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Department of Energy
Nevada Operations Office
P. O. Box 14100
Las Vegas, NV 89114

Mr. Gary S. Zumwalt
University of California, Davis
Department of Geology
Davis, California 95616

SEP 7 1978

Dear Mr. Zumwalt:

This will acknowledge your letter of August 29, 1978 regarding my conversation with

Although you do not mention the dates of your visits to Enewetak, I assume that they must have been in the late 1960's or early 1970's well after the conclusion of the nuclear testing at that atoll. During those years there is no credible way that a person visiting or working at Enewetak could have sustained an external radiation dose, exceeding U. S. Federal Standards, due to environmental radiation sources. Nor, by the way, is there any way, by examination or testing, of determining after the fact what dose may have been accrued.

What we can do after the fact is to assay the human body for certain gamma-emitting radionuclides and the excreta for certain others. We have done this in the case of a few people known to have participated extensively in activities on Runit and the results, without exception, have been negative. Included were persons who have picnicked and remained overnight on Runit.

My statement to if I recall it correctly, was that I do not believe he has any reason to be concerned but that if it would relieve his mind to have a bio-assay done, I would be pleased to arrange for it. The procedure is non-intrusive and could be done at Lawrence Livermore Laboratory. I make the same statements to you, not as a recommendation but simply as an offer.

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A word about the quarantive on Runit and about the "dump site" on Tilda. First, the quarantive was imposed on Runit in the spring of 1972 when we found that there were pieces of metal with a high plutonium assay on and near the surface at some locations on that island. Although these presented no particular hazard to people working on Runit, we wanted to isolate that contamination and not run the risk of spreading it, by vehicle tire or shoe sole, for example, to boats and other atoll locations. Evidence from the cleanup operation is that the primary plutonium hazard (resuspension of particles of respirable size) is extremely low even under the extraordinary conditions of surface disturbance and soil movement. As to the "dump site", I assume that you refer to the monument and underlying buried debris on the man-made causeway between Sally and Tilda. We have made many surface measurements in that area and the Defense Department has conducted fairly extensive sub-surface investigations. It appears that the debris which is buried there is very well contained, and that short of excavating to a depth of several feet it is difficult to imagine any way of becoming exposed to a radiation hazard in that area.

I hope that this letter places at least some of your concerns in clearer perspective. Please do not hesitate to write me again if you have further questions.

Sincerely,

Roger Ray
Assistant for Pacific Operations

cc w/encl of G. S. Zumwalt ltr.:
W. Weyzen, DOE/HQ
M. E. Kaye, EPA/LV

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