Nuclear Fuel Services, Inc. ERWIN, TENNESSEE 37650

A Subsidiary of Getty Oil Company

IDENTIFICATION

Criticality and Licensing
(Controlling Department)

NFS-CL-001
(Procedure No.)

N/A
(Section)

3
(Revision)

June 13, 1980
(Date)

Revision 2
(Supersedes)

QUALITY ASSURANCE PROGRAM FOR SHIPPING PACKAGES FOR RADIOACTIVE MATERIAL

RECORD OF REVISIONS

Revision Number	Date	Page Number	Description
(0)	12/29/78	All	Initial Submittal
(1)	11/29/79	All	Complete Revision
(2)	3/17/80	All	Complete Revision
(3)	6/13/80	6	Revised last paragraph of Section 1.0
		7	Added reference to Appendix B to Section 2.0
		7 & 8	Added Design Criteria to Section 3.0
		9	Added last two paragraphs to Section 4.0
		19	Updated Figure 1
		21	Added Appendix B

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INTRODUCTION

The purpose of this document is to describe the NFS Quality Assurance policies and procedures which are applicable to the safety aspect of the fabrication, testing, use and maintenance of each shipping package of radioactive material as defined in 10 CFR 71.4(l) and to show how these comply with the Quality Assurance requirements defined in Title 10, Code of Federal Regulations, Part 71, Paragraph 71.24 and Appendix E, thereof.

The Quality Assurance Program is designed to provide the appropriate control of quality for safety-related activities associated with the purchasing, fabricating, handling, shipping, storing, cleaning, inspecting, testing, operating, maintaining, repairing, and modifying of packaging used for the shipment of radioactive materials.

The Quality Assurance program applies to Nuclear Fuel Services, Inc., at Erwin, Tennessee only and is applicable in some degree to all packages used by NFS at Erwin. These packages are authorized for the shipment of special nuclear material, primarily enriched uranium. NFS at Erwin is not authorized to ship spent fuel, high level waste and certain forms of plutonium in large quantities. This program includes then, only the pertinent requirements of Appendix E that are applicable to packages used by NFS at Erwin. Appendix A lists the packages for which NFS at Erwin holds the NRC Certificate of Compliance or is listed as a user.

This description serves as the authorizing document for the Quality Assurance Program. It is approved by and distributed to the responsible organizations who must be aware of the Quality Assurance requirements.

1.0 ORGANIZATION

The NFS Quality Assurance organization for shipping packages is retained and exercised within the Administrative Department. The Administrative Department enforces the policies set forth in this document and reports at a level that will permit the freedom of action to do so. Figure 1 shows the organization structure.

The Administrative Manager's qualifications are a Baccalaureate Degree in science or engineering with eight years nuclear experience in the quality and safety fields -- three of which have been in a supervisory position.

The Administrative Manager is responsible for:

- Insuring that the Quality Assurance Program is carried out in accordance with this document.

- Reviewing annually the status and adequacy of this Quality Assurance Program by checking, auditing and inspecting.

The Administrative Manager may appoint a representative with a minimum of 2 years experience in the quality field to conduct the annual review described above.

The Q. A. function as referenced to in this document means the Criticality and Licensing Department and/or the Health & Safety Department. The Q. A. function reports to the Administrative Manager as identified in Figure 1. The organization is structured so that the Q. A. function does not have direct responsibility for performing the work being verified.

The Criticality and Licensing Supervisor's qualifications are a Baccalaureate Degree in Nuclear Science or Nuclear Engineering and three years of nuclear experience relating to nuclear criticality safety, and be a qualified nuclear safety specialist.

The Nuclear Safety Specialist qualifications are a Baccalaureate Degree in Nuclear Science or Nuclear Engineering with at least one year of experience in Nuclear Criticality Safety.

The Health and Safety Manager's qualifications are a Baccalaureate Degree with specialized training in Health Physics with three years of nuclear experience in health and safety and one year in a supervisory position.

The Health Physics Specialist's qualifications are a Baccalaureate Degree with specialized training in Health Physics and at least one year of experience in professionally responsible health physics.

