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III

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Year	1	2	3	4	5	6	7	8	9	10	11	12
1987	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1988	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1989	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1990	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1991	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1992	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1993	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1994	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1995	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1996	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1997	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1998	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1999	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2001	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2002	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2003	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2004	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2005	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2006	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2007	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2008	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2009	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2010	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2011	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2012	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2013	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2014	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2015	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2016	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2017	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2018	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2019	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2020	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2021	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2022	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2023	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2024	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2025	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2026	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2027	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2028	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2029	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2030	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

1) Highest dose values were used. (Dose were based on 1000 mg/1000 ml). A 1000 mg/1000 ml  
 2) Numbers used in book.  
 3) Maximum annual dose in mlll/1000.

CANCER RISK

8	9	10	11	12	13	14
BCIR-1 Absolute (Col. 7 x 2) / 10 <sup>6</sup> (row 1)	Number of Cancer Deaths BCIR-1 Relative (Col. 7 x 458 x 10 <sup>6</sup> (row 1))	BCIR-111 Absolute (Col. 7 x 67 x 10 <sup>6</sup> (row 1))	BCIR-111 Relative (Col. 7 x 430 x 10 <sup>6</sup> (row 1))	Deaths in 30 years	Natural Deaths (15% of All Deaths)	Percent Increase (Col. 11 x (col. 13 x 100)
1.00E+06	1.00E+06	1.00E+06	1.00E+06	100	150	50
1.50E+06	1.50E+06	1.50E+06	1.50E+06	150	225	50
2.00E+06	2.00E+06	2.00E+06	2.00E+06	200	300	50
2.50E+06	2.50E+06	2.50E+06	2.50E+06	250	375	50
3.00E+06	3.00E+06	3.00E+06	3.00E+06	300	450	50
3.50E+06	3.50E+06	3.50E+06	3.50E+06	350	525	50
4.00E+06	4.00E+06	4.00E+06	4.00E+06	400	600	50
4.50E+06	4.50E+06	4.50E+06	4.50E+06	450	675	50
5.00E+06	5.00E+06	5.00E+06	5.00E+06	500	750	50
5.50E+06	5.50E+06	5.50E+06	5.50E+06	550	825	50
6.00E+06	6.00E+06	6.00E+06	6.00E+06	600	900	50
6.50E+06	6.50E+06	6.50E+06	6.50E+06	650	975	50
7.00E+06	7.00E+06	7.00E+06	7.00E+06	700	1050	50
7.50E+06	7.50E+06	7.50E+06	7.50E+06	750	1125	50
8.00E+06	8.00E+06	8.00E+06	8.00E+06	800	1200	50
8.50E+06	8.50E+06	8.50E+06	8.50E+06	850	1275	50
9.00E+06	9.00E+06	9.00E+06	9.00E+06	900	1350	50
9.50E+06	9.50E+06	9.50E+06	9.50E+06	950	1425	50
1.00E+07	1.00E+07	1.00E+07	1.00E+07	1000	1500	50



GENETIC EFFECTS

OCTOBER 31, 1982

8	9	10	11
30-year MB Dose x Number of Births (Column 4 x Column 8)	BFIR-111 Minimum Number of Increased Effects (Column 8 x 5 x 10 <sup>-5</sup> per rem)	Maximum Number of Increased Effects (Column 8 x 75 x 10 <sup>-5</sup> per rem)	Percent Increased (Column 10 ÷ Column 9 x 100)
10000	0.0050	0.0075	150%
20000	0.0100	0.0150	150%
30000	0.0150	0.0225	150%
40000	0.0200	0.0300	150%
50000	0.0250	0.0375	150%
60000	0.0300	0.0450	150%
70000	0.0350	0.0525	150%
80000	0.0400	0.0600	150%
90000	0.0450	0.0675	150%
100000	0.0500	0.0750	150%
110000	0.0550	0.0825	150%
120000	0.0600	0.0900	150%
130000	0.0650	0.0975	150%
140000	0.0700	0.1050	150%
150000	0.0750	0.1125	150%
160000	0.0800	0.1200	150%
170000	0.0850	0.1275	150%
180000	0.0900	0.1350	150%
190000	0.0950	0.1425	150%
200000	0.1000	0.1500	150%



STATION DATA

Station	Year	Latitude	Longitude	Height	Remarks
100	1960	38 42	100 30	100	...
101	1960	38 42	100 30	100	...

