

Report No. EMP-155

APR 19 1983

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REVIEW AND EXPANSION OF USNRC REGULATORY GUIDE 1.109  
MODELS FOR COMPUTING DOSE CONVERSION FACTORS

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February 1983

## 1.0 INTRODUCTION

The USNRC Regulatory Guide 1.109<sup>(1)</sup> referenced models for calculating chronic exposure dose conversion factors (DF) by radionuclide, pathway, organ, and age group are provided in NUREG-0172.<sup>(2)</sup> Additional computed DFs are presented in NUREG/CR-2384.<sup>(3)</sup> Since issuance, a number of corrections and updates have been made to the metabolic data base used in NUREG-0172.<sup>(4)</sup>

In this report, the models are expanded to provide acute exposure dose conversion factors and to treat the special case of inhalation of insoluble nuclides with identical biological half-lives in the lung and in the organ of interest. Newly calculated chronic and acute exposure DFs are provided for a number of important radionuclides.

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## 2.0 DOSE CONVERSION FACTOR (DF) FORMULATIONS

All DFs are calculated to provide 50-year integrated dose commitment estimates. In the case of chronic exposures, the DF is in units of mrem/50 yr per pCi intake in the first year. For acute exposures, the units are mrem/50 yr per pCi intake at the beginning of the age group period. In all cases except the GI-Tract, the DF is computed as follows:

$$DF = K \cdot P \quad \text{Eqn. 1}$$

### 2.1 Form of "K" Function by Pathway

2.1.1 Ingestion of all nuclides and inhalation of all soluble nuclides and for lung DF with insoluble nuclides (see Figure 2-1):

$$K = 5.121E-2 \cdot F \quad \text{Eqn. 2}$$

where:  $5.121E-2 = (2.22 \text{ dpm/pCi}) * (1440 \text{ min/day}) * (1.602E-5 \text{ gm mrem/MeV})$

F = Fraction reaching the organ

= F<sub>w</sub> for ingestion

= F<sub>a</sub> for inhalation

(Note that A\*B means A times B.)

2.1.2 Inhalation of insoluble nuclides - all organs except lung (see Figure 2-2):

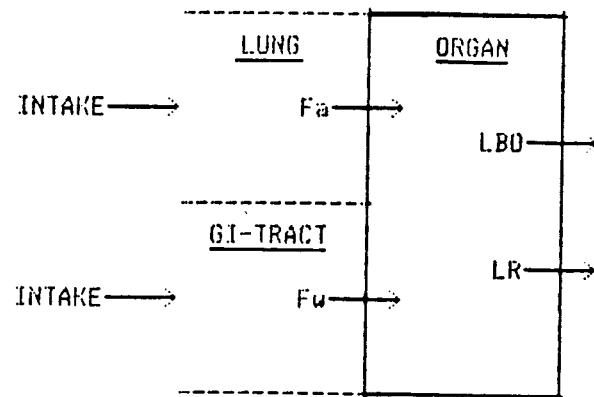


FIGURE 2-1 MODEL FOR INGESTION OF ALL NUCLIDES AND INHALATION OF ALL SOLUBLE NUCLIDES AND LUNG WITH INSOLUBLE NUCLIDES

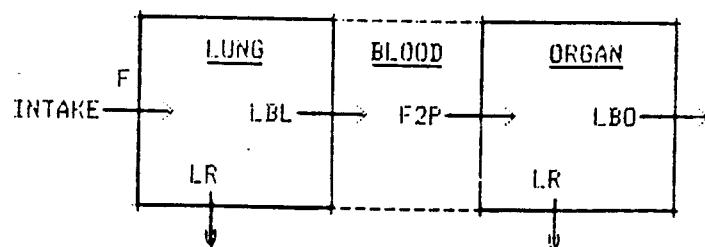


FIGURE 2-2 MODEL FOR INHALATION OF INSOLUBLE NUCLIDES

$$K = 5.121E-2 * F * F2P$$

Eqn. 3

where:  $F$  = Fraction retained in lung  
 $F2P$  = Fraction from blood to organ

## 2.2 Form of "P" Function by Age Group

Assumptions concerning the time duration of each age group are shown pictorially in Figure 2-3. The time integral " $F(T)$ " is defined in Section 2.3 to follow. In all cases the dose commitment is calculated over a 50-year time period ( $T_a = 50$  years = 18,250 days). Other time period assumptions are as follows:

$T_t$  = Time during which individual is a teen =  
6 years = 2,190 days.

$T_c$  = Time during which individual is a child =  
10 years = 3,650 days.

$T_i$  = Time during which individual is an infant =  
1 year = 365 days.

The "P" function is computed as follows:

Adult:  $P = (E/M)a * F(T_a)$  Eqn. 4

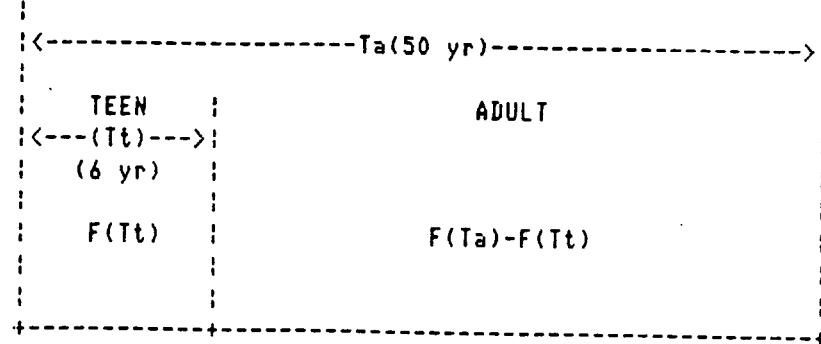
Teen:  $P = (E/M)t * F(T_t) +$   
 $(E/M)a * [F(T_a) - F(T_t)]$  Eqn. 5

Child:  $P = (E/M)c * F(T_c) +$   
 $(E/M)t * [F(T_t+T_c) - F(T_c)] +$   
 $(E/M)a * [F(T_a) - F(T_t+T_c)]$

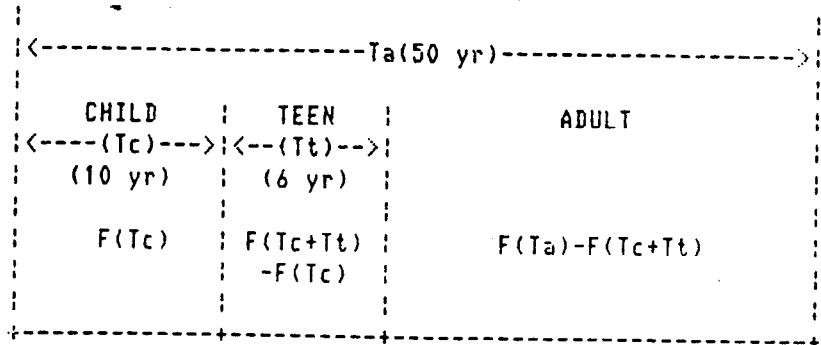
Eqn. 6

ADULT AGE GROUP ( $T_a = 50$  yr):  $F(T_a)$

TEEN AGE GROUP



CHILD AGE GROUP



INFANT AGE GROUP

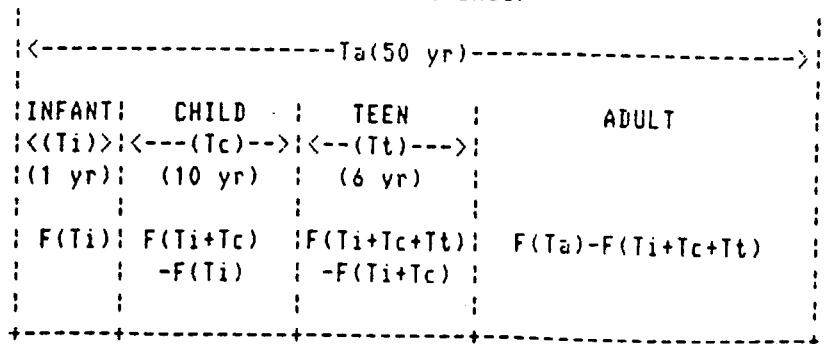


FIGURE 2-3 TIME INTERVALS FOR FOUR AGE GROUPS

$$\begin{aligned}
 \text{Infant: } P = & (E/M)_i * F(T_i) + \\
 & (E/M)_c * [F(T_c+T_i)-F(T_i)] + \\
 & (E/M)_t * [F(T_t+T_c+T_i)-F(T_c+T_i)] + \\
 & (E/M)_a * [F(T_a)-F(T_t+T_c+T_i)]
 \end{aligned}$$

Eqn. 7

where:  $(E/M)_x$  = Effective absorbed energy (MeV/dis) divided by the mass of the organ (gms) for age group "x."

### 2.3 Forms of Time Integral "F(T)" by Pathway and Exposure Type

2.3.1 Ingestion of all nuclides and inhalation of all soluble nuclides and for lung with insoluble nuclides

$$\text{Chronic: } F(T_2) = \frac{T_1 * LEO - \exp[-LEO * (T_2 - T_1)] + \exp[-LEO * T_2]}{T_1 * LEO^{**2}}$$

Eqn. 8

(Note that  $A^{**B}$  means A to the B power.)

$$\text{Acute: } F(T_2) = \frac{1 - \exp[-LEO * T_2]}{LEO}$$

Eqn. 9

where:  $T_1$  = Time period over which the intake occurs  
           = 365 days

$LEO = LBO + LR$  = Effective decay constant for organ (1/day)

$LBO$  = Biological elimination rate from organ (1/day)

(Note that LBO may vary with age group.)

$LR$  = Radiological decay constant for radionuclide (1/day)

### 2.3.2 Inhalation of insoluble nuclides

$$\begin{aligned}
 \text{Chronic: } F(T_2) &= \left[ \frac{\text{LBL}}{\text{T1} * (\text{LEO} - \text{LEL})} \right] * \\
 &\quad \left[ \frac{\text{T1} * \text{LEL} - \text{Exp}[-\text{LEL} * (\text{T2} - \text{T1})] + \text{Exp}[-\text{LEL} * \text{T2}]}{\text{LEL}^{**2}} \right. \\
 &\quad \left. \frac{\text{T1} * \text{LEO} - \text{Exp}[-\text{LEO} * (\text{T2} - \text{T1})] + \text{Exp}[-\text{LEO} * \text{T2}]}{\text{LEO}^{**2}} \right]
 \end{aligned}$$

Eqn. 10

$$\begin{aligned}
 \text{Chronic: } F(T_2) &= \left[ \frac{\text{LBL}}{\text{T1} * \text{LEO}^{**3}} \right] * \\
 &\quad \left[ \text{T1} * \text{LEO} * [1 + \text{Exp}(-\text{LEO} * \text{T2})] - [2 + \text{LEO} * (\text{T2} - \text{T1})] * \right. \\
 &\quad \left. [\text{Exp}(-\text{LEO} * (\text{T2} - \text{T1})) - \text{Exp}(-\text{LEO} * \text{T2})] \right]
 \end{aligned}$$

Eqn. 11

$$\begin{aligned}
 \text{Acute: } F(T_2) &= \left[ \frac{\text{LBL}}{\text{LEO} - \text{LEL}} \right] * \\
 &\quad \left[ \frac{1 - \text{Exp}(-\text{LEL} * \text{T2})}{\text{LEL}} - \frac{1 - \text{Exp}(-\text{LEO} * \text{T2})}{\text{LEO}} \right]
 \end{aligned}$$

Eqn. 12

$$\begin{aligned}
 \text{Acute: } F(T_2) &= \left[ \frac{\text{LBL}}{\text{LEO}^{**2}} \right] * \\
 &\quad \left[ 1 - (1 + \text{LEO} * \text{T2}) * \text{Exp}(-\text{LEO} * \text{T2}) \right]
 \end{aligned}$$

Eqn. 13

where: LEL = LBL + LR = Effective decay constant for lung (1/day)

LBL = Biological elimination rate from lung (1/day)

(Note that as the radioactive half-life approaches zero, the forms of the chronic and acute equations (Eqn. 8-13) approach being equivalent. Thus, the DFs for short half-life nuclides are nearly the same for both the chronic and acute exposure cases.)

#### 2.4 GI-Tract Dose Conversion Factors

The formulations used to compute the GI-Tract (appropriate for both chronic and acute exposures) DFs are taken directly from NUREG-0172 and are as follows:

##### Ingestion Pathway:

$$DF = 5.121E-2 * Fr * Fe * Tx * (E/M) * \text{Exp}(-LR * Ty) \quad \text{Eqn. 14}$$

where: Fr = Fraction of radioactive emissions originating in LLI contents which reach the LLI wall (assumed = 0.5)

Fe = Fraction of radionuclide remaining at entrance to LLI = 1 minus Fw for the total body or 0.05, whichever is larger

Tx = Travel time in LLI (days)

Ty = Travel time to LLI (days)

##### Inhalation Pathway

$$DF = 5.121E-2 * Fa * Fr * Fe * Tx * (E/M) * \text{Exp}(-LR * Ty)$$

Eqn. 15

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### 3.0 METABOLIC DATA

Except as discussed below, all of the metabolic data used to calculate the dose conversion factors were taken from NUREG-0172. Said data, with corrections, are reproduced in Appendix A.

#### 3.1 Tritium

The NUREG-0172 DFs for tritium were based on an effective decay energy of 0.01 MeV/dis, which included a quality factor of 1.7 taken from ICRP-2.<sup>(5)</sup> The quality factor has been changed to 1.0<sup>(4)</sup> which is consistent with other sources.<sup>(6)</sup> This results in a reduction in the effective decay energy of tritium to 0.0057 MeV/dis and a reduction of all of the tritium DFs to 57% of the values listed in a NUREG-0172. Also, as a first approximation, tritium-bone DFs are estimated at one-half the total body values since none are given in NUREG-0172. Tritium-bone DFs were omitted from NUREG-0172 partly because of the small turnover of bound hydrogen in bone.<sup>(4)</sup> The newer metabolic data in ICRP-23<sup>(7)</sup> plus the concept of calculating bone surface and marrow doses instead of dose to the mineral bone<sup>(8,9)</sup> will undoubtedly change the whole system of bone dosimetry.<sup>(4)</sup> Hydrogen turnover in these tissues is significant.

The chronic inhalation DFs for tritium contain a factor of 1.5 to compensate for absorption through the skin. This factor is not included in the acute inhalation DFs since the time duration

of exposure is too short for the absorption pathway to become significant.

### 3.2 Carbon-14

The C-14 DFs presented in NUREG-0172 were computed on the basis of an effective decay energy of 0.0538 MeV/dis. Current data indicate that the true value is 0.0493 MeV/dis. (6, 10, 11, 12, 13) Metabolic models were used in these calculations; (2, 5, 14) whereas specific activity methods are now more commonly in use. (10, 11, 12, 13) The specific activity methodology produces an upper-limit dose commitment estimate to the maximum exposed individual (10, 11) regardless of age. (12)

As an interim measure until the NRC publishes a new set of C-14 DFs, the specific gravity values provided for the ingestion pathway in Reference (13) have been adopted for the organs considered in Regulatory Guide 1.109. (1) They are provided in Reference (13) in units of mrem/year pCi C-14/gm C as shown in Table 3-1. For comparison, similar conversion factors were computed from the Regulatory Guide 1.109 models and included in this table. It is of particular significance to note that in half of the cases the regulatory guide metabolic model produces higher dose conversion factors than does the specific activity model, which is physically impossible. In the case of the bone conversion factor, the explanation lies in the elimination in Reference (13) of the relative damage factor ( $n = 5$ ) used in ICRP-2. (5) For the other organs, some adjustments probably should have been made in the bio-

**TABLE 3-1**  
**CARBON-14 SPECIFIC ACTIVITY DOSE EQUIVALENT RATE CONVERSION FACTORS**  
**Dose Equivalent Rate Conversion Factor**  
(mrem/year per pCi C-14/gm C)

Organ	Reference (13)	Regulatory Guide 1.109 - Reference (1)				
		All Age Groups	Adult	Teen	Child	Infant
Body Fat	0.68					
Adipose Tissue (body fat plus yellow marrow)	0.59					
Kidneys	0.12	0.0622	0.0966	0.230	0.139	
Liver	0.13	0.0622	0.0966	0.230	0.139	
Lungs	0.09	0.0622	0.0966	0.230	0.139	
Cortical Bone	0.13					
Trabecular Bone	0.12					
Red Marrow	0.38					
Yellow Marrow	0.58					
Total Endosteal Cells	0.33					
Lower Large Intestine	0.11	0.0622	0.483	1.15	0.650	
Stomach	0.11					
Skin	0.21					
Testes	0.08					
Ovaries	0.08					
Female Breasts	0.13					
Thyroid	0.10	0.0622	0.0966	0.230	0.139	
Total Body	0.21					
Total Body Less Adipose Tissue	0.11	0.0622	0.0966	0.230	0.139	

NOTES: (a) This conversion factor represents contributions from C-14 in cancellous bone, cortical bone, red marrow, and yellow marrow. It is adopted for Bone to be consistent with References (8) and (9).

(b) This conversion factor is adopted for the Total Body as discussed on pages 1 and 21 of Reference (13).

logical half-lives for the child and infant age groups, in the preparation of NUREG-0172.(2)

Since these dose conversion factors are used in the regulatory guide metabolic model, they have been converted to units of mrem/pCi ingested as shown in Table 3-2. For comparison, the old values are included in the table along with the new to old ratios. The new values produce the same organ dose commitment estimates for all age groups as do the specific activity factors. The new conversion factors are different for each age group (in contrast to the specific gravity model) to compensate for differences in the models and parametric values used. Since the new factors are back calculated using various metabolic and environmental transfer factors, they will have to be recomputed if any of the influencing parameters change in the future.

Since the specific activity method was employed to calculate C-14 DFs, the results are pathway independent. Thus values are listed for the ingestion pathway only. When used in the Regulatory Guide 1.109 metabolic model, they will produce dose commitment estimates the same as the specific activity model. Caution should be employed when evaluating the acute exposure case since the time of exposure is insufficient to permit specific activity equilibrium to be achieved.

**TABLE 3-2**  
**C-14 INGESTION DOSE CONVERSION FACTORS**  
 $(\text{mrem}/\text{pCi ingested})$

			Bone	T. Body	Thyroid	Kidney	Lung	GI-LLI
Adult:	Old	<u>2.60E-06</u>	<u>5.20E-07</u>	<u>5.20E-07</u>	<u>5.20E-07</u>	<u>5.20E-07</u>	<u>5.20E-07</u>	<u>5.20E-07</u>
	New	3.01E-06	1.19E-06	1.00E-06	9.13E-07	1.10E-06	8.22E-07	1.00E-06
	Ratio	1.16	2.29	1.92	1.76	2.12	1.58	1.92
Teen:	Old	3.72E-06	7.44E-07	7.44E-07	7.44E-07	7.44E-07	7.44E-07	7.44E-07
	New	2.77E-06	1.09E-06	9.25E-07	8.41E-07	1.01E-06	7.57E-07	9.25E-07
	Ratio	0.74	1.47	1.24	1.13	1.36	1.02	1.24
Child:	Old	1.11E-05	2.22E-06	2.22E-06	2.22E-06	2.22E-06	2.22E-06	2.22E-06
	New	3.47E-06	1.37E-06	1.16E-06	1.05E-06	1.26E-06	9.47E-07	1.16E-06
	Ratio	0.31	0.62	0.52	0.47	0.57	0.43	0.52
Infant:	Old	2.17E-05	4.64E-06	4.64E-06	4.64E-06	4.64E-06	4.64E-06	4.64E-06
	New	1.20E-05	4.73E-06	4.00E-06	3.64E-06	4.37E-06	3.28E-06	4.00E-06
	Ratio	0.55	1.02	0.86	0.78	0.94	0.71	0.86

**NOTES:**

- (a) The old bone DFs include a relative damage factor of 5.
- (b) The old DFs are from Reference (2), corrected for an effective decay energy of 0.0493 MeV/dis.
- (c) The new DFs were back calculated to produce organ dose commitment estimates which are the same as those produced by the specific activity conversion factors provided in Reference (13). Parametric values used in the calculations were taken from Reference (1) except for the transfer factor from annual feed to milk which was set at 0.015 days/liter from Reference (17).

### 3.3 Strontium

Newer values of several metabolic parameters for strontium nuclides have been published.<sup>(4, 14, 15)</sup> The biological half-life for all Sr nuclides in bone and total body has been changed to 4000 days. For Sr-90, only the fractions of ingested nuclide reaching the bone and total body have been changed to 0.051; and the fractions from blood to bone and total body to 0.17.

