

TAB

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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Results from 1974 to 1979 for Bikini Island Residents", R. S. Miltenberger et al., BNL Report (in press) and from unpublished bioassay results.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

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	1100
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

DOE ARCHIVES

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)

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
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

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.

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

Medical ID	Weight in Kilograms	Age (yr)	Years on Bikini	1976 ¹				1977 ²				1978				January 1979				May 1979				¹³⁷ Cs Lung Removal Rate Constant
				Potassium grams	¹³⁷ Cs Bq	Potassium grams	¹³⁷ Cs Bq	Potassium grams	⁶⁰ Co Bq	¹³⁷ Cs Bq	Potassium grams	⁶⁰ Co Bq	¹³⁷ Cs Bq	Potassium grams	⁶⁰ Co Bq	¹³⁷ Cs Bq	Potassium grams	⁶⁰ Co Bq	¹³⁷ Cs Bq	MdL	MdL	MdL	MdL	
60	61	69	0.75	-	-	-	-	-	-	97.6	1.42	53	1.14	42	-	-	-	133	-	-	-	-		
6006	63	37	0.75	-	-	-	-	-	-	141	2.39	88	1.47	56	-	-	-	-	-	-	-	-		
6013	67	27	4	-	-	-	-	-	-	156	4.93	180	2.34	87	-	-	-	-	-	-	-	-		
6010	85	28	10	170	0.093	3.4	-	146	0.729	152	0.17	300	3.92	150	-	-	-	-	-	-	-	-		
6004	95	28	0.35	148	0.095	3.5	-	187	1.51	167	1.88	70	1.33	49	-	-	-	-	-	-	-	-		
6011	79	27	6	198	0.22	8.2	-	136	1.52	172	0.45	370	3.84	140	-	-	-	-	-	-	-	-		
6008	89	34	6	198	0.22	8.2	-	136	1.52	180	14.3	530	5.88	220	-	-	-	-	-	-	-	-		
6009	61	32	8	-	-	-	-	-	-	137	6.01	150	1.17	43	-	-	-	-	-	-	-	-		
6008	70	56	6	185	0.031	1.9	-	144	0.778	141	6.17	230	3.07	110	-	-	-	-	-	-	-	-		
6007	76	56	7	-	-	-	-	-	-	151	5.91	220	2.99	110	-	-	-	-	-	-	-	-		
6017	80	49	3	-	-	-	-	-	-	168	2.06	75	0.820	30	-	-	-	-	-	-	-	-		
6019	60	48	5	-	-	-	-	-	-	133	13.9	510	5.72	210	-	-	-	-	-	-	-	-		
6001	85	46	7	163	0.078	2.8	-	119	0.791	107	3.95	150	1.03	38	-	-	-	-	-	-	-	-		
6012	85	34	7	-	-	-	-	132	0.775	126	3.33	120	1.75	61	-	-	-	-	-	-	-	-		
6005	70	38	1.5	-	-	-	-	133	-	133	4.19	160	2.18	80	-	-	-	-	-	-	-	-		
6008	35	22	4	-	-	-	-	133	1.99	125	5.00	190	1.94	72	-	-	-	-	-	-	-	-		
6006	78	46	8	170	0.17	6.2	-	159	2.16	131	2.92	290	3.51	130	-	-	-	-	-	-	-	-		
6016	69	39	0.75	-	-	-	-	136	-	136	2.26	84	1.72	64	-	-	-	-	-	-	-	-		
6016	69	39	2	-	-	-	-	163	-	163	6.54	250	3.44	130	-	-	-	-	-	-	-	-		
6012	35	20	0.67	-	-	-	-	128	-	128	2.56	110	1.75	65	-	-	-	-	-	-	-	-		
6110	38	23	4	-	-	-	-	163	0.985	108	3.65	140	1.69	62	-	-	-	-	-	-	-	-		
6118	35	22	6	126	0.77	2.9	-	108	-	108	1.92	71	0.631	23	-	-	-	-	-	-	-	-		
6118	35	22	2	-	-	-	-	149	2.21	137	7.79	290	3.30	120	-	-	-	-	-	-	-	-		
6118	35	22	2	-	-	-	-	149	2.21	137	7.79	290	3.30	120	-	-	-	-	-	-	-	-		
6003	77	22	8	168	0.076	2.8	-	161	0.923	139	5.60	210	2.64	90	-	-	-	-	-	-	-	-		
6003	80	22	6	-	-	-	-	169	1.15	148	6.09	230	2.68	99	-	-	-	-	-	-	-	-		
6117	80	22	6	-	-	-	-	149	1.29	119	4.79	180	1.85	69	-	-	-	-	-	-	-	-		
6118	52	31	7	-	-	-	-	144	1.54	144	5.65	210	2.32	93	-	-	-	-	-	-	-	-		
6113	64	35	9	159	0.18	5.8	-	127	-	127	2.58	95	1.49	55	-	-	-	-	-	-	-	-		
6007	82	35	0.58	-	-	-	-	143	-	143	2.20	81	1.46	54	-	-	-	-	-	-	-	-		
6130	69	29	0.42	-	-	-	-	143	-	143	2.20	81	1.46	54	-	-	-	-	-	-	-	-		

