



THE
GREENWICH HOSPITAL
ASSOCIATION

PERRYRIDGE ROAD
GREENWICH, CONNECTICUT 06830 • TEL: 203 860-7000

February 3, 1987

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Mr. Thomas K. Thompson
Nuclear Materials Safety Section B
Division of Radiation Safety & Safeguards
U.S. Nuclear Regulatory Commission
Region I²
631 Park Avenue
King of Prussia, PA 19406

Re: Survey report of 6 December 1986
License # 06 09522 02
Docket # 030 00118
Mail control # 106571

Dear Mr. Thompson:

We are in receipt of your letter dated 29 January 1987 in which additional information was required concerning the Teletherapy Source Exchange Report. Information that you so desire is as follows:

(1) Our physicist is well aware of the differences between timer accuracy and source transit error. Timer accuracy is defined as the variation between the "set" treatment time and "actual" treatment time. Source transit error is defined as the amount of time required for the source to come to the full "on" position after the treatment timer is activated.

Source transit error is evaluated during the monthly spot checks and at the time of the annual calibration. Source transit error is evaluated by the NE CRP method, as follows:

$$\epsilon = (R_2 t_1 - R_1 t_2) / (R_1 - R_2)$$

where; ϵ = source transit error
t = set time
R = measured exposure

(2) With respect to your inquiry into assurance that unrestricted areas outside of the teletherapy room will not exceed 2 mR in any one hour, please note:

(a) You state that the use of weekly averages based upon a weekly "beam on" time of 8.75 hours is not sufficient to assure compliance. However, Appendix E, Section 1 (Unrestricted Areas),

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Part b(2) of the GUIDE FOR THE PREPARATION OF APPLICATIONS FOR LICENSES IN MEDICAL TELETHERAPY PROGRAMS; Task TM 608 4 (Division 10); March 1982, states that the licensee "... may take advantage of the "on time" (ie: that fraction of an hour or week during which the primary beam of radiation is "on" regardless of the orientation of the beam)....;

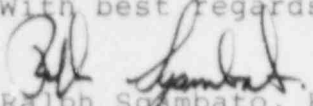
(b) Section 20.105(b)(1) and (2) of 10 CFR 20 which deals with permissible levels of radiation in unrestricted areas, clearly states that radiation levels in an unrestricted area, if an individual were continuously present in the area, could result in his receiving a dose in excess of 2 mRem in any one hour OR a dose in excess of 100 mRem in any seven consecutive days. The word "or" between Part (1) and Part (2) of Section 20.105(b) of 10 CFR 20 is important since it implies that either of the dose limits are applicable;

(c) A review of the survey report indicates that no unrestricted areas (code "U" on the report) have radiation levels in excess of 2 mR/hr. Therefore, unrestricted areas (Code "U") cannot exceed a dose of 2 mRem in any one hour.

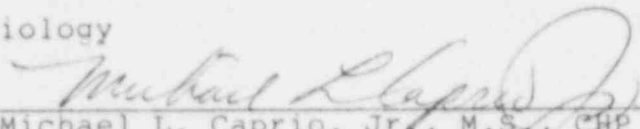
(3) Mr. Caprio, Jr is listed as this hospital's qualified expert. Please reference Condition #24 of Amendment #10 of NRC License # 06 09522 02 as issued to Greenwich Hospital Association : Perryridge Road : Greenwich : CT for this listing.

If any additional information is required, please do not hesitate to contact the hospital.

With best regards,


Ralph Scambato, RSO
Manager, Dept of Radiology

Report prepared by:


Michael L. Caprio, Jr., M.S., CHP
Certified Health Physicist

cc: GHA file
RPS file