in the [redacted] should be alerted about the leak via the intercom and immediate steps should be taken to locate and repair the leak. The RHP, if necessary, in consultation with Department 7885's industrial hygiene group will determine whether the concentration of SF_6 require any other action such as evacuation. Ex.4

3. The Cobalt-60 Gamma Cell

The Model AECL-GC 220 Irradiator containing approximately 9000 Curies of cobalt-60 will be located in this area, either in room [redacted] Use of this irradiator will be controlled by Department 1512. After arrangements have been made to use this device, the RHP must be consulted to arrange for actual entry into the facility and proper personnel dosimetry. Ex.4

(a) Operating Procedures

The Gammacell 220 has been designed to enable operation with minimum exposure to radiation. To ensure protection, operators should adhere to the following procedures.

i. Automatic Operation

1. Raise the drawer by first inserting the key in the key switch and turning it 90° clockwise, then press the UP rocker switch.

2. Open the collar doors by grasping the handles and pulling on the lever behind the right handle.

3. Slide the sample chamber locking ring to the right, remove the door by lifting it up and outwards.

4. Place the sample in the chamber. The access tube in the drawer top accommodates accessory tubes and electrical leads, which should be fitted in accordance with the instructions provided in the Gammacell 220 Accessories Manual.

NOTE: Materials expected to change state during irradiation should be placed in suitable containers.

Liquids expected to expand or boil should be provided with secondary containers for overflow, or vented to one of the access tubes.

The sample chamber and source cage will not withstand repeated spills of corrosive materials.

5. Replace the sample chamber door with a forward and downward motion. Move the locking ring to the left until it snaps into position. If difficulties are experienced check that the door is correctly positioned in the port.

6. Close the collar doors, the left one first; ensure that the latch locks the door in place.

7. Set the required irradiation time on the digital timer in the following manner. (Refer to Fig. 8. in the Gammacell manual.)

   (a) Push the timer reset knob, turn it clockwise 90°, and release; the white line on the knob should be horizontal.

   (b) Open the hinged cover which protects the predetermining drums; turn the knurled wheels either direction until the desired number sequence appears in the windows.

   (c) Rotate the selector switch to hours, minutes or seconds. Close the hinged cover and turn the timer reset knob counterclockwise; the white line on the knob should be vertical, press the reset knob to set the timer.

8. Push the DOWN switch. The drawer will lower to the irradiating position, activate the timer, and remain there until the preset time interval has elapsed, when it will automatically raise.

9. To remove the sample repeat steps 2 and 3.

ii. Manual Operation

1. For initial set-up read the preceding steps 2 to 6.

2. Rotate the selector switch to MANUAL.

3. Press the DOWN switch. The drawer will lower and remain there indefinitely until the UP switch is operated.

iii. Power Failure

In the event of a power failure the timer will stop and it will be necessary to raise the drawer manually.

1. Turn the key switch to the OFF position.

2. Spring out the large round button near the lower right corner of the back cover.

3. Push the crank (Fig. 2, item 14 in the Gammacell manual) through the hole until it snaps into the extension on the input shaft of the reducer.

4. Crank in a clockwise direction to raise the drawer.

NOTE:

1. If it is necessary to change an operation time do not alter the digit settings while the drawer is down and the timer is operating. Raise the drawer and set the timer as described in AUTOMATIC OPERATION, step 7.

2. On completion of a timed operation the timer can be reset to the same operation time by depressing the reset knob.

3. If it is required that the drawer be raised during an operation the timer will store the remaining portion of the preset time until the operation is resumed.

(b) Emergency Procedures

In the event of any emergency such as fire, the procedure listed in Section VI-C should be followed. In addition, the following steps should be taken if time permits.

i. Check unit to make sure chamber is in load position.

ii. Turn off all power to the unit.

iii. If reentry is urgent, keep the duration of the stay in the room to a minimum, just sufficient to conduct necessary emergency operations. If radiation levels exceed 100 mR/hr or are off scale on available meter, do not enter until the RSO or RHP arrives unless it is necessary to evacuate someone.

vi. In case of fire, water or other fire damping materials may be applied. A minimum of water or other such materials should be used. No repairs should be attempted without first consulting with the RSO. In no instance should a high velocity water stream be used to combat fire in this area.

D. [redacted] EX.4

1. General

(a) Clothing - All personnel entering the [redacted] complex must wear a laboratory coat. EX.4 Regular users should arrange to have a permanently assigned laboratory coat which will be available in the clean-up room and must be left there when exiting the [redacted] complex. Protective gloves must be worn when EX 4 handling unsealed radioactive sources. Additional protective clothing such as hats, and shoe covers may be required by the Radiation Protection Group.

(b) Personnel Dosimetry - Regular personnel must wear both a film and self-reading pocket dosimeters. Finger dosimeters will be provided by the Radiation Protection Group on an as needed basis. Transient personnel will be given either a film badge or self-reading dosimeter as determined by the RHP or his alternate.

(c) Surveys - Contamination Control - work areas shall be surveyed by the user as often as necessary to avoid any unnecessarily high levels of radiation. The RHP will be available to assist in these measurements as needed. Surveys may include wipe tests and instrumental observations. All supplies and equipment leaving the area must be surveyed and approved for removal by the RHP.

(d) Monitoring - Personnel must use the hand and foot counters provided before leaving the area. All protective garments such as laboratory coats must be left in the clean-up room when leaving the area. In the event a person is found with contamination on his person or