[redacted]

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Division of Biology and [redacted]edicine

May 21, 1954

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Biophysics Branch, [redacted]ion of Biology and Medicine

INTERPRETATION OF [redacted]SES FOR PU IN RONGELAP NATIVES

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This is a follow-up to [redacted]ur request for interpretation of Pu data on Rongelap natives [redacted]d in the attached paper.

According to LASL [redacted]h, the relationships between Pu excretion, body burden, and time [redacted]er exposure may be expressed in the equation

$$U = 0.23\ t^{-0.77}$$

where: U = [redacted]ry excretion per day in percentage of [redacted]ted dose
t = time after ingestion.

On the 24th day, the [redacted]entage of excretion would have been about 0.02 of the ingested [redacted]. Assuming that the rate of excretion of urine was 1.5 liters/day, then

$$1\ d/m/l = \frac{1.5}{(2.2 \times 10^{9})(2 \times 10^{-4})} = \sim 3.4 \times 10^{-3}\ \mu c.$$

The maximum permissible [redacted]ody burden recommended by Handbook 52 for Pu is 4×10^{-2} μc. [redacted]fore

$$\frac{4 \times 10^{-2}}{3.4 \times 10^{-3}} = \sim 12\ d/m/l \text{ at 24 days}$$

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would correspond to a [redacted]imum permissible body burden.

Three of the readings on the attached data sheet are at or above this value. However, [redacted]re appears to me to be uncertainty concerning the reliability [redacted]f the data since it is unlikely, for example, that patient [redacted]ao would have excretion rates of Pu that differ by a factor of [redacted] on two successive days.

[redacted] sheets [redacted]m Dr. Harley, NYO (M.S.37078)

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