### 3.4 Transuranics

The metabolic model for transuranics from ICRP-19<sup>(16)</sup> replaces that given in ICRP-2.<sup>(5)</sup> This leads to several important changes for neptunium, plutonium, americium, and curium as follows:

	<u>New Value</u>
Biological half-life in bone	100 years
Biological half-life in liver	40 years
Fraction from blood to bone and liver	0.45

### 3.5 Other Corrections in NUREG-0172 Metabolic Data Input File

Corrections in the original metabolic data file are listed in Table 3-3.<sup>(4)</sup>

TABLE 3-3

## CHANGES IN METABOLIC DATA IN APPENDIX B OF NUREG-0172(2,4)

Nuclide	Organ	Parameter	Old Value	New Value
Sc-46	GI-INHAL	Fa	0.62	0.50
Zr-93	All organs except bone	E for Infant, Child, Teen }		Divide old values by 10
	GI-INGES	E for Adult	11.62	1.62
	GI-INHAL		11.62	1.62
Te-133M	GI-INGES	E for Infant, Child, Teen }		Divide old values by 10
	GI-INHAL	E for Adult	11.62	1.62
Eu-155	GI-INGES	E for Infant, Child, Teen }		Divide old values by 10
	GI-INHAL	E for all ages }	0.0	1.00
Ho-166M	GI-INGES	E for all ages }	0.0	0.20
	GI-INHAL	E for all ages	0.46	0.019
Pb-210	-		0.46	0.019
Bi-210	Total Body	Fw	0.0015	0.01
	Bone	Fa	0.0	0.03
Th-229	Bone	E for all ages	940	1600
	Liver		49	160
	Total Body		330	190
	Thyroid		49	160
	Kidney		49	160
	Lung INGES		270	280
	Lung INHAL		270	280
	GI-INGES		4.0	0.61
	GI-INHAL		4.0	0.61
Th-232	Total Body	T-BIOL	5.7E+6	5.7E+4

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#### 4.0 DOSE CONVERSION FACTORS

Dose conversion factors for selected radionuclides are presented in Tables 4-1 through 4-16. The chronic exposure DFs are presented in Tables 4-1 through 4-8; and the acute exposure DFs, in Tables 4-9 through 4-16.

TABLE 4-1 CHRONIC INGESTION DOSE CONVERSION FACTORS - INFANT AGE GROUP

(rem/50 years per pCi intake in first year)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LI
H-3	8.74E-08	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07
C-14	1.20E-05	4.73E-06	4.00E-06	3.64E-06	4.37E-06	3.28E-06	4.00E-06
BE-10	1.71E-05	2.48E-06	5.16E-07	0.00E-01	1.64E-06	0.00E-01	2.68E-05
CR-51	0.00E-01	0.00E-01	1.41E-08	9.20E-09	2.01E-09	1.78E-08	3.96E-07
MN-54	0.00E-01	1.99E-05	4.51E-06	0.00E-01	4.41E-06	0.00E-01	7.05E-06
FE-59	3.08E-05	5.37E-05	2.12E-05	0.00E-01	0.00E-01	1.59E-05	2.47E-05
CD-58	0.00E-01	3.60E-06	8.98E-06	0.00E-01	0.00E-01	0.00E-01	8.65E-06
CO-60	0.00E-01	1.08E-05	2.55E-05	0.00E-01	0.00E-01	0.00E-01	2.48E-05
GA-67	1.59E-08	1.11E-08	1.84E-09	0.00E-01	3.74E-09	0.00E-01	6.61E-06
ZN-69M	1.50E-06	3.06E-06	2.78E-07	0.00E-01	1.24E-06	0.00E-01	4.09E-05
SR-89	2.49E-03	0.00E-01	7.14E-05	0.00E-01	0.00E-01	0.00E-01	4.97E-05
SR-90	2.84E-02	0.00E-01	5.72E-04	0.00E-01	0.00E-01	0.00E-01	2.22E-04
Y-90	8.69E-08	0.00E-01	2.34E-09	0.00E-01	0.00E-01	0.00E-01	1.16E-04
Y-91	1.13E-06	0.00E-01	3.01E-08	0.00E-01	0.00E-01	0.00E-01	7.80E-05
ZR-93	1.93E-07	9.17E-09	5.54E-09	0.00E-01	2.72E-08	0.00E-01	2.30E-06
ZR-95	2.05E-07	5.02E-08	3.56E-08	0.00E-01	5.41E-08	0.00E-01	2.41E-05
NB-95	4.20E-08	1.73E-08	1.00E-08	0.00E-01	1.24E-08	0.00E-01	1.41E-05
TC-99	1.08E-06	1.46E-06	4.55E-07	0.00E-01	1.23E-05	1.42E-07	6.08E-06
RU-103	1.48E-06	0.00E-01	4.95E-07	0.00E-01	3.08E-06	0.00E-01	1.74E-05
RU-106	2.41E-05	0.00E-01	3.00E-06	0.00E-01	2.85E-05	0.00E-01	1.76E-04
AG-110M	9.96E-07	7.27E-07	4.81E-07	0.00E-01	1.04E-06	0.00E-01	3.64E-05
CD-115M	0.00E-01	1.42E-05	4.93E-07	0.00E-01	7.41E-06	0.00E-01	7.80E-05
SN-123	2.49E-04	3.89E-06	6.50E-06	3.91E-06	0.00E-01	0.00E-01	6.35E-05
SB-124	2.14E-05	3.15E-07	6.62E-06	5.68E-08	0.00E-01	1.34E-05	6.37E-05
SB-125	1.23E-05	1.19E-07	2.53E-06	1.54E-08	0.00E-01	7.72E-06	1.58E-05
TE-125M	2.33E-05	7.78E-06	3.15E-06	7.84E-06	5.69E-05	0.00E-01	1.07E-05
I-129	2.86E-05	2.12E-05	1.49E-05	1.29E-02	2.51E-05	0.00E-01	4.08E-07
I-131	3.58E-05	4.23E-05	1.84E-05	1.37E-02	4.94E-05	0.00E-01	1.46E-06
CS-134	3.76E-04	7.03E-04	7.40E-05	0.00E-01	1.81E-04	7.42E-05	1.84E-06
CS-137	5.22E-04	6.11E-04	4.51E-05	0.00E-01	1.64E-04	6.64E-05	1.84E-06
BA-140	1.71E-04	1.71E-07	8.81E-06	0.00E-01	4.05E-08	1.05E-07	4.05E-05
LA-140	2.11E-08	8.34E-09	2.15E-09	0.00E-01	0.00E-01	0.00E-01	9.42E-05
CE-141	7.87E-08	4.79E-08	5.64E-09	0.00E-01	1.48E-08	0.00E-01	2.39E-05

TABLE 4-1 (Continued)

(Mrrem/50 years per pCi intake in first year)

NUCLIDE	BONE	LIVER	TOT.BODY	THYROID	KIDNEY	LUNG	GI-LLI
CE-144	2.98E-06	1.21E-06	1.67E-07	0.00E-01	4.92E-07	0.00E-01	1.65E-04
PM-147	3.88E-07	3.26E-08	1.59E-08	0.00E-01	4.88E-08	0.00E-01	8.94E-06
SM-151	2.90E-07	6.66E-08	1.44E-08	0.00E-01	4.53E-08	0.00E-01	5.38E-06
EU-154	2.64E-06	3.66E-07	2.20E-07	0.00E-01	9.95E-07	0.00E-01	4.42E-05
EU-155	5.42E-07	6.25E-08	3.22E-08	0.00E-01	1.40E-07	0.00E-01	8.07E-06
HO-166M	1.25E-06	2.68E-07	2.13E-07	0.00E-01	3.57E-07	0.00E-01	2.56E-05
TL-201	1.20E-06	7.98E-07	6.00E-07	0.00E-01	3.61E-06	2.09E-07	3.60E-06
PB-210	5.28E-02	1.42E-02	2.38E-03	0.00E-01	4.32E-02	0.00E-01	2.24E-06
BI-210	4.16E-06	2.68E-05	2.39E-06	0.00E-01	2.08E-04	0.00E-01	5.08E-05
TH-229	2.51E-02	6.33E-04	4.19E-04	0.00E-01	3.03E-03	0.00E-01	7.81E-05
TH-232	4.24E-03	1.62E-04	1.37E-04	0.00E-01	7.79E-04	0.00E-01	5.12E-05
U-232	2.42E-02	0.00E-01	2.16E-03	0.00E-01	2.37E-03	0.00E-01	6.79E-05
U-234	4.88E-03	0.00E-01	3.79E-04	0.00E-01	1.06E-03	0.00E-01	6.15E-05
U-235	4.67E-03	0.00E-01	3.56E-04	0.00E-01	9.93E-04	0.00E-01	7.81E-05
U-236	4.67E-03	0.00E-01	3.64E-04	0.00E-01	1.01E-03	0.00E-01	5.76E-05
U-238	4.47E-03	0.00E-01	3.33E-04	0.00E-01	9.28E-04	0.00E-01	5.51E-05
NP-237	2.40E-03	1.59E-04	1.05E-04	0.00E-01	6.34E-04	0.00E-01	7.94E-05
NP-239	1.11E-08	9.93E-10	5.61E-10	0.00E-01	1.98E-09	0.00E-01	2.77E-05
PU-236	3.40E-04	4.07E-05	8.59E-06	0.00E-01	2.72E-05	0.00E-01	7.37E-05
PU-238	1.28E-03	1.50E-04	3.40E-05	0.00E-01	1.21E-04	0.00E-01	7.30E-05
PU-239	1.38E-03	1.55E-04	3.54E-05	0.00E-01	1.28E-04	0.00E-01	6.66E-05
PU-240	1.38E-03	1.55E-04	3.54E-05	0.00E-01	1.28E-04	0.00E-01	6.79E-05
PU-241	4.25E-05	1.76E-06	8.82E-07	0.00E-01	3.16E-06	0.00E-01	1.40E-06
PU-242	1.28E-03	1.49E-04	3.41E-05	0.00E-01	1.23E-04	0.00E-01	6.53E-05
PU-244	1.49E-03	1.71E-04	3.91E-05	0.00E-01	1.41E-04	0.00E-01	9.73E-05
AN-241	1.46E-03	1.27E-03	1.09E-04	0.00E-01	6.55E-04	0.00E-01	7.43E-05
AN-242M	1.51E-03	1.22E-03	1.13E-04	0.00E-01	6.63E-04	0.00E-01	9.35E-05
AN-243	1.44E-03	1.23E-03	1.06E-04	0.00E-01	6.36E-04	0.00E-01	8.71E-05
CN-242	1.37E-04	1.27E-04	9.09E-06	0.00E-01	2.62E-05	0.00E-01	7.94E-05
CN-243	1.39E-03	1.15E-03	8.98E-05	0.00E-01	3.27E-04	0.00E-01	7.81E-05
CN-244	1.18E-03	9.70E-04	7.59E-05	0.00E-01	2.71E-04	0.00E-01	7.55E-05
CF-252	1.22E-03	0.00E-01	2.95E-05	0.00E-01	0.00E-01	0.00E-01	2.88E-04

TABLE 4 - 2 CHRONIC INGESTION DOSE CONVERSION FACTORS - CHILD AGE GROUP

( $\mu\text{rem}/50 \text{ years per pCi intake in first year}$ )

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LLI
H-3	5.77E-08	1.15E-07	1.15E-07	1.15E-07	1.15E-07	1.15E-07	1.15E-07
C-14	3.47E-06	1.37E-06	1.16E-06	1.05E-06	1.26E-06	9.47E-07	1.16E-06
BE-10	1.35E-05	1.57E-06	3.39E-07	0.00E-01	1.11E-06	0.00E-01	2.68E-05
CR-51	0.00E-01	0.00E-01	8.90E-09	4.74E-09	1.35E-09	9.01E-09	4.59E-07
MN-54	0.00E-01	1.07E-05	2.85E-06	0.00E-01	3.00E-06	0.00E-01	8.73E-06
FE-59	1.65E-05	2.67E-05	1.33E-05	0.00E-01	0.00E-01	7.74E-06	2.70E-05
CO-58	0.00E-01	1.80E-06	5.51E-06	0.00E-01	0.00E-01	0.00E-01	1.02E-05
CO-60	0.00E-01	5.29E-06	1.56E-05	0.00E-01	0.00E-01	0.00E-01	2.85E-05
GA-67	7.52E-09	4.68E-09	1.01E-09	0.00E-01	2.20E-09	0.00E-01	6.80E-06
ZN-69H	7.09E-07	1.21E-06	1.43E-07	0.00E-01	7.02E-07	0.00E-01	3.84E-05
SR-89	1.30E-03	0.00E-01	3.74E-05	0.00E-01	0.00E-01	0.00E-01	4.97E-05
SR-90	2.56E-02	0.00E-01	5.16E-04	0.00E-01	0.00E-01	0.00E-01	2.22E-04
Y-90	4.10E-08	0.00E-01	1.10E-09	0.00E-01	0.00E-01	0.00E-01	1.14E-04
Y-91	6.02E-07	0.00E-01	1.61E-08	0.00E-01	0.00E-01	0.00E-01	7.80E-05
ZR-93	1.67E-07	6.24E-09	4.45E-09	0.00E-01	2.43E-08	0.00E-01	2.30E-06
ZR-95	1.16E-07	2.55E-08	2.27E-08	0.00E-01	3.65E-08	0.00E-01	2.58E-05
NB-95	2.25E-08	8.75E-09	6.26E-09	0.00E-01	8.23E-09	0.00E-01	1.57E-05
TC-99	5.35E-07	5.96E-07	2.14E-07	0.00E-01	7.02E-06	5.27E-08	6.08E-06
RU-103	7.31E-07	0.00E-01	2.81E-07	0.00E-01	1.84E-06	0.00E-01	1.83E-05
RU-106	1.17E-05	0.00E-01	1.45E-06	0.00E-01	1.59E-05	0.00E-01	1.76E-04
Ag-110M	5.39E-07	3.64E-07	2.92E-07	0.00E-01	6.78E-07	0.00E-01	4.21E-05
CD-115M	0.00E-01	5.89E-06	2.51E-07	0.00E-01	4.38E-06	0.00E-01	7.79E-05
SN-123	1.32E-04	1.65E-06	3.24E-06	1.75E-06	0.00E-01	0.00E-01	6.34E-05
SB-124	1.11E-05	1.44E-07	3.89E-06	2.45E-08	0.00E-01	6.16E-06	6.75E-05
SB-125	7.16E-06	5.52E-08	1.50E-06	6.62E-09	0.00E-01	3.99E-06	1.66E-05
TE-125M	1.14E-05	3.09E-06	1.52E-06	3.20E-06	3.24E-05	0.00E-01	1.07E-05
I-129	1.39E-05	8.53E-06	7.61E-06	5.57E-03	1.44E-05	0.00E-01	4.17E-07
I-131	1.72E-05	1.73E-05	9.82E-06	5.72E-03	2.84E-05	0.00E-01	1.49E-06
CS-134	2.34E-04	3.84E-04	8.09E-05	0.00E-01	1.19E-04	4.26E-05	2.02E-06
CS-137	3.27E-04	3.13E-04	4.61E-05	0.00E-01	1.02E-04	3.67E-05	1.90E-06
BA-140	8.31E-05	7.29E-08	4.87E-06	0.00E-01	2.38E-08	4.34E-08	4.09E-05
LA-140	1.01E-08	3.53E-09	1.19E-09	0.00E-01	0.00E-01	0.00E-01	9.59E-05
CE-141	3.96E-08	1.98E-08	2.94E-09	0.00E-01	8.67E-09	0.00E-01	2.40E-05

TABLE 4-2 (Continued)

(nrem/50 years per pci intake in first year)

NUCLIDE	BONE	LIVER	TOT.BODY	THYROID	KIDNEY	LUNG	GI-LLI
CE-144	2.08E-06	6.48E-07	1.11E-07	0.00E-01	3.60E-07	0.00E-01	1.65E-04
PN-147	3.18E-07	2.27E-08	1.22E-08	0.00E-01	4.01E-08	0.00E-01	8.94E-06
SM-151	2.56E-07	3.81E-08	1.20E-08	0.00E-01	3.94E-08	0.00E-01	5.38E-06
EU-154	2.30E-06	2.07E-07	1.89E-07	0.00E-01	9.09E-07	0.00E-01	4.67E-05
EU-155	4.82E-07	3.47E-08	2.72E-08	0.00E-01	1.30E-07	0.00E-01	8.45E-06
H0-166M	1.08E-06	2.26E-07	1.91E-07	0.00E-01	3.22E-07	0.00E-01	2.56E-05
TL-201	5.66E-07	3.24E-07	3.17E-07	0.00E-01	2.07E-06	8.24E-08	3.64E-06
PB-210	4.75E-02	1.22E-02	2.09E-03	0.00E-01	3.67E-02	0.00E-01	2.24E-06
BI-210	1.97E-06	1.02E-05	1.13E-06	0.00E-01	1.15E-04	0.00E-01	5.03E-05
TH-229	2.34E-02	5.91E-04	3.91E-04	0.00E-01	2.89E-03	0.00E-01	7.81E-05
TH-232	3.96E-03	1.52E-04	1.28E-04	0.00E-01	7.40E-04	0.00E-01	5.12E-05
U-232	1.76E-02	0.00E-01	1.26E-03	0.00E-01	1.34E-03	0.00E-01	6.79E-05
U-234	3.57E-03	0.00E-01	2.21E-04	0.00E-01	5.97E-04	0.00E-01	6.15E-05
U-235	3.42E-03	0.00E-01	2.07E-04	0.00E-01	5.61E-04	0.00E-01	7.81E-05
U-236	3.42E-03	0.00E-01	2.12E-04	0.00E-01	5.73E-04	0.00E-01	5.76E-05
U-238	3.27E-03	0.00E-01	1.94E-04	0.00E-01	5.24E-04	0.00E-01	5.51E-05
NP-237	2.23E-03	1.47E-04	9.79E-05	0.00E-01	6.05E-04	0.00E-01	7.94E-05
NF-239	5.25E-09	3.77E-10	2.65E-10	0.00E-01	1.09E-09	0.00E-01	2.71E-05
PU-236	2.95E-04	3.34E-05	7.45E-06	0.00E-01	2.44E-05	0.00E-01	7.37E-05
PU-238	1.19E-03	1.37E-04	3.16E-05	0.00E-01	1.15E-04	0.00E-01	7.30E-05
PU-239	1.29E-03	1.43E-04	3.31E-05	0.00E-01	1.22E-04	0.00E-01	6.66E-05
PU-240	1.28E-03	1.43E-04	3.30E-05	0.00E-01	1.22E-04	0.00E-01	6.79E-05
PU-241	3.87E-05	1.58E-06	8.04E-07	0.00E-01	2.96E-06	0.00E-01	1.40E-04
PU-242	1.19E-03	1.38E-04	3.18E-05	0.00E-01	1.17E-04	0.00E-01	6.53E-05
PU-244	1.39E-03	1.58E-04	3.65E-05	0.00E-01	1.34E-04	0.00E-01	9.73E-05
AN-241	1.36E-03	1.17E-03	1.02E-04	0.00E-01	6.23E-04	0.00E-01	7.43E-05
AN-242M	1.40E-03	1.12E-03	1.04E-04	0.00E-01	6.30E-04	0.00E-01	9.35E-05
AN-243	1.34E-03	1.13E-03	9.83E-05	0.00E-01	6.05E-04	0.00E-01	8.71E-05
CH-242	8.77E-05	7.01E-05	5.84E-06	0.00E-01	1.87E-05	0.00E-01	7.93E-05
CH-243	1.28E-03	1.04E-03	8.24E-05	0.00E-01	3.08E-04	0.00E-01	7.81E-05
CH-244	1.07E-03	8.73E-04	6.93E-05	0.00E-01	2.54E-04	0.00E-01	7.55E-05
CF-252	1.05E-03	0.00E-01	2.54E-05	0.00E-01	0.00E-01	0.00E-01	2.88E-04

