Screening People for External Contamination:

How to Use Hand-held Radiation Survey Equipment

For more information on radiation emergencies, or for additional copies of the G-M Detectors Job Aid insert, visit http://emergency.cdc.gov/radiation. For additional complimentary copies of this program send an email to cdcinfo@cdc.gov.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

G–M DETECTORS JOB AID:

- **Check batteries**
- **Take background reading in an uncontaminated area**
- **Scan slowly and close to the object**
- **Record your survey readings**

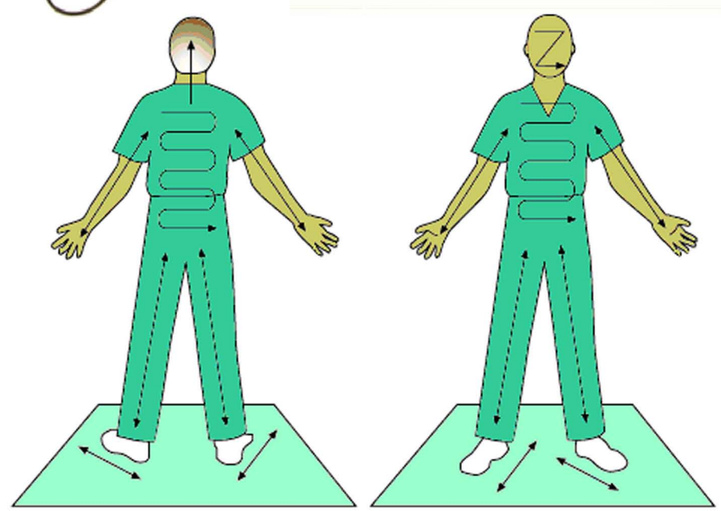

Figure: Conducting the Survey

SAFETY NOTE:
Do not disconnect or connect the connectors for the coaxial cable on the survey meter when the meter is turned on. You could receive an electrical shock.

G–M DETECTORS JOB AID:

Inspect the equipment.

a. Attach the meter to the probe with the cable.
b. Inspect the cable that connects the G-M detector to the survey meter. With the meter on, wiggle the cable near the connectors to see if this causes erratic behavior of sound or display; if so, the cable is defective.
c. Inspect the meter for obvious signs of damage (e.g., broken detector window; broken glass on meter face).

Perform a battery check.

a. Check the batteries, using the "range" switch or "bat" button; the method depends on the type of instrument. The meter needle should move to an area on scale marked “Bat” indicating the batteries are good. Replace if necessary.

Conduct a source/ operational check.

a. Place detector close to a check source (e.g., Thorium containing gas lantern mantle in a plastic bag; plastic button "check source").
b. Select appropriate range (e.g., x10).
c. Verify meter response.
d. If no source is available, assume the meter is working if the response to background is about 30 to 200 counts per minute (cpm).

Conduct a background reading.

a. Expect a reading of 30 to 200 counts per minute.

Conduct the survey (see figure).

a. Move the probe slowly (1 inch per second).
b. Do not let the probe touch anything.
c. Pay particular attention to face, feet, and hands.
d. Locate the points that produce the most clicks and document the reading. Generally, areas more than twice the pre-determined back ground are considered contaminated.

If large numbers of people require screening, to avoid delays, it may be necessary to perform only a “quick look” spot survey of the head, face, shoulders and hands, the most likely locations for contamination.