410726

[redacted]

[illegible] and [illegible]

[illegible]

[illegible] [illegible]

[illegible] provide information, [illegible] estimates [illegible] dose rates [illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

All available data were considered in arriving at these estimates. These data are reported [illegible] Annex D of this Part. Not included in the above estimates are [illegible] (below [illegible] mev) for betas. These are [illegible] contributed very little to significant doses.

[illegible] uncertainties in arriving at these estimates are probably well known, [illegible] particular precautions are indicated because of difficulty of computing [illegible] for any case.

1. [illegible] measurements have been reported ranging from [illegible] to -1.3+. Most of these [illegible] to the [illegible] fallout [illegible] the time of evaluation. This [illegible] uncertainty and therefore -1.2 has been assigned.

2. [illegible] contamination, if a single dose rate reading is made at the peak of the relative Pp^{239} activity and then an integration made according to -1.2, a serious miscalculation might be introduced. Likewise, ignoring the radiation dose from Pp^{239} would not be desirable. The above whole body estimates are made taking the Pp^{239} contamination into account, since the amount produced has been estimated for this device.

3. [illegible] personnel, dose rate readings vary by almost a factor [illegible] different localities where the natives that have been here [illegible] were [illegible] known [illegible] has not been determined with certainty. [illegible] dose rate readings in the sleeping barracks of the Air Material [illegible] as only about [illegible] at that site; the dose rate [illegible] the huts was about [illegible] outside. The natives kept [illegible] and [illegible] huts that were almost as dense outside the huts. [illegible] original estimates [illegible] would have delivered [illegible] more [illegible] dose.

[redacted]

OFFICE ▶ [illegible]
SURNAME ▶ [illegible]
DATE ▶ [illegible]

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AUTHORITY DOE/OC
BY [illegible] SULLIVAN, DATE 18

[illegible] RESEARCH & APPL.

John . ...er — ...ne , 1954

[illegible]. Sky shine. The phenomena of sky shine with the passage of the cloud was documented at St. George, Utah in the spring of 1953. The gamma dose from the sky shine might have been appreciable when one considers the relatively heavy fallout. This factor is extremely difficult to assess.

7. Dose rate readings were made by different individuals, at different times, at different locations, and by different types of instruments some of which were calibrated and some were not.

8. The exact time of initial fallout is not known. An hour or even half-hour difference in estimating initial time of fallout will make a difference in estimating doses in the early times after detonation.

Distribution:
- Orig. - Dr. Bugher
- Green, pink & yellow - B&M files
- 1 cc - Lt. Robt Sharpe, NMRI, NMC, Bethesda, Md.
- 4 cc's - Bioph. Br.

[illegible]

. stimated time of fallout: -o hours.

. Time of evacuation and number of vacuees: ? ≠ 51 16 by air; 48 by ship)

[redacted]

. adiation levels.
1. (vacuation Team)

redecontamination eadings - ? March 1954

Time(D≠2)	Place	Geiger Muller Reading(R/50hrs)
0855	int at landing	1.0 R
0900	int 100 yards from landing	1. R
0903	120 yards from landing	1.5 R
0904	int 50 yards over + 50 yds. from landing	1.2 R
0905	int 25 yds. over ≠ 50 yds. from landing	1.2 R
0906	10 yds. in 50 yds. from landing	1.4 R
0907	t landing	
0915	200 yards from beach on ground	1.3 R
"	" " " " 3' level	1.3 R
0917	250 yards from beach on ground	1.6 R
"	" " " " trees	1.3 R
0920	150 yards from beach on ground	1.9 R
"	" " " " 3' level	1.5 R
0922	100 yards in at school house	1.3 R
0925	50 yards from beach	1.5 R
1020	100 yards in from landing on ground	1.6 R
"	" " " " " 3' level	1.2 R
1023	300 yards in on ground	1.5 R
"	" " " 3' level	1.2 R
1025	400 yards in on ground	1.8 R
"	" " " 3' level	1.3 R
1030	450 yards in ≠ 200 yds. over on ground	1.6 R
"	" " " " " " " 3' level	1.3 R
1035	200 yards in ≠ 400 over on ground	2.1 R
"	" " " " " " 3' level	1.5 R
1037	200 yards in ≠ 500 over on ground	2.3 R
"	" " " " " " 3' level	1.6 R
1045	" " " " 550 " on ground	1.3 R
"	" " " " " " 3' level	1.4 R

?. 1. 4 r/hr at ? ≠ 31
?. 7 r/hr at ? ≠ 55
NYOO erial survey)

?. 1.4 r/hr at ≠ 36 (Lt. Larson of Task Force)

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4. Typical Readings in Rongelap Village, 8 March

Location	Dose Rate (mr/hr)
Rongelap Island (average)	[illegible]
Center of village	[illegible]
Near central cistern	300
Near southern cistern	220
Near northern cistern	250

(Scoville using TIB)

5. 40 mr/hr at D + 25 (Schiavone using PDR-39)

