

TAB

B

DOE ARCHIVES

BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.

Upton, New York 11973

(516) 345-4207

Safety & Environmental Protection Division

June 22, 1979

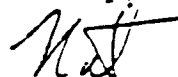
Dr. William L. Robison,
L-452
Lawrence Livermore Laboratory
P. O. Box 808
Livermore, California 94550

Dear Bill:

The enclosed tables present dosimetric and body burden information on former Bikini residents. Net external exposure rates (background subtracted) were obtained from "External Exposure Measurements at Bikini Atoll", N. A. Greenhouse et al., BNL Report (in press). Dosimetric models were outlined in several informal reports and are available upon request. Input data were obtained from "Whole Body Counting Results from 1974 to 1979 for Bikini Island Residents", R. S. Miltenberger et al., BNL Report (in press) and from unpublished bioassay results. New information on the long term removal of ^{137}Cs is being derived from replicate counts of former Bikinians done in January and May 1979. This preliminary information is also included, but we would like to corroborate these results with urine bioassay data which will not be available for several more weeks.

If you have any questions or need additional information, please contact me at FTS 666-4207 or Bob Miltenberger at FTS 666-2503.

Sincerely,



N. A. Greenhouse

NAG/lm

Enclosures

cc: E. Lessard
R. Miltenberger
J. Naidu
T. McCraw (OES) ✓
B. Wacholz (EV)

DOE ARCHIVES

Individual Dosimetry Data for Bikinians - Explanation
of Column Headings

<u>Column</u>	<u>Item or Derived Quantity</u>	<u>Measured Quantity</u>	<u>Comments</u>
1	Name	-	Personal Interview
2	ID Number	-	BNL Medical Dept. & S&EP Div. Records
3	Residence Interval	-	Personal Interviews
4	⁹⁰ Sr and ⁹⁰ Y Bone Marrow Dose Equivalent During and Post Residence Interval	Urine Activity Concentration	Three Compartment Model, Constant Continuous Uptake
5	¹³⁷ Cs + ^{137m} Ba Dose Equivalent During and Post Residence Interval	Body Burden Measurements	Two Compartment Model, Monotonically Increasing Uptake
6	Net External Dose Equivalent During Residence Interval	External Exposure Rate Measurements	Assumed Living Patterns
7	Total Body Dose Equivalent	-	Sum of Columns 5 and 6
8	Total Bone Marrow Dose Equivalent During and Post Residence Interval	-	Sum of Columns 4, 5 and 6

DOE ARCHIVES

INDIVIDUAL DOSIMETRY DATA FOR BIKINIANS

DOE ARCHIVES

ID Number	Residence Interval Years	⁹⁰ Sr & ⁹⁰ Y Bone Marrow Dose Equiv. During & Post Residence Int. mRem	¹³⁷ Cs + ^{137m} Ba Dose Equiv. During & Post Residence Int. mRem	Net External Dose Equiv. During Residence Interval mRem	Total Body Dose Equiv. During & Post Residence Int. mRem	Total Bone Marrow Dose Equiv. During and Post Residence Interval mRem
6001	7.3	130*	480	950	1400	1600
6127	7.3	39	580	950	1500	1600
6130	.72	49	200	94	300	300
6076	3.3	9.9	900	430	1300	1300
813	4.3	77*	600	560	1200	1200
6019	5.3	190	420	690	1100	1300
6111	.80	7.7	150	100	250	260
6097	4.3	51*	430	520	950	1000
6115	7.3	97	760	880	1600	1700
6109	4.3	51*	240	520	760	810

INDIVIDUAL DOSIMETRY DATA FOR BIKINIANS (cont'd)

DOE ARCHIVES

ID Number	Residence Interval Years	⁹⁰ Sr & ⁹⁰ Y Bone Marrow Dose Equiv. During & Post Residence Int. mRem	¹³⁷ Cs + ^{137m} Ba Dose Equiv. During & Post Residence Int. mRem	Net External Dose Equiv. During Residence Interval mRem	Total Body Dose Equiv. During & Post Residence Int. mRem	Total Bone Marrow Dose Equiv. During and Post Residence Interval mRem
6091	6.3	74*	550	760	1300	1400
6132	2.3	62	1200	300	1500	1600
6046	2.0	27	400	240	600	700
6061	6.3	65	630	760	1400	1500
6066	3.3	59*	400	420	830	890
6070	10.3	185*	870	1300	2200	2400
6118	6.3	42	420	820	1200	1300
6117	6.3	110*	610	820	1400	1500
6128	7.3	130*	810	950	1800	1900
6122	10.3	86	380	1200	1600	1700

INDIVIDUAL DOSIMETRY DATA FOR BIKINIANS (cont'd)

DOE ARCHIVES

ID Number	Residence Interval Years	⁹⁰ Sr & ⁹⁰ Y Bone Marrow Dose Equiv. During & Post Residence Int. mRem	¹³⁷ Cs + ^{137m} Ba Dose Equiv. During & Post Residence Int. mRem	Net External Dose Equiv. During Residence Interval mRem	Total Body Dose Equiv. During & Post Residence Int. mRem	Total Bone Marrow Dose Equiv. During and Post Residence Interval mRem
6015	1.7	31*	650	220	870	900
6030	3.3	39*	1200	400	1600	1600
6129	4.3	51*	330	520	850	900
6027	3.3	39*	760	400	1200	1200
6010	7.3	86*	1100	900	2000	2100
6105	3.3	39*	1100	400	1500	1500
6033	8.3	150*	900	1100	2000	2100
6007	.88	15	190	110	300	310
6008	4.3	77*	850	560	1400	1500
6071	1.0	18*	220	130	350	370

