

# J. B. Thomas Hospital

15 KING STREET, PEABODY, MASS. 01960  
TELEPHONE 531-2900

Control No. 06117

2 December 1981

John E. Glenn, Ph.D.  
U.S. Nuclear Regulatory Commission  
Material Licensing Branch  
Division of Fuel Cycle and Material Safety  
631 Park Avenue  
King of Prussia, PA. 19406

Dear Dr. Glenn:

This is in response to your letter of 26 October 1981 with specific questions regarding our application to renew License No. 20-14073-01. We will answer the questions in order:

- 1.) The Radiation Safety Committee at J.B. Thomas meets at least quarterly.
- 2.) We have a Ludlum Model 177 Rate Meter and a Victoreen Model 489-110 Probe (window 1.5 to 2 mg/cm<sup>2</sup> mica) which we use for our surveys. The minimum detectable limit on this unit is 0.02mR/hr.
- 3.) The Radiation Safety Officer's name and telephone number is listed on the actual memorandum.
- 4.) Find enclosed diagram of the radioactive waste storage area. The area will be surveyed weekly, provided radioactive materials are in storage there.
- 5.) Find enclosed signed and dated copy of our ALARA program.

If you have any further questions, please do not hesitate to contact the undersigned.

Sincerely,

*Edward O'Keefe*  
Edward O'Keefe

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REG1 LIC30  
20-14073-01 PDR

Enclosures

"OFFICIAL RECORD COPY"

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XVI.

2. Only Registered Nurses are accepted for private duty nurses. The Supervisor is responsible for checking the registration of the oncoming nurse. They must possess a current Registration in Nursing for Massachusetts. If they show an expired license or do not have theirs with them, they cannot work.
3. Private Duty Nurses must sign in the appropriate book in the Nursing Supervisors' Office.
4. The care of the patient being specialized is still the responsibility of the Charge Nurse on the respective unit and of the Supervisor.

XVII. Pay Checks

When checks are ready on Thursday, employees may pick up their checks in the Secretary's Office between 3 - 4 p.m. On Friday checks can be picked up between 8 a.m. and 4 p.m.

The Supervisor will distribute paychecks to nursing department employees working on the second and third shift on Thursday and Friday.

Checks are not available after 4 p.m. on Friday and all day Saturday and Sunday unless the employee is on duty.

XVIII. Receipt of Packages Containing Radioactive Material

Any packages containing radioactive material that arrive between 4:00 p.m. and 8:00 a.m. or during the weekends shall be signed for by the Nursing Supervisor on duty and taken immediately to the Nuclear Medicine Department. Unlock the door, place the package in the Radio-pharmacy and relock the door. If the package is wet or appears to be damaged, immediately contact the hospital Radiation Safety Officer and the Nuclear Medicine Technician on call. Ask the carrier to remain at the hospital until it can be determined that neither he nor the delivery vehicle is contaminated.

It is to be strongly emphasized that the Nursing Supervisor on duty is the only person during these times who has the authority to accept these parcels.

⇒ RADIATION SAFETY OFFICER: Thomas J. Lapine, M.D.

OFFICE PHONE: 532-2800

HOME PHONE: 774-0473

The On-call technician can be reached through the switchboard operator.

