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September 17, 1975

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Senator Olympio T. Borja, Chairman  
Special Joint Committee Concerning Rongelap  
and Utirik Atolls  
Congress of Micronesia  
Saipan, Mariana Islands 96950

Dear Senator Borja:

This is in response to a letter from Brian Farley (Aug. 27, 1975) containing questions regarding the compensation of Rongelap and Utirik people exposed to fallout. I have numbered the questions on a copy of your letter and present the following answers by these numbers:

(1) It would not be feasible to grade compensation with regard to degree of thyroid injury in the surgical cases since it is not possible to quantify degree of injury or amount of healthy thyroid tissue remaining after surgery. In any event thyroid replacement therapy used restores the normal metabolic state (dependent on thyroid function). The thyroid cancer cases following surgery have been asymptomatic and have shown no evidence of recurrence. Such recurrence is extremely unlikely since it is already well beyond the time (5 years) of usual recurrence. In answer to your query about the cases in whom the thyroid has ceased to function we have recommended (see attached letter to Mr. Rice) inclusion for compensation of the two young Rongelap men who had atrophy of the thyroid with growth retardation. Also recommended for compensation was a Rongelap woman who had a nonthyroid neurofibroma surgically removed from her neck. ~~This tumor may have been related to exposure.~~

(2) Due to their short radioactive life, none of the radioiodines involved in thyroid tumor production remained on the island when the people moved back to Rongelap. Only small amounts of other isotopes (principally  $^{90}\text{Sr}$  and  $^{137}\text{Cs}$ ) remained, which unlike radioiodines are not selectively absorbed by the thyroid gland. Therefore the thyroid dose from these isotopes and from a slight amount of gamma radiation was far below that known to produce tumors of the thyroid or other effects on the body. The finding of about the same incidence of such tumors in the population living on an uncontaminated island in Likiep atoll favored nonradiation involvement. The thyroid tumors in the Utirik population, one of which was malignant, have to be considered in a different light since the thyroids in this group received some radioiodine exposure. However, the dose received was quite low and since the incidence of benign tumors of the thyroid was about the same as in the Rongelap control and Likiep population it seems extremely unlikely that radiation was involved. This contention is supported by the fact that most of the tumors were in the older age group (as found in unexposed populations) and only one case of nodularity developed in

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a child exposed at less than 10 years of age (2% of that group) compared with 90% of the Rongelap children exposed at that age. Another important consideration is that the fallout occurred considerably later at Utirik than at Rongelap and most of the more potent short-lived isotopes of iodine had died out. The development of thyroid cancer in the Utirik woman might be considered separately since this is more rare. It is difficult however to make a case for radiation effect for one such event. As pointed out above the later arrival of fallout at Utirik, by reduction of short-lived iodine isotopes, would tend to render the thyroid exposure much less tumorigenic.

(3) The first part of question 3 was answered above under #1. I do not believe that there is basis for compensation in the woman with increased miscarriages during the first 5 years after exposure. There is no evidence that radiation was involved. Analysis of such occurrences in the much larger population of Japanese women exposed at Hiroshima and Nagasaki do not show any such effect of exposure. The lack of birth defects in the viable children born of exposed Rongelap women who had miscarriages would seem to negate a radiation effect on the germ plasma as a cause of the miscarriages. Data on the exposed women subsequent to the first 5 years show nearly the same incidence of miscarriages in the exposed and unexposed women.

(4) Regarding the death of \_\_\_\_\_ although there is no certainty that his leukemia was radiation-related the chances are in favor of it. Therefore I believe we should favor radiation etiology for compensation purposes.

(5) It is not possible to be precise. However, I will say that we are well past the period when most radiation induced leukemias are noted. With regard to thyroid tumors the number of new cases seems to be diminishing.

(6) I did not participate in the decision to move the Rongelap people back and perhaps you had best refer this question to ERDA. I might point out that our data on body burdens in people living on Rongelap show that such levels have always remained well below suggested guide lines.

I hope these answers will be helpful to you and I will be happy to help in any further way I can. Please let me know about developments with regard to the compensation bill. With kindest regards.

Sincerely,

Robert A. Conard, M.D.

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