Equivalent experience may be used in place of a Baccalaureate Degree in accordance with the requirement of Special Nuclear Material License SNM-124 that is held by NFS.

The Q. A. function is responsible for:

- Insuring the documentation of the Quality Assurance Program by written procedures or instructions.
- Insuring that the Quality Assurance Program is carried out in accordance with these procedures.
- Implementing the Quality Assurance Program approved for each licensed package.
- Identifying the material and components to be covered by the Quality Assurance Program.

- Insuring that proper indoctrination and training of personnel performing activities affecting quality is proficiently achieved and maintained.
- Approving requirements for contractor's and subcontractor's Q. A. Program.
- Insuring proper identification of containers.
- Approving requisitions for procurement of shipping containers.
- Reviewing and approving shipping documents, procedures, and letters of authorization.
- Insure that applicable regulatory requirements are correctly translated into written procedures and instructions.

The Q. A. function has the responsibility and authority to stop unsatisfactory work and control further processing, delivery, or installation of non-conforming material, and to reject non-conforming material.

2.0 QUALITY ASSURANCE PROGRAM

The purpose of the Quality Assurance Program is to provide the appropriate control of quality for safety-related activities associated with the purchasing, fabricating, handling, shipping, storing, cleaning, inspecting, testing, operating, maintaining, repairing, and modifying of packaging used for the shipment of radioactive materials.

It is the responsibility of the Q. A. Function to verify that there is strict compliance to the requirements of this program and its implementing documentation.

The Quality Assurance Program is reviewed annually to assess the scope, status, implementation and effectiveness of the program to assure that the program is adequate and complies with 10 CFR Part 71, Appendix E criteria. This assessment is performed by personnel not within the Q. A. Function. Personnel performing the review must have at least two years of experience in the quality field.

Q. A. responsibilities may be delegated to principal contractors. The NFS Q. A. Function will determine that functions delegated to principal contractors are being properly accomplished. This is accomplished by audits and inspections of contractor activities to insure compliance with the NFS Q. A. Plan or the contractor's approved Q. A. Plan. In addition the Q. A. Function reviews and documents agreement with the Q. A. Program of the contractor to assure that Appendix E can be implemented.

Distribution of the Q. A. Plan, manuals and procedures, are controlled under the NFS Document Control Procedure. Any revisions are

similarly controlled. Distribution is made to all departments whose operations affect the quality of shipping packages.

The packagings covered by this Plan are listed in Appendix A. In addition to these packages, the Q. A. Plan is applicable to the handling, shipping, inspecting, testing, maintaining and repairing of DOT specification containers.

Disputes involving quality arising from a difference of opinion between the Q. A. Function and other departments are submitted to the NFS Quality Control Manager for resolution.

Personnel responsible for performing quality - affecting activities are trained in accordance with established training procedures. The training procedures require instruction of personnel in accordance with Standard Operating Procedure (SOP). All quality related activities are included in the SOPs. Personnel must be qualified in order to perform the activities.

Procedures that implement the Quality Assurance Program are contained in the Quality Assurance manual for shipping packages for radioactive material. Each criterion of Appendix E to 10 CFR Part 71 is addressed as a separate section in the manual. Appendix B lists the Quality Assurance Procedures and contains a matrix of these procedures cross referenced to each criterion of Appendix E or 10 CFR Part 71.

3.0 DESIGN AND FABRICATION CONTROL

Shipping packagings will be fabricated only in accordance with designs previously certified by the NRC or as specified by DOT regulations. The Q. A. function is responsible for maintaining current files on packagings certified by the NRC and maintaining an up to date copy of the DOT regulations that contain the specifications of packagings utilized by NFS Erwin. Modifications to packagings will be performed only in accordance with changes issued by the NRC or DOT.

Newly constructed packages are inspected by the Q. A. Function to insure that they have been constructed in accordance with approved drawings and/or specifications. Contractors and sub-contractors employed to fabricate a shipping package are required, if applicable, to submit a copy of their quality assurance program to NFS. NFS will determine if their program meets the requirements of the NRC or DOT, whichever is applicable.

