



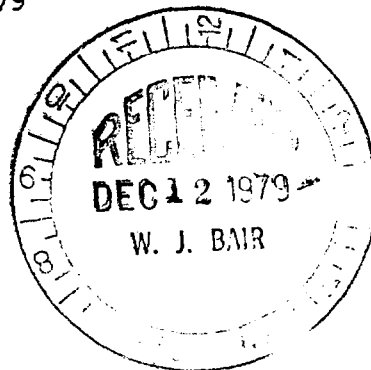
Department of Energy  
Washington, D.C. 20545

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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.

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

Mrs. Ruth Van Cleve

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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

Dear Mr. Chairman:

As promised in my progress report of July 3, 1979, on Enewetak Rehabilitation and Resettlement Project to your Committee, I am submitting this followup report on recent developments.

The Department of Energy during March and April of this year conducted a new soil survey of Engebi Island and other northern islands of Enewetak Atoll, and the results were analyzed by the Lawrence Livermore Laboratory. A draft report entitled, "Preliminary Reassessment of the Potential Radiological Doses for Residents Resettling Enewetak Atoll" was issued by DOE on July 23, 1979. This preliminary report has not yet been released because survey results on one additional northern <sup>ASTEAN</sup> island, Lujor, <sup>AND ALL OF THE ISLANDS IN THE NORTHWEST</sup> still have to be factored into the dose calculations. It is not expected that the additional information will substantially alter the <sup>FOR THE LIFESTYLES CONSIDERED, HOWEVER.</sup> exposure estimates. <sup>DA</sup> Copies of the final reassessment report will be provided to the Committee as soon as it is released by the Department of Energy.

*discussion of decision based upon risk vs. standards?*

The preliminary assessment report, however, enabled actions to take place on a number of pending items, and it is on these that I report.

#### Planting of the Northern Islands

You will recall from my July 3, 1979, progress report, that planting of the six northern islands of Enewetak (exclusive of Engebi Island) had been held up pending the results of the new soil analysis. The planting of these six northern islands was part of the Enewetak Rehabilitation Master Plan. The Enewetak Rehabilitation Master Plan, as funded by appropriations through your Committee, called for residence only on the three southern islands of the Atoll, Enewetak, Medren, and Japtan. Coconut and other agricultural planting was to be confined to the southern islands and certain of the northern islands. The people of Enewetak agreed to these stipulations.

The exposure analyses in the "Preliminary Reassessment Report" demonstrated that, under certain assumptions and limitations, all of the radiation exposure estimates would be below the U.S. exposure guidance and A.E.C. recommendations. <sup>(THIS DOES NOT ADDRESS THE ISSUE OF THE ACCEPTABILITY ON THE WHOLE OF COPRA FROM THESE COCONUT TREES, HOWEVER.)</sup> The potential situation is outlined in a September 28, 1979, letter from the Department of Energy to the Director of the Office of Territorial Affairs. A copy of that letter is enclosed for your information.

On the basis of the DOE analysis, the decision was made in September to proceed with the planting of coconut trees on these six northern islands and the planting program on these islands now is underway.

#### Dose Assessment Meeting

The "Preliminary Dose Reassessment Report" also permitted the "Dose Assessment" meeting that the people of Enewetak had requested in December 1978, to take place. This meeting with the people of Enewetak originally had been scheduled for May 1979. For various reasons, it had to be rescheduled and the meeting was held on Ujelang Island on September 19 and 20. The <sup>MAJORITY</sup> ~~bulk~~ of the people of Enewetak still reside on Ujelang pending a return to Enewetak Atoll. The Department of the Interior was represented at the September meeting on Ujelang by the Solicitor of the Department, Mr. Leo Krulitz.

