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**INSPECTION, OPERATION, HANDLING AND MAINTENANCE PROCEDURES
FOR COC 5984 OVERPACK, S.N. 22032, 2/5/91
REVISED 05/01/95
INNER CONTAINERS (SOURCE TRANSFER CONTAINER, MARK I, 143 & 89 SHIELDS)
PER DRAWINGS, A-0068-1B, A-0068-1B-A, A-0068-1B-B
QAM/QP IMPLEMENTING DOCUMENTS # 10.0 & 13.0 COMBINED
& ADDENDUM TO RADIOLOGICAL CONTROL MANUAL**

A. Radiological Procedures for Incoming Shipments of the Above Referenced Inner Containers Shipped in COC 5984 Overpack, S.N. 22032.

1. The incoming shipment will be surveyed with a calibrated survey meter to determine that the external radiation levels correspond to the DOT diamond label on the package, shipping document, manifest and bill of lading. All other documentation, source certification, leak test, etc., will then be checked and appropriate entries made in the appropriate logs. Container will be moved to radioactive materials laboratory or radioactive material storage area, as appropriate.

2. Smear tests, using an absorbent material, will be taken at the exterior of the overpack, covering a 100 cm^2 area, will be made on a sufficient number of areas (3 minimum) to make a representative assessment of non-fixed contamination levels. At least one area measures will the one most probable to show contamination if the contents of the overpack were leaking. The smears will be counted on a calibrated digital detection device. If removable contamination is in excess of 100 dpm/100 cm^2, the overpack will be decontaminated (all surfaces) until it is below these levels.

3. After the inner packaging is removed from the overpack (procedures listed below), a smear test will be made on that area of the inner packaging which would be contaminated if the sources inside the inner packaging were leaking. If this test shows greater than $5 \times e^{-3}$ removable contamination, the sources will be considered leaking and both the sources and the inner packaging will be handled in accordance with procedures for non-sealed sources and contaminated inner packaging, as found in JLS&A's Radiological Safety Control Manual, approved by the State of California under JLS&A's Radioactive Materials License #1777-70.

Note: If sources are determined to be leaking, inner packaging and sources will be moved to a hot cell for removal of the sources, in accordance with standard procedures of hot cell operator. Source handling operations for inner packaging are normally conducted in hot cells owned and operated by others under contract with JLS&A.

4. For Quality Assurance/Quality Control purposes, an "Overpack QA/QC Check List", will be completed as to the condition of the Overpack. The overpack is red tagged to prohibit shipment until all QA/QC and radiological procedures are performed and the Check List is attached to the overpack until inspected & cleared for outgoing shipments. Distribution of the check List is covered under Implementing document QAM/QP 6.3 Document Control, QA/QC Documents for Overpack QA/QC Check List for Incoming and Outgoing Shipments. The Check List will be filled out and attached to the overpack. At such a time when the overpack is approved for reuse, the red tag will be replaced with a green tag. Any stenciled indication of use will be overlaid and an "Empty" sign attached. See "Overpack Checkout and Maintenance Procedures" below for additional information.

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B. Physical Procedures for Unloading Inner Container/Device from COC 5984 Overpack.

1. Remove the 12 each, 1/4-20 bolts, which attach angles on the top steel plate to the outer steel body of the overpack.

2. Remove nuts & washers from 6 each, 3/4-10 tie rods.

3. Attach a cable or chain (rated at 500 pounds) with spreaders to the eyebolts or ears on the top of the lid and remove the lid (wood with steel plate attached) from the body of the overpack. Vertical lift, with crane or forklift, required.

4. Attach chain or cables (minimum tensile strength of 2,000 pounds each) to the eyebolts or ears which are mounted on the inner package shield in the overpack. Be careful to lift vertically, using a crane or forklift, and lift the shield (maximum 8,000 pounds) from the overpack.

Note: If at any time unsafe rigging procedures are observed, immediately stop removal. Restart when situation is safe.

5. Move the inner container either the space in the customer's facility (example - Model 89 or Mark I, etc. shield) or to a hot cell for the removal of sources (source transfer container) in accordance with standard procedures of the hot cell operator. Note: all inner packaging also conforms with USA DOT Type A Containers, and are labeled as such.

C. Physical Procedures for Loading Inner Packaging into the COC 5984 Overpack.

1. Attach chains/cables (rated at over 2,000 pounds) to the eyebolts/lifting ears of the inner package.

2. Lift the inner packaging (shield) and place it into the center of the overpack. Vertical lifting, with crane or forklift, is necessary so that the packaging and overpack will not be damaged.

