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COLLECTION CL-4

BOX No. 11331-1

May 25, 1954

FOLDER Castle General

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Dr. Gordon Dunning
Division of Biology and Medicine
U. S. Atomic Energy Commission
Washington 25, D. C.

BEST COPY AVAILABLE

Dear Gordon:

The following report dated May 24 has just been submitted to me by Bill Johnson. Will you be good enough to see to it that the information is given the proper distribution?

"Since 2/19/54, nearly continuous monitoring has been in progress for the detection of contamination of possible Pacific origin. This has consisted of air sampling for concentration and size of radioactive fallout particles and a recording G-M tube instrument for observing changes in surface activity. Samples prior to 3/1/54 were used to develop a standard decay curve for normal background radiation and all succeeding samples were compared to this curve. Filter samples were changed twice daily throughout the period of concern.

Two periods of significant change in normal background were observed. The first occurred between 0800-1620 on 4/5/54 when the air concentration approached ten times normal background. The rise and fall of the air concentration took place within a 24-hour period. Successive counts indicated that the material decayed with a slope of -2.0 on the basis of a 3/26/54 origin.

The second period of interest is not yet completed. Air concentrations about five times normal were observed on 5/10/54. A heavy rain occurred during this day also, which contained approximately 0.3 mc of beta activity per liter. Rain water from succeeding showers was radio-assayed but the highest concentration found was only about 0.03 mc/liter. Surface beta activity was noted to be 4 - 5 times normal background when measured with open-shield G-M instruments.

The contamination resulting from this latest incident is still in the air and on the ground in detectable quantities. Ten representative air samples have been observed for decay. Five of the decay curves exhibited a slope between -1.0 and -1.5 on the basis of 5/4/54 origin while the remaining five fell off more rapidly with

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slopes of -2.1 or greater. The water sample of highest concentration decayed as $t^{-1.7}$ using the same shot as its zero time.

Sampling will be continued until normal background air concentrations are obtained."

ORIGINAL SIGNED BY THOMAS L. SHIPMAN, M. D.

THOMAS L. SHIPMAN, M. D.,
Health Division Leader

TLS/lca