organization prior to the scheduled completion date, no followup response is required. The audited organization shall take the appropriate action to assure that corrective action is accomplished as scheduled." The Manager-Quality Assurance may, at his discretion, waive the requirements for supplementary response.

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NRC Regulatory Guide 1.146 - "Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants" (Rev. 0, 8/80) - Endorses ANSI N45.2.23 - 1978.

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<p>The Operational Quality Assurance Program complies with this guide with the following clarifications and alternatives:</p>	<p>Clarifications and alternatives meet or exceed applicable guides and standards.</p>	<p>The clarifications and alternatives reflect experience gained at operational nuclear facilities and are intended to enhance and provide additional guidance in the areas of auditing as delineated herein.</p>
<p>1) With respect to Section 1.4 of ANSI N45.2.23 - 1978 titled <u>Definitions</u>: Definitions in this Standard which are not included in ANSI N45.2.10 will be used; "AUDIT" which is included in ANSI N45.2.10 will be used as addressed in the Company's commitment to Regulatory Guide 1.74.</p>		
<p>2) With respect to Section 2.2 of ANSI N45.2.23 - 1978 titled <u>Qualification of Auditors</u>: Subsection 2.2.1 references ANSI N45.2 therefore, the Company will comply with an alternate subsection 2.2.1 which reads:</p>		
<p style="padding-left: 40px;">Orientation to provide a working knowledge and understanding of the Operational QA Program, including the ANSI standards and Regulatory Guides included in Table 17.2.0 of the Program, and the Company's procedures for implementing audits and reporting results.</p>		
<p>3) With respect to Section 3.2 of ANSI N45.2.23 - 1978 titled <u>Maintenance of Proficiency</u>: The Company will comply with the requirements of this Section by defining "annual assessment" as one which takes place every 12 months or less and which uses the initial date of certification (not the calendar year) as</p>		

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the starting date for determining when such annual assessment is due.		
4) With respect to Section 4.1 of ANSI N45.2.23 - 1978 titled <u>Organizational Responsibility</u> : The Company will comply with this Section with the substitution of the following sentence in place of the last sentence in the Section. The Manager-Quality Assurance, Supervisor-Quality or 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 activities to be audited.		
5) With respect to Section 5.3 of ANSI N45.2.23 - 1978 titled <u>Updating of Lead Auditor's Records</u> : The Company will substitute the following sentence for this Section: Records for each Lead Auditor shall be maintained and updated during the period of the annual management assessment as defined in Section 3.2 (as clarified).		

17.2.1 ORGANIZATION

17.2.1.1 General Description

A. Senior Vice President - Nuclear

Nuclear is divided into five distinct groups; Nuclear Operations, Nuclear Engineering Services, Nuclear Services, Nuclear Administrative Services, and Nuclear Quality Assurance. Nuclear Operations, Nuclear Services, Nuclear Administrative Services, and Nuclear Engineering Services are responsible for licensing, operation, and support of the nuclear power stations. Nuclear Quality Assurance has the responsibility to monitor compliance with the Operational Quality Assurance Program.

17.2.1.2 Management of Operational Quality Assurance. The specific responsibilities for operational quality assurance are outlined below.

A. NUCLEAR OPERATIONS - The Vice President-Nuclear Operations is responsible to the Senior Vice President-Nuclear and has corporate responsibility for the operation of nuclear power stations. As such, he has overall responsibility for the implementation of the requirements established by the Operational Quality Assurance Program for the operational phase of the nuclear power stations.

1. Assistant Vice President - Nuclear Operations

Responsible to the Vice President - Nuclear Operations and provides assistance in the day-to-day operation of the nuclear power stations.

2. Station Manager

Responsible to the Vice President-Nuclear Operations for the overall safety and efficient operation of the station, and for the implementation of quality assurance requirements in the areas specified by the Operational Quality Assurance Program.

a. Assistant Station Manager (Operations and Maintenance)

Responsible to the Station Manager for directing operation, maintenance and for support and enforcement of the company's policies. In the Station Manager's absence, he assumes the authority and responsibilities of the Manager, including implementation of the Operational Quality Assurance Program.

b. Assistant Station Manager (Nuclear Safety and Licensing)

Responsible to the Station Manager for ensuring compliance with station technical specifications, managing licensing activities within the station, interfacing with the Manager-Nuclear Licensing and Programs on operating experience and safety and licensing issues, managing station procedures and managing station emergency plan activities.

c. Superintendent-Operations/Superintendent-Maintenance/Superintendent-Radiological Protection

Responsible to the Station Manager, either directly or through the Assistant Station Manager (O&M) for the safe and efficient operation and maintenance of the station within their respective areas of responsibility, including quality assurance requirements specified in the Operational Quality Assurance Program.

d. Station Supervisory Personnel

Responsible directly to the Station Manager through their respective superintendents, for implementing the Operational Quality Assurance Program requirements applicable to their respective areas of responsibility.

e. Station Staff

It is the responsibility of each member of the station staff to adhere to the provisions contained in the Operational Quality Assurance Program when performing their work tasks to assure quality workmanship. Personnel with unescorted access status shall receive training (General Employee Training) in the use of and adherence to the Operational Quality Assurance Program.

f. Station Nuclear Safety and Operating Committee

Serves in an advisory capacity to the Station Manager. The technical specifications of each station define the responsibilities of this committee. The Station Nuclear Safety and Operating Committee is separate from operational quality assurance activities in that its authority and responsibilities are not established by the Operational Quality Assurance Program. However, since the prime responsibility of this committee is to provide a continuing review of the operational and safety aspects of the station, it does perform a quality assurance function.

g. Superintendent-Site Services

Responsible to Station Manager for managing all aspects of the assigned projects including interface with station management, engineering, construction and support activities such as accounting, procurement planning, scheduling and cost control.

- B. NUCLEAR SERVICES - The Vice President - Nuclear Services is responsible to the Senior Vice President - Nuclear and has corporate responsibility for long-term nuclear operations support activities. As such, he has responsibility for the system level implementation of the requirements established by the Operational Quality Assurance Program for the nuclear power stations.

1. Manager-Nuclear Operations Support

Responsible to the Vice President-Nuclear Services to manage the system level support involving maintenance, health physics, chemistry and outage management services for the operating nuclear power stations.

a. Director-Health Physics/Chemistry

Responsible to the Manager-Nuclear Operations Support for providing health physics and chemistry support services for nuclear stations.

b. Director-Maintenance Support

Responsible to the Manager-Nuclear Operations Support for providing and assessing maintenance programs coordinating major equipment repair or replacement, for reviewing station efficiency, and for making recommendations for improvement.

c. Director-Methods and Procedures

Responsible to the Manager - Nuclear Operations Support for the production and maintenance of corporate and station standards and administrative procedures and for coordinating station production and maintenance of station technical procedures.

2. Manager-Nuclear Licensing and Programs

Responsible to the Vice President-Nuclear Services to manage the Industry Operational Event Review Sections, and to manage the system level support involving licensing, safety review, interface with industry, coordination with the Institute for Nuclear Power Operations, and other programs which may be assigned.

a. Supervisor-Licensing

Responsible to the Manager - Nuclear Licensing and Programs for providing support for the stations in the areas of safety review; NRC issues and actions; and technical and strategic support for licensing and regulatory agency submittals, hearings, and conferences.

b. Supervisor-Corporate Nuclear Safety

Responsible to the Manager-Nuclear Licensing and Programs to provide an independent review of matters relating to the activities of the Station Nuclear Safety and Operating Committee, the Operating License and Technical Specifications, changes and modifications, Technical Specification departures, investigations, tests, abnormal performance, and incidents reportable as required by applicable federal codes; and makes recommendations on these matters. Corporate Nuclear Safety also acts as the technical body of the Management Safety Review Committee. The Technical Specifications for each station further define these responsibilities.

