

INVENTORY AND LOSS OF RADIOACTIVE MATERIALS

1. After monitoring and storage of newly received packages of radioactive materials, log quantities into inventory records.
 - A. Radiopharmaceuticals are best recorded by attaching the label received with the vial or syringe to the log book. The log should be divided in sections for each radiopharmaceutical. The log must document for each dose of radiopharmaceutical received:
 - a. Generic or trade name and nuclide
 - b. Lot No., expiration date
 - c. Patient name, ID#
 - d. Prescribed activity and measured activity
 - e. Date and time of measurement
 - f. Initials
 - g. Disposal date and method.
 - B. Sealed sources are best recorded by saving the calibration certificate supplied with the source. Certificates from calibration sources should be kept with "Sealed Source Leak Test" records. The inventory of sealed sources must be checked at least quarterly. Brachytherapy sources must be inventoried promptly after each use to ensure that all sources taken from the storage area have been returned. The Brachytherapy log must document:
 - a. Patient's name and number
 - b. Number and activity of sources removed from storage
 - c. Time and date removed from storage
 - d. Number and activity of sources remaining in storage after removal
 - e. Number and activity of sources returned to storage
 - f. Time and date returned to storage
 - g. Number and activity of sources in storage after return
 - h. Initials of individual who removed and returned sources
 - i. Survey measurement of patient after sources are removed.
2. All newly received packages should be verified with the contents of the purchase order and packing slip to assure that all materials that were ordered were received. If an item is missing from a shipment, contact the supplier to ascertain that it was shipped.
3. Immediate action must be taken if a source is found to be missing. Report missing sources immediately to the R.S.O. Trace missing packages from the carrier to security. Survey for missing or dislodged sources.

4. Lost or missing radioactive materials must be immediately reported to the State of Ohio office as required by OAC 3701: 1-38-21.

A telephone report is due immediately after occurrence, if the lost, stolen or missing material is equal to or greater than 1,000 times the quantity specified in Appendix A to 3701: 1-38-18; under such circumstances that it appears to the licensee that an exposure could result to persons in unrestricted areas.

If the lost, stolen or missing material is equal to or greater than 10 times the quantity specified in Appendix A to OAC 3701: 1-38-18 reports are due within 30 days.

Telephone reports are reported to Ohio Department of Health, at 614-644-2727

A written report must also be filed as specified in Ohio Administrative Code, Rule 3701: 1- 38 – 21.

**Appendix C to Part 20
(Abbreviated List)**

| Radionuclide | Quantity (uCi) | Radionuclide | Quantity (uCi) |
|-----------------------|---------------------------|-----------------------|---------------------------|
| Hydrogen-3 | 1,000 | Indium-111 | 100 |
| Carbon-14 | 1,000 | Iodine-123 | 100 |
| Fluorine-18 | 1,000 | Iodine-125 | 1 |
| Phosphorus-32 | 10 | Iodine-131 | 1 |
| Chromium-51 | 1,000 | Xenon-133 | 1,000 |
| Cobalt-57 | 100 | Cesium-137 | 10 |
| Cobalt-60 | 1 | Barium-133 | 100 |
| Gallium-67 | 1,000 | Gadolinium-153 | 10 |
| Strontium-89 | 10 | Iridium-192 | 1 |
| Strontium-90 | 0.1 | Thallium-201 | 1,000 |
| Technetium-99m | 1,000 | Radium-226 | 0.1 |
| Palladium-103 | 100 | | |

5. Caution should be employed with generators, sealed sources and Xenon-133 to not exceed the possession limit.