Radiation Spill, Accident, Decontamination and Emergency Procedures

Spill
- Notify all personnel in the room of the spill.
- If personnel are contaminated, immediately proceed with personnel decontamination using proper techniques.
- Confine the spill as soon as possible.
- Notify the Radiation Safety Officer and the Environmental Health, Safety, and Risk Management Department at 468-4532 immediately of significant personnel contamination or large spills.
- Decontaminate the area using personnel protective equipment and proper techniques.
- Perform surveys and wipe tests to verify that the area has been adequately decontaminated.
- Dispose of all radioactive waste properly.

Accident

Accident involving radioactive dust, mist, fume, organic vapor, or gas
- Notify all personnel to vacate the room immediately.
- Hold breath and vacate the room.
- Notify the Radiation Safety Officer and the Environmental Health, Safety and Risk Management Department at once (468-4532).
- Keep all access doors locked.
- Do not re-enter the room until approval of the Radiation Safety Officer is obtained.

Accident involving Personnel Injury
- Call the SFASU Police at extension 911 if a physician is needed or for a life threatening situation.
- Proceed with personnel decontamination if possible.
- All radiation accidents (wound, overexposure, ingestion, inhalation) must be reported to the Radiation Safety Officer and the Environmental Health, Safety, and Risk Management Department at 468-4532 as soon as possible.
- No one involved in a radiation injury will be permitted to return to work without the approval of the Radiation Safety Officer.
Decontamination

Area

- Attend to the spill as soon as possible.
- All persons not involved and not contaminated should leave the area.
- Put on lab coat, protective eye ware, gloves and shoe covers if available before entering the room or area.
- Prevent liquids from spreading by placing any absorbing material over it.
- Monitor the spill, equipment, and people involved to determine the radiation exposure levels.
- Wash the area with a minimum of soapy water or a standard radioactive decontaminating agent. Using paper towels, start at the furthest end or the place of least contamination and move inwards toward the highest point of contamination. Dispose of all radioactive waste properly.
- Using a filter paper or cotton swab, wipe the area. Count the wipe using a scintillation or gamma counter. If the count is greater than 200 dpm, repeat area decontamination until the count is below this level of contamination.
- Once the affected area has been blotted dry, scrub the contaminated area with soap and water. Continue this process until the contamination is less than 1,000 dpm/100 cm² of the removable contamination. If the contaminated area cannot be reduced to these levels, the area should be covered with an impervious material (e.g. diaper paper) to prevent further contamination. If the spill produces radiation fields exceeding 2 mrem hr⁻¹ at one foot from the source, appropriate shielding material should be placed on the area. If shielding is not feasible, access to the spill zone should be restricted. All areas of non-removable contamination should be labeled with cautionary information, and personnel in the area should be notified. The Radiation Safety Officer is available to supervise personnel concerning decontamination of surfaces, appropriate shielding, and restriction of access.

Personnel

- For contamination of the skin, use light pressure with heavy lather. Wash for 2 minutes, 3 times. Rinse and monitor. Use care not to scratch or erode the skin. (Do not scrub contaminated skin). Use warm not hot water, and avoid reddening the skin.
- Contaminated clothing, including shoes, should be removed before the individual leaves the area. This clothing shall be labeled and held for storage until decayed, decontaminated, or properly disposed. Thorough washing, preferably showers, should be accomplished immediately where major personnel contamination has occurred.
- Cover with sterile dressing and seek medical attention at once.
- Monitor personnel after washing. Repeat if necessary.
- Minor cuts should be encouraged to bleed, thereby reducing absorption.
- Treatment of major cuts should be considered before decontamination.
Emergency

Radiation emergencies are incidents which involve actual or suspected exposure to uncontrolled sources of radioactivity that cause or threaten to cause an external dose in excess of twenty-five (25) rem to the whole body, or gross radioactive personnel contamination resulting in ingestion, inhalation, injection, or skin absorption of radioactive material leading to comparable risk.

Emergencies will be dealt with according to their nature that may include fire, spill, accident, injury, or a combination. The following is the basics for the handling of all emergencies:

- Life-saving or first aid measures take precedence over radiation hazards and decontamination efforts.
- Notify all personnel in the area.
- Contain or secure the radioactive material if possible.
- Take care of injuries and remove injured personnel from the area when possible.
- Notify the Radiation Safety Officer and the Environmental Health, Safety, and Risk Management Department at 468-4532 as soon as possible.
- Permission from the Radiation Safety Officer must be obtained to continue or return.
- Apply decontamination procedures when possible.
- The Radiation Safety Officer will notify the appropriate agencies of any incidents required to be reported.

See the Disposal of Radioactive Wastes section for proper disposal of spill cleanup material. All spills should be reported the Environmental Health, Safety and Risk Management Department. A Radiation Incident Form located on the next page should be filled out and attached to the container of spilled material and a copy should be mailed to the Environmental Health, Safety and Risk Management Department (Box 6113).
RADIATION SPILL INCIDENT SHEET
Stephen F. Austin State University

TIME: ___________ NOTIFIED BY______________________________

DATE: _______ PHONE: _______ DEPARTMENT: __________________

EXACT LOCATION OF INCIDENT: ________________________________
(be specific)

TYPE OF RADIATION _______

AMOUNT _______

LIST SUPPLIES USED FOR CLEAN-UP: ___________________________

_________________________________________________________

SPECIAL PROBLEMS ENCOUNTERED _____________________________

_________________________________________________________

SIGNATURE________________________________________________