3. Director-Emergency Preparedness

Responsible to the Vice President-Nuclear Services for managing the overall scheduling and coordination of emergency testing and training exercises with Federal, State, and local agencies. Works with corporate and nuclear station managers and personnel to ensure emergency plans meet all the requirements and commitments.

4. Manager-Nuclear Training

Responsible to the Vice President-Nuclear Services for training of personnel who operate or support the nuclear power stations, including Quality Assurance personnel. Included in this process are determining the need for training based on information provided by the Nuclear Group, developing performance-based training programs, implementing training programs to support employee and station needs, and evaluating training programs.

5. Manager-Nuclear Business Services

Reports directly to the Vice President-Nuclear Services and is responsible for programs supporting budgeting-management reporting, document control-records management, and the publication design and graphic support for the Nuclear Department. In addition, Nuclear Business Services is responsible for assessment of the programs performance and follow-up actions to ensure program objectives are accomplished.

A. Director Nuclear Document Control

Reports directly to the Manager-Nuclear Business Services and is responsible for development, implementation, maintenance and routine assessment of the Nuclear Document Management Program.

6. Manager-Nuclear Materials

Responsible to the Vice President-Nuclear Services for ensuring that necessary parts and materials meeting quality and/or design requirements are available when needed.

7. Management Safety Review Committee (MSRC)

The MSRC is the body which performs the offsite safety review function. It reports to the Senior Vice President - Nuclear and provides an independent review in the areas of station operations, maintenance, reactivity management, engineering, chemistry and radiochemistry, radiological safety, quality assurance practices, and emergency preparedness. The Technical Specifications of each station further define the function, composition, alternates, consultants, meeting frequency, quorum, reviews, audits, authority and records of this committee.

- C. NUCLEAR ENGINEERING SERVICES - The Vice President-Nuclear Engineering Services is responsible to the Senior Vice President-Nuclear for civil, electrical, mechanical, and nuclear engineering, including establishment, implementation and maintenance of programs to control design input, final design, design output, internal and external design interface, and design authority. Also responsible for procurement engineering, inservice inspection and nondestructive examination programs and for nuclear core design, safety analysis, reactor performance evaluation, spent fuel disposition, fuel inspection, and fuel surveillance.

1. Manager-Nuclear Engineering

Responsible to the Vice President - Nuclear Engineering Services for implementing the Operational Quality Assurance Program in the following areas:

- ° Implementation of engineering standards for nuclear design control.
- ° Engineering evaluation of generic industry issues.
- ° Management of engineering resources for specific tasks.

a. Superintendent-Station Engineering (One at each station)

Responsible to the Manager-Nuclear Engineering for the implementation of the Operational Quality Assurance Program in the following areas:

- ° Implementation of the design change program at the site including initiating field changes as required.
- ° Providing engineering disposition to Deviation Reports as required.
- ° Managing the drawing update program.
- ° Managing engineering services as requested by station management.

2. Manager-Nuclear Analysis and Fuel

Responsible to the Vice President-Nuclear Engineering Services for the development and implementation of the Operational Quality Assurance Program in the following areas:

- ° Nuclear fuel management and core design
- ° Core and system thermal hydraulic analysis
- ° Fuel performance analysis
- ° Reload safety evaluation
- ° Engineering support for spent fuel disposition
- ° Radiation protection engineering
- ° Reactor performance evaluation
- ° Special nuclear material accountability
- ° Inspection and surveillance of nuclear fuel and related items at the stations and vendors
- ° Engineering evaluation of fuel vendors
- ° Site reactor engineering

3. Manager ISI/NDE and Engineering Programs

Responsible to the Vice President-Nuclear Engineering Services for the Inservice Inspection Program and the Nondestructive Examination Services Program and other engineering programs in the following areas:

- ° Direction of the Inservice Inspection Program relative to sound judgement, company requirements, and regulatory and enforcement authority requirements.
- ° Management and assessment of the effectiveness of the Inservice Inspection Program through reviews, evaluations, and updates.
- ° Development of the inservice inspection programs, plans, and schedules.
- ° Development, maintenance, and implementation of the Nondestructive Examination Services Program.
- ° Performance and the technical aspects of nondestructive examinations.
- ° Qualification and certification of Virginia Power NDE personnel.
- ° Management and assessment of the effectiveness of procurement engineering.
- ° Control and implementation of General Engineering standards for nuclear design control.
- ° Engineering programs to maintain compliance with regulatory issues.
- ° Reviewing procurement documents.
- ° Managing the commercial grade procurement/dedication process.
- ° Vendor manual control
- ° Managing the Equipment Data System (EDS) and Bill of Material System (BOM).
- ° Managing the Q-list and equipment and component safety classification programs.
- ° Development and Maintenance of the Corporate Welding Manual.
- ° Provides material and metallurgical assessments and recommendations for existing and proposed new equipment.

- * Provide material failure analysis and evaluations.
- * Welding/corrosion engineering and fabrication support on in-house and AE/contractor designed material.

4. Managers - (Civil/Mechanical, Electrical) Engineering

Responsible to the Vice President-Nuclear Engineering Services. Provide engineering services through a project matrix organization to the Manager-Nuclear Engineering. Activities include preparation of design change packages and engineering evaluations, corporate administration of design engineering programs, control and implementation of discipline specific engineering standards for nuclear design control, development of procurement specifications, construction drawings, technical reviews, calculations, etc.

5. Project Manager - Configuration Management

Responsible to the Vice President - Nuclear Engineering Services for the Design Basis Documentation program.

D. PROCUREMENT - The Vice President-Procurement is responsible to the Senior Vice President-Corporate Services for the acquisition of all fuels, materials, supplies, services, and transportation.

1. Manager-Contracts is the responsible to the Vice President - Procurement for performing contract administration functions in support of the Operational Quality Assurance Program for the nuclear power stations, except for fuel and fuel related services.
2. Manager-Fuel Procurement is responsible to the Vice President - Procurement for the purchasing of nuclear fuel and related services, and to adhere to the provisions contained in the Operational Quality Assurance Program applicable to his respective area of responsibility.
3. Manager-Purchasing is responsible to Vice President - Procurement to procure the equipment, materials, supplies and general and technical services in support of the Operational Quality Assurance Program at the nuclear stations.

E. NUCLEAR QUALITY ASSURANCE - The Manager-Nuclear Quality Assurance is responsible to the Senior Vice President - Nuclear for the establishment of, and monitoring compliance with, the quality assurance program for engineering, construction, and operation activities of Nuclear Operations. The Manager - Nuclear Quality Assurance may make recommendations to the Vice President - Nuclear Operations, the Vice President - Nuclear Services, or other levels of management. If he disagrees with any action taken by the Nuclear group, and is unable to obtain resolution, he shall bring the matter to the attention of the Senior Vice President - Nuclear who will determine the final disposition.

