A. Purpose:

Bioassays for intake of radioactive materials are required for individuals who are involved in operations that utilize, at any one time,

- H-3 – more than 3.7 GBq (100 mCi) in a dispersible or unsealed form (other than metallic foils); or
- Na[125-I]I or Na[I-131]I – more than 37 MBq (1 mCi) in dispersible form
- Na[125-I]I or Na[I-131]I – for radiopharmaceutical therapy

B. Applicability/scope

This policy applies to individuals conducting operations under the jurisdiction of the Columbia University Radiation Safety Program.

C. Definitions

D. Procedures

1. H-3 bioassay
   a. The individual should submit a urine sample within one week following a single operation and at weekly intervals for continuing operations.
   b. Radiation Safety personnel will perform the bioassay in accordance with SOP 7.810 Tritium Assay in Liquids Using Liquid Scintillation Counting.

2. Radioiodine bioassay:
   a. The individual should contact Radiation Safety to request a thyroid bioassay within 3 days of preparation or use of radioiodine. Nuclear Medicine personnel may choose to have the bioassay performed in the Nuclear Medicine Department using protocols established by the Department.
   b. Radiation Safety personnel will perform all other bioassays in accordance with SOP 7.830 Thyroid Uptake Monitoring.

E. Responsibilities

- Affected individuals: provide samples or arrange for bioassay as described above
- Nuclear Medicine personnel: conduct bioassay and report results to affected individuals
- Radiation Safety personnel: conduct bioassay and report results to affected individuals; audit results of Nuclear Medicine bioassays
- Radiation Safety Officer: update dosimetry record with bioassay results as necessary

F. Emergency contact

Radiation Safety
- Columbia University Medical Center – 212-305-0303; rsocumc@columbia.edu
G. Medical Surveillance: N/A

H. Recordkeeping:

Records of intakes resulting in estimated doses exceeding 1 mrem should be reported to the radiation dosimetry vendor by the Radiation Safety Officer for inclusion in the annual dose report. Records should be maintained until disposal is approved by competent authority (i.e. agency that licenses the use of the radioactive materials).

I. Appendices: N/A

J. Forms: N/A

K. References: N/A

L. Acknowledgements: N/A