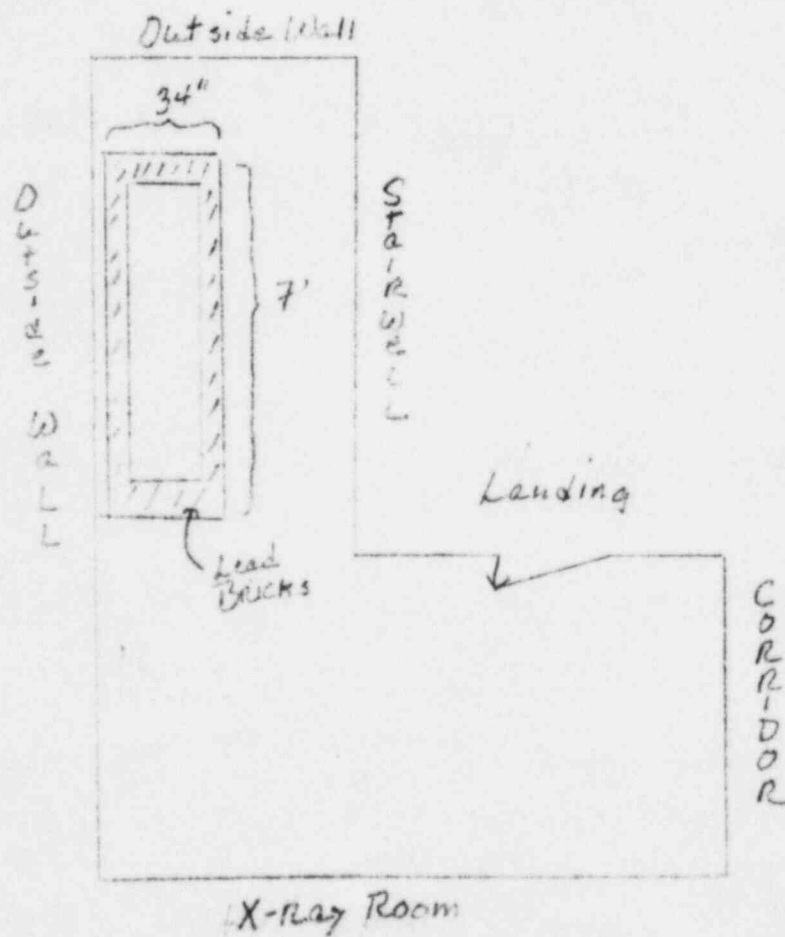
XIX. Sick Calls

On 3-11, 11-7, weekends and holidays the Supervisor will accept sick calls. The name of the person, the time of call, and reason for absence must be documented by the Supervisor in the "Sick Book". The Supervisor must also draw a circle around the name of the person in the Daily Staffing Book.

XX. Surgical Bookings

- A. When surgery is booked late in the day for the following day, the Supervisor is responsible for booking the surgery. She may delegate this responsibility to some other capable person.

J.B. Thomas Hospital ~ Waste Storage  
Ground Floor (below grade)



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- d. In addition to maintaining doses to individuals as far below the limits as is reasonably achievable, the sum of the doses received by all exposure individuals will also be maintained at the lowest practicable level. It would not be desirable, for example, to hold the highest doses to individuals to some fraction of the applicable limit if this involved exposing additional people and significantly increasing the sum of radiation doses received by all involved individuals.

## II. Radiation Safety Committee (RSC):

### a. Review of Proposed Users and Uses:

1. The RSC will thoroughly review the qualifications of each applicant with respect to the types and quantities of materials and uses for which he has applied to assure that the applicant will be able to take appropriate measures to maintain exposure ALARA.
2. When considering a new use of byproduct material, the RSC will review the efforts of the applicant to maintain exposure ALARA. The user should have systematized procedures to ensure ALARA, and shall have incorporated the use of special equipment such as syringe shields, rubber gloves, etc., in his proposed use.
3. The RSC will ensure that the user justifies his procedures and that dose will be ALARA (individual and collective).

### b. Delegation of Authority:

1. The RSC will delegate authority to the RSO for enforcement of the ALARA concept.
2. The RSC will support the RSO in those instances where it is necessary for the RSO to assert his authority. Where the RSO has been overruled, the Committee will record the basis for its action in the minutes of the Committee's quarterly meeting.

c. Review of ALARA Program:

1. The RSC will encourage all users to review current procedures and develop new procedures as appropriate to implement the ALARA concept.
2. The RSC will perform a quarterly review of occupational radiation exposure with particular attention to instances where Investigational Levels in Table I below are exceeded. The principle purpose of this review is to assess trends in occupational exposure as an index of the ALARA program quality and to decide if action is warranted when Investigational Levels are exceeded (see paragraph VI).
3. The RSC will evaluate our hospital's overall efforts for maintaining exposures ALARA on an annual basis. This review will include the efforts of the RSO, authorized users, and workers as well as those of management.

III. Radiation Safety Officer (RSO):

a. Annual and Quarterly Review:

1. Annual review of the Radiation Safety Program. The RSO will perform an annual review of the Radiation Safety Program for adherence to ALARA concepts. Reviews of specific procedures may be conducted on a more frequent basis.
2. Monthly review of Occupational Exposures. The RSO will review monthly the external radiation exposures of authorized users and workers to determine that their exposures are ALARA in accordance with the provisions of paragraph VI of this program.
3. Quarterly reviews of records of Radiation Level Surveys. The RSO will review radiation levels in unrestricted and restricted areas to determine that they were at ALARA levels during the previous quarter.

b. Education Responsibilities for an ALARA Program

1. The RSO will schedule briefings and educational sessions to inform workers of ALARA program efforts.

2. The RSO will assure that authorized users, workers and ancillary personnel who may be exposed to radiation will be instructed in the ALARA philosophy and informed that management, the RSC and the RSO are committed to implementing the ALARA concept.

c. Cooperative Efforts for Development of ALARA Procedures:

Radiation workers will be given opportunities to participate in formulation of the procedures that they will be required to follow.