1. The Manager-Quality Assurance (Station) (one at each site) is responsible to the Manager - Nuclear Quality Assurance for monitoring compliance with the Operational Quality Assurance Program for the nuclear power stations and the technical support of the quality assurance effort associated with the modification, operation, and maintenance of the nuclear stations. The Manager - Quality Assurance (Station) may make recommendations to the Station Manager or other levels of management. If he disagrees with any quality assurance actions taken by the Station Manager, he shall notify the Manager - Nuclear Quality Assurance and the Vice President - Nuclear Operations.
2. The Manager-Quality Assurance (Corporate) is responsible to the Manager - Nuclear Quality Assurance for monitoring compliance with the quality assurance program for scheduling and conducting internal audits, inspection and audit of vendors and contractors, preparation and maintenance of the Safety-Related Vendors List, quality review of safety related procurement documentation, and those areas of the Operational Quality Assurance as may be assigned to his area of responsibility.

F. Nuclear Administrative Services - The Director - Nuclear Administrative Services is responsible to the Senior Vice President - Nuclear for Personnel/Human Resources, Management Information and Planning and Fitness for Duty. Other responsibilities include: provide staff support to the Senior Vice President - Nuclear and coordinating international information exchange activities.

17.2.1.3 Organization - Each nuclear power station's Technical Specifications contain the company's organizational requirements for facility operation and corporate management.

17.2.2 QUALITY ASSURANCE PROGRAM

17.2.2.1 General Description

The objective of the Company Quality Assurance Program for operating nuclear power stations is to comply with the criteria as expressed in 10 CFR 50, Appendix B, as amended, and with the quality assurance program requirements for nuclear power plants as referenced in the Regulatory Guides and ANSI Standards as listed in table 17.2.0. This program, its policies and procedures are described herein: the Topical Report (VEP-1-5A) (entitled Operational Quality Assurance Program); the Quality Assurance Organization Standards (QAOS); the Nuclear Operations Department Standards (NODS); and the corporate and station procedures. This program applies to those quality-related activities that involve the functions of safety-related structures, systems, and components associated with the operation, maintenance and modification of nuclear power stations and those nonsafety-related components described in the UFSAR.

The goal of this program is to assure the safe, reliable and efficient operation of the nuclear power station in accordance with sound engineering principles.

The program provides written policies, standards, procedures, and instructions covering engineering, design, procurement, modifications, periodic surveillance, testing, and maintenance after the systems have been installed, checked and turned over to the Company for operation. Nuclear Operations Department (NOD) policies and standards establish commitments to the Operational Quality Assurance Program. Detailed procedures and instructions are issued by the station in accordance with and to meet the requirements of their Technical Specifications for administrative, normal operation, periodic testing, abnormal and emergency conditions. An audit and inspection program has been implemented to provide assurance that these procedures are being correctly applied.

The Company quality assurance personnel, both station and corporate, report through a line of management completely separate from operational and production management and influences, and fulfill the following three-part role:

1. Audit and inspect to ensure that the overall operation of the nuclear power station is carried out in accordance with Technical Specifications, applicable codes and standards, NRC guides and regulations, company policies and commitments.
2. Serve as a management tool for station and system management personnel, illuminating problem areas, detecting trends, and providing recommendations regarding solution of problem areas when applicable.
3. Provide all levels of management with an independent source of information regarding the quality aspect of station operations, maintenance and modification activities.

Differences of opinion between quality assurance personnel and other departments are resolved either at the manager level by the cognizant Manager and the Manager - Quality Assurance or are forwarded through normal administrative chains of both individuals for resolution at the corporate level. Final decision-making authority rests with the Senior Vice President-Nuclear.

The Quality Assurance Organization conducts audits and inspections in accordance with the Operational Quality Assurance Program and performs other duties as directed by the individual Supervisors-Quality. The Quality Assurance Organization representatives have access to all areas of the station at any time deemed necessary for inspections, audits, and observations related to quality. They have access to station records required for in-depth auditing of station operations, including confidential personnel records (but only to the extent necessary to verify personnel qualifications or other information related to quality.)

17.2.2.2 Quality Assurance Program

The Company Operational Quality Assurance Program is displayed in a point-by-point comparison to Appendix B, 10 CFR 50 in Table 17.2.2, which follows.

TABLE 17.2.2

<u>Appendix B</u> <u>10 CFR 50</u> <u>Criterion</u>	<u>Topical</u> <u>Report</u> <u>Section</u>	<u>Title</u>	<u>Abstract</u>
I	17.2.1	Organization	Defines the relationship of departments to the quality assurance effort associated with the operation of the nuclear power station.
II	17.2.2	Quality Assurance Program	Defines the Operational Quality Assurance Program, its overall responsibility and provisions.
III	17.2.3	Design Control	Defines the policy, responsibility and procedures for exercising design control.
IV	17.2.4	Procurement Document Control	Establishes policy applicable to plant operation and maintenance.
V	17.2.5	Instructions, Procedures and Drawings	Establishes guidelines for preparing instructions, procedures and drawings.
VI	17.2.6	Document Control	Establishes policy for the control of procedures and instructions.
VII	17.2.7	Control of Purchased Material, Equipment and Services	Establishes methods for assuring that purchased items conform to the specified quality requirements.
VIII	17.2.8	Identification and Control of Material, Parts and Components	Establishes procedures for the identification and control of material, parts and components.
IX	17.2.9	Control of Special Processes	Establishes procedures which assure that special processes are controlled and accomplished by qualified personnel.

<u>Appendix B</u> <u>10 CFR 50</u> <u>Criterion</u>	<u>Topical</u> <u>Report</u> <u>Section</u>	<u>Title</u>	<u>Abstract</u>
X	17.2.10	Inspection	Establishes a program for inspection of activities affecting quality.
XI	17.2.11	Test Control	Establishes policy for power stations test programs.
XII	17.2.12	Control of Measuring and Test Equipment	Establishes policy for control and calibration of test and measuring equipment.
XIII	17.2.13	Handling, Storage and Shipping	Establishes policy for this function as related to material and equipment.
XIV	17.2.14	Inspection, Test, and Operating Status	Makes reference to appropriate administrative procedures which govern this function.
XV	17.2.15	Non-Conforming Material, Parts, or Components	Establishes policy for reporting and controlling non-conforming materials, parts, or components.
XVI	17.2.16	Corrective Action	Establishes policy for identifying, documenting, notifying, determining causes and preventing defects from recurring.
XVII	17.2.17	Quality Assurance Records	Assures maintenance, identification and retrievability of records.
XVIII	17.2.18	Audits	Defines policy and procedures for audit programs.

17.2.2.3 Identification of Structures, Systems, and Components

Safety related structures, systems, and components are identified in the UFSAR. The portions of these structures, systems, and components that are within the scope of the Operational Quality Assurance Program are further identified in the respective Q-List for North Anna and Surry Power Station.

17.2.2.4 Periodic Review of the Operational Quality Assurance Program

Audits of activities required by the Operational Quality Assurance Program will be conducted at least once per 24 months. These audits are performed under the cognizance of the Management Safety Review Committee.

17.2.2.5 Qualification of Quality Assurance Organization Personnel

The Manager - Quality Assurance (Corporate) shall have a four-year accredited engineering or science degree or equivalent with a minimum of ten years experience related to electric power generating facilities. At least five years of overall experience shall have been in a supervisory capacity, two years of which should have involved quality assurance related matters.

