15.0 (continued)

Radwaste Management Systems, Structures, and Components

Special features containing radioactive materials (i.e., liquids, gases, or solids) that, by design or operating practice, provide a means of processing prior to final disposition.

Reference Standards

Standards (primary, secondary, and working standards where appropriate) used in a calibration program. These standards establish the basic accuracy limits for the calibration program.

Safety-Related Structures, Systems, and Components

Those items that are necessary to ensure:

1. The integrity of the reactor coolant pressure boundary.

2. The capability to shut down the reactor and maintain it in a safe condition.

3. The capability to prevent or mitigate the consequences of an incident which could result in potential offsite exposures comparable to those specified in 10 CFR 100.

Seismic Category I(L)

Special features that apply to nonsafety-related systems, structures, and components which provide structural integrity in preventing damage to a safety-related system, structure, and component in case of a failure and/or damage during a safe shutdown earthquake (SSE).

Significant Adverse Condition

A documented adverse condition that is determined to be a QA programmatic deficiency or reportable to the NRC.

Special Nuclear Material Management

A program which provides for special nuclear material (SNM) control and accountability as required by 10 CFR 70, 74, and 75. This program includes SNM inventories and system reviews, inspections, records management, and DOE/NRC inventory and transfer reports.

15.0 (continued)
Special Tests

A test that is (a) an engineering test including qualification testing for design verification or evaluation of components, structures, or systems, (b) a general test that is not specifically related to plant systems or features, such as the material testing and product testing that is normally performed by a testing lab, or (c) tests or experiments not described in the facilities Safety Analysis Report which may affect the operation of systems described therein (reference 10 CFR 50.59).

Startup Tests

Those tests as identified in the Final Safety Analysis Report that commence after receipt of an operating license allowing fuel loading and testing at ranges through zero power, power escalation, and 100% warranty run. Startup tests prove that the unit has been properly designed and constructed and will meet all licensing requirements and specific contractual criteria.

*Storage

The act of holding items at the construction or operating site in an area other than its permanent location in the plant.

Surveillance Tests

Periodic tests to verify that structures, systems, and components continue to function or are in a state of readiness to perform their functions.

Test Record Drawings

A set of as-constructed drawings which depict the configuration of a system as tested.

Test Scoping Documents

Documents which include descriptions of each test to be performed including safety precautions to be followed, specific identification of test objectives, the means of performing the test, prerequisites that must be completed, environmental conditions required for testing, justification for a proposed degree of simulation less than full simulation, and specific acceptance criteria or a description of the means of determining acceptance criteria from functional testing requirements.

15.0 (continued)

Test Deficiency

Any condition during which the equipment or system being tested: (1) fails to operate (e.g., pump will not operate, no control room annunciation), (2) operates in a suspected adverse manner (e.g., motor operates but smokes, questionable vibration), or (3) operates outside limits of documented acceptance criteria (e.g., inadequate flow, slow valve closure time).

Trend Analysis

Evaluation of data that has been compiled or grouped onto charts, diagrams, reports, or other formats such that the prevailing tendency of selected parameters can identify areas that need improving and areas of past successes.

*Verification

An act of confirming, substantiating, and ensuring that an activity or condition has been implemented and accomplished in conformance with specific requirements. This includes line verifications.

APPENDIX A

COMPARISON MATRIX OF QUALITY ASSURANCE PLAN REQUIREMENTS WITH THOSE OF 10 CFR 50, APPENDIX B AND SELECTED ANSI STANDARDS

10 CFR 50, Appx B		ANSI N45.2 - 1971		ANSI N18.7 - 1976	
Criterion	NQA Plan	Section	NQA Plan	Section	NQA Plan
I	4.0;4.1	2.0	5.0	3.1	4.1;5.0
II	5.0	3.0	4.0;4.1	3.2	4.0;4.1
III	7.0	4.0	7.0	3.3	11.0
IV	8.1	5.0	8.1	3.4	4.0;11.0
V	6.0;7.0	6.0	6.0;7.0	4.0	5.3;6.0
VI	6.0;7.0	7.0	6.0;7.0		7.2;12.0
VII	8.2	8.0	8.2	5.1	5.0
VIII	8.3	9.0	8.3	5.2.1	4.0
IX	9.3	10.0	9.3	5.2.2	6.0
X	9.1	11.0	9.1	5.2.3	6.0
XI	9.4	12.0	9.4	5.2.4	6.0
XII	9.5	13.0	9.5	5.2.5	6.0
XIII	9.6	14.0	9.6	5.2.6	6.0;9.7
XIV	9.7	15.0	9.7	5.2.7	6.0;9.8
XV	10.0	16.0	10.0	5.2.8	6.0;9.1;9.4
XVI	10.0	17.0	10.0	5.2.9	5.1;6.0
XVII	6.3	18.0	6.3	5.2.10	4.1.2;6.0
XVIII	12.0	19.0	12.0	5.2.11	6.0;10.0
				5.2.12	6.0;6.3
				5.2.13	6.0;8.0;9.6
				5.2.14	6.0;10.0
				5.2.15	6.0
				5.2.16	6.0;9.5
				5.2.17	6.0;9.1
				5.2.18	6.0;9.3
				5.2.19	6.0;9.4
				5.3	6.0
				5.3.1	6.0
				5.3.2	6.0
				5.3.3	6.0
				5.3.4	6.0
				5.3.5	6.0;9.8
				5.3.6	6.0;5.1
				5.3.7	6.0;9.5
				5.3.8	6.0;5.1
				5.3.9	6.0;5.1
				5.3.10	6.0;9.1;9.4

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NRC Regulatory Guide 1.8 - "Personnel Selection and Training," Revision 2 4/87, endorses ANSI N18.1-1971 and ANSI/ANS 3.1-1981.

The Nuclear Quality Assurance Program (NQAP) follows this Guide with the following alternatives:

1. TVA will meet the requirements of Regulatory Guide 1.8, Revision 2 (4/87) for all new personnel qualifying on positions identified in regulatory position C.1 after January 1, 1990. Personnel qualified on these positions prior to this date will still meet the requirements of Regulatory Guide 1.8, Revision 1-R (5/77). As specified in regulatory position C.2, all other positions will meet the requirements of ANSI/ANS N18.1-1971.

2. Section 4.3.2 - There may be occasions where TVA will utilize a composite crew (multidiscipline) during operations phase activities to efficiently perform a task. As such, a foreman may not have the experience required in one of the disciplines he supervises. In these instances, the foreman will meet the requirements of ANSI N18.1 in at least one of the disciplines, and additional technical support, procedure support, and/or discipline support will be available to the foreman for the task period.

3. Sections 4.3.1.1.c, 4.3.1.2.c, and 4.5.1.2.c (ANSI/ANS 3.1-1981) - In lieu of ANSI/ANS 3.1-1981, subsection 5.5, TVA meets the requirements of 10 CFR 55.59.

4. TVA uses the methodology for equating education and experience contained in ANSI 3.1-1987 for guidance to evaluate equivalent related experience for a degree.

NRC Regulatory Guide 1.28 - "Quality Assurance Program Requirements (Design and Construction)," Revision 3, 8/85, allows continued implementation of ANSI N45.2-1971 as previously committed.

The NQAP follows this Guide.

NRC 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 NQAP follows this Guide with the following alternatives:

1. ANSI N45.2.4 states that the Appendixes are not a part of the standard, therefore, TVA does not consider the Appendixes to be mandatory.

2. Section 2.1, "Planning" - The intent of this section shall be met in different forms depending on magnitude and scope of work.

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REGULATORY GUIDE CONFORMANCE STATUS

3. During the operational phase, tests are performed as determined by the site engineering organization, modification, or maintenance engineers, as appropriate, based upon the equipment or system functions that could be impacted by the work performed.

4. TVA's alternative to the tagging of in-plant process instruments for calibration status (ANSI N45.2.4, Section 6.2.1) is that each item of process control instrumentation is uniquely identified with an instrument number. This number is utilized in an instrument maintenance record so that the current calibration status and data attesting to the status of each item are documented along with the identification of the person performing the calibration. In addition, this record system provides a mechanism for evaluating equipment performance and adjusting calibration frequencies to ensure quality performance.

5. Section 6.2.2 - For modifications, TVA interprets this section as not requiring that an entire system be retested after modifications. Testing will be performed on equipment that has or could be impacted by the modification in accordance with applicable design and testing requirements to verify that operability requirements are met and that interfacing components and equipment functions have not been degraded.

6. TVA implements the requirements of N45.2.4 Sections 5.1 and 6.1 with a performance-based graded QA verification program consisting of quality control inspection, line verification, and quality monitoring.

NRC Regulatory Guide 1.33 - "Quality Assurance Program Requirements (Operations)," Revision 2, 2/78 endorses ANSI N18.7-1976/ANS 3.2.

