Approved: _____
Chairman - RHSC

WORCESTER POLYTECHNIC INSTITUTE
HEALTH PHYSICS PROCEDURE HP-11
LABORATORY SAFETY RULES

1. PURPOSE:

To provide guidance to all individuals working with radioactive materials or working in areas containing radioactive materials.

2. FREQUENCY:

These guidelines shall be followed whenever radioactive materials are worked with or are present.

3. MATERIALS, TOOLS, AND EQUIPMENT:

None

4. PRECAUTIONS:

4.1. Before starting work with radioactive materials, each person shall make known any previous work with radioactive materials or radiation sources and any exposure over the maximum permissible dose.

4.2. Topcoats, hats, and other personal belongings (including books not required for laboratory work) should not be brought into the laboratory.

4.3. High standards of cleanliness and good housekeeping should be maintained throughout the laboratory.

4.4. Eating, drinking, smoking, and applying cosmetics in any area where radioactive material is used or stored are forbidden.

4.5. Pipetting liquids of any type by mouth or by the performance of any similar operation by mouth suction is forbidden.

5. INSTRUCTIONS:

5.1. Personal monitoring devices (pocket ionization chambers, film badges, ring badges, etc.) shall be worn at all times while in areas where radioactive materials are used or stored. These devices should be worn at chest or waist level.

5.2. The concepts of time, distance, and shielding shall be utilized to minimize exposure.

5.3. The total gamma irradiation of any part of the body should not exceed 100 mRem/week.

5.4. The Radiation, Health, and Safeguards Committee Radiation Regulations shall be complied with.

5.5. Radioactive material should be transported within shielded containers.

5.6. Survey meters shall be used to check the dosage level at appropriate stages in experiments with radioactive materials.

5.7. Approved warning signs shall be properly displayed in all areas where radiation hazards exist.

5.8. Laboratory coats, disposable gloves, and other appropriate protective clothing should be worn if the possibility of contamination exists.

5.9. Individuals with breaks in the skin of the hands must wear protective gloves and should consult the instructor or adviser before starting work with liquid or powdered radioisotopes.

5.10. Hands, clothing, bottom of shoes, and work area should be monitored for contamination:

* At the end of each procedure
* Previous to exiting the work area
* At frequent intervals during the experiment
* At any time personal contamination is suspected

5.11. Precautions should be taken to avoid the spread of contamination.

5.12. Any suspected contamination of the body, clothing, or apparatus must be immediately reported to the laboratory staff and cleaned as required.

5.13. Radioactive materials should be confined in properly labeled covered containers (i.e.: indicate isotope, amount, and date).

5.14. When not in use, radioactive material should be stored such that the radiation level at the surface of the shield storage container will result in a dose no greater than 2 mRem in any one hour and no greater than 100 mrem in one week.

5.15. Radioactive waste shall only be disposed of in specially designated receptacles.

5.16. Disposal of radioactive waste shall conform with 10CFR20. Such disposal shall be carried out only under the supervision of the laboratory staff.

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6. RESTORATION:

None

7. REFERENCES:

7.1 "Radioisotope Techniques" by Overman and Clark

7.2 United States Nuclear Regulatory Commission Regulatory Guide 10.8, Appendix G

7.3 Radiation, Health and Safeguards Committee Radiation Regulations

7.4 Code of Federal Regulations Part 10, Chapter 20