The Manager - Quality Assurance (Station) shall have a four-year accredited engineering or science degree or equivalent with a minimum of eight years experience related to electric power generation facilities, two years of which involve experience in nuclear power stations. At least four years of overall experience shall have been in a supervisory capacity, two years of which should have involved quality assurance related matters.

The Supervisors - quality shall have a four-year accredited engineering or science degree, or equivalent. A minimum of two years overall experience or equivalent training in power plant operations is a prerequisite with at least one year of this experience involved in nuclear power station quality assurance program implementation.

Replacement personnel in the key positions listed will meet or exceed the applicable requirements of ANSI/ANS 3.1 (Draft 12/79) as clarified in Table 17.2.0.

17.2.2.6 Certification of Quality Assurance Organization Personnel

The certification of Quality Assurance Organization personnel is accomplished in accordance with the Quality Assurance Certification Program. This program provides for the certification and recertification of Level I, Level II and Level III inspectors, and for auditors and lead auditors.

The program outlines the qualification and certification requirements for personnel and requires the individual to be certified prior to performing specified inspection or audit functions. The Supervisor - Quality has the responsibility to certify/qualify inspection/audit personnel.

17.2.2.7 Certification of Other Support Personnel

The certification of Quality Maintenance Team (QMT) personnel, Material Dedication Inspection Personnel, Fuel Accountability and Inspection personnel, and Inservice Testing personnel is accomplished in accordance with the approved certification programs.

These programs outline the qualification and certification requirements of personnel and require the individual to be certified prior to performing specified functions. The Supervisor - Quality has the responsibility to certify/qualify Quality Maintenance Team (QMT) personnel.

17.2.3 DESIGN CONTROL

Nuclear Standards describe the design control program. Measures are established to assure that applicable regulatory requirements and the nuclear power station design bases are correctly translated into the Company specifications, drawings, procedures, and instructions applicable to design changes and/or modifications for the operating nuclear power station.

All design changes and/or modifications to safety-related structures, equipment, systems and components described in the UFSAR are reviewed, approved, and acted upon by the Station Nuclear Safety and Operating Committee in accordance with their responsibilities and functions as referenced in the Technical Specifications. Design changes to these structures, equipment, systems and components approved by the Station Nuclear Safety and Operating Committee are forwarded to the Nuclear Licensing and Programs Staff for an independent review. This review may be performed by Nuclear Licensing and Programs Staff personnel, the staff of other company departments, qualified outside contractors, or consultants. The responsibility for the development, identification of requirements, monitoring, and implementation of an effective design control program is delegated to the Vice President - Nuclear Engineering Services with input as appropriate from the Station Manager and operations personnel.

The Nuclear Design Control Program (NDCP), delineates procedures that assure design changes, including field changes, are subject to design control measures commensurate with those applied to the original design and the applicable specified design requirements. These procedures assure that design basis, regulatory requirements, codes and standards are correctly translated into specifications, drawings, procedures, or instructions for those structures, systems and components classified as safety-related in the UFSAR and Q-List. The NDCP provides for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program. When a testing program is solely used to test the adequacy of a design, the test will be conducted under adverse design conditions. The provisions of this section assure that the verifying or checking process is performed by individuals other than those who performed the original design. These individuals are identified and their authority and responsibility is described. The NDCP also identifies the design documents that are required to be reviewed and the personnel responsible for their review and revisions, to assure that design characteristics can be controlled, inspected and tested, and that inspection and test criteria are identified. Design change documents and revisions thereto are distributed to responsible supervisors to determine whether revisions to controlled design and operating documents are necessary. Design documents and reviews, records and changes thereto are collected, stored and maintained in a systematic and controlled manner.

The NDCP establishes measures for the selection and review for suitability of application of materials, parts, equipment and processes that are essential to the safety-related functions of the systems, structures and components. These measures include the use of valid and applicable industry standards and specifications, materials and prototype hardware testing programs, and design reviews. In the event of a design modification to a system which is safety related, engineering studies

are initiated to evaluate parts, equipment, processes, and material suitability for repair of such equipment or components; previously approved items are used without further review. Previously approved materials, parts or components used for a different application are reviewed for suitability prior to approval for their new application.

Quality measures are assured through all levels of the design control program by the design control organization, the Design Control Engineer, Engineering Supervisors, Superintendent - Station Engineering, Manager - Nuclear Licensing and Programs, and the Station Nuclear Safety and Operating Committee. Any errors or deficiencies noted in the design process are documented on the design change forms and subsequently corrected.

Procedures for design controls, analysis, and reviews have as their basis the applicable portions of documents referenced in the Nuclear Design Control Manual, and include ANSI N45.2.11 - 1974 as modified in Table 17.2.0.

The Nuclear Design Control Program Instruction Manual for Architect/Engineers establishes procedures to describe the design interface between the Company and contractors for the review, approval, release, distribution, and revision of documents involving design interfaces.

Suitable design controls are applied to such disciplines as reactor physics; seismic stress, thermal, hydraulic, radiation and accident analysis; compatibility of materials; and accessibility for inservice inspection, maintenance and repair. Designs are reviewed to assure that (1) design characteristics can be controlled, inspected, and tested, and (2) inspection and test criteria are identified.

Changes to nonsafety-related structures, systems, and components will be controlled in accordance with applicable procedures and to meet the requirements, where applicable, of 10 CFR 50.59.

The Quality Assurance Organization reviews the implementation of the design control measures through inspections and audits.

17.2.4 PROCUREMENT DOCUMENT CONTROL

Nuclear Operations Department Standards and their supporting procedures describe the program for completing procurement documents including review, approval, document control, and change control. In addition, references to procedures that govern the actions of the Quality Assurance (Corporate) are made which include provisions for access to the suppliers facilities and records, for source inspection and audit by quality assurance personnel, and qualification of vendors prior to the initiation of quality related actions when the need for such inspection and/or audit has been determined. This program also provides for records to be prepared, maintained, made available for review, or delivered to the Company prior to use or installation of the hardware, such as drawings, specifications, procedures, procurement documents, inspection and test records, personnel and procedure qualifications, material, chemical and physical tests results, and the identification of quality assurance requirements applicable to the items or services purchased, including sub-tier procurement requirements when required.

Policies and standards are established in the Nuclear Department Standards Manual to ensure that procurement documents reference all actions required by a supplier in accordance with the applicable codes, specifications, and drawings.

Procurement documents incorporate the design basis technical and quality requirements including the applicable regulatory requirements, component and material identification requirements, drawings, specifications, codes and industrial standards, test and inspection requirements, and special instructions for special procedures such as welding, heat treating, nondestructive testing and cleaning as applicable.

Procurement documents for spare or replacement parts of safety-related structures, systems and components are subject to technical and quality controls at least equivalent to those used on the original equipment.

The procurement document, a copy of which is filed and available for review, is prepared by the cognizant supervisor and then undergoes the review and approval routing as determined by the Procurement and Materials Management Process Manual. These reviews and approvals are documented.

The Quality Assurance Organization periodically audits the control of procurement documents.

17.2.5 INSTRUCTIONS, PROCEDURES, AND DRAWINGS

As required by the individual unit's Technical Specifications, detailed written procedures are established, approved, implemented, and maintained.

