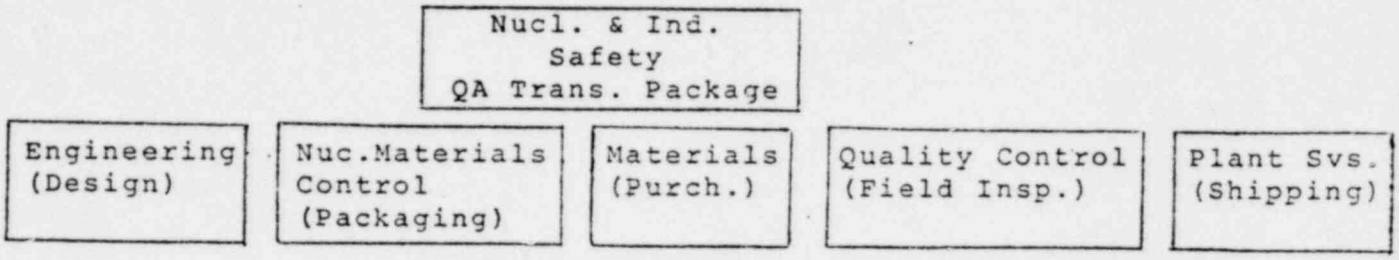
QUALITY ASSURANCE
PROGRAM

UNC - NPD SHIPPING CONTAINERS
10 CFR 71 APPENDIX E

I. Organization

Responsibility for the QA Program is retained and exercised by our company.

QA/QC functions shall be performed to implement appropriate elements of Appendix E to (a) assure that an appropriate quality assurance program is established and effectively executed and (b) verify such as by checking, auditing and inspections that activities affecting the safety-related functions have been correctly performed.



The above chart indicates the organization elements used in the control of the QA Program for transportation packages.

The responsibilities of each job function shown above are as follows:

Engineering - design of packages to meet requirements of 10 CFR 71 and the DOT.

Nuclear Materials Control - order transportation containers. Package contents.

Materials - purchase transportation containers.

Quality Control - perform any specified field inspection.

Plant Services - arrange for appropriate transportation and security. Load released packages.

Nuclear and Industrial Safety - review and audit transportation package functions of above noted departments for compliance to NRC license.

The Nuclear and Industrial Safety Manager shall have overall authority and responsibility for the Q.A. Program. The basic responsibilities of the NIS Department Manager are to assure effective and timely administration of the nuclear and industrial safety control and audit function of the Division; he establishes sound programs in compliance with appropriate NRC licenses and assures continued compliance with these official requirements through regular audit and thorough follow-up with responsible Division Management.

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Qualifications for the position The Nuclear and Industrial Safety Manager shall hold a degree in science or engineering and have at least 10 years experience in a responsible position in the nuclear industry, at least three years of which have been in an activity which would develop an understanding of nuclear criticality safety, health physics, industrial safety and quality assurance.

The Nuclear and Industrial Safety Manager has the responsibility and authority to stop unsatisfactory work and control further processing, delivery, or installation of non-conforming material related to nuclear material transportation packages.

II. Quality Assurance Program

The QA Program for transportation packages shall be audited annually by personnel not involved in the particular program, to assure that the QA Program is adequate and complies with 10 CFR Part 71; Appendix E criteria. The audit results shall be reported to the General Manager of the Division.

Provisions are established to control the distribution and revision of the SNM Shipping Guide containing the QA Program for Transportation Packages.

Provisions are established for communicating to all responsible employees that quality policies, QA manuals and procedures are mandatory requirements which must be implemented and enforced.

This particular QA Program is concerned with the Maintenance of Safety of Transportation Packages during packaging, shipping and unloading.

Procedures exist for the resolution of disputes involving quality that may arise from a difference of opinion between NIS/QA personnel and other departments.

An indoctrination and training program is established such that appropriate NIS/QA personnel are instructed as to the purpose, scope and implementation of the SNM Shipping Guide, QA instructions and procedures; are trained and qualified in the principles and techniques of the activity being performed; and that their proficiency in performing quality-affecting activities is maintained.

Quality related activities are performed with specified equipment under suitable environmental conditions, and pre-requisites shall be satisfied prior to inspection and test.

III. Design Control

Container designs approved for use by DOT/NRC prior to January 1, 1979 or standardized by DOT (e.g., Title 49 listing) are deemed to have been designed in compliance with Appendix E per para. 10 CFR 71.51(b).

