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## PERSONNEL SURVEYS

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### 1.0

#### **PURPOSE**

To provide guidelines for personnel surveys (surveys) to ensure the timely detection of personnel contamination and to maintain personnel exposures as low as reasonably achievable (ALARA).

### 2.0

#### **SCOPE**

This procedure is applicable to surveys of Radiation Workers working with radioactive materials at the Georgia Institute of Technology (Georgia Tech) using a handheld survey meter (meter) or smears.

### 3.0

#### **RESPONSIBILITIES**

#### 3.1

The Office of Radiological Safety (ORS) shall ensure that properly calibrated meters are available in appropriate locations for surveys.

### 4.0

#### **REFERENCES/REQUIREMENTS**

#### 4.1

Requirements and Specifications

##### 4.1.1

State of Georgia, Rules and Regulations for Radioactive Material, OCGA 391-3-17

#### 4.2

Related Procedures

##### 4.2.1

Procedure 9306, Preparation and Maintenance of Radiation Work Permits

#### 4.3

Equipment/Materials Required

##### 4.3.1

An appropriate meter (with audible response preferred)

##### 4.3.2

Smears and appropriate fixed instrumentation (e.g., liquid scintillation counter)

### 5.0

#### **PROCEDURAL STEPS**

#### 5.1

Survey Instructions

##### 5.1.1

Personnel that are using open source radioactive material shall survey, at a minimum, hands and feet, prior to exiting the lab for any time period.

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- 5.1.2 If the open source radioactive material contains an isotope that is normally undetectable with a meter (such as H-3 or Ni-63), the worker shall thoroughly wash their hands each time prior to leaving the laboratory in lieu of using a meter.
- 5.1.3 Prior to entry into a potentially contaminated area, a meter should be taken to the entry of the area prior to any personnel entries. In some cases a step-off pad will be located at the lab entry/exit.
- 5.1.4 When exiting a potentially contaminated area, personnel shall survey hands and feet, as well as any other area which came into contact with a potentially contaminated surface.
- 5.1.5 Certain situations or a Radiation Work Permit may require a more extensive survey than the hands and feet.
- 5.1.6 Any time personnel contamination is suspected, a smear shall be taken in addition to the meter survey. If the suspected contamination is an isotope that is not reasonably surveyed with a meter, only a smear shall be taken.
- 5.2 Performing a Survey Using a Meter
  - 5.2.1 Set the meter on the lowest useful scale (e.g., the lowest scale that background levels of radiation do not cause the meter to go off-scale), the response setting to FAST, and audio to ON.
  - 5.2.2 Keeping the meter's probe ~ 0.25 to 0.5 inches from the body, move the probe slowly (approximately 2 inches/second) over the entire area of interest.
  - 5.2.3 Listen to the audible count rate of the meter and/or watch the meter display for an increase in count rate.
  - 5.2.4 If an increase is noticed, return the probe to the area responsible for the increased count rate, holding the probe over the suspect area 4-5 seconds to confirm.
  - 5.2.5 If it is still unclear if the increased count rate is due to contamination or background, change the response setting to SLOW and hold the probe over the suspect area for 25 seconds.
- 5.3 Performing a Survey Using Smears
  - 5.3.1 Wipe each hand and foot, or other area of concern, with a separate smear.
  - 5.3.2 Analyze the smears on an appropriate fixed instrument.

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Date: / /

**Office of Radiological Safety**  
Georgia Institute of Technology

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5.4 Response to Elevated Readings

5.4.1 If the confirmed meter reading is  $> 100$  cpm over background or if the smear results are  $>100$  dpm, cease the survey and notify ORS immediately.

5.4.2 PERSONNEL SHALL REMAIN AT THE SURVEY LOCATION AS MUCH AS POSSIBLE. DO NOT EXIT THE LABORATORY!

6.0 **RECORDS**

6.1 Records of personnel surveys do not normally need to be maintained. However, if contamination is identified on an individual, the levels shall be documented along with the methods used to decontaminate, the success of these methods, and residual levels (if any) left on a person.

6.2 Any records generated as a result of identified personnel contamination shall be retained for the life of the facility.