

Quality Assurance Requirements for Packaging of Radioactive Material for Transport (10 CFR Part 71 QA Program)

A. Introduction

CFR-71 "Packaging of Radioactive Material for Transport and Transportation of Radioactive Material Under Certain Conditions" requires a description of the QA program applicable to shipping packages and a QA program for the design, fabrication, assembly, testing, use, and maintenance of the shipping packages.

B. Organization

1. The final responsibility for the Quality Assurance program for 10 CFR Part 71 requirements rests with the American Airlines Maintenance and Engineering Center.
2. Within the Maintenance and Engineering Center, the Quality Assurance Division develops radiological techniques using the licensed isotopes; administers the training, records keeping, handling, storage, shipping, inspection, test and audit programs; and uses the isotopes to obtain radiographs of aircraft and engine structure and components.

Vice President Maintenance & Engineering

R. J. Masiello

Senior Director Quality Assurance

W. W. Schaefer

Manager Nondestructive Testing QA

C. R. Anderson

The Manager Nondestructive Testing QA has the overall responsibility for the development of all nondestructive testing programs, which includes the Isotope Radiography Program.

Radiation Safety Officer

B. W. Nethercutt

The Radiation Safety Officer is responsible for overall administration of the package QA program, training and qualification of personnel, certification of equipment, and document control.

Radiographers

The Radiographers are responsible for assembling, maintaining, cleaning, handling, storing, shipping, inspection, test, operating status, and record keeping of licensed isotopes and packages.

965 108

7909190276

C. Applicability

Transport packages used by American Airlines are Type B, Nuclear Regulatory Commission approved, packages.

<u>Model</u>	<u>Contents</u>	<u>Certificate of Compliance No.</u>	<u>Package Identification No.</u>
650	1R-192	9032	USA/9032/B
660	1R-192	9033	USA/9033/B
500SU		9006	USA/9006/B

D. Quality Assurance Program

1. This Quality Assurance Program applies to all activities affecting the components of the packaging which are significant to SAFETY. This includes purchasing, handling, shipping, storing, cleaning, assembling, inspecting, testing, operating, maintaining, repairing, and modifying transport packaging.
2. Certification from vendors may be used for areas not under the direct control of American Airlines such as design, fabrication, assembly, initial testing, repair and modification of packaging components.

The Radiation Safety Officer shall assure that all radioactive material shipping packages are designed and manufactured under a quality assurance program approved by the Nuclear Regulatory Commission for all packages designed or fabricated after January 1, 1979. This requirement may be satisfied by receiving a proper certification from the manufacturer.

The Radiation Safety Officer shall assure that packaging sent to vendor for repair or modification after January 1, 1979, is repaired or modified under a Quality Assurance Program approved by the NRC. This requirement may be satisfied by receiving a proper certification from the vendor.

3. The authority for American Airlines to use an NRC-approved package is contained in the general license in 10 CFR Part 71 paragraph 71.12 following registration by American Airlines with NRC and submission of certain other information. Compliance with the provisions of the general license is mandatory.
4. The radiographer concerned is responsible for all aspects of the transportation package. He shall determine that all quality assurance provisions for the package have been followed and to describe to the NRC (through documentation) how that determination was made.
5. The Radioisotope training program, as outlined in the NDT Manual, will be completed prior to assuming responsibility within the QA program for packaging materials.

D. Quality Assurance Program

6. Revisions to this QA program will be made in accordance with procedures outlined in the General Section of the NDT Manual, page 15.
7. Radiographers will assure that all applicable QA procedures, engineering procedures and specifications and specific operating procedures of the package manufacturers are satisfied. The QA program will emphasize control of the characteristics of the package which are critical to SAFETY.

E. Document Control

All documents related to a specific shipping package will be controlled through the use of established procedures as stated in the General Section page 15 of the NDT Manual.

The Radiation Safety Officer will be responsible for manual revisions and insure they comply with the NRC and company regulations.

F. Handling, Storage, and Shipping

Written safety procedures concerning the handling, storage, and shipping of packages for certain special form radioactive material will be followed. These safety procedures are as specified in 10 CFR Part 71.51. Shipments will not be made unless all tests, certifications, acceptances, and final inspections have been completed. All shipments will be in full compliance with the Air Transport Restricted Articles Circular No. 6-D.

Handling, Storage, and Shipping instructions are included in the NDT Manual, pages 65, 66, 66A, and 67.

Qualified Radiographers shall perform the critical handling, storage, and shipping operations.

G. Inspection, Test, and Operating Status

Inspection, test, and operating status of packages for certain special form radioactive material will be controlled by written procedure in the NDT Manual, page 61 and 62. Status will be indicated by tag, label, marking, or log entry. Status of nonconforming parts or packages will be positively maintained by written procedures.

Qualified Radiographers shall perform the regulatory required inspections and tests in accordance with written procedures as stated in the NDT Manual. The Radiation Safety Officer shall assure that these functions are performed.

H. Quality Assurance Records

Records of package approvals (including references and drawings), inspections, test, operating logs, audit results, personnel training and qualifications, and records of shipments will be maintained. Descriptions of equipment and written procedures will also be maintained.

965 110

H. Quality Assurance Records (Continued)

The Radiation Safety Officer will maintain the records or logs as required by the NDT Manual or have access to such records.

I. Audits

Established schedules of audits of the Quality Assurance Program will be performed using written check lists. The auditor or auditors will have no responsibility in the activity being audited. Results of audits will be maintained and reported to management. Audit reports will be evaluated and deficient areas corrected. The audits will be dependent on the safety significance of the activity being audited, but each activity will be audited at least once per year. Audit reports will be maintained as part of the quality assurance records.