TABLE 4-3 CHRONIC INGESTION DOSE CONVERSION FACTORS - TEEN AGE GROUP

(mrem/50 years per pCi intake in first year)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LLI
H-3	3.00E-08	6.01E-08	6.01E-08	6.01E-08	6.01E-08	6.01E-08	6.01E-08
C-14	2.77E-06	1.09E-06	9.25E-07	8.41E-07	1.01E-06	7.57E-07	9.25E-07
BE-10	4.48E-06	6.94E-07	1.13E-07	0.00E-01	5.30E-07	0.00E-01	2.68E-05
CR-51	0.00E-01	0.00E-01	3.60E-09	2.00E-09	7.88E-10	5.13E-09	5.71E-07
MN-54	0.00E-01	5.90E-06	1.17E-06	0.00E-01	1.76E-06	0.00E-01	1.14E-05
FE-59	5.87E-06	1.36E-05	5.28E-06	0.00E-01	0.00E-01	4.32E-06	3.06E-05
CO-58	0.00E-01	9.72E-07	2.24E-06	0.00E-01	0.00E-01	0.00E-01	1.27E-05
CO-60	0.00E-01	2.81E-06	6.33E-06	0.00E-01	0.00E-01	0.00E-01	3.45E-05
GA-67	2.61E-09	2.27E-09	3.86E-10	0.00E-01	1.11E-09	0.00E-01	6.90E-06
ZN-69M	2.40E-07	5.65E-07	5.18E-08	0.00E-01	3.43E-07	0.00E-01	2.93E-05
SR-89	4.36E-04	0.00E-01	1.25E-05	0.00E-01	0.00E-01	0.00E-01	4.95E-05
SR-90	1.02E-02	0.00E-01	2.04E-04	0.00E-01	0.00E-01	0.00E-01	2.20E-04
Y-90	1.37E-08	0.00E-01	3.69E-10	0.00E-01	0.00E-01	0.00E-01	1.06E-04
Y-91	2.01E-07	0.00E-01	5.39E-09	0.00E-01	0.00E-01	0.00E-01	7.77E-05
ZR-93	5.53E-08	2.75E-09	1.54E-09	0.00E-01	1.14E-08	0.00E-01	2.43E-06
ZR-95	4.11E-08	1.30E-08	8.97E-09	0.00E-01	1.91E-08	0.00E-01	2.83E-05
NB-95	8.22E-09	4.56E-09	2.50E-09	0.00E-01	4.42E-09	0.00E-01	1.84E-05
TC-99	1.79E-07	2.63E-07	7.16E-08	0.00E-01	3.34E-06	2.72E-08	6.08E-06
RU-103	2.54E-07	0.00E-01	1.08E-07	0.00E-01	8.99E-07	0.00E-01	2.01E-05
RU-106	3.92E-06	0.00E-01	4.96E-07	0.00E-01	7.55E-06	0.00E-01	1.77E-04
A6-110M	2.04E-07	1.94E-07	1.18E-07	0.00E-01	3.70E-07	0.00E-01	5.14E-05
CD-115M	0.00E-01	2.60E-06	8.39E-08	0.00E-01	2.08E-06	0.00E-01	7.76E-05
SN-123	4.43E-05	7.29E-07	1.08E-06	5.83E-07	0.00E-01	0.00E-01	6.34E-05
SB-124	3.87E-06	7.13E-08	1.51E-06	8.78E-09	0.00E-01	3.38E-06	7.36E-05
SB-125	2.48E-06	2.71E-08	5.80E-07	2.37E-09	0.00E-01	2.18E-06	1.83E-05
TE-125M	3.83E-06	1.38E-06	5.12E-07	1.07E-06	1.56E-05	0.00E-01	1.07E-05
I-129	4.66E-06	3.92E-06	6.53E-06	4.77E-03	7.01E-06	0.00E-01	4.31E-07
I-131	5.85E-06	8.19E-06	4.39E-06	2.39E-03	1.41E-05	0.00E-01	1.53E-06
CS-134	8.40E-05	1.97E-04	9.13E-05	0.00E-01	6.26E-05	2.39E-05	2.31E-06
CS-137	1.12E-04	1.49E-04	5.16E-05	0.00E-01	5.06E-05	1.97E-05	2.00E-06
BA-140	2.84E-05	3.48E-08	1.83E-06	0.00E-01	1.19E-08	2.34E-08	4.13E-05
LA-140	3.48E-09	1.72E-09	4.55E-10	0.00E-01	0.00E-01	0.00E-01	9.27E-05
CE-141	1.33E-08	8.87E-09	1.01E-09	0.00E-01	4.17E-09	0.00E-01	2.40E-05

TABLE 4-3 (Continued)

(mrem/50 years per pCi intake in first year)

NUCLIDE	BONE	LIVER	TOT.BODY	THYROID	KIDNEY	LUNG	GI-LLI
CE-144	6.95E-07	2.89E-07	3.73E-08	0.00E-01	1.71E-07	0.00E-01	1.65E-04
PN-147	1.05E-07	9.96E-09	4.06E-09	0.00E-01	1.90E-08	0.00E-01	8.93E-06
SN-151	8.73E-08	1.68E-08	3.93E-09	0.00E-01	1.84E-08	0.00E-01	5.38E-06
EU-154	7.90E-07	1.02E-07	7.19E-08	0.00E-01	4.56E-07	0.00E-01	5.08E-05
EU-155	1.85E-07	1.68E-08	1.04E-08	0.00E-01	6.57E-08	0.00E-01	9.09E-06
H0-166M	3.56E-07	1.10E-07	7.95E-08	0.00E-01	1.61E-07	0.00E-01	2.56E-05
TL-201	1.94E-07	1.52E-07	1.18E-07	0.00E-01	1.02E-06	4.37E-08	3.57E-06
Pb-210	1.81E-02	5.44E-03	7.01E-04	0.00E-01	1.72E-02	0.00E-01	2.24E-06
Bi-210	6.59E-07	4.51E-06	3.77E-07	0.00E-01	5.48E-05	0.00E-01	4.86E-05
Th-229	1.43E-02	4.10E-04	2.37E-04	0.00E-01	1.99E-03	0.00E-01	7.81E-05
Th-232	2.41E-03	1.05E-04	7.74E-05	0.00E-01	5.11E-04	0.00E-01	5.12E-05
U-232	5.89E-03	0.00E-01	4.21E-04	0.00E-01	6.38E-04	0.00E-01	6.79E-05
U-234	1.19E-03	0.00E-01	7.39E-05	0.00E-01	2.84E-04	0.00E-01	6.15E-05
U-235	1.14E-03	0.00E-01	6.94E-05	0.00E-01	2.67E-04	0.00E-01	7.81E-05
U-236	1.14E-03	0.00E-01	7.09E-05	0.00E-01	2.73E-04	0.00E-01	5.76E-05
U-238	1.09E-03	0.00E-01	6.48E-05	0.00E-01	2.50E-04	0.00E-01	5.51E-05
NP-237	1.33E-03	9.54E-05	5.84E-05	0.00E-01	4.33E-04	0.00E-01	7.94E-05
NP-239	1.76E-09	1.66E-10	9.21E-11	0.00E-01	5.21E-10	0.00E-01	2.52E-05
PU-236	9.75E-05	1.44E-05	2.46E-06	0.00E-01	1.13E-05	0.00E-01	7.37E-05
PU-238	6.70E-04	8.58E-05	1.82E-05	0.00E-01	7.80E-05	0.00E-01	7.30E-05
PU-239	7.65E-04	9.28E-05	2.01E-05	0.00E-01	8.57E-05	0.00E-01	6.66E-05
PU-240	7.63E-04	9.27E-05	2.01E-05	0.00E-01	8.55E-05	0.00E-01	6.79E-05
PU-241	1.75E-05	8.40E-07	3.69E-07	0.00E-01	1.71E-06	0.00E-01	1.40E-06
PU-242	7.08E-04	8.94E-05	1.93E-05	0.00E-01	8.25E-05	0.00E-01	6.53E-05
PU-244	8.27E-04	1.02E-04	2.22E-05	0.00E-01	9.45E-05	0.00E-01	9.73E-05
AN-241	7.98E-04	7.53E-04	5.75E-05	0.00E-01	4.31E-04	0.00E-01	7.43E-05
AN-242M	8.07E-04	7.10E-04	5.79E-05	0.00E-01	4.30E-04	0.00E-01	9.35E-05
AN-243	7.95E-04	7.35E-04	5.62E-05	0.00E-01	4.22E-04	0.00E-01	8.71E-05
CH-242	2.94E-05	3.10E-05	1.95E-06	0.00E-01	8.89E-06	0.00E-01	7.92E-05
CH-243	6.50E-04	6.03E-04	4.09E-05	0.00E-01	1.91E-04	0.00E-01	7.81E-05
CN-244	5.04E-04	4.77E-04	3.19E-05	0.00E-01	1.49E-04	0.00E-01	7.55E-05
CF-252	3.47E-04	0.00E-01	8.37E-06	0.00E-01	0.00E-01	0.00E-01	2.88E-04

TABLE 4-4 CHRONIC INGESTION DOSE CONVERSION FACTORS - ADULT AGE GROUP

(mrem/50 years per pCi intake in first year)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LLI
H-3	3.00E-08	6.00E-08	6.00E-08	6.00E-08	6.00E-08	6.00E-08	6.00E-08
C-14	3.01E-06	1.19E-06	1.00E-06	9.13E-07	1.10E-06	8.22E-07	1.00E-06
BE-10	3.18E-06	4.91E-07	7.94E-08	0.00E-01	3.71E-07	0.00E-01	2.68E-05
CR-51	0.00E-01	0.00E-01	2.66E-09	1.59E-09	5.86E-10	3.53E-09	6.69E-07
NN-54	0.00E-01	4.57E-06	8.72E-07	0.00E-01	1.36E-06	0.00E-01	1.40E-05
FE-59	4.34E-06	1.02E-05	3.91E-06	0.00E-01	0.00E-01	2.85E-06	3.40E-05
CO-58	0.00E-01	7.45E-07	1.67E-06	0.00E-01	0.00E-01	0.00E-01	1.51E-05
CO-60	0.00E-01	2.14E-06	4.73E-06	0.00E-01	0.00E-01	0.00E-01	4.02E-05
GA-67	1.88E-09	1.67E-09	2.81E-10	0.00E-01	8.16E-10	0.00E-01	7.09E-06
ZN-69M	1.70E-07	4.08E-07	3.73E-08	0.00E-01	2.47E-07	0.00E-01	2.48E-05
SR-89	3.05E-04	0.00E-01	8.77E-06	0.00E-01	0.00E-01	0.00E-01	4.94E-05
SR-90	8.71E-03	0.00E-01	1.75E-04	0.00E-01	0.00E-01	0.00E-01	2.19E-04
Y-90	9.62E-09	0.00E-01	2.58E-10	0.00E-01	0.00E-01	0.00E-01	1.02E-04
Y-91	1.41E-07	0.00E-01	3.77E-09	0.00E-01	0.00E-01	0.00E-01	7.76E-05
ZR-93	4.18E-08	2.34E-09	1.09E-09	0.00E-01	8.87E-09	0.00E-01	2.43E-06
ZR-95	3.04E-08	9.74E-09	6.58E-09	0.00E-01	1.53E-08	0.00E-01	3.09E-05
NB-95	6.22E-09	3.45E-09	1.86E-09	0.00E-01	3.42E-09	0.00E-01	2.10E-05
TC-99	1.25E-07	1.86E-07	5.01E-08	0.00E-01	2.34E-06	1.58E-08	6.08E-06
RU-103	1.84E-07	0.00E-01	7.96E-08	0.00E-01	7.06E-07	0.00E-01	2.17E-05
RU-106	2.75E-06	0.00E-01	3.47E-07	0.00E-01	5.32E-06	0.00E-01	1.79E-04
Ag-110M	1.60E-07	1.48E-07	8.80E-08	0.00E-01	2.91E-07	0.00E-01	6.04E-05
CD-115M	0.00E-01	1.84E-06	5.87E-08	0.00E-01	1.46E-06	0.00E-01	7.74E-05
SN-123	3.10E-05	5.15E-07	7.59E-07	4.38E-07	0.00E-01	0.00E-01	6.33E-05
SB-124	2.80E-06	5.29E-08	1.11E-06	6.79E-09	0.00E-01	2.18E-06	7.95E-05
SB-125	1.79E-06	2.00E-08	4.25E-07	1.81E-09	0.00E-01	1.38E-06	1.97E-05
TE-125M	2.68E-06	9.71E-07	3.59E-07	8.06E-07	1.09E-05	0.00E-01	1.07E-05
I-129	3.27E-06	2.81E-06	9.21E-06	7.23E-03	6.04E-06	0.00E-01	4.44E-07
I-131	4.16E-06	5.95E-06	3.41E-06	1.95E-03	1.02E-05	0.00E-01	1.57E-06
CS-134	6.23E-05	1.48E-04	1.21E-04	0.00E-01	4.79E-05	1.59E-05	2.59E-06
CS-137	7.97E-05	1.09E-04	7.14E-05	0.00E-01	3.70E-05	1.23E-05	2.11E-06
BA-140	2.03E-05	2.55E-08	1.33E-06	0.00E-01	8.68E-09	1.46E-08	4.18E-05
LA-140	2.51E-09	1.27E-09	3.34E-10	0.00E-01	0.00E-01	0.00E-01	9.25E-05
CE-141	9.35E-09	6.33E-09	7.17E-10	0.00E-01	2.94E-09	0.00E-01	2.42E-05

TABLE 4-4 (Continued)

(mrem/50 years per pCi intake in first year)

NUCLIDE	BONE	LIVER	TOT.BODY	THYROID	KIDNEY	LUNG	GI-LLI
CE-144	4.87E-07	2.04E-07	2.61E-08	0.00E-01	1.20E-07	0.00E-01	1.65E-04
PM-147	7.54E-08	7.09E-09	2.87E-09	0.00E-01	1.34E-08	0.00E-01	8.93E-06
SM-151	6.90E-08	1.19E-08	2.85E-09	0.00E-01	1.33E-08	0.00E-01	5.25E-06
EU-154	6.17E-07	7.56E-08	5.38E-08	0.00E-01	3.62E-07	0.00E-01	5.48E-05
EU-155	1.47E-07	1.22E-08	7.87E-09	0.00E-01	5.63E-08	0.00E-01	9.60E-06
HO-166M	2.70E-07	8.43E-08	6.40E-08	0.00E-01	1.26E-07	0.00E-01	2.56E-05
TL-201	1.39E-07	1.10E-07	8.52E-08	0.00E-01	7.37E-07	2.70E-08	3.57E-06
PB-210	1.53E-02	4.37E-03	5.44E-04	0.00E-01	1.23E-02	0.00E-01	2.24E-06
BI-210	4.61E-07	3.18E-06	2.64E-07	0.00E-01	3.83E-05	0.00E-01	4.75E-05
TH-229	1.36E-02	3.90E-04	2.25E-04	0.00E-01	1.88E-03	0.00E-01	7.81E-05
TH-232	2.30E-03	1.00E-04	7.36E-05	0.00E-01	4.82E-04	0.00E-01	5.12E-05
U-232	4.13E-03	0.00E-01	2.94E-04	0.00E-01	4.47E-04	0.00E-01	6.79E-05
U-234	8.36E-04	0.00E-01	5.17E-05	0.00E-01	1.99E-04	0.00E-01	6.15E-05
U-235	8.01E-04	0.00E-01	4.86E-05	0.00E-01	1.87E-04	0.00E-01	7.81E-05
U-236	8.01E-04	0.00E-01	4.96E-05	0.00E-01	1.91E-04	0.00E-01	5.76E-05
U-238	7.66E-04	0.00E-01	4.54E-05	0.00E-01	1.75E-04	0.00E-01	5.51E-05
NP-237	1.26E-03	8.95E-05	5.54E-05	0.00E-01	4.12E-04	0.00E-01	7.94E-05
NP-239	1.24E-09	1.17E-10	6.45E-11	0.00E-01	3.65E-10	0.00E-01	2.40E-05
PU-236	7.39E-05	1.09E-05	1.87E-06	0.00E-01	8.58E-06	0.00E-01	7.37E-05
PU-238	6.29E-04	7.97E-05	1.71E-05	0.00E-01	7.32E-05	0.00E-01	7.30E-05
PU-239	7.25E-04	8.71E-05	1.91E-05	0.00E-01	8.11E-05	0.00E-01	6.66E-05
PU-240	7.23E-04	8.70E-05	1.91E-05	0.00E-01	8.10E-05	0.00E-01	6.79E-05
PU-241	1.57E-05	7.45E-07	3.31E-07	0.00E-01	1.53E-06	0.00E-01	1.40E-06
PU-242	6.71E-04	8.39E-05	1.84E-05	0.00E-01	7.81E-05	0.00E-01	6.53E-05
PU-244	7.84E-04	9.60E-05	2.11E-05	0.00E-01	8.94E-05	0.00E-01	9.73E-05
AM-241	7.55E-04	7.05E-04	5.41E-05	0.00E-01	4.07E-04	0.00E-01	7.43E-05
AM-242M	7.61E-04	6.63E-04	5.43E-05	0.00E-01	4.04E-04	0.00E-01	9.35E-05
AM-243	7.54E-04	6.89E-04	5.29E-05	0.00E-01	3.99E-04	0.00E-01	8.71E-05
CM-242	2.06E-05	2.19E-05	1.37E-06	0.00E-01	6.22E-06	0.00E-01	7.92E-05
CM-243	5.98E-04	5.49E-04	3.75E-05	0.00E-01	1.75E-04	0.00E-01	7.81E-05
CM-244	4.56E-04	4.27E-04	2.87E-05	0.00E-01	1.34E-04	0.00E-01	7.55E-05
CF-252	2.61E-04	0.00E-01	6.29E-06	0.00E-01	0.00E-01	0.00E-01	2.88E-04

TABLE 4-5 CHRONIC INHALATION DOSE CONVERSION FACTORS - INFANT AGE GROUP

(mrem/50 years per pCi intake in first year)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LLI
H-3	1.31E-07	2.63E-07	2.63E-07	2.63E-07	2.63E-07	2.63E-07	2.63E-07
BE-10	9.49E-04	1.25E-04	2.65E-05	0.00E-01	8.59E-05	1.49E-03	1.67E-05
CR-51	0.00E-01	0.00E-01	6.39E-08	4.11E-08	9.45E-09	9.17E-06	2.46E-07
MN-54	0.00E-01	1.81E-05	3.56E-06	0.00E-01	3.56E-06	7.14E-04	4.86E-06
FE-59	9.69E-06	1.68E-05	6.78E-06	0.00E-01	0.00E-01	7.25E-04	1.70E-05
CO-58	0.00E-01	8.72E-07	1.30E-06	0.00E-01	0.00E-01	5.55E-04	7.66E-06
CO-60	0.00E-01	5.73E-06	8.41E-06	0.00E-01	0.00E-01	3.22E-03	2.20E-05
GA-67	5.23E-08	3.64E-08	6.04E-09	0.00E-01	1.23E-08	1.58E-05	4.10E-06
ZN-69M	8.98E-09	1.83E-08	1.67E-09	0.00E-01	7.45E-09	1.91E-05	2.82E-05
SR-89	2.82E-04	0.00E-01	8.09E-06	0.00E-01	0.00E-01	1.45E-03	4.40E-05
SR-90	1.11E-02	0.00E-01	2.24E-04	0.00E-01	0.00E-01	8.03E-03	9.02E-05
Y-90	2.35E-06	0.00E-01	6.32E-08	0.00E-01	0.00E-01	1.92E-04	7.17E-05
Y-91	4.21E-04	0.00E-01	1.12E-05	0.00E-01	0.00E-01	1.75E-03	4.84E-05
ZR-93	2.24E-04	9.51E-06	6.19E-06	0.00E-01	3.20E-05	1.37E-04	1.43E-06
ZR-95	8.24E-05	1.99E-05	1.45E-05	0.00E-01	2.22E-05	1.25E-03	1.49E-05
NB-95	1.12E-05	4.59E-06	2.70E-06	0.00E-01	3.37E-06	3.42E-04	8.72E-06
TC-99	2.09E-07	2.68E-07	8.86E-08	0.00E-01	2.50E-06	6.76E-04	7.54E-06
RU-103	1.44E-06	0.00E-01	4.85E-07	0.00E-01	3.03E-06	3.94E-04	1.11E-05
RU-106	6.20E-05	0.00E-01	7.77E-06	0.00E-01	7.61E-05	8.28E-03	1.13E-04
AG-110M	7.13E-06	5.16E-06	3.57E-06	0.00E-01	7.81E-06	2.62E-03	2.28E-05
CD-115M	0.00E-01	1.73E-04	6.19E-06	0.00E-01	9.42E-05	1.47E-03	4.84E-05
SN-123	2.09E-04	4.22E-06	7.29E-06	4.27E-06	0.00E-01	2.22E-03	3.93E-05
SB-124	2.71E-05	3.97E-07	8.56E-06	7.18E-08	0.00E-01	1.89E-03	4.07E-05
SB-125	3.69E-05	3.41E-07	7.78E-06	4.45E-08	0.00E-01	1.17E-03	1.01E-05
TE-125M	3.40E-06	1.43E-06	4.70E-07	1.16E-06	7.53E-06	3.19E-04	8.88E-06
J-129	2.16E-05	1.59E-05	1.12E-05	9.92E-03	1.88E-05	0.00E-01	2.04E-07
J-131	2.71E-05	3.17E-05	1.38E-05	1.05E-02	3.70E-05	0.00E-01	7.29E-07
CS-134	2.82E-04	5.02E-04	5.55E-05	0.00E-01	1.36E-04	5.69E-05	9.19E-07
CS-137	3.92E-04	4.37E-04	3.38E-05	0.00E-01	1.23E-04	5.09E-05	9.19E-07
BA-140	4.01E-05	4.01E-08	2.08E-06	0.00E-01	9.57E-09	1.14E-03	2.64E-05
LA-140	3.63E-07	1.43E-07	3.69E-08	0.00E-01	0.00E-01	1.20E-04	5.84E-05
CE-141	1.98E-05	1.19E-05	1.42E-06	0.00E-01	3.75E-06	3.69E-04	1.48E-05
CE-144	2.28E-03	8.62E-04	1.26E-04	0.00E-01	3.84E-04	7.01E-03	1.02E-04