3. Replace the lid of the overpack with the 1/2" steel plate attached, taking care to align with the alignment marks.

4. Replace the 6 each, 3/4-10 nuts on the tie rods, using washers, and torque to a 150 inch/pound minimum.

5. Replace the 12 each, 1/4-20 bolts which go through the angles on the top of the lid through the corresponding holes in the outer shell of the overpack and tighten to a 50 pound/inch minimum.

6. Load the overpack onto the shipping vehicle and tie down using the eyebolts on top of the unit for tiedown.

NOTE: Extreme care must be taken not to block the vent holes on the sides of the overpack body, as these provide convective cooling for the inner containment during shipment.

D. Radiological Procedures for Outgoing Shipments of Devices Shipped in COC 5984 Overpack.

1. All sources loaded into the inner packaging must have removable contamination of less than 5 x e^{-3} microCuries. After loading into the inner packaging, the portion of the inner packaging most likely to be contaminated is smear tested (over a 300 cm^2 area) and must meet the criteria for sealed sources.

2. After the sources have been loaded and prior to packaging into the overpack, external radiation levels are monitored to determine that they meet manufacturer's specifications. QA/QC requirements must also be met. Any non-conforming packaging will not be shipped.

3. After the inner packaging is loaded into the overpack (see Preparation above), the outgoing shipment will be surveyed with a calibrated survey meter to determine the external radiation levels and corresponding DOT diamond label on the package. Shipping document, diamond labels, manifest and bill of lading are made out in conformance with 49CFR172.403, 173.488 and all applicable parts of 49CFR. All other documentation, source certification, leak test, etc., will then be checked and appropriate entries made in the appropriate logs. All shipments are made in conformance with 49CFR. Any nonconforming packaging will not be shipped.

E. COC 5984 Overpack Inspection Checkout & Maintenance Procedures & Criteria.

Each time an overpack is received and prior to each shipment, it is thoroughly inspected, according to the attached check list, which is filled out and maintained on file for two years. Repairs must have a Repair Job Number and are subject to all QA/QC requirements, documentation and inspections.

Any required maintenance, on a Repair Job # is performed as follows:

1. Bolts are replaced if threads are not perfect or if corrosion is noted. Washers are replaced if corrosion is noted.

2. Each threaded rod is examined. If excessive corrosion is noted or rods are damaged, the threaded section is replaced and rewelded in place. If threads are imperfect, threads are retapped.

3. Any cracked welds are repaired.

4. Lock washers are replaced if defective.

5. Vent hole covers are replaced if defective.

6. Labels/Stencils are replaced if defaced or unreadable.

6. The overpack is repainted if necessary, scratches do not require a Repair Job #.

7. The wooden shipping skid is repaired or replaced as necessary.

8. Hold down fixture (eyebolts) are repaired or replaced if defective.

F. Overpack Storage Procedures.

1. In addition to the overpack handling and storage as described above, all repaired overpacks, which are not immediately outgoing (within a week or two, and as floor space dictates), will be placed on the overpack area and/or the shipping crate/fixture storage mezzanine.

G. Acceptance Testing.

Acceptance testing relates to new overpacks ordered from outside contractors or made in house at JLS&A and to materials, subcontracted assemblies and other outside procurements made for new overpacks. A capsule summary includes the following points:

1. All drawings and purchase orders must be approved by cognizant personnel.

2. All incoming materials, subcontracted parts or subassemblies are checked for material, quantity, dimensions and material certificates, as applicable - our commitment is for important-to-safety items. Non con-forming materials or parts are rejected and segregated, until disposition thereof has been ascertained.

3. All fabrication personnel, i.e. welders, are required to have current certifications of competency, as applicable.

4. After inspection of incoming materials, parts or subassemblies, and upon completion (prior to introduction into shipping use), the overpack is 100% inspected as to dimensions, materials, fabrication and conformance to drawings, per QA Check Sheet. Please reference those sections for the QA Manual for additional details.

Master Index Reference for QA Procedures & Implementation
QAM/QP 6.3, Document Control, QA/QC Documents
QAM/QP 10.0 Inspection Control & 13.0 Handling, Storage & Shipping (combined)
See these documents for implementing procedures.
Orig. computer Document location - OP10.0B, MFS, WordStar
Revision 1, Date 5/1/95, per USNRC letter of 4/13/95 By MFS, Appr. by JLS, JLS
Revision 0, Date 2/5/91,
QA Manual QA-RM-001-A, Rev. 3, 10/10/90