The following design control requirements must be met for modification and repair activities associated with existing shipping containers:

a. Quality standards are specified in the design documents, and deviations and changes from these quality standards are controlled.

b. Designs are reviewed to assure that (1) design characteristics can be controlled, inspected, and tested and (2) inspection and test criteria are identified.

c. Proper selection and accomplishment of design verification or checking processes such as by design reviews, alternate calculations, or qualification testing are performed. When a test program is used to verify the adequacy of a design, a qualification test of a prototype unit under design conditions should be used.

d. Individuals or groups responsible for design verification are other than the original designer and the designer's immediate supervisor.

e. Design and specification changes are subject to the same design controls and approvals that were applicable to the original design unless NFS designates another qualified responsible organization.

f. The positions or groups responsible for design reviews and other design verification activities and their authority and responsibility are identified and controlled by written procedures.

4.0 PROCUREMENT DOCUMENT CONTROL

All purchase requisitions for shipping packagings or material, equipment, services, etc. related to shipping packagings must be approved by the Q. A. Function to insure that specifications for safety-related items are included. The requisitions initiated for shipping containers require Q. A. Function approval which attests to the adequacy of the quality requirements required for the procurement document.

The preparation, review, approval, and control of procurement documents are performed in accordance with established procedures that clearly delineate the sequence of actions to be accomplished. The Q. A. Function review of purchase requisitions determines that quality requirements are correctly stated, inspectable, and controllable; there are adequate acceptance and rejection criteria; and the procurement document has been prepared, reviewed, and approved in accordance with Q. A. program requirements. The review and approval of purchase requisitions must be documented prior to release and available for verification.

The Q. A. Function will insure that procurement documents identify the applicable 10 CFR 71, Appendix E requirements which must be complied with and described in the supplier's Q. A. program. This Q. A. program or portions thereof shall be reviewed and concurred with by the Q. A. Function prior to initiation of activities affected by the program. As determined by the Q. A. function purchase requisitions will:

- Identify those records to be retained, controlled and maintained by the supplier, and those delivered to NFS prior to use or installation of the hardware.

- Contain NFS's right of access to supplier's facilities and records for source inspection and audit.

- Provide that changes and revisions are subject to at least the same review and approval as the original requisition.

- Provide that spare or replacement parts of safety-related structures, systems, and components are acceptable in accordance with DOT specifications or NRC Certificates of Compliance.

- Contain or reference 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.

- Identify the documentation (e.g., drawings, specifications, procedures, inspection and fabrication plans, inspection and test records, personnel and procedure qualifications, and chemical and physical test results of material) to be prepared, maintained, and submitted to NFS for review and approval.

5.0 INSTRUCTIONS, PROCEDURES AND DRAWINGS

Activities affecting quality of shipping packages are included in documented instructions, procedures or drawings. All such documents are approved by the Q. A. Function, and distributed to implementing personnel in accordance with Document Control Program described herein.

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

Methods for complying with the applicable 18 criteria of 10 CFR Part 71, Appendix E are specified in instructions, procedures, and drawings. Instructions, procedures, and drawings include quantitative (such as dimensions, tolerances, and operating limits) and qualitative (such as workmanship samples) acceptance criteria to verify that important activities have been satisfactorily accomplished.

The 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.

The following departments are responsible for reviewing and approving internal NFS documents and revisions thereto:

Production

Engineering

Technical Services

Criticality and Licensing

Health and Safety

Materials

Approved documents are issued and controlled by the originating department. Changes to documents are reviewed and approved by the same organizations that perform the original review and approval. Changes in instructions, procedures, drawings, and other documents are not implemented until the change is approved and revised documents are issued.

Supplier's instructions, procedures and drawings are prepared, reviewed, approved and controlled in accordance with the supplier's approved Q. A. Program.

6.0 DOCUMENT CONTROL

The Q. A. Plan along with associated manuals and procedures are subject to the NFS Document Control Procedure.