TABLE 4- 5 (Continued)

(mrem/50 years per pCi intake in first year)

NUCLIDE	BONE	LIVER	TOT.BODY	THYROID	KIDNEY	LUNG	GI-LLI
PK-147	3.92E-04	3.07E-05	1.56E-05	0.00E-01	4.94E-05	4.55E-04	5.54E-06
SK-151	3.38E-04	6.45E-05	1.63E-05	0.00E-01	5.25E-05	2.98E-04	3.33E-06
EU-154	2.96E-03	3.46E-04	2.45E-04	0.00E-01	1.14E-03	3.04E-03	2.74E-05
EU-155	5.98E-04	5.73E-05	3.47E-05	0.00E-01	1.58E-04	5.20E-04	5.00E-06
H0-166M	1.45E-03	3.07E-04	2.51E-04	0.00E-01	4.23E-04	2.05E-03	1.59E-05
TL-201	8.10E-09	4.90E-09	4.10E-09	0.00E-01	2.41E-08	1.36E-05	4.06E-06
PB-210	8.63E-02	2.02E-02	3.43E-03	0.00E-01	6.85E-02	1.76E-01	1.51E-06
BI-210	2.06E-06	1.33E-05	1.18E-06	0.00E-01	1.03E-04	9.96E-03	3.15E-05
TH-229	2.28E+01	5.96E-01	3.81E-01	0.00E-01	2.94E+00	1.27E+01	4.84E-05
TH-232	3.86E+00	1.53E-01	1.25E-01	0.00E-01	7.54E-01	2.09E+00	3.18E-05
U-232	2.58E-01	0.00E-01	2.13E-02	0.00E-01	2.40E-02	1.49E+00	4.21E-05
U-234	5.23E-02	0.00E-01	3.75E-03	0.00E-01	1.07E-02	3.49E-01	3.81E-05
U-235	5.01E-02	0.00E-01	3.52E-03	0.00E-01	1.01E-02	3.28E-01	4.84E-05
U-236	5.01E-02	0.00E-01	3.60E-03	0.00E-01	1.03E-02	3.35E-01	3.57E-05
U-238	4.79E-02	0.00E-01	3.29E-03	0.00E-01	9.41E-03	3.06E-01	3.41E-05
NP-237	2.88E+00	1.71E+00	1.26E-01	0.00E-01	7.70E-01	3.49E-01	4.92E-05
NP-239	2.65E-07	2.13E-07	1.34E-08	0.00E-01	4.74E-08	4.25E-05	1.72E-05
PU-236	5.28E-01	3.24E-01	2.37E-02	0.00E-01	7.70E-02	7.39E-01	4.57E-05
PU-238	2.69E+00	1.68E+00	1.27E-01	0.00E-01	4.65E-01	9.03E-01	4.52E-05
PU-239	2.93E+00	1.76E+00	1.34E-01	0.00E-01	4.95E-01	8.47E-01	4.13E-05
PU-240	2.93E+00	1.75E+00	1.34E-01	0.00E-01	4.95E-01	8.47E-01	4.21E-05
PU-241	8.43E-02	1.85E-02	3.11E-03	0.00E-01	1.15E-02	7.62E-04	8.65E-07
PU-242	2.72E+00	1.69E+00	1.29E-01	0.00E-01	4.77E-01	8.15E-01	4.05E-05
PU-244	3.17E+00	1.94E+00	1.48E-01	0.00E-01	5.46E-01	9.33E-01	6.03E-05
AN-241	3.15E+00	1.95E+00	1.31E-01	0.00E-01	7.94E-01	4.06E-01	4.60E-05
AN-242M	3.25E+00	1.86E+00	1.35E-01	0.00E-01	8.03E-01	1.64E-01	5.79E-05
AN-243	3.10E+00	1.88E+00	1.27E-01	0.00E-01	7.72E-01	3.84E-01	5.40E-05
CH-242	1.28E-01	8.65E-02	5.70E-03	0.00E-01	1.69E-02	2.96E-01	4.92E-05
CH-243	2.47E+00	1.52E+00	1.06E-01	0.00E-01	3.91E-01	4.24E-01	4.84E-05
CH-244	2.07E+00	1.27E+00	8.89E-02	0.00E-01	3.21E-01	4.07E-01	4.68E-05
CF-252	2.37E+00	0.00E-01	1.02E-01	0.00E-01	1.37E+00	1.79E-04	

TABLE 4-6 CHRONIC INHALATION DOSE CONVERSION FACTORS - CHILD AGE GROUP

(mrem/50 years per pCi intake in first year)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LLI
H-3	8.67E-08	1.73E-07	1.73E-07	0.00E-01	0.00E-01	0.00E-01	0.00E-01
BE-10	8.44E-04	9.83E-05	2.12E-05	0.00E-01	6.95E-05	7.41E-04	1.67E-05
CR-51	0.00E-01	0.00E-01	4.17E-08	2.31E-08	6.57E-09	4.59E-06	2.85E-07
MN-54	0.00E-01	1.16E-05	2.57E-06	0.00E-01	2.71E-06	4.26E-04	6.01E-06
FE-59	5.59E-06	9.03E-06	4.51E-06	0.00E-01	0.00E-01	3.43E-04	1.86E-05
CD-58	0.00E-01	4.79E-07	8.55E-07	0.00E-01	0.00E-01	2.99E-04	9.04E-06
CO-60	0.00E-01	3.55E-06	6.11E-06	0.00E-01	0.00E-01	1.91E-03	2.52E-05
GA-67	2.49E-08	1.55E-08	3.34E-09	0.00E-01	7.27E-09	6.49E-06	4.22E-06
ZN-69M	4.26E-09	7.28E-09	8.59E-10	0.00E-01	4.22E-09	7.36E-06	2.65E-05
SR-89	1.61E-04	0.00E-01	4.62E-06	0.00E-01	0.00E-01	5.83E-04	4.40E-05
SR-90	1.03E-02	0.00E-01	2.08E-04	0.00E-01	0.00E-01	3.99E-03	9.02E-05
Y-90	1.12E-06	0.00E-01	3.00E-08	0.00E-01	0.00E-01	7.08E-05	7.04E-05
Y-91	2.47E-04	0.00E-01	6.59E-06	0.00E-01	0.00E-01	7.10E-04	4.83E-05
ZR-93	2.07E-04	7.80E-06	5.55E-06	0.00E-01	3.02E-05	7.09E-05	1.43E-06
ZR-95	5.11E-05	1.13E-05	1.00E-05	0.00E-01	1.61E-05	6.02E-04	1.60E-05
NB-95	6.36E-06	2.48E-06	1.77E-06	0.00E-01	2.33E-06	1.66E-04	9.74E-06
TC-99	1.34E-07	1.49E-07	5.35E-08	0.00E-01	1.76E-06	3.37E-04	7.54E-06
RU-103	7.56E-07	0.00E-01	2.90E-07	0.00E-01	1.90E-06	1.79E-04	1.17E-05
RU-106	3.68E-05	0.00E-01	4.56E-06	0.00E-01	4.98E-05	3.88E-03	1.13E-04
AG-110M	4.56E-06	3.08E-06	2.47E-06	0.00E-01	5.74E-06	1.48E-03	2.63E-05
CD-115M	0.00E-01	7.88E-05	3.39E-06	0.00E-01	5.93E-05	5.86E-04	4.83E-05
SN-123	1.29E-04	2.14E-06	4.19E-06	2.27E-06	0.00E-01	9.59E-04	3.93E-05
SB-124	1.55E-05	2.00E-07	5.41E-06	3.41E-08	0.00E-01	8.76E-04	4.31E-05
SB-125	2.66E-05	2.05E-07	5.59E-06	2.46E-08	0.00E-01	6.27E-04	1.06E-05
TE-125M	1.82E-06	6.29E-07	2.47E-07	5.21E-07	4.62E-06	1.29E-04	8.88E-06
I-129	1.05E-05	6.39E-06	5.70E-06	4.27E-03	1.08E-05	0.00E-01	2.09E-07
I-131	1.30E-05	1.30E-05	7.36E-06	4.39E-03	2.13E-05	0.00E-01	7.47E-07
CS-134	1.75E-04	2.74E-04	6.07E-05	0.00E-01	8.93E-05	3.27E-05	1.01E-06
CS-137	2.45E-04	2.23E-04	3.46E-05	0.00E-01	7.63E-05	2.81E-05	9.51E-07
BA-140	2.00E-05	1.76E-08	1.17E-06	0.00E-01	5.73E-09	4.72E-04	2.67E-05
LA-140	1.75E-07	6.10E-08	2.06E-08	0.00E-01	0.00E-01	4.95E-05	5.94E-05
CE-141	1.06E-05	5.27E-06	7.82E-07	0.00E-01	2.31E-06	1.47E-04	1.49E-05
CE-144	1.83E-03	5.70E-04	9.79E-05	0.00E-01	3.16E-04	3.22E-03	1.02E-04

TABLE 4-6 (Continued)

(nrem/50 years per pCi intake in first year)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LLI
PM-147	3.53E-04	2.52E-05	1.36E-05	0.00E-01	4.46E-05	2.20E-04	5.54E-06
SM-151	3.14E-04	4.75E-05	1.49E-05	0.00E-01	4.90E-05	1.48E-04	3.33E-06
EU-154	2.74E-03	2.49E-04	2.27E-04	0.00E-01	1.09E-03	1.66E-03	2.90E-05
EU-155	5.61E-04	4.06E-05	3.18E-05	0.00E-01	1.51E-04	2.79E-04	5.24E-06
HO-166M	1.34E-03	2.81E-04	2.38E-04	0.00E-01	4.01E-04	1.13E-03	1.59E-05
TL-201	3.84E-09	2.00E-09	2.18E-09	0.00E-01	1.39E-08	5.38E-06	4.10E-06
PB-210	8.03E-02	1.85E-02	3.18E-03	0.00E-01	6.32E-02	8.74E-02	1.51E-06
BI-210	9.86E-07	5.12E-06	5.65E-07	0.00E-01	5.76E-05	3.70E-03	3.12E-05
TH-229	2.18E+01	5.74E-01	3.64E-01	0.00E-01	2.84E+00	1.08E+01	4.84E-05
TH-232	3.68E+00	1.47E-01	1.19E-01	0.00E-01	7.28E-01	1.77E+00	3.18E-05
U-232	2.19E-01	0.00E-01	1.56E-02	0.00E-01	1.67E-02	7.41E-01	4.21E-05
U-234	4.46E-02	0.00E-01	2.76E-03	0.00E-01	7.47E-03	1.74E-01	3.81E-05
U-235	4.27E-02	0.00E-01	2.59E-03	0.00E-01	7.01E-03	1.63E-01	4.84E-05
U-236	4.227E-02	0.00E-01	2.65E-03	0.00E-01	7.16E-03	1.67E-01	3.57E-05
U-238	4.09E-02	0.00E-01	2.42E-03	0.00E-01	6.55E-03	1.53E-01	3.41E-05
NP-237	2.72E+00	1.62E+00	1.19E-01	0.00E-01	7.41E-01	1.74E-01	4.92E-05
NP-239	1.26E-07	8.14E-08	6.36E-09	0.00E-01	2.63E-08	1.57E-05	1.68E-05
PU-236	4.99E-01	3.03E-01	2.24E-02	0.00E-01	7.39E-02	4.60E-01	4.57E-05
PU-238	2.55E+00	1.60E+00	1.21E-01	0.00E-01	4.47E-01	6.08E-01	4.52E-05
PU-239	2.79E+00	1.68E+00	1.28E-01	0.00E-01	4.78E-01	5.71E-01	4.13E-05
PU-240	2.79E+00	1.68E+00	1.28E-01	0.00E-01	4.77E-01	5.71E-01	4.21E-05
PU-241	7.94E-02	1.75E-02	2.93E-03	0.00E-01	1.10E-02	5.06E-04	8.65E-07
PU-242	2.59E+00	1.62E+00	1.23E-01	0.00E-01	4.60E-01	5.50E-01	4.05E-05
PU-244	3.02E+00	1.85E+00	1.41E-01	0.00E-01	5.27E-01	6.30E-01	6.03E-05
AM-241	2.97E+00	1.84E+00	1.24E-01	0.00E-01	7.63E-01	2.02E-01	4.60E-05
AM-242M	3.07E+00	1.76E+00	1.27E-01	0.00E-01	7.71E-01	8.14E-02	5.79E-05
AM-243	2.94E+00	1.78E+00	1.20E-01	0.00E-01	7.42E-01	1.92E-01	5.40E-05
CH-242	9.48E-02	5.68E-02	4.20E-03	0.00E-01	1.34E-02	1.31E-01	4.92E-05
CH-243	2.32E+00	1.42E+00	9.95E-02	0.00E-01	3.74E-01	2.10E-01	4.84E-05
CH-244	1.94E+00	1.18E+00	8.31E-02	0.00E-01	3.06E-01	2.02E-01	4.68E-05
CF-252	2.18E+00	0.00E-01	9.34E-02	0.00E-01	0.00E-01	6.62E-01	1.79E-04

TABLE 4-7 CHRONIC INHALATION DOSE CONVERSION FACTORS - TEEN AGE GROUP

(mrem/50 years per pCi intake in first year)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LI
H-3	4.50E-08	9.02E-08	9.02E-08	9.02E-08	9.02E-08	9.02E-08	9.02E-08
BE-10	2.78E-04	4.33E-05	7.09E-06	0.00E-01	3.31E-05	3.83E-04	1.67E-05
CR-51	0.00E-01	0.00E-01	1.69E-08	9.37E-09	3.84E-09	2.61E-06	3.54E-07
MN-54	0.00E-01	6.40E-06	1.05E-06	0.00E-01	1.59E-06	2.48E-04	7.88E-06
FE-59	1.99E-06	4.62E-06	1.79E-06	0.00E-01	0.00E-01	1.91E-04	2.11E-05
CO-58	0.00E-01	2.59E-07	3.48E-07	0.00E-01	0.00E-01	1.68E-04	1.12E-05
CO-60	0.00E-01	1.89E-06	2.48E-06	0.00E-01	0.00E-01	1.09E-03	3.06E-05
GA-67	8.63E-09	7.49E-09	1.27E-09	0.00E-01	3.66E-09	3.52E-06	4.28E-06
ZN-69M	1.44E-09	3.39E-09	3.11E-10	0.00E-01	2.06E-09	3.92E-06	2.02E-05
SR-89	5.38E-05	0.00E-01	1.55E-06	0.00E-01	0.00E-01	3.02E-04	4.38E-05
SR-90	4.14E-03	0.00E-01	8.33E-05	0.00E-01	0.00E-01	2.06E-03	9.02E-05
Y-90	3.74E-07	0.00E-01	1.00E-08	0.00E-01	0.00E-01	3.66E-05	6.60E-05
Y-91	8.26E-05	0.00E-01	2.21E-06	0.00E-01	0.00E-01	3.67E-04	4.82E-05
ZR-93	6.83E-05	3.44E-06	1.91E-06	0.00E-01	1.41E-05	3.67E-05	1.51E-06
ZR-95	1.81E-05	5.73E-06	3.96E-06	0.00E-01	8.42E-06	3.36E-04	1.76E-05
NB-95	2.33E-06	1.29E-06	7.08E-07	0.00E-01	1.25E-06	9.38E-05	1.14E-05
TC-99	4.48E-08	6.58E-08	1.79E-08	0.00E-01	8.36E-07	1.74E-04	7.54E-06
RU-103	2.63E-07	0.00E-01	1.12E-07	0.00E-01	9.29E-07	9.79E-05	1.29E-05
RU-106	1.23E-05	0.00E-01	1.56E-06	0.00E-01	2.37E-05	2.01E-03	1.13E-04
AG-110M	1.73E-06	1.64E-06	1.00E-06	0.00E-01	3.14E-06	8.44E-04	3.22E-05
CD-115M	0.00E-01	3.48E-05	1.14E-06	0.00E-01	2.82E-05	3.03E-04	4.81E-05
SN-123	4.31E-05	9.45E-07	1.40E-06	7.56E-07	0.00E-01	4.96E-04	3.93E-05
SB-124	5.38E-06	9.92E-08	2.10E-06	1.22E-08	0.00E-01	4.81E-04	4.70E-05
SB-125	9.23E-06	1.01E-07	2.16E-06	8.80E-09	0.00E-01	3.42E-04	1.17E-05
TE-125M	6.10E-07	2.80E-07	8.35E-08	1.75E-07	2.22E-06	6.70E-05	8.85E-06
I-129	3.52E-06	2.94E-06	4.90E-06	3.65E-03	5.25E-06	0.00E-01	2.16E-07
I-131	4.43E-06	6.14E-06	3.29E-06	1.83E-03	1.05E-05	0.00E-01	7.65E-07
CS-134	6.30E-05	1.41E-04	6.85E-05	0.00E-01	4.69E-05	1.83E-05	1.16E-06
CS-137	8.38E-05	1.06E-04	3.87E-05	0.00E-01	3.80E-05	1.51E-05	1.00E-06
BA-140	6.86E-06	8.38E-09	4.41E-07	0.00E-01	2.86E-09	2.55E-04	2.70E-05
LA-140	6.01E-08	2.96E-08	7.84E-09	0.00E-01	0.00E-01	2.69E-05	5.75E-05
CE-141	3.55E-06	2.36E-06	2.70E-07	0.00E-01	1.11E-06	7.66E-05	1.49E-05
CE-144	6.10E-04	2.54E-04	3.28E-05	0.00E-01	1.51E-04	1.68E-03	1.02E-04

TABLE 4-7 (Continued)

(mrem/50 years per pCi intake in first year)

