

EH&S - UC Berkeley  
**Radiation Safety News**

August 2009

Recent findings issued by the California Department of Public Health (CDPH), Radiologic Health Branch (RHB) indicated compliance concern in specific areas of radiation safety. While the RHB findings did not occur at UC Berkeley, we should take the opportunity to learn from the experiences of universities and apply it to our own work. Please review these bullets and take action to minimize the potential for similar situations in your laboratories.

1. Radioactive materials were received, possessed, and used without a current Radiation Use Authorization (RUA).

First, do not “lend” your radioactive materials or radiation producing machine (RPM) to anyone not authorized by a current RUA.

Second, don’t work under an RUA that has expired. The EH&S Radiation Safety Team (RST) schedules renewal inspections of your RUAs prior to exceeding the expiration date. If your RUA is about to expire, contact the RST and request renewal or notify the RST of your intent to terminate use of the radioactive material or machine.

2. Persons who were not listed as authorized users on the RUA were permitted to use radioactive materials.

Do not allow anyone **Not** listed on your RUA to use or handle radioactive materials or receive occupation levels of exposure to ionizing radiation in your laboratories.

3. Persons were permitted to use radioactive materials without completing training specified in the license.

The RUA Holder and RST are responsible to provide radiation safety training and annual retraining. If an authorized user fails to complete the training, the RUA Holder is responsible to limit access to restricted areas and prevent use of radioactive materials or radiation producing machines. The RSC will terminate the RUA if the RUA Holder fails to complete required training or retraining.

4. Radioactive material stored in refrigerators was not locked or otherwise under the direct supervision of a trained individual to prevent unauthorized use or removal.

CDPH regulations require that radioactive material be secured from unauthorized access or removal. If not secured, it must be under constant surveillance of a

trained individual to protect the material or radiation producing machine from unauthorized use or removal.

5. Rooms and containers with licensed quantities of radioactive materials were not posted or labeled as required.

Rooms with greater than 10 times the 10 CFR Part 20, Appendix C quantities of radioactive material must be posted with signs bearing the words “Caution Radioactive Materials” and containers with greater than the Appendix C quantities must be labeled with the radiation symbol, “Caution Radioactive Material” and sufficient information, like the isotope and quantity, for the user to take appropriate precautions.

10 CFR Part 20 Appendix C can viewed at: <http://www.nrc.gov/reading-rm/doc-collections/cfr/part020/part020-appc.html>

6. Several survey instruments were observed in use beyond their calibration due date.

Each user must ensure that instruments and equipment used for quantitative radiation measurements are calibrated for the type of radiation being measured. The RST calibrates the instruments but each user must: physically inspect the instrument prior to each use to verify the battery is still good, the calibration date due has not past, and that the instrument responds to a known source of radiation.

7. Defacing of radioactive material labels.

CDPH regulations require that prior to removal or disposal of an empty uncontaminated container you must remove or deface the radioactive material label or otherwise clearly indicate that the container no longer contains radioactive materials. In this case, contaminated sharps were sent for disposal without removing or defacing the labeling or providing information to indicate the objects no longer contained radioactive material.

There have been two recent situations where refrigerators were released for disposal by CAL Overstock and Surplus without appropriate surveys to confirm they were free of radioactive material and to assure that all radioactive materials labeling had been removed or defaced. While radioactive materials were not actually released it is instructive to review what happened.

The RUA Holder is responsible for the security of radioactive materials under his/her control and for ensuring that individuals permitted access to radioactive material use areas have been adequately trained. Prior to disposal of hazardous or potentially radioactive material please consult:

<http://businessservices.berkeley.edu/overstock/disposal/hazardous>. If you are planning to dispose of a refrigerator, also consult:

<http://businessservices.berkeley.edu/overstock/disposal/refrigerators>.

If you plan to dispose of an X-Ray machine or other registered source of ionizing radiation you must ensure that the RST is informed so the CDPH can be notified, within 30 days, of the sale, transfer, disposal or discontinuance of use of the machine. The RST must also have proof that machines that are to be disposed of have been rendered incapable of producing radiation.

Prior to release of any potentially contaminated material or equipment, surveys must be performed and documented to demonstrate compliance with the limits for release specified in the Radiation Safety Manual. The RUA Holder must perform these surveys for small uncomplicated items (like hand tools), however the RST must survey large or complicated items (like gas chromatographs) that contained or had contact with radioactive materials.

Had the refrigerator been dumped in the trash, the CDPH would probably have been notified by the trash disposal company and UC Berkeley would have been required to recover the refrigerator, survey the disposal site, and respond to a Notice of Violation. A near miss is a great opportunity to learn.