INDIVIDUAL DOSIMETRY DATA FOR BIKINIANS (cont'd)

DOE ARCHIVES

ID Number	Residence Interval Years	⁹⁰ Sr & ⁹⁰ Y Bone Marrow Dose Equiv. During & Post Residence Int. mRem	¹³⁷ Cs + ^{137m} Ba Dose Equiv. During & Post Residence Int. mRem	Net External Dose Equiv. During Residence Interval mRem	Total Body Dose Equiv. During & Post Residence Int. mRem	Total Bone Marrow Dose Equiv. During and Post Residence Interval mRem
863	4.3	120	620	600	1200	1300
6086	8.3	240	990	1100	2100	2300
6069	8.3	150*	580	1100	1700	1900
6073	7.3	130*	490	950	1400	1600
6072	1.0	18*	330	130	460	480
6119	7.3	130*	730	950	1700	1800
864	7.3	130*	960	950	1900	2000
966	7.3	130*	1400	950	2300	2500
6059	1.3	15*	240	160	400	410
6124	.88	10*	180	110	390	400

INDIVIDUAL DOSIMETRY DATA FOR BIKINIANS (cont'd)

ID Number	Residence Interval Years	⁹⁰ Sr & ⁹⁰ Y Bone Marrow Dose Equiv. During & Post Residence Int. mRem	¹³⁷ Cs + ^{137m} Ba Dose Equiv. During & Post Residence Int. mRem	Net External Dose Equiv. During Residence Interval mRem	Total Body Dose Equiv. During & Post Residence Int. mRem	Total Bone Marrow Dose Equiv. During and Post Residence Interval mRem
6058	5.3	63*	550	600	1200	1300
6036	.64	7.6*	260	77	340	340
6110	8.3	98*	450	1000	1400	1500
6051	5.3	63*	520	600	1200	1200
6092	6.3	74*	1600	800	2400	2400
6080	.88	10*	200	110	310	320
6038	2.3	27*	1100	280	1400	1400
6103	3.3	39*	1200	400	1600	1600
6028	5.3	63*	1200	600	1800	1900
6044	5.3	63*	1600	600	2200	2300

DOE ARCHIVES

INDIVIDUAL DOSIMETRY DATA FOR BIKINIANS (cont'd)

ID Number	Residence Interval Years	⁹⁰ Sr & ⁹⁰ Y Bone Marrow Dose Equiv. During & Post Residence Int. mRem	¹³⁷ Cs + ^{137m} Ba Dose Equiv. During & Post Residence Int. mRem	Net External Dose Equiv. During Residence Interval mRem	Total Body Dose Equiv. During & Post Residence Int. mRem	Total Bone Marrow Dose Equiv. During and Post Residence Interval mRem
6062	4.3	51*	540	520	1100	1100
6034	7.3	86*	880	900	1800	1900
865	7.3	86*	430	900	1300	1400
6050	2.3	27*	410	300	710	740
6009	4.3	77*	1600	600	2200	2300
6049	2.3	41*	1600	300	1900	1900
6042	.55	10*	510	72	580	590
6014	1.6	29*	1300	210	1500	1500
6012	7.3	130*	1500	950	2400	2600
6016	7.3	130*	1500	950	2400	2600

DOE ARCHIVES

INDIVIDUAL DOSIMETRY DATA FOR BIKINIANS (cont'd)

ID Number	Residence Interval Years	⁹⁰ Sr & ⁹⁰ Y		¹³⁷ Cs + ^{137m} Ba		Net External		Total Body		Total Bone Marrow	
		Dose Equiv. During & Post Residence Int.	mKem	Dose Equiv. During & Post Residence Int.	mKem	Dose Equiv. During Residence Interval	mKem	Dose Equiv. During & Post Residence Int.	mKem	Dose Equiv. During and Post Residence Interval	mKem
6013	2.3	41*	1300	300	1600	1600					
6094	6.3	74*	1300	800	2100	2200					
6005	1.8	12	470	230	700	710					
6135	1.3	11	330	170	500	510					
6125	9.3	45	890	1200	2100	2100					
6067	7.3	54	780	950	1700	1800					
6002	2.3	7.7	370	300	670	680					
6006	1.0	9.5	260	230	490	500					
6112	1.3	12	260	160	420	430					
6035	6.3	140	600	760	1400	1500					

INDIVIDUAL DOSIMETRY DATA FOR BIKINIANS (cont'd)

ID Number	Residence Interval Years	90 Sr & 90 Y Bone Marrow Dose Equiv. During & Post Residence Int.		137 Cs + 137m Ba Dose Equiv. During & Post Residence Int.		Net External Dose Equiv. During Residence Interval		Total Body Dose Equiv. During & Post Residence Int.		Total Bone Marrow Dose Equiv. During and Post Residence Interval	
		mrem	mrem	mrem	mrem	mrem	mrem	mrem	mrem		
6096	3.3	46	680	430	1100	1100	1100				
80	1.0	18*	200	130	330	350					
6017	8.3	330	1200	1100	2300	2700					
6045	1.0	9.0	150	120	270	280					
6108	4.3	43	210	520	730	770					
6063	4.3	19	620	520	1100	1100					
525	1.0	5.6	350	120	470	470					
934	6.3	120	1300	760	2100	2200					
6068	6.3	60	630	820	1500	1600					
6106	3.3	39*	750	400	1100	1200					
6025	3.3	39*	900	400	1300	1300					