NUCLIDE	BONE	LIVER	TOT.BODY	THYROID	KIDNEY	LUNG	GI-LL1
PM-147	1.16E-04	1.10E-05	4.50E-06	0.00E-01	2.10E-05	1.14E-04	5.54E-06
SM-151	1.07E-04	2.10E-05	4.86E-06	0.00E-01	2.27E-05	7.68E-05	3.33E-06
EU-154	9.42E-04	1.23E-04	8.61E-05	0.00E-01	5.44E-04	9.12E-04	3.15E-05
EU-155	2.15E-04	1.96E-05	1.21E-05	0.00E-01	7.65E-05	1.51E-03	5.63E-06
HO-166M	4.41E-04	1.36E-04	9.87E-05	0.00E-01	2.00E-04	6.24E-04	1.59E-05
TL-201	1.32E-09	9.38E-10	8.07E-10	0.00E-01	6.84E-09	2.87E-06	4.03E-06
PB-210	3.09E-02	8.28E-03	1.07E-03	0.00E-01	2.95E-02	4.52E-02	1.51E-06
BI-210	3.30E-07	2.26E-06	1.89E-07	0.00E-01	2.74E-05	1.91E-03	3.01E-05
TH-229	1.54E+01	4.44E-01	2.56E-01	0.00E-01	2.18E+00	5.23E+00	4.84E-05
TH-232	2.61E+00	1.14E-01	8.38E-02	0.00E-01	5.60E-01	8.60E-01	3.18E-05
U-232	7.31E-02	0.00E-01	5.23E-03	0.00E-01	7.94E-03	3.84E-01	4.21E-05
U-234	1.49E-02	0.00E-01	9.24E-04	0.00E-01	3.56E-03	8.99E-02	3.81E-05
U-235	1.42E-02	0.00E-01	8.67E-04	0.00E-01	3.34E-03	8.44E-02	4.84E-05
U-236	1.42E-02	0.00E-01	8.86E-04	0.00E-01	3.41E-03	8.62E-02	3.57E-05
U-238	1.36E-02	0.00E-01	8.11E-04	0.00E-01	3.12E-03	7.89E-02	3.41E-05
NP-237	1.64E+00	1.06E+00	7.21E-02	0.00E-01	5.35E-01	8.99E-02	4.92E-05
NP-239	4.23E-08	3.60E-08	2.21E-09	0.00E-01	1.25E-08	8.10E-06	1.56E-05
PU-236	1.64E-01	1.30E-01	7.38E-03	0.00E-01	3.39E-02	2.37E-01	4.57E-05
PU-238	1.50E+00	1.03E+00	7.22E-02	0.00E-01	3.11E-01	3.12E-01	4.52E-05
PU-239	1.73E+00	1.12E+00	8.06E-02	0.00E-01	3.44E-01	2.93E-01	4.13E-05
PU-240	1.72E+00	1.12E+00	8.04E-02	0.00E-01	3.43E-01	2.93E-01	4.21E-05
PU-241	3.74E-02	9.56E-03	1.40E-03	0.00E-01	6.48E-03	2.60E-04	8.65E-07
PU-242	1.60E+00	1.08E+00	7.76E-02	0.00E-01	3.31E-01	2.82E-01	4.05E-05
PU-244	1.87E+00	1.24E+00	8.88E-02	0.00E-01	3.79E-01	3.23E-01	6.03E-05
AM-241	1.77E+00	1.20E+00	7.10E-02	0.00E-01	5.32E-01	1.04E-01	4.60E-05
AM-242M	1.79E+00	1.13E+00	7.15E-02	0.00E-01	5.30E-01	4.21E-02	5.79E-05
AM-243	1.77E+00	1.17E+00	6.95E-02	0.00E-01	5.21E-01	9.91E-02	5.40E-05
CM-242	3.17E-02	2.51E-02	1.41E-03	0.00E-01	6.40E-03	6.76E-02	4.91E-05
CM-243	1.19E+00	8.30E-01	5.01E-02	0.00E-01	2.34E-01	1.09E-01	4.84E-05
CM-244	9.19E-01	6.53E-01	3.88E-02	0.00E-01	1.81E-01	1.04E-01	4.68E-05
CF-252	7.16E-01	0.00E-01	3.07E-02	0.00E-01	3.42E-01	1.79E-04	

TABLE 4-8 CHRONIC INHALATION DOSE CONVERSION FACTORS - ADULT AGE GROUP

( $\mu\text{rem}/50$  years per pCi intake in first year)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LL1
H-3	4.50E-08	9.00E-08	9.00E-08	9.00E-08	9.00E-08	9.00E-08	9.00E-08
BE-10	1.99E-04	3.07E-05	4.96E-06	0.00E-01	2.32E-05	2.22E-04	1.67E-05
CR-51	0.00E-01	0.00E-01	1.25E-08	7.44E-09	2.85E-09	1.80E-06	4.15E-07
MN-54	0.00E-01	4.95E-06	7.87E-07	0.00E-01	1.23E-06	1.75E-04	9.67E-06
FE-59	1.47E-06	3.46E-06	1.32E-06	0.00E-01	0.00E-01	1.27E-04	2.35E-05
CO-58	0.00E-01	1.98E-07	2.59E-07	0.00E-01	0.00E-01	1.16E-04	1.33E-05
CO-60	0.00E-01	1.44E-06	1.86E-06	0.00E-01	0.00E-01	7.46E-04	3.56E-05
GA-67	6.20E-09	5.51E-09	9.29E-10	0.00E-01	2.70E-09	2.22E-06	4.39E-06
ZN-69M	1.02E-09	2.45E-09	2.24E-10	0.00E-01	1.48E-09	2.78E-06	1.71E-05
SR-89	3.77E-05	0.00E-01	1.08E-04	0.00E-01	0.00E-01	1.75E-04	4.37E-05
SR-90	3.59E-03	0.00E-01	7.22E-05	0.00E-01	0.00E-01	1.20E-03	9.02E-05
Y-90	2.62E-07	0.00E-01	7.03E-09	0.00E-01	0.00E-01	2.12E-05	6.32E-05
Y-91	5.78E-05	0.00E-01	1.55E-06	0.00E-01	0.00E-01	2.13E-04	4.81E-05
ZR-93	5.23E-05	2.92E-06	1.37E-06	0.00E-01	1.11E-05	2.13E-05	1.51E-06
ZR-95	1.34E-05	4.30E-06	2.90E-06	0.00E-01	6.77E-06	2.21E-04	1.88E-05
NB-95	1.76E-06	9.77E-07	5.26E-07	0.00E-01	9.68E-07	6.31E-05	1.30E-05
TC-99	3.13E-08	4.65E-08	1.25E-08	0.00E-01	5.85E-07	1.01E-04	7.54E-06
RU-103	1.91E-07	0.00E-01	8.23E-08	0.00E-01	7.29E-07	6.31E-05	1.38E-05
RU-106	8.65E-06	0.00E-01	1.09E-06	0.00E-01	1.67E-05	1.17E-03	1.14E-04
AG-110M	1.35E-06	1.26E-06	7.45E-07	0.00E-01	2.46E-06	5.79E-04	3.78E-05
CD-115M	0.00E-01	2.46E-05	7.95E-07	0.00E-01	1.98E-05	1.76E-04	4.80E-05
SN-123	3.02E-05	6.67E-07	9.82E-07	5.67E-07	0.00E-01	2.88E-04	3.92E-05
SB-124	3.90E-06	7.37E-08	1.55E-06	9.44E-09	0.00E-01	3.10E-04	5.08E-05
SB-125	6.67E-06	7.45E-08	1.58E-06	6.75E-09	0.00E-01	2.17E-04	1.26E-05
TE-125M	4.27E-07	1.98E-07	5.84E-08	1.31E-07	1.56E-06	3.92E-05	8.83E-06
I-129	2.48E-06	2.11E-06	6.90E-06	5.54E-03	4.53E-06	0.00E-01	2.22E-07
I-131	3.15E-06	4.46E-06	2.56E-06	1.49E-03	7.66E-06	0.00E-01	7.85E-07
CS-134	4.67E-05	1.06E-04	9.08E-05	0.00E-01	3.59E-05	1.22E-05	1.30E-06
CS-137	5.98E-05	7.76E-05	5.35E-05	0.00E-01	2.77E-05	9.40E-06	1.05E-06
BA-140	4.89E-06	6.15E-09	3.21E-07	0.00E-01	2.09E-09	1.59E-04	2.73E-05
LA-140	4.33E-08	2.18E-08	5.77E-09	0.00E-01	0.00E-01	1.70E-05	5.73E-05
CE-141	2.49E-06	1.69E-06	1.91E-07	0.00E-01	7.82E-07	4.51E-05	1.50E-05
CE-144	4.28E-04	1.79E-04	2.29E-05	0.00E-01	1.05E-04	9.72E-04	1.02E-04

TABLE 4-8 (Continued)

(nrem/50 years per pCi intake in first year)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LLI
PM-147	8.37E-05	7.87E-06	3.19E-06	0.00E-01	1.49E-05	6.60E-05	5.54E-06
SM-151	8.59E-05	1.48E-05	3.55E-06	0.00E-01	1.66E-05	4.45E-05	3.25E-06
EU-154	7.43E-04	9.10E-05	6.48E-05	0.00E-01	4.36E-04	5.84E-04	3.40E-05
EU-155	1.72E-04	1.43E-05	9.21E-06	0.00E-01	6.59E-05	9.46E-05	5.95E-06
H0-166M	3.37E-04	1.05E-04	8.00E-05	0.00E-01	1.57E-04	3.94E-04	1.59E-05
TL-201	9.43E-10	6.80E-10	5.85E-10	0.00E-01	4.95E-09	1.76E-06	4.03E-06
PB-210	2.64E-02	6.73E-03	8.37E-04	0.00E-01	2.12E-02	2.62E-02	1.51E-06
BI-210	2.31E-07	1.59E-06	1.32E-07	0.00E-01	1.92E-05	1.11E-03	2.95E-05
TH-229	1.51E+01	4.35E-01	2.51E-01	0.00E-01	2.13E+00	3.62E+00	4.84E-05
TH-232	2.56E+00	1.12E-01	8.21E-02	0.00E-01	5.47E-01	5.95E-01	3.18E-05
U-232	5.14E-02	0.00E-01	3.66E-03	0.00E-01	5.56E-03	2.22E-01	4.21E-05
U-234	1.05E-02	0.00E-01	6.47E-04	0.00E-01	2.49E-03	5.21E-02	3.81E-05
U-235	1.00E-02	0.00E-01	6.07E-04	0.00E-01	2.34E-03	4.89E-02	4.84E-05
U-236	1.00E-02	0.00E-01	6.20E-04	0.00E-01	2.39E-03	5.00E-02	3.57E-05
U-238	9.58E-03	0.00E-01	5.67E-04	0.00E-01	2.18E-03	4.58E-02	3.41E-05
NP-237	1.56E+00	1.00E+00	6.87E-02	0.00E-01	5.10E-01	5.21E-02	4.92E-05
NP-239	2.97E-08	2.54E-08	1.55E-09	0.00E-01	8.76E-09	4.70E-06	1.49E-05
PU-236	1.28E-01	1.01E-01	5.77E-03	0.00E-01	2.65E-02	1.38E-01	4.57E-05
PU-238	1.43E+00	9.71E-01	6.90E-02	0.00E-01	2.96E-01	1.82E-01	4.52E-05
PU-239	1.66E+00	1.07E+00	7.75E-02	0.00E-01	3.30E-01	1.72E-01	4.13E-05
PU-240	1.65E+00	1.07E+00	7.73E-02	0.00E-01	3.29E-01	1.72E-01	4.21E-05
PU-241	3.42E-02	8.69E-03	1.29E-03	0.00E-01	5.93E-03	1.52E-04	8.65E-07
PU-242	1.53E+00	1.03E+00	7.46E-02	0.00E-01	3.18E-01	1.65E-01	4.05E-05
PU-244	1.79E+00	1.18E+00	8.54E-02	0.00E-01	3.64E-01	1.89E-01	6.03E-05
AM-241	1.68E+00	1.13E+00	6.71E-02	0.00E-01	5.05E-01	6.06E-02	4.60E-05
AM-242M	1.70E+00	1.06E+00	6.73E-02	0.00E-01	5.01E-01	2.44E-02	5.79E-05
AM-243	1.68E+00	1.10E+00	6.57E-02	0.00E-01	4.95E-01	5.75E-02	5.40E-05
CH-242	2.22E-02	1.77E-02	9.84E-04	0.00E-01	4.48E-03	3.92E-02	4.91E-05
CH-243	1.10E+00	7.61E-01	4.61E-02	0.00E-01	2.15E-01	6.31E-02	4.84E-05
CH-244	8.37E-01	5.88E-01	3.51E-02	0.00E-01	1.64E-01	6.06E-02	4.68E-05
CF-252	5.43E-01	0.00E-01	2.33E-02	0.00E-01	0.00E-01	1.99E-01	1.79E-04

TABLE 4 - 9 ACUTE INGESTION DOSE CONVERSION FACTORS - INFANT AGE GROUP

(mrem/50 years per pCi intake)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LI
H-3	8.75E-08	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07
BE-10	2.01E-05	3.15E-06	6.28E-07	0.00E-01	1.91E-06	0.00E-01	2.68E-05
CR-51	0.00E-01	0.00E-01	1.48E-08	9.70E-09	2.08E-09	1.89E-08	3.96E-07
NN-54	0.00E-01	2.09E-05	4.63E-06	0.00E-01	4.44E-06	0.00E-01	7.05E-06
FE-59	3.37E-05	5.89E-05	2.29E-05	0.00E-01	0.00E-01	1.76E-05	2.47E-05
Co-58	0.00E-01	3.66E-06	9.10E-06	0.00E-01	0.00E-01	0.00E-01	8.65E-06
Co-60	0.00E-01	1.10E-05	2.59E-05	0.00E-01	0.00E-01	0.00E-01	2.48E-05
GA-67	1.60E-08	1.11E-08	1.84E-09	0.00E-01	3.76E-09	0.00E-01	6.61E-06
ZN-69M	1.50E-06	3.07E-06	2.79E-07	0.00E-01	1.24E-06	0.00E-01	4.09E-05
SR-89	2.76E-03	0.00E-01	7.94E-05	0.00E-01	0.00E-01	0.00E-01	4.97E-05
SR-90	3.07E-02	0.00E-01	6.17E-04	0.00E-01	0.00E-01	0.00E-01	2.22E-04
Y-90	8.74E-08	0.00E-01	2.35E-09	0.00E-01	0.00E-01	0.00E-01	1.16E-04
Y-91	1.27E-06	0.00E-01	3.40E-08	0.00E-01	0.00E-01	0.00E-01	7.80E-05
ZR-93	2.16E-07	1.14E-08	6.44E-09	0.00E-01	2.97E-08	0.00E-01	2.30E-06
ZR-95	2.32E-07	5.65E-08	3.91E-08	0.00E-01	5.92E-08	0.00E-01	2.41E-05
NB-95	4.50E-08	1.86E-08	1.06E-08	0.00E-01	1.31E-08	0.00E-01	1.41E-05
TC-99	1.14E-06	1.58E-06	4.56E-07	0.00E-01	1.28E-05	1.44E-07	6.08E-06
RU-103	1.52E-06	0.00E-01	5.00E-07	0.00E-01	3.09E-06	0.00E-01	1.74E-05
RU-106	2.49E-05	0.00E-01	3.05E-06	0.00E-01	2.86E-05	0.00E-01	1.76E-04
Ag-110M	1.05E-06	7.49E-07	4.85E-07	0.00E-01	1.05E-06	0.00E-01	3.64E-05
CD-115M	0.00E-01	1.56E-05	5.33E-07	0.00E-01	7.95E-06	0.00E-01	7.80E-05
SN-123	2.81E-04	4.37E-06	6.90E-06	4.37E-06	0.00E-01	0.00E-01	6.35E-05
SB-124	2.31E-05	3.33E-07	6.90E-06	5.72E-08	0.00E-01	1.46E-05	6.37E-05
SB-125	1.44E-05	1.29E-07	2.70E-06	1.55E-08	0.00E-01	9.27E-06	1.58E-05
TE-125M	2.43E-05	8.18E-06	3.23E-06	7.99E-06	5.90E-05	0.00E-01	1.07E-05
I-129	2.94E-05	2.15E-05	1.55E-05	1.36E-02	2.54E-05	0.00E-01	4.08E-07
I-131	3.62E-05	4.26E-05	1.86E-05	1.39E-02	4.97E-05	0.00E-01	1.46E-06
CS-134	4.47E-04	8.22E-04	7.06E-05	0.00E-01	1.93E-04	9.00E-05	1.84E-06
CS-137	6.30E-04	7.33E-04	4.31E-05	0.00E-01	1.76E-04	8.28E-05	1.84E-06
BA-140	1.75E-04	1.76E-07	8.98E-06	0.00E-01	4.08E-08	1.08E-07	4.05E-05
LA-140	2.12E-08	8.37E-09	2.15E-09	0.00E-01	0.00E-01	0.00E-01	9.42E-05
CE-141	8.42E-08	5.16E-08	6.01E-09	0.00E-01	1.56E-08	0.00E-01	2.39E-05
CE-144	3.61E-06	1.53E-06	2.03E-07	0.00E-01	5.77E-07	0.00E-01	1.65E-04

TABLE 4-9 (Continued)

(mrem/50 years per pCi intake)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LLI
PM-147	4.48E-07	4.06E-08	1.89E-08	0.00E-01	5.59E-08	0.00E-01	8.94E-06
SN-151	3.18E-07	8.49E-08	1.65E-08	0.00E-01	5.03E-08	0.00E-01	5.38E-06
EU-154	2.93E-06	4.48E-07	2.46E-07	0.00E-01	1.07E-06	0.00E-01	4.42E-05
EU-155	5.94E-07	7.64E-08	3.64E-08	0.00E-01	1.49E-07	0.00E-01	8.07E-06
HO-166M	1.39E-06	3.06E-07	2.32E-07	0.00E-01	3.87E-07	0.00E-01	2.56E-05
TL-201	1.21E-06	8.02E-07	6.03E-07	0.00E-01	3.62E-06	2.10E-07	3.60E-06
PB-210	5.71E-02	1.60E-02	2.63E-03	0.00E-01	4.88E-02	0.00E-01	2.24E-06
BI-210	4.19E-06	2.71E-05	2.40E-06	0.00E-01	2.09E-04	0.00E-01	5.08E-05
TH-229	2.64E-02	6.69E-04	4.42E-04	0.00E-01	3.15E-03	0.00E-01	7.81E-05
TH-232	4.46E-03	1.72E-04	1.44E-04	0.00E-01	8.09E-04	0.00E-01	5.12E-05
U-232	2.91E-02	0.00E-01	2.56E-03	0.00E-01	2.44E-03	0.00E-01	6.79E-05
U-234	5.87E-03	0.00E-01	4.50E-04	0.00E-01	1.09E-03	0.00E-01	6.15E-05
U-235	5.62E-03	0.00E-01	4.23E-04	0.00E-01	1.02E-03	0.00E-01	7.81E-05
U-236	5.62E-03	0.00E-01	4.32E-04	0.00E-01	1.04E-03	0.00E-01	5.76E-05
U-238	5.38E-03	0.00E-01	3.95E-04	0.00E-01	9.53E-04	0.00E-01	5.51E-05
NP-237	2.52E-03	1.69E-04	1.11E-04	0.00E-01	6.57E-04	0.00E-01	7.94E-05
NP-239	1.11E-08	9.98E-10	5.64E-10	0.00E-01	1.99E-09	0.00E-01	2.77E-05
PU-236	3.80E-04	4.72E-05	9.59E-06	0.00E-01	2.95E-05	0.00E-01	7.37E-05
PU-238	1.35E-03	1.60E-04	3.58E-05	0.00E-01	1.26E-04	0.00E-01	7.30E-05
PU-239	1.45E-03	1.65E-04	3.73E-05	0.00E-01	1.33E-04	0.00E-01	6.66E-05
PU-240	1.45E-03	1.64E-04	3.73E-05	0.00E-01	1.33E-04	0.00E-01	6.79E-05
PU-241	4.54E-05	1.91E-06	9.41E-07	0.00E-01	3.32E-06	0.00E-01	1.40E-06
PU-242	1.35E-03	1.58E-04	3.59E-05	0.00E-01	1.28E-04	0.00E-01	6.53E-05
PU-244	1.57E-03	1.81E-04	4.11E-05	0.00E-01	1.47E-04	0.00E-01	9.73E-05
AM-241	1.53E-03	1.35E-03	1.16E-04	0.00E-01	6.80E-04	0.00E-01	7.43E-05
AM-242M	1.59E-03	1.30E-03	1.19E-04	0.00E-01	6.89E-04	0.00E-01	9.35E-05
AM-243	1.51E-03	1.30E-03	1.12E-04	0.00E-01	6.60E-04	0.00E-01	8.71E-05
CM-242	1.66E-04	1.62E-04	1.10E-05	0.00E-01	3.07E-05	0.00E-01	7.94E-05
CM-243	1.48E-03	1.24E-03	9.55E-05	0.00E-01	3.42E-04	0.00E-01	7.81E-05
CM-244	1.25E-03	1.05E-03	8.10E-05	0.00E-01	2.84E-04	0.00E-01	7.55E-05
CF-252	1.37E-03	0.00E-01	3.30E-05	0.00E-01	0.00E-01	0.00E-01	2.88E-04

TABLE 4-10 ACUTE INGESTION DOSE CONVERSION FACTORS - CHILD AGE GROUP

( $\text{mrem}/50 \text{ years per pCi intake}$ )

