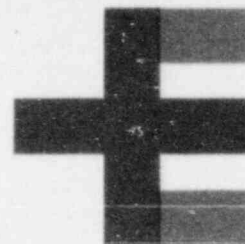


Evanston Hospital



2650 Ridge Avenue
Evanston, Illinois 60201
312 492 2000

Nuclear Regulatory Commission
Licensing Branch
Region III
799 Roosevelt Road
Glen Ellyn IL 60137

Dec. 4, 1985

Ref: License No. 12-00437-01
Control No. 79792

Dear Mr. Adam:

This is in response to your letter dated November 12, 1985 regarding our request for license amendment to include Gd-153 source in Lunar bone mineral analyzer. The order of my response will correspond to the same order as your enquiry.

1. We intend to follow the manufacturer's step by step instructions during exchange of sources. The procedure is outlined in pages 13 and 14 of the enclosure. The source will be exchanged by the Radiation Safety Office under the supervision of S. Guru Prasad Ph.D., Radiation Safety Officer.
2. Whole body and extremity monitoring will be performed during source exchange.
3. Lunar corporation or any other authorized organization approved by NRC will service the device.
4. The device will be installed and used in Nuclear Medicine Department and will be in a secure location. Either the room containing the device or the department will be locked during after hours.
5. The proposed users of scanner will receive demonstration and "hands-on" training in:
 1. Installation and exchange of the source
 2. Leak testing
 3. Shipment of decayed source

RECEIVED

DEC 6 1985

REGION III



A Member of the McGaw Medical Center of Northwestern University

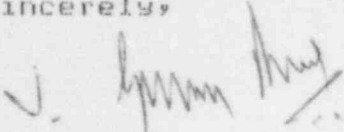
8602200044 851217
REG3 LIC30
12-00437-01 PDR

DEC 6 1985

4. Storage of source when not in the scanner.

I hope I have provided you with adequate information to continue with your review. Also please include DuPont/NEN Gd-153 source, catalogue No. NER-430 in addition to Gulf Nuclear Gd-153 source.

Sincerely,

A handwritten signature in dark ink, appearing to read 'S. Guru Prasad', with a stylized flourish at the end.

S. Guru Prasad Ph.D.
Radiological Physicist

C.. Routine Health Physics Services

C.1 Source Changes

WARNING: Only individuals trained in the principles of radiation safety and protection and the device specific radiation requirements of LUNAR scanners should conduct these procedures.

C.1.a Gd-153 Source Changes

The source is encapsulated in a metal cylinder, approximately 1 inch in length and 1/8 inch diameter. This metal capsule is inside a lead-lined brass source holder (Fig. 1). For all phases of operation, the capsule need not be removed for the source holder. During a source exchange the entire source holder is returned. Operator exposure is minimized by never removing the capsule from the holder.

All the following steps should be performed without tools. Use of tools may cause damage to the equipment.

Procedure

1. Remove pad and the lucite insert from the table.
2. Use OPTION 5 (Static Counter, ref. User Manual) of the DP3 Spine software to position the arm and source at the center of the window.
3. Place a lead source holder cap onto the source collimator (Fig. 2)
4. Use the "shutter open" command of OPTION 5 to access the source holder/collimator assembly. Alternatively, the shutter may be manually opened. Be careful to keep hands and other body parts clear of the actual radiation beam. If the source is opened manually, do not force the shutter blade to swing more than 35 degrees; then tape the shutter in this open position during the exchange.
5. Turn the chuck ring (Fig. 3) counterclockwise until the collimator is loose in the chuck. Do not completely loosen the chuck ring.
6. Pull the source collimator (which will have the source holder attached) out of the chuck. The source holder and collimator can now be handled as an unit.

7. Holding the source holder/collimator upright, as positioned in the scanner, unscrew the source holder from the source collimator. Put the lead cap on the source holder.

CAUTION: RADIATION PRESENT! After the collimator is removed a broad beam of radiation projects from the top of the source holder.

8. Exchange the spent source for the new source. Place the lead cap from the source holder onto the collimator. Tread the source holder onto the base of the collimator. Do not force the collimator onto the source holder or it may cross-tread. The source holder/collimator can now be handled as an unit.

9. Slide the source holder/collimator into the source chuck (Fig. 3) so that the pin on the bottom fits into the notch on the source chuck. The collimator should rest on the top of the chuck, not the chuck ring.

10. Close the shutter by using "shutter close" command of OPTION 5 or remove any tape used to hold open the shutter.

11. Verify that the shutter blade moves freely in and out of the source collimator. If necessary, adjust the location of the collimator to allow free motion.

12. Turn the chuck ring clockwise until the collimator is held firmly in the chuck.

13. Remove the lead cap from the top of the collimator.

CAUTION: A narrow beam of radiation is now projected upward from the collimator aperture.

14. Replace the lucite insert and patient pad.

15. Monitor radiation levels around the table to insure operator safety.

16. Perform Standard Scan and QA procedure to verify proper operation.

C.1.b I-125 or Am-241 Source Changes

The I-125 source is encapsulated in a metal cylinder: 10 mm in length and 3 mm diameter. This metal capsule fits inside the brass source holder, SRC-0100-1 (Fig. 4). For all phases of operation, the capsule need not be removed for the source holder.