Other activities affecting quality of structures, systems, and components within the scope of the 10 CFR 50 Appendix B are prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances. These activities are accomplished in accordance with these instructions, procedures, or drawings. Applicable instructions, procedures, or drawings include for reference appropriate qualitative and/or quantitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

Administrative procedures describe the requirements for developing, reviewing, approving, and controlling procedures used for testing as well as corrective maintenance, operating, administrative, and other activities performed at the power station. These requirements include references, prerequisites, precautions, limitations, manufacturer's specifications, check-off lists, and acceptance criteria (as appropriate). When applicable the acceptance limits and requirements contained in the design and procurement documents constitute a portion of the acceptance criteria referenced and contained in written testing procedures.

The Quality Assurance Department periodically reviews the documents to ensure revisions are made promptly and that obsolete material is deleted. They have the authority to recommend changes and to require the addition/deletion of inspection hold/verification points. Through their stop work authority they can prohibit the use of inappropriate documents until correct documents can be obtained.

17.2.6 DOCUMENT CONTROL

Measures are established and documented within the operating nuclear power stations and at Innsbrook Technical Center describing the control of documents, such as procedures, instructions, and drawings, to provide for their review, approval, and issue, and changes thereto, prior to release and to assure they are adequate and the quality requirements are stated. Provisions call for, among other things, (1) the periodic review of approved nuclear safety-related station procedures, the review and approval of all new station procedures and design changes prior to release, the review and approval of all changes/revisions to station procedures and design changes by the Station Nuclear Safety and Operating Committee, (2) policy and procedures for issuance of and changes to station drawings and approval of changes, and (3) the maintenance and distribution of these procedures. Normally changes to documents are reviewed and approved by the same organizations that performed the original review and approval; however, this responsibility may be delegated to other qualified responsible organizations. Approved changes are incorporated into procedures and drawings and other appropriate documents associated with the change. Procedures and drawings and changes thereto are processed, distributed and controlled. The station maintains a record of all holders of procedures and drawings and an index of all procedures and drawings, listing the current revision date. Instructions require that a copy of the appropriate procedure be available at the activity location prior to the commencement of that activity. These measures are addressed in the Technical Specifications and Administrative Procedures for each station.

Individual station administrative procedures list certain documents that require strict administrative control for distribution, revision, and routing. These documents are categorized as "Controlled Documents." Examples of controlled documents are: Station Procedures, Station Drawings, and the Precautions, Limitations, and Setpoints Document. Also set forth are the distribution and controlling procedures for design and procurement documents. The Quality Assurance Organization makes periodic inspections and audits of documents to verify their status, using a current master copy.

17.2.7 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

An evaluation of suppliers is performed prior to contract award, except in emergency situations where an item or service is needed to preclude development or deterioration of an unsafe condition at the plant, by one or more of the following: (1) A review of the supplier's capability to comply with the elements of 10 CFR 50, Appendix B that are applicable to the type of material, equipment, or service being procured, (2) A review of previous records and performances of suppliers who have provided similar articles of the type being procured, (3) A survey of the supplier's facilities and quality assurance program to determine his capability to supply a product or service which meets the design, manufacturing, and quality requirements, or (4) A review of qualification information supplied by another utility or outside organization. Surveillance of suppliers during fabrication, inspection, testing, and shipment of materials, equipment, and components is planned and performed in accordance with written procedures to assure conformance to the purchase order requirements as applicable. These procedures provide for:

- a. Instructions that specify the characteristics or processes to be witnessed, inspected or verified, and accepted; the method of surveillance and the extent of documentation required; and those responsible for implementing these instructions. Surveillance shall be performed on those items where verification of procurement requirements cannot be determined on receipt.
- b. Audits and/or inspections which assure that the supplier complies with all quality requirements.

These evaluations are performed under the supervision of the Manager - Quality Assurance (Corporate), except for surveillance of nuclear fuel related suppliers. The surveillance of suppliers of nuclear fuel and related items is performed under the supervision of the Manager - Nuclear Analysis and Fuel. The results of these actions are documented and filed.

Individual station administrative procedures describe the requirements for controlling purchased material, equipment, and services including commercial grade items for use on safety-related structures, systems, equipment, and components. The requirements applied to spare and replacement parts are at least equivalent to those applied to the original parts. Periodic inspections by the Quality Assurance Department are made for assuring that applicable material and equipment received at the station meet the requirements of the specifications, purchase orders, code, drawings, or other purchasing documents. This assurance includes the review of documentation received, physical inspection, cleanliness, packaging, marking or functional testing, as required. Purchased items are normally under the control of the "on-site" organization. This organization is authorized to contact system organizations and NSSS, A/E contractors and subcontractors through the auspices of system representatives for assistance as required.

Periodic evaluations or monitoring of procurement history of the suppliers are performed to verify continued supplier capability.

Documentation concerning the quality of material, components, and equipment received is periodically reviewed by the power station Quality Assurance representative for conformance with the Purchase Requisition and Purchase Order.

The procurement of nuclear fuel is controlled in accordance with procedures that have been developed by the Engineering and Procurement Organizations to address the requisite quality attributes of this function. Monitoring and verification of this activity is performed under the supervision of the Manager - Quality Assurance (Corporate).

17.2.8 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS

Installed components at the nuclear power station are adequately identified and substantiated with documented records by the Architect - Engineer and the NSSS Vendor during the construction phase of the station. These identifications and records are maintained in the station files.

Replacement materials, parts, and components including partially fabricated subassemblies are adequately and properly identified to allow control and traceability to pertinent quality assurance records such as drawings, specifications, purchase orders, manufacturing and inspection documents, deviation reports, and physical and chemical mill test reports. The identification system is consistent, as practical, with that used during the construction of the station, with similar identification used during design change activities. The location and method of identification do not affect the function or quality of the item being identified. Verification of correct identification of safety-related materials, parts, and components is required and documented prior to the release for fabrication, assembling, shipping, or installation.

The Quality Assurance Organization periodically performs inspections and audits of this activity.

17.2.9 CONTROL OF SPECIAL PROCESSES

The control of special processes is maintained and implemented through the use of procedures, technique sheets, travelers and inspection verification reports, and personnel qualified in accordance with the applicable codes, specifications, and standards for the specific work. In instances where the Company assigns such work to contractors, the contractor must submit their procedures and personnel qualifications to the Company for approval prior to the start of work.

Special processes include, for example, those involving welding, heat treating, nondestructive testing, coldwelding, removal of undesirable substances during shop and site cleaning, degreasing and flushing, and verification of wall thickness of valves and other cast components important to nuclear safety.

The Company conducts inspections of work involving special processes to assure that procedures and personnel are properly qualified and their workmanship is in compliance with applicable specifications, codes, and standards.

Records of procedures, equipment, and personnel qualification are maintained and kept current in accordance with the provisions of Section 17.2. herein.

Monitoring and verification is performed by the Quality Assurance Department.

17.2.10 INSPECTION

Inspection procedures for those activities affecting quality have been established. These procedures govern the inspection and documentation of activities relating to repairs, modifications, and changes made to safety related systems, structures, and components. Written maintenance procedures are provided which include inspection hold points.

Examinations, measurements, or tests of materials or components associated with safety-related equipment and systems are performed for each work operation, where necessary, to assure quality. If inspection is impossible or inappropriate, indirect control by monitoring methods, equipment, and personnel is provided. Both methods are provided when control is inadequate without both.

