# WORCESTER POLYTECHNIC INSTITUTE HEALTH PHYSICS PROCEDURE HP-10 RADIATION SURVEYS

1.	PURPOSE	
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To determine the radiation levels present around ionizing radiation emitting equipment.

### 2. FREQUENCY:

This procedure shall be performed semiannually.

## 3. MATERIALS, TOOLS, AND EQUIPMENT:

- 3.1. Form(s):
  - 3.1.1. Reactor Facility Beta, Gamma, Neutron Survey (Form 17)
  - 3.1.2. X-ray Diffraction Survey (Form 19)
- 3.2. Ionization chamber
- 3.3. G-M tube survey meter
- 3.4. Neutron detector (if applicable)

### 4. PRECAUTIONS:

- 4.1. Ensure that all appropriate health physics precautions are followed throughout the procedure.
- 4.2. Utilize the concepts of time, distance, and shielding to maintain dose as low as reasonably achievable.
- 4.3. Perform an operability check on all instrumentation used. Ensure that the instrumentation has been calibrated within the proper time limit.

### 5. INSTRUCTIONS:

- 5.1. Radiation survey
  - 5.1.1. Record the following information on the form:
    - 5.1.1.1. Date of the radiation survey.

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- 5.1.1.2. Instruments used and their serial numbers.
- 5.1.1.3. Individuals present during the survey.
- 5.1.2. Select various locations within each area.
- 5.1.3. Indicate these locations on the forms when applicable.
- 5.1.4. Record the highest reading found at each location.
- 5.2. Reactor Facility Survey
  - 5.2.1. Ensure that the reactor is at a power level greater than 5kW.
  - 5.2.2. Perform a radiation survey in the areas immediately surrounding the reactor and in the following rooms: 245, 248, 249, 323, and 336 of Washburn labs.
- 5.3. X-ray Diffraction Survey
  - 5.3.1. Review the Log Book
  - 5.3.2. Perform a radiation survey of each x-ray diffraction machine.
- 5.4. Van de Graff Accelerator Survey
  - 5.4.1. Perform a radiation survey of the Van de Graff Accelerator.
- 5.5. Compare the results from each radiation survey to previous results obtained. Investigate any discrepancies.
- 5.6. Submit all results to the RHSC.
- 6. <u>RESTORATION</u>:

None

7. <u>REFERENCES</u>:

None