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TO : Dr. John C. Bugher, M.D., Director
Division of Biology and Medicine

DATE: May 20, 1954

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411537

SUBJECT: SUGGESTED ANSWERS TO QUESTIONS RAISED BY STATE DEPARTMENT

SYMBOL: BMBP:GMD

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Below are my suggestions that might be used as a basis for answering the questions raised by the State Department re consequences of the tests at the Pacific Proving Ground.

Question 2. "Does the Administering Authority feel satisfied that there will be no long-run effects on the inhabitants, either physical or psychological, from these enormously destructive devices?"

Answer. It is expected that there will be no deleterious, long-run effects on the physical well-being of the native inhabitants. This is based on good estimates of external radiation doses as well as on the body burden of the ingested and/or inhaled fission products.*

I am not qualified to speak of psychological effects, except to point out that two points may be made:

(a) The natives were apparently satisfied with their treatment and living conditions at Kwajalein and with the announced plans to restock their islands.

(b) Possibly their greatest uncertainty is (in their minds) the uncertainty of return to their home islands despite reassurances.

*For your information I have made the following estimates based on urinalysis reports from LASL.

Radioisotope	Percentage of Maximum Permissible Body Burden Present at Time of Sampling
Pu	~10%
Sr^{89}	50%
Ba^{140}	40%
Ru^{103}	~1%

It is to be remembered that the body burden measured was at the time of urine collection and with the possible exception of Pu, will be significantly reduced in the ensuing months, while the maximum permissible body burden is based on the concept that the

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Question 4(b). "How much land was in any way damaged? What was the extent and kind of damage?"

Answer. There was no land damaged outside the test area. The fallout that occurred did not damage the land in the sense that it could not be reinhabited or could not be used for agricultural pursuits. Except for possibly the uninhabited northern islands of Rongelap Atoll, all of the islands could be re-entered safely in the near future by personnel who had not previously experienced significant radiation exposures. Since the indigenous inhabitants have already received some radiation exposure, it has been deemed wise not to allow them to return until the activity has decayed to an insignificant level. The amount of activity in the soil does not constitute a hazard to the growth and edibility of plant life.

Question 4(c). "What was the extent of sea area, including lagoons and surrounding open sea, contaminated or otherwise affected? What were the effects? How lasting are they? Will any areas require decontamination? Is there any way of doing this?"

Answer. The amount of activity in the Bikini and Eniwetok lagoons would make it unwise to eat fish from these waters without monitoring first, at least for the present. The activity in the other lagoons and in the open sea is so small that no deleterious effects may be expected to the fish themselves nor will the edibility of the fish be impaired.

No sea areas need decontamination. Certain land areas might be covered with an inactive material such as dirt, but this procedure is not recommended nor is it really necessary since the activity on practically all of the islands will be at a very low level in a few months.

/Footnote continued from previous page/ amount of activity in the body will remain constant due to equilibrium conditions with intake of activity. Also to be considered is the fact that the calculated beta dose to the thyroid was about 200-500 reps.

Question 4(d). "How many persons were injured? How many were indigenous inhabitants? What steps were taken to treat and otherwise assist them? What is their present condition?"

Answer. Sixty-four natives were evacuated from Rongelap, 18 from Ailinginae, and 154 from Utirik. Of these, about 40 natives from Rongelap showed beta radiation burns, principally on their scalps and necks. Nearly all of these burns have healed leaving no permanent marks. Some 30 natives also suffered loss of hair in small patches which is expected to be followed by regrowth of normal hair.

All of the natives were immediately evacuated to Kwajalein. Here they were given a thorough medical examination including blood counts. They have been kept under constant surveillance by an Atomic Energy Commission-Department of Defense team of medical experts. In addition to the best of medical care, the natives were well provided for in terms of food, clothing, shelter, and recreation.

There is every reason to believe that the natives will not sustain any permanent radiation injury.

Question 5(a). "Was the land area which was destroyed or rendered useless of any agricultural or economic value and, if so, does the Administering Authority plan to compensate the owners or users? How?"

Answer. There was no land area outside of the Bikini and Eniwetok Atolls that was destroyed or rendered useless of any agricultural or economic value.

Question 5(c). "To the extent that marine life (an important source of food) was contaminated, has any compensation or assistance to the inhabitants affected been undertaken or planned?"

Answer. The same answer applies here as to Question 4(c).

Second Section, Question 5. "Did any notification include the UN? Was any kind of UN approval deemed necessary, sought, or obtained? Presuming there is a right to close large danger areas of this kind, does this right include the right to contaminate international waters and marine life?"

Answer. I have no comment here except to point out that the contamination of the waters outside of the immediate lagoon has been insignificant in terms of health hazard.

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