Any new container design application shall set forth necessary design controls. Presently we do not expect to submit any new designs.

IV. Procurement Document Control

Procedures are established that clearly delineate the sequence of actions to be accomplished in the preparation, review, approval and control of original procurement documents or changes thereto.

Procurement documents shall identify:

1. Applicable 10 CFR 71, Appendix E requirements which must be complied with and described in supplier's QA Program.
2. The design basis technical requirements including the applicable regulatory requirements, material and component identification requirements, drawings, specifications, codes and industrial standards, test and inspection requirements, and special process instructions.
3. The documentation (e.g., drawings, specifications, procedures, inspection, and fabrication plans, inspection and test records, personnel and procedures qualifications, and chemical and physical test results of materials) to be prepared, maintained and submitted to the purchaser for review and approval.
4. Those records to be retained, controlled and maintained by the supplier and those delivered to the purchaser prior to use or installation of the hardware.
5. The procuring agency's right of access to supplier's facilities and records for source inspection and audit.

V. Instructions, Procedures, and Drawings

Activities affecting quality are prescribed and accomplished in accordance with documented instructions, procedures or drawings as deemed necessary.

Procedures are established which clearly delineate the sequence of actions to be accomplished in the preparation, review, approval, and control of instructions, procedures and drawings.

The NIS/QA organization reviews and concurs with inspection plans; test, calibration, and special process procedures; drawings and specifications; and changes thereto; or acceptable alternatives.

VI. Document Control

Review, approval and issue of documents and changes thereto, prior to release, are procedurally controlled to assure they are adequate and the quality requirements are stated.

Changes to documents are reviewed and approved by the same organizations that performed the original review and approval. Approved changes are included in instructions, procedures, drawings, and other documents prior to implementation of the change.

Documents are available at the location where the activity will be performed prior to commencing the work.

A master list; or equivalent, is established to identify the current revision number of instructions, procedures, specifications, drawings and procurement documents.

VII. Control of Purchased Materials, Parts and Components

Qualified personnel evaluate the supplier's capability to provide acceptable quality services and products.

Evaluation of suppliers is based on one or more of the following:

1. The supplier's capability to comply with the elements of Appendix E to 10 CFR Part 71 that are applicable to the type of material, equipment, or service being procured.
2. A review of previous records and performance of suppliers who have provided similar articles of the type being procured.
3. A survey of the supplier's facilities and QA program to determine his capability to supply a product which meets the design, manufacturing, and quality requirements.

Results of supplier evaluations are documented and filed.

Surveillance, if required, of suppliers during fabrication, inspection, testing and shipment of materials, equipment and components is planned and performed in accordance with written procedures to assure conformance to the purchase order requirements.

The supplier shall furnish the following records as a minimum to the Division:

1. Documentation that identifies the purchased material or equipment and the specific procurement requirements (e.g., codes, standards, and specifications) met by the items.

2. Documentation that identifies any procurement requirements which have not been met together with a description of those non-conformances dispositioned "accept as is" or "repair."

Receiving inspection of the supplier-furnished material, equipment and services is performed to assure:

1. The material, component, or equipment is properly identified and corresponds with the identification on receiving documentation.

2. Material, components, equipments, and acceptance records are inspected and judged acceptable in accordance with predetermined inspection instructions, prior to installation or use.

3. Inspection records or certificates of conformance attesting to the acceptance of material and components are available prior to installation or use.

4. Items accepted and released are identified as to their inspection status prior to forwarding them to a controlled storage area or releasing them for further work.

VIII. Identification and Control of Materials, Parts and Components

A system of identification of present shipping containers exists. For the types of containers presently used at the Division further identification of subparts is not required.

When considered necessary due to the complexity or function, a system shall be established in which:

1. Procedures are established to identify and control materials, parts and components, including partially fabricated subassemblies.

2. Identification of materials and parts important to the function of safety-related systems and components can be traced to the appropriate documentation such as drawings, specifications, purchase orders, manufacturing and inspection documents, deviation reports and physical and chemical mill test reports.

3. The correct identification of materials parts and components is verified and documented prior to release for fabrication, assembling and installation.

The identification and control procedures assure that identification is maintained either on the item or on records traceable to the item to preclude use of incorrect or defective items. The location and method of identification do not affect the fit, function or a quality of the item being identified.