Station	Year	Latitude	Longitude	Height	Remarks
102	1960	38 42	100 30	100	...
103	1960	38 42	100 30	100	...

Station	Year	Latitude	Longitude	Height	Remarks
104	1960	38 42	100 30	100	...
105	1960	38 42	100 30	100	...

Station	Year	Latitude	Longitude	Height	Remarks
106	1960	38 42	100 30	100	...
107	1960	38 42	100 30	100	...

Station	Year	Latitude	Longitude	Height	Remarks
108	1960	38 42	100 30	100	...
109	1960	38 42	100 30	100	...

Station	Year	Latitude	Longitude	Height	Remarks
110	1960	38 42	100 30	100	...
111	1960	38 42	100 30	100	...

\* Highest dose values were used. These were based on BNL Community A & B Surveys.

( ) No. of birds.

8	9	10	11	12	13	14
BEIR-I Absolute (Col. 7 x 87 x 10 <sup>-6</sup> rem <sup>-1</sup> )	BEIR-I Relative (Col. 7 x 458 x 10 <sup>-6</sup> rem <sup>-1</sup> )	Number of Cancer Deaths BEIR-III Absolute (Col. 7 x 67 x 10 <sup>-4</sup> rem <sup>-1</sup> )	BEIR-III Relative (Col. 7 x 430 x 10 <sup>-4</sup> rem <sup>-1</sup> )	Deaths in 30 years	Natural Rates Cancer (1/100 of All Deaths)	Percent Increase (Col. 11 ÷ Col. 13 x 100)

