



Department of Energy
Washington, D.C. 20545

G36

September 28, 1979

Mrs. Ruth Van Cleve
Director, Office of
Territorial Affairs
Department of Interior
Washington, D. C. 20240

Dear Mrs. Van Cleve:

The following is in response to your verbal request that the Department of Energy assess for you the radiological consequences which might accrue to the people of Enewetak assuming that they reside only on the islands of Enewetak, Medren and Japtan, and assuming that coconut trees are planted on the northeastern islands of the Enewetak Atoll, specifically the islands of Lujor, Lojwa, Aomon, Bijire, AeJ and Alembel.

In what follows we are concerned only with potential health consequences to the people of Enewetak and not with the question of the acceptability or marketability of copra produced from the coconut trees on the world market or at specific processing facilities, nor with any possible U.S. involvement with respect to the acceptability or marketability of the copra. Information regarding the distribution or binding properties of radionuclides of concern in coconuts is not yet available, and the commercial implications of same is an issue not addressed in this letter.

The exposure estimates below are based upon preliminary information analyzed by the staff of the Lawrence Livermore Laboratory and included in their draft report entitled, "Preliminary Reassessment of the Potential Radiological Doses for Residents Resettling Enewetak Atoll." It must be emphasized that while these values are best estimates, they are only estimates and could be in error by a factor of 2 or more. Furthermore, they are based upon average values (e.g., average diets, average island contamination values, average uptake of radionuclides by food plants, etc.), and individuals will depart from the average--in either direction--to varying degrees depending upon personal lifestyles, proclivities, and diet preferences. Nor do the exposure estimates consider those individuals who might, for whatever reason, engage in practices which could lead to excessive exposures.

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Location EH
Access No. Box 1086 Jpt 9189
Folder 5470 Enewetak Cleanup

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Although the data base for the potential exposure estimates is not yet complete (e.g., the island of Lujor had not yet been factored into the dose calculations), it is not expected that additional information will substantively alter the exposure estimates; should this occur, however, we will immediately inform you.

The calculated radiation exposure levels for living only on Enewetak, Medren and Japtan islands are:

	<u>Maximum Individual</u>	<u>30-Years</u>
with imported food	11 millirem/year	100 millirem-bone marrow 69 millirem-whole body
without imported food	24 millirem/year	220 millirem-bone marrow 120 millirem-whole body

If it is assumed that 15% of their time is spent on the northern islands, and that 10% of their total intake of coconut meat/milk originates from the coconut trees of the northeastern islands, the calculated radiation exposure levels are:

	<u>Maximum Individual</u>	<u>30-Years</u>
with imported food	28 millirem/year	250 millirem-bone marrow 200 millirem-whole body
without imported food	51 millirem/year	460 millirem-bone marrow 270 millirem-whole body

For purposes of reference, it may be recalled that U.S. exposure criteria are:

Maximum exposure to an individual in any one year: 500 millirem

Integrated 30-year exposure level: 5000 millirem

Because of the uncertainties and assumptions which are inherent in deriving radiation exposure estimates of this nature, the Atomic Energy Commission Task Group report recommended the following exposure limits for planning and cleanup purposes:

Maximum exposure to an individual in any one year: 250 millirem

Integrated 30-year exposure level: 4000 millirem

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Given the assumptions and limitations stated, it is apparent that all of the radiation exposure estimates are below both the U.S. exposure guidance and the AEC recommendations.

I hope that this information is helpful to you and responsive to your request.

Sincerely,

Bruce W. Wachholz

Bruce W. Wachholz, Ph.D.
Office of Environment