

UNIVERSITY OF MISSOURI-ROLLA - NUCLEAR REACTOR

STANDARD OPERATING PROCEDURES

S.O.P.: 606

REVISED: 5-9-84

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TITLE: HANDLING OF RADIOACTIVE SAMPLES

A. Purpose

To ensure that reactor personnel, students, and researchers handle radioactive materials with proper precautions.

B. Precautions and Prerequisites

1. Always wear protective clothing (ie. glasses, gloves etc.) when handling radioactive materials.
2. Always use tongs or other handling devices to reduce personnel exposure whenever possible.
3. Always have a portable radiation detector available and operational when working with radioactive samples.
4. Always follow the laboratory rules (see SOP 600).

C. Procedure

Removing samples from the reactor pool or the glove box.

(For the remainder of this SOP, the word pool may be applied to both the reactor pool and to the glove box.)

1. Put on protective gloves and glasses.
2. Have another person assist you in monitoring radiation levels while the samples are exiting the pool. If radiation levels are greater than 3 mr/hr at 2 ft return the sample to the pool for further decay.
3. Before removing a radioactive sample from the pool ensure that the sample or the sample holding device has decayed to acceptable levels (if possible).
4. After the sample has been removed from the pool take it to the radioactive work area for preparation. Keep the sample as far away from your body as possible. Use tongs or tweezers to carry the sample.

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5. Remove the sample from the stringer or sample holder and place all burnable radioactive wastes in the yellow rad-waste can. (See SOP 600, section B.8.)
6. After sample counting or when the experiment is completed, place the sample in a properly labeled envelope stating Name, Class Number, Material, Radiation Level and Date.

Store the sample in the reactor safe if radiation levels are greater than 5 mr/hr at 1 ft. Otherwise dispose of burnable samples in the yellow rad-waste container.

(Note: If sample or wastes are not burnable they will be stored separately in the reactor safe and the envelope marked to indicate that the contents are "Not burnable".)

7. Clean up and decontaminate the radioactive work area, if necessary.
8. Check all areas where radioactive materials have been used with a portable GM detector to ensure that these areas are clean of contamination. (Take swipes and count them, if necessary).
9. Return all equipment to the proper location and ensure all survey meters are turned off.
10. Check hands, feet and clothing for contamination.
11. Do not exit through Door 101 after handling radioactive material.
12. Always wash your hands thoroughly after having worked with radioactive material even though you wore gloves.

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