

Metropolitan Medical Center  
900 South Eighth Street  
Minneapolis, MN 55404

Aug. 19, 1985

B.J. Holt  
Materials Licensing Section  
U.S. NRC Region III  
799 Roosevelt Road  
Glen Ellyn, Il 60137

Re: Metropolitan Medical Center, your file  
# 79163.

Dear Ms. Holt:

Additional information related to the application for  
ammendment to license # 22-13859-01 has been obtained per  
your request letter dated 7/30/85.

Present group VI total activity authorization is one  
(1) curie which will be adequate for our needs including  
the 250 mCi of I-125.

The physicians who will be directly working with the  
device are:

Quentin Anderson  
William Boardman  
Joseph Melland

All physicians are users on the current license.

Step by step procedures for Gd-153 source exchange  
have been received from a manufacturer (Lunar) and are being  
enclosed herewith for your inspection. I personally will be  
reviewing them until I understand the procedure and will be  
assisting the technician with the procedure. A survey of  
the equipment will be performed after completion of source  
exchange to insure full shielding is in place.

It is envisaged that only the manufacturer's  
representative will service the scanner mechanism including  
any components which could compromise radiation protection  
features. I will be responsible for a survey of the unit  
after any repairs to assure staff and patients of a safe  
device.

Sincerely,

*Joseph R. Giganti*

Joseph R. Giganti, Ph.D.  
Medical Physicist, A.B.R.  
M.M.C. - R.S.O.

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## C.2 INSTALLING AND REMOVING THE SOURCE

**CAUTION:** Only personnel trained in the principles of radiation safety and protection should conduct these procedures. The technician should study the following procedures before an actual source transfer is attempted. A press-on label with the warning "CAUTION - RADIOACTIVE MATERIALS" should be displayed in a location where it can be seen by the operator, patients and/or visitors to that area where measurements are done.

**WARNING:** All steps should be conducted without tools. Use of pliers, clamps, etc. may cause irreparable damage to parts.

### C.2.a Removing the Source

1. Remove the pad if it is on the table. Using the key provided with the system, unlock the lucite insert and remove it from the table.
2. Select OPTION 5 (STATIC COUNTER) of the "DP3 SYSTEM" diskette menu to position the arm and source at the center of the window.
3. Place a lead source holder cap onto the source collimator (Fig. 10 and 11).
4. Select the "SHUTTER OPEN" command of OPTION 5. Alternatively, the shutter can be manually opened. Be careful to keep hands and other body parts clear of the actual radiation beam. If the shutter is opened manually, do not force the shutter blade to swing more than 35 degrees; then tape the shutter in this (open) position.
5. Turn the chuck ring (Fig. 12) counterclockwise until the collimator is loose in the chuck. Do not completely loosen the chuck ring.
6. Slide the source collimator (Fig. 13), which will have the source holder attached to the end of it, out of the chuck. The source collimator and holder can now be handled as a unit.
7. Holding the source collimator and source holder upright (as they are positioned in the scanner assembly enclosure), unscrew the source holder from the collimator. Immediately put a lead cap on the source holder and tape it in place.

**CAUTION:** RADIATION PRESENT! After the collimator is removed and before the lead cap is positioned a broad beam of high intensity radiation projects from the top of the source holder. Exercise due caution.

This completes the source removal procedure.

### C.2.b Installing a Source

1. Unlock and remove the lucite insert on the scan table.
2. Load and run the "DP3 SYSTEM" diskette. Use the "shutter open" command ("O") of OPTION 5 (STATIC COUNTER). Alternatively the shutter can be manually opened. Be careful to keep hands and other body parts clear of the actual radiation beam. If the shutter is opened manually, do not force the shutter blade to swing more than 35 degrees; then tape the shutter in this (open) position.
3. Remove the lead cap from the source holder and place it on the brass collimator provided with the system. Thread the source holder onto the base of the collimator. Do not force the collimator onto the source holder or it may cross-thread. The source collimator and holder can now be handled as a single unit (Fig. 10).
4. Slide the source collimator/holder assembly into the source chuck (Fig. 12) so the lower pin on the collimator fits into the notch on the source chuck. The collimator shoulder should rest on the top of the chuck (not the chuck ring).
5. Use the "shutter close" command ("C") of OPTION 5 or remove the tape if the shutter is held opened manually.
6. Turn the chuck ring clockwise until the collimator is held firmly in the chuck.
7. Verify that the shutter can swing into the notch on the collimator (Fig. 12) and fully occludes the source beam. Open and close the shutter using the "O" and "C" commands in OPTION 5 (STATIC COUNTER). If actuation is not smooth, adjust the collimator position. If actuation still is not smooth, notify LUNAR. Close the shutter.
8. Remove the source holder (lead) cap from the top of the collimator.
9. Replace and lock the lucite window. NOTE: The "HOME" position should be nearest the scan arm side of the table.
10. Monitor radiation levels around the table to insure operator safety.
11. Return to the computer's main menu and select OPTION 3 - "SCAN STANDARD AND Q/A". All measurements should yield a passing status.

