

T.F.W. (over)

410350

Summary of Information^r
on
Radioactivity at Rongelap and Rongerik Atolls
1956

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The Rongelapese were allowed to return to their homeland June 29, 1957 after an absence of more than 3 years (March 1954). Analyses of segments of the bioenvironment were made in determining the suitability for rehabilitating the island. Thus, to determine whether Rongerik is suitable for habitation now (1969) only a comparison of 1956 analytical results for Rongelap and Rongerik Atolls is possible.

Group (Atoll)	Summary of Dose to Population 1954	
Rongelap	64 Marshallese	175 rads
Ailingnal	18 Marshallese	69
Rongerik	28 Americans	78
Uterik	157 Marshallese	14

There were no natives on Rongerik. The Americans were servicemen on duty during the operational period at the Pacific Proving Ground, thus were moved at the end of the operation. The Marshallese on Rongelap have been given a medical examination by Dr. Robert Conard, BNL, each year since 1954. There have been a few medical problems associated with the 175 rads dose received by the Rongelapese during the period of heavy fallout. Periodic analyses of elements of the bioenvironment have been made at Rongelap.

Cocoonut crabs were banned as a food at the time of Rongelap rehabilitation in 1957. due to the high ^{90}Sr and ^{137}Cs content of the edible portions. A summary of the 1966 survey states: "It seems clear from this (analysis of cocoonut crabs for ^{90}Sr , ^{137}Cs) that because

of the relatively high ^{90}Sr content the use of crab meat as a food then should continue to be avoided. Other foods, however, are responsible for the ^{137}Cs levels found."

1. External gamma.

a. 1954, D + 1 (approximate) R/hr

Rongelap Atoll

Eniaetok	8.5
Lomuilal	35.0
Gejan	35.0
Lukuen	21.0
Kabelle	19.0
Rongelap	3.5

Rongerik Atoll

Latobek	19.0
Rongerik	5.3
Eniwetak	3.8

b. External gamma rate, July 1956, Rongelap 0.2-0.5 mR/hr

however, no external gamma dose rates were obtained at Rongerik Atoll.

2. Food - Land Plants (1956) (c/min/kg X 10^{-5})

	<u>Eniwetak</u> (Rongerik)	<u>Enaetok</u> (Rongelap)	<u>Rongelap</u>
Arrowroot			
Stem, leaves	4.5	0.32	0.25
tubers	0.57	0.69	0.55
Pandanus			
air root	0.17	1.05	0.32
leaves	1.02	5.26	0.38
Green keys	0.37	0.70	0.22
ripe keys	--	0.53	0.17

	<u>Eniwetak (Rongerik)</u>	<u>Eniwetak (Rongelap)</u>	<u>Rongelap</u>
Cocoanut - ripe			
milk	--	--	0.54
meat	0.36	1.97	0.24
Shell	0.38	0.72	0.44
Cocoanut - green			
milk	0.29	0.11	0.05
meat	0.33	0.25	--

Food - Fish and marine invertebrates Summary 1956

(d/min/kgX10⁻⁴)

<u>Island</u>	<u>Fish</u>		<u>Crabs</u>		<u>Clams</u>		<u>Snails</u>	
	<u>beta</u>	<u>gamma</u>	<u>beta</u>	<u>gamma</u>	<u>beta</u>	<u>gamma</u>	<u>beta</u>	<u>beta</u>
Rongelap Atoll								
North							648	513
Gejan	24.5	78.8	28	87	--	--		
Kaballe	14.9	55.4	--	--	--	--	17.7	43.9
Central-Eniwetak	19.3	45.1	4.5	14.1	4.5	8.8	--	--
South-Rongelap	17.7	32	25.4	24.5	23	56	31	51
Rongerik Atoll								
Eniwetak	2.2	7.8	2.8	18.3	--	--	--	--
Uterik Atoll								
Uterik	1.6	2.1	--	--	--	--	--	--

Food - Birds and eggs Turn

<u>Rongelap Atoll</u>	<u>Beta</u> d/m/sample X 10 ⁻⁴	<u>d/m/kg X 10⁻⁴</u>	<u>Gamma</u> d/m/sampleX10 ⁻⁴	<u>d/m/kgX10⁻⁴</u>
Rongelap				
Egg shell	NDA	0	0.62	10.3
Egg, soft tissue	0.26	7.9	0.11	3.3

Gejen Tern

Viscera	0.38	3.8	0.025	0.25
Muscle	NDA	0	0.19	0.14
Tibia	NDA	0	NDA	0

Kabelle Tern

Muscle	0.1	5.9	0.13	7.7
Tibia	0.07	79.0	0.027	30.0

Rongerik AtollEniwetak

Muscle	0.04	2.3	0.03	1.9
Tibia	NDA	0	NDA	0
Viscera	0.05	--	0.09	--

3. Water - Lagoon

No activity detected in the lagoon at either Rongelap or Rongerik in 1956.

4. Soil

(c/m/kg X 10⁻⁵)

<u>Depth</u>	<u>Eniwetak</u>	<u>Eniwetak</u>	<u>Rongelap</u>
0-1	34.8	6.43	7.00
12	--	--	0.70