The station safety-related maintenance procedures (including modification procedures) are reviewed by the Supervisor-Quality or designee (Inspections) to determine the need for an independent inspection and the degree and method if such an inspection is required. Examinations, measurements, or tests that require witnessing are identified as "inspection hold" points in procedures. The inspection performed at a hold point is specific in nature; quality characteristics and acceptance/rejection criteria are included or qualitative criteria such as operability checks, compliance with procedural steps, or cleanliness instructions are specified. The inspection is documented by signature or initials on the written procedure form.

Quality Assurance Department performs physical inspections at random intervals to ensure quality requirements are met. These checks are performed as the conditions of the maintenance warrant. These personnel and other inspectors are qualified in accordance with codes and standards as applicable to the function they are performing.

The inspection program requires that inspectors be assigned as appropriate for the activity being inspected. An inspector may be a member of the organization performing the activity. However, they must be qualified and shall not be the person performing the activity or the supervisor directly responsible for the activity. For example, Quality Maintenance Team personnel when performing Quality Control inspections are under the direction of the Supervisor - Quality (Inspection). Personnel so assigned shall become familiar with the procedure being used and other pertinent documents such as technical manuals and drawings prior to performing the inspection.

Personnel responsible solely for the conduct of nondestructive examination are qualified to SNT-TC-1A, 1980 Edition, except as amended by IWA-2300. Audits and reviews of their findings and associated corrective actions are periodically conducted by quality assurance personnel to assure that these procedures are being carried out in a quality manner. The inspectors qualifications are periodically reviewed for recertification.

Generally, all physical inspections are under the control of the on-site organization. However, the Station Manager is authorized to request assistance as required through the Manager - Nuclear Operations Support as does the Supervisor - Quality via the Manager - Quality Assurance (Station).

The inspection of nuclear fuel and related items is controlled in accordance with procedures that have been developed by Nuclear Analysis and Fuel to address the requisite quality attributes of this function. Monitoring and verification of this activity is performed under the direction of the Manager - Quality Assurance (Corporate).

Additionally, inspection activities pertaining to Design Control (Section 17.2.3); Procurement Document Control (Section 17.2.4); Test Control (Section 17.2.11); Nonconforming Materials, Parts, or Components (Section 17.2.15); and Corrective Action (Section 17.2.16) shall be controlled in accordance with provisions established for this function in the referenced sections contained herein.

17.2.11 TEST CONTROL

The test program described in the Technical Specifications assures that safety-related structures, systems, and components will perform satisfactorily when required. Written "Periodic Test" procedures for this program are reviewed and approved as specified in the individual unit's Technical Specifications. These test procedures include or reference:

- (1) The requirements and acceptance limits contained in applicable design and procurement documents.
- (2) Test prerequisites such as the availability of adequate and appropriate equipment and calibrated instrumentation; trained, qualified, and licensed or certified personnel; the completeness of the item to be tested; suitable and controlled environmental conditions; provisions for data collection and storage.
- (3) Instructions for performing the test.
- (4) Inspection points as appropriate.
- (5) Acceptance and rejection criteria.
- (6) Methods of documenting or recording test data and results.

The Periodic Test Program provides for testing of instrumentation and electrical equipment in the categories of (1) instruments installed as listed in the Technical Specifications, (2) installed instrumentation used to verify Technical Specification parameters, and (3) installed safety-related instruments and electrical equipment that provide an active function during operation, shutdown, or abnormal conditions (i.e., vice being designated safety-related solely because the instrument is an integral part of a pressure retaining boundary). This instrumentation shall be in a calibration program. This program provides, by the use of equipment history data, status, records, and performance schedules, for the date that calibration is due and indicates the status of calibration. The identity of person(s) performing calibration is provided on the calibration documents.

Testing of modifications is done in accordance with procedures developed within the Design Change Program described in Section 17.2.3 of this report.

Testing upon completion of maintenance is done in accordance with Maintenance Procedures developed as described in Section 17.2.16 of this report.

Monitoring and verification is performed by the Quality Assurance Department.

17.2.12 CONTROL OF MEASURING AND TEST EQUIPMENT

A program has been established and documented in station administrative procedures that describes the calibration technique and frequency, maintenance, and control of all "Measuring and Test Equipment" (portable instruments, tools, gauges, fixtures, reference and transfer standards, and nondestructive test equipment) which are used in the measurement, inspection, maintenance, and monitoring of safety-related components, systems, and structures. Measuring and test equipment does not include: measuring equipment used for preliminary checks or utility troubleshooting where accuracy is not required. There is also no intention to imply a need for special calibration and control measures of rulers, tape measures, levels, and other basic tools if normal commercial practices provide adequate accuracy. Controls for measuring and test equipment include the transportation, storage, and protection of the equipment; the handling of associated documents giving the status of all items under the calibration system such as maintenance history, calibration test data, and individual log sheets assigned to each device; and the permanent marking of each device by a unique number.

The maintenance, calibration technique, and frequency of calibration of measuring and test equipment utilized in activities affecting quality at the power station are normally performed as specified in the manufacturer's instruction manual or in approved written procedures. In some cases the calibration interval may be assigned or changed based on accumulated experience by trained technicians. The recall system may include provisions for the temporary extension of the calibration due date under certain conditions specified in approved procedures. If standards are not available or there is some special reason that procedures cannot be followed, the modified procedures and/or interval are documented, including justification. In other cases, rather than require calibration at specified intervals, requirements may specify the device be calibrated prior to use, as in the case of torque wrenches or micrometers. Where permitted by commercially available state of the art equipment, reference standards are no more than 1/4 the error allowed in the measuring and test equipment calibrated by that standard. Measuring and test equipment used on safety-related systems or equipment are calibrated utilizing reference standards whose calibration has a known valid relationship to nationally recognized standards, such as the National Institute of Standards and Technology (NIST), or accepted values of natural physical constants. If no national standard exists, the basis for calibration is documented. Whether the device is calibrated at the power station or at an NIST traceable outside laboratory, one or more stickers are affixed on a conspicuous surface identifying, but not limited to, date of calibration and next calibration due date.

When measuring and test equipment utilized in activities affecting quality are found to be out of calibration an evaluation will be performed and documented concerning the validity of previous tests and the acceptability of devices previously tested. All previous tests and measurements performed during the current or proceeding calibration cycle shall be redone if the evaluation so indicates.

Implementation of these procedures is assured through routine inspections or audits by the station Quality Assurance Department.

17.2.13 HANDLING, STORAGE, AND SHIPPING

Measures have been established in station administrative procedures to provide adequate methods by qualified personnel for the classification, packaging, cleaning, preservation, shipping, storage, and handling of material and equipment received at the station.

These measures, prepared in accordance with design and specification requirements, define responsibility, levels of essentiality, degree of receipt inspection, tagging, categories of inspection and their definition, and storage levels for categorized items. The procedures also control cleaning, handling, storage, packaging, shipping, and preservation of materials, components, and systems to preclude damage, loss, or deterioration by environmental conditions such as temperature or humidity. Implementation of these measures is verified by audits and inspections.