The NQAP follows this Guide with the following alternatives:

1. ANSI N18.7-1976 references certain other standards to which TVA takes exception. TVA's exception and appropriate alternatives to the other standards are listed in this Appendix in the appropriate location.

2. Section 5.2.2 - The guidelines of this section are accepted with the following interpretations:

   a. Temporary changes which clearly do not change the intent of the approved procedure shall as a minimum be approved by two members of the plant management staff, at least one of whom holds a Senior Reactor Operator License on the unit affected or as defined in Technical Specifications.

b. For facilities holding a construction permit where system(s) and/or components have been released to the operations organization, temporary changes to procedures, as described above, shall as a minimum be approved by two members of the plant management staff, at least one of whom shall be a designated member of the plant operations management staff.

3. Section 5.2.13.1 - The statement that changes made to procurement documents be subject to the same degree of control as was used in the preparation of the original documents is applied consistent with the requirements of ANSI N45.2.11, paragraph 7.2. Minor changes to documents, such as inconsequential editorial corrections or changes to commercial terms and conditions, may not require that the revised document receive the same review and approval as the original documents.

4. Section 5.2.15 - The guidelines of this section are accepted with the following alternatives:

   a. Minor changes to documents are processed as delineated in Section 6.1.2.F3 of this plan.

   b. TVA has programmatic controls in place that make a biennial review process unnecessarily duplicative. These programmatic controls ensure procedures are periodically reviewed and maintained current when pertinent source material is revised; the plant design changes; and/or any deficiencies occur. TVA has determined that this approach better addresses the purpose of the biennial review process and that, from a technical and practical standpoint, is better suited to ensure the validity of operational phase site procedures and instructions.

5. Section 5.2.17 - The statement that deviations, their cause, and any corrective action completed or planned shall be documented will apply to significant deviations. Other identified deviations will be documented and corrected. This interpretation is consistent with Appendix B to 10 CFR 50, Criterion XVI, "Corrective Action."

6. TVA will comply with regulatory position C.4 except that audit frequencies will be consistent with plant specific technical specification requirements.

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.

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The NQAP follows this Guide with the following alternatives:

1. The phrase "when applicable" used in Regulatory Guide 1.37, paragraph C.2, leaves open to interpretations which specific requirements and recommendations contained in ANSI N45.2.1-1973 are applicable to and achievable during the construction or operation phase. The interpretation of "when applicable" will be made with appropriate concurrence in a written procedure before its application.

2. The second sentence of paragraph C.3 should be amended to read:

   "The water quality for final flushes of fluid systems and associated components during the operations phase shall be at least equivalent to the quality required for normal operation. This requirement does not apply to dissolved oxygen or nitrogen limits nor does it infer that other additives normally in the system water will be added to the flush water."

3. Temporary ink markings placed by the fabricator as mill marks may remain on components that operate at temperatures greater than 140°F (normal or accident) and have a 40-year integrated radiation dose less than 10^6 rads.

4. Control of halogen, sulfur, or low-melting metal contents is not required for abrasive tools such as grinding wheels, cutoff wheels, sanding paper, and flapper wheels. Use of abrasive tools on corrosion-resistant alloys shall be followed by cleaning with an approved solvent. Particulate residue shall be removed by vacuum, brush, dry wiping cloth, or air, with special attention to crevices.

5. Temporary tape and markings (ink and paint) may remain on components that operate at temperatures less than 140°F (normal or accident).

6. Section 2.1, "Planning - For operations phase activities, the required planning is frequently performed on a generic basis for application to many systems and component installations. This results in standard procedures for cleaning, inspection, and testing which meet the requirements of the standard. Individual plans for each item or system are not normally prepared unless the work operations are unique; however, standard procedures are reviewed for applicability in each case. Cleaning procedures are limited in scope to those actions or activities which are essential to maintain or achieve required quality. This is consistent with Section 5.2.17, paragraph 5, of ANSI N18.7-1976, which provides for examination, measurement, or testing to ensure quality or indirect control by monitoring of processing methods.

7. TVA intends to conform to the cleanness requirements of Section 3.1 of ANSI N45.2.1-1973 with the exception of permissible particle sizes for cleanness Classes B and D. In these cases, TVA will conform to the requirements of ANSI N45.2.1-1980, Section 3.2.2.1(b), which states, "There shall be no particles larger than 1/32 inches by 1/16 inches long (0.8 mm by 1.6 mm)" for cleanness Class B, and Section 3.2.4.4 which states, "Particles no larger than 1/16 inch by 1/8 inch long (1.6 mm by 3.2 mm) on a 14-mesh (1.4 mm, ASTM E-11, "Specification for Wire Cloth Sieves for Testing Purposes) or finer filter, or the equivalent" for cleanness Class D.

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

The NQAP follows this Guide with the following alternatives:

1. Storage requirements at the site are determined by the responsible engineering unit. This determination involves an evaluation of the complexity of the item and its importance to safety. The various types of storage are provided (yard, warehouse, humidity controlled, etc.) but the classification levels of N45.2.2 are not necessarily employed.

2. In accordance with ASME QA Case 78-N45.2.2-01-0, welding electrodes hermetically sealed in metal containers may be stored under conditions described for level C items unless other storage requirements are specified by the manufacturer. Storage conditions for level C items may also apply to bare wire and consumable inserts unless specified otherwise by the manufacturer.

3. Austenitic stainless steel and nickel alloy items may have markings applied directly to the bare metal surfaces provided the requirements of TVA internal procedures, which control the chemical content of the marking materials, are met.

4. Tubing and piping materials shall have end caps or plugs while in storage unless specified otherwise by engineering specification. End caps or plugs are not mandatory on tube or pipe fittings provided the requirements of TVA internal procedures to store under cover with protection from the elements are met. These materials are required to be in a visually clean condition and free of visually detectable defects prior to installation.

5. Section 6.4.1 - TVA will meet this section through periodic inspection of randomly selected stored items by QC inspection personnel certified to ANSI N45.2.6. The criteria and factors regarding frequency and degree are established in Section 5.2A and B of this plan.

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6. TVA takes exception to ANSI N45.2.2, Section 5.2.1. TVA's alternative is that shipping damage inspection shall be done before unloading if evidence of possible shipping damage would be lost in unloading, such as when the item is secured to the carrier, covered by tarpaulin, accompanied by a visible impact recorder, or when the contract requires any of the above. Personnel performing preliminary visual observations (prior to unloading) per Section 5.2.1 need not be qualified to ANSI N45.2.6. Item inspections per Section 5.2.2 are performed by personnel qualified to ANSI N45.2.6. The item inspections also ensure that no damage has occurred during shipping.

7. Section 6.4.2(8) - TVA will follow either vendor recommendations for preventive maintenance, an engineering evaluation, or engineering requirements documents delineating appropriate maintenance requirements, for items in storage. Engineering evaluations and engineering requirement documents will consider vendor recommendations.

8. Section 6.5 (last sentence) - During a period of installed storage or extended layup after release of an item from permanent storage, vendor recommendations for preventive maintenance, or an engineering evaluation or an engineering requirements document delineating appropriate maintenance requirements will be followed. Engineering evaluations and engineering requirement documents will consider vendor recommendations.

9. TVA's alternative to the requirements of Section 6.6 of ANSI N45.2.2 is that Site Materials will maintain written records of pertinent information such as storage location and receipt inspection results and will take necessary action to provide packaging for items not suitably packaged for storage. Written records of personnel access to Power Stores are kept for entry during times when Power Stores personnel are not on duty. All other times, the storeroom is locked and admittance is controlled by stores personnel.

10. TVA does not utilize specific levels for classification of items (ANSI N45.2.2, Section 2.7); however, the specific requirements identified in the Standard are used as a guide with respect to protecting the equipment.

11. TVA does not utilize specific levels for packaging (ANSI N45.2.2, Section 3.2). All purchased items have been properly packaged. Additionally, periodic storage inspections are conducted to ensure protective measures specified in the Standard to prevent damage or deterioration are complied with and are imposed until the item or component is issued for use. Purchased items undergo receiving inspection using the graded approach. This inspection verifies that items have been properly packaged for shipment and will ensure that any special protective measures specified in the Standard to prevent damage, deterioration, or contamination will be imposed until the item or component is issued for use.

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12. TVA takes exception to the requirement (ANSI N45.2.2, Section 6.2.4) that salt-tablet dispensers in any storage area shall not be permitted. TVA Site Materials stores salt-tablet dispensers in sealed containers for use outside of the storage area only.

13. Sections 7.3.2 and 7.4.2 - Use of hoisting equipment beyond its rated load is acceptable when specifically approved with technical justification by engineering.

