

## EMERGENCY PROCEDURES FOR RADIOACTIVE MATERIAL

### MINOR SPILLS:

1. Notify persons in the area that a spill has occurred.
2. Prevent the spread of contamination by covering the spill with absorbent paper.
3. Clean up the spill using disposable gloves and absorbent paper. Carefully fold the absorbent paper with the clean side out and place in a plastic bag for transfer to a radioactive waste container. Also put contaminated gloves and any other contaminated disposable material in the bag.
4. Survey the area with a low-range radiation detector survey meter. Check the area around the spill. Also check your hands, clothing and shoes for contamination.
5. The Radioactive Material Spill Report should be documented of the spill and cleanup
6. Report incident to the Radiation Safety Officer (RSO).

### MAJOR SPILLS:

1. Clear the area. Notify persons not involved in the spill to vacate the room.
2. Prevent the spread of contamination by covering the spill with absorbent paper, but do not attempt to clean it up. To prevent the spread of contamination, limit the movement of all personnel who may be contaminated.
3. Shield the source if possible. This should be done only if it can be done without further contamination or a significant increase in radiation exposure.
4. Close the room and lock or otherwise secure the area to prevent entry.
5. Notify the RSO or alternate immediately.

RADIATION SAFETY OFFICER: Sarah Hughes

PHONE: Office: 852-5231 Cell phone: 502- 552-5454

STATE RADIATION CONTROL BRANCH: 502-564-3700 normal business hours

KY EMERGENCY OPERATIONS AFTERHOURS NUMBER: 1-800-255-2587

6. Decontaminate personnel by removing contaminated clothing and flushing contaminated skin with lukewarm water and washing with mild soap. If contamination remains, induce perspiration by covering the area with plastic. Then wash the affected area again to remove any contamination that was released by the perspiration.

DETERMINATION OF MAJOR AND MINOR SPILLS:

Spills above the amounts listed below are considered major. Spills below the listed amounts are considered minor.

Nuclide	Millicurie amount
P-32	10
Co-57	100
Tc-99m	100
In-111	10
I-123	10
I-131	1
Tl-201	100

LABORATORY FIRES:

In the event of a laboratory fire, the following procedure is recommended:

- A. Report the fire by calling DPS at 852-6111 or 911. The following information should be given:
  - 1. Identify yourself and phone number;
  - 2. Exact location of fire (building, laboratory number of the specific area);
  - 3. Extent of personnel injuries;
  - 4. Type of fire (electrical, flammable liquid, trash, *etc.*); and
  - 5. Extent of fire (severity of fire and smoke).
- B. Close laboratory doors to contain the fire as you leave the laboratory area.
- C. Activate the fire alarm system as you exit to the stairwell. Fire alarm pull stations are generally located near stairwells.
- D. Evacuate to safe area after exiting through the stairwell.
- E. Contact the Radiation Safety Office Immediately.

INCIDENTS INVOLVING AIRBORNE RADIOACTIVE MATERIAL:

- A. Notify all personnel to vacate the room immediately.
- B. Shut down ventilation system, if possible, unless it is determined that the room ventilation system needs to be used to clear the air for access purposes.
- C. Vacate the room. Seal the area, if possible.
- D. Notify the RSO immediately.
- E. Ensure that all access doors to the area are closed and posted with radiation warning signs, or post guards (trained) at all access doors to prevent accidental opening of the doors or entry to the area.

- F. Survey all persons who could have possibly been contaminated. Decontaminate as directed by the RSO.
- G. Promptly report suspected inhalations and ingestions of licensed material to the RSO.
- H. Decontaminate the area only when advised and/or supervised by the RSO.
- I. Allow no one to return to work in the area unless approved by the RSO.
- J. Cooperate with the RSO and/or the RSO's staff (e.g., investigation of root cause, provision of requested bioassay samples).
- K. Follow the instructions of the RSO and/or the RSO's staff (e.g., decontamination techniques, surveys, provision and collection of bioassay samples, requested documentation).

#### DEFINING INCIDENTS OR EMERGENCIES:

The following may constitute an incident or emergency:

- A. Loss or theft of any radioactive material or radiation producing device.
- B. High or potentially high radiation exposure to an employee or member of the general public. For example:
  1. Greater than 1000 mrem whole-body in one month to an occupationally exposed individual;
  2. Greater than 10000 mrem in one month to the extremities of an occupationally exposed individual; or
  3. Greater than 100 mrem to any member of the general public.
- C. Intake of radioactive material by inhalation, ingestion, skin absorption, or injection through the skin or wound.
- D. Deceptive or potentially deceptive exposure of a dosimeter.
- E. Personnel contamination which cannot be removed after two washes with soap and water.
- F. Spills involving significant activities of  $^{125}\text{I}$  or  $^{131}\text{I}$  with the potential for inhalation.
- G. Removable contamination in unrestricted areas (e.g. hallways, offices, vehicles, etc.) which exceed 200 dpm/100 cm<sup>2</sup>.
- H. Radiation fields in unrestricted areas which exceed the limits specified for members of the general public of 2 mR/hr.
- I. Accidental or unmeasured releases of radioactive material to the environment.
- J. Fire or floods which threaten to release radioactive material to the environment or which threaten to expose emergency response personnel.

# RADIOACTIVE SPILL REPORT

The spill occurred at \_\_\_\_:\_\_\_\_ pm on \_\_\_\_/\_\_\_\_/\_\_\_\_ in room \_\_\_\_\_

Instrument used to check for contamination:

G.M. Meter model: \_\_\_\_\_ Serial #: \_\_\_\_\_

Wipe test counter used: \_\_\_\_\_ Serial #: \_\_\_\_\_

## Survey of the area of the spill:

AREA OR PERSON SURVEYED:	GM METER SURVEY: mR/hr	WIPE TEST READING: DPM	COMMENTS

Report results of survey after cleaning; make sure to survey all material used in the cleanup including any personnel. Area is not considered clean until G.M. meter readings are below 0.2 mR/hr and wipe tests are below 200 dpm/100 cm<sup>2</sup>.

\* On the back of the sheet, indicate any personnel decontamination, additional monitoring, or care instituted.

\* Survey the spill area to identify hot spots, then begin decontamination. When finished, conduct a post cleaning contamination wipe-test.

\* Radioisotopes present or suspected in the spill:

\_\_\_\_ mCi of \_\_\_\_ as \_\_\_\_\_

\_\_\_\_ mCi of \_\_\_\_ as \_\_\_\_\_

\_\_\_\_ mCi of \_\_\_\_ as \_\_\_\_\_

Give a brief description of the accident:

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Give a brief description of follow up actions taken to prevent recurrence:

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

