CONTROL OF STUDENT EXPOSURE TO RADIATION

Mount Holyoke College recommends the following guides on the uses of ionizing radiation. They should be distributed to students participating in demonstrations or experiments involving radiation:

1. Persons in the general population at any age. — Such individuals should not receive an exposure exceeding 0.1 rem per year (1 mSv/yr) total effective dose equivalent in addition to natural background and medical exposure. This limit applies to those persons who are not occupationally exposed. An instructor or student of age 18 or greater subjected routinely to work involving radiation is an occupationally exposed worker. Their exposure limit is 5 rems per year (0.05 Sv/yr) total effective dose equivalent and 50 rems per year (0.5 Sv) committed dose equivalent to any tissue or organ.

2. Persons under 18 years of age may not use radioactive material or radiation producing equipment in such a manner that they may receive a dose in excess of the limits specified in 105 CMR 120.217.

3. Students under 18 years of age exposed during educational activities. — Such individuals should not receive whole body exposure exceeding 0.1 rem per year (1 mSv/yr) total effective dose equivalent due to their educational activity. To provide an additional factor of safety, Mount Holyoke College recommends that each experiment be planned so that no individual receives more than 0.01 rem (0.1 mSv) while conducting or participating in the experiment.

4. Students over 18 years of age exposed during educational activities fall into category 1.

It should be emphasized that there is no difficulty in performing radiation experiments and demonstrations in conformity with the above recommendations, if appropriate safeguards are provided.

Mount Holyoke College recommends the following precautions when students handle radionuclides:

1. "Good housekeeping" should be maintained always. Keep the laboratory neat, wash glassware regularly and do not let waste or contaminated material accumulate.

2. Perform a "mock" run, when practical, using stable or low-activity material to establish the adequacy of procedures and equipment for handling the radioactive material.

3. Measure and evaluate the radiation levels at the hand and body locations before carrying out intended operations on a source of radioactive material.

4. Use a fume hood or glove box when performing operations that might produce airborne contamination, (evaporations, sanding or grinding operations, transfers of unsealed powdered material, etc.)

5. Wear protective gloves and a lab coat, and closed shoes (heel and toe) with no perforations when performing operations to prevent skin or clothing contamination.

6. Survey skin, hair and clothing after handling unsealed radioactive material, and wash hands before leaving the laboratory.

7. Do not eat, drink, smoke, or apply cosmetics in laboratories where unsealed radioactive material is handled, unless in a specifically marked area. Do not store food in a laboratory's radionuclide storage refrigerator.

8. Do not pipette radioactive solutions by mouth.

9. Do not handle radioactive sources by hand unless you are certain that the contact dose is within permissible limits and that the source is not contaminated externally.

10. All containers of radioactive material should be properly labeled at all times. The label should indicate the date of assay and the kind and quantity of radioactive material, and should carry the standard yellow and magenta radioactivity symbol.

11. Containers of radioactive solutions shall be kept closed unless in actual use.

12. Radioactive sources shall be stored when not in use, in a suitably labeled location with means to prevent unauthorized use when not in use. Adequate shielding should be provided.

13. Contact the Licensed Investigator if a spillage or accident involving RAM or radiation occurs.