NUCLIDE	BONE	LIVER	TOT.BODY	THYROID	KIDNEY	LUNG	GI-LLI
H-3	5.77E-08	1.15E-07	1.15E-07	1.15E-07	1.15E-07	1.15E-07	1.15E-07
BE-10	1.35E-05	1.57E-06	3.39E-07	0.00E-01	1.11E-06	0.00E-01	2.68E-05
CR-51	0.00E-01	0.00E-01	8.90E-09	4.94E-09	1.35E-09	9.01E-09	4.59E-07
MN-54	0.00E-01	1.07E-05	2.85E-06	0.00E-01	3.00E-06	0.00E-01	8.73E-06
FE-59	1.65E-05	2.67E-05	1.33E-05	0.00E-01	0.00E-01	7.74E-06	2.70E-05
CO-58	0.00E-01	1.80E-06	5.51E-06	0.00E-01	0.00E-01	0.00E-01	1.02E-05
CO-60	0.00E-01	5.29E-06	1.56E-05	0.00E-01	0.00E-01	0.00E-01	2.85E-05
GA-67	7.52E-09	4.68E-09	1.01E-09	0.00E-01	2.20E-09	0.00E-01	6.80E-06
ZN-69M	7.09E-07	1.21E-06	1.43E-07	0.00E-01	7.02E-07	0.00E-01	3.84E-05
SR-89	1.30E-03	0.00E-01	3.74E-05	0.00E-01	0.00E-01	0.00E-01	4.97E-05
SR-90	2.61E-02	0.00E-01	5.26E-04	0.00E-01	0.00E-01	0.00E-01	2.22E-04
Y-90	4.10E-08	0.00E-01	1.10E-09	0.00E-01	0.00E-01	0.00E-01	1.14E-04
Y-91	6.02E-07	0.00E-01	1.61E-08	0.00E-01	0.00E-01	0.00E-01	7.80E-05
ZR-93	1.69E-07	6.25E-09	4.45E-09	0.00E-01	2.44E-08	0.00E-01	2.30E-06
ZR-95	1.16E-07	2.55E-08	2.27E-08	0.00E-01	3.65E-08	0.00E-01	2.58E-05
NB-95	2.25E-08	8.75E-09	6.26E-09	0.00E-01	8.23E-09	0.00E-01	1.57E-05
TC-99	5.35E-07	5.96E-07	2.14E-07	0.00E-01	7.02E-06	5.27E-08	6.08E-06
RU-103	7.31E-07	0.00E-01	2.81E-07	0.00E-01	1.84E-06	0.00E-01	1.83E-05
RU-106	1.17E-05	0.00E-01	1.45E-06	0.00E-01	1.59E-05	0.00E-01	1.76E-04
AG-110M	5.39E-07	3.64E-07	2.92E-07	0.00E-01	6.78E-07	0.00E-01	4.21E-05
CD-115M	0.00E-01	5.89E-06	2.51E-07	0.00E-01	4.38E-06	0.00E-01	7.79E-05
SN-123	1.32E-04	1.65E-06	3.24E-06	1.75E-06	0.00E-01	0.00E-01	6.34E-05
SB-124	1.11E-05	1.44E-07	3.89E-06	2.45E-08	0.00E-01	6.16E-06	6.75E-05
SB-125	7.16E-06	5.52E-08	1.50E-06	6.62E-09	0.00E-01	3.99E-06	1.66E-05
TE-125M	1.14E-05	3.09E-06	1.52E-06	3.20E-06	3.24E-05	0.00E-01	1.07E-05
I-129	1.39E-05	8.53E-06	7.61E-06	5.57E-03	1.44E-05	0.00E-01	4.17E-07
I-131	1.72E-05	1.73E-05	9.82E-06	5.72E-03	2.84E-05	0.00E-01	1.49E-06
CS-134	2.34E-04	3.84E-04	8.09E-05	0.00E-01	1.19E-04	4.26E-05	2.02E-06
CS-137	3.27E-04	3.13E-04	4.61E-05	0.00E-01	1.02E-04	3.67E-05	1.90E-06
BA-140	8.31E-05	7.29E-08	4.87E-06	0.00E-01	2.38E-08	4.34E-08	4.09E-05
LA-140	1.01E-08	3.53E-09	1.19E-09	0.00E-01	0.00E-01	0.00E-01	9.59E-05
CE-141	3.96E-08	1.98E-08	2.94E-09	0.00E-01	8.67E-09	0.00E-01	2.40E-05
CE-144	2.08E-06	6.48E-07	1.11E-07	0.00E-01	3.60E-07	0.00E-01	1.65E-04

TABLE 4-10 (Continued)

(Aren/50 years per pCi intake)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LL1
PM-147	3.19E-07	2.27E-08	1.22E-08	0.00E-01	4.01E-08	0.00E-01	8.94E-06
SM-151	2.59E-07	3.81E-08	1.20E-08	0.00E-01	3.95E-08	0.00E-01	5.38E-06
EU-154	2.32E-06	2.07E-07	1.89E-07	0.00E-01	9.14E-07	0.00E-01	4.67E-05
EU-155	4.84E-07	3.47E-08	2.72E-08	0.00E-01	1.31E-07	0.00E-01	8.45E-06
H0-166M	1.09E-06	2.27E-07	1.92E-07	0.00E-01	3.23E-07	0.00E-01	2.56E-05
TL-201	5.66E-07	3.24E-07	3.17E-07	0.00E-01	2.07E-06	0.00E-01	3.64E-08
PB-210	4.84E-02	1.23E-02	2.11E-03	0.00E-01	3.67E-02	0.00E-01	2.24E-06
BI-210	1.97E-06	1.02E-05	1.13E-06	0.00E-01	1.15E-04	0.00E-01	5.03E-05
TH-229	2.40E-02	6.04E-04	4.01E-04	0.00E-01	2.94E-03	0.00E-01	7.81E-05
TH-232	4.06E-03	1.55E-04	1.31E-04	0.00E-01	7.55E-04	0.00E-01	5.12E-05
U-232	1.76E-02	0.00E-01	1.26E-03	0.00E-01	1.34E-03	0.00E-01	6.79E-05
U-234	3.57E-03	0.00E-01	2.21E-04	0.00E-01	5.97E-04	0.00E-01	6.15E-05
U-235	3.42E-03	0.00E-01	2.07E-04	0.00E-01	5.61E-04	0.00E-01	7.81E-05
U-236	3.42E-03	0.00E-01	2.12E-04	0.00E-01	5.73E-04	0.00E-01	5.76E-05
U-238	3.27E-03	0.00E-01	1.94E-04	0.00E-01	5.24E-04	0.00E-01	5.51E-05
NP-237	2.29E-03	1.50E-04	1.00E-04	0.00E-01	6.18E-04	0.00E-01	7.94E-05
NP-239	5.25E-09	3.77E-10	2.65E-10	0.00E-01	1.09E-09	0.00E-01	2.71E-05
PU-236	2.97E-04	3.36E-05	7.51E-06	0.00E-01	2.46E-05	0.00E-01	7.37E-05
PU-238	1.22E-03	1.40E-04	3.23E-05	0.00E-01	1.18E-04	0.00E-01	7.30E-05
PU-239	1.32E-03	1.46E-04	3.39E-05	0.00E-01	1.24E-04	0.00E-01	6.66E-05
PU-240	1.32E-03	1.46E-04	3.39E-05	0.00E-01	1.24E-04	0.00E-01	6.79E-05
PU-241	3.96E-05	1.61E-06	8.22E-07	0.00E-01	3.01E-06	0.00E-01	1.40E-06
PU-242	1.22E-03	1.41E-04	3.27E-05	0.00E-01	1.20E-04	0.00E-01	6.53E-05
PU-244	1.43E-03	1.61E-04	3.74E-05	0.00E-01	1.37E-04	0.00E-01	9.73E-05
AM-241	1.39E-03	1.19E-03	1.04E-04	0.00E-01	6.36E-04	0.00E-01	7.43E-05
AM-242M	1.43E-03	1.14E-03	1.07E-04	0.00E-01	6.43E-04	0.00E-01	9.35E-05
AM-243	1.37E-03	1.16E-03	1.01E-04	0.00E-01	6.18E-04	0.00E-01	8.71E-05
CH-242	8.77E-05	7.01E-05	5.84E-06	0.00E-01	1.87E-05	0.00E-01	7.93E-05
CH-243	1.31E-03	1.06E-03	8.44E-05	0.00E-01	3.14E-04	0.00E-01	7.81E-05
CH-244	1.10E-03	8.90E-04	7.08E-05	0.00E-01	2.58E-04	0.00E-01	7.55E-05
CF-252	1.06E-03	0.00E-01	2.56E-05	0.00E-01	0.00E-01	0.00E-01	2.88E-04

TABLE 4-11 ACUTE INGESTION DOSE CONVERSION FACTORS - TEEN AGE GROUP

(mrem/50 years per pCi intake)

NUCLIDE	BONE	LIVER	TOT.BODY	THYROID	KIDNEY	LUNG	GI-LLI
H-3	3.00E-08	6.01E-08	6.01E-08	6.01E-08	6.01E-08	6.01E-08	6.01E-08
BE-10	4.49E-06	6.94E-07	1.13E-07	0.00E-01	5.30E-07	0.00E-01	2.68E-05
CR-51	0.00E-01	0.00E-01	3.60E-09	2.00E-09	7.88E-10	5.13E-09	5.71E-07
MN-54	0.00E-01	5.90E-06	1.17E-06	0.00E-01	1.76E-06	0.00E-01	1.14E-05
FE-59	5.87E-06	1.36E-05	5.28E-06	0.00E-01	0.00E-01	4.32E-06	3.06E-05
CO-58	0.00E-01	9.72E-07	2.24E-06	0.00E-01	0.00E-01	0.00E-01	1.27E-05
CO-60	0.00E-01	2.81E-06	6.33E-06	0.00E-01	0.00E-01	0.00E-01	3.45E-05
GA-67	2.61E-09	2.27E-09	3.86E-10	0.00E-01	1.11E-09	0.00E-01	6.90E-06
ZN-69M	2.40E-07	5.65E-07	5.18E-08	0.00E-01	3.43E-07	0.00E-01	2.93E-05
SR-89	4.36E-04	0.00E-01	1.25E-05	0.00E-01	0.00E-01	0.00E-01	4.95E-05
SR-90	1.03E-02	0.00E-01	2.06E-04	0.00E-01	0.00E-01	0.00E-01	2.20E-04
Y-90	1.37E-08	0.00E-01	3.69E-10	0.00E-01	0.00E-01	0.00E-01	1.06E-04
Y-91	2.01E-07	0.00E-01	5.39E-09	0.00E-01	0.00E-01	0.00E-01	7.77E-05
ZR-93	5.58E-08	2.76E-09	1.54E-09	0.00E-01	1.14E-08	0.00E-01	2.43E-06
ZR-95	4.11E-08	1.30E-08	8.97E-09	0.00E-01	1.91E-08	0.00E-01	2.83E-05
NB-95	8.22E-09	4.56E-09	2.50E-09	0.00E-01	4.42E-09	0.00E-01	1.84E-05
TC-99	1.79E-07	2.63E-07	7.16E-08	0.00E-01	3.34E-06	2.72E-08	6.08E-06
RU-103	2.54E-07	0.00E-01	1.08E-07	0.00E-01	8.99E-07	0.00E-01	2.01E-05
RU-106	3.92E-06	0.00E-01	4.96E-07	0.00E-01	7.55E-06	0.00E-01	1.77E-04
AG-110M	2.04E-07	1.94E-07	1.18E-07	0.00E-01	3.70E-07	0.00E-01	5.14E-05
CD-115M	0.00E-01	2.60E-06	8.39E-08	0.00E-01	2.08E-06	0.00E-01	7.76E-05
SN-123	4.43E-05	7.29E-07	1.08E-06	5.83E-07	0.00E-01	0.00E-01	6.34E-05
SB-124	3.87E-06	7.13E-08	1.51E-06	8.78E-09	0.00E-01	3.38E-06	7.36E-05
SB-125	2.48E-06	2.71E-08	5.80E-07	2.37E-09	0.00E-01	2.18E-06	1.83E-05
TE-125M	3.83E-06	1.38E-06	5.12E-07	1.07E-06	1.56E-05	0.00E-01	1.07E-05
I-129	4.66E-06	3.92E-06	6.53E-06	4.77E-03	7.01E-06	0.00E-01	4.31E-07
I-131	5.85E-06	8.19E-06	4.39E-06	2.39E-03	1.41E-05	0.00E-01	1.53E-06
CS-134	8.40E-05	1.97E-04	9.13E-05	0.00E-01	6.26E-05	2.39E-05	2.31E-06
CS-137	1.12E-04	1.49E-04	5.16E-05	0.00E-01	5.06E-05	1.97E-05	2.00E-06
BA-140	2.84E-05	3.48E-08	1.83E-06	0.00E-01	1.19E-08	2.34E-08	4.13E-05
LA-140	3.48E-09	1.72E-09	4.55E-10	0.00E-01	0.00E-01	0.00E-01	9.27E-05
CE-141	1.33E-08	8.87E-09	1.01E-09	0.00E-01	4.17E-09	0.00E-01	2.40E-05
CE-144	6.95E-07	2.89E-07	3.73E-08	0.00E-01	1.71E-07	0.00E-01	1.65E-04

TABLE 4-11 (Continued)

(mrem/50 years per pCi intake)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LLI
Pm-147	1.05E-07	9.98E-09	4.07E-09	0.00E-01	1.90E-08	0.00E-01	8.93E-06
Sr-151	8.83E-08	1.68E-08	3.96E-09	0.00E-01	1.85E-08	0.00E-01	5.38E-06
Eu-154	7.97E-07	1.02E-07	7.22E-08	0.00E-01	4.60E-07	0.00E-01	5.08E-05
Eu-155	1.86E-07	1.68E-08	1.04E-08	0.00E-01	6.60E-08	0.00E-01	9.09E-06
Hg-166M	3.60E-07	1.11E-07	8.00E-08	0.00E-01	1.62E-07	0.00E-01	2.56E-05
Tl-201	1.94E-07	1.52E-07	1.18E-07	0.00E-01	1.02E-06	4.39E-08	3.57E-06
Pb-210	1.83E-02	5.50E-03	7.08E-04	0.00E-01	1.73E-02	0.00E-01	2.24E-06
Bi-210	6.59E-07	4.51E-06	3.77E-07	0.00E-01	5.48E-05	0.00E-01	4.86E-05
Th-229	1.45E-02	4.15E-04	2.40E-04	0.00E-01	2.02E-03	0.00E-01	7.81E-05
Th-232	2.45E-03	1.07E-04	7.84E-05	0.00E-01	5.17E-04	0.00E-01	5.12E-05
U-232	5.89E-03	0.00E-01	4.21E-04	0.00E-01	6.38E-04	0.00E-01	6.79E-05
U-234	1.19E-03	0.00E-01	7.39E-05	0.00E-01	2.84E-04	0.00E-01	6.15E-05
U-235	1.14E-03	0.00E-01	6.94E-05	0.00E-01	2.67E-04	0.00E-01	7.81E-05
U-236	1.14E-03	0.00E-01	7.09E-05	0.00E-01	2.73E-04	0.00E-01	5.76E-05
U-238	1.09E-03	0.00E-01	6.48E-05	0.00E-01	2.50E-04	0.00E-01	5.51E-05
NP-237	1.35E-03	9.65E-05	5.92E-05	0.00E-01	4.39E-04	0.00E-01	7.94E-05
NP-239	1.76E-09	1.66E-10	9.21E-11	0.00E-01	5.21E-10	0.00E-01	2.52E-05
PU-236	9.84E-05	1.46E-05	2.49E-06	0.00E-01	1.14E-05	0.00E-01	7.37E-05
PU-238	6.78E-04	8.67E-05	1.84E-05	0.00E-01	7.89E-05	0.00E-01	7.30E-05
PU-239	7.74E-04	9.39E-05	2.04E-05	0.00E-01	8.68E-05	0.00E-01	6.66E-05
PU-240	7.73E-04	9.37E-05	2.03E-05	0.00E-01	8.66E-05	0.00E-01	6.79E-05
PU-241	1.77E-05	8.48E-07	3.72E-07	0.00E-01	1.72E-06	0.00E-01	1.40E-06
PU-242	7.17E-04	9.04E-05	1.96E-05	0.00E-01	8.35E-05	0.00E-01	6.53E-05
PU-244	8.38E-04	1.04E-04	2.24E-05	0.00E-01	9.57E-05	0.00E-01	9.73E-05
Am-241	8.08E-04	7.61E-04	5.82E-05	0.00E-01	4.37E-04	0.00E-01	7.43E-05
Am-242M	8.17E-04	7.18E-04	5.86E-05	0.00E-01	4.35E-04	0.00E-01	9.35E-05
Am-243	8.05E-04	7.43E-04	5.69E-05	0.00E-01	4.27E-04	0.00E-01	8.71E-05
Cm-242	2.94E-05	3.10E-05	1.95E-06	0.00E-01	8.89E-06	0.00E-01	7.92E-05
Cm-243	6.57E-04	6.09E-04	4.13E-05	0.00E-01	1.93E-04	0.00E-01	7.81E-05
Cm-244	5.09E-04	4.82E-04	3.22E-05	0.00E-01	1.50E-04	0.00E-01	7.55E-05
Cf-252	3.50E-04	0.00E-01	8.45E-06	0.00E-01	0.00E-01	0.00E-01	2.88E-04

TABLE 4-12 ACUTE INGESTION DOSE CONVERSION FACTORS - ADULT AGE GROUP

(mrem/50 years per pCi intake)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LLI
H-3	3.00E-08	6.00E-08	6.00E-08	6.00E-08	6.00E-08	6.00E-08	6.00E-08
BE-10	3.18E-06	4.91E-07	7.94E-08	0.00E-01	3.71E-07	0.00E-01	2.68E-05
CR-51	0.00E-01	0.00E-01	2.66E-09	1.59E-09	5.86E-10	3.53E-09	6.69E-07
MN-54	0.00E-01	4.57E-06	8.72E-07	0.00E-01	1.36E-06	0.00E-01	1.40E-05
FE-59	4.34E-06	1.02E-05	3.91E-06	0.00E-01	0.00E-01	2.85E-06	3.40E-05
CO-58	0.00E-01	7.45E-07	1.67E-06	0.00E-01	0.00E-01	0.00E-01	1.51E-05
CO-60	0.00E-01	2.14E-06	4.73E-06	0.00E-01	0.00E-01	0.00E-01	4.02E-05
GA-67	1.88E-09	1.67E-09	2.81E-10	0.00E-01	8.16E-10	0.00E-01	7.09E-06
ZN-69M	1.70E-07	4.08E-07	3.73E-08	0.00E-01	2.47E-07	0.00E-01	2.48E-05
SR-89	3.05E-04	0.00E-01	8.77E-06	0.00E-01	0.00E-01	0.00E-01	4.94E-05
SR-90	8.72E-03	0.00E-01	1.75E-04	0.00E-01	0.00E-01	0.00E-01	2.19E-04
Y-90	9.62E-09	0.00E-01	2.58E-10	0.00E-01	0.00E-01	0.00E-01	1.02E-04
Y-91	1.41E-07	0.00E-01	3.77E-09	0.00E-01	0.00E-01	0.00E-01	7.76E-05
ZR-93	4.18E-08	2.34E-09	1.09E-09	0.00E-01	8.87E-09	0.00E-01	2.43E-06
ZR-95	3.04E-08	9.74E-09	6.58E-09	0.00E-01	1.53E-08	0.00E-01	3.09E-05
NB-95	6.22E-09	3.45E-09	1.86E-09	0.00E-01	3.42E-09	0.00E-01	2.10E-05
TC-99	1.25E-07	1.86E-07	5.01E-08	0.00E-01	2.34E-06	1.58E-08	6.08E-06
RU-103	1.84E-07	0.00E-01	7.96E-08	0.00E-01	7.06E-07	0.00E-01	2.17E-05
RU-106	2.75E-06	0.00E-01	3.47E-07	0.00E-01	5.32E-06	0.00E-01	1.79E-04
A6-110M	1.40E-07	1.48E-07	8.80E-08	0.00E-01	2.91E-07	0.00E-01	6.04E-05
CD-115M	0.00E-01	1.84E-06	5.87E-08	0.00E-01	1.46E-06	0.00E-01	7.74E-05
SN-123	3.10E-05	5.15E-07	7.59E-07	4.38E-07	0.00E-01	0.00E-01	6.33E-05
SB-124	2.80E-06	5.29E-08	1.11E-06	6.79E-09	0.00E-01	2.18E-06	7.95E-05
SB-125	1.79E-06	2.00E-08	4.25E-07	1.81E-09	0.00E-01	1.38E-06	1.97E-05
TE-125M	2.68E-06	9.71E-07	3.59E-07	8.06E-07	1.09E-05	0.00E-01	1.07E-05
I-129	3.27E-06	2.81E-06	9.21E-06	7.23E-03	6.04E-06	0.00E-01	4.44E-07
I-131	4.16E-06	5.95E-06	3.41E-06	1.95E-03	1.02E-05	0.00E-01	1.57E-06
CS-134	6.23E-05	1.48E-04	1.21E-04	0.00E-01	4.79E-05	1.59E-05	2.59E-06
CS-137	7.97E-05	1.09E-04	7.14E-05	0.00E-01	3.70E-05	1.23E-05	2.11E-06
BA-140	2.03E-05	2.55E-08	1.33E-06	0.00E-01	8.68E-09	1.46E-08	4.18E-05
LA-140	2.51E-09	1.27E-09	3.34E-10	0.00E-01	0.00E-01	0.00E-01	9.25E-05
CE-141	9.35E-09	6.33E-09	7.17E-10	0.00E-01	2.94E-09	0.00E-01	2.42E-05
CE-144	4.87E-07	2.04E-07	2.61E-08	0.00E-01	1.20E-07	0.00E-01	1.65E-04

