

71-0250



E-24257
November 10, 2006

ATTENTION: Document Control Desk
Mr. E. William Brach
Director, Spent Fuel Project Office
Office of Nuclear Material Safety and Safeguards
11555 Rockville Pike
Rockville, MD 20852

Subject: Proposed Revision 7 to the Transnuclear, Inc. and Packaging Technology, Inc. Quality Assurance Program Description Manual for 10CFR71, Subpart H, and 10CFR72, Subpart G

Dear Mr. Brach:

We are hereby submitting an update to our Quality Assurance Program Description Manual (QAPDM) to reflect a pending ownership change for Packaging Technology, Inc.

Packaging Technology, Inc. (PacTec) is currently a wholly owned subsidiary of Transnuclear, Inc. On January 1, 2007, ownership of PacTec will be transferred to AREVA NC, Inc. Those changes deemed necessary to support this transition are appropriately denoted in the manual.

Please note that previous revisions of the Transnuclear, Inc. QAPDM were approved under Docket No. 71-0250 for use in accordance with the requirements of 10 CFR 71 and 10 CFR 72. Any questions regarding this proposed change may be addressed to me at 410-910-6870. Thank you for your consideration.

Very truly yours,

Steven C. White
Director, Corporate Quality Assurance
Transnuclear, Inc.

c (w attachment):

Mr. Robert Lewis
11555 Rockville Pike
Mail Stop 013-D13
Rockville, MD 20852

c (w/o attachment):

G. Field
W. Gallo
R. Grubb
T. Neider

NMSSO 1

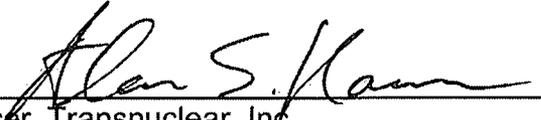


TRANSNUCLEAR, Inc.
and
PACKAGING TECHNOLOGY, Inc.

**Quality Assurance Program
Description Manual
for
10 CFR 71, Subpart H
and
10 CFR 72, Subpart G**

Revision 7

Issue Date: January 1, 2007

Alan S. Hanson: 
Chief Executive Officer, Transnuclear, Inc.
Executive Vice President, AREVA NC, Inc.

Date: 11-10-06

William D. Gallo: 
Senior Vice President, AREVA NC, Inc.

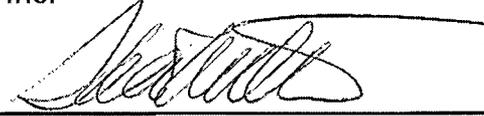
Date: 11/9/06

J. Greg Field: 
President, Packaging Technology, Inc.

Date: 11/9/06

Tara J. Neider: 
President, Transnuclear, Inc.

Date: 11/9/06

Steven C. White: 
Director, Corporate Quality Assurance, Transnuclear, Inc.
Director, Corporate Quality Assurance, Packaging Technology, Inc.

Date: 11/9/06

INTRODUCTION

The Transnuclear, Inc. and Packaging Technology, Inc. Quality Assurance Program Description Manual for 10 CFR 71, Subpart H, and 10 CFR 72, Subpart G, has been developed as a means to describe the overall measures that control activities governing the design, procurement, fabrication, handling, shipping, cleaning, assembly, inspection, modification, testing, operation, repair, and maintenance of storage and transport systems for spent fuel and radioactive materials in accordance with the regulations pursuant to 10CFR71, Subpart H and 10CFR72, Subpart G. This Quality Assurance Program Description Manual (QAPDM) is also applicable to activities performed in accordance with the requirements of ANSI/ASME NQA-1 and 10 CFR 50, Appendix B, as specifically identified in the NRC issued Certificate(s) of Compliance or referenced documents. This QAPDM applies to Transnuclear, Inc. and Packaging Technology, Inc. (hereafter referred to as TN/PT) currently located as follows:

Transnuclear, Inc.
7135 Minstrel Way
Columbia, MD 21045

Transnuclear, Inc.
310 Woodward Drive
Aiken, SC 29803

Packaging Technology, Inc.
1102 Broadway Plaza, Suite 300
Tacoma, WA 98424

Transnuclear, Inc. and Packaging Technology, Inc. are both wholly owned subsidiaries of AREVA NC, Inc.

For the purpose of this QAPDM, the entities listed above are considered operating entities. As such, each operating entity is responsible for the implementation of this QAPDM for its respective operations; however, the ultimate overall responsibility is retained by the Presidents of Transnuclear, Inc. and Packaging Technology, Inc.

The Quality Assurance Program is comprised of this QAPDM; the Transnuclear, Inc. Quality Assurance Program Description Manual for ASME Section III, Division 1 and Division 3 (ASME QAPDM); and Transnuclear Implementing Procedures (TIPs). The TIPs, which are designed and administered to meet the requirements of 10 CFR 71, Subpart H; 10 CFR 72, Subpart G; 10 CFR 50, Appendix B and ASME Section III, Division 1 (NCA 4000) and Division 3 (WA 4000), are utilized by both Transnuclear, Inc. and Packaging Technology, Inc.

Transnuclear, Inc. maintains ASME Certificates of Authorization for the design, fabrication and delivery of products in accordance with the requirements of the ASME QAPDM, which specifies additional ASME Code-related requirements applicable to ASME Code projects only.

STATEMENT OF POLICY AND AUTHORITY

Transnuclear, Inc. and Packaging Technology, Inc. are engaged in the business of designing, certifying, testing, procuring, operating and maintaining packages for the transport and/or storage of radioactive materials. This business carries with it the responsibility of protecting the health and safety of the public and workers from the deleterious effects of radiation. Therefore, it is the Policy of Transnuclear, Inc. and Packaging Technology, Inc. that all products and services must be delivered with the highest levels of quality consistent with the expectations of our customers, shareholders and the government agencies which regulate our activities.