Obsolete or superseded documents are controlled to prevent inadvertent use. The originating department is responsible for distributing revised documents and disposing of obsolete documents. Disposal of documents is recorded and a list of current documents is maintained. This list is updated and distributed with revised documents to preclude use of superseded documents.

Documents controlled include as a minimum:

- Purchase requisitions.
- Manufacturing, inspection and testing instructions.
- Nonconformance reports.
- Packaging, shipping and receiving procedures.

7.0 CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

Prior to the use of purchased material, equipment or services, the NFS Q. A. Function will insure conformance with purchase requisitions.

Qualified personnel evaluate the supplier's capability to provide acceptable quality services and products before the award of the purchase order or contract. The Q. A. Function performs the evaluation of those suppliers providing equipment and services. The evaluation of suppliers is based on the following:

a. The supplier's capability to comply with the elements of 10 CFR Part 71, Appendix E that are applicable to the type of material, equipment, or service being procured.

b. A review of previous records and performance of suppliers who have provided similar articles of the type being procured.

c. 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 retained.

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

a. Instructions that specify the characteristics or processes to be witnessed, inspected or verified, and accepted; the method of surveillance and the extent of documentation required; and those responsible for implementing these instructions.

b. Audits and surveillance which assure that the supplier complies with the quality requirements. Surveillance is performed on those items where verification of procurement requirements cannot be determined upon receipt.

The supplier furnishes the following records as a minimum to NFS:

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

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

The review and acceptance of these documents shall be performed as described in NFS's QA program and as a minimum shall be undertaken by a responsible QA individual. The supplier's certificates of conformance are periodically evaluated by audits, independent inspections, or tests to assure they are valid.

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

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

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

c. Inspection records or certificates of conformance attesting to the acceptance of material, components, and equipment are available at NFS prior to installation or use.

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

The effectiveness of the control of quality by suppliers is assessed by NFS at intervals consistent with the importance, complexity, and quantity of the item.

8.0 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

The NFS Q. A. function will review the suppliers' Q. A. Program to insure that:

a. Materials, parts and components affecting quality of shipping packages are identified by part number or other means approved by the suppliers' Q. A. Function. Such identity appears on drawings and other appropriate documents. Materials, parts and components which are standard, commercial (off the shelf) or which have been previously approved for a different application will be reviewed for suitability by the suppliers' Q. A. Function prior to selection.

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

c. Identification of materials and parts important to the function of safety-related structures, 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.

d. The location and the method of identification do not affect the fit, function, or quality of the item being identified. Correct identification of material, parts, and components is verified and documented prior to release for fabrication, assembling, shipping, and installation.

9.0 CONTROL OF SPECIAL PROCESSES

The NFS Q. A. function will review the suppliers' Q. A. Program to insure that:

a. Applicable codes, standards or specifications are utilized for welding, heat treating and nondestructive testing that affect quality. The qualifications of personnel performing the activities are documented.

b. Special processes such as welding, heat treating, nondestructive testing, and cleaning are procedurally controlled. Procedures, equipment, and personnel connected with special processes are qualified in accordance with applicable codes, standards, and specifications.

c. Special processes are performed by qualified personnel and accomplished in accordance with written procedures or instructions with recorded evidence of verification. Qualification records of procedures, equipment, and personnel associated with special processes are established, filed, and kept current.

10.0 INSPECTIONS

The inspection program which verifies conformance of quality-affecting activities with requirments is established, documented, and accomplished in accordance with written controlled procedures. Inspection procedures, instructions, and check lists provide for the following:

a. Identification of characteristics and activities to be inspected.

b. Identification of the individuals or groups responsible for performing the inspection operation.

c. Acceptance and rejection criteria.

d. A description of the method of inspection.

e. Recording evidence of completing and verifying a manufacturing, inspection, or test operation.

f. Recording inspector or data recorder and the results of the inspection operation.

Inspection procedures or instructions are used with necessary drawings and specifications when performing inspection operations.

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 are kept current.

