

A. Purpose

Incoming packages containing radioactive materials must be surveyed in accordance with the provisions of the Radiation Safety Manual and Rules of the City of New York, Article 175.03(j). The purpose of this survey is to ensure there is no removable contamination or excessive radiation levels.

B. Applicability/scope

This policy applies to Columbia University Medical Center (CUMC) personnel who open packages containing RAM in clinical areas.

C. Definitions

DPM – disintegrations per minute

CUMC – Columbia University Medical Center

RSO – Radiation Safety Office – This term includes the Chief RSO, RSO for Research Programs and the RSO for Clinical Programs

RAM – Radioactive materials

Radioactive White I – Almost no radiation: 0.5 mR/hr maximum on surface

Radioactive Yellow II – Low radiation levels: 50 mR/hr maximum on surface; 1 mrem/hr (10 uSv/hr) maximum at 1 meter

Radioactive Yellow III – Higher radiation levels: 200 mR/hr maximum on surface, 10 mrem/hr (0.1 mSv/hr) maximum at 1 meter

D. Procedures

1. Disposable gloves should be worn in order to prevent potential hand contamination.
2. Visually inspect the package for any sign of damage (e.g., wet or crushed).

STOP: Notify the Radiation Safety Officer (RSO) immediately if damage is observed. DO NOT PROCEED.

3. For volatile material, place the package in a vented fume hood.

4. Monitor the external surfaces the package for radiation levels. Record the highest reading (mR/hr) at the surface of the package. Monitor the radiation level at one meter and record the reading (mR/hr).

STOP: Notify the Radiation Safety Officer (RSO) immediately if the radiation level exceeds 200 mR/hr at the surface or 10 mR/hr at one meter.

5. Monitor the external surfaces of a labeled package for removable contamination. Wipe external surfaces with a swipe or Q-tip. Count in a liquid scintillation or gamma counter as appropriate. Record the readings. Take precautions against the potential spread of contamination. *Note: a dose calibrator is not sufficiently sensitive for this measurement.*

STOP: Notify the Radiation Safety Officer (RSO) immediately if removable contamination exceeds 1,000 disintegrations per minute (DPM).

6. Remove the packing slip.
7. Open the outer package, following any instructions that may be provided by the supplier.
8. Open the inner package and verify that the contents agree with the packing slip, and in the case of sealed sources for brachytherapy procedures, the correct number of sealed sources were sent by the supplier.
9. Check the integrity of the final source container.

STOP: Notify the Radiation Safety Officer (RSO) immediately if any broken seals or vials, loss of liquid, condensation, or discoloration of the packing material is noted.

10. If there is any reason to suspect contamination, wipe the external surface of the final source container as described above.
11. Locate and copy packing slip. Verify the packing slip details with the approved order;

STOP: Notify the Radiation Safety Officer (RSO) immediately if the contents do not match the packing slip and/or order.

12. Monitor the packing material and the empty packages for contamination with a radiation detection survey meter before discarding. If contaminated, treat this material as radioactive waste. If not contaminated, remove or obliterate the radiation labels before discarding in in-house trash.
13. Make a record of the receipt.

14. For “empty” transport radiation shields being returned from consortium members, implement the following procedure for opening each package:

- a. Monitor the package for radioactive contamination as described above.
- b. Visually inspect the contents to ensure that the transport radiation shield is empty. Notify the RSO if the transport radiation shield is not empty.

E. Responsibilities

- Clinical department or group receiving the package – conduct survey as directed above; maintain records; notify RSO as directed above.
- RSO – investigate problems described above and notify outside agencies as necessary; audit records of receipt surveys.

F. Emergency contact

Radiation Safety Officer 212-305-0303

G. Medical Surveillance

N/A

H. Recordkeeping

Keep completed inventory Record Form. The record will be reviewed by the RSO during routine audit.

I. Appendices

N/A

J. Forms

[N/A](#)

K. References

- Radiation Safety Manual (<http://www.ehs.columbia.edu/RadiationSafetyManual.pdf>), Chapter VIII *Receipt of Packages Containing Radioactive Materials*
- Rules of the City of New York, Article 175 *Radiation Control*, Section 175.03(j)

L. Acknowledgements (optional)

N/A