In order to carry out this Policy, a Quality Assurance Program has been established that includes this Quality Assurance Program Description Manual which complies with 10CFR71, Subpart H, and 10CFR72, Subpart G. This QAPDM is reviewed and approved by the U.S. Nuclear Regulatory Commission. Compliance is mandatory for all personnel performing quality related activities on projects subject to the requirements of this QAPDM.

While the ultimate responsibility for implementation of the Quality Assurance Program rests with the Presidents of Transnuclear, Inc. and Packaging Technology, Inc., each and every employee is expected to assume personal responsibility for performing their assigned work activities in accordance with the applicable requirements of the Quality Assurance Program and implementing procedures in effect.

Quality Assurance Program requirements shall be invoked to the extent applicable upon suppliers to which Transnuclear, Inc. and Packaging Technology, Inc. subcontract quality related work,

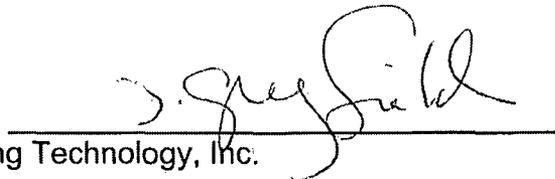
The Director, Corporate Quality Assurance is delegated responsibility to establish and maintain the Quality Assurance Program consistent with this Policy.

Alan S. Hanson:



Chief Executive Officer, Transnuclear, Inc.
Executive Vice President, AREVA NC, Inc.

J. Greg Field:



President, Packaging Technology, Inc.

Tara J. Neider:



President, Transnuclear, Inc.

1.0 ORGANIZATION

- 1.1 Responsibility for compliance with this Quality Assurance (QA) Program resides ultimately with the Presidents of Transnuclear, Inc. (TN) and Packaging Technology, Inc. (PT). QA Program activities include those actions necessary to comply with the applicable criteria of 10 CFR 71, Subpart H; 10 CFR 72, Subpart G; ANSI/ASME NQA-1, ASME NCA/WA 4000; and 10 CFR 50, Appendix B. When suppliers are used for performance of quality related activities, TN/PT qualifies those organizations to ensure compliance with applicable criteria; however TN/PT retain the overall responsibility for the quality of those activities.
- 1.2 The Presidents have full authority over all functions of the company, and delegate authority and responsibility for selected functions to other appropriately qualified personnel within the companies as outlined in this QAPDM. Each organization is responsible for implementation of the QA Program within their respective scope of operation and responsibilities.
- 1.3 Engineering Department personnel are responsible for the technical aspects of a project including design, licensing, procurement, construction and delivery of storage/transport systems.
- 1.4 Transportation Logistics Department personnel are responsible for domestic and international transportation management, regulatory assistance, and specialized support services related to the nuclear fuel cycle.
- 1.5 QA Department personnel are responsible for the development, implementation and administration of this QAPDM and the TIPs. The QA Department has sufficient authority and organizational freedom to identify quality problems, implement corrective action and verify corrective action effectiveness and has sufficient independence from cost and schedule considerations when such considerations are opposed to safety considerations.
- 1.6 QA Department personnel are independent from other departments and report directly to a QA Manager. The QA Managers (QAMs) report to the Director, Corporate QA (DCQA) who reports directly to the Presidents of Transnuclear, Inc. and Packaging Technology, Inc. If a QAM cannot resolve an issue with the Director, Corporate QA, then they have the authority to bring that issue to the President for resolution. The QAMs must have sufficient expertise in the field of Nuclear Quality Assurance to enable them to direct the quality functions in accordance with the applicable regulatory criteria invoked by this QAPDM. The QAMs and other QA personnel and/or organizations within, or utilized by TN/PT, are qualified for their responsibilities. Records supporting QA personnel qualifications are maintained as Quality Assurance Records.
- 1.7 The QAMs are also responsible for delegating the performance of quality-related tasks to persons qualified by virtue of their education, training and experience, and to evaluate the adequacy of performance of those delegated tasks.

- 1.8 QA Department personnel have the authority to prevent the continued processing, fabrication, installation, delivery or use of unsatisfactory work.
- 1.9 Organization charts depicting TN and PT company relationships and executive management are included as Figures 1 and 2; functional organization charts for Transnuclear, Inc. and Packaging Technology, Inc. are included as Figures 3 and 4, all in Section 20.0 of this QAPDM.

2.0 QUALITY ASSURANCE PROGRAM

2.1 General

- 2.1.1 TN/PT have established a QA Program consistent with the regulations and codes defined in the Introduction for the control of quality in the design, procurement, fabrication, handling, shipping, cleaning, assembly, inspection, modification, testing, operation, repair, and maintenance of shipping/storage systems for spent fuel and radioactive materials which are classified as important-to-safety or safety-related.
- 2.1.2 The TN/PT QA Program is comprised of this QAPDM, the TN ASME QAPDM, and Transnuclear Implementing Procedures (TIPs), all of which are designed and administered to meet the requirements of 10 CFR 71, Subpart H, 10 CFR 72, Subpart G; 10 CFR 50, Appendix B; ASME Section III, Division 1 (NCA 4000) and Division 3 (WA 4000).
- 2.1.3 The Statement of Policy and Authority directs all employees whose activities affect quality to comply with the provisions of the QA Program and this QAPDM.
- 2.1.4 The Statement of Policy and Authority directs that the applicable provisions of the QA Program and this QAPDM be applied at approved supplier locations for quality related work subcontracted by TN/PT.
- 2.1.5 TN/PT commit to complying with the provisions of 10 CFR 21, including internal posting and dissemination via procurement documents to suppliers.
- 2.1.6 More specific details or methods of implementing the requirements of this QAPDM are defined in the TIPs. Applicability of other quality standards, unique owner requirements, or other contract considerations may dictate the need to address unique project requirements that are not specifically covered by the TIPs. These other requirements or considerations are defined in the Project Plan or in Project Instructions. Further description of the review, approval, and control of Project Plans, TIPs, and Project Instructions is contained in Section 5.0 of this Manual.