1. The RSO will be in close contact with all users and workers in order to develop ALARA procedures for working with radioactive materials.
2. The RSO will establish procedures for receiving and evaluating the suggestions of individual workers for improving health physics practices and encourage the use of those procedures.

d. Reviewing Instances of Deviation from Good ALARA Practices:

The RSO will investigate all known instances of deviation from good ALARA practices; if possible, determine the causes. When the cause is known, the RSO will require changes in the program to maintain exposures ALARA.

IV. Authorized Users:

a. New Procedures Involving Potential Radiation Exposures:

1. The authorized user will consult with, and receive the approval of, the RSO and/or RSC during the planning stage before using radioactive materials for a new procedure.
2. The authorized user will evaluate all procedures before using radioactive materials to ensure that exposures will be kept ALARA. This may be enhanced through the application of trial runs.

b. Responsibility of the Authorized User to Those He Supervises:

1. The authorized user will explain the ALARA concept and his commitment to maintain exposures ALARA to all of those he supervises.



2. The authorized user will ensure that those under his supervision who are subject to occupational radiation exposure are trained and educated in good health physics practices and in maintaining exposures ALARA.

V. Persons Who Receive Occupational Radiation Exposure:

- a. The worker will be instructed in the ALARA concept and its relationship to his working procedures and work conditions.
- b. The worker will know what recourses are available if he feels that ALARA is not being promoted on the job.

VI. Establishment of Investigational Levels in Order to Monitor Occupational External Radiation Exposures:

This hospital hereby establishes Investigational Levels for occupational external radiation exposure which, when exceeded, will initiate review or investigation by the Radiation Safety Committee and/or the Radiation Safety Officer. The Investigational Levels that we have adopted are listed in Table I below. These levels apply to the exposure of individual workers.

Table 1

	Investigational Levels- (mrems per calendar quarter)	
	Level I	Level II
1. Whole body; head and trunk; active blood-forming organs; lens of eyes; or gonads	125	375
2. Hands and forearms; feet and ankles	1875	5625
3. Skin of whole body*	750	2250

\*Not normally applicable to nuclear medicine operations except those using significant quantities of beta emitting isotopes.

The Radiation Safety Officer will review and record on Form NRC-5, Current Occupational External Radiation Exposures, or an equivalent form (e.g. dosimeter processor's report), results of personnel monitoring, not less than once in any calendar quarter, as is required by 10 CFR 20, §20.401. The following actions will be taken at the Investigational Levels as stated in Table 1:

- a. Quarterly exposure of individuals to less than Investigational Level I.

Except when deemed appropriate by the RSO, no further action will be taken in those cases where an individual's exposure is less than Table I values for the Investigational Level I.

- b. Personnel exposures equal to or greater than Investigational Level I, but less than Investigational Level II.

The RSO will review the exposure of each individual whose quarterly exposures equal or exceed Investigational Level I. He will report the results of his reviews at the first RSC meeting following the quarter when the exposure was recorded. If the exposure does not equal or exceed Investigational Level II, no action related specifically to the exposure is required unless deemed appropriate by the Committee. The Committee will, however, consider each such exposure in comparison with those of others performing similar tasks as an index of ALARA program quality and will record the review in the Committee minutes.

- c. Exposure equal to or greater than Investigational Level II.

The RSO will investigate in a timely manner the cause(s) of all personnel exposures equaling or exceeding Investigational Level II and, if warranted, take action. A report of the investigation, actions taken, if any, and a copy of the individual's Form NRC-5 or its equivalent will be presented to the RSC at the first RSC meeting following completion of the investigation. The details of these reports will be recorded in the Committee minutes. Committee minutes will be sent to the management of this hospital for review. The minutes, containing details of the investigation, will be made available to NRC inspectors for review at the time of the next inspection.

- d. Re-establishment of an individual occupational worker's Investigational Level II above that listed in Table I.

In cases where a worker's or a group of worker's exposures need to exceed Investigational Level II, a new, higher Investigational Level II may be established on the basis that it is consistent with good ALARA practices for that individual or group. Justification for a new Investigational Level II will be documented.



The Radiation Safety Committee will review the justification for, and will approve, all revisions of Investigational Levels II. In such cases, when the exposure equals or exceeds the newly established Investigational Level II, those actions listed in paragraph c above will be followed.

VII. Signature of Certifying Official

I hereby certify that this hospital has implemented the ALARA Program set forth above.

Edward C. O'Keefe  
Signature

Edward C. O'Keefe  
Name (print or type)

Administrator  
Title

8/18/80  
Date