



Christian Hospital
Northeast-Northwest
Corporate Office
11133 Dunn Road
St. Louis, Missouri 63136
(314) 355-2300

Fred L. Brown, FACHA
President and Chief Executive Officer

February 22, 1984

William J. Adam, Ph.D.
Materials Licensing Section
USNRC - Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

RE: Control 75927, Response to letter dated January 25, 1984
Replacing letter dated February 8, 1984

Dear Dr. Adam:

In response to your letter requesting additional information:

- 1) Our survey instruments will be calibrated on an annual basis, or after repair.
- 2) Dr. William L. Walter will be the person responsible on behalf of Christian Hospital for the use of the Sr-90 eye applicator. Dr. Walter is an authorized user on our license.
- 3) In accordance with CFR 10, 20.105(a), we are including at the time of our application for use of Group VI sources proposed limits other than those stated in 20.105(b). The purpose of these proposed limits is not to allow us to routinely exceed the 20.105(b) limits, but rather to ensure compliance with our license for the occasional cases, in which exposure levels outside the patient's room may exceed 100 mR in any consecutive seven days, or 2 mR in any one hour.

We primarily plan to use one room (Room 327) for the implant cases. If the room is used for two consecutive implants each of 50 hours, and the exposure rate in the hallway is 1.5 mR, then the total exposure in the hall will be 150 mR in four days, exceeding the 100 mR in any consecutive seven days. Certainly from a practical point of view, this does not present a hazard as no individual (workers, visitors, etc.) will be continuously present in the area. For a hallway, an occupancy factor of 1/4 is generally assumed. Nonetheless, this would be a technical violation. Room 327 is currently the room of choice because only one other room (Room 326) adjoins it.

RECEIVED

8508050122 850717
REG3 LIC30
24-13383-01 PDR

MAR 05 1984

MAR 5 1984

REGION III

Thus, we wish to propose our seven day exposure limit be based on occupancy factors of :

Hallways - 1/4

We plan to shield, when necessary, our implant patients with portable radiation shields. The radiation shield is finite in size. It is possible that the exposure level in the hallway just past the solid angle defined by the source - shield(s) geometry may be above 2 mR/hr. While an individual might be present continuously for one hour, certainly no one would be present continuously for four hours, day after day. Therefore, exposure to an individual, even if 5 mR/hr. levels were present, will highly likely be less than 100 mR during one work week.

Therefore, we request that for Group VI sources the limit for radiation levels be:

- (a) No radiation level shall be present in an existing hallway such that considering occupancy factors, an individual will receive 2 millirems in one hour. No exposure level shall be greater than 5 mR/hr. continuous radiation in unrestricted areas.
- (b) No radiation level shall be present such that considering occupancy factors, an individual will receive 100 millirems in one week.

Should you have any further questions concerning this amendment, please contact David Keys, Radiation Safety Officer, at (314) 355-5075. As mentioned in the reference, this letter replaces the letter dated February 8, 1984.

Sincerely,



Fred L. Brown
President and Chief Executive Officer

DJK,FLB/jl