

COLLEGE OF THE HOLY CROSS
WORCESTER, MASSACHUSETTS 01610

DEPARTMENT OF BIOLOGY

(617) 793-2655

June 17, 1981

Mr. John Glenn
USNRC Region I
Material Licensing Section
631 Park Avenue
King of Prussia, PA. 19406

Reference: Control no. 07842

Dear Mr. Glenn:

In response to our telephone conversation of June 16, I would like the following information to be considered as an addendum to our application for a new Byproduct Material License, NRC form 3131.

Section 8E Use of licensed material

1. Hydrogen-3 No more than 1 millicurie of isotope will be handled at one time except in preparing working dilutions from our stock supply of radioisotope.
3. Rubidium-86 Only the named users will handle the stock supply. All others will work with solutions at or below 100 uCi/ml.

Section 11 Calibration of instruments

- a. Calibrated by service company
 - (2) The count rate meter will be calibrated annually by Frank Masse Associates, during their visits to University of Massachusetts Medical Center, Worcester, MA.

Section 12 Personnel monitoring devices

- A. 1. Film badge
- B. Supplier: R.S. Landauer, Jr.
Burlington, MA.
- C. Exchange frequency: quarterly or as needed.

Section 14 Waste disposal

- b. All discharges to the sanitary sewer are in compliance with paragraph 20.303.

Section 15 Radiation Protection Program

It will be a responsibility of the Radiation Safety Officer (RSO) to monitor the amounts and security of isotopes on hand. The procedures to be used are as follows:

1. All orders for radioisotopes will be approved by the RSO prior to being placed, to ensure that licensed quantities of isotope are not exceeded.

2. As orders are received, the receiving department will expedite their delivery to the person placing the order or, in his/her absence, the RSO. Upon receipt, the isotope will be logged in with the RSO. Every effort will be made to ensure that delivery is accomplished during working hours. If delivery at some other time is unavoidable, security personnel are instructed to lock the isotope away under the appropriate storage conditions and to notify the RSO.
3. As orders are unpacked, the package will be inspected and monitored as follows:
 - a. Visual inspection. If the package appears to be damaged or leaking, it will be placed in a plastic bag and the carrier will be notified. If the package contains ^{86}Rb , the area will be surveyed with a count rate meter.
 - b. Even apparently undamaged packages containing ^{86}Rb will be surveyed with a count rate meter before opening.
 - c. Gloves will be worn when opening the packages.
 - d. The inner container surrounding the actual vial of sample will be wipe-test monitored.
4. Any isotope being carried between areas of use will be secured in a tightly closed container.

We will take the following safety precautions:

1. Any manipulations involving fumes, volatile compounds or aerosols will be conducted in a fume hood.
2. Undergraduates will use isotopes only under the direct supervision and in the presence of one of the named users.
3. Ancillary personnel (secretarial, janitorial staff) will be instructed as to restricted areas and proper conduct in emergencies.
4. When working with isotopes, all users will wear lab coats and gloves. Anyone using more than 100 μCi of ^{86}Rb will wear ring and body film badges; after use, their hands and clothing will be monitored with the count rate meter.
5. All users will be instructed in correct procedures for waste disposal and surveying for contamination.
6. In areas of isotope use and storage, smoking, eating and drinking are prohibited. No foods or cosmetics will be stored in these areas. No pipetting will be done by mouth.

In the event of a spill the involved area will be isolated and the RSO notified. Minor spills will be contained with absorbent. The spill will be cleaned up using methods appropriate to the chemistry of the spilled material. Clean-up materials will be disposed of as radioactive waste if they contain more than 10^5 dpm/g of ^{14}C or ^3H , or more than 200 dpm/g $^{86}\text{Rb}^+$. These emergency procedures will be posted, together with instruction to notify the RSO, and his/her name and phone number. Any area discovered during routine surveys to contain more than 200 dpm/100 cm^2 will be declared contaminated and will be cleaned until it falls below these limits.

Thank you very much for your help in expediting this application!

Sincerely yours,

Mary Lee S. Ledbetter

Mary Lee S. Ledbetter, Ph.D.
Assistant Professor of Biology