UW Health
University of Wisconsin Hospital and Clinics

# Division of Nuclear Medicine Procedure / Protocol
# University Hospital & The American Center Nuclear Medicine
# AFCH PET

**WIPE TEST SURVEY** **CPT CODE: N/A**
**UPDATED: MARCH 2017**

**Purpose:** The purpose of this protocol is to confirm the absence of any removable radioactive contamination within the Nuclear Medicine department. This is done in accordance of Appendix R of WISREG-1556, Volume 9, Revision 2. This is also in accordance of UW Radiation Safety Procedures.

**Types of Areas:** Types of Areas are defined in Wisconsin Department of Health Services chapter 157.03.

A. **Radiation Area** means an area, accessible to individuals, in which radiation levels could result in an individual receiving in excess of 5 mRem in 1 hour at 30 cm. from the radiation source or from any surface that the radiation penetrates.

1. Examples: Radiopharmacy E1/378, inpatient therapy rooms.

B. **Restricted Area** means an area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials.

1. The following areas are examples of Restricted Areas
   i. University Hospital: Radiopharmacy E1/378, inpatient therapy rooms.
   ii. TAC: Hot Lab 1033A
   iii. AFCH: PET Control Room 1140
2. Within the UW Hospital Nuclear Medicine Service, the radiopharmacy (E1/378) is the only room considered a “restricted area” and “radiation area”.
3. Restricted areas must be locked and/or access restricted by a radiation worker present in the room. Only trained radiation workers may enter a restricted area.

C. **Controlled Area** means an area, outside of a restricted area but inside the site boundary, access to which can be limited by the licensee for any reason.

1. The following areas have been designated as “controlled areas”
   i. University Hospital: The wet lab (E1/381), Injection room (E1/367), uptake room (E1/369), and all imaging rooms (E1/385, E1/387, E1/392, E1/394, E1/396).
   ii. TAC: Imaging Room 1033 and Stress/Treadmill Room B14.
   iii. AFCH: PET Scan Room (1142)
2. In controlled or unrestricted areas, unauthorized removal or access to radioactive materials must be prevented by the licensee, but the area does not need to be locked unless unattended radioactive materials are present and/or the RAM is not under the constant surveillance and control of a trained radiation worker.
3. Members of the general public may enter controlled areas if their exposure is limited to 2 mRem/hr and 100 mRem/year.

D. **Unrestricted Area** means an area access to which is neither limited nor controlled by the licensee.

1. Examples: Inpatient therapy rooms when not restricted, waiting rooms, offices.
2. Exposure in unrestricted areas are also limited to 2 mRem/hr and 100 mRem/year
3. The inpatient therapy rooms are radiation areas and restricted areas while the treated patients are present but must meet the criteria for unrestricted areas when the room is released for use.
4. Remote stress/treadmill rooms at University Hospital or The American Center are radiation areas and restricted areas while in use for nuclear stress tests but must meet the criteria for unrestricted areas when the room is released for general or other use.

5. Unrestricted Areas are not routinely wiped for contamination.

**Procedure:**

Read and follow the general procedure for wipe testing found in Appendix R of WISREG-1556, Volume 9, Revision 2 and the UW Radiation Safety Manual, Part 7.7.b

Areas to be wiped are on the maps in each room or in the protocol book under Radiation Safety.

Each wipe should be 100 $cm^2$.

Wipes are counted in a single well or multi-well counter with a window range of 30-1000 keV

- Quality Control is required to be current
  - Daily constancy each day of use
  - Manufacturer recommended efficiency

1-minute count per sample including a 1-minute background

Enter wipe results (background subtracted cpm) in Nuclear Medicine Information System (NMIS).

- Open NMIS select the wipe test for your site from the reminder screen
- Alternatively
  - Health Physics---Area Surveys/Wipes---Area Wipe
    - All CSC – Weekly Wipes
    - AFCH PET
    - TAC
  - Frequency should be weekly, and group should be weekly wipes.
- Enter background subtracted cpm results for each wipe location.
- Click OK.

If net dpm with any wipe is higher than 200 dpm then repeatedly decontaminate the area until the wipe is <200 dpm/100 sq cm if possible.

If repeat wipes still exceed 200 dpm/100 sq cm

1. Contact the following to assist in determining which action level (defined below) is applicable depending on the area and/or radionuclide involved according to the criteria above for 2nd action level.
   a. If during business hours: contact a Senior Nuclear Medicine Technologist (for Nuclear Medicine) or a Nuclear Pharmacist (for the Radiopharmacy) or the Nuclear Medicine Manager.
   b. If outside normal business hours contact the Nuclear Medicine Manager or Office of Radiation Safety. To contact Radiation Safety call hospital paging (262-2122) and ask to page "Radiation Safety". This will activate the call list which they will use until they reach one of the Radiation Safety team.
2. At any time, more assistance or guidance is needed contact the Radiation Safety Office.
3. The identity of the radionuclide must be determined. Acquire a spectrum on the hot wipe in the Captus 3000 Well counter with the Multi-Channel Analyzer to identify the radionuclide by energy and consult the appropriate table for 2nd action level.
4. If the second action levels are exceeded and repeated decontamination does not succeed, notify the Radiation Safety Office or the Nuclear Medicine Manager who will assist in managing the contamination.

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**Action Levels:** Action Levels for Removable Surface Contamination

A. 1st Action Level- 200 dpm/100 sq. cm.

B. 2nd Action Level

1. Based on which radionuclide the area was contaminated with use the following criteria for the 2nd action level:
2. 2nd Action Level- Appendix R of WISREG-1556, Volume 9, Revision 2

| | I-131, I-125 or I-123<br>In-111, P-32, Sr-89, Sm153 | Tc-99m, Tl-201, Ga-67<br>Cr-51, Co-57, F-18 |
|---|---|---|
| Unrestricted Areas | 200 dpm/100 sq cm | 1000 dpm/100 sq cm |
| Restricted Areas | 2000 dpm/100 sq cm | 20000 dmp/100 sq cm |

3. 2nd Action Level- UW Radiation Safety Manual, Table 7-4

| | All Radionuclides used in Nuclear Medicine |
|---|---|
| Controlled Areas | 660 dpm/100 sq cm |

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