17.2.14 INSPECTION, TEST, AND OPERATING STATUS

Measures for the identification and documentation of the inspection and test status for items to prevent inadvertent bypassing of specified inspections and tests are established in station administrative procedures and in station operating procedures. These measures define the three general categories of inspection and test status for items: Accept, Reject, or Hold. They provide for status identification through the use of stickers, tags, record cards, test records, check-off lists, or logs. The operating status of items and/or equipment is identified through records, checklists, or operational tagging systems that are maintained to indicate the status and authority to operate the item and/or equipment. Operating status is additionally controlled through the normal station operating procedures. The application and removal of the various status tags, stickers, and other indicators is controlled by Station Procedures. Implementation of these measures is verified through audits and inspections conducted in accordance with the Operational Quality Assurance Program. These activities assure that the required inspections, tests, and other critical operations are controlled.

17.2.15 NONCONFORMING MATERIALS, PARTS, AND COMPONENTS

A documented system for controlling nonconformances observed during receipt inspection, storage, fabrication and erection, installation, initial and/or acceptance testing, or initial operation is established and provides for the preparation, issuing, and distribution of Station Deviation Reports in accordance with prescribed procedures. These procedures apply to new or reworked materials, parts, or components which possess manufacturer/supplier caused nonconformances.

The identification, documentation, segregation, review, disposition, and notification to affected organizations of nonconforming material, parts, or components are described or referenced in station Technical Specifications, Administrative procedures, and/or station operating procedures. Nonconformance of purchased services are controlled under Section 17.2.7 Control of Purchased Material, Equipment, and Services; Section 17.2.10 Inspection; and station administrative procedures.

Specifically, instructions require that the individual discovering a nonconformance identifies, describes, and documents the nonconformance on a Station Deviation Report.

When a nonconforming item is identified, it is placed in the hold area established in the storeroom or other segregated location, if practical, and identified with a hold tag to prevent its inadvertent use. If material is dispositioned as 'reject,' the Quality Control Hold Tag shall remain attached to the material/component until loaded for departure from site and shall only be removed by Quality Assurance at that time.

Hold items may be released on a risk basis following the documented approval of such risk release by the Station Manager on a Release on a Risk Basis Form. Each risk release is handled on a case basis and depends on the nature of the hold status. The basis and conditions of the release are described on the form, including the criteria for clearing the original hold status. Rejected material is not risk released.

A Station Deviation Report of a nonconforming material, part, or component dispositioned "accept as is" requires an engineering analysis and approval. The results of this review and approval are documented and become a part of station records.

Should the disposition of a nonconformance require the rework or repair of materials, parts, components, systems, or structures, such rework or repair is reinspected or retested by a method which is at least equal to the original inspection or test method. The inspection requirements and the inspection, rework, or repair procedures are documented and become a part of station records.

The disposition and approval of nonconformances are the responsibility of the on-site organization. However, the Station Manager has the authority to request assistance as appropriate from off-site organizations such as Nuclear Operations Support, other engineering groups, or the Quality Assurance Department.

The Station Deviation Reports trends are periodically reviewed for conditions adverse to quality by station management.

In service failures of materials, parts, and components are dispositioned by the use of Deviation Reports and/or Work Orders as described in Section 17.2.16 of this report.

Implementation and verification of the procedures for the control of nonconformances are assured through audits and inspections by the Quality Assurance Department.

The nonconformances observed during the inspection of nuclear fuel and related items and the disposition of those nonconformances is controlled in accordance with procedures that have been developed by Nuclear Analysis and Fuel to address the requisite quality attributes of this function. Monitoring and verification of this activity is performed under the direction of the Manager - Quality Assurance (Corporate).

17.2.16 CORRECTIVE ACTION

Corrective action measures are established as an integral part of the processing and resolving of nonconformances and failures in service. Through these measures, assurance is confirmed that significant adverse quality conditions are identified, documented, their cause determined, and the corrective actions have been taken that preclude repetition of the adverse quality conditions. Verification of the proper implementation of corrective action measures and closeout of corrective action documentation is assured through the monitoring effort of the station staff and the follow-up reviews and audits conducted by the Quality Assurance Department. Adverse conditions significant to quality, the cause of the conditions, and the initiation of corrective action are reported to appropriate levels of both offsite and onsite management by use of Deviation Reports and audit findings. If further corrective action is required the appropriate management program for performing, tracking and closing the issue will be used.

Nuclear Engineering Services maintains a program to evaluate complex design concerns that may lead to adverse quality conditions at the Nuclear stations. The Potential Problem Reporting (PPR) system allows for detailed, multidiscipline reviews of complex design concerns that may yield station deviation reports. Many design concerns cannot be determined to be adverse to quality until a detailed design review is performed. The PPR process controls this activity as part of the Nuclear Design Control Program.

The procedures for processing a Deviation Report require that each adverse condition significant to quality be categorized as either requiring a Licensee Event Report, Special Report or NRC Notification or as a nonreportable deviation. Nonreportable deviation refers to deviations not reportable to the Nuclear Regulatory Commission. The reporting requirements differ for each of the categories of deviation but require the appropriate levels of management be notified in each case. The Quality Assurance Department periodically audits the deviation reporting process.

Procedures require that corrective maintenance of nuclear safety related material, parts, or components be documented on a Work Order. The Quality Assurance Department is notified prior to the commencement of safety related maintenance. The Quality Assurance Department may then initiate a surveillance program as necessary. Examples of areas subject to surveillance are (1) the use of approved maintenance procedures, (2) the existence of Radiation Work Permits and proper tagout, if applicable, (3) the existence of required plant conditions, and (4) documentation of Technical Specification requirements. If the Quality Assurance Department elects to inspect the work, the surveillance does not have to be performed prior to commencement of work. Also, the Quality Assurance Department monitors completed Work Orders to assure maintenance performed is properly documented, maintenance procedures are properly signed off and check lists are completed if applicable, Technical Specification limits were met if applicable, materials used are documented, and Work Orders are being adequately reviewed by appropriate supervisory personnel.

Station Technical Specifications require that rework or repair of nuclear safety-related materials, parts, components, systems, and structures be accomplished in accordance with approved written procedures. The procedures for rework or repair of safety-related equipment are approved by the Station Nuclear Safety and Operating Committee to ensure provisions for an adequate inspection of the completed rework or repair and that this inspection is a method at least equal to the method originally used for inspection or an acceptable alternative. The cognizant supervisor reviews the completed procedures to insure the acceptance criteria have been satisfied and for the completeness of the post-maintenance check-out. The station Quality Assurance Department monitors completed procedures to assure adequate supervisory review.

The Supervisor - Quality determines the scope of the required quality assurance effort on the basis of the extent of modifications or repair to safety-related equipment, systems, or components. When this determination is made, the station Quality Assurance Department reviews the proposed procedures to be used for the modification or repair activities to ensure hold points are included, the procedure complies with the operational quality assurance program, and the applicable codes and standards are referenced. For some repair efforts, briefings of quality assurance personnel by the Supervisor - Quality are conducted. For major evolutions, such as refueling, steam generator modifications, etc., a series of seminars covering all aspects of the activity (e.g., radiation control, personnel hazards, stop work procedures, inspection criteria) may be held.

17.2.16.1 Authority to Stop Work

The Quality Assurance Organization has the authority, and the responsibility, to stop work in progress which is not being done in accordance with approved procedures or where safety or equipment integrity may be jeopardized. This extends to off-site work performed by vendors furnishing safety-related materials and services to the Company.

