

TO : U.S. Fish & Game Survey  
FROM : C. H. Shantz, Ph.D.  
SUBJECT : Condition of Fishes  
SYMBOL : ~~SECRET~~

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Starting February 1958, a continuous survey of the pathological condition of the fish stocks was conducted by Dr. Allen Shantz, Health Division, U.S.A. He found that the general pattern of intensive infections in E. gouldi was not much different from what had been observed during the years following, except that Island. After 200 feet of ground, i.e., the first 200 feet of the section, there was a trend of intensification of infections. This was also true in an similar way between approximately 600 and 1000 feet. From 1000 to 1300 feet there was a small decrease in intensity. Beyond 1300 feet, i.e., after 1430 feet, the intensity of infection increased again, reaching a maximum at 1800 feet.

At the point where the intensity of infection was maximum, i.e., 1800 feet, there was a layer of sand 20 feet thick, followed by a layer of sand 100 feet thick. (Report LAB-4-L-1, page 6)

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T. L. Ripman, M.D.

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Date 16 January 1951

During January, 1951, I surveyed the area of the atomic bomb test site, Los Alamos, New Mexico, USA, for Dr. W. H. K. Tamm, Chairman of the Radiation Safety Committee, Los Alamos Scientific Laboratory, Los Alamos, New Mexico. This survey was part of a larger one of the area around the Los Alamos test site in Los Alamos and was conducted by the Los Alamos Scientific Laboratory. Following this conference, it was decided that decontamination should be done by

- (1) First, removing and dumping from the soil all of the radioactive scrap, (e.g., radioactive steel rods) that could be located.
- (2) Second, wetting the soil to saturation, and bulldozing the top layer to bury the generally adherent radioactive contamination.

Note Since it might appear that burying the contamination would not entirely solve the problem in an area where subsequent excavation work would be necessary, a discussion is made herewith forth the reasoning upon which this method of disposal was based.

On account of the great amount of radioactive waste in the soil, much of the radiation exposure of a man working in the contaminated area is due to radioactive dust. This dust is composed of radioactive particles which are suspended in the air. These particles are so small that they can remain suspended in the air for long periods of time. It has been determined that all of the radioactive material which is suspended in the air can subsequently fall to the earth. The reason for this is that the wind which is due in such a way as to disperse the radioactive material throughout the area without removing any of it (which is a matter of probability). Then the man could not continue to be exposed to radiation exposure which

T. L. Shinnin, M.D.

DATES: 16 June 1949

This theoretical calculation has been developed by practical experience has shown that the most effective method of effective decontamination of radioactive material, Health Officers, I feel, should be the removal of the radioactive material from the area, the period approximately 10 days to 14 days, the activity due to the removal of the radioactive material should be left alone. It was decided that no further work would be done in contaminated areas until some months later, when another full investigation could be undertaken.

During the period of my absence (between May 29, Dr. Ken. W. Day, Health Physicist, C.R.B., arrived on May 31, 1949 at Shinketok. He conducted a scientific examination of the situation with special emphasis on the radioactive content of ash on the two islands. He was unable to detect any significant amount of radioactivity in dust kicked up by a, ordinary performance of household. By stirring up dust into the air by artificial means, he was able to detect some radioactivity. He concluded that there was no significant amount of radioactive material present, and that the amount of radioactive material present was negligible.

On the 1st of June, Dr. Day, Dr. H. G. Smith, and myself prepared three specimens of ash, and the following day informed our personnel in radiological safety organization, Dr. Day's work is as follows in the following "Radiological Safety Manual" (Confidential): Page (20 May 1949), TD-216 (10 June 1949), TD-217 (11 June 1949), TD-218

- 1 - W. S. GOODMAN, R.D.

DATE 10 June 1953

decontamination by the following date. At that time, in April 1949, with Mr. W. S. Goodman, R.D., and Mr. H. E. Moore, about 1000 tons of decontaminated soil were delivered to the Safety Officer by Mr. John Avery, Head of Site, 1942, and General Manager. A further delivery of 1000 tons was made by Dr. G. C. Shattock, Plant Manager, on 10 May. The delivery is excerpted from his report (unpublished), dated 10 May, Assistant Engineer, dated 1 May 1950.