INDIVIDUAL DOSIMETRY DATA FOR BIKINIANS (cont'd)

ID Number	Residence Interval Years	⁹⁰ Sr & ⁹⁰ Y Bone Marrow Dose Equiv. During & Post Residence Int. mRem	¹³⁷ Cs + ^{137m} Ba Dose Equiv. During & Post Residence Int. mRem	Net External Dose Equiv. During Residence Interval mRem	Total Body Dose Equiv. During & Post Residence Int. mRem	Total Bone Marrow Dose Equiv. During and Post Residence Interval mRem
6113	4.3	19	360	520	880	900
6060	2.3	27*	510	280	790	820
6032	3.3	39*	960	400	1400	1400
6123	4.3	50*	480	520	1000	1100
6098	3.3	39*	320	400	720	760
6065	4.3	130	390	20	910	1000
6004	.55	10*	130	72	200	210
6018	6.3	150	1100	820	1900	2100
6126	2.3	45	1100	300	1400	1400
6003	8.3	250	580	1100	1700	1900
6114	1.0	12*	170	120	290	300

DOE ARCHIVES

INDIVIDUAL DOSIMETRY DATA FOR BIKINIANS (cont'd)

ID Number	Residence Interval Years	⁹⁰ Sr & ⁹⁰ Y Bone Marrow Dose Equiv. During & Post Residence Int. mRem	¹³⁷ Cs + ^{137m} Ba Dose Equiv. During & Post Residence Int. mRem	Net External Dose Equiv. During Residence Interval mRem	Total Body Dose Equiv. During & Post Residence Int. mRem	Total Bone Marrow Dose Equiv. During and Post Residence Interval mRem
6064	7.3	86*	400	900	1300	1400
6023	4.3	77*	990	560	1500	1600
6131	6.3	110*	950	820	1800	1900
6011	6.3	170	550	820	1400	1600
6081	.97	12*	490	120	610	620
6133	7.3	130*	1900	950	2800	3000
6048	.55	6.5*	590	72	660	670

*These values were derived from average male or average female daily activity ingestion rates for Sr-90.

Budy Burden Data for Medically Registered Adult Nuclei Relocated from Bikini Atoll

