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TITLE

QUALITY ASSURANCE PROGRAM
FOR
USE, MAINTENANCE AND REPAIR OF SHIPPING
CONTAINERS FOR RADIOACTIVE MATERIAL

X-RAY ENGINEERING COMPANY
1118 CHESS DRIVE
FOSTER CITY, CALIFORNIA 94404

Reference: 10CFR71

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Attachment

Shipping Container Inspection (yearly) form
 Radioactive Material Transfer Report (Figure 3)
 Management Audit - Radiation Safety Officer

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1.0 ORGANIZATION

The final responsibility for the Quality Assurance Program for Part 71 requirements rests with Peabody Testing/X-Ray Engineering Company. Design and fabrication of radioactive material shipping packages shall not be conducted under this Quality Assurance Program. The Quality Assurance Program is implemented using the following organization:

- a. The Radiation Safety Officer is responsible for overall administration of the Program, training and certification, document control, and auditing.
- b. Radiographers are responsible for handling, storing, shipping, inspection, test, operating status and record keeping.

2.0 QUALITY ASSURANCE PROGRAM

The management of Peabody Testing/X-Ray Engineering Company establishes and implements this Quality Assurance Program. Training for all QA functions, prior to engagement in these functions, is required according to written procedures. QA Program revisions will be made according to written procedures with management approval. The QA Program will ensure that all defined QC procedures, engineering procedures, and specific provisions of the package design approval are satisfied. The QA Program will emphasize control of the characteristics of the package which are critical to safety.

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 July 1, 1978. This requirement can be satisfied by receiving a certification to this effect from the manufacturer.

Written procedures and instructions for implementing the Quality Assurance Program are contained in the Radiation Safety Program.

3.0 DOCUMENT CONTROL

All documents related to a specific shipping package will be controlled through the use of written procedures. All document changes will be performed according to written procedures approved by management.

The Radiation Safety Officer shall insure that all QA functions are conducted in accordance with the latest applicable changes to these documents.

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4.0 HANDLING, STORAGE AND SHIPPING

Written safety procedures concerning the handling, storage, and shipping of packages for certain special form radioactive material will be followed. Shipments will not be made unless all tests, certifications, acceptances, and final inspections have been completed. Work instructions will be provided for handling, storage, and shipping operations.

Radiography personnel shall perform the handling, storage, and shipping operations.

5.0 INSPECTIONS, TEST AND OPERATING STATUS

Inspections, test and operating status of packages for certain special form radioactive material will be indicated and controlled by written procedures. Status will be indicated by tag, label, marking or log entry. Status of nonconforming parts or packages will be positively maintained by written procedures.

Radiography personnel shall perform the regulatory required inspections and tests in accordance with written procedures. The Radiation Safety Officer shall ensure that these functions are performed.

6.0 QUALITY ASSURANCE RECORDS

Records of package approvals (including references and drawings), inspections, tests, 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.

These records will be maintained in accordance with written procedures. The records will be identifiable and retrievable. A list of these records, with their storage locations, will be maintained by the Radiation Safety Officer.

