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Dr. James G. Kereiakes
Radioisotope Laboratory
Cincinnati General Hospital
Cincinnati, Ohio 45229

Dear Dr. Kereiakes:

Enclosed is a copy of the dose estimates that have been made for the Cincinnati total body irradiation patients by means of a comparison of your Eldorado teletherapy unit and the ORINS ⁶⁰Co temporary irradiator. These estimates were made based on the results of Hayes' ferrous-sulfate dosimetry study, as we discussed at the work conference and over the phone last week. I am also enclosing a copy of Hayes' paper and a Table showing the Conversion factors for the whole-body average dose from the free-air exposure at various body weights.

The values in Table I were obtained by graphing the conversion factor for each of the three phantoms against the phantoms' weight, and assuming the relation is a smoothly varying one, just as in Hayes' Figure 5. The patient's whole-body average dose estimate is then simply the conversion factor for the patient's weight multiplied by the free-air mid-line exposure.

I plan to recalculate these doses based on Mayneord's method in the near future. I am looking forward to comparing results with you and seeing how our estimates compare to those from Hayes' work.

If there is any additional information needed, please let me know.

Sincerely,



Wm. L. (Jack) Beck

WLB:jb

Enclosures 3

TABLE I
ORINS TBI WEIGHT CORRECTED RAD/R

CONVERSION FACTORS

Body Weight in Pounds	WHOLE BODY RAD/R FACTORS			AVERAGE ABDOMINAL RAD/R FACTORS		
	¹³⁷ Cs TBI Facility	Temporary ⁶⁰ Co Unit	Westinghouse ⁶⁰ Co Unit	¹³⁷ Cs TBI Facility	Temporary ⁶⁰ Co Unit	Westinghouse ⁶⁰ Co Unit
35-45	.75	.77	.82	.71	.74	.76
45-55	.75	.74	.79	.71	.71	.72
55-65	.75	.71	.78	.70	.69	.70
65-75	.75	.69	.76	.70	.66	.69
75-85	.74	.67	.75	.69	.63	.68
85-95	.74	.65	.74	.69	.62	.67
95-105	.74	.64	.74	.69	.60	.66
105-115	.73	.63	.73	.68	.59	.66
115-125	.72	.62	.73	.67	.58	.65
125-135	.72	.61	.73	.67	.58	.65
135-145	.71	.61	.73	.67	.57	.65
145-155	.70	.61	.73	.66	.57	.65
155-165	.70	.61	.73	.66	.57	.65
165-175	.69	.61	.73	.65	.56	.65
175-185	.69	.60	.73	.65	.56	.65
185-195	.68	.60	.73	.64	.56	.65
195-205	.68	.60	.73	.63	.55	.65