Med-ical ID	Height in kilo-gram (Yr)	Years on Bikini	Potas- sium gram	1974 ¹			1977 ²			1978			January 1979			May 1979			137Cs lung term removal Rate Coefficient														
				137Cs Bq	137Cs uCi	60Co Bq	Potas- sium gram	137Cs Bq	137Cs uCi	60Co Bq	Potas- sium gram	137Cs Bq	137Cs uCi	60Co Bq	Potas- sium gram	137Cs Bq	137Cs uCi	60Co Bq		Potas- sium gram	137Cs Bq	137Cs uCi	60Co Bq	Potas- sium gram	137Cs Bq	137Cs uCi	60Co Bq	Potas- sium gram					
80	61	69	0.75	-	-	-	-	-	97.6	1.42	53	1.14	42	-	-	-	-	133	MDL	MDL	0.12	4.4											
8006	63	37	0.75	-	-	-	-	-	141	2.39	86	1.67	54	-	-	-	-	133	MDL	MDL	0.12	4.4											
8003	67	27	4	-	-	-	-	-	156	4.93	180	2.34	87	-	-	-	-	137	-	-	-	-	-	-	-	-	-	-	-				
8070	85	20	10	120	0.093	3.4	-	-	157	8.17	300	3.92	150	-	-	-	-	137	2.5	93	1.1	59	-	-	-	-	-	-	-	-			
8004	95	28	0.25	-	-	-	-	-	167	1.88	70	1.33	49	-	-	-	-	165	1.2	44	0.48	18	197	1.5	165	-	-	-	-	-	-	-	4.4
8011	79	27	6	148	0.085	3.5	-	-	172	8.45	320	3.84	140	-	-	-	-	166	1.5	56	0.52	19	-	-	-	-	-	-	-	-	-	4.4	
8018	89	34	6	198	0.22	8.2	-	-	180	14.3	530	5.88	220	-	-	-	-	166	2.0	74	0.28	14	-	-	-	-	-	-	-	-	-	4.4	
8008	79	36	6	185	0.051	1.9	-	-	137	6.17	230	3.07	110	-	-	-	-	169	2.4	89	1.0	37	169	1.2	44	-	-	-	-	-	-	4.4	
8007	74	36	7	-	-	-	-	-	151	5.91	220	2.99	110	-	-	-	-	171	1.7	44	0.48	18	197	1.5	165	-	-	-	-	-	-	4.4	
8006	94	32	3	-	-	-	-	-	168	2.06	75	0.820	30	-	-	-	-	165	1.2	44	0.48	18	197	1.5	165	-	-	-	-	-	-	4.4	
8017	80	49	8	-	-	-	-	-	153	13.9	510	5.72	210	-	-	-	-	177	2.9	107	0.39	14	-	-	-	-	-	-	-	-	-	4.4	
8019	60	48	3	-	-	-	-	-	126	3.93	150	1.03	38	-	-	-	-	135	1.9	70	0.27	28	-	-	-	-	-	-	-	-	-	4.4	
8001	85	46	7	163	0.078	2.9	-	-	132	3.33	120	1.75	67	-	-	-	-	134	1.1	MDL	MDL	0.12	4.4										
8013	85	24	7	-	-	-	-	-	133	4.19	160	2.18	80	-	-	-	-	134	1.1	MDL	MDL	0.12	4.4										
8005	70	38	1.5	-	-	-	-	-	133	3.40	150	2.08	77	-	-	-	-	177	1.1	MDL	MDL	0.12	4.4										
8008	35	37	4	-	-	-	-	-	125	3.00	190	1.84	72	-	-	-	-	148	3.2	118	1.3	48	-	-	-	-	-	-	-	-	-	4.4	
8008	78	46	8	170	0.17	6.2	-	-	131	2.92	290	3.51	130	-	-	-	-	179	2.8	104	0.86	32	161	1.9	70	-	-	-	-	-	-	4.4	
8016	78	32	3	-	-	-	-	-	136	2.26	84	1.72	64	-	-	-	-	136	1.2	44	0.93	34	-	-	-	-	-	-	-	-	-	4.4	
8016	69	39	3	-	-	-	-	-	136	6.44	250	3.44	130	-	-	-	-	171	2.9	107	2.4	89	-	-	-	-	-	-	-	-	-	4.4	
8072	35	20	0.87	-	-	-	-	-	128	2.96	110	1.75	65	-	-	-	-	134	1.8	67	0.61	23	-	-	-	-	-	-	-	-	-	4.4	
8113	38	23	4	-	-	-	-	-	138	3.65	140	1.69	62	-	-	-	-	134	1.8	67	0.61	23	-	-	-	-	-	-	-	-	-	4.4	
8118	35	22	6	126	0.37	2.9	-	-	108	1.92	71	0.831	23	-	-	-	-	144	1.6	59	0.75	20	-	-	-	-	-	-	-	-	-	4.4	
8120	55	35	2	-	-	-	-	-	159	2.21	82	1.37	90	-	-	-	-	130	-	-	-	-	-	-	-	-	-	-	-	-	-	4.4	
8003	77	22	8	168	0.076	2.8	-	-	139	5.60	210	2.44	90	-	-	-	-	132	-	-	-	-	-	-	-	-	-	-	-	-	-	4.4	
8117	88	22	6	-	-	-	-	-	148	6.09	230	2.68	99	-	-	-	-	172	2.9	107	0.90	33	1.6	1.5	56	-	-	-	-	-	-	-	4.4
8120	52	31	7	-	-	-	-	-	159	1.29	48	1.15	69	-	-	-	-	155	2.7	100	0.92	34	-	-	-	-	-	-	-	-	-	-	4.4
8123	64	35	9	159	0.18	3.8	-	-	144	4.65	210	2.52	93	-	-	-	-	154	2.7	100	0.92	34	-	-	-	-	-	-	-	-	-	-	4.4
8007	82	25	0.58	-	-	-	-	-	127	2.38	95	1.49	55	-	-	-	-	144	0.67	25	0.32	12	-	-	-	-	-	-	-	-	-	-	4.4
8120	69	29	0.42	-	-	-	-	-	143	2.20	81	1.46	54	-	-	-	-	156	1.5	56	1.5	56	-	-	-	-	-	-	-	-	-	-	4.4

Person had recently traveled to Bikini Atoll

Body Burden Data for Medically Registered Adult Males Relocated from Bikini Atoll (Cont'd)

Med- ical ID	Weight (kg)	Age (Yr)	Years on Bikini	1974 ¹		1977 ²		1978				January 1979				May 1979				Long Term Removal Rate Constant d^{-1}					
				Potas- sium grams	¹³⁷ Ca μ Ci	Potas- sium grams	¹³⁷ Ca kBq	Potas- sium grams	⁶⁰ Co nCi	⁶⁰ Co Bq	¹³⁷ Ca μ Ci	¹³⁷ Ca kBq	Potas- sium grams	⁶⁰ Co nCi	⁶⁰ Co Bq	¹³⁷ Ca μ Ci	¹³⁷ Ca kBq	Potas- sium grams	⁶⁰ Co nCi		⁶⁰ Co Bq	¹³⁷ Ca μ Ci	¹³⁷ Ca kBq		
6119	54	17	7	-	-	138	0.641	24	124	4.58	170	2.13	79	-	-	-	-	-	-	-	-	-	-	-	
864	90	51	7	163	0.29	11	133	3.23	120	136	5.99	220	3.05	110	-	-	-	-	-	-	-	-	-	-	-
966	75	56	7	-	-	162	2.72	82	174	14.8	550	5.71	210	-	-	-	-	-	-	149	2.5	93	0.48	18	
6135	81	35	1	-	-	-	-	-	142	3.30	120	2.12	78	-	-	-	-	-	-	-	-	-	-	-	-
6096	66	48	3	-	-	145	1.93	64	146	4.32	160	1.91	71	146	2.5	93	1.3	48	156	0.9	33	0.70	26	5.44 ³	
6002	66	65	2	-	-	130	1.04	38	116	2.21	82	1.26	46	-	-	-	-	-	-	-	-	-	-	-	-
6161 ^{3,4}	66	36	5	130	0.081	3.0	-	-	-	-	-	-	-	142	MDL	MDL	0.109	4.0	126	MDL	MDL	0.048	1.8	7.44 ³	
6160 ^{3,4}	64	58	7	150	0.072	2.7	-	-	-	-	-	-	-	146	MDL	MDL	0.023	0.85	146	MDL	MDL	0.011	0.41	7.5=10 ³	
6184 ⁴	50	59	5	160	0.043	1.6	-	-	-	-	-	-	-	130	MDL	MDL	0.067	2.5	144	MDL	MDL	0.025	0.93	2.24 ³	
6218 ⁴	85	35	10	156	0.124	4.6	0.74	27	-	-	-	-	-	-	-	-	-	-	160	MDL	MDL	0.290	11	-	

¹ CD 75² CD 77³ Individuals left Bikini Atoll 8 months prior to the August 1978 Relocation Program.⁴ Individuals received sick call medical care prior to April 1978 but were not officially registered.