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IX. Control of Special Processes

Special processes such as welding, heat treating, non-destructive testing and cleaning are procedurally controlled when necessary to the function of the component. Appropriate records and qualifications shall be maintained when special processes are used and controlled.

X. Inspection

An inspection program which verifies conformance of quality-affecting activities with requirements is established, documented and accomplished in accordance with written and controlled procedures.

Inspection personnel are independent from the individuals performing the activity being inspected. Inspectors are qualified in accordance with applicable codes, standards, and company training programs; and their qualifications and certifications kept current.

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

Provisions are established that identify mandatory inspection hold points for witness by an inspector as needed.

XI. Test Control

A test program to demonstrate that the item or component will perform satisfactorily in service is established, documented and accomplished in accordance with written, controlled procedures.

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

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

XII. Control of Measuring and Test Equipment

Measuring and test instruments are calibrated at specified intervals based on the required accuracy, purpose, degree of usage, stability characteristics and other conditions affecting the measurement.

Measuring and test equipment is identified and traceable to the calibration test data.

Measurements are retaken and documented to determine the validity of previous inspections performed when measuring and test equipment is found to be out of calibration.

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

XIII. Handling, Storage and Shipping

Special handling, preservation, storage, cleaning, packaging and shipping requirements are established and accomplished by qualified individuals in accordance with predetermined work and inspection instructions.

All conditions (operations, tests, inspections, specifications) of the NRC package approval and the U.S. DOT shipping requirements are satisfied prior to shipment.

All necessary shipping papers shall be prepared as required.

Departure, arrival time, and destination of a package shall be established and monitored to a degree consistent with the safe transportation of the package.

XIV. Inspection, Test and Operating Status

Identification of the inspection, test and operating status of packages and components is known by affected organizations.

The application and removal of inspection and welding stamps and status indicators such as tags, markings, labels and stamps are procedurally controlled.

Bypassing of required inspections, tests, and other critical operations is procedurally controlled if performed.

The status of nonconforming, inoperative, or malfunctioning packages or components is identified to prevent inadvertent use.

XV. Nonconforming Material, Parts, or Components

The identification, documentation, segregation, review disposition, and notification to affected organizations of nonconforming materials, parts, components, or services are procedurally controlled.

Documentation identifies the nonconforming item; describes the nonconformance, the disposition of the nonconformance, and the inspection requirements; and includes signature approval of the disposition.

Nonconforming items are segregated from acceptable items and identified as discrepant until properly dispositioned.

Acceptability of rework or repair of materials, parts, components and systems is verified by reinspecting and retesting the item as originally inspected and tested or by a method which is at least equal to the original inspection and testing method as related to the extent of rework or repair.

XVI. Corrective Action

Evaluation of conditions adverse to quality (such as nonconformances, failures, malfunctions, deficiencies, deviations, and defective material and equipment) is conducted to determine the need for corrective action in accordance with established procedures.

Corrective action is initiated following the determination of a condition adverse to quality to preclude recurrence.

Follow-up reviews are conducted to verify proper implementation of corrective actions and to close out the corrective action documentation.

XVII. Quality Assurance Records

Sufficient records are maintained to provide documentary evidence of the quality and safety of items and the activities affecting quality and safety.

QA records include operating logs; results of reviews, inspections, tests, audits, and material analyses; qualification of personnel, procedures, and equipment; and other documentation such as drawings, specifications, procurement documents, calibration procedures and reports; nonconformance reports; and corrective action reports; as appropriate to the item.

Records are identifiable and retrievable.

A list of the required records and their storage locations will be maintained.

Design related records (e.g., drawings, calculations, etc.) are maintained for the life of the shipping package and all other records are maintained for a minimum of two years.

Inspection and test records contain the following where applicable:

1. A description of the type of observation.
2. Evidence of completing and verifying a manufacturing, inspection, or test operation.
3. The date and results of the inspection or test.
4. Information related to conditions adverse to quality.
5. Inspector or data recorder identification.
6. Evidence as to the acceptability of the results.

XVIII. Audits

Audits are performed in accordance with pre-established written procedures or check lists and conducted by personnel not having direct responsibilities in the areas being audited.

Audit results are documented and then reviewed with management having responsibility in the area audited.

Responsible management takes the necessary action to correct the deficiencies revealed by the audit.

Deficient areas are reaudited on a timely basis to verify implementation of corrective actions which minimize recurrence of deficiencies.

Audits of the QA program are performed at least annually based on safety significance of the activity being audited.