This completes the source installation procedures.

FIGURE 13  
Source Collimator Details

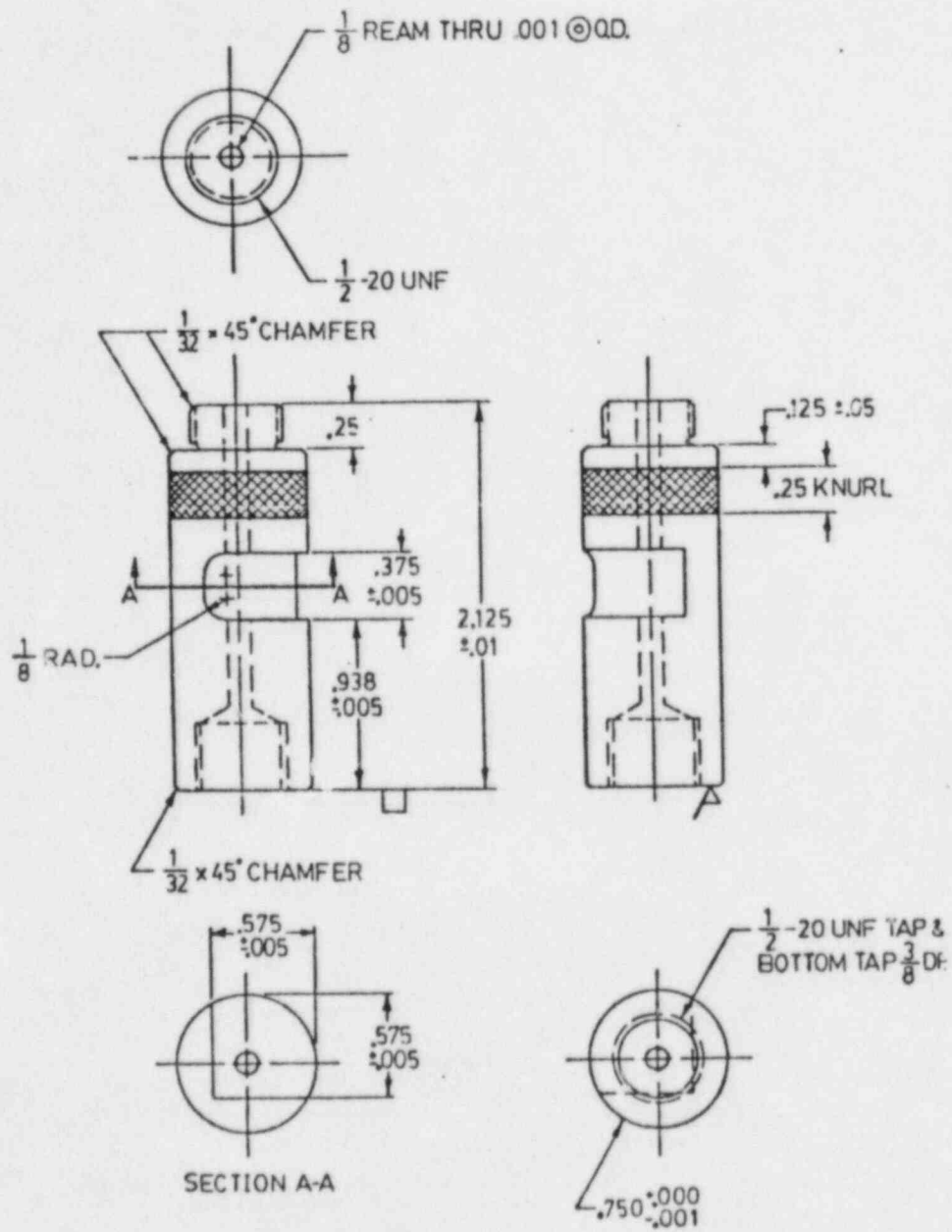


FIGURE 12  
Side View of Transverse Carriage Assembly

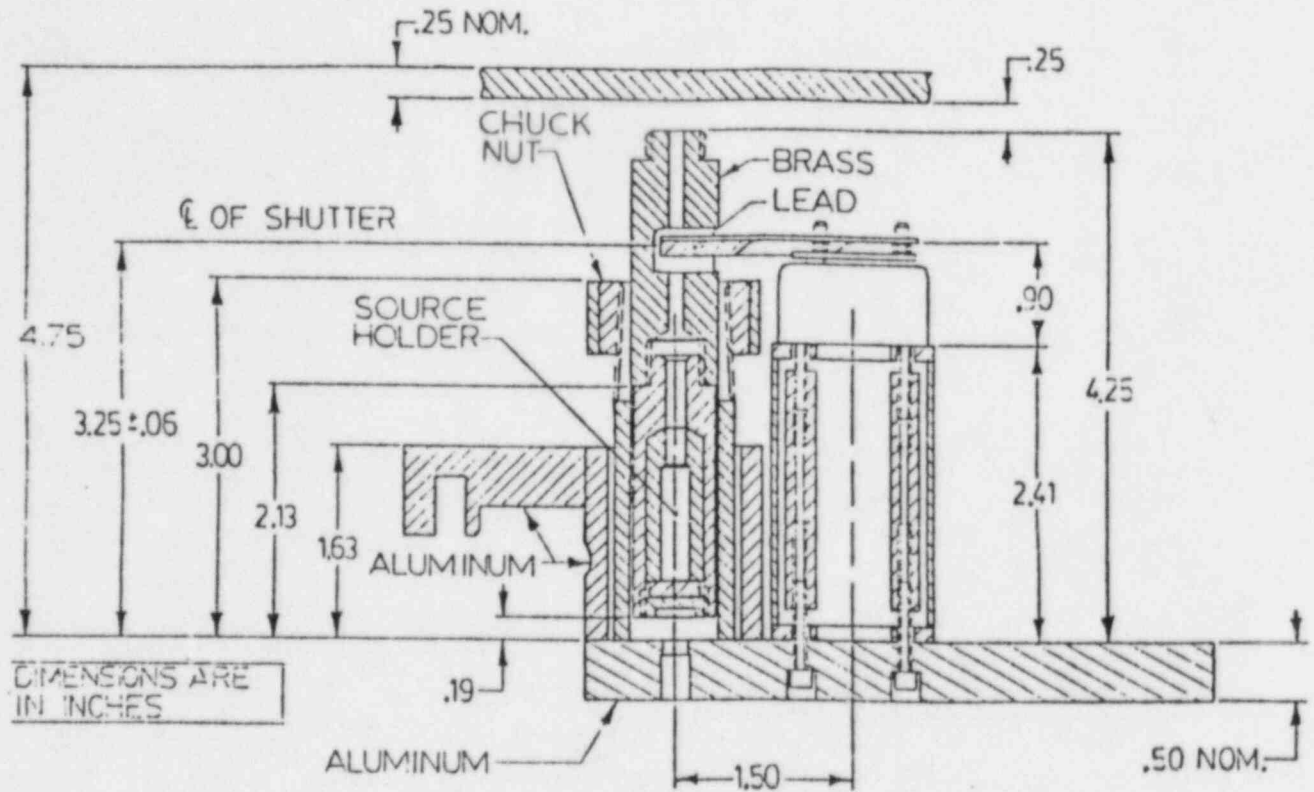


FIGURE 10  
Source Collimator/Holder Assembly