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C. S. Long
Removal from
Bikini Atoll
1978

Body Burden Data for Medically Registered Adult Females Relocated from Bikini Atoll

Medical ID	Weight in Kilograms	Years on Bikini	Age (Yr)	1976 ¹		1977 ²		1978		1979		January		May 1979											
				Potassium grams	¹³⁷ Cs μCi	Potassium grams	¹³⁷ Cs kBq	Potassium grams	⁶⁰ Co Bq	Potassium grams	⁶⁰ Co Bq	Potassium grams	⁶⁰ Co Bq	¹³⁷ Cs μCi	Potassium grams	⁶⁰ Co Bq	¹³⁷ Cs μCi	⁶⁰ Co Bq							
6045	83	0.75	28	-	-	-	-	95	1.79	66	1.15	43	-	-	-	-	-	-	-	-	-	-			
6112	90	1	35	-	-	-	-	96	2.18	81	1.76	65	94	1.6	59	0.98	36	118	MDL	MDL	0.46	17	6.7e3		
6114	54	0.75	32	-	-	-	-	79	1.40	52	0.818	30	102	MDL	MDL	0.12	4.4	-	-	-	-	-	-		
6111	84	0.5	32	-	-	-	-	100	2.11	78	1.31	49	107	1.2	44	0.53	20.	-	-	-	-	-	-		
6122	73	10	20	94	0.833	1.2	-	84	3.20	120	1.34	49	93	1.9	70.	0.31	11	90	1.1	41	0.11	4.1	4.1e3		
6123	77	4	50	-	-	-	107	1.53	57	99	3.81	140	126	2.5	93	0.62	23	97	MDL	MDL	0.25	9.3	9.3e3		
6059	45	1	19	-	-	-	-	80	1.33	49	0.861	32	-	-	-	-	-	-	-	-	-	-	-		
6043	69	4	24	-	-	-	89.6	0.799	30	81	3.16	120	1.52	56	-	-	-	-	-	-	-	-	-		
6017	63	3	32	-	-	-	96.4	1.88	70	100	5.49	200	3.07	110	94	1.7	63	0.77	28	109	1.0	37	0.26	9.6	9.6e3
6124	53	0.58	54	-	-	-	-	71	1.27	47	0.957	35	-	-	-	-	-	-	-	-	-	-	-	-	
6108	86	4	24	94	0.029	1.1	98.0	0.706	26	93	2.48	92	114	1.6	59	0.53	20	-	-	-	-	-	-	-	
6058	66	5	18	106	0.077	2.9	88.8	0.690	26	92	4.63	170	2.08	77	-	-	-	-	-	-	-	-	-	-	
6113	54	4	25	-	-	-	91.7	0.534	20	91	2.33	86	107	1.1	41	0.30	11	107	MDL	MDL	0.11	4.1	8.9e3		
6065	52	4	19	-	-	-	101	0.734	27	93	2.79	88	96	1.3	48	0.36	13	-	-	-	-	-	-	-	
6097	53	4	19	86	0.036	1.3	88.9	0.448	17	90	2.15	80	47	95	1.0	37	0.31	11	86	MDL	MDL	0.16	5.9	5.9e3	
6109	50	4	15	-	-	-	110	0.621	23	88	1.49	55	106	MDL	MDL	0.040	2.2	116	MDL	MDL	0.018	0.67	1.6e3		
6046	85	1.75	43	-	-	-	94.3	0.833	31	100	1.81	147	78	-	-	-	-	104	1.2	44	0.36	13	-	-	
6098	60	3	16	-	-	-	91.4	0.706	26	93	2.78	83	66	1.2	44	0.47	17	92	MDL	MDL	0.18	6.5	8.5e3		
6060	55	2	22	-	-	-	-	81	2.00	77	1.39	51	105	MDL	MDL	0.18	6.7	115	MDL	MDL	0.059	2.2	1.6e3		
6036	56	0.34	27	-	-	-	-	73	1.54	57	1.53	57	-	-	-	-	-	-	-	-	-	-	-	-	
6110	77	8	32	111	0.11	4.0	-	94	3.98	150	1.50	56	-	-	-	-	-	110	MDL	MDL	0.11	4.1	-	-	
525	78	0.75	37	-	-	-	-	106	2.94	113	2.36	87	-	-	-	-	-	109	MDL	MDL	0.32	12	-	-	
6064	60	7	30	-	-	-	-	83	2.55	94	0.907	74	74	1.6	59	0.42	16	88	MDL	MDL	0.22	8.1	5.6e3		
6061	65	6	32	-	-	-	-	81	3.62	133	2.22	82	-	-	-	-	-	-	-	-	-	-	-	-	
6051	50	5	19	-	-	-	95.9	0.545	20	88	2.25	83	53	-	-	-	-	33	MDL	MDL	0.045	1.7	-	-	
934	74	6	43	-	-	-	98.8	2.23	83	110	13.8	403	5.48	210	-	-	-	4	2.1	74	1.48	18	-	-	
6062	54	4	21	-	-	-	96.8	0.840	31	79	2.53	94	53	-	-	-	-	40	MDL	MDL	0.088	3.3	-	-	
6075	77	6	20	-	-	-	113	0.573	21	100	4.94	180	2.78	100	2.3	85	0.65	24	-	-	-	-	-	-	
6115	56	7	43	95	0.058	2.2	85.9	1.15	43	80	4.16	150	84	84	1.8	67	0.48	18	95	2.0	74	0.17	6.3	6.3e3	
6034	76	7	46	102	0.12	4.3	93.7	0.995	37	92	6.92	260	140	-	-	-	-	104	MDL	MDL	0.15	5.4	-	-	
865	54	7	45	59	0.018	0.67	89.4	0.558	21	78	1.70	63	49	-	-	-	-	82	1.0	37	0.13	4.8	-	-	
6050	62	2	22	-	-	-	112	1.14	43	81	3.42	130	50	-	-	-	-	-	-	-	-	-	-	-	
6167 ^{3,4}	60	7	59	89	0.030	1.1	-	-	-	-	-	-	-	92	MDL	MDL	0.015	0.54	97	MDL	MDL	0.079	0.29	-	-
6159 ^{3,4}	111	4	27	124	0.073	2.7	-	-	-	-	-	-	-	115	MDL	MDL	0.028	1.0	125	MDL	MDL	0.012	0.44	-	-
6148 ³	94	3	42	60	0.018	0.67	-	-	-	-	-	-	-	90	MDL	MDL	0.037	1.4	96	MDL	MDL	0.015	0.56	-	-
6163 ^{3,5}	84	-	38	-	-	-	142	0.570	21	-	-	-	-	136	MDL	MDL	0.061	2.3	-	-	-	-	-	-	
6151 ³	82	2	31	-	-	-	102	0.971	36	-	-	-	-	87	MDL	MDL	0.121	4.5	77	MDL	MDL	0.059	2.2	-	-