2.2 Preparation and Control of the Transnuclear, Inc. and Packaging Technology, Inc. Quality Assurance Program Description Manual for 10CFR71, Subpart H and 10CFR72, Subpart G

- 2.2.1 This QAPDM provides for the planning and accomplishment of activities affecting quality in a controlled manner.
- 2.2.2 This QAPDM shall be prepared by the Director, Corporate Quality Assurance (DCQA). It shall be approved by the:
 - Chief Executive Officer, Transnuclear, Inc./Executive Vice President, AREVA NC, Inc.

- Senior Vice President, AREVA NC, Inc.
- President, Packaging Technology, Inc.
- President, Transnuclear, Inc.
- Director, Corporate Quality Assurance

2.2.3 The QAPDM shall be subject to review and approval by the U.S. Nuclear Regulatory Commission (NRC). The effective date for implementation is the date of approval by the NRC.

2.2.4 The DCQA is responsible for the maintenance and distribution of this Manual.

2.2.5 Revisions to the QAPDM shall be indicated by a vertical line in the appropriate margin. Extensive revisions that constitute a complete rewrite do not require the application of revision bars. Any changes to the Manual shall be reviewed and approved in accordance with Section 2.2.1. All changes shall be submitted to the NRC for review and acceptance prior to their implementation.

2.2.6 The DCQA is responsible for the issuance of controlled copies of this Manual when requested. Only controlled copies shall be issued internal to the corporation and they shall be assigned a unique number, which shall appear on the title page of each controlled copy. The DCQA is responsible for ensuring that current revisions are sent to all controlled Manual holders; however, it is the responsibility of the Manual holders to keep their Manuals up-to-date.

2.3 Management Review of Quality Assurance Program

2.3.1 The Director, Corporate Quality Assurance regularly evaluates the QA Program for adherence to baseline commitments in scope, implementation and effectiveness. Annually, the Presidents and Senior Vice President(s), are informed of the status and adequacy of the TN/PT QA Program.

2.3.2 A Management Audit of the QA organization shall be conducted annually by an organization independent of TN/PT QA. An audit team appointed by the Presidents performs the audit. This audit shall assess the adequacy and effectiveness of that part of the TN/PT QA Program for which the QA organization is responsible. The audit report shall be transmitted to management for correction of any observed deficiencies.

2.4 Indoctrination and Training

2.4.1 The QA Managers (QAMs) shall ensure that QA Program indoctrination training is provided for employees who perform activities affecting quality. The QAMs shall:

- a. Identify personnel performing activities affecting quality
- b. Define indoctrination and training requirements

c. Define documentation requirements.

- 2.4.2 When necessary, training in project unique quality requirements shall be provided by the appropriate Project Manager in accordance with the TIPs.
- 2.4.3 When required by applicable codes and standards, qualified personnel shall be appropriately certified in accordance with the TIPs.
- 2.4.4 Proficiency of personnel who participate in the QA Program is maintained by continuing execution of their assigned responsibilities, retraining, reexamining, and/or recertifying as appropriate. If it is determined by the DCQA or a QAM that an individual's capabilities are not in accordance with specified requirements, that individual shall be removed from that capacity until such time as that person has been retrained and has demonstrated adequate capability for performing that activity.
- 2.4.5 Records of training and certification shall be maintained by the QAMs in accordance with the applicable TIPs to demonstrate implementation of the training program. Project unique training records shall be maintained by the Document Control Administrator.
- 2.4.6 Personnel performing audit activities shall be qualified in accordance with the TIPs. Personnel who are designated as Lead Auditors shall be certified by the DCQA and shall meet applicable requirements for qualification. All records of personnel qualification and certification, including previous certifications used in support of current qualifications, shall be retained as QA Records. Capability demonstrations (tests) of Lead Auditors shall be written.

3.0 DESIGN CONTROL

- 3.1 Transnuclear Implementing Procedures have been established to control design activities to ensure that the following occur:
 - 3.1.1 Design activities are planned, controlled and documented.
 - 3.1.2 Regulatory requirements, design requirements and appropriate quality standards are correctly translated into specifications, drawings and procedures.
 - 3.1.3 Competent engineering personnel, independent of design activities, perform design verification. Verification may include design reviews, alternate calculations or qualification testing. Qualification tests are conducted in accordance with approved test programs or procedures.
 - 3.1.4 Design interface controls are established and adequate.
 - 3.1.5 Design, specification and procedure changes are reviewed and approved in the same manner as the original issue. In a case where a proposed design change potentially impacts licensed conditions, the Quality Assurance Program provides for ensuring that licensing considerations have been reviewed and are complied with or otherwise reconciled by amending licenses for Transport Applications or evaluated in accordance with the requirements of 10 CFR 72.48 for Storage Applications.
 - 3.1.6 Design errors and deficiencies are documented, corrected and corrective action to prevent recurrence is taken.
 - 3.1.7 Design organization(s) and their responsibilities and authorities are delineated and controlled through written procedures.
- 3.2 Materials, parts, equipment, and processes essential to the function of items that are important to safety are selected and reviewed for suitability of application.
- 3.3 Computer programs used for design analysis or verification are controlled in accordance with approved TIPs. These procedures provide for verification of the accuracy of computer results and for the assessment and resolution of reported computer program errors.

