

## HOW TO PERFORM GAMMA SURVEYS

**Function:** To assess levels of gamma radiation.

**Description:** Using a gamma survey meter, measurements are taken to determine:

- a. Gamma radiation levels in an area, and
- b. The location of the gamma sources in that area.

When results are obtained, warning signs should be placed if necessary.

STEP	OPERATION
1	Obtain any pre-prepared survey sheets to simplify the recording of survey data. Obtain any existing survey data.
2	Choose an appropriate gamma survey meter for the job: Low Range: R-Metrics - 10 $\mu$ Gy/h to 100 mGy/h FAG - 3 $\mu$ Gy/h to 999 mGy/h High Range: R-Metrics - 10 mGy/h to 10 Gy/h
3	Perform the pre-operational checks for the instrument selected.
4	Switch the instrument on <u>before</u> entering any suspected or known radiation areas and take heed of any information displayed on warning signs. Note Alarming Area Gamma Monitor (AAGM) radiation indicator reading if appropriate.
5	Choose an appropriate meter range before entering the area. If you are entering an area with unknown gamma fields, select high range.
6	Watch the meter indication as you approach the area to be surveyed, and, if necessary, change ranges to give an on-scale reading.
7	Move the instrument slowly in a large arc as you enter the area. The maximum readings obtained will indicate the general direction of the radiation sources in the area.
8	Establish the general fields by taking readings at waist height in the accessible areas.
9	If work is to be done, survey the work location and the access route.
10	If contact readings are needed to properly identify the radiation sources, they should be taken at 1 cm or 1/2" (be consistent, whichever you choose)..
11	If localized sources with contact radiation fields of greater than 100 times the general area fields are found, they should be identified with "HOT SPOT" stickers.
12	When the survey is finished, warning signs should be placed to properly identify the hazards. Place completed survey forms with Health Physics. If you think that the information from your survey will be of general interest, make it available.

### PRECAUTIONS:

1. Avoid unnecessary radiation exposure.
2. If the instrument goes off-scale, believe it and retreat.
3. Do not assume that conditions will remain constant. Check your survey meter and direct reading dosimeter (DRD) periodically. Consider the use of a Portable Alarming Dosimeter (PAD) for work in variable, high-radiation fields.
4. Personnel entering the Reactor Building should have a gamma meter with them (or with the group at all times. During shutdown, when conditions are known and will not change, a gamma meter may not be required.