NRC Regulatory Guide 1.39 - "Housekeeping Requirements for Water-Cooled Nuclear Power Plants," Revision 2, 9/77 endorses ANSI N45.2.3-1973.

The NQAP follows this Guide with the following alternative:

The zone designations of Section 2.1 of N45.2.3 and the requirements associated with each zone are not consistent with the requirements for an operating plant. Instead, NP procedures or instructions for housekeeping activities which include the applicable requirements outlined in Section 2.1 of N45.2.3 and which take into account radiation control considerations, security considerations, fire protection considerations, and personnel and equipment safety considerations are developed on a case basis.

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

The NQAP follows this Guide with the following alternatives:

1. TVA complies with Regulatory Position C.1 of this Regulatory Guide, as follows:

   - Construction testing personnel are qualified to Regulatory Guide 1.28 (ANSI N45.2).

   - Operations, maintenance, and modification testing personnel are qualified to Regulatory Guide 1.8 (ANSI N18.1) as endorsed in Appendix B of this plan.

   - Quality control inspection personnel are qualified to ANSI N45.2.6.

2. Certifications may not correspond to the levels established in N45.2.6. Inspection, examination, and testing personnel may be classified by disciplines (mechanical, civil, electrical, instrumentation, hanger, etc.) and certified by procedure to perform the functions identified in N45.2.6, Table I, and L-I and L-II.

3. Qualified instructors and/or responsible supervisors in their respective areas may perform the functions identified in N45.2.6, Table I, and L-III.

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4. Medical eye examinations for inspection, testing, and examination personnel are made in accordance with TVA eye examination requirements.

5. ASNT recommended practice SNT-TC-1A-1984 will be used to qualify and certify nondestructive examination personnel after February 26, 1990. Personnel qualified prior to this date will still meet the requirements of SNT-TC-1A-1980. In ASME Section XI applications, SNT-TC-1A as modified by ASME Section XI will be used.

NRC Regulatory Guide 1.64 - "Quality Assurance Requirements for the Design of Nuclear Power Plants," Revision 2, 5/76, endorses ANSI N45.2.11-1974.

The NQA Plan follows this Guide with the following alternative to Regulatory Position C.2:

If in an exceptional circumstance, the engineer's supervisor is the only person technically qualified to perform the review, the design verification review will be conducted by the supervisor, provided that:

1. The other provisions of this Regulatory Guide and ANSI N45.2.11, Section 6.1 are satisfied.
2. The justification is individually documented and approved in advance by the supervisor's management.
3. Nuclear Quality Assurance or Completion Assurance will audit the use of supervisors as design verifiers to guard against abuse.

RC Regulatory Guide 1.74 - "Quality Assurance Terms and Definitions,"2/74, endorses ANSI N45.2.10-1973.

The NQAP follows this Guide with applicable alternatives noted in Section 15 of this plan.

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

The NQAP follows this guide with the following alternatives:

Section 2.2.1 - TVA may also define lifetime QA records to be "life of the nuclear liability policy, plus the subsequent 10 years during which claims may be covered by the policy." This definition is consistent with ANI/MAELU Information Bulletin 80-1A, Revision 2, and the requirements of our nuclear insurer.

Section 5.4.3 - In order to preclude deterioration, manufacturer's packaging and storage recommendations for special process records will be considered.

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Section 5.6 - TVA will provide two-hour minimum fire-rated protection for QA records and utilize one of the following alternatives as single storage facilities:

1. A fire-resistive vault or file room that meets the applicable requirements of ANSI N45.2.9-1974 with the following exceptions:

   a. Records will be afforded the protection of a two-hour rated facility.
   b. Records will be stored in fully enclosed cabinets.
   c. Structure, doors, frames, and hardware shall be designed to fully comply with a minimum two-hour rating.
   d. Pipes or penetrations will be allowed for fire protection, lighting, temperature, humidity control, or communications.
   e. Work not directly associated with records storage or retrieval will be prohibited in the facility.
   f. Smoking and eating/drinking will be prohibited throughout the records facility.

2. One-hour fire-rated cabinets if the following conditions are met:

   a. The records are recreatable, OR
   b. Are contained within a facility of fire-resistive construction with adequate smoke detection or fire-suppression systems: OR
   c. Are within a facility with a fuel loading less than 25 pounds/square foot as defined by NFPA 232-1980.

QA records may be temporarily stored for 60 days or less in steel file cabinets or drawers if the following conditions are met:

1. The records are recreatable, OR

2. Are contained within a facility of fire-resistive construction with adequate smoke detection or fire-suppression systems: OR

3. Are within a facility with a fuel loading less than 25 pounds/square foot as defined by NFPA 232-1980.

For storage of film and other processed records, humidity and temperature controls shall be provided to maintain a stable environment. Recommendations by the manufacturer will be considered in determining an acceptable range of tolerance.

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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," Revision 1, 4/76, endorses ANSI N45.2.5-1974.

The NQAP follows this Guide with the following alternatives:

1. The qualification requirements for quality control (QC) inspectors are stated in our position on Regulatory Guide 1.58 in this table.

2. Testing frequency and QC acceptance criteria for concrete construction is described in the Safety Analysis Report for each plant.

3. Burning of bolt holes is acceptable when specifically approved by engineering.

4. The installation method for high strength bolting may be either the automatic cutoff impact wrench method, turn-of-nut method, or direct tension indicator method.

5. Torque wrench inspection of completed connections installed by the turn-of-nut method shall not be required but may serve to resolve disagreements concerning the results of inspection of bolt tension.

6. Torque wrench inspection of the load indicator washer type of direct tension indicator shall not be required.

7. Bolts shall be considered long enough if the bolt point is flush with or outside the face of the nut.

8. When specified by the design output document, TVA's alternative for visual welding acceptance criteria will be NCIG-01, May 7, 1985, Revision 2, "Visual Weld Acceptance Criteria for Structural Welding of Nuclear Power Plants."

9. For modifications or repairs to structures within the scope of N45.2.5-1974, plant management shall refer to the site engineering organization for any design analyses.

10. Verification of preweld activities, including fit-up, will be verified through a graded QC inspection program, unless 100 percent inspection is specified in design output documents.

11. Much of N45.2.5 applies to construction and preoperational testing. As a result, many of the listed tests are not appropriate in an operational plant. In lieu of this, TVA utilizes the appropriate engineering organizations to establish the need for specific tests or test procedures during the operational phase, and the guidance provided in ANSI N45.2.5-1974 is considered for applicability.

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12. TVA implements the requirements of N45.2.5 Sections 3, 4, and 5 with a performance-based graded QA verification program consisting of quality control inspection, line verification, and quality monitoring.

NRC Regulatory Guide 1.116 - "Quality Assurance Requirements for the Installation, Inspection, and Testing of Mechanical Equipment and Systems," 6/76, endorses ANSI N45.2.8-1975.

The NQAP follows this Guide with the following alternatives:

1. QA programmatic/administrative requirements included in the Regulatory Guide shall apply to construction, maintenance, and modification activities. Technical requirements associated with maintenance and modifications shall be the original requirements or better (e.g., code requirements, material properties, design margins, manufacturing processes, and types of inspection requirements).

2. Much of N45.2.8 applies to construction and preoperational testing. As a result, many of the listed tests are not appropriate in an operational plant. In lieu of this, TVA utilizes the appropriate engineering organizations to establish the need for specific tests or test procedures during the operational phase and the guidance provided in ANSI N45.2.8-1975 is considered for applicability.

3. TVA implements the requirements of N45.2.8 Sections 4.4 and 5.1 with a performance-based, graded QA verification program consisting of quality control inspection, line verification, and quality monitoring.

NRC Regulatory Guide 1.123 - "Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants," Revision 1, 7/77, endorses ANSI N45.2.13-1976.

The NQAP follows this Guide with the following alternative:

Section 4.2 - In the special case of "commercial grade items: the supplier may not be evaluated by one of the methods identified; however, the procurement documents shall contain acceptance requirements (special receipt inspection requirements, special tests, or functional tests) specific to the item being procured. The acceptance (dedication) of commercial grade items intended for safety-related applications meets the intent of EPRI NP-5652 as accepted by the NRC.

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

The NQAP follows this Guide with the following alternatives:

1. Paragraph 2.3 - Technical specialists who assist in performing audits in their area of special expertise will not be trained in auditing techniques; however, they will be accompanied by a trained, qualified auditor.

2. TVA implements the requirements of Regulatory Guide paragraph C.3.a and Sections 3.4 and 3.5 of ANSI N45.2.12 with a performance-based, graded QA audit program. Real time adjustments are made to the audit scope, depth, and frequency based on an item's or subject's importance to safety and performance history. Real-time adjustments allow emphasis to be placed in areas where performance is weak and decrease emphasis where performance is evaluated to be good.