4.0 PROCUREMENT DOCUMENT CONTROL

- 4.1 Transnuclear Implementing Procedures have been established to assure that procurement documents are prepared to clearly define applicable technical and quality assurance requirements including codes, standards, regulatory requirements and commitments, and contractual requirements. These documents serve as the principal documents for the procurement of structures, systems and components, and related services for use in the design, fabrication, maintenance and operation, inspection and testing of storage and/or transportation systems. The Quality Assurance Program ensures that purchased material, components, equipment and services adhere to the applicable requirements.
- 4.2 The assignment of quality requirements through procurement documents is administered and controlled in accordance with approved TIPs.
- 4.3 Procurement activities are performed in accordance with approved TIPs delineating requirements for preparation, review, approval and control of procurement documents. Revisions to procurement documents are reviewed and approved by the same cognizant groups as the original.
- 4.4 Quality requirements are included in quality-related purchase orders. TN/PT personnel assign quality requirements within procurement documents, as applicable to the scope of the procurement referencing 10 CFR 71, Subpart H; 10 CFR 72, Subpart G; 10 CFR 50, Appendix B, ASME Section III, or other regulations, codes or standards as appropriate.
- 4.5 TN/PT procurement documents require suppliers to pass on appropriate quality assurance program requirements to subtier suppliers.
- 4.6 TN/PT procurement documents include provisions that suppliers either maintain or supply those Quality Assurance records which provide evidence of conformance to the procurement documents. Additionally, procurement documents designate the supplier documents required for submittal to TN/PT for review and/or approval.
- 4.7 TN/PT maintain rights of access to supplier facilities and performance of source surveillance and/or audit activities, as applicable. A statement to this effect is included in procurement documents.
- 4.8 Procurement documents also address the applicability of the provisions of 10CFR21 for the Reporting of Defects and Noncompliances.

5.0 INSTRUCTIONS, PROCEDURES AND DRAWINGS

- 5.1 Transnuclear Implementing Procedures have been established to assure that methods for complying with each of the applicable criteria of 10 CFR 71, Subpart H; 10 CFR 72, Subpart G; 10 CFR 50, Appendix B, or ASME Section III, as applicable, for activities affecting quality during design, fabrication, inspection, testing, use, maintenance, and operations are specified in instructions, procedures, and/or drawings.
- 5.2 Instructions, procedures and drawings are developed, reviewed, approved, utilized and controlled in accordance with the requirements of approved TIPs. These instructions, procedures and drawings include appropriate quantitative and qualitative acceptance criteria.
- 5.3 Changes to instructions, procedures and drawings, are developed, reviewed, approved, utilized and controlled using the same requirements and controls as applied to the original documents.
- 5.4 Compliance with these approved instructions, procedures and drawings is mandatory for all personnel performing activities affecting quality.

6.0 DOCUMENT CONTROL

- 6.1 Transnuclear Implementing Procedures have been established to control the issuance of documents that prescribe activities affecting quality and to assure adequate review, approval, release, distribution, and use of documents and their revisions. Controlled documents may include, but are not limited to:
 - 6.1.1 Design specifications
 - 6.1.2 Design and fabrication drawings
 - 6.1.3 Special process specifications and procedures
 - 6.1.4 QA Program Description Manuals and TIPs
 - 6.1.5 Test procedures
 - 6.1.6 Operational test procedures and data.
- 6.2 Changes to documents, which prescribe activities affecting quality, are reviewed and approved by the same organization that performed the initial review and approval, or by qualified responsible organizations.
- 6.3 Documents that prescribe activities affecting quality are reviewed and approved for technical adequacy and inclusion of appropriate quality requirements prior to approval and issuance.
- 6.4 Measures are taken to ensure that only current documents are available at the locations where activities affecting quality are performed prior to commencing the work.

7.0 CONTROL OF PURCHASED MATERIALS, PARTS AND COMPONENTS

- 7.1 Transnuclear Implementing Procedures have been established to assure that purchased material, equipment and services conform to procurement documents.
- 7.2 Procurement documents are reviewed and approved by authorized personnel for acceptability of proposed suppliers based on the quality requirements of the items/services being purchased.
- 7.3 Approved suppliers are listed on the TN/PT Approved Suppliers List (ASL) for the items and/or services they provide. The ASL is controlled in accordance with approved TIPs.
- 7.4 As required, audits and/or surveys are conducted to determine supplier approval. These audits/surveys are based on one or all of the following criteria:
- 7.4.1 The supplier's capability to comply with the requirements of 10 CFR 71, Subpart H; 10 CFR 72, Subpart G; 10 CFR 50, Appendix B, ASME Section III, and other regulations, codes or standards that are applicable to the scope of work to be performed.
 - 7.4.2 A review of previous records to establish the past performance of the supplier.
 - 7.4.3 A survey of the supplier's facilities and review of the supplier's QA Program to assess the adequacy and verify implementation of quality controls consistent with the requirements being invoked.
- 7.5 Qualified personnel conduct audits and surveys. Audit/survey results are documented and retained as Quality Assurance Records. Suppliers are re-audited and/or re-evaluated at planned intervals to verify that they continue to comply with quality requirements and to assess the continued effectiveness of their QA Program. Additionally, interim periodic evaluations are performed of supplier quality activities to verify implementation of their QA Program.
- 7.6 Suppliers are required to provide objective evidence that items or services provided meet the requirements specified in procurement documents. Items are properly identified to appropriate records that are available to permit verification of conformance with procurement documents. Any procurement requirements not met by suppliers are reported to TN/PT for review and approval. These conditions are reviewed by technical and quality personnel to assure that they have not compromised the quality of the item or service.
- 7.7 Periodic surveillance of supplier in-process activities is performed as necessary, to verify supplier compliance with the procurement documents. When deemed necessary, the need for surveillance is noted in approved quality or project planning documents, and surveillances are performed and documented in accordance with approved TIPs. Personnel performing surveillance of supplier activities are trained and qualified in accordance with approved procedures.

