

NAME L. Hurley EXT.: _____ (FOR PICKUP)

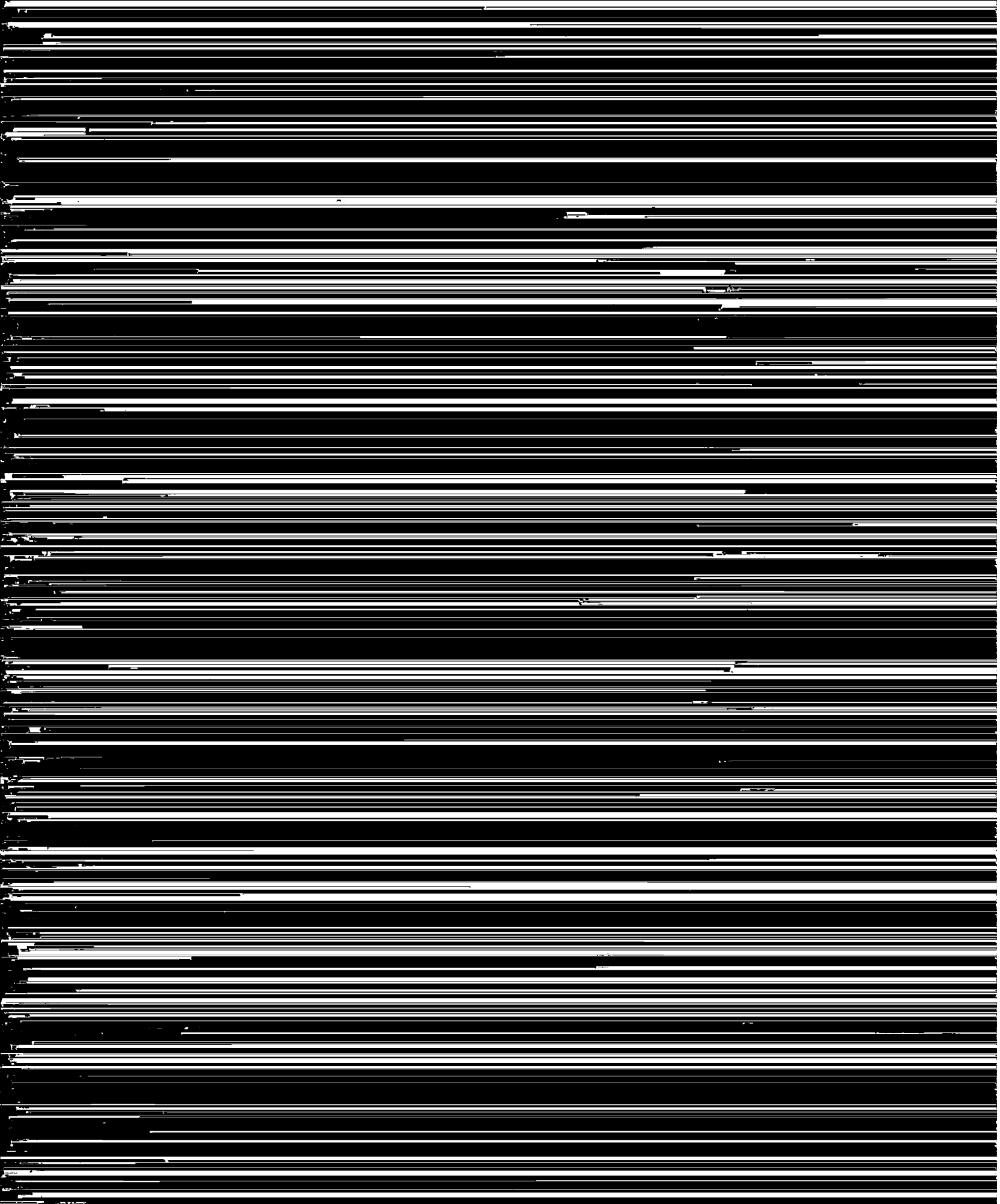
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all 754 refer to Engebi
Worst case calculation
no imported food
250 mrem/yr (average) no peak of 3

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Notes on Meeting of Monday, August 13, 1979, with T. L. Mitchell and His Consultants, Dr. W. Ogle, Mr. Michael Bender, and Dr. R. Brill

Dr. Ogle (Environmental Aspects)

1. This informal meeting was opened by Dr. William E. Ogle, Energy Systems, Inc. (formerly associated with the Los Alamos Project) who explained briefly how the radiation dose was computed. He noted that the "direct path" radiation was not very significant but that the "food chain" aspect was the important aspect to be considered. Marine food chain with respect to Enewetak is "clean" and presents no problem.
2. Dr. Ogle limited his comments to "Engebi" Island. He commented that the Livermore Report was a good one—that a fine job had been done, although he noted that over 50 years you might find a 50% uncertainty.
3. Using Engebi Island and the worst example, i.e., taking all 454 people and assuming "famine condition" (i.e., no imported foods) but all food from Engebi or the N.E. islands, after 8 years of living on Engebi, the dose assessment which would be received by the people would be 200-250 miligram per year at the peak.
4. Over a 30-year period, this would result in exposure of 4-7 R. Fed. Standards in USA for a 30-year period would be 5 R.
5. Ogle raised a question as to how uncertain is the 4-7 R estimate. He noted that a year ago the estimate without the benefit of the recent "dose assessment study" was twice as high, i.e., 8-14 R over a period of 30 years.