At the December 1978 meeting, the Department of Energy had been requested to give a risk assessment review to the people of Enewetak. Subsequently, in July 1979, the Legal Advisor for the people of Enewetak, Mr. Theodore Mitchell, Micronesian Legal Services Corporation, informed the Department of Energy that he had retained scientific consultants and he would not need to rely upon the Department of Energy for that type of information. The Department of Energy and this Department believes<sup>D</sup>, however, that the United States

copies were provided <sup>TO</sup> ~~for~~ all <sup>MEMBERS</sup> ~~adults~~ of the community.

A copy of "Enewetak Atoll Today" is enclosed for the Committee's information.

? The Legal Counsel for the people of Enewetak and the independent consultants presented a risk assessment to the people at a closed session to which government representatives were not invited. Copies of the presentation given by scientists retained by the Micronesian Legal Services Corporation will be provided as soon as they are received from the Legal Advisor for the people of Enewetak.

#### Engebi Resettlement

The consultants for the Micronesian Legal Services Corporation contend that the risks from living on Engebi Island are so small as to be essentially insignificant. In their estimation, only approximately one additional cancer death in the lifetime of the population would result, and they believe that it might take five generations before even one

page 10, on the Enewetak Cleanup funding by the Department  
of Defense stated: (Underlining ours)



as now counsel for the people of Enewetak, supported the above result, at hearings of May 7, 1975 on H.R. 5210 before the Subcommittee on Military Installations and Facilities (page 162 - 165), stated:

" . . . . ERDA has been, I think wisely conservative in the standards that they have set.

So that the ultimate objective, the premise of the clean-up program, is that when it is done, there will not be a danger, a risk, for these people, for the entire atoll.

. . . . I don't want these people to be endangered at all.

. . . . No danger to the people."

Similarly, when the Department of Interior's request for rehabilitation and resettlement funds was under consideration before your Subcommittee on March 17, 1977, there was

Congress when it approved the cleanup funding. As noted

islands, Enewetak, Medran, and Japtan, and for the planting of only certain of the northern islands as well as the southern islands. Engebi Island was not to be used for the next 35-50 years, i.e., until natural decay of strontium<sup>AND</sup> cesium elements in the soil had ~~brought about acceptable levels,~~ <sup>RESULTED IN POTENTIAL RADIATION EXPOSURE LEVELS WHICH WOULD BE WITHIN THE APPLICABLE STANDARDS.</sup>

The people of Enewetak agreed to these stipulations and had a major role in the development of the approved Master Plan. Thus, in addition to the radiation risk elements still unresolved, resettlement of the Engebi people on Engebi

and rehabilitation plan. Congress also has not authorized funds, as yet, to provide for housing and community facilities on Engebi.

Nonetheless, given the present desire of the people of Engebi, that in spite of the risk elements involved they wish to reside on Engebi Island, this Department has indicated that it would study the matter further with knowledge of the people's preference. This study now is underway.

Irrespective of the final decision with respect to Engebi, of which we will advise you when it is made, additional funding for the Enewetak Project would appear to be necessary. Should it finally be decided that housing and community facilities should be built at this time on Engebi, funding for these facilities will be required. Conversely, if the decision is that Engebi should remain "off-limits" for residential and other purposes for another 35-50 years, it is our belief that the U.S. Government has a moral and legal obligation to provide, before termination of the trusteeship, a suitable financial arrangement that would insure the ability of the people of Engebi to build appropriate housing and community facilities on Engebi at a period in the future when the ~~reduced~~ radiation levels of the island will <sup>BE REDUCED TO SUCH A LEVEL</sup> ~~not pose a risk~~ <sup>THAT APPLICABLE STANDARDS WOULD NOT BE EXCEEDED.</sup> ~~hazard to them.~~ This matter also is under study and we will keep the Committee informed of developments.

Sincerely,

UNDER SECRETARY

Enclosures.

REPOSITORY PNNL  
COLLECTION Marshall Islands  
BOX No. 5686  
FOLDER Enemetch Oct - Dec 1979

DOCUMENT DOES NOT CONTAIN ECI

Reviewed by R. Schutte Date 4/30/97