TABLE 4-12 (Continued)

(nrem/50 years per pCi intake)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LLI
PM-147	7.54E-08	7.09E-09	2.87E-09	0.00E-01	1.34E-08	0.00E-01	8.93E-06
SM-151	6.90E-08	1.19E-08	2.85E-09	0.00E-01	1.33E-08	0.00E-01	5.25E-06
EU-154	6.17E-07	7.56E-08	5.38E-08	0.00E-01	3.62E-07	0.00E-01	5.48E-05
EU-155	1.47E-07	1.22E-08	7.87E-09	0.00E-01	5.63E-08	0.00E-01	9.60E-06
H0-166M	2.70E-07	8.43E-08	6.40E-08	0.00E-01	1.26E-07	0.00E-01	2.56E-05
TL-201	1.39E-07	1.10E-07	8.52E-08	0.00E-01	7.37E-07	2.70E-08	3.57E-06
PB-210	1.53E-02	4.37E-03	5.44E-04	0.00E-01	1.23E-02	0.00E-01	2.24E-06
BI-210	4.61E-07	3.18E-06	2.64E-07	0.00E-01	3.83E-05	0.00E-01	4.75E-05
TH-229	1.37E-02	3.94E-04	2.27E-04	0.00E-01	1.89E-03	0.00E-01	7.81E-05
TH-232	2.32E-03	1.01E-04	7.42E-05	0.00E-01	4.86E-04	0.00E-01	5.12E-05
U-232	4.13E-03	0.00E-01	2.94E-04	0.00E-01	4.47E-04	0.00E-01	6.79E-05
U-234	8.36E-04	0.00E-01	5.17E-05	0.00E-01	1.99E-04	0.00E-01	6.15E-05
U-235	8.01E-04	0.00E-01	4.86E-05	0.00E-01	1.87E-04	0.00E-01	7.81E-05
U-236	8.01E-04	0.00E-01	4.96E-05	0.00E-01	1.91E-04	0.00E-01	5.76E-05
U-238	7.66E-04	0.00E-01	4.54E-05	0.00E-01	1.75E-04	0.00E-01	5.51E-05
NP-237	1.27E-03	9.01E-05	5.59E-05	0.00E-01	4.16E-04	0.00E-01	7.94E-05
NP-239	1.24E-09	1.17E-10	6.45E-11	0.00E-01	3.65E-10	0.00E-01	2.40E-05
PU-236	7.39E-05	1.09E-05	1.87E-06	0.00E-01	8.58E-06	0.00E-01	7.37E-05
PU-238	6.34E-04	8.01E-05	1.73E-05	0.00E-01	7.37E-05	0.00E-01	7.30E-05
PU-239	7.31E-04	8.77E-05	1.93E-05	0.00E-01	8.18E-05	0.00E-01	6.66E-05
PU-240	7.29E-04	8.75E-05	1.92E-05	0.00E-01	8.16E-05	0.00E-01	6.79E-05
PU-241	1.57E-05	7.46E-07	3.32E-07	0.00E-01	1.53E-06	0.00E-01	1.40E-06
PU-242	6.77E-04	8.44E-05	1.86E-05	0.00E-01	7.87E-05	0.00E-01	6.53E-05
PU-244	7.91E-04	9.66E-05	2.13E-05	0.00E-01	9.02E-05	0.00E-01	9.73E-05
AM-241	7.61E-04	7.09E-04	5.44E-05	0.00E-01	4.10E-04	0.00E-01	7.43E-05
AM-242M	7.67E-04	6.67E-04	5.46E-05	0.00E-01	4.07E-04	0.00E-01	9.35E-05
AN-243	7.60E-04	6.94E-04	5.33E-05	0.00E-01	4.02E-04	0.00E-01	8.71E-05
CM-242	2.06E-05	2.19E-05	1.37E-06	0.00E-01	6.22E-06	0.00E-01	7.92E-05
CM-243	6.01E-04	5.51E-04	3.76E-05	0.00E-01	1.76E-04	0.00E-01	7.81E-05
CN-244	4.57E-04	4.28E-04	2.88E-05	0.00E-01	1.34E-04	0.00E-01	7.55E-05
CF-252	2.61E-04	0.00E-01	6.29E-06	0.00E-01	0.00E-01	0.00E-01	2.88E-04

TABLE 4-13 ACUTE INHALATION DOSE CONVERSION FACTORS - INFANT AGE GROUP

(mrem/50 years per pCi intake)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LLI
H-3	8.75E-08	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07	1.75E-07
BE-10	1.10E-03	1.62E-04	3.33E-05	0.00E-01	1.05E-04	1.87E-03	1.67E-05
CR-51	0.00E-01	0.00E-01	6.92E-08	4.55E-08	1.01E-08	9.62E-06	2.46E-07
MN-54	0.00E-01	2.18E-05	4.07E-06	0.00E-01	3.94E-06	8.30E-04	4.86E-06
FE-59	1.14E-05	1.99E-05	7.72E-06	0.00E-01	0.00E-01	7.81E-04	1.70E-05
CO-58	0.00E-01	9.73E-07	1.41E-06	0.00E-01	0.00E-01	6.08E-04	7.66E-06
CO-60	0.00E-01	6.94E-06	9.69E-06	0.00E-01	0.00E-01	3.86E-03	2.20E-05
GA-67	5.30E-08	3.68E-08	6.10E-09	0.00E-01	1.24E-08	1.59E-05	4.10E-06
ZN-69M	9.00E-09	1.84E-08	1.67E-09	0.00E-01	7.46E-09	1.91E-05	2.82E-05
SR-89	3.39E-04	0.00E-01	9.73E-06	0.00E-01	0.00E-01	1.59E-03	4.40E-05
SR-90	1.18E-02	0.00E-01	2.38E-04	0.00E-01	0.00E-01	1.01E-02	9.02E-05
Y-90	2.38E-06	0.00E-01	6.39E-08	0.00E-01	0.00E-01	1.93E-04	7.17E-05
Y-91	5.16E-04	0.00E-01	1.38E-05	0.00E-01	0.00E-01	1.93E-03	4.84E-05
ZR-93	2.46E-04	1.19E-05	7.10E-06	0.00E-01	3.45E-05	1.70E-04	1.43E-06
ZR-95	1.01E-04	2.46E-05	1.71E-05	0.00E-01	2.58E-05	1.38E-03	1.49E-05
NB-95	1.27E-05	5.26E-06	2.99E-06	0.00E-01	3.69E-06	3.63E-04	8.72E-06
TC-99	2.62E-07	3.55E-07	1.07E-07	0.00E-01	2.98E-06	8.48E-04	7.54E-06
RU-103	1.57E-06	0.00E-01	5.17E-07	0.00E-01	3.19E-06	4.22E-04	1.11E-05
RU-106	7.52E-05	0.00E-01	9.26E-06	0.00E-01	8.75E-05	1.01E-02	1.13E-04
A6-110M	8.60E-06	6.16E-06	4.03E-06	0.00E-01	8.73E-06	3.05E-03	2.28E-05
CD-115M	0.00E-01	2.08E-04	7.21E-06	0.00E-01	1.07E-04	1.60E-03	4.84E-05
SN-123	2.63E-04	5.48E-06	8.79E-06	5.49E-06	0.00E-01	2.59E-03	3.93E-05
SB-124	3.20E-05	4.62E-07	9.59E-06	7.96E-08	0.00E-01	2.08E-03	4.07E-05
SB-125	4.75E-05	4.40E-07	9.40E-06	5.44E-08	0.00E-01	1.43E-03	1.01E-05
TE-125M	3.87E-06	1.66E-06	5.26E-07	1.30E-06	8.40E-06	3.53E-04	8.88E-06
I-129	2.23E-05	1.62E-05	1.16E-05	1.04E-02	1.90E-05	0.00E-01	2.04E-07
I-131	2.74E-05	3.20E-05	1.40E-05	1.06E-02	3.73E-05	0.00E-01	7.29E-07
CS-134	3.36E-04	5.87E-04	5.29E-05	0.00E-01	1.45E-04	6.90E-05	9.19E-07
CS-137	4.72E-04	5.24E-04	3.24E-05	0.00E-01	1.32E-04	6.35E-05	9.19E-07
BA-140	4.21E-05	4.25E-08	2.16E-06	0.00E-01	9.84E-09	1.17E-03	2.64E-05
LA-140	3.66E-07	1.44E-07	3.72E-08	0.00E-01	0.00E-01	1.21E-04	5.84E-05
CE-141	2.24E-05	1.37E-05	1.60E-06	0.00E-01	4.15E-06	3.94E-04	1.48E-05
CE-144	2.84E-03	1.18E-03	1.60E-04	0.00E-01	4.63E-04	8.50E-03	1.02E-04

TABLE 4-13 (Continued)

(mrem/50 years per pCi intake)

NUCLIDE	BONE	LIVER	TOT.BODY	THYROID	KIDNEY	LUNG	GI-LLI
PM-147	4.47E-04	3.84E-05	1.85E-05	0.00E-01	5.61E-05	5.65E-04	5.54E-06
SM-151	3.66E-04	8.65E-05	1.84E-05	0.00E-01	5.74E-05	3.74E-04	3.33E-06
EU-154	3.24E-03	4.58E-04	2.71E-04	0.00E-01	1.21E-03	3.73E-03	2.74E-05
EU-155	6.47E-04	7.62E-05	3.87E-05	0.00E-01	1.66E-04	6.37E-04	5.00E-06
H0-166M	1.59E-03	3.43E-04	2.70E-04	0.00E-01	4.52E-04	2.52E-03	1.59E-05
TL-201	8.19E-09	4.95E-09	4.14E-09	0.00E-01	2.43E-08	1.37E-05	4.06E-06
PB-210	9.22E-02	2.23E-02	3.73E-03	0.00E-01	7.62E-02	2.21E-01	1.51E-06
BI-210	2.10E-06	1.36E-05	1.20E-06	0.00E-01	1.05E-04	1.01E-02	3.15E-05
TH-229	2.36E+01	6.13E-01	3.94E-01	0.00E-01	3.01E+00	1.44E+01	4.84E-05
TH-232	3.99E+00	1.57E-01	1.29E-01	0.00E-01	7.74E-01	2.37E+00	3.18E-05
U-232	3.11E-01	0.00E-01	2.75E-02	0.00E-01	2.84E-02	1.87E+00	4.21E-05
U-234	6.29E-02	0.00E-01	4.85E-03	0.00E-01	1.27E-02	4.38E-01	3.81E-05
U-235	6.03E-02	0.00E-01	4.55E-03	0.00E-01	1.20E-02	4.11E-01	4.84E-05
U-236	6.03E-02	0.00E-01	4.65E-03	0.00E-01	1.22E-02	4.20E-01	3.57E-05
U-238	5.77E-02	0.00E-01	4.25E-03	0.00E-01	1.12E-02	3.84E-01	3.41E-05
NP-237	3.01E+00	1.80E+00	1.32E-01	0.00E-01	7.95E-01	4.38E-01	4.92E-05
NP-239	2.68E-07	2.16E-07	1.35E-08	0.00E-01	4.78E-08	4.27E-05	1.72E-05
PU-236	5.64E-01	3.55E-01	2.53E-02	0.00E-01	8.09E-02	9.43E-01	4.57E-05
PU-238	2.80E+00	1.74E+00	1.32E-01	0.00E-01	4.78E-01	1.14E+00	4.52E-05
PU-239	3.05E+00	1.83E+00	1.39E-01	0.00E-01	5.09E-01	1.07E+00	4.13E-05
PU-240	3.04E+00	1.82E+00	1.39E-01	0.00E-01	5.09E-01	1.07E+00	4.21E-05
PU-241	8.81E-02	1.94E-02	3.25E-03	0.00E-01	1.18E-02	9.62E-04	8.65E-07
PU-242	2.82E+00	1.76E+00	1.34E-01	0.00E-01	4.90E-01	1.03E+00	4.05E-05
PU-244	3.29E+00	2.01E+00	1.53E-01	0.00E-01	5.61E-01	1.17E+00	6.03E-05
AM-241	3.29E+00	2.05E+00	1.38E-01	0.00E-01	8.22E-01	5.09E-01	4.60E-05
AM-242M	3.40E+00	1.97E+00	1.41E-01	0.00E-01	8.31E-01	2.05E-01	5.79E-05
AM-243	3.25E+00	1.99E+00	1.33E-01	0.00E-01	7.98E-01	4.82E-01	5.40E-05
CM-242	1.65E-01	1.18E-01	7.30E-03	0.00E-01	2.06E-02	3.51E-01	4.92E-05
CM-243	2.61E+00	1.62E+00	1.12E-01	0.00E-01	4.07E-01	5.31E-01	4.84E-05
CM-244	2.19E+00	1.36E+00	9.41E-02	0.00E-01	3.34E-01	5.10E-01	4.68E-05
CF-252	2.62E+00	0.00E-01	1.12E-01	0.00E-01	0.00E-01	1.70E+00	1.79E-04

TABLE 4-14 ACUTE INHALATION DOSE CONVERSION FACTORS - CHILD AGE GROUP

(nrem/50 years per pCi intake)

NUCLIDE	BONE	LIVER	TOT.BODY	THYROID	KIDNEY	LUNG	GI-LLI
H-3	5.77E-08	1.15E-07	1.15E-07	1.15E-07	1.15E-07	1.15E-07	1.15E-07
BE-10	8.45E-04	9.83E-05	2.12E-05	0.00E-01	6.95E-05	7.41E-04	1.67E-05
CR-51	0.00E-01	0.00E-01	4.17E-08	2.31E-08	6.57E-09	4.59E-06	2.85E-07
MN-54	0.00E-01	1.16E-05	2.57E-06	0.00E-01	2.71E-06	4.26E-04	6.01E-06
FE-59	5.59E-06	9.03E-06	4.51E-06	0.00E-01	0.00E-01	3.43E-04	1.86E-05
CD-58	0.00E-01	4.79E-07	8.55E-07	0.00E-01	0.00E-01	2.99E-04	9.04E-06
CO-60	0.00E-01	3.55E-06	6.11E-06	0.00E-01	0.00E-01	1.91E-03	2.52E-05
GA-67	2.49E-08	1.55E-08	3.34E-09	0.00E-01	7.22E-09	6.49E-06	4.22E-06
ZN-69M	4.26E-09	7.28E-09	8.59E-10	0.00E-01	4.22E-09	7.36E-06	2.65E-05
SR-89	1.61E-04	0.00E-01	4.62E-06	0.00E-01	0.00E-01	5.83E-04	4.40E-05
SR-90	1.06E-02	0.00E-01	2.13E-04	0.00E-01	0.00E-01	3.99E-03	9.02E-05
Y-90	1.12E-06	0.00E-01	3.00E-08	0.00E-01	0.00E-01	7.08E-05	7.04E-05
Y-91	2.47E-04	0.00E-01	6.59E-06	0.00E-01	0.00E-01	7.10E-04	4.83E-05
ZR-93	2.09E-04	7.81E-06	5.56E-06	0.00E-01	3.04E-05	7.09E-05	1.43E-06
ZR-95	5.11E-05	1.13E-05	1.00E-05	0.00E-01	1.61E-05	6.02E-04	1.60E-05
NB-95	6.36E-06	2.48E-06	1.77E-06	0.00E-01	2.33E-06	1.66E-04	9.74E-06
TC-99	1.34E-07	1.49E-07	5.35E-08	0.00E-01	1.76E-06	3.37E-04	7.54E-06
RU-103	7.56E-07	0.00E-01	2.90E-07	0.00E-01	1.90E-06	1.79E-04	1.17E-05
RU-106	3.68E-05	0.00E-01	4.56E-06	0.00E-01	4.98E-05	3.88E-03	1.13E-04
A6-110M	4.56E-06	3.08E-06	2.47E-06	0.00E-01	5.74E-06	1.48E-03	2.63E-05
CD-115M	0.00E-01	7.88E-05	3.39E-06	0.00E-01	5.93E-05	5.86E-04	4.83E-05
SN-123	1.29E-04	2.14E-06	4.19E-06	2.27E-06	0.00E-01	9.59E-04	3.93E-05
SB-124	1.55E-05	2.00E-07	5.41E-06	3.41E-08	0.00E-01	8.76E-04	4.31E-05
SB-125	2.66E-05	2.05E-07	5.59E-06	2.46E-08	0.00E-01	6.27E-04	1.06E-05
TE-125M	1.82E-06	6.29E-07	2.47E-07	5.21E-07	4.62E-06	1.29E-04	8.88E-06
I-129	1.05E-05	6.39E-06	5.70E-06	4.27E-03	1.08E-05	0.00E-01	2.09E-07
I-131	1.30E-05	1.30E-05	7.36E-06	4.39E-03	2.13E-05	0.00E-01	7.47E-07
CS-134	1.75E-04	2.74E-04	6.07E-05	0.00E-01	8.93E-05	3.27E-05	1.01E-06
CS-137	2.45E-04	2.23E-04	3.46E-05	0.00E-01	7.63E-05	2.81E-05	9.51E-07
BA-140	2.00E-05	1.76E-08	1.17E-06	0.00E-01	5.73E-09	4.72E-04	2.67E-05
LA-140	1.75E-07	6.10E-08	2.06E-08	0.00E-01	0.00E-01	4.95E-05	5.94E-05
CE-141	1.06E-05	5.27E-06	7.82E-07	0.00E-01	2.31E-06	1.47E-04	1.49E-05
CE-144	1.83E-03	5.70E-04	9.79E-05	0.00E-01	3.16E-04	3.22E-03	1.02E-04

TABLE 4-14 (Continued)

(Mrrem/50 years per pCi intake)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LI
PM-147	3.54E-04	2.52E-05	1.36E-05	0.00E-01	4.46E-05	2.20E-04	5.54E-06
SM-151	3.19E-04	4.75E-05	1.49E-05	0.00E-01	4.91E-05	1.48E-04	3.33E-06
EU-154	2.77E-03	2.49E-04	2.27E-04	0.00E-01	1.09E-03	1.66E-03	2.90E-05
EU-155	5.64E-04	4.06E-05	3.18E-05	0.00E-01	1.52E-04	2.79E-04	5.24E-06
H0-166M	1.35E-03	2.82E-04	2.39E-04	0.00E-01	4.03E-04	1.13E-03	1.59E-05
TL-201	3.84E-09	2.00E-09	2.18E-09	0.00E-01	1.39E-08	5.38E-06	4.10E-06
PB-210	8.19E-02	1.87E-02	3.22E-03	0.00E-01	6.32E-02	8.74E-02	1.51E-06
BI-210	9.86E-07	5.12E-06	5.65E-07	0.00E-01	5.76E-05	3.70E-03	3.12E-05
TH-229	2.24E+01	5.88E-01	3.75E-01	0.00E-01	2.90E+00	1.09E+01	4.84E-05
TH-232	3.79E+00	1.51E-01	1.22E-01	0.00E-01	7.45E-01	1.79E+00	3.18E-05
U-232	2.19E-01	0.00E-01	1.56E-02	0.00E-01	1.67E-02	7.41E-01	4.21E-05
U-234	4.46E-02	0.00E-01	2.76E-03	0.00E-01	7.47E-03	1.74E-01	3.81E-05
U-235	4.27E-02	0.00E-01	2.59E-03	0.00E-01	7.01E-03	1.63E-01	4.84E-05
U-236	4.27E-02	0.00E-01	2.65E-03	0.00E-01	7.16E-03	1.67E-01	3.57E-05
U-238	4.09E-02	0.00E-01	2.42E-03	0.00E-01	6.55E-03	1.53E-01	3.41E-05
NP-237	2.79E+00	1.66E+00	1.23E-01	0.00E-01	7.57E-01	1.74E-01	4.92E-05
NP-239	1.26E-07	8.14E-08	6.36E-09	0.00E-01	2.63E-08	1.57E-05	1.68E-05
PU-236	5.05E-01	3.05E-01	2.27E-02	0.00E-01	7.45E-02	4.60E-01	4.57E-05
PU-238	2.62E+00	1.63E+00	1.24E-01	0.00E-01	4.57E-01	6.08E-01	4.52E-05
PU-239	2.87E+00	1.72E+00	1.31E-01	0.00E-01	4.88E-01	5.72E-01	4.13E-05
PU-240	2.86E+00	1.71E+00	1.31E-01	0.00E-01	4.88E-01	5.71E-01	4.21E-05
PU-241	8.15E-02	1.79E-02	3.01E-03	0.00E-01	1.12E-02	5.06E-04	8.65E-07
PU-242	2.66E+00	1.65E+00	1.26E-01	0.00E-01	4.70E-01	5.50E-01	4.05E-05
PU-244	3.10E+00	1.89E+00	1.45E-01	0.00E-01	5.39E-01	6.30E-01	6.03E-05
AM-241	3.05E+00	1.88E+00	1.27E-01	0.00E-01	7.79E-01	2.02E-01	4.60E-05
AM-242M	3.14E+00	1.80E+00	1.30E-01	0.00E-01	7.87E-01	8.14E-02	5.79E-05
AM-243	3.01E+00	1.82E+00	1.23E-01	0.00E-01	7.57E-01	1.92E-01	5.40E-05
CN-242	9.48E-02	5.68E-02	4.20E-03	0.00E-01	1.34E-02	1.31E-01	4.92E-05
CN-243	2.38E+00	1.45E+00	1.02E-01	0.00E-01	3.81E-01	2.10E-01	4.84E-05
CN-244	1.98E+00	1.21E+00	8.51E-02	0.00E-01	3.12E-01	2.02E-01	4.68E-05
CF-252	2.20E+00	0.00E-01	9.42E-02	0.00E-01	0.00E-01	6.62E-01	1.79E-04