Modifications, repairs, and replacements 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 and for indirect control by monitoring processing methods, equipment, and personnel if direct inspection is not possible.

11.0 TEST CONTROL

All testing of packagings must be done in accordance with written procedures approved by the Q. A. Function. The procedures shall specify equipment to be used, prerequisites to be met prior to testing and environmental conditions. All test results must be documented. A copy of such documentation must be sent to the Q. A. Function. The Q. A. Function evaluates the test results to assure that the testing requirements are satisfied.

Written test procedures incorporate or reference:

a. The requirements and acceptance limits contained in applicable design and procurement documents.

b. Instructions for performing the test.

c. Test prerequisites such as:

   Calibrated instrumentation
   Adequate and appropriate equipment
   Trained, qualified, and licensed or certified personnel.
   Completeness of item to be tested.
   Suitable and controlled environmental conditions.
   Provisions for data collection and storage.

d. Mandatory inspection hold points for witness by owner, contractor, or inspector.

e. Acceptance and rejection criteria.

f. Methods of documenting or recording test data and results.

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

12.0 CONTROL OF MEASURING AND TEST EQUIPMENT

Tools, gauges, instruments, and other measuring and testing devices used in activities affecting quality must be controlled, calibrated and adjusted to maintain accuracy. The method and frequency of control or calibration must be specified in written procedures approved by the Q. A. Function.

Measuring and test equipment is identified and traceable to the calibration test data and is labeled or tagged to indicate date of the next calibration. Calibration is performed at specified intervals based on the required accuracy, purpose, degree of usage, stability characteristics, and other conditions affecting the measurement. The complete status of all items under the calibration system is recorded and maintained.

Reference and transfer standards are traceable to nationally recognized standards; or, where national standards do not exist, provisions are established to document the basis for calibration. Calibrating standards have an uncertainty (error) requirement of no more than 1/4th of the tolerance of the equipment being calibrated. A greater uncertainty may be acceptable when limited by the "state-of-the-art."

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

13.0 HANDLING, STORAGE AND SHIPPING

Any special handling and storage requirements must be contained in written procedures that have been approved by the Q. A. Function. In addition, all shipments of radioactive material must be approved by the Q. A. Function.

These procedures control the cleaning, handling, storage, packaging, shipping, and preservation of materials, components, and systems in accordance with design and specification requirements to preclude damage, loss, or deterioration by environmental conditions such as temperature or humidity.

14.0 INSPECTION, TEST AND OPERATING STATUS

Inspections of new containers are performed by the shipping supervisor and the Q. A. Function. The shipping supervisor performs packaging inspection prior to shipment and upon receipt of the empty packages. The operational groups who use the package are responsible for insuring that required tests are performed. Testing procedures must be approved by the Q. A. Function, who must also insure that the qualifications of licensed or certified individuals performing certain inspections or tests are adequate. Any required labeling or tagging of the package to document

inspections or tests must be included in the appropriate procedures or instructions.

Identification of the inspection, test, and operating status of components is known throughout fabrication. Bypassing of required inspections, tests, and other critical operations is procedurally controlled under the cognizance of the NFS Q. A. Function or the suppliers' Q. A. organization.

15.0 NONCONFORMING MATERIALS, PARTS OR COMPONENTS

The status of nonconforming, inoperative, or malfunctioning components is identified to prevent inadvertent use. 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. The NFS Q. A. Function has the responsibility and authority for the disposition and approval of nonconforming items identified at NFS.

Acceptability of rework or repair of materials, parts, components, systems, and structures 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. Inspection, testing, rework, and repair procedures are documented. Nonconformance reports dispositioned "accept as is" or "repair" are made part of the inspection records and forwarded with the hardware to NFS for review and assessment. Nonconformance reports are periodically analyzed to show quality trends, and the results are reported to management for review and assessment.

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.

16.0 CORRECTIVE ACTION

All deviations observed by the Q. A. Function during required audits are documented along with corrective actions taken and reported to the General Manager.

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.

Significant conditions adverse to quality, the cause of the conditions, and the corrective action taken are reported to cognizant levels of management for review and assessment.