Person had recently traveled to Bikini Atoll

*4/11/75
6.7x10⁻³*

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

Med- ical ID	Weight (kg)	Age (Yr)	Years on Bikini	Potas- sium grams	1974 ¹		1977 ²		1978				January 1979				May 1979				Long Term Removal Rate Constant d ⁻¹							
					¹³⁷ Co μCi	¹³⁷ Co kBq	Potas- sium grams	¹³⁷ Co μCi	¹³⁷ Co kBq	Potas- sium grams	⁶⁰ Co nCi	⁶⁰ Co Bq	¹³⁷ Co μCi	¹³⁷ Co kBq	Potas- sium grams	⁶⁰ Co nCi	⁶⁰ Co Bq	¹³⁷ Co μCi	¹³⁷ Co kBq	Potas- sium grams		⁶⁰ Co nCi	⁶⁰ Co Bq	¹³⁷ Co μCi	¹³⁷ Co 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	2.22	82	174	14.8	550	5.71	210	-	-	-	-	-	-	149	2.5	93	0.48	18	-	-	
8135	81	75	1	-	-	-	-	-	-	142	3.30	120	2.12	78	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6098	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	5.4x10 ⁻³	-	-	
6002	66	65	2	-	-	-	130	1.04	38	116	2.21	82	1.26	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6161 ^{3,4}	66	34	5	130	0.081	3.0	-	-	-	-	-	-	-	-	142	MDL	MDL	0.109	4.0	126	MDL	MDL	0.048	1.8	7.4x10 ⁻³	-	-	
6166 ^{3,4}	64	58	7	150	0.072	2.7	-	-	-	-	-	-	-	-	146	MDL	MDL	0.023	0.85	146	MDL	MDL	0.011	0.41	7.5x10 ⁻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	2.2x10 ⁻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.

DOE ARCHIVES

Body Burden Data for Medically Registered Adolescents Relocated from Bikini Atoll

Medical ID	Weight kilograms	Years on Bikini	A.E (Yr)	1977				1978				January 1979				May 1979					
				Potassium gram	¹³⁷ Cs μ Ci	¹³⁷ Cs kBq	Potassium Grams	⁶⁰ Co μ Ci	⁶⁰ Co Bq	¹³⁷ Cs μ Ci	¹³⁷ Cs kBq	Potassium grams	⁶⁰ Co μ Ci	⁶⁰ Co Bq	¹³⁷ Cs μ Ci	¹³⁷ Cs kBq	Potassium grams	⁶⁰ Co μ Ci	⁶⁰ Co Bq	¹³⁷ Cs μ Ci	¹³⁷ Cs kBq
Males																					
6147	36	4.5	12	84	0.959	36	-	-	-	-	53	MDL	MDL	0.204	7.6	94	MDL	MDL	0.075	2.8	
6152	33	2	12	-	-	-	58	3.45	130	1.85	68	-	-	-	-	-	-	-	-	-	
6131	38	6	14	96	1.33	49	69	3.40	130	1.69	63	108	2.1	78	0.76	28	137	1.4	52	0.32	12
6011	40	6	12	-	-	-	53	1.34	50	0.830	31	59	1.0	37	0.055	2.0	74	MDL	MDL	0.017	0.63
6127	37	7	13	91	0.824	31	51	2.17	80	0.732	22	95	2.0	74	0.21	7.8	60	MDL	MDL	0.053	2.0
6111	27	7	13	-	-	-	51	3.52	130	2.09	78	-	-	-	-	-	55	1.0	37	0.022	0.81
6015	39	1.42	11	-	-	-	57	1.18	44	1.28	47	37	MDL	MDL	0.071	2.6	60	MDL	MDL	0.016	0.60
Females																					
6129	48	4	11	91	0.682	25	69	1.32	49	.744	28	73	1.2	44	0.22	10	89	MDL	MDL	0.076	2.8
6048	40	0.25	11	-	-	-	70	2.61	96	2.05	76	-	-	-	-	-	121	MDL	MDL	0.074	2.7
6091	43	6	13	-	-	-	69	2.20	82	1.17	43	103	1.6	57	0.15	5.6	86	MDL	MDL	0.037	1.4

Medical ID

¹³⁷Cs long Term Removal Rate Constant, d⁻¹

6147	8.9×10^{-3}
6131	7.6×10^{-2}
6011	1.1×10^{-2}
6127	1.2×10^{-2}
6015	1.4×10^{-2}
6129	1.1×10^{-2}
6091	1.3×10^{-2}

137Cs long
Term Annual
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 ⁶⁰ Co		¹³⁷ Cs		Potassium grams	nCi	January 1979 ⁶⁰ Co		¹³⁷ Cs		Potassium grams	May 1979 ⁶⁰ Co		¹³⁷ Cs	
					nCi	Bq	µCi	kBq			nCi	Bq	µCi	kBq		nCi	Bq	µCi	kBq
Males																			
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	-	-	-	-	-	-	-	-	-	-	
6016	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	32	1.7	63	1.28	47	43	0.91	34	0.16	5.9	-	-	-	-	-	
6016	27	7	10	33	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	-	-	-	-	-	-	-	-	-	-	
Females																			
6094	34	6	10	51	2.3	86	2.07	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	47	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	40	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	0.004	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	-	-	-	-	-	5	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 ¹³⁷ Cs Result		1979 Potassium Result Grams	1979 ¹³⁷ Cs Result		1979 Potassium Result Grams
							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

¹³¹
Cs long term
Removal Rate
Constant

3.1×10^{-2}
 2.6×10^{-2}
 2.9×10^{-2}

2.1×10^{-2}
 1.4×10^{-2}

*Indicates children were 4 yrs or less April, 1978

NC = Not Calculated

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 ¹³⁷Co 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 Result</u>		<u>May 1979 Potassium Result Gram</u>
							<u>nCi</u>	<u>kBq</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

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	0.41	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

<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 ¹³⁷Co Result</u>		<u>May 1979 Potassium Result Gram</u>
							<u>nCi</u>	<u>KBq</u>	
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

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 Co Result		1979 ¹³⁷ Co 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