[illegible] ISLAND)

[redacted]

A. Estimated time of fallout 5-6 hours.

B. Time of evacuation: H + 54 hours.

C. Number of evacuees: 18 natives.

D. Radiation levels:

1. 400 mr/hr at H + 21
   240 mr/hr at H + 75
   (NYOO aerial survey)

2. 145 mr/hr at H + 58
   (Member of Task Force using TIB)

3. 100 mr/hr at D + 9
   (Scoville using TIB)

[redacted]

[redacted]

ONG RIK

1. Estimated time of fallout: 7.5 hours.

2. Time of evacuation and number of evacuees: 3 air weather personnel at H ≠ 28 hours; 20 air weather personnel at H ≠ 34 hours.

3. Radiation levels.

   1. Film badge readings:

      38 roentgens (representing 3 army personnel at one end of island. Was hung about 4 feet high on the tent pole)

      32 roentgens (hung between and against one wall of metal barracks)

      44 roentgens

      40 roentgens

      40 roentgens (represneting 8 people)

      38.5 roentgens (in an icebox

      38 roentgens (" " "

      37.5 roentgens (" " "

      37.5 roentgens (" " "

      37.5 roentgens (" " "

      37.5 roentgens (" " "

   2. NYOO automatic srecorder went off-scale (100 mr/hr) at H ≠ 7.3 hours.

   3. 1.8 r/hr at H ≠ 28 hours (evacuation team)

   4. (Scoville using TIB)

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TYPICAL READINGS IN CAMP ON ENIWETOK IS. - 10 MARCH

Location	Outside Dose Rate (mr/hr)	Inside Dose Rate (mr/hr)
Eniwetok Island (average)	280	- -
Mess hall	220	110
Tent, edge of main camp	270	175
Latrine	260	160
Sleeping quarters	160	90
[illegible]	[illegible]	[illegible]

Rongerik (cont'd.

17 March, 1200 GMT

Living area Readings:

Mess hall interior	40 - 100 mr/hr
Hospital interior	50 - 75 mr/hr
Walk from hospital to mess	100 - 110 mr/hr
Store room (behind mess)	50 - 55 mr/hr
Exterior store room tent	100 - 150 mr/hr
General area exterior	100 - 150 mr/hr

Weather Station Site Readings:

Exterior areas local	50 - 160 mr/hr
Interior all tents	50 - 75 mr/hr
Interior building	50 - 60 mr/hr

Army Site Readings:

General area	140 - 190 mr/hr
Interior tents	70 - 80 mr/hr
Adjacent to trailer	160 - 180 mr/hr

19 March, 1100 - 1222 GMT

Landing on beach	42 mr/hr
Living area	60 mr/hr
Inside mess hall	22 mr/hr
Inside dispensary	26 mr/hr
Inside barracks	23 mr/hr
ESE end of island (Ravinsende)	47 mr/hr
Along road to Ravinsende area 40-42	40 mr/hr
Inside weather building	23 mr/hr
Work area outside building	60 mr/hr
Army area (around trailer)	40 mr/hr
Inside foliage area	40 mr/hr
Inside tent	19 mr/hr

19 March, 1400 GMT

Inside weather building	21 mr/hr
Living area Still	60 mr/hr
Inside barracks	23 mr/hr
Inside dispensary	5 mr/hr

Rongerik (cont'd.)

~~5. ... Schiavone using ... recently calibrated)~~

6. 1.7 r/hr at H + 31 hrs.
1.0 r/hr at H + 30 hrs.
(YOO aerial survey)

[redacted]

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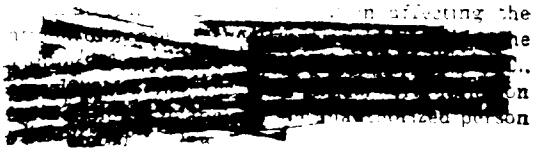
4. Estimated time of fallout: 16-1[illegible] hours.

3. Time of evacuation: H + 78 hours.

2. Number of evacuees: 154 natives.



D. Radiation levels.

1. 160 mr/hr at H + 55 (survey team from Task Force using PIB)

2. 120 and 150 mr/hr at H + 77 (Goodwin)

3. 100 mr/hr at H + 77 (evacuation team)

4. 40 mr/hr at D + 8 (Seevil.e using PIB)

5. 3.3 mr/hr at D + 54 (highest reading)

6. 2.0 mr/hr at D + 54 (lowest reading)

7. 1.0 - 1.2 mr/hr at D + 54 (on sleeping mats)

8. 240 mr/hr at H + 34
160 mr/hr at H + 30
TDC aerial survey

Distribution:
Orig. - Dr. Bugher
1 cc - Lt. Sharpe, NMRI, NNC, Bethesda, Md.
2 cc's - B&M files (attached to yellow and pink copies of memo fm. Dunning to Bugher dated June 8, 1954
2 cc's - Biophy. Br.