- 7.8 Quality planning for the performance of source surveillance, test, shipping and/or receiving inspection activities to verify compliance with approved design and licensing requirements, applicable regulatory criteria, procurement document requirements, or contract specifications is performed in accordance with approved TIPs.
- 7.9 For commercial "off-the-shelf" items, where specific quality controls appropriate for nuclear applications cannot be imposed in a practical manner, additional quality verification is performed to the extent necessary to verify the acceptability and conformance of an item to procurement document requirements. When dedication of a commercial grade item is required for use in a quality-related application, such dedication is performed in accordance with approved TIPs.

8.0 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

- 8.1 Transnuclear Implementing Procedures have been established to identify and control materials, parts and components. These procedures assure identification of items by appropriate means during fabrication, installation and use of the items and prevent the inadvertent use of incorrect or defective items.
- 8.2 Requirements for identification are established during the preparation of procedures and specifications.
- 8.3 Methods and location of identification are selected so as to not adversely affect the fit, function or quality of the items being identified.
- 8.4 Items having limited shelf or operating life are controlled to prevent their inappropriate use.

9.0 CONTROL OF SPECIAL PROCESSES

- 9.1 Transnuclear Implementing Procedures have been established to control special processes used in the fabrication and inspection of storage/transport systems. These processes may include welding, non-destructive examination, or other special processes as identified in procurement documents.
- 9.2 Special processes are performed in accordance with written approved procedures.
- 9.3 Personnel who perform special processes are trained and qualified in accordance with applicable codes, standards, specifications, or and other special requirements. Records of qualified procedures and personnel are filed and kept current by the organization that performs the special processes.

10.0 INSPECTION

- 10.1 Transnuclear Implementing Procedures have been established to assure that inspection or surveillance is performed to verify that materials, parts, processes or other activities affecting quality conform to documented instructions, procedures, specifications, drawings, or procurement documents.
- 10.2 Personnel performing inspection and surveillance activities shall be trained and qualified in accordance with written approved procedures.
- 10.3 Inspections and surveillances are performed by individuals other than those who performed or supervised the subject activities.
- 10.4 Inspection or surveillance and process monitoring are both required where either one by itself will not provide assurance of quality.
- 10.5 Modifications and/or repairs to and replacements of safety-related and important-to-safety structures, systems and components are inspected in accordance with the original design and inspection requirements or acceptable alternatives.
- 10.6 Mandatory hold points, inspection equipment requirements, acceptance criteria, personnel qualification requirements, performance characteristics, variable and/or attribute recording instructions, reference documents, and other requirements are considered and included, as applicable, during inspection and surveillance planning.

11.0 TEST CONTROL

- 11.1 Transnuclear Implementing Procedures have been established to assure that required proof, acceptance and operational tests, as identified in design or procurement documents, are performed and appropriately controlled.
- 11.2 Test personnel shall have appropriate training and shall be qualified for the level of testing which they are performing. Personnel shall be qualified in accordance with approved, written instructions, procedures and/or checklists.
- 11.3 Tests are performed by qualified personnel in accordance with approved, written instructions, procedures and/or checklists. Test procedures contain or reference the following information, as applicable:
 - 11.3.1 Acceptance criteria contained in the applicable test specifications, or design and procurement documents;
 - 11.3.2 Instructions for performance of tests, including environmental conditions;
 - 11.3.3 Test prerequisites such as test equipment and instrumentation requirements, personnel qualification requirements, fabrication or operational status of the items to be tested; and
 - 11.3.4 Provisions for data recording and records retention.
- 11.4 Test results are documented and evaluated to ensure that acceptance criteria have been met.
- 11.5 Tests to be conducted after modifications, repairs or replacements of safety-related and important-to-safety structures, systems or components are performed in accordance with the original design and testing requirements or acceptable alternatives.

12.0 CONTROL OF MEASURING AND TEST EQUIPMENT

- 12.1 Transnuclear Implementing Procedures are established to assure that tools, gages, instruments and other measuring and testing devices (M&TE) used in activities affecting quality are properly controlled, calibrated and adjusted to maintain accuracy within required limits.
- 12.2 M&TE are calibrated at scheduled intervals against certified standards having known valid relationships to national standards. If no national standards exist, the basis for calibration shall be documented. Calibration intervals are based on required accuracy, precision, purpose, amount of use, stability characteristics and other conditions that could affect the measurements.
- 12.3 Calibrations are performed in accordance with approved written procedures. Inspection, measuring and test equipment are marked to indicate calibration status.
- 12.4 M&TE are identified, labeled or tagged indicating the next required calibration due date, and traceable to calibration records.
- 12.5 If M&TE are found to be out of calibration, an evaluation is performed and documented regarding the validity of inspections or tests performed and the acceptability of items inspected or tested since the previous acceptable calibration. The current status of M&TE is recorded and maintained. Any M&TE that are consistently found to be out of calibration shall be repaired or replaced.
- 12.6 Special calibration and control measures on rules, tape measures, levels and other such devices are not required where normal commercial practices provide adequate accuracy.