Summary of Dr. Ogle's opinion:

1. No problem at all with respect to return of people of Engebi.
2. If there is concern for "any risk", you could decrease the 4-7 R range by increasing amount of imported food brought in, or by delaying use of consumption of local food, i.e., coconuts for another stated period.
3. He further noted that only 15% of food now consumed (3/10 of a daily 2 pound diet) is locally grown in any event.

Dr. R. Brill (Cancer Risk)

1. Dr. Brill described what the dose assessment meant in terms of effect on the people. He noted that there is 2-3% chance of increase in cancer risk to people exposed to 1/rem per year. You cannot tell which might be radiation induced or natural. Also in the U.S. there is a 15% chance of anyone getting cancer.

cancer than would normally be expected would occur and you couldn't "pick" this case out. in essence, "risk would be zero".

3. Dr. Brill commented that the greatest hazard is that increased medical attention which will identify more cancer cases. But there would be no way to tell whether any of these were radiation induced. He noted that radiation is a low factor of risk. As an example, he cited that a "smoker" subtracts 225 days from life whereas radiation at the Engebi level would subtract only 16 days.

Dr. M. Bender (Genetic Effects)

1. He pointed out that cancer and genetic effects are the only ones known to occur from levels of radiation as found at Engebi.
2. Studies at Hiroshima produced no hard evidence of genetic effects in man.
3. For "Engebi" he maximized the risk... took a presumed 7.5 dose (i.e., constant famine situation, etc., and assumed 7.5 R exposure to each child). Since there would be a 10-11% chance, in any event, that a child would be born with some abnormality, the additional exposure risk at Engebi would add only .0004 to .0006 added risk, less than one-half of a percent. This would be a very small risk.
4. Could expect 1 extra abnormality in each of 3 generations exposed to 1 rad/year.
5. In short, if all the Enewetak population were to live on Engebi, under the worst conditions, radiation would induce "one" additional defect every 83 years. These would not be "monsters" but variety of "defects".
6. Dr. Bender also stressed that the Federal Radiation Guides are "guides" only, not mandatory rules for people to follow. He noted that people in Denver receive higher annual exposures than would the people at Engebi.
7. He stressed the exaggerated "fear" of radiation risk and stated that in his opinion there had been too much explanation and warning about hazards of radiation given to the people of the Marshalls and this has blown the situation out of proportion.

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A brief discussion of Federal Standards followed with comparison of "occupational standards", etc.

1. Dr. Brill noted that many people in the U.S. accept a much higher rate of exposure in certain jobs, etc., than the Federal standards.
2. Dr. Ogle stated that U.S. standards were not intended to apply to an individual or to a small group.
3. Dr. Bender stressed that the Federal Radiation Guides are not "rules" but simply guidelines that set arbitrary levels.
4. Dr. Bender also stressed that the "guidelines" do not take into consideration doses people receive from medical x-rays, etc. This is estimated to be about 80 milirem a year. If you add this to an average of 100 normal (direct) rad radiation, an individual in the U.S. regularly receives about 180 R a year. This is not much different than the 250 people would receive on Engebi.
5. Dr. Bender also said that the normal dose in the Marshalls (direct) is about 50 milirem per year. He would have no hesitation about living on Engebi himself.
6. Dr. Ogle stated that in his opinion the real issue is emotional and political. In his opinion, there are no physical radiation hazards that can be measured at Engebi, and probably none at all exist there.

Comparison with Bikini situation

High Commissioner Winkel asked how the "Engebi" situation compared to the Bikini situation

1. Dr. Brill, after stating that he had not investigated the Bikini situation in any depth, believed that the Bikini situation clearly was of a different order of magnitude. Dr. Bender concurred. Both, though, would defer to analysis of more detailed data on Bikini.
2. Dr. Ogle was of the opinion (again qualified by stating that he had not examined the Bikini data) that there was appreciably more fallout at Bikini and the situation might be significantly different there.

SUMMARY

In short, these three experts appeared to be saying that there is no "danger" at present or in the "future" at Engebi and that no ill effects would result if the people were allowed to return to live there.

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DATE 8/17/79

TO: Bill Bair
NAME

PNL Richland
LOCATION

509-946-2421
TELEPHONE NR.

FROM: B. Wachholz
NAME

DOE Hermantown
LOCATION

233-4365
TELEPHONE NR.

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ENJEBI

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
0-5	27	17	44
6-10	16	23	39
11-15	14	11	25
16-20	14	10	24
21-25	12	6	18
26-30	4	6	10
31-35	5	4	9
36-40	11	4	15
40 and above	<u>7</u>	<u>7</u>	<u>14</u>
TOTAL	110	88	198

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ENEWETAK

<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
0-5	35	24	59
6-10	16	18	34
11-15	18	20	38
16-20	18	14	32
21-25	10	9	19
26-30	11	7	18
31-35	6	9	15
36-40	8	5	13
40 and above	<u>15</u>	<u>11</u>	<u>26</u>
TOTAL	137	117	234

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DOCUMENT DOES NOT CONTAIN ECI

Reviewed by R. Schuetz Date 4/30/97