The islands were surveyed with Geiger-Muller instruments sensitive only to gamma. The present safe weekly dose at the present time in the laboratory area is assumed to be 300 milliroentgens (MR.) per week, with the present work week of 54 hours, the maximum dose rate for continuous exposure is about 5.5 MR. per hour.

#### Engabi - 25 February 1953

The entire graded area within the 100-foot radius from zero was found to have an activity falling off very slowly for the most part. At the outermost end of the 100-foot occasional spots with 1.5 MR. per hour could be found.

Classification of the graded area into three categories,即 graded, ungraded, and unclassified, was made on the basis of the following:

1. The amount of radiation measured in the graded area.

2. The amount of radiation measured in the ungraded area.

Top soil samples from the graded area were taken for the new tower while soil which had been left over from this has been measured to evaluate the amount of radiation the soil during operations there.

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TO: T. L. Crittenden, Major

DATE: 18 June 1953

The measurement of the radiation dose rate at Eniwetok Atoll is placed in the following report which is submitted to the Director of Research, the Weather Bureau, Washington, D. C., for their information and activity. It is also submitted to the Commandant of the Eniwetok Atoll. It would be appreciated if you would forward this report to Mr. Curtis, Director of Research, and to Mr. Shlaer, Director of the Weather Bureau, Washington, D. C.

This excerpt is taken from a report dated 22 March 1950, submitted by the Eniwetok Atoll Survey Team, Project Manager, another survey party made up of Mrs. Currier and Mr. Ashby. The following excerpt is taken from (unclassified) report to Mr. Curtis, dated 22 March 1950, and concerns all of the information contained in their report relative to working conditions on the island of Engebi.

The islands are equipped with four monitoring instruments sensitive to gamma radiation. The permissible weekly dose at the present time in the laboratory of the Islands is 300 milliroentgens (M.R.) per week. With the present work week at Eniwetok of 40 hours, the maximum dose rate for continuous exposure is about 7.5 M.R. per hour.

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The entire 40 hour work day can be taken from 0800 to 1200 hours. The radiation dose rate is measured at the end of each work period. The dose rate is detected with a Geiger-Muller tube and a Geiger counter connected to Shlaer's meter. On 20 March, the meter has been removed to the lagoon side, well out of the way of the sun.

The grading operations on Engebi have been completed.

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Date: 16 June 1953TEST AND SPECIMEN TESTS

As of the date, 6/16/53, all personnel working on work areas free of radiation hazard, either the ground or above ground, are issued Runit. This area will be utilized by the civilian engineers, technicians and radiologists which should be completed within 10 months.

At present, film badges are issued to about 1000 members of Navy personnel on Eniwetok atoll and approximately 1000 additional personnel on Eberiru and Runit.

The Navy personnel on Harry Island, a total of about 900 film badges are issued each month.

These film badges are designed to detect ionizing radiation, and from the above it is shown that no radiation hazard exists except on Eberiru and Runit. At present, the film badge industry is running at full peak in order to supply the demand for essential work.

Probably between 30,000 and 40,000 additional badges will be required for future tests here. The production of this number of badges presents a serious problem at Harry. It is felt that we are not using good judgment in using so many film badges where no ionizing radiation hazard exists.

The processing of these same numbers of film badges at Harry takes entire film badge account approximately 10 days to process and 10 days to develop.

Furthermore, one can see that there probably would be significant psychological reaction to the issuing of these badges if it exist in the presence of the normal working conditions.

It is therefore recommended, pursuant to the agreement of the Scientific Director of J.S.D., that the use of film badges be discontinued immediately. This is to be done except the workmen on

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TO: T. L. Shipman, M.D.

DATE: 16 June 1953

Unit, and that there had been no radiation survey or protection measures on this island at that time.

J. P. COONEY, M.D.  
RAD-SAFETY OFFICER, JTF-3

JACK W. AEBY  
RAD-SAFE OFFICER, ENIWETOK ATOL

A few months later, after all decommissioning operations had been completed another survey was made by Mr. John Aeby and Mr. T. L. White, H-Division, LASL. Since this was the final survey, the complete report (SC-2017) is appended. After the departure of Mr. Aeby and Mr. White on 13 May 1950, no Rad-Safe Officer was assigned to the AFIC Repair & Maintenance because it was believed to be entirely unnecessary.