

## **Background Information**

Surface contamination is denoted as one of three types: *removable, fixed, and total contamination*. **Removable contamination** is that contamination that can be removed from surfaces by nondestructive means, such as casual contact, wiping, brushing or washing. Usually, smear or wipe samples are collected to determine both qualitatively, and quantitatively, removable contamination. **Fixed contamination** is contamination that cannot be removed. **Total contamination** is the amount of fixed and/or removable contamination that is readily detected by direct survey/monitoring techniques using hand-held radiation instrumentation. ***For emergency response purposes use only the terms Removable and Total.***

Record contamination data in C/m. Note if this was a smear measurement. Compare these data to the recorded **Background** measurement.

Contamination surveys (both personnel and equipment) are performed upon exiting contamination areas. It is also a good practice to check respirator air filter cartridges and smear/wipe samples for gross activity.

## **Equipment**

- A. Calibrated Survey Meter (Check Calibration Sticker)
- B. Pancake G-M Detector (1) and cable
- C. Check Source ( $^{137}\text{Cs}$ )
- D. Instrument Check Sheet

## **Operational Check/Calibration Verification**

1. Set up the contamination monitor:
  - a. Remove the survey meter, cable, and pancake detector from the case,
  - b. Connect the cable to the detector and survey meter,
  - c. Remove two "D" cell batteries from the case and properly install them in the survey meter noting the polarity markings,
  - d. Set the survey meter switches to AUD – "ON", "F", and "1".

2. Source Check:
  1. Turn the survey meter main switch to "Ratemeter". After the self-diagnostics check is completed, remove the cover to the pancake detector.
  2. Check the ambient background value. Do this by observing the LCD screen for about 1 minute. It is normal to see random values from 15 to 70 C/m. Note the average value as your **Background** measurement. Record the reading on the sheet.
  3. Using the appropriate check source, check meter readings when the source is in contact with the detector. Open the hinged door and place the pancake detector face directly against the source. Record the reading on the sheet. Readings within  $\pm 20\%$  will be accepted as verifying the instrument response.
  4. Tag for repair and place out of service all instruments not meeting the criteria.