17.0 QUALITY ASSURANCE RECORDS

Records of activities described in this document are maintained in accordance with federal regulation, current license conditions and established NFS procedures. The Q. A. Function insures that all records of required container inspections and testing be maintained in accordance with established procedures and regulatory requirements.

Q. A. records include operating logs; results of reviews, audits, and material analyses; monitoring of work performance; 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. Q. A. records are identifiable and retrievable.

Requirements and responsibilities for record transmittals, retention (such as duration, location, fire protection, and assigned responsibilities), and maintenance subsequent to completion of work are consistent with applicable codes, standards, and procurement documents.

Inspection and test records contain the following where applicable:

a. A description of the type of observation.

b. Evidence of completing and verifying a manufacturing, inspection, or test operation.

c. The date and results of the inspection or test.

d. Information related to conditions adverse to quality.

e. Inspector or data recorder identification.

f. Evidence as to the acceptability of the results.

Record storage facilities are constructed, located, and secured to prevent destruction of the records by fire, flooding, theft, and deterioration by environmental conditions such as temperature or humidity.

18.0 AUDITS

Audits are performed in accordance with preestablished written procedures or check lists and conducted by trained 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 include an objective evaluation of quality-related practices, procedures, and instructions and the effectiveness of implementation; as well as objective evaluation of work areas, activities, processes, and items, and the review of documents and records.

Audits to assure that procedures and activities are meaningful and comply with the overall Q. A. program are performed by:

a. The Q. A. Function, to provide a comprehensive independent verification and evaluation of the quality-related procedures and activities.

b. NFS and its principal contractors, to verify and evaluate their suppliers' Q. A. programs, procedures, and activities.

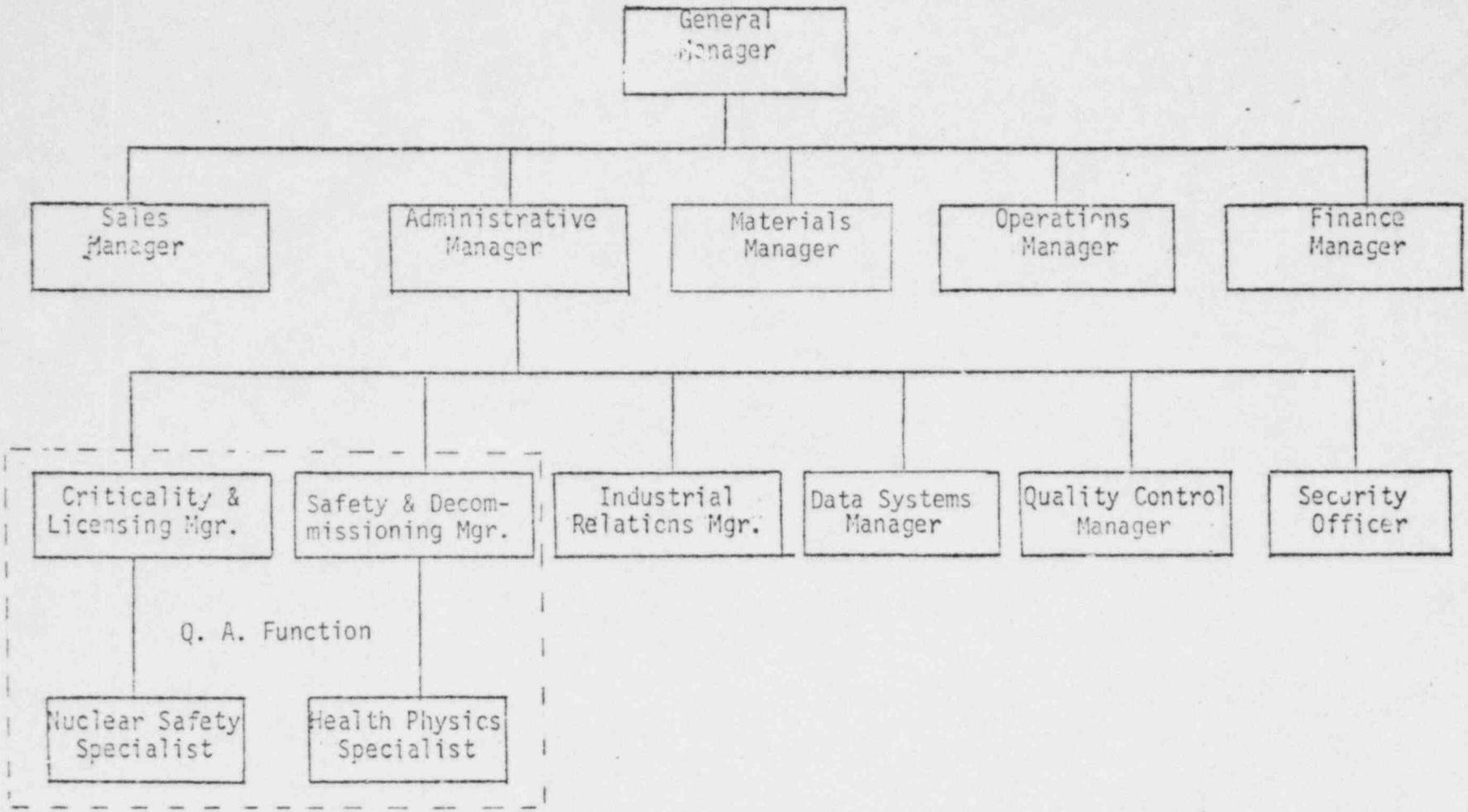
Audits are regularly scheduled on the basis of the status and safety importance of the activities being performed and are initiated early enough to assure effective quality assurance during the procurement and contracting activities.

