030-00572

DEPARTMENT OF THE ARMY
HEADQUARTERS, TRIPLER ARMY MEDICAL CENTER
TRIPLER AMC, HAWAII 96859-5000

REPLY TO
ATTENTION OF:

August 26, 1986

Radiation Protection
Office

United States Nuclear Regulatory Commission, Region V
ATTN: Mr. David D. Skov
1450 Maria Lane, Suite 210
Walnut Creek, California 94596

Dear Mr.Skov:

Request that Item 6 of United States Nuclear Regulatory Commission (USNRC) Byproduct Material License 53-00458-05 be amended to include the irradiation of human blood and blood products.

This procedure requires that the blood be irradiated with 1000 Rad. The blood is irradiated one package at a time. The field size is determined to cover the entire package. Midway through the treatment, the package is inverted to ensure an equal dose distribution to the blood elements. The time required to deliver 1000 Rad is derived using the following equation:

$$\text{TIME} = \frac{\text{TOTAL DOSE}}{\text{Calibration dose rate} \times \text{Inverse square} \times \text{Field Size Dependence} \times \text{Backscatter Field}}$$

The procedure is performed by the same technologists that perform teletherapy procedures on Tripler Army Medical Center's (TAMC) patients, under the supervision of the approved user. The beam is never taken off of the beam stop for this procedure. The teletherapy unit is operated with the gantry at 0 degrees and the teletherapy head at 0 degrees.

The average time required to deliver 1000 Rad to the packages of blood is 8 minutes. The maximum anticipated workload is 25 packages of blood per week. This requires an on-time of less than 45 hours per quarter.

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Utilizing the radiation exposure readings in Table 2 Item 9 (i.e., gantry and teletherapy head in the most adverse position and the beam stop in the beam) and assuming an occupancy factor of 1, the greatest exposure that any individual may receive as a result of this procedure is 9 milli-rem per quarter. This is of-course well below the requirements of 10CFR20.

This procedure has been performed in the past at TAMC, as a previous Radiation Protection Officer (RPO) judged it to be "human use". A telephone conversation between Mr. David Skov of the USNRC and Captain Douglas G. Ashby, the current TAMC RPO, indicated that an amendment to the license would be required for TAMC to continue to perform this procedure.

For further information on this contact Captain Douglas G. Ashby at (808) 433-6925.

Sincerely,

Paul D. Robertus
Major, U.S. Army
Chief, Administrative Services

Copy Furnished:

United States Army Health Services Command (HSCL-P)