13.0 HANDLING, STORAGE AND SHIPPING

- 13.1 Transnuclear Implementing Procedures have been established to assure that materials, parts, assemblies, spare parts, special tools, and equipment are handled, stored, packaged and shipped in a manner to prevent damage, loss of identity or deterioration.
- 13.2 When necessary, storage procedures address special requirements for environmental protection such as inert gas atmospheres, moisture control, temperature levels, etc.

14.0 INSPECTION, TEST AND OPERATING STATUS

- 14.1 Transnuclear Implementing Procedures have been established to assure that the inspection and test status of materials, items, structures, systems and components throughout fabrication, installation, operation and test are clearly indicated by suitable means, (e.g., tags, labels, cards, form sheets, check lists, etc.).
- 14.2 Bypassing of required inspections, tests, or other critical operations is prevented through the use of approved instructions or procedures
- 14.3 As appropriate, the operating status of nonconforming, inoperative or malfunctioning components of a storage/transport system (e.g., valves, switches, etc.) is indicated to prevent inadvertent operation. The application and removal of status indicators is performed in accordance with approved instructions and procedures.
- 14.4 Any nonconforming items are identified and controlled in accordance with Section 15 of this QAPDM.

15.0 NONCONFORMING MATERIAL, PARTS OR COMPONENTS

- 15.1 Transnuclear Implementing Procedures have been established to control materials, parts, and components that do not conform to requirements so as to prevent their inadvertent use in manufacturing operations or during service.
- 15.2 Nonconforming items include those items that do not meet specification or drawing requirements. Additionally, nonconforming items include items not fabricated or tested (1) in accordance with approved written procedures, (2) by qualified processes, or (3) by qualified personnel; where use of such procedures, processes or personnel is required by the fabrication, test, inspection or quality assurance requirements.
- 15.3 Nonconforming items are identified and/or segregated to prevent their inadvertent use until properly dispositioned. The identification of nonconforming items is by marking, tagging or other methods that do not adversely affect the end use of the item. The identification shall be legible and easily recognizable. When identification of each nonconforming item is not practical, the container, package, or segregated storage area, as appropriate, is identified.
- 15.4 Nonconforming conditions are documented on Nonconformance Reports (NCRs) or Discrepancy Reports (DRs) and affected organizations are notified. These reports include a description of the nonconforming condition. Nonconforming items are dispositioned as use-as-is, reject, repair, or rework.
- 15.5 Inspection or surveillance requirements for nonconforming items following rework, repair or modification are detailed in the NCRs/DRs and approved following completion of the disposition.
- 15.6 Acceptability of rework or repair of nonconforming materials, parts, and components is verified by re-inspecting and/or re-testing the item to the original requirements or equivalent inspection/testing methods. Inspection, testing, rework, and repair methods are documented and controlled.
- 15.7 The disposition of nonconforming items as use-as-is or repair shall include technical justification and independent verification to assure compliance with design, regulatory and contractual requirements.
- 15.8 Items dispositioned as rework or repair are reinspected and retested in accordance with the original inspection and test requirements or acceptable alternatives that are in compliance with the specified acceptance criteria.
- 15.9 When specified by contract requirements, nonconformances that result in a violation of client contract or specification requirements are submitted for client approval.
- 15.10 NCRs/DRs are made part of the inspection records and are periodically reviewed to identify quality trends. Unsatisfactory quality trends are documented on a Corrective Action Report as detailed in Section 16 of this QAPDM. The results of these reviews are reported to management.

- 15.11 NCRs/DRs related to activities internal to TN/PT are issued to the management of the affected organization. The appropriate Quality Assurance Manager approves their disposition and performs follow-up activities to assure proper closure.
- 15.12 Compliance with the evaluation and reporting requirements of 10 CFR 21 related to defects and noncompliances is controlled by approved TIPs.

16.0 CORRECTIVE ACTION

- 16.1 Transnuclear Implementing Procedures have been established to identify significant conditions adverse to quality. Significant and/or repetitive failures, malfunctions and deficiencies in material, components, equipment and operations are promptly identified and documented on Corrective Action Reports (CARs) and reported to appropriate management. The cause of the condition and corrective action necessary to prevent recurrence are identified, implemented and followed up to verify corrective action is completed and effective.
- 16.2 The Director, Corporate Quality Assurance (DCQA) is responsible for ensuring implementation of the corrective action program, including follow up and close-out actions. The DCQA may delegate certain activities in the Corrective Action process to others.

17.0 QUALITY ASSURANCE RECORDS

- 17.1 Transnuclear Implementing Procedures have been established to assure the control of quality records. The purpose of the Quality Assurance Records system is to assure that documented evidence pertaining to quality related activities is maintained and available for use by TN/PT, customers, and/or regulatory agencies, as applicable.
- 17.2 Approved procedures identify the types of documents to be retained as Quality Assurance records, as well as those to be retained by the originating organization. Lifetime and Non-Permanent records are retained by TN/PT or customers, as appropriate. Records are identified, indexed and stored in accessible locations.
- 17.3 Quality Assurance Records are maintained for periods specified in regulations to furnish evidence of activities affecting the quality of structures, systems and components that are safety-related or important-to-safety. These records include records of design, procurement, fabrication, assembly and erection.
- 17.4 When TN/PT perform maintenance, these records include the use of operating logs; results of reviews, inspections, tests, and audits; results from monitoring of work performance and material analyses; results of maintenance, modification, and repair activities; qualification of personnel, procedures and equipment; records of calibration of measuring and test equipment; and related instructions, procedures, and drawings.
- 17.5 Requirements for indexing, record retention period, storage method(s) and location(s), classification, preservation measures, disposition of nonpermanent records, and responsibility for safekeeping are specified in approved TIPs. Record storage facilities have been established to prevent destruction of the records by fire, flood, theft, and deterioration due to environmental conditions (such as temperature, humidity, or vermin). As an alternative, two identical sets of records may be maintained at separate locations.
- 17.6 TN/PT shall retain required records for at least three (3) years beyond the date of last engagement in the activities under the scope of this QAPDM for 10 CFR 71 related records and until the Nuclear Regulatory Commission terminates the Certificate of Compliance for 10 CFR 72 related records.