Audit data are analyzed and the reports, which indicate quality trends and the effectiveness of the Q. A. program are reported to management for review and assessment.

19.0 SPECIFIC PROVISIONS

The General Provisions of the NFS Quality Assurance Program provide the controls to assure compliance with any specific provisions introduced in and specified by applicable DOT regulations, package approvals by the NRC, and package approvals that have been revalidated by the DOT and Subpart D of 10 CFR Part 71. The NFS Radioactive Materials Packaging Manual is a summary of these specific provisions. The manual is approved by and distributed to the responsible plant organizations who must be aware of the specific provisions. The Q. A. Function is responsible for timely updating of the manual. The Q. A. Function is also responsible for maintaining current files for the packages listed in Appendix A.

FIGURE 1


General Manager
Sales Manager
Administrative Manager
Materials Manager
Operations Manager
Finance Manager
Criticality & Licensing Mgr.
Safety & Decom-missioning Mgr.
Industrial Relations Mgr.
Data Systems Manager
Quality Control Manager
Security Officer
Q. A. Function
Nuclear Safety Specialist
Health Physics Specialist

APPENDIX A

Listed below are the packages for which NFS at Erwin holds the NRC Certificate of Compliance or is listed as a user.

Certificate Number	Certificate Model No.
4915	HEDL-55
4949	UNC-1484
5059	NFS Tanker
5442	LA-36
5468	NFS-1X-A
5492	RMG-181-I
5517	BB-250-1
5687	RMG-184
5754	RMG-172
5768	BB-250-2
5908	6M (Type B)
6273	48A, F, X&Y
6387	HEDL-60
6400	Super Tiger
6458	BU-5
6581	51032-1
9078	GENS

APPENDIX B

Matrix of NFS Procedures Cross Referenced to

Criterion of Appendix E of 10CFR71

NFS PROCEDURES	Criterion 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
A	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
B					x					x	x		x					
C							x			x			x					
D		x																
E						x												
F					x					x	x	x	x					

Index of NFS Procedures:

A. Quality Assurance Manual for Shipping Packages for Radioactive materials.

B. Radioactive Materials Packaging Manual

C. Procedure for Shipping Radioactive Materials

D. Training Procedures

E. Document Control Procedures

F. Procedures for Packing, Testing and Inspecting Packagings (contained in various Standard Operating Procedures)