1 03 75
2 03 77
3 Individuals received sick call medical care prior to April 1978 but were not officially registered.
4 Individuals left Bikini Atoll 8 months prior to the August 1978 Relocation Program.
5 Individuals left Bikini Atoll 16 months prior to the August 1978 Relocation Program.

137Cs long
Term Removal
Rate
Constant

Body Burden Data for Medically Registered Children Relocated from Bikini Atoll

Medical ID	Weight kilograms	Years on Bikini	AGE (Yr)	Potassium Grams	1978				January 1979				May 1979					
					⁶⁰ Co nCi	⁶⁰ Co Bq	¹³⁷ Cs μCi	¹³⁷ Cs kBq	Potassium grams	nCi	⁶⁰ Co Bq	μCi	¹³⁷ Cs kBq	Potassium grams	nCi	⁶⁰ Co Bq	μCi	¹³⁷ Cs kBq
Male																		
6009	20	4	6	36	0.98	36	1.26	47	-	-	-	-	-	59	MDL	MDL	0.007	0.26
6049	23	2	8	47	2.7	99	1.71	63	-	-	-	-	-	-	-	-	-	-
6042	23	0.25	7	43	1.0	38	1.07	39	-	-	-	-	-	-	-	-	-	-
6014	20	1.34	5	41	1.7	64	1.50	56	-	-	-	-	-	69	MDL	MDL	0.012	0.44
6012	24	7	7	41	1.7	63	1.27	47	-	-	-	-	-	63	MDL	MDL	0.022	0.81
6073	28	4	8	52	1.7	63	1.28	47	43	0.91	34	0.16	5.9	-	-	-	-	-
6016	27	7	10	53	2.5	93	1.43	53	-	-	-	-	-	51	1.3	48	0.039	1.4
6018	18	2	5	33	1.3	50	1.00	37	-	-	-	-	-	-	-	-	-	-
Female																		
6094	34	6	10	51	2.3	86	2.02	75	-	-	-	-	-	-	-	-	-	-
6092	29	6	8	52	2.8	100	2.25	83	-	-	-	-	-	-	-	-	-	-
6080	34	0.58	7	50	MDL	MDL	0.543	20	-	-	-	-	-	-	-	-	-	-
6010	29	7	8	56	1.8	67	1.41	52	50	MDL	MDL	0.17	6.3	-	-	-	-	-
6038	21	2	6	42	1.3	47	1.00	37	-	-	-	-	-	-	-	-	-	-
6105	22	3	5	31	1.2	43	0.967	36	65	-	-	0.053	2.0	-	1.0	37	0.0074	0.27
6103	-	3	9	48	1.4	53	1.40	52	-	-	-	-	-	-	-	-	-	-
6028	25	5	7	52	1.4	51	1.26	47	-	-	-	-	-	4	1.0	37	0.015	0.56
6030	34	3	10	54	3.0	110	2.38	88	34	MDL	MDL	0.26	9.6	7	MDL	MDL	0.064	2.4
6027	22	3	6	36	5.6	210	1.16	43	58	MDL	MDL	0.042	1.6	-	-	-	-	1.2 x 10 ⁻²
6044	18	5	6	35	6.4	240	1.15	43	-	-	-	-	-	1	MDL	MDL	0.0062	0.23
6025	21	3	5	44	0.97	36	1.03	38	45	MDL	MDL	0.13	4.8	67	MDL	MDL	0.028	1.0
6081	26	0.67	9	49	MDL	MDL	1.02	38	-	-	-	-	-	-	-	-	-	1.4 x 10 ⁻²
6106	22	3	6	32	MDL	MDL	0.622	23	37	-	-	0.077	2.9	44	MDL	MDL	0.013	0.48

