

Section 7. EMERGENCY PROCEDURES

INTRODUCTION

During the course of routine operations, radioactive material may be spilled resulting in contamination of personnel or lab equipment and areas. Correct action taken during such an incident can prevent unnecessary doses to personnel and further spread of contamination.

GENERAL PROCEDURES

Medical attention takes precedence over radiological or other concerns in the case of a serious injury. Inform emergency personnel if there is the possibility of contamination.

Do not risk an external or internal radiation dose in order to save equipment or an experiment. An exception to this should only be made at the direction of a person qualified to evaluate the hazards involved.

Take all reasonable precautions to limit the spread of the radioactive contamination.

- Limit access to the area.
- Turn off ventilation system, if possible.
- Prevent spread of liquid or powdered contaminates.

SERIOUS INJURY INVOLVING RADIOACTIVE MATERIAL

1. Dial 911 and request emergency medical services. Tell the 911 operator that it is also a radiation emergency and request notification of the Radiological Safety Officer.
2. When emergency personnel arrive, inform them of the possibility of radioactive contamination.
3. Follow the steps for a major or minor spill as appropriate.
4. Try to determine the radionuclide, activity, and chemical form of the material involved.

MAJOR SPILL

A radioactive material spill is considered major if it results in any of the following:

- Internal radiation dose to personnel (inhalation/ingestion of radioactive material).
 - Excessive external radiation dose to or contamination of personnel.
 - Contamination of large areas.
 - Considerable delay in work.
1. Notify personnel not involved in the spill to vacate the laboratory. Prevent other personnel from entering the contaminated area.
 2. Monitor personnel for contamination.
 3. Remove contaminated clothing. If skin is contaminated, flush thoroughly with water and wash with mild soap.
 4. Confine movement of all potentially contaminated personnel to prevent further spread of contamination.
 5. Cover a liquid spill with absorbent paper or pads. Dampen dry powders, being careful not to spread contamination. Use oil if material is water reactive. Do not attempt to clean up the spill.
 6. Notify the Radiological Safety Officer (ext. 4-4870). If after working hours, dial 911 and instruct operator to contact the Radiological Safety Officer. Also notify the laboratory supervisor or Principal Investigator.
 7. If possible, turn off fans or ventilation that might spread vapors or dust.
 8. Try to determine the radionuclide, activity, and chemical form of the material involved.
 9. Assist Radiological Safety in evaluation and decontamination.

MINOR SPILL

A radioactive material spill can generally be considered minor if it contaminates small areas or equipment and results in:

- No external or internal contamination of personnel.
 - No excessive external radiation dose to personnel.
 - No serious delay in work.
1. Notify personnel in the area that a spill has occurred.
 2. Monitor personnel leaving the area and remove any contaminated clothing.
 3. Cover a liquid spill with absorbent paper or pads. Dampen dry powders, being careful not to spread contamination. Use oil if material is water reactive.
 4. Call the Radiological Safety Officer (ext. 4-4870) if assistance is needed.
 5. Plan the decontamination procedure before proceeding. Keep in mind these points:
 - Limit personnel to a minimum.
 - Wear appropriate protective clothing.
 - Dispose of all contaminated material as radioactive waste.
 - Use appropriate survey instruments. Perform wipe tests if necessary.
 - After decontamination, check all areas around the spill and all personnel for contamination. Be sure to check hands and shoes.

RADIATION-PRODUCING MACHINE

In the event of an accident or unusual incident involving a radiation producing machine:

1. If there is a serious injury or fire, call 911 and request emergency medical services or the fire department.
2. **TURN OFF THE MACHINE.** If possible, turn off the circuit breaker for the machine.
3. Notify the Radiological Safety Officer (ext. 4-4870). If after working hours, call 911 and have the 911 operator contact the Radiological Safety Officer.
4. Notify the laboratory supervisor or Principal Investigator.
5. Record information about the incident (e.g. operating voltage and current, exposure time, distance from radiation source).