18.0 AUDITS

- 18.1 Transnuclear Implementing Procedures have been established to assure that periodic audits to verify compliance with all aspects of the Quality Assurance Program and determine its effectiveness are performed. Those areas and activities to be audited, such as design, procurement, fabrication, inspection, and testing of storage/transportation systems, are identified in audit planning.
- 18.2 TN/PT audits supplier Quality Assurance Programs, procedures and implementation activities to evaluate and verify that procedures and activities are adequate and comply with applicable requirements.
- 18.3 Audits are planned and scheduled in a manner to provide coverage and coordination with ongoing Quality Assurance Program activities commensurate with the status and importance of the activities.
- 18.4 Audits are performed by trained and qualified personnel not having direct responsibilities in the areas being audited and are conducted in accordance with written plans and checklists. Audit results are documented and reviewed with management having responsibility for the area audited. Corrective actions and schedules for implementation are established and recorded. Audit reports include an objective evaluation of the quality-related practices, procedures and instructions for the areas or activities being audited and the effectiveness of implementation.
- 18.5 Responsible management shall undertake corrective actions as a follow-up to audit reports when appropriate. The Director, Corporate Quality Assurance shall evaluate audit results for indications of adverse trends that could affect quality. When results of such assessments so indicate, appropriate corrective action will be implemented.
- 18.6 The Director, Corporate Quality Assurance shall follow up on audit findings to assure that appropriate corrective actions have been implemented and directs the performance of re-audits when deemed necessary.

19.0 REFERENCES

- Title 10, Code of Federal Regulations, Part 21 - *Reporting of Defects and Noncompliances*
- Title 10, Code of Federal Regulations, Part 50, Appendix B – *Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants*
- Title 10, Code of Federal Regulations, Part 71, Subpart H – *Packaging and Transportation of Radioactive Material, Quality Assurance*
- Title 10, Code of Federal Regulations, Part 72, Subpart G – *Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste, Quality Assurance*
- ASME Section III, Division 1 (*NCA 4000 Quality Assurance*)
- ASME Section III, Division 3 (*WA 4000 Quality Assurance*)