DOE ARCHIVES

2.0 x 10⁻²
1.2 x 10⁻²
1.4 x 10⁻²
1.7 x 10⁻²

Body Burden Data for Medically Registered Children Relocated from Bikini Atoll

ID #	Sex	Age (yr)	Height (cm)	Weight (kg)	Yrs On Bikini	Yrs Off Bikini	January		May		1979 Potassium Result Grams	
							1979 137Cs Result		1979 137Cs Result			
							nCi	kBq	nCi	kBq		
6031*	M	5	105	20	3	.70	--	--	--	2.8	0.10	35
6029	M	6	112	20	5	.70	--	--	--	4.7	0.17	25
6100*	M	5	99	17	4.3	.70	--	--	--	15	0.56	24
6021*	M	5	103	19	4.3	.71	46	1.7	NC	6.2	0.23	51
6020	M	6	107	20	2	.71	56	2.1	72	7.4	0.27	37
6107*	M	5	96	15	4.3	.71	16	0.59	46	2.6	0.096	40
6074*	M	5	104	20	4.3	.71	9.0	0.33	34	MDL	MDL	25
6078*	F	5	99	17	--	0.40	3.0	0.11	28	--	--	--
6088*	F	5	95	15	4.3	.70	--	--	--	3.0	0.11	33
6090	F	6	108	25	5	.70	--	--	--	4.9	0.18	31
6101	F	6	104	19	5.3	.70	51	1.9	12	6.9	0.26	15
6056*	F	6	100	17	4.3	.71	46	1.7	NC	7.4	0.27	49
6057	F	7	107	26	1	.72	--	--	--	5.8	0.22	66

*Indicates children were 4 yrs or less April, 1978

NC = Not Calculated

131
Cs long term
Removal Rate
Constant

 3.1×10^{-2} 2.0×10^{-2} 2.7×10^{-2} 2.1×10^{-2} 1.4×10^{-2}

Body Burden Data for Non-Medically Registered Adult Male Prior Residents of Bikini Atoll

<u>ID #</u>	<u>Sex</u>	<u>Age (yr)</u>	<u>Height (cm)</u>	<u>Weight (kg)</u>	<u>Yrs on Bikini</u>	<u>Yrs off Bikini</u>	<u>May 1979 ¹³⁷Cs Result</u>		<u>May 1979 Potassium Result</u>
							<u>nCi</u>	<u>kBq</u>	<u>Grams</u>
6190	M	19	166	57	0.25	2	6.0	0.22	161
6205	M	42	170	81	4	4.5	MDL	MDL	159
6211	M	19	163	55	1	3	MDL	MDL	134
6218	M	56	158	72	2	10	MDL	MDL	169
6219	M	30	173	60	2	9	MDL	MDL	143
6220	M	26	166	66	2	9	MDL	MDL	165
6221	M	53	175	82	2	9	4.2	0.16	139
6223	M	66	152	65	2 days May 14, 15, 1979	.016	99	3.7	127
6224	M	45	158	55	2 days May 14, 15, 1979	.016	120	4.4	146
6226	M	18	164	58	2 yr	3	MDL	MDL	137

Body Burden Data for Non-Medically Registered Adult Male Prior Residents of Bikini Atoll

ID #	Sex	Age (yr)	Height (cm)	Weight (kg)	Yrs. On Bikini	Yrs. Off Bikini	January		May				
							1979 ¹³⁷ Cs Result		1979 Potassium Result		1979 ¹³⁷ Cs Result		1979 Potassium Result
							nCi	kBq	Gram	nCi	kBq	Gram	
6136	M	48	150	58		4	8.5	0.31	144	--	--	--	
6138	M	20	163	57		3	2.8	0.10	165	--	--	--	
6153	M	23	160	65	1	1.42	5.8	0.21	170	5.4	0.20	146	
6168	M	16	150	44	7	1.0	2.4	0.089	101	MDL	MDL	100	
6174	M	52	174	84		6	17	0.63	158	--	--	--	
6180	M	22	173	67	4	1	34	1.1	141	--	--	--	
6182	M	18	161	53	6	0.42	1220	45	122	620	23	131	

¹³⁷Cs
Long Term Removal
Rate Constant
d⁻¹

6.1×10^{-3}

Body Burden Data of Non-Medically Registered Adult Female Prior Residents of Bikini Atoll

ID #	Sex	Age (yr)	Height (cm)	Weight (kg)	Yrs. On Bikini	Yrs. Off Bikini	January		May		1979 Potassium Result Gram	1979 Potassium Result Gram
							1979 137Cs Result		1979 137Cs Result			
							nCi	kBq	nCi	kBq		
6137	F	38	161	64	0.33	4	3.8	0.14	113	1.7	0.063	112
6139	F	22	140	38	--	3	2.1	0.078	89	--	--	--
6140	F	16	146	46	0.17	0.42	27	1.0	94	8.6	0.32	94
6144	F	21	150	44	1	0.42	37	1.4	105	13	0.48	89
6152	F	20	157	59	1	1.42	2.4	0.089	123	3.9	0.14	117
6155	F	24	155	66	6	0.42	390	15	120	150	5.6	96
6160	F	65	153	55	6	0.67	360	13	67	140	5.1	87
6165	F	36	142	60	--	1.5	6.6	0.24	76	--	--	--
6175	F	24	155	63	--	--	11	0.41	90	5.2	0.19	92
6181	F	44	151	55	4	1	8.5	0.31	105	4.6	0.17	105
6185	F	21	144	41	3	2.5	2.7	0.10	74	3.4	0.13	79