7.0 AUDITS

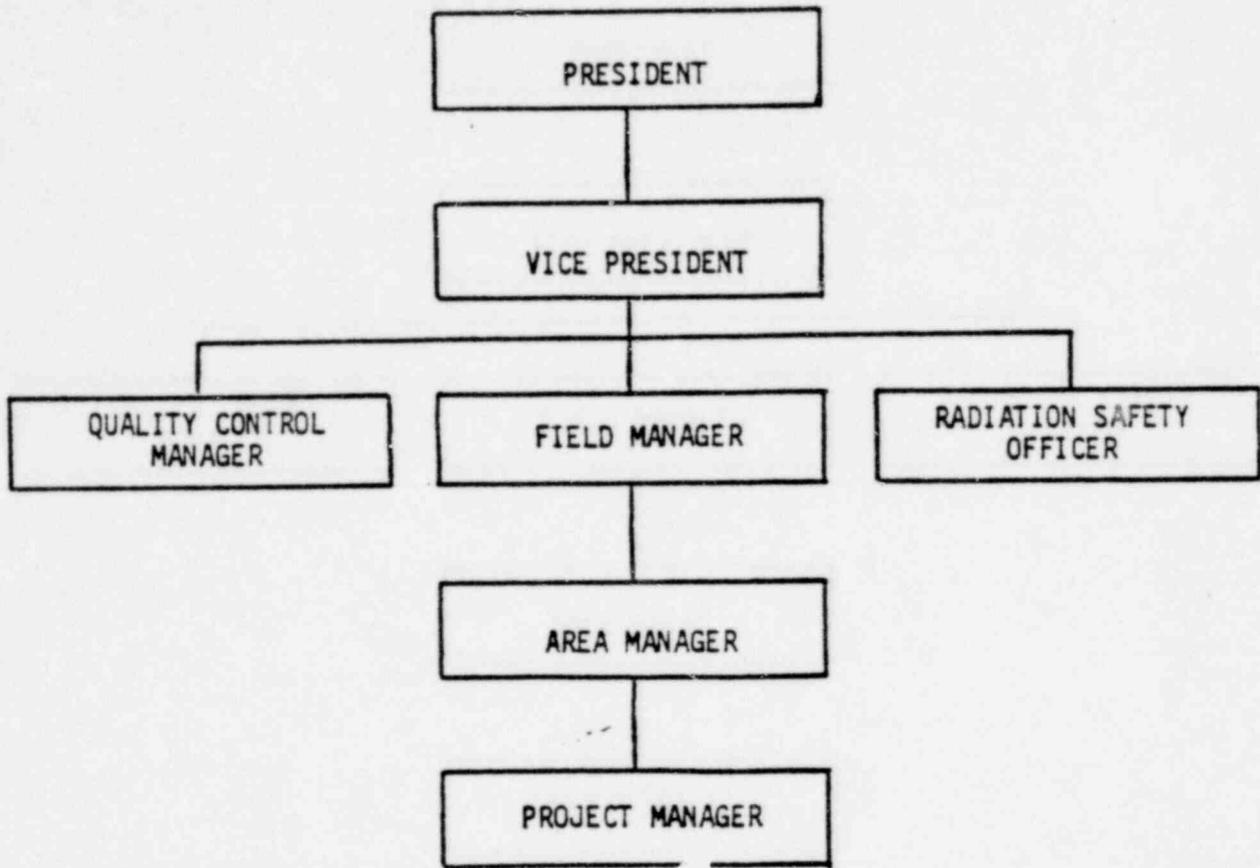
Audits for verification of compliance with the Quality Assurance Program will be conducted as described below:

- a. Each completed "Radioactive Material Transfer Report" form (see Radiation Safety Program) will be reviewed by the Radiation Safety Officer, or his designee, when it is received. This review will check for proper completion of all appropriate portions of the form.
- b. At least once each year, each shipping container will be checked for damage, proper labeling, and identification.
- c. Management shall conduct periodic audits (not to exceed yearly) on the Radiation Safety Officer for compliance with the program's procedures. Audit will be conducted using the Quality Assurance Program's Management Audit Form (attached).

Results of audits will be maintained and reported to management. Audit reports will be evaluated and deficient areas corrected. Audit reports will be maintained as part of the Quality Assurance records. Personnel performing audits shall have no direct responsibility in the activity being audited.

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QUALITY ASSURANCE PROGRAM FOR

Peabody Testing
X-RAY ENGINEERING COMPANY

SHIPPING CONTAINER INSPECTION (YEARLY)

Assignee _____ Date Due _____

Shipping Container Model No. _____ S/N _____

Location _____

Special Instructions _____

	<u>Accept</u>	<u>Repaired</u>	<u>Replaced</u>
1. Condition of Container	_____	_____	_____
2. Danger Peligro Cargo Aircraft Labeling	_____	_____	_____
3. Attached Package Certification (IAEA)	_____	_____	_____
4. Radioactive Material Special Form N.O.S. Labeling	_____	_____	_____
5. Type B Labeling	_____	_____	_____
6. Package Certificate Labeling (same as Model or Identification No.)	_____	_____	_____
7. Inside Thermal Barrier	_____	_____	_____
8. Inside Polyurethane Filler	_____	_____	_____
9. Attach Ring Seal	_____	_____	_____
10. Container Locking Device (bolt or clip)	_____	_____	_____

Remarks _____

Designated Representative _____ Date _____

All shipping containers shall conform to the requirements of DOT and 10 CFR Part 71.

POOR ORIGINAL

1044 032

RADIOACTIVE MATERIAL TRANSFER REPORT

JOB SITE _____ DATE _____

ISOTOPE _____ CAPSULE S/N _____ CURIES _____

EXPOSURE DEVICE

MAKE _____ MODEL _____ S/N _____

TRANSFERRED FROM _____ TO _____

REASON FOR TRANSFER:

NEW SOURCE REQUESTED SOURCE RETURNING MALFUNCTIONING OR DAMAGED

LIST ANY MECHANICAL DEFECTS OR MALFUNCTIONS _____

SHIPMENT PREPARED BY _____ AUTHORIZED BY _____

SHIPPING CONTAINER

Container shall be a Type B designed to meet with the requirements of DOT.