3. Section 4.5.2 - Nuclear Quality Assurance or Completion Assurance will have a certified lead auditor or a manager of the auditor either conduct the required follow-up or attest to the acceptability of the follow-up conducted by audit personnel.

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

The NQAP follows this Guide with the following alternative:

In addition to the State agencies and technical societies recognized by ANSI N45.2.23, Section 2.3.1.3, TVA may grant two points for professional competency to those individuals licensed as either a Reactor Operator (RO) or Senior Reactor Operator (SRO) by the NRC.

NRC Regulatory Guide 1.152 - "Criteria For Programmable Digital Computer System Software in Safety-Related Systems of Nuclear Power Plants," November 1985, endorses ANSI/IEEE-ANS-7-4.3.2-1982.

The NQAP follows this Guide consistent with Section D of the Guide, with the following alternative:

For programmable digital computer system software installed in safety-related protection systems, TVA will follow this guide for the verification and validation of program elements specified in Sections 13.2G and 13.2H of the NQA Plan.

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GUIDELINES FOR DETERMINATION OF TVA IDENTIFIED QUALITY-RELATED CLASSIFICATIONS

1.0 INTRODUCTION

The guidelines for classifying components, systems, and activities as quality-related depend on the relationship of the terms quality-related and safety-related as discussed in 2.0 and 3.0 below. The guidelines are contained in Section 4.0 of this Appendix.

2.0 QUALITY-RELATED

Quality-related (QR) is a term which encompasses quality assurance program requirements that describe activities which affect structures, systems, and components. These requirements provide reasonable assurance that the facility can be operated without undue risk to the health and safety of the public. In addition to safety-related structures, systems, components, and activities, the term "quality-related" encompasses the broad class of plant features covered (not necessarily explicitly) in the General Design Criteria of 10 CFR 50, Appendix A, that contribute in an important way to the safe operation and protection of the public in all phases and aspects of facility operation (i.e., normal operation and transient control as well as accident mitigation).

Quality-related is more encompassing than the term safety-related. Appendix D shows the scope of the NQAP. All quality-related items and activities are not necessarily safety-related. Appendix D illustrates the programmatic relationships.

3.0 SAFETY-RELATED

Use of the term safety-related (or variations thereof) and the methodology for classifying items and activities as safety-related has been established in the General Design Criteria and Safety Analysis Report for TVA's Browns Ferry, Sequoyah, Watts Bar, and Bellefonte Nuclear Plants. The term safety-related as used in this Appendix, this plan and in NQAP documents is generic in nature.

Items and activities classified as safety-related are subject, without exception, to the requirements of 10 CFR 50, Appendix B. All safety-related items and activities are also quality-related.

4.0 GUIDELINES

Some items and activities are classified as quality-related but not safety-related. However, because some items and activities classified as quality-related are considered important to the continued reliable operation of TVA's nuclear facilities, TVA shall apply the requirements of all or selected parts of the NQAP to such items and activities.

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4.1 Structures, systems, and components shall be classified as quality-related but not safety-related if they fit one or more of the following categories:

A. Contain radioactive material and have not been identified as safety-related.

B. Are required by ANS 3.2/ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," and are not identified as safety-related (e.g., plant security system).

C. Are fire protection features that provide protection for safety-related structures, systems, or components.

D. Are structures, systems, and components that have environmental or operability requirements important to the safe operation of the unit (as specified in the Plant Technical Specifications).

E. Are structures, systems, and components that could impact reliability and operability goals recommended by NP management and approved by the Senior Vice President of Nuclear Power.

4.2 Some components and systems have been identified as "non-nuclear safety" (NNS) in TVA nuclear plant FSARs. Those components and systems identified as NNS in the FSARs shall be classified as quality-related.

4.3 Those components or systems designated as Seismic Category I(L) (Class II for BFN) in nuclear plant FSARs shall be classified as quality-related. Seismic Category I(L) is the nonsafety-related portion of Seismic Category I. (Refer to Appendix D.)

4.4 Additional components or systems, not identified in the FSARs as NNS or Seismic Category I(L,) can be designated as quality-related but not safety-related. Such additional components or systems could include the following:

A. Plant security system.

B. Plant radiological controls and radwaste systems.

C. Other structures, systems, and components which have special environmental or operability requirements.

D. Structures, systems, or equipment designated by NP management as requiring some level of quality control because of their importance to plant reliability or operability.

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4.5 Items to which one or more of the following regulatory documents are applicable should be considered for classification as quality-related.

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

B 10 CFR 71, Subpart H, "Quality Assurance (Packaging and Transportation of Radioactive Material)."

C. Regulatory Guide 1.29, "Seismic Design Classification."

D. 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors Against Radiological Sabotage."

E. 10 CFR 50.62, "Requirements for Reduction of Risk From Anticipated Transients Without Scram (ATWS) Events for Light-Water-Cooled Nuclear Power Plants."

F. 10 CFR 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979."

G. ANS 3.2/ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants."

H. Regulatory Guide 1.33, Revision 2, February 1978, "Quality Assurance Program Requirements (Operation)."

I. NRC letter from H. J. Thompson Jr. dated April 16, 1985, "Quality Assurance Guidance for ATWS Equipment That is Not Safety Related," Generic Letter 85-06, (A02 850422 044).

J. NRC letter from D. G. Eisenhut dated April 24, 1986, "Implementation of Fire Protection Requirements," Generic Letter 86-10 (A02 860512 005).

K. NUREG 0737, "Clarification of TMI Action Plan Requirements."

L. NUREG 0800, Section 9.5.1, Branch Technical Position, CMEB 9.5-1 (formerly BTP ASB 9.5-1), Revision 2, July 1981, "Fire Protection for Nuclear Power Plants."

4.6 New systems (or items being added as a result of approved modifications) shall be classified on the same basis as the existing components or systems.

4.7 Classification of components or systems as quality-related but not safety-related shall be performed in accordance with approved corporate or site engineering procedures or at NP management direction.

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SCOPE OF NUCLEAR QUALITY ASSURANCE PROGRAM

This diagram displays the relationship of safety-related to quality-related items and activities. Examples of these items and activities are shown. It is not intended to show each specific item and activity within the scope of the Nuclear QA Program.

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COMPUTER SOFTWARE

The requirements of Section 13.0 apply to application software whose output can be used without further verification (i.e. whose output can be assumed to be acceptable for its intended use) and which performs any of the following:

1. Directly operate safety-related plant equipment.

2. Generates design output affecting safety-related functions, structures, systems, or components.

3. Directly interfaces with control room personnel and is used by them to make decisions affecting:

   a. The integrity of the reactor coolant pressure boundary.

   b. The capability to shut down the reactor and maintain it in a safe condition.

   c. The capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to the 10 CFR 100 guidelines.

4. Generates design output affecting quality-related equipment.

5. Performs calculations which form the basis for the acceptance of inspection or test data for quality-related equipment.

6. Design or aid in the design of quality-related structures, systems, or components.

7. Generates output used to procure quality-related items.

8. Maintain or control descriptive information used in the procurement of quality-related items.

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DEFERRED PLANT QUALITY ASSURANCE PROGRAM

During the period of plant deferral, a QA program will be implemented which concentrates on the activities being performed and ensuring that the quality and licensability of the deferred plant are maintained.

The program which will be implemented is based on the guidance provided in NRC Generic Letter 87-15 dated November 4, 1987, and the NRC Policy Statement on "Deferred Plants" published in the Federal Register, Volume 52, No. 198, dated October 14, 1987. This program does not reduce 10 CFR 50, Appendix B requirements but focuses efforts where they are deemed necessary. A description of this program was submitted to the NRC on July 29, 1988.

Program Implementation

During the period of plant deferral, implementation of the following QA programmatic elements will be accomplished through written, reviewed, and approved procedures. These procedures will include as a minimum:

1. A description of the organizational structure for the plant showing functional relationships of personnel.

2. An indoctrination and training program, including the qualifications, responsibilities, and duties of personnel performing quality-related activities. The range of training will be structured to that needed for ongoing activities during deferral.

3. A construction status when work was suspended, including control of deviations from the established status which occur during the deferral period.

4. Control of Measuring and Test Equipment (M&TE) used during deferral, including identification, calibration, and evaluation of out-of-calibration equipment.

5. Control of work, including verification by the line organizations.

6. Program for inspection by Quality Control/Quality Assurance personnel using a graded approach.

7. Program for operation of equipment and systems which continue in operation or must be operated periodically.

8. Program for maintenance and lay-up of systems including:

   a. Establishment of acceptable conditions, periodic testing, and restoration of acceptable conditions during lay-up.

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b. A listing identifying the location, storage level, and/or preventive maintenance requirement for all permanent plant equipment and materials important to safety.