2 x 2 50 2.4 2.4 2.4

2 x 2 38 10.2 10.2 10.2

2 x 2 20 2.0 2.0 2.0

2 x 2 20 2.0 2.0 2.0

2 x 2 20 2.0 2.0 2.0

2 x 2 20 2.0 2.0 2.0

2 x 2 20 2.0 2.0 2.0

2 x 2 20 2.0 2.0 2.0

2 x 2 20 2.0 2.0 2.0

2 x 2 20 2.0 2.0 2.0

2 x 2 20 2.0 2.0 2.0

CANCER RISK

	1	2	3	4	5	6
Age Group	Initial Population	50-Year Bone Marrow Age	30-Year Person Years	Number of Births Expected in 30 years	30-Year Hosp. Rate (Col. 4 x Col. 5)	30-Year Additional Person Years (Col. 3 x Col. 5)
0-14	135	135	7000	14	1.7	2200
15-24	400	400	20000	100	1.0	4000
25-34	200	200	10000	50	1.0	2000
35-44	200	200	10000	50	1.0	2000
45-54	200	200	10000	50	1.0	2000
55-64	200	200	10000	50	1.0	2000
65-74	200	200	10000	50	1.0	2000
75-84	200	200	10000	50	1.0	2000
85-94	200	200	10000	50	1.0	2000
95-104	200	200	10000	50	1.0	2000
105-114	200	200	10000	50	1.0	2000
115-124	200	200	10000	50	1.0	2000
125-134	200	200	10000	50	1.0	2000
135-144	200	200	10000	50	1.0	2000
145-154	200	200	10000	50	1.0	2000
155-164	200	200	10000	50	1.0	2000
165-174	200	200	10000	50	1.0	2000
175-184	200	200	10000	50	1.0	2000
185-194	200	200	10000	50	1.0	2000
195-204	200	200	10000	50	1.0	2000
205-214	200	200	10000	50	1.0	2000
215-224	200	200	10000	50	1.0	2000
225-234	200	200	10000	50	1.0	2000
235-244	200	200	10000	50	1.0	2000
245-254	200	200	10000	50	1.0	2000
255-264	200	200	10000	50	1.0	2000
265-274	200	200	10000	50	1.0	2000
275-284	200	200	10000	50	1.0	2000
285-294	200	200	10000	50	1.0	2000
295-304	200	200	10000	50	1.0	2000
305-314	200	200	10000	50	1.0	2000
315-324	200	200	10000	50	1.0	2000
325-334	200	200	10000	50	1.0	2000
335-344	200	200	10000	50	1.0	2000
345-354	200	200	10000	50	1.0	2000
355-364	200	200	10000	50	1.0	2000
365-374	200	200	10000	50	1.0	2000
375-384	200	200	10000	50	1.0	2000
385-394	200	200	10000	50	1.0	2000
395-404	200	200	10000	50	1.0	2000
405-414	200	200	10000	50	1.0	2000
415-424	200	200	10000	50	1.0	2000
425-434	200	200	10000	50	1.0	2000
435-444	200	200	10000	50	1.0	2000
445-454	200	200	10000	50	1.0	2000
455-464	200	200	10000	50	1.0	2000
465-474	200	200	10000	50	1.0	2000
475-484	200	200	10000	50	1.0	2000
485-494	200	200	10000	50	1.0	2000
495-504	200	200	10000	50	1.0	2000
505-514	200	200	10000	50	1.0	2000
515-524	200	200	10000	50	1.0	2000
525-534	200	200	10000	50	1.0	2000
535-544	200	200	10000	50	1.0	2000
545-554	200	200	10000	50	1.0	2000
555-564	200	200	10000	50	1.0	2000
565-574	200	200	10000	50	1.0	2000
575-584	200	200	10000	50	1.0	2000
585-594	200	200	10000	50	1.0	2000
595-604	200	200	10000	50	1.0	2000
605-614	200	200	10000	50	1.0	2000
615-624	200	200	10000	50	1.0	2000
625-634	200	200	10000	50	1.0	2000
635-644	200	200	10000	50	1.0	2000
645-654	200	200	10000	50	1.0	2000
655-664	200	200	10000	50	1.0	2000
665-674	200	200	10000	50	1.0	2000
675-684	200	200	10000	50	1.0	2000
685-694	200	200	10000	50	1.0	2000
695-704	200	200	10000	50	1.0	2000
705-714	200	200	10000	50	1.0	2000
715-724	200	200	10000	50	1.0	2000
725-734	200	200	10000	50	1.0	2000
735-744	200	200	10000	50	1.0	2000
745-754	200	200	10000	50	1.0	2000
755-764	200	200	10000	50	1.0	2000
765-774	200	200	10000	50	1.0	2000
775-784	200	200	10000	50	1.0	2000
785-794	200	200	10000	50	1.0	2000
795-804	200	200	10000	50	1.0	2000
805-814	200	200	10000	50	1.0	2000
815-824	200	200	10000	50	1.0	2000
825-834	200	200	10000	50	1.0	2000
835-844	200	200	10000	50	1.0	2000
845-854	200	200	10000	50	1.0	2000
855-864	200	200	10000	50	1.0	2000
865-874	200	200	10000	50	1.0	2000
875-884	200	200	10000	50	1.0	2000
885-894	200	200	10000	50	1.0	2000
895-904	200	200	10000	50	1.0	2000
905-914	200	200	10000	50	1.0	2000
915-924	200	200	10000	50	1.0	2000
925-934	200	200	10000	50	1.0	2000
935-944	200	200	10000	50	1.0	2000
945-954	200	200	10000	50	1.0	2000
955-964	200	200	10000	50	1.0	2000
965-974	200	200	10000	50	1.0	2000
975-984	200	200	10000	50	1.0	2000
985-994	200	200	10000	50	1.0	2000
995-1004	200	200	10000	50	1.0	2000

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