137Cs Long
Term Removal
Rate Constant
d⁻¹

1.1×10^{-2}

1.0×10^{-2}

8.5×10^{-3}

8.4×10^{-3}

4.1×10^{-3}

8.1×10^{-3}

Body Burden Data of Non-Medically Registered Adult Female Prior Residents of Bikini Atoll

<u>ID #</u>	<u>Sex</u>	<u>Age (yr)</u>	<u>Height (cm)</u>	<u>Weight (kg)</u>	<u>Yrs on Bikini</u>	<u>Yrs off Bikini</u>	<u>May 1979 ¹³⁷Cs</u>		<u>May 1979</u>
							<u>Result nCi</u>	<u>Result kBq</u>	<u>Potassium Result Gram</u>
6187	F	21	152	54	0.019	1	1.6	0.059	107
6189	F	21	155	--	2.5	1	1.9	0.070	114
6206	F	32	151	73	3	5.5	MDL	MDL	116
6222	F	39	156	66	2.5	3	MDL	MDL	98

DOE ARCHIVES

Body Burden Data for Non-Medically Registered Adolescents and Children Prior Residents of Bikini Atoll

ID #	Sex	Age (yr)	Height (cm)	Weight (kg)	Yrs. On Bikini	Yrs. Off Bikini	January		May				
							1979 ¹³⁷ Cs Result		1979 Potassium Result		1979 ¹³⁷ Cs Result		1979 Potassium Result
							nCi	kBq	Gram	nCi	kBq	Gram	
6156	M	9	130	34	6	1.0	2.0	0.074	53	3.4	0.13	59	
6164	M	5	85	15	--	1.5	8.0	0.30	40	--	--	--	
6169	M	14	167	46	7	1.0	1.2	0.044	108	MDL	MDL	120	
6172	M	10	130	30	7	1.0	2.8	0.10	40	1.9	0.070	74	
6178	M	12	157	33	4	1.0	2.0	0.074	46	1.7	0.062	70	
6183	M	12	139	35	--	1.67	1.0	0.037	36	MDL	MDL	74	
6179	F	8	115	22	4	1	1.2	0.044	MDL	MDL	MDL	59	
6177	F	6	103	18	--	6	MDL	MDL	MDL	MDL	MDL	36	
6176	F	8	144	24	--	6	MDL	MDL	MDL	MDL	MDL	38	
6173	F	13	142	47	3	0.42	4.0	0.15	33	MDL	MDL	48	
6171	F	6	96	15	2.67	1.0	4.0	0.15	16	1.1	0.041	47	
6170	F	13	140	45	7	1.0	2.8	0.10	58	1.8	0.067	77	
6162	F	12	147	50	--	1.5	5.0	0.19	36	--	--	--	
6157	F	5	106	20	4	1.0	7.2	0.27	32	MDL	MDL	54	
6158	F	6	103	20	4	1.0	3.5	0.13	32	1.2	0.044	46	
6150	F	8	120	25	4	0.42	4.0	0.15	42	1.5	0.056	40	
6149	F	5	99	19	4.3	0.42	1.6	0.059	37	MDL	MDL	32	

DOE ARCHIVES

Body Burden Data for Non-Medically Registered Adolescents and Children Prior Residents of Bikini Atoll

ID #	Sex	Age (yr)	Height (cm)	Weight (kg)	Yrs on Bikini	Yrs off Bikini	May 1979 ¹³⁷ Co Result		May 1979 Potassium Result Gram
							nCi	kBq	
6200	M	14	155	43	1	.71	110	4.1	111
6202	M	6	100	19	5.3	.72	1.8	0.067	53
6207	M	12	138	35	4	4.5	MDL	MDL	78
6208	M	10	136	33	4	4.5	MDL	MDL	76
6225	M	11	125	25	5	1.33	MDL	MDL	53
6203	F	5	92	15	4.3	.72	MDL	MDL	54
6204	F	5	104	21	1	.72	1.1	0.040	57
6212	F	14	151	50	1	3	MDL	MDL	73
6213	F	10	121	25	1	3	MDL	MDL	56
6217	F	10	126	25	2	9	MDL	MDL	44

DOE ARCHIVES

Body Burden Data for Non-Medically Registered Adolescents and Children Never on Bikini Island

ID #	Sex	Age (yr)	Height (cm)	Weight (kg)	January		May		1979 Potassium Result Gram	
					1979 ¹³⁷ Cs Result		1979 ¹³⁷ Cs Result			
					nCi	kBq	nCi	kBq		
6141	F	12	138	33	2.7	0.10	63	1.5	0.056	112
6142	F	10	126	26	2.3	0.085	52	1.0	0.037	72
6143	F	4	104	19	1.2	0.044	41	MDL	MDL	35
6145	M	5	110	21	1.0	0.037	46	--	--	--
6186	M	5	104	20	--	--	--	MDL	MDL	22
6188	F	14	146	49	--	--	--	2.9	0.11	107
6191	F	6	113	23	--	--	--	1.1	0.041	61