9. Identification, reporting, and correction of adverse conditions, including 10 CFR 21 and 10 CFR 50.55(e) items.

10. Collection, retention, and protection of records, including procedures, drawings, and controlled documents.

11. Scheduling and performance of audits and monitoring, concentrating on activities being performed and programs in place.

12. Program for plant security and access control.

13. Identification of the program for activities during the deferral that are associated with reactivation.

Completion Assurance is responsible to ensure that the methods utilized by each organization responsible for the deferred QA program meet applicable QA program requirements.

Existing site procedures which are not being utilized during the period of deferral will be placed in an inactive status. Should an activity be required during deferral, the applicable procedure will be activated, reissued, and reviewed prior to the conduct of the activity.

At the end of the deferral period, the respective plant will be subject to the QA program described in this plan.

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TYPES OF CONTROLLED DOCUMENTS AND MANUALS

1. Design Specifications and Drawings
2. Safety Analysis Reports
3. Program Manuals
4. Plant Instructions
5. Nuclear Fuel Procedures Manual
6. Radiological Protection Plan
7. Nuclear Engineering Procedures Manual
8. Site Engineering Project Manuals
9. ASME Section III Quality Assurance Manual
10. Nuclear Procedures System Manuals
11. As-built Documents
12. Computer Programs
13. Nonconformance Reports
14. NQA Plan
15. System Descriptions
16. Topical Report

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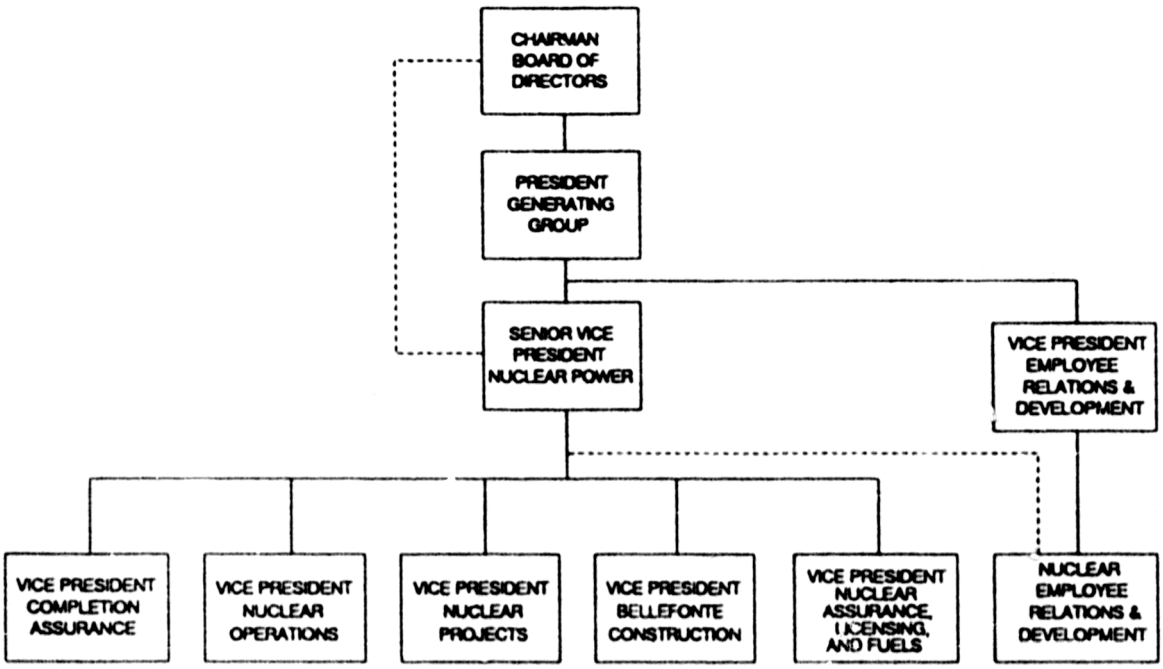
TVA NQAP
ORGANIZATION CHARTS

NUCLEAR POWER ORGANIZATION CHART



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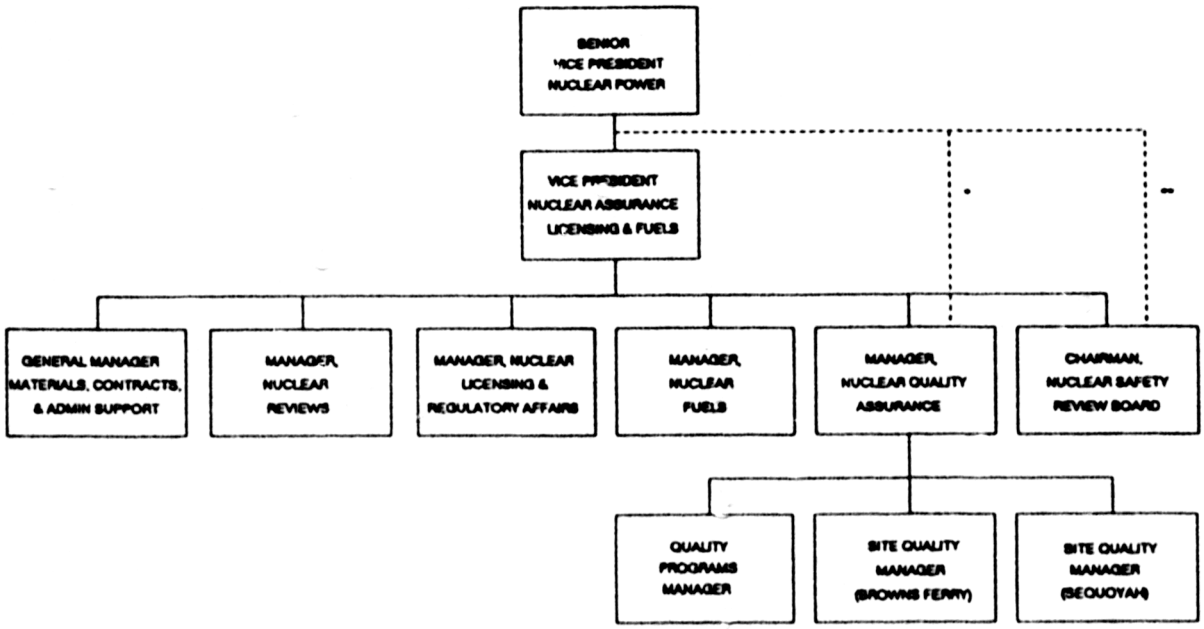
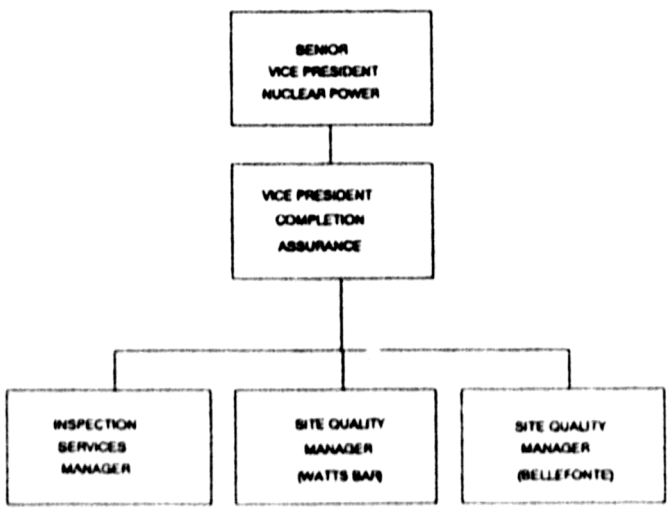
TVA NQAP
ORGANIZATION CHARTS

NUCLEAR POWER
NUCLEAR ASSURANCE, LICENSING, AND FUELS



* INDEPENDENT REPORTING TO THE SENIOR VICE PRESIDENT ON QUALITY STATUS & ISSUES
** INDEPENDENT REPORTING TO THE SENIOR VICE PRESIDENT ON SAFETY MATTERS

NUCLEAR POWER
COMPLETION ASSURANCE



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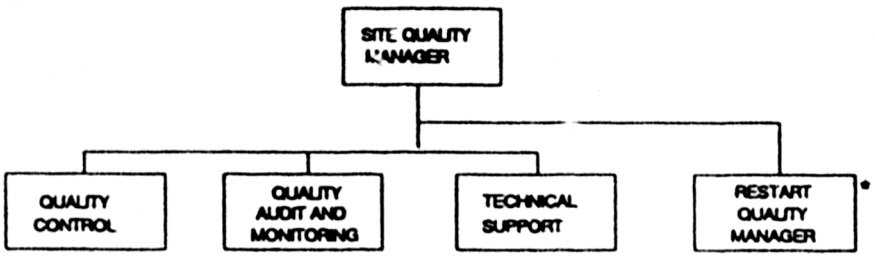
TVA NQAP
ORGANIZATION CHARTS