- | | |
|--|--|
| 1. Shipping Container S/N _____ | 6. Labeled with "Radio-
active Material Special
Form N.O.S." _____ |
| 2. Condition of Shipping Container _____ | 7. Labeled with "Type B" _____ |
| 3. Danger Peligro Cargo Aircraft
Only Label Affixed _____ | 8. Shipping Label Affixed _____ |
| 4. Package Certification or
Approval Affixed _____ | 9. Radioactive Yellow
Labels Affixed _____ |
| 5. Labeled with Package Certificate
(Model or Identification No.) _____ | Type of Label: Yellow II <input type="checkbox"/> |
| | Yellow III <input type="checkbox"/> |

SURVEY OF MATERIAL PRIOR TO SHIPMENT

SURFACE OF EXPOSURE DEVICE _____ MR/HR AT 36" _____ MR/HR
 SURFACE OF CONTAINER _____ MR/HR AT 36" _____ MR/HR

SURVEY OF MATERIAL AS RECEIVED

SURFACE OF CONTAINER _____ MR/HR AT 36" _____ MR/HR
 SURFACE OF EXPOSURE DEVICE _____ MR/HR AT 36" _____ MR/HR
 DATE RECEIVED _____ RECEIVED BY _____

(Shipper complete top half of report and ship with exposure device. Individual receiving material complete bottom (survey of material as received) and return by mail to originator (jobsite) with a copy to the RSO.

POOR ORIGINAL

1044 033

QUALITY ASSURANCE PROGRAM
 MANAGEMENT AUDIT

Radiation Safety Officer _____ Date _____

1. Copy of the Quality Assurance Program on file _____
2. The Quality Assurance Program is adequately established and implemented _____
3. Records of inspection (yearly) for shipping containers being maintained _____
4. Records of "Radioactive Material Transfer Reports" (figure 3) maintained _____
5. Is adequate control of shipping containers being maintained _____
6. Are audit results being reported to management _____
7. Management's inspection of at least one (1) shipping container for compliance with program requirements. (If additional containers are inspected use reverse side)

Shipping Container Model No. _____ S/N _____

Location _____	Accept	Poor	Defective
a. Condition of container	_____	_____	_____
b. Danger Peligro Cargo Aircraft Labeling	_____	_____	_____
c. Package Certification (IAEA) attached	_____	_____	_____
d. Radioactive Material Special Form N.O.S. Label	_____	_____	_____
e. Type B Labeling	_____	_____	_____
f. Package Certificate Labeling (same as model or Identification No.)	_____	_____	_____
g. Inside Thermal Barrier	_____	_____	_____
h. Inside Polyurethan Filler	_____	_____	_____
i. Attach Ring Seal	_____	_____	_____
j. Container Locking Device (bolt or clip)	_____	_____	_____

Remarks _____

- No items of non-compliance found
 Areas of non-compliance found

Audit Performed By _____ Title _____

RSO _____

Letter of corrective action for areas of noncompliance issued on

1044 034 (Date)

Shipping Container Model No. _____ S/N _____

Location _____ Accept Poor Defective

- | Location | Accept | Poor | Defective |
|---|--------|-------|-----------|
| a. Condition of container | _____ | _____ | _____ |
| b. Danger Peligro Cargo Aircraft Labeling | _____ | _____ | _____ |
| c. Package Certification (IAEA) attached | _____ | _____ | _____ |
| d. Radioactive Material Special Form N.O.S. Label | _____ | _____ | _____ |
| e. Type B Labeling | _____ | _____ | _____ |
| f. Package Certificate Labeling (same as model or Identification No.) | _____ | _____ | _____ |
| g. Inside Thermal Barrier | _____ | _____ | _____ |
| h. Inside Polyurethan Filler | _____ | _____ | _____ |
| i. Attach Ring Seal | _____ | _____ | _____ |
| j. Container Locking Device (bolt or clip) | _____ | _____ | _____ |

Remarks _____

Shipping Container Model No. _____ S/N _____

Location _____ Accept Poor Defective

- | Location | Accept | Poor | Defective |
|---|--------|-------|-----------|
| a. Condition of container | _____ | _____ | _____ |
| b. Danger Peligro Cargo Aircraft Labeling | _____ | _____ | _____ |
| c. Package Certification (IAEA) attached | _____ | _____ | _____ |
| d. Radioactive Material Special Form N.O.S. Label | _____ | _____ | _____ |
| e. Type B Labeling | _____ | _____ | _____ |
| f. Package Certificate Labeling (same as model or Identification No.) | _____ | _____ | _____ |
| g. Inside Thermal Barrier | _____ | _____ | _____ |
| h. Inside Polyurethan Filler | _____ | _____ | _____ |
| i. Attach Ring Seal | _____ | _____ | _____ |
| j. Container Locking Device (bolt or clip) | _____ | _____ | _____ |

Remarks _____