Section 20.0

Figure 1 – Company Relationships

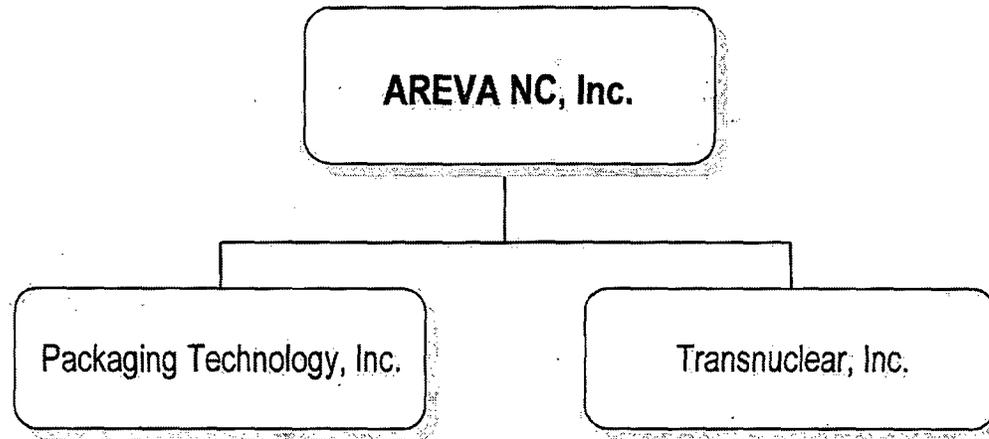


Figure 2 – Executive Management

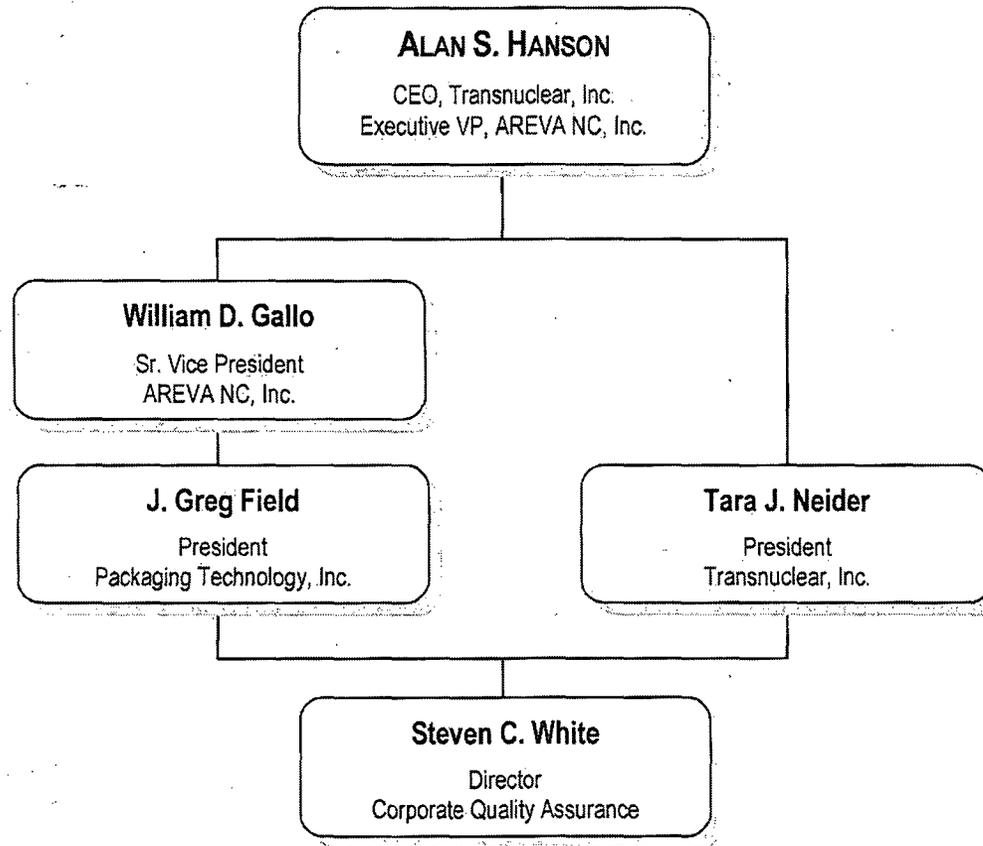


Figure 3 – Transnuclear, Inc. Organization

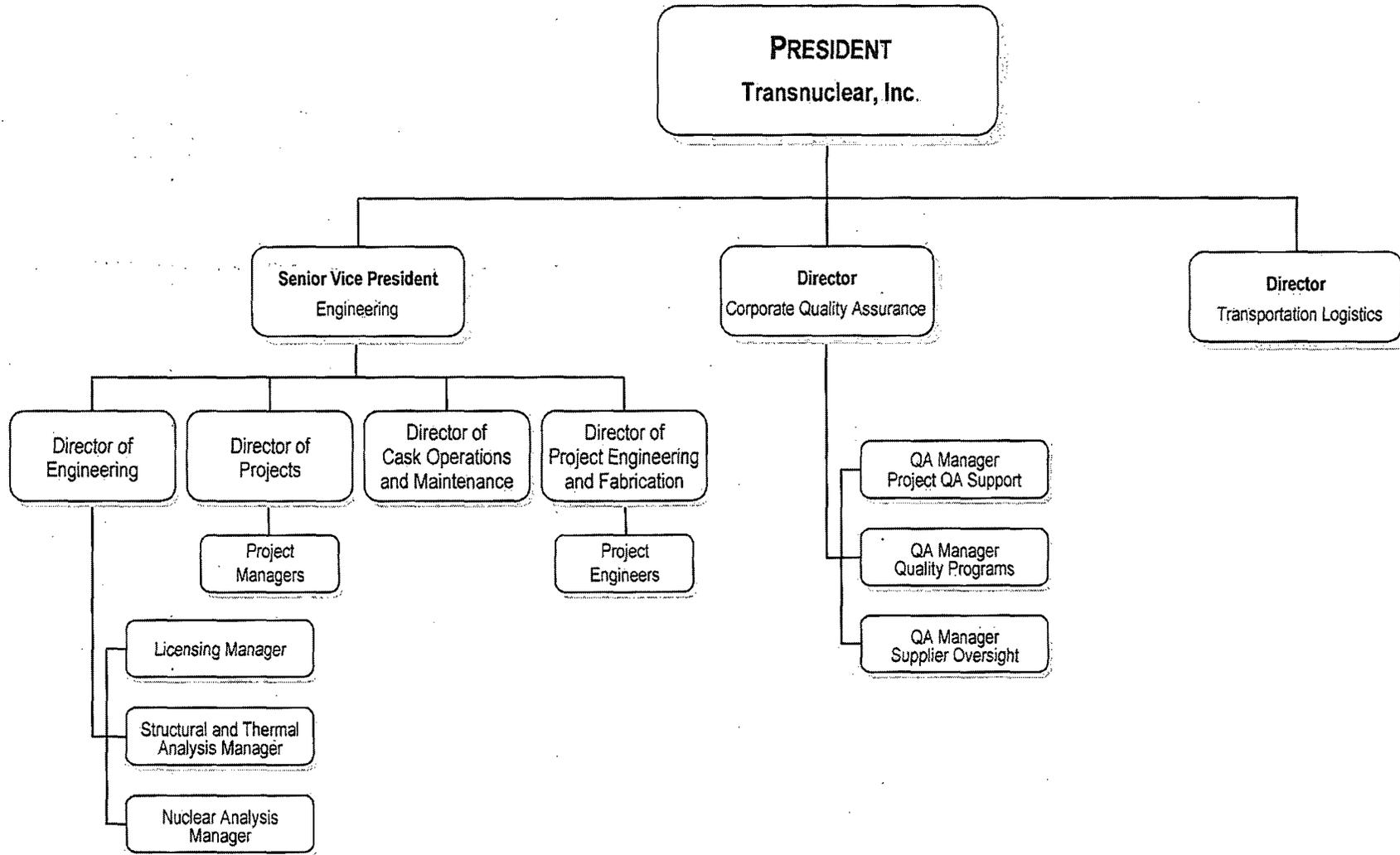


Figure 4 – Packaging Technology, Inc. Organization