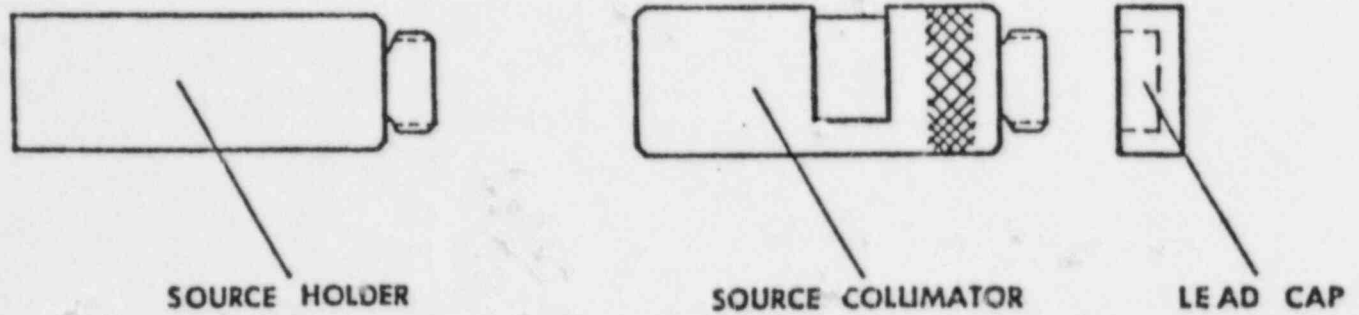
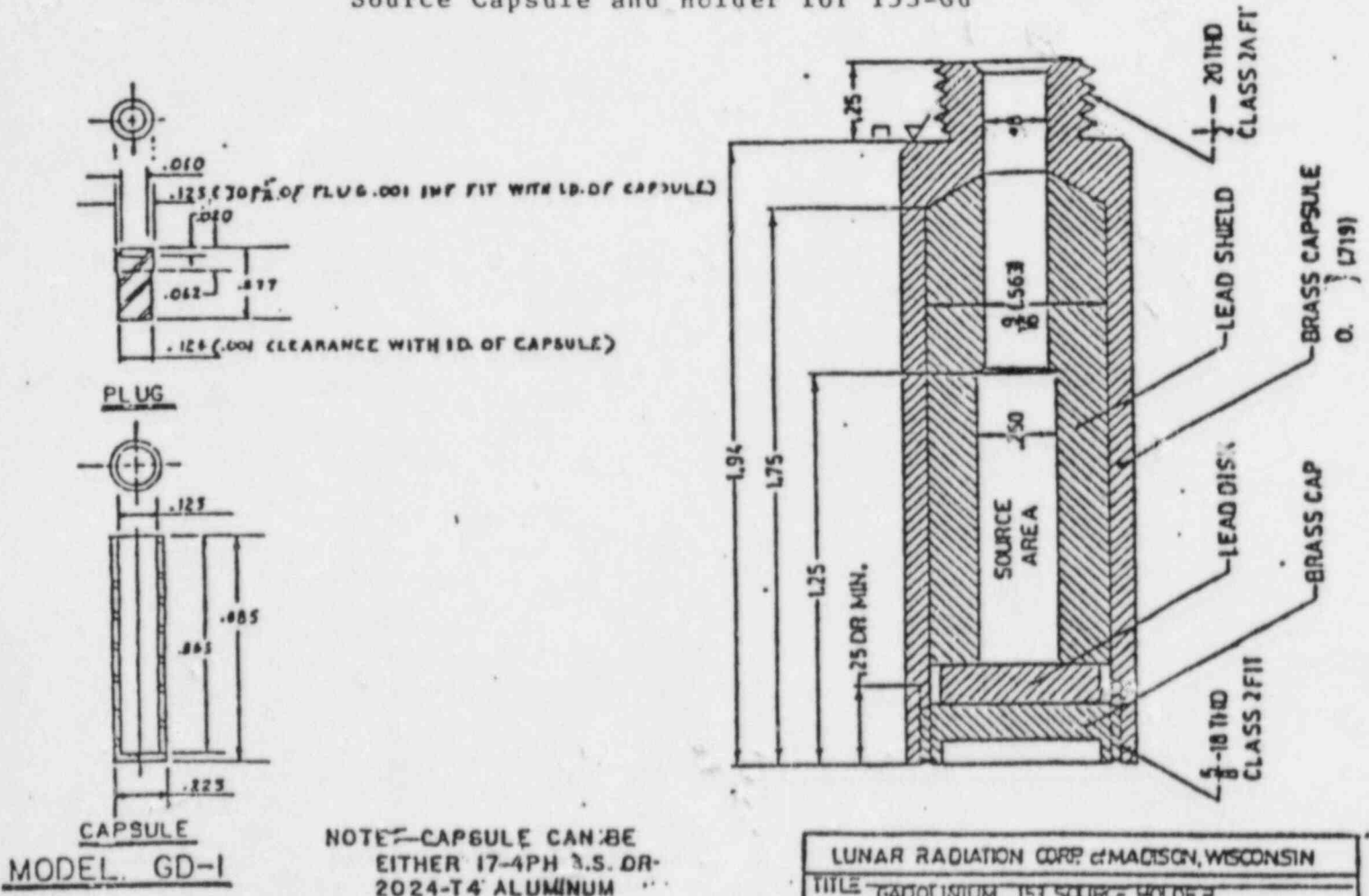


FIGURE 11  
Source Capsule and Holder for 153-Gd



PROVISIONS			GULF NUCLEAR, INC.		
NO.	DATE	BY	GADOLINIUM CAPSULE		
1			DRAWN BY FGI	SCALE NONE	MATERIAL 17-4PH 3.5
2					
3			CHK'D	DATE 4-3-77	DRAWING NO.
4			PRACED	APP'D	A-120

LUNAR RADIATION CORP. of MADISON, WISCONSIN	
TITLE <u>GADOLINIUM 153 SOURCE HOLDER</u>	
CHAR.	MATERIAL
	BRASS & LEAD
FOR ASSEMBLY	TOLERANCES (UNLESS OTHERWISE SPECIFIED)
	.00±.01 .000±.001
SCALE	DIMENSIONS ARE IN INCHES
4:1	ALL WALL THICKNESSES AND CORNERS
DESIGNED BY J. R. FUSCH 2/82	