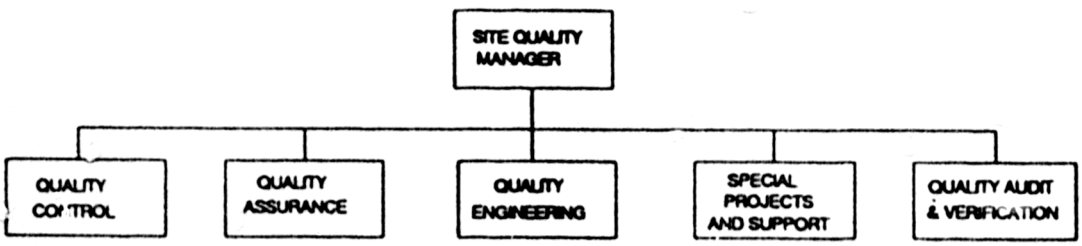
NUCLEAR POWER SITE QUALITY

BROWNS FERRY AND SEQUOYAH

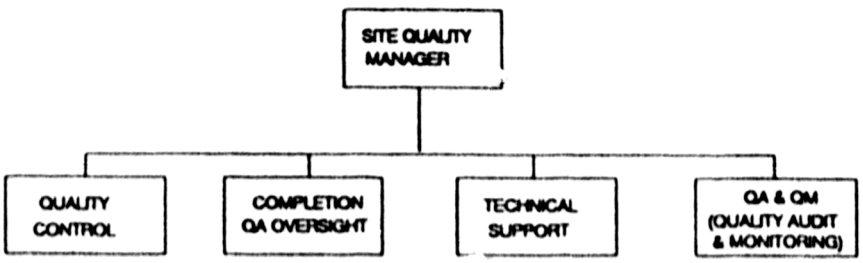


* BFN only

WATTS BAR



BELLEFONTE



Note: The majority of changes and justifications were previously submitted to the NRC in the following correspondence:

1. E. G. Wallace's letter to the NRC dated April 1, 1991, "TVA Nuclear Quality Assurance Plan (TVA-NQA-PLN89-A, Revision 1) - Proposed Change"

2. E. G. Wallace's letter to the NRC dated September 23, 1991, "TVA Nuclear Quality Assurance Plan (TVA-NQA-PLN89-A, Revision 1) - Changes"

3. E. G. Wallace's letter to the NRC dated December 4, 1991, "TVA Nuclear Quality Assurance Plan (TVA-NQA-PLN89-A, Revision 1) - Change"

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Policy	Third paragraph, added Completion Assurance.	To show Completion Assurance Organization responsiblities as described in the body of this plan. (Refer to 12/4/91 letter to the NRC.)
	Sixth paragraph added to clarify responsibility related to contractor activities.	Clarification.
Table of Contents	Changed to reflect page number changes.	General update.
	Changed title of Section 9.2.	Changed Nuclear Quality Assurance to Quality Assurance to support addition of Completion Assurance Organization.
	Ch[illegible] title of Appendix H.	Edited to agree with text.
	Deleted Appendix I and transferred information to Appendix A.	General update.
List of Abbreviations	Added abbreviations for Sequoyah and Watts Bar Nuclear Plants.	General update.

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Section 3.3.2	Second paragraph changed NQA to QA.	Changed throughout the Plan to remove NQA Organization connotation and support the addition of Completion Assurance. (Refer to 12/4/91 letter to the NRC.)
Section 3.3.3	First paragraph, added Vice President, Completion Assurance responsibility for BLN and WBN, and changed Manager, NQA responsibility to corporate, BFN, and SQN.	Organization update. Change associated with addition of Completion Assurance in Section 4.1.4.
	Added contractors in the seventh line.	To show applicability of assessments to contractors.
	Second paragraph, changed Nuclear Quality Audit & Evaluation's to TVA site and corporate quality assurance organizations'.	To broaden the use of external organizations to assess TVA sites as well as corporate QA organizations.
Section 3.3.5	Changed NQAP to NQA Plan.	Clarification.
Section 4.0 (first paragraph)*	Changed Human Resource Organization to Employee Relations and Development organization.	Organization update (title change only).
	Added Completion Assurance Organization responsibility at BLN and WBN, and added NAL&F organization responsibility at corporate, BFN, and SQN.	To show Completion Assurance responsibilities and associated changes to NAL&F responsibilities. (Refer to 12/4/91 letter to the NRC.)
	Changed NQA to QA in the last sentence.	Refer to Section 3.3.2 justification.

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Section 4.1.1	Added Vice President, Completion Assurance.	Organization update. Change associated with addition of Completion Assurance in Section 4.1.4.
	Changed Vice President New Generation and Bellefonte Construction to Vice President, Bellefonte Construction.	Organization update (title change only).
	Changed Manager, Nuclear Human Resources to Manager, Nuclear Employee Relations and Development (matrix reporting relationship).	Organization update.
Section 4.1.3.A	Added Nuclear Reviews.	Organization update to identify existing responsibilities.
Section 4.1.3.B	Changed Manager, Nuclear Safety Oversight to Chairman, Nuclear Safety Review Board.	Organization update.
	Added Manager, Nuclear Reviews.	To identify existing responsibilities.
Section 4.1.3.B.5	Changed Manager, Nuclear Safety Oversight to Chairman, Nuclear Safety Review Board.	Organization update.
Section 4.1.3.B	Added 4.1.3.B.6, Manager, Nuclear Reviews.	Organization update to identify existing responsibilities.
Section 4.1.3.C.2	Changed responsibilities to corporate, BFN, and SQN.	Organization update. Change associated with addition of Completion Assurance. Refer to section 4.1.4 for related responsibilities at BLN and WBN.

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Section 4.1.3.C.3	Changed QA to NQA.	Clarification.
Section 4.1.3.C.4	Changed responsibilities to corporate, BFN, and SQN.	Organization update Refer to Section 4.1.3.C.2 justification.
Section 4.1.3.C.5	Changed responsibilities to corporate, BFN, and SQN.	Organization update Refer to Section 4.1.3.C.2 justification.
Section 4.1.3.C.6	Changed to read: Establishing upper-tier QA requirements for QA training and for assessing the implementation and effectiveness of that training.	Clarification of responsibility and changed to differentiate between the terms "assessment" and "monitor" as defined in the NQA Plan.
Section 4.1.3.C.7	Deleted Nuclear Quality Audit and Evaluation Manager.	Organization update. Position now reports to Quality Programs Manager.
	Moved Inspection Services Manager to section 4.1.4.B.	Position now reports to Vice President, Completion Assurance.
	Deleted Special Programs Manager.	Position functions are inherently part of the Quality Programs Manager responsibilities.
	Changed Site Quality Managers to Site Quality Managers (BFN and SQN).	To show SQM (BFN and SQN) reporting to Manager, NQA. SQM (BLN and WBN) report to Vice President Completion Assurance. Refer to Section 4.1.4.B.

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Section 4.1.3.C.7.a	Deleted Nuclear Quality Audit and Evaluation Manager and substituted Quality Programs Manager in its place.	Organization update. Position now reports to Quality Programs Manager.
1.	Moved to Section 4.1.3.C.7.a.14 and changed audits to corporate audits.	Organization update. Quality Programs Manager is responsible for corporate audits. Refer to Section 4.1.3.C.7.b.12 for site audits.
2.	Moved to Section 4.1.3.C.7.a.15 and changed audits to audits and assessments.	Organization update. Assessments are used in addition to audits.
3.	Moved to Section 4.1.3.C.7.a.16 and changed audits to audits and assessments.	Organization update. Assessments are used in addition to audits.
4.	Moved to Section 4.1.3.C.7.a.17.	Organization update. Audit of Site Quality Manager organizations, as shown in the 9/23/91 letter to NRC is now addressed in Section 3.3.3, second paragraph.
5.	Moved to Section 4.1.3.C.7.a.18 and changed audits to audits and assessments, and changed contractors to major engineering contractors.	Organization update. Assessments are used in addition to audits. Refer to Section 4.1.3.C.7.b.14 for audits of onsite contractors.