17.2.16.2 Imposition of "Stop Work"

- A. Station Quality Control Staff - The station Quality Assurance Department representative advises the cognizant supervisor or supervisory personnel to stop work in progress whenever he determines that it is not being conducted in accordance with applicable procedures, instructions, guides, or standards or may jeopardize the safe operation of the station. The Supervisor-Quality immediately notifies the Station Manager of the decision to stop work because of adverse quality conditions. He shall also notify the Manager-Quality Assurance (Station).
- B. Station Manager - The Station Manager evaluates the Quality Assurance Department's determination of the necessity to stop work.
 1. If he concurs with the decision to stop work, he initiates the necessary corrective action. Only after the discrepancy has been corrected and the corrective action approved by the Quality Assurance Department does work resume.

2. In the event the Station Manager does not concur with the Quality Assurance Department's decision to stop work, he may order work to resume by notifying the Manager-Quality Assurance and the appropriate station supervisory personnel in his organization of his decision. He shall also refer the issue to the Vice President-Nuclear Operations for review and approval.
- C. Vice President-Nuclear Operations - The Vice President-Nuclear Operations is responsible for approving or disapproving the Station Manager's decision in those cases where the Station Manager does not concur with the stop work and orders work to resume.
 - D. Manager-Quality Assurance - The Manager-Quality Assurance (Station) may refer any concerns he may have concerning the handling of "stop work" to the Vice President-Nuclear Operations or to the Manager-Nuclear Quality Assurance. He may direct imposition of "stop work" whenever he deems such action to be appropriate.
 - E. Imposition of offsite work performed by vendors shall be controlled by appropriate department procedures.

17.2.17 QUALITY ASSURANCE RECORDS

The requirements and responsibilities for quality assurance records transmittal, retention, and maintenance subsequent to completion of work at the power station have been established and are documented in station administrative procedures.

Quality Assurance records relating to the operating status of the station and documentary evidence of the quality of items and activities affecting quality are maintained in accordance with the Technical Specifications and station administrative procedures. These records include plant history; operating logs; principal maintenance and modification activities; Licensee Event Reports; results of reviews, inspections, tests, audits, and material analysis; monitoring of work performance, qualification of personnel, procedures, and equipment; and other documentation such as drawings, specifications, procurement documents, calibration procedures and reports, deviation reports, and corrective action reports.

Identification and retrievability of these records is facilitated through proper indices and an established basic filing system. Record storage facilities are constructed, located, and secured to prevent the destruction of records by fire, flooding, theft, and deterioration through environmental conditions such as temperature and humidity.

The Quality Assurance Department monitors these records to assure their completeness, adequacy, retrievability, and protection. They periodically audit these records to verify implementation of established policies and procedures. The record storage facilities conform to Regulatory Guide 1.88, Rev. 2 October 1976, as stated in Table 17.2.0.

17.2.18 AUDITS

The system of audits devised to verify compliance with quality related aspects of the power station is described in the station Technical Specifications. Additional audits may be performed as deemed necessary by company management. The general audit policy specifies that quality assurance audits be conducted in accordance with a formal preplanned and scheduled system to ensure an adequate and meaningful quality assurance/control program is in effect.

The Quality Assurance Organization is delegated the responsibility for conducting periodic audits to determine the adequacy of the station's programs and procedures, that they are meaningful, and comply with the overall Quality Assurance Program. An audit includes an objective evaluation of quality related practices, procedures, and instructions; the effectiveness of implementation; and the conformance with policy and directives. An audit also includes the evaluation of work area, activities, processes, and items and the review of documents and records. Provisions are established requiring that audits be performed in those areas where the requirements of Appendix B to 10 CFR 50 are being implemented. These areas include as a minimum, but are not limited to, those activities associated with operation, maintenance, modification, and repair controls; the preparation, review, approval, and control of design changes, procurement documents, instructions, procedures, and drawings; receiving and plant inspections; indoctrination and training programs; the implementation of the operating and test procedures; and the remaining criteria in Appendix B to 10 CFR 50.

The Supervisor - Quality or designee directs audits to be conducted. The audits are regularly scheduled on a formal pre-planned audit schedule; the scope and frequency are determined by quality status and safety importance of the activities being performed. Additional audits may be performed as deemed necessary by the Management Safety Review Committee, Manager - Quality Assurance or the Supervisor - Quality as conditions warrant. These audits are conducted by trained personnel not having direct responsibilities in the area being audited and in accordance with prepared and approved audit plans or checklists.

The results of each audit are reported in writing to the distribution delineated in accordance with station Technical Specifications. Additional internal distribution is made to other concerned management levels in accordance with approved procedures.

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

If the Supervisor - Quality determines the response to an audit is unacceptable or if a response is not received in the time allotted or if corrective action is not accomplished as indicated on the response, the matter is brought to the attention of the Manager - Quality Assurance who notifies the Station Manager or appropriate Corporate Manager for resolution. If the Manager - Quality Assurance does not agree with the resolution proposed, he notifies the Manager - Nuclear Quality Assurance for referral to appropriate levels of management in accordance with established escalation procedures.

The responsibility for analyzing audit reports for trends and effectiveness lies with the Manager - Quality Assurance. As trends are discovered or if the effectiveness of the program is in question, the analysis of the Manager - Quality Assurance is forwarded to the management level consistent with the seriousness of the problem.

Attachment 3

Discussion of Revision to Biennial Procedure Review Requirement

REVISION TO BIENNIAL PROCEDURE REVIEWS

ANSI Standard N18.7 requires that all safety-related procedures be reviewed on a biennial basis. The intent of a biennial procedure review requirement is to provide a systematic program for ensuring the best possible procedures. Our QA Topical Report currently commits us to follow ANSI N18.7. However, the ANSI standard is flexible enough to allow the modification of this requirement based on the following:

- ANSI N18.7 states that the frequency of reviews may vary depending on the type and complexity of the activity involved and may vary with time as a given plant reaches operational maturity.
- ANSI N18.7 also states that the procedures in current use provide the best possible instructions for performance of the work involved, systematic review and feedback of information based on use is required.

Therefore, it is our interpretation that ANSI N18.7 was set up to require new plants to review procedures more often than a plant which has reached operational maturity (as our plants have), the requirement then focus on maintaining the best possible procedures through systematic feedback.

We are currently implementing a procedure upgrade program. The upgrade program provides a systematic and effective process for developing and revising procedures which encompasses the intent of the biennial procedure review requirement.

The procedure upgrade program provides for a more thorough review than that currently available through the biennial review. The procedure upgrade program review includes consideration of factors such as technical issues, human factor concerns and vendor recommendations. Procedures that have been through the upgrade program are quality documents. Given this, it is clear that the sooner the program can be completed, the sooner we have much higher quality safety-related procedures in use. Therefore, management has decided that the best use of available resources is to direct them in support of the upgrade program.

Based on the guidance provided in ANSI N18.7 and the intent of the procedure upgrade program we are revising the current biennial procedure review requirement to be a periodic procedure review requirement. The period will be established as four years. This change to a periodic procedure review will permit the maximum utilization of existing resources in support of the procedure upgrade program. However, to assure that the periodic review is not adversely affecting procedure quality and that the upgrade program is maintaining high quality, we will periodically assess a sample of procedures (both non-upgraded and upgraded) to verify that more frequent procedure reviews are not necessary. Changing the QA Topical Report as shown in Attachment 2 page 17.2-14 will allow the flexibility to revise the period for procedure reviews if need be, without further QA Topical Report changes, based on the results of those assessments.