

# Radioactive Incident Response

All spills shall immediately be contained and cleaned up by employees properly trained and equipped to work with radioactive materials.

Do **NOT** attempt to clean up a radioactive spill if any of the following conditions apply:

- A large volume spill has occurred;
- The spill or contamination incident involves a large area;
- The spill involves radioactive material with a high activity;
- The spill involves volatile radioactive materials;
- The incident involves contamination of body or clothing;
- The incident involves contamination that has spread or occurred outside the laboratory or designated area of use; or
- you are uncomfortable in the situation.

If you are **UNABLE** to deal with the release or incident, adhere to the following steps.

## Incident Notification

- 1 Immediately notify the Office of Radiation Safety or the University of Chicago Police upon the discovery of any of the following incidents:
  - a. Major radioactive spill or uncomfortable spill situation;
  - b. Exposure to sources of radiation that were not expected or a potentially overexposure; or
  - c. Loss, theft or damage to sources of radioactive materials.
- 2 During **normal work hours** (Monday – Friday, 8:30 am to 5:00 pm), contact the Office of Radiation Safety at **773-702-6299** or on-call staff pager at **188-9130** (or dial 773-753-1880 from an outside phone and enter 9130 when prompted).
- 3 During **off-hours**, contact the University of Chicago Police at extension **123** or **773-702-8181** and report the radiation incident to the dispatcher. Instruct the dispatcher to contact the Office of Radiation Safety on-call personnel.
- 4 Notify all individuals in the room or area that a radioactive spill or radiation incident has occurred.
- 5 Restrict movement into the area and evacuate the room if volatile material has been spilled outside a fume hood.

## Incident Response Procedures

If the incident involves a **minor radioactive spill** and you are able to clean up the spill without assistance, adhere to the following steps.

A **minor spill** is one that can be readily cleaned without spreading the spill. It involves small volumes, small areas, and low activity of radioactive material and involves no internal radiation hazard to personnel. A knowledgeable lab worker with readily accessible cleaning supplies should clean this type of spill. The principal investigator, authorized user, supervisor or medical physicist must be notified. If the principal investigator, authorized user, supervisor or medical physicist is inaccessible, contact the Office of Radiation Safety.

In the event of a **minor radioactive spill**:

- 1 Notify all persons in the room immediately that a spill has occurred;
- 2 Don disposable gloves;
- 3 Cover the spill with absorbent material;
- 4 Restrict movement into the area;
- 5 Proceed in decontaminating the spill area;
- 6 Insert all clean-up material (e.g., absorbent paper, paper towels, scrub brushes) into a plastic bag and dispose of contaminated material in the appropriate radioactive waste container;
- 7 With a GM survey instrument, survey spill area, hands and clothing for contamination. For alpha and low-energy beta emitters, conduct wipe test at the spill area; and
- 8 Permit no one to resume work in the immediate area of the spill until the contamination has been cleaned.

If the incident involves a **major radioactive spill** and you are able to clean up the spill without assistance, adhere to the following steps.

A **major spill** involves large volumes, large areas, high activity radioactive material, volatile materials, contamination of body or clothing, or contamination that has spread or occurred outside the lab or designated area of use. **Immediately contact the Office of Radiation Safety.**

In the event of a **major radioactive spill**:

- 1 Notify all persons in the room immediately that a spill has occurred;
- 2 Don disposable gloves;
- 3 Confine the spill by covering it with absorbent paper;
- 4 Restrict movement into the area;
- 5 Notify the Office of Radiation Safety;
- 6 Confine all personnel potentially contaminated to an isolated area in or near the lab.
- 7 Monitor all individuals involved in the spill;
- 8 Decontaminate personnel by washing the affected area immediately with soap and water or a decontaminating agent effective for the chemical involved. If the contamination is localized to a small area of the skin, the contamination should be masked off and the affected areas cleaned with cotton applicators dipped in soap or suitable decontamination agents. Care should be taken not to scratch or erode the epidermal skin layer;
- 9 If serious injuries are present, the individual should be given immediate first aid and transported to a hospital. Notification regarding possible contamination of the patient should be communicated to the hospital;
- 10 All clothing suspected of being contaminated should be removed and isolated for monitoring;
- 11 Proceed in decontaminating the spill area and shield, if needed;

- 12 Insert all clean-up material (e.g., absorbent paper, paper towels, scrub brushes) into a plastic bag and dispose of contaminated material in the radioactive waste container;
- 13 With a GM survey instrument, survey spill area, hands and clothing for contamination. For alpha and low-energy beta emitters, conduct wipe test at the spill area; and
- 14 Permit no one to resume work in the area until a survey is completed and the Office of Radiation Safety has given approval.

If the incident involves **exposure to sources of radiation that were not expected or a potentially overexposure**, adhere to the following steps.

- 1 If applicable, terminate the source of exposure and prevent others from being exposed. Use additional shielding as needed to minimize the radiation exposure.
- 2 Immediately notify the Radiation Safety Officer and the individual responsible for the use of the radioactive material or radiation producing equipment.
- 3 Seek medical attention if severe exposure is suspected.

If the incident involves **loss, theft, or damage to sources of radioactive materials**, adhere to the following steps.

- 1 Immediately notify the Office of Radiation Safety any loss, theft, or damage to any source of radioactive material (radioactive waste, stock vial solutions, sealed sources, etc.) or any other accident involving radioactive material.
- 2 Notify the individual responsible for the use of the radioactive material.
- 3 The Office of Radiation Safety will notify the Illinois Emergency Management Agency (IEMA), Division of Nuclear Safety in accordance with 32 Ill. Adm. Code 340.1210 and 340.1220, if necessary.