


**DEACONESS
HOSPITAL**

DEPARTMENT OF RADIATION THERAPY
Telephone (812) 426-3366

JULY 21, 1986

U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

RE: CONTROL NO. 81501 LICENSE NO. 13-00142-02

Gentlemen:

The following is submitted as addition information for our license amendment request dated June 6, 1986, for Gadolinium-153 bone mineral scanning. The information is submitted in response to your letter dated June 30, 1986.

1. Enclosed is a copy of the manufacturer's procedure for source installation and source removal. We will follow this procedure.
2. Source Disposal: Sealed depleted sources will be returned to the manufacturer, who will be informed of the pending shipment date and anticipated arrival date. In the event the manufacturer no longer is in business, or for other reasons cannot accept the source, an alternate waste disposal will be sought.
3. Service and maintenance of the bone mineral analyzer involving the source holder and/or shutter mechanism will be performed either by the manufacturer or by other persons specifically authorized by the Nuclear Regulatory Commission or an Agreement State.
4. Enclosed is a drawing of a section of the Women's Center on the fourth floor of Deaconess Hospital where the bone mineral analyzer will be installed. The unit will either be installed in the Conference Room (existing) or in a room to be constructed in available adjacent space (Labeled Alternate Room on the drawing.) Both rooms have entries visible to Women's Center receptionist, and the room which will have the unit installed will be locked during non-working hours, and will be posted with a standard Radioactive Materials sign.

We hope that the above completes the requirements for the license amendment, and that it can be acted upon expediently even though we can only indicate the general area where the bone mineral analyzer will be installed.

8610020007 860820
REG3 LIC30
13-00142-02 PDR

600 Mary Street, Evansville, Indiana 47747-(812) 426-3000
VHA Voluntary Hospitals of America, Inc.

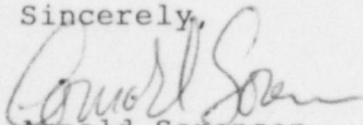
JUL 28 1986

U.S. Nuclear Regulatory Commission

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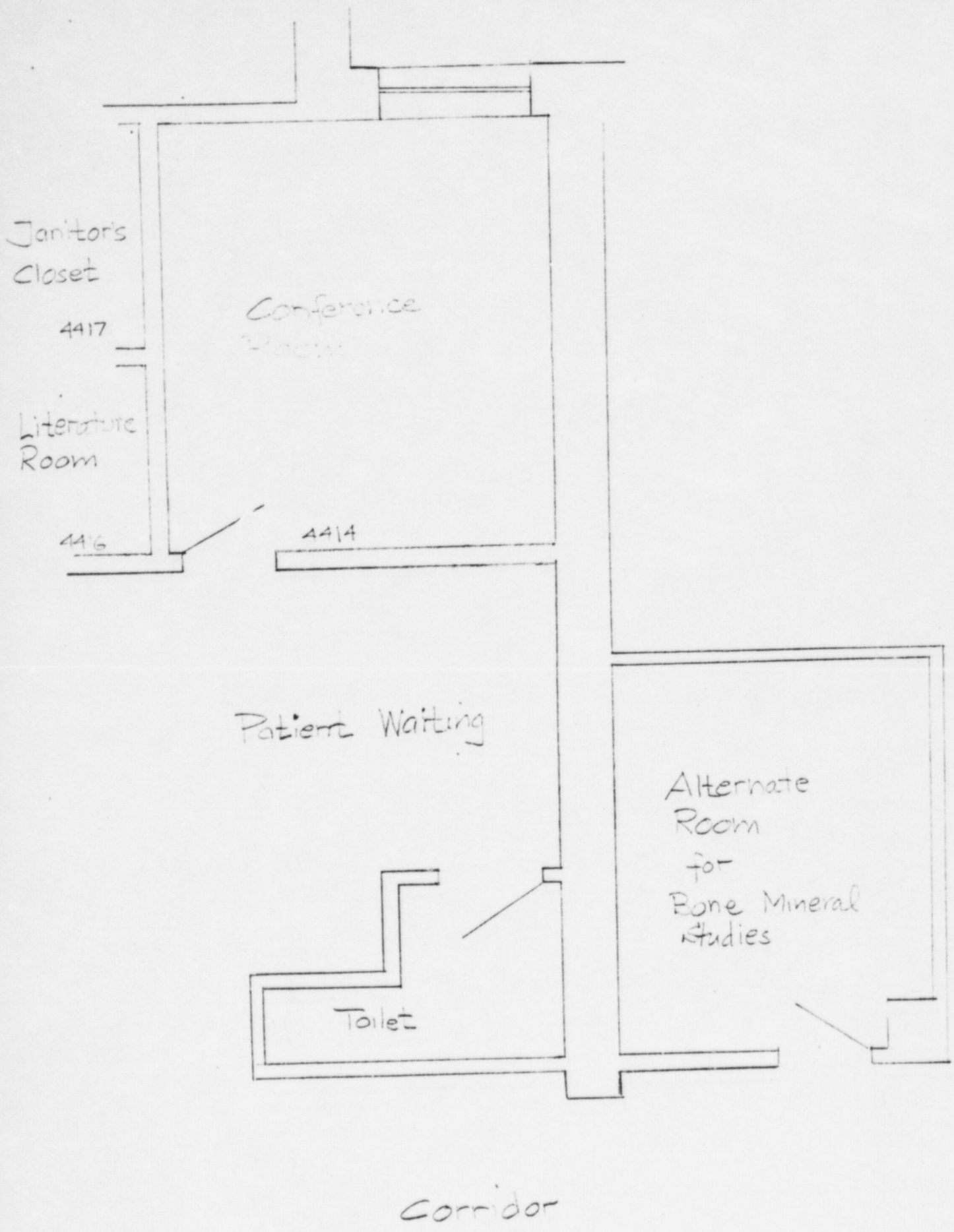
July 21, 1986

Sincerely,

A handwritten signature in cursive script, appearing to read "Arnold Sorensen".