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Section 4.1.3.C.7.b	Renumbered as Section 4.1.3.C.7.a	NQA Plan Section number change only.
1.	Renumbered as Section 4.1.3.C.7.a.1.	NQA Plan Section number change only.
2.	Renumbered as Section 4.1.3.C.7.a.2 and changed to read: Develop and maintain upper-tier QA requirements for . . .	NQA Plan Section number change and clarification of responsiblities. NQA develops and maintains upper-tier QA requirements. Receipt programs are addressed in new Sections 4.1.3.B.1 and 4.1.3.B.3.
3.	Renumbered as Section 4.1.3.C.7.a.3.	NQA Plan Section number change only.
4.	Renumbered as Section 4.1.3.C.7.a.4 and changed to read: Provide quality assurance support for NP organizations.	NQA Plan Section number change and changed to broaden the support function.
5.	Renumbered as Section 4.1.3.C.7.a.5.	NQA Plan Section number change only.
6.	Renumbered as Section 4.1.3.C.7.a.6 and changed to read: Establish upper-tier QA requirements for auditing, monitoring, QC, and NDE activities.	NQA Plan Section number change and clarification of responsibilities and types of QA functions.
7.	Renumbered as Section 4.1.3.C.7.a.7.	NQA Plan Section number change only.
8.	Moved to Section 4.1.4.B.1.c and changed to read: As appropriate, develop and maintain quality control inspection and nondestructive examination (NDE) methods and procedures.	Organization update and clarification of responsibilities.

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Section 4.1.3.C.7.b (Continued)		
9.	Renumbered as Section 4.1.3.C.7.a.8 and changed to read: Assess NDE, Quality Engineering, Quality Control, and QA activities.	NQA Plan Section number change and changed to use assessments. Refer to Section 4.1.3.C.6 justification.
10.	Deleted.	Function is now addressed in new Section 4.1.3.C.7.a.6.
11.	Renumbered as Section 4.1.3.C.7.a.15 and changed to read: Conduct in-depth technical audits and assessments to assess the technical adequacy of TVA engineering activities.	NQA Plan Section number change and changed to use audits and assessments.
12.	Renumbered as Section 4.1.3.C.7.a.9.	NQA Plan Section number change only.
13.	Renumbered as Section 4.1.3.C.7.a.10 and added the word conduct.	NQA Plan Section number change and clarification.
14.	Renumbered as Section 4.1.3.C.7.a.11 and changed to read: Audit or assess TVA Nuclear Fuels QA Program and TVA quality-related programs.	NQA Plan Section number change and changed to use audits or assessments.
15.	Renumbered as Section 4.1.3.C.7.a.12.	NQA Plan Section number change only.
16.	Renumbered as Section 4.1.3.C.7.a.13.	NQA Plan Section number change only.

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Section 4.1.3.C.7.c	Renumbered as Section 4.1.3.C.7.b and changed to read: Site Quality Manager (SQM) BFN and SQN. First paragraph, changed to read: . . . to perform the quality control, technical support, and quality audit/monitoring/engineering . . .	Organization update. Change associated with addition of Completion Assurance. Refer to Section 4.1.4.B.2 for related responsibilities at BLN and WBN.
1.	Renumbered as Section 4.1.3.C.7.b.1 and changed to read: . . . initiating, directing, and auditing nuclear plant QA programs.	Organization update. Auditing function added.
2.	Renumbered as Section 4.1.3.C.7.b.2.	NQA Plan Section number change only.
3.	Renumbered as Section 4.1.3.C.7.b.3 and changed to read: . . . through auditing, assessing, inspection, and review.	NQA Plan Section number change and clarification of responsibility.
4.	Renumbered as Section 4.1.3.C.7.b.4 and changed to read: Verifying through monitoring or other means that quality assurance requirements . . .	NQA Plan Section number change and clarification that verification is not restricted to reviewing and/or monitoring.
5.	Renumbered as Section 4.1.3.C.7.b.5.	NQA Plan Section number change only.
6.	Renumbered as Section 4.1.3.C.7.b.6.	NQA Plan Section number change only.
7.	Renumbered as Section 4.1.3.C.7.b.7.	NQA Plan Section number change only.
8.	Renumbered as Section 4.1.3.C.7.b.8 and changed to read: Performing in-depth technical monitoring to determine . . .	NQA Plan Section number change and clarification.

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Section 4.1.3.C.7.c (Continued)		
9.	Renumbered as Section 4.1.3.C.7.b.9 and changed to delete engineering from services (onsite).	NQA Plan Section number change and clarification that reviewing and/or monitoring is not restricted to engineering services.
10.	Renumbered as Section 4.1.3.C.7.b.10.	NQA Plan Section number change only.
11.	Renumbered as Section 4.1.3.C.7.b.11.	NQA Plan Section number change only.
	Added Section 4.1.3.C.7.b.12 to read: Planning, conducting, and reporting the results of site audits, assessments, and monitorings and following up identified adverse conditions to ensure appropriate corrective action has been taken.	Organization update as shown in the 9/23/91 letter to NRC. Added assessments and monitorings to show additional responsibilities.
Section 4.1.3.C.7.c	Added Section 4.1.3.C.7.b.13 to read: Ensuring audits, assessments, and monitorings of site engineering, construction, and operations activities are performed (except supplier nuclear fuel-related activities) to determine compliance with QA program requirements.	Organization update as shown in the 9/23/91 letter to NRC. Added assessment and monitorings to show additional responsibilities.
	Added Section 4.1.3.C.7.b.14 to read: Performing audits and assessments of onsite contractors.	Organization update. supports change to Section 4.1.3.C.7.a.18.

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Section 4.1.3.C.7.d	Renumbered as Section 4.1.4.B.1.a as shown in the QA Plan which was submitted to the NRC on 12/4/91.	Refer to the 12/4/91 letter to the NRC.
Section 4.1.3.C.7.e	Deleted.	Position functions are inherently part of the Quality Programs Manager responsibilities.
Section 4.1.4 (Nuclear Projects)	Renumbered as Section 4.1.5.	NQA Plan Section number change only.
Section 4.1.5 (NG&BC)	Renumbered as Section 4.1.6 which was submitted to NRC 4/1/91 and changed Section Title & Position title (underlined) to read: Bellefonte Construction In addition to the responsibilities described in subsection 4.1.2, and responsibility to implement the deferred plant QA program requirements as identified in Appendix F, the Vice President, Bellefonte Construction has responsibility for development and implementation of programs at Bellefonte Nuclear Plant (BLN), ensuring that the QA requirements of this plan are appropriately established in BLN site procedures.	Title changes. Refer to the 4/1/91 letter to NRC.
	Added new Section 4.1.4, Completion Assurance to read as submitted to the NRC 12/4/91 except for deletion of Section 4.1.4.B.1.d which read: Monitor NDE and QC activities. Renumbered existing Sections 4.1.4 through 4.1.7 to 4.1.5 through 4.1.8.	Refer to the 12/4/91 letter to the NRC. Function deleted in former Section 4.1.4.B.1.d is addressed as assessment in 4.1.3.C.7.a.8.

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Section 4.1.6 (Human Resources)	Renumbered as Section 4.1.7 and changed to Nuclear Employee Relations and Development. In addition to the responsibilities described in subsection 4.1.2, the Manager, Nuclear Employee Relations and Development is responsible for maintaining a position qualification documentation and validation program.	NQA Plan Section number change, title change, and clarification of responsibility to maintain. the program.
Section 4.1.7	Renumbered as Section 4.1.8.	NQA Plan Section number change only.
Section 5.0 (first paragraph)	Changed to read: Vice Presidents, Nuclear Projects and Bellefonte Construction.	Organization update (title change only).
Section 5.1.B	Changed next to last sentence to read: NQA shall review or assess these programs and features.	Refer to the 9/23/91 letter to the NRC, except assessment is used in place of monitoring.
Section 5.1.C	Changed to read: Vice Presidents, Nuclear Projects, Bellefonte Construction and NO.	Organization update (title change only).
Section 6.1.2.B.3	Changed NQA to QA.	Refer to Section 3.3.2 justification.
Section 6.1.2.E	Changed the biennial review of operational phase site procedures to read as submitted to the NRC on 9/23/91.	Refer to the 9/23/91 letter to the NRC.
Section 6.1.3.B (first sentence)	Added Vice President, Completion Assurance as delegated to the SQM (BLN and WBN) . . .	Organization update. Change associated with addition of Completion Assurance in Section 4.1.4.
Section 6.1.3.B.2	Changed the responsibility related to document reviews to read as submitted to the NRC on 9/23/91.	Refer to the 9/23/91 letter to the NRC.