Arnold Sorensen
Radiation Safety Officer

cc: W. Newhouse
Radiology Administrative Director



DEACONESS HOSPITAL
EVANSVILLE INDIANA

SCALE 1/4" = 10"

A. SORENSEN 7/22/56

Rcd 7/10/86
A. Sorensen

SAFETY AND INSTALLATION INSTRUCTIONS FOR THE LUNAR DUAL-PHOTON SCANNER.

CAUTION: Only individuals trained in the principles of radiation safety and protection should conduct these procedures.

Warnings: All steps should be performed without the use of tools.

The radioactive source used by the Lunar dual-photon scanner is Gadolinium-153. It has half-life of 242 days. The patient is subjected to a non-invasive radioactive beam, which is occluded by a lead shutter when not scanning.

The radiation safety officer should study the following procedures before an actual source installation/exchange is attempted. A press-on label with the wording "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 performed. Refer to the appropriate guidelines for required posting and handling rules.

SOURCE INSTALLATION

1. Unlock and remove the lucite insert on the scan table.
2. Manually position the arm and source at the center of the scan window. CAUTION: Be careful to keep hands and other body parts clear of the actual radiation beam.
3. Manually open shutter. Turn the source chuck nut (fig. 1) counterclockwise until the nut holds the shutter open. Do not remove the source nut.
4. Remove the source collimator by sliding it upward out of the source chuck. Remove the lead cap from the source holder and place it on the source collimator, see Fig. 1.
5. Thread the source holder onto the base of the collimator. The source collimator and holder can now be handled as a single unit.
6. Slide the source collimator/holder assembly into the source chuck 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 nut). See Fig. 2
7. Turn the source chuck nut clockwise until the collimator is held firmly in the chuck.
8. Verify that the shutter can swing into the notch on the collimator and fully occludes the source beam. Open and close the shutter manually. If actuation is not smooth, adjust the collimator position. If actuation still is not smooth, notify LUNAR. Close the shutter.

9. Remove the source holder lead cap from the top of the collimator.
10. Replace and lock the lucite window.
11. Monitor the radiation levels around the table to insure operator safety.
12. Return to the computer's main menu and select 'system calibration' on DP3B or 'peak options' on DP3A. All measurements should yield a passing status.

This completes the source installation procedures.

SOURCE EXCHANGE

1. Unlock and remove the lucite window on the scan table.
2. Manually position the arm and source at the center of the window.
3. Place a lead cap onto the collimator/source holder assembly.
4. Manually open the shutter. Turn the source nut (Fig 2) counterclockwise until the nut holds the shutter open. Do not remove the source nut.
5. Remove the source holder collimator (which will ^{lose} the source holder attached) out of the chuck.
6. Unscrew the depleted source holder from the base of the collimator. Take the lead cap from the collimator and attach it to the threaded end of the source holder.
CAUTION: Avoid exposure to the open end of the source holder.
7. Remove the lead cap from the new source holder and place over the end of the collimator.
8. From this point, follow the instructions from step 5, of source installation.

FIGURE 1
Gd-153 Source Collimator/Holder Assembly
for DP3 Scanner

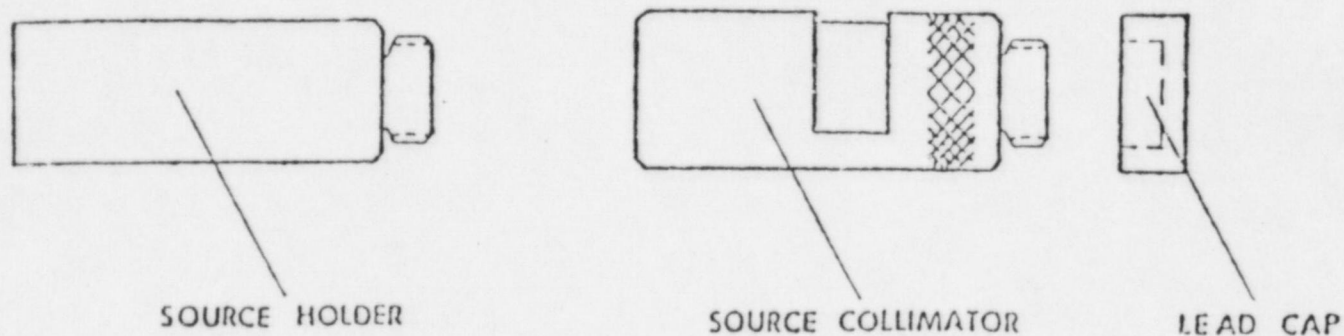


FIGURE 2
Side View of Transverse Carriage of DP3 Scanner