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Section 6.1.3.C	Changed the responsibility for implementing the QA Program to read as submitted to the NRC on 9/23/91.	Refer to the 9/23/91 letter to the NRC.
Section 7.2.1.C	Changed the last word from approved to implemented as submitted to the NRC on 9/23/91.	Refer to the 9/23/91 letter to the NRC.
Section 7.2.4	Changed critical structures systems, and components (CSSC) to quality-related structures, systems, and components.	To remove the term CSSC and make consistent with transition to the Q-list.
Section 7.4	Added new item I to read: American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components, "Article IWA-1000, "Scope and Responsibility."	ASME Section XI contains pertinent requirements.
Section 8.1.2.B.3	Changed to read: As appropriate, require that suppliers have a documented QA Program that is approved by TVA and appropriate interfaces established.	To support clarification made to the sixth paragraph of the policy statement.
Section 9.1.2.C	Changed to read: Inspections shall be performed by NQA, Completion Assurance, or other qualified individuals approved by these organizations . . .	Organization update. Change associated with addition of Completion Assurance in Section 4.1.4.
Section 9.1.2.C.1	Changed to read: Inspections shall be performed by individuals delineated above other than those . . .	Organization update. Refer to Section 9.1.2.C justification.
Section 9.1.2.C.2 (second sentence)	Changed to read: The requirements criteria shall be approved by NQA or Completion Assurance.	Organization update. Refer to Section 9.1.2.C justification. Deleted last part of sentence to reflect the fact that procedure review is not the only means of approval.

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Section 9.1.3.A	Added the Vice President, Completion Assurance as delegated to the SQM (BLN and WBN) . . .	Organization update. Change associated with addition of Completion Assurance in Section 4.1.4.
Section 9.1.3.C	Changed to read: The Vice Presidents, Nuclear Projects, NO, and Bellefonte Construction . . .	Organization update (title change only).
Section 9.2	Changed Nuclear Quality Assurance (NQA) Monitoring to Quality Assurance Monitoring.	Refer to Section 3.3.2 justification.
Section 9.2.1 (first paragraph)	Changed to read: Monitoring by NQA and Completion Assurance is performed . . .	Organization update. Change associated with addition of Completion Assurance in Section 4.1.4.
Section 9.2.3	Added second sentence to read: The Vice President, Completion Assurance, is responsible to implement the QA monitoring program at BLN and WBN.	Organization update. Change associated with addition of Completion Assurance in Section 4.1.4.
Section 9.3.3.B	Changed to read: The Vice Presidents, Nuclear Projects, NO, and Bellefonte Construction.	Organization update (title change only).
Section 9.3.3.C	Changed to read: . . . is responsible for the the development of upper-tier QA requirements for the NDE program.	Organization update. Change associated with addition of Completion Assurance in Section 4.1.4. New Section 9.3.3.D addresses remaining responsibilities.
Section 9.3.3.D	Renumbered as Section 9.3.3.E and changed to read: The Vice Presidents, Nuclear Projects, NO, and Bellefonte Construction . . .	Organization update (title change only).

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Section 9.3.3	Added new Section 9.3.3.D to read: The Vice President, Completion Assurance, is responsible to develop and implement NDE methods and procedures. He is also responsible for the qualification or certification of procedures, equipment, and personnel.	Refer to Section 9.3.3.C Justification.
Section 9.4.3.A	Changed to read: The Vice Presidents, Nuclear Projects, NO, and Bellefonte Construction . . .	Organization update (title change only).
Section 9.4.3.B	Changed to read: The Vice Presidents, Nuclear Projects, NO, and Bellefonte Construction . . .	Organization update (title change only).
Section 9.4.3.C	Changed to read: The Vice Presidents, Nuclear Projects and Bellefonte Construction . . .	Organization update (title change only).
Section 9.4.3.E	Added the Vice President, Completion Assurance, as delegated to the SQM (BLN and WBN) . . .	Organization update. Change associated with addition of Completion Assurance in Section 4.1.4.
Section 9.5.3.B	Changed to read: The Vice Presidents, NO, Nuclear Projects, and Bellefonte Construction . . .	Organization update (title change only).
Section 9.6.3.C	Changed to read: The Vice Presidents, Nuclear Projects and Bellefonte Construction . . .	Organization update. Clarification that the Vice President NO is not responsible for the construction phase activities.
Section 9.6.3.D	Changed to read: The Vice Presidents, Nuclear Projects, NO, and Bellefonte Construction . . .	Organization update (title change only).
Section 9.7.3.B	Changed to read: The Vice Presidents, Nuclear Projects, NO, and Bellefonte Construction . . .	Organization update (title change only).

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Section 9.7.3.C	Changed to read: The Vice Presidents, Nuclear Projects and Bellefonte Construction . . .	Organization update (title change only).
Section 9.8.3.B	Changed to read: The Vice Presidents, Nuclear Projects and Bellefonte Construction . . .	Organization update (title change only).
Section 10.2.2.H	Changed to read: Independent verification of corrective action implementation is performed as specified within the corrective action program.	Clarification and change associated with addition of Completion Assurance in Section 4.1.4.
Section 10.3.C	Added Completion Assurance.	Organization Update. Change associated with addition of Completion Assurance in Section 4.1.4.
Section 10.3.D	Added Completion Assurance.	Organization Update. Refer to Section 10.3.C justification.
Section 11.3.C	Changed to read: Manager, Nuclear Employee Relations and Development . . .	Organization Update (title change only).
Section 12.3	Added new Section 12.3.C to read: The Vice President, Completion Assurance, is responsible to conduct audits at BLN and WBN.	Organization Update. Change associated with addition of Completion Assurance in Section 4.1.4.
Section 15.0	Added Assessment definition to read: An evaluation of the effectiveness of quality programs, processes, or management controls to identify opportunities for improvement, performance problems, or verify resolution of problems.	To define the term as used in the NQA Plan.

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Section 15.0	Changed Basic Component definition by changing the last sentence to read: In all cases, "basic component" includes safety related design, analysis, inspection, testing, fabrication, replacement parts, or consulting services that are associated with the component hardware whether these services are performed by the component supplier or others (10CFR21.3 and 10 CFR 50.2).	To conform with 10 CFR Parts 21 and 50 Criteria and Procedures for the Reporting of Defects and Conditions of Construction Permits.
Section 15.0	Added Graded Approach definition to read: A methodology of applying a grading criteria based on an item's impact on safety, quality history, and other factors such that determination can be made as to the type and degree of QA program requirements which need to be applied. Refer to Section 5.2.	Added to define the term as used in the NQA Plan.
Section 15.0	Changed Inspection definition by adding in the second and third lines . . .or Completion Assurance . . .	Organization Update. Change associated with addition of Completion Assurance in Section 4.1.4.
Section 15.0	Changed Line Verification definition by changing the first sentence to read: A routine verification by a qualified individual who is in the work-performing organization who did not perform the work.	Clarification that the line verification is performed by an individual who did not perform the work.
Section 15.0	Changed Monitoring definition by changing in item (1) the word "program" to "task."	Clarification to differentiate from the definition of assessment.
Appendix A	Transferred information from Appendix I to Appendix A.	To eliminate the Appendix A page intentionally left blank in Revision 1.
Appendix B RG 1.33	Changed Alternative 4 regarding biennial review of operational phase site procedures to read as submitted to the NRC on 9/23/91.	Refer to the 9/23/91 letter to the NRC.

SECTION NO. IN REV. 1	CHANGE REFLECTED IN REV. 2 DATED 1-18-92	JUSTIFICATION
Appendix B R.G. 1.38 (Continued)	Changed Alternative 4 to add the word "material" after "tubing and piping" as submitted to the NRC on 9/23/91.	Refer to the 9/23/91 letter to the NRC.
Appendix B R. G. 1.38	Added Alternative 13 regarding the use of hoisting equipment to read as submitted to the NRC on 9/23/91.	Refer to the 9/23/91 letter to the NRC.
Appendix B R.G. 1.58	Changed Alternative 1, third bullet to read: Quality control inspection personnel are qualified to ANSI N45.2.6.	Organization Update. NQA changed to quality control to support addition of Completion Assurance in Section 4.1.4.
	Changed Alternative 5 by adding a third sentence to read: In ASME Section XI applications, SNT-TC-1A as modified by ASME Section XI will be used.	Clarification of the application of ASME Section XI requirements.
Appendix B R.G. 1.64	Changed item 3 of the Alternative to read: 3. Nuclear Quality Assurance or Completion Assurance will audit the use of supervisors as design verifiers to guard against abuse.	Organization Update. Change associated with addition of Completion Assurance in Section 4.1.4.
Appendix B R.G. 1.144	Changed Alternative 3 to read: Section 4.5.2 - Nuclear Quality Assurance or Completion Assurance will have a certified lead auditor or a manager of the auditor either conduct the required follow-up or attest to the acceptability of the follow-up conducted by audit personnel.	Organization Update. Change associated with addition of Completion Assurance in Section 4.1.4.
Appendix F	Changed third from last paragraph to read: Completion Assurance is responsible to ensure that the methods utilized by each organization responsible for the deferred QA program meet applicable QA program requirements.	Organization Update. Change associated with addition of Completion Assurance in Section 4.1.4.
Appendix H	Changed charts to reflect new organization.	Organization Update.
Appendix I	Deleted.	Information transferred to Appendix A.