TABLE 4-15 ACUTE INHALATION DOSE CONVERSION FACTORS - TEEN AGE GROUP

(rem/50 years per pCi intake)

NUCLIDE	BONE	LIVER	TOTL.BODY	THYROID	KIDNEY	LUNG	GI-LLI
H-3	3.00E-08	6.01E-08	6.01E-08	6.01E-08	6.01E-08	6.01E-08	6.01E-08
BE-10	2.80E-04	4.34E-05	7.09E-06	0.00E-01	3.31E-05	3.83E-04	1.67E-05
CR-51	0.00E-01	0.00E-01	1.69E-08	9.37E-09	3.84E-09	2.61E-06	3.54E-07
MN-54	0.00E-01	6.40E-06	1.05E-06	0.00E-01	1.59E-06	2.48E-04	7.88E-06
FE-59	1.99E-06	4.62E-06	1.79E-06	0.00E-01	0.00E-01	1.91E-04	2.11E-05
CD-58	0.00E-01	2.59E-07	3.48E-07	0.00E-01	0.00E-01	1.68E-04	1.12E-05
CO-60	0.00E-01	1.89E-06	2.48E-06	0.00E-01	0.00E-01	1.09E-03	3.06E-05
GA-67	8.63E-09	7.49E-09	1.27E-09	0.00E-01	3.66E-09	3.52E-06	4.28E-06
ZN-69M	1.44E-09	3.39E-09	3.11E-10	0.00E-01	2.06E-09	3.92E-06	2.02E-05
SR-89	5.38E-05	0.00E-01	1.55E-06	0.00E-01	0.00E-01	3.02E-04	4.38E-05
SR-90	4.19E-03	0.00E-01	8.42E-05	0.00E-01	0.00E-01	2.06E-03	9.02E-05
Y-90	3.74E-07	0.00E-01	1.00E-08	0.00E-01	0.00E-01	3.66E-05	6.60E-05
Y-91	8.26E-05	0.00E-01	2.21E-06	0.00E-01	0.00E-01	3.67E-04	4.82E-05
ZR-93	6.91E-05	3.44E-06	1.92E-06	0.00E-01	1.42E-05	3.67E-05	1.51E-06
ZR-95	1.81E-05	5.73E-06	3.96E-06	0.00E-01	8.42E-06	3.36E-04	1.76E-05
NB-95	2.33E-06	1.29E-06	7.08E-07	0.00E-01	1.25E-06	9.38E-05	1.14E-05
TC-99	4.48E-08	6.58E-08	1.79E-08	0.00E-01	8.36E-07	1.74E-04	7.54E-06
RU-103	2.63E-07	0.00E-01	1.12E-07	0.00E-01	9.29E-07	9.79E-05	1.29E-05
RU-106	1.23E-05	0.00E-01	1.56E-06	0.00E-01	2.37E-05	2.01E-03	1.13E-04
AG-110M	1.73E-06	1.64E-06	1.00E-06	0.00E-01	3.14E-06	8.44E-04	3.22E-05
CD-115M	0.00E-01	3.48E-05	1.14E-06	0.00E-01	2.82E-05	3.03E-04	4.81E-05
SN-123	4.31E-05	9.45E-07	1.40E-06	7.56E-07	0.00E-01	4.96E-04	3.93E-05
SB-124	5.38E-06	9.92E-08	2.10E-06	1.22E-08	0.00E-01	4.81E-04	4.70E-05
SB-125	9.23E-06	1.01E-07	2.16E-06	8.80E-09	0.00E-01	3.42E-04	1.17E-05
TE-125M	6.10E-07	2.80E-07	8.35E-08	1.75E-07	2.22E-06	6.70E-05	8.85E-06
I-129	3.52E-06	2.94E-06	4.90E-06	7.56E-07	0.00E-01	5.25E-06	0.00E-01
I-131	4.43E-06	6.14E-06	3.29E-06	1.83E-03	1.05E-05	0.00E-01	7.65E-07
CS-134	6.30E-05	1.41E-04	6.85E-05	0.00E-01	4.69E-05	1.83E-05	1.16E-06
CS-137	8.38E-05	1.06E-04	3.87E-05	0.00E-01	3.80E-05	1.51E-05	1.00E-06
BA-140	6.86E-06	8.38E-09	4.41E-07	0.00E-01	2.86E-09	2.55E-04	2.70E-05
LA-140	6.01E-08	2.96E-08	7.84E-09	0.00E-01	0.00E-01	2.69E-05	5.75E-05
CE-141	3.55E-06	2.36E-06	2.70E-07	0.00E-01	1.11E-06	7.66E-05	1.49E-05
CE-144	6.11E-04	2.54E-04	3.28E-05	0.00E-01	1.51E-04	1.68E-03	1.02E-04

TABLE 4-15 (Continued)

(mrem/50 years per pCi intake)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LLI
PM-147	1.16E-04	1.11E-05	4.51E-06	0.00E-01	2.11E-05	1.14E-04	5.54E-06
SK-151	1.09E-04	2.10E-05	4.90E-06	0.00E-01	2.29E-05	7.68E-05	3.33E-06
EU-154	9.51E-04	1.23E-04	8.65E-05	0.00E-01	5.49E-04	9.12E-04	3.15E-05
EU-155	2.16E-04	1.96E-05	1.22E-05	0.00E-01	7.69E-05	1.51E-03	5.63E-06
HO-166M	4.45E-04	1.37E-04	9.94E-05	0.00E-01	2.01E-04	6.24E-04	1.59E-05
TL-201	1.32E-09	9.38E-10	8.07E-10	0.00E-01	6.84E-09	2.87E-06	4.03E-06
PB-210	3.13E-02	8.38E-03	1.08E-03	0.00E-01	2.97E-02	4.52E-02	1.51E-06
BI-210	3.30E-07	2.26E-06	1.89E-07	0.00E-01	2.74E-05	1.91E-03	3.01E-05
TH-229	1.56E+01	4.50E-01	2.60E-01	0.00E-01	2.21E+00	5.32E+00	4.84E-05
TH-232	2.64E+00	1.16E-01	8.50E-02	0.00E-01	5.67E-01	8.74E-01	3.18E-05
U-232	7.33E-02	0.00E-01	5.23E-03	0.00E-01	7.94E-03	3.84E-01	4.21E-05
U-234	1.49E-02	0.00E-01	9.24E-04	0.00E-01	3.56E-03	8.99E-02	3.81E-05
U-235	1.43E-02	0.00E-01	8.67E-04	0.00E-01	3.34E-03	8.44E-02	4.84E-05
U-236	1.43E-02	0.00E-01	8.86E-04	0.00E-01	3.41E-03	8.62E-02	3.57E-05
U-238	1.36E-02	0.00E-01	8.11E-04	0.00E-01	3.12E-03	7.89E-02	3.41E-05
NP-237	1.66E+00	1.07E+00	7.31E-02	0.00E-01	5.42E-01	8.99E-02	4.92E-05
NP-239	4.23E-08	3.60E-08	2.21E-09	0.00E-01	1.25E-08	8.10E-06	1.56E-05
PU-236	1.66E-01	1.31E-01	7.48E-03	0.00E-01	3.44E-02	2.38E-01	4.57E-05
PU-238	1.52E+00	1.04E+00	7.32E-02	0.00E-01	3.14E-01	3.13E-01	4.52E-05
PU-239	1.75E+00	1.14E+00	8.16E-02	0.00E-01	3.49E-01	2.94E-01	4.13E-05
PU-240	1.75E+00	1.13E+00	8.15E-02	0.00E-01	3.48E-01	2.94E-01	4.21E-05
PU-241	3.78E-02	9.67E-03	1.41E-03	0.00E-01	6.55E-03	2.60E-04	8.65E-07
PU-242	1.62E+00	1.09E+00	7.86E-02	0.00E-01	3.36E-01	2.83E-01	4.05E-05
PU-244	1.89E+00	1.25E+00	9.00E-02	0.00E-01	3.84E-01	3.24E-01	6.03E-05
AH-241	1.79E+00	1.21E+00	7.19E-02	0.00E-01	5.39E-01	1.04E-01	4.60E-05
AM-242M	1.81E+00	1.14E+00	7.23E-02	0.00E-01	5.37E-01	4.21E-02	5.79E-05
AH-243	1.79E+00	1.18E+00	7.03E-02	0.00E-01	5.28E-01	9.91E-02	5.40E-05
CH-242	3.17E-02	2.51E-02	1.41E-03	0.00E-01	6.40E-03	6.76E-02	4.91E-05
CH-243	1.21E+00	8.39E-01	5.06E-02	0.00E-01	2.36E-01	1.09E-01	4.84E-05
CH-244	9.29E-01	6.59E-01	3.92E-02	0.00E-01	1.83E-01	1.04E-01	4.48E-05
CF-252	7.24E-01	0.00E-01	3.10E-02	0.00E-01	0.00E-01	3.42E-01	1.79E-04

TABLE 4-16 ACUTE INHALATION DOSE CONVERSION FACTORS - ADULT AGE GROUP

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LLI
	( $\text{krem}/50 \text{ years per pCi intake}$ )						
H-3	3.00E-08	6.00E-08	6.00E-08	6.00E-08	6.00E-08	6.00E-08	6.00E-08
BE-10	1.99E-04	3.07E-05	4.96E-06	0.00E-01	2.32E-05	2.22E-04	1.67E-05
CR-51	0.00E-01	0.00E-01	1.25E-08	7.44E-09	2.85E-09	1.80E-06	4.15E-07
MN-54	0.00E-01	4.95E-06	7.87E-07	0.00E-01	1.23E-06	1.75E-04	9.67E-06
FE-59	1.47E-06	3.46E-06	1.32E-06	0.00E-01	0.00E-01	1.27E-04	2.35E-05
CO-58	0.00E-01	1.98E-07	2.59E-07	0.00E-01	0.00E-01	1.16E-04	1.33E-05
C0-60	0.00E-01	1.44E-06	1.86E-06	0.00E-01	0.00E-01	7.46E-04	3.56E-05
GA-67	6.20E-09	5.51E-09	9.29E-10	0.00E-01	2.70E-09	2.22E-06	4.39E-06
ZN-69M	1.02E-09	2.45E-09	2.24E-10	0.00E-01	1.48E-09	2.38E-06	1.71E-05
SR-89	3.77E-05	0.00E-01	1.08E-06	0.00E-01	0.00E-01	1.75E-04	4.37E-05
SR-90	3.59E-03	0.00E-01	7.22E-05	0.00E-01	0.00E-01	1.20E-03	9.02E-05
Y-90	2.62E-07	0.00E-01	7.03E-09	0.00E-01	0.00E-01	2.12E-05	6.32E-05
Y-91	5.78E-05	0.00E-01	1.55E-06	0.00E-01	0.00E-01	2.13E-04	4.81E-05
ZR-93	5.23E-05	2.92E-06	1.37E-06	0.00E-01	1.11E-05	2.13E-05	1.51E-06
ZR-95	1.34E-05	4.30E-06	2.90E-06	0.00E-01	6.77E-06	2.21E-04	1.88E-05
NB-95	1.76E-06	9.77E-07	5.26E-07	0.00E-01	9.68E-07	6.31E-05	1.30E-05
TC-99	3.13E-08	4.65E-08	1.25E-08	0.00E-01	5.85E-07	1.01E-04	7.54E-06
RU-103	1.91E-07	0.00E-01	8.23E-08	0.00E-01	7.29E-07	6.31E-05	1.38E-05
RU-106	8.65E-06	0.00E-01	1.09E-06	0.00E-01	1.67E-05	1.17E-03	1.14E-04
A6-110M	1.35E-06	1.26E-06	7.45E-07	0.00E-01	2.46E-06	5.79E-04	3.78E-05
CD-115M	0.00E-01	2.46E-05	7.95E-07	0.00E-01	1.98E-05	1.76E-04	4.80E-05
SN-123	3.02E-05	6.67E-07	9.82E-07	5.67E-07	0.00E-01	2.88E-04	3.92E-05
SB-124	3.90E-06	7.37E-08	1.55E-06	9.44E-09	0.00E-01	3.10E-04	5.08E-05
SB-125	6.67E-06	7.45E-08	1.58E-06	6.75E-09	0.00E-01	2.17E-04	1.26E-05
TE-125M	4.27E-07	1.98E-07	5.84E-08	1.31E-07	1.56E-06	3.92E-05	8.83E-06
I-129	2.48E-06	2.11E-06	6.90E-06	5.54E-03	4.53E-06	0.00E-01	2.22E-07
I-131	3.15E-06	4.46E-06	2.56E-06	1.49E-03	7.66E-06	0.00E-01	7.85E-07
CS-134	4.67E-05	1.06E-04	9.08E-05	0.00E-01	3.59E-05	1.22E-05	1.30E-06
CS-137	5.98E-05	7.76E-05	5.35E-05	0.00E-01	2.77E-05	9.40E-06	1.05E-06
BA-140	4.89E-06	6.15E-09	3.21E-07	0.00E-01	2.09E-09	1.59E-04	2.73E-05
LA-140	4.33E-08	2.18E-08	5.77E-09	0.00E-01	0.00E-01	1.70E-05	5.73E-05
CE-141	2.49E-06	1.69E-06	1.91E-07	0.00E-01	7.82E-07	4.51E-05	1.50E-05
CE-144	4.28E-04	1.79E-04	2.29E-05	0.00E-01	1.05E-04	9.72E-04	1.02E-04

TABLE 4-16 (Continued)

(mrem/50 years per pCi intake)

NUCLIDE	BONE	LIVER	TOT. BODY	THYROID	KIDNEY	LUNG	GI-LI
PH-147	8.37E-05	7.87E-06	3.19E-06	0.00E-01	1.49E-05	6.60E-05	5.54E-06
SH-151	8.59E-05	1.48E-05	3.55E-06	0.00E-01	1.66E-05	4.45E-05	3.25E-06
EU-154	7.43E-04	9.10E-05	6.48E-05	0.00E-01	4.36E-04	5.84E-04	3.40E-05
EU-155	1.72E-04	1.43E-04	9.21E-06	0.00E-01	6.59E-05	9.46E-05	5.95E-06
HO-166M	3.37E-04	1.05E-04	8.00E-05	0.00E-01	1.57E-04	3.94E-04	1.59E-05
TL-201	9.43E-10	6.80E-10	5.85E-10	0.00E-01	4.95E-09	1.76E-06	4.03E-06
PB-210	2.64E-02	6.73E-03	8.37E-04	0.00E-01	2.12E-02	2.62E-02	1.51E-06
BI-210	2.31E-07	1.59E-06	1.32E-07	0.00E-01	1.92E-05	1.11E-03	2.95E-05
TH-229	1.53E+01	4.40E-01	2.54E-01	0.00E-01	2.15E+00	3.62E+00	4.84E-05
TH-232	2.58E+00	1.13E-01	8.30E-02	0.00E-01	5.52E-01	5.95E-01	3.18E-05
U-232	5.14E-02	0.00E-01	3.66E-03	0.00E-01	5.56E-03	2.22E-01	4.21E-05
U-234	1.05E-02	0.00E-01	6.47E-04	0.00E-01	2.49E-03	5.21E-02	3.81E-05
U-235	1.00E-02	0.00E-01	6.07E-04	0.00E-01	2.34E-03	4.89E-02	4.84E-05
U-236	1.00E-02	0.00E-01	6.20E-04	0.00E-01	2.39E-03	5.00E-02	3.57E-05
U-238	9.58E-03	0.00E-01	5.67E-04	0.00E-01	2.18E-03	4.58E-02	3.41E-05
NP-237	1.57E+00	1.01E+00	6.93E-02	0.00E-01	5.15E-01	5.21E-02	4.92E-05
NP-239	2.97E-08	2.54E-08	1.55E-09	0.00E-01	8.76E-09	4.70E-06	1.49E-05
PU-236	1.28E-01	1.01E-01	5.77E-03	0.00E-01	2.65E-02	1.38E-01	4.57E-05
PU-238	1.44E+00	9.76E-01	6.96E-02	0.00E-01	2.98E-01	1.82E-01	4.52E-05
PU-239	1.67E+00	1.08E+00	7.82E-02	0.00E-01	3.33E-01	1.72E-01	4.13E-05
PU-240	1.67E+00	1.07E+00	7.81E-02	0.00E-01	3.32E-01	1.72E-01	4.21E-05
PU-241	3.43E-02	8.70E-03	1.29E-03	0.00E-01	5.94E-03	1.52E-04	8.65E-07
PU-242	1.55E+00	1.04E+00	7.53E-02	0.00E-01	3.20E-01	1.65E-01	4.05E-05
PU-244	1.81E+00	1.19E+00	8.62E-02	0.00E-01	3.67E-01	1.89E-01	6.03E-05
AN-241	1.70E+00	1.13E+00	6.75E-02	0.00E-01	5.08E-01	6.06E-02	4.60E-05
AN-242M	1.71E+00	1.06E+00	6.77E-02	0.00E-01	5.05E-01	2.44E-02	5.79E-05
AN-243	1.70E+00	1.11E+00	6.62E-02	0.00E-01	4.99E-01	5.75E-02	5.40E-05
CN-242	2.22E-02	1.77E-02	9.84E-04	0.00E-01	4.48E-03	3.92E-02	4.91E-05
CN-243	1.11E+00	7.63E-01	4.63E-02	0.00E-01	2.16E-01	6.31E-02	4.84E-05
CN-244	8.39E-01	5.89E-01	3.52E-02	0.00E-01	1.64E-01	6.06E-02	4.68E-05
CF-252	5.43E-01	0.00E-01	2.33E-02	0.00E-01	0.00E-01	1.99E-01	1.79E-04

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- (13) U. S. Environmental Protection Agency, Health Impact Assessment of C-14 Emissions from Normal Operations of Uranium Fuel Cycle Facilities, EPA-520/5-80-004 (March 1981).
- (14) International Commission on Radiological Protection, Evaluation of Radiation Doses to Body Tissues from Internal Contamination Due to Occupational Exposure, ICRP-10 (1968).

- (15) International Commission on Radiological Protection, The Assessment of Internal Contamination Resulting from Recurrent or Prolonged Intakes, ICRP-10A (1971).
- (16) International Commission on Radiological Protection, The Metabolism of Compounds of Plutonium and Other Actinides, ICRP-19 (1972).
- (17) Ng, Y. C., "A Review of Transfer Factors for Assessing the Dose from Radionuclides in Agricultural Products," Nuclear Safety, Volume 23, No. 1 (1982).

## **APPENDIX A**

**METABOLIC DATA USED TO CALCULATE  
DOSE CONVERSION FACTORS**

Metabolic and other parameters used in all of the radionuclide dose conversion factor calculations are listed in Table A-1. The masses of the body organs were taken from NUREG-0172. The masses of the GI-Tract-LLI contents were calculated on the basis of the NUREG-0172 assumption that said mass is proportional to the total body mass. Travel times to and in the adult GI-Tract-LLI were taken from ICRP-2. These travel times were calculated for the other age groups based on the assumption that they too are proportional to the total body mass (or GI-Tract-LLI contents). The time intervals are those assumed in NUREG-0172. The assumptions regarding the biological half-life in the lung for insoluble material, the fraction of insoluble nuclides retained in the lung, and the fraction of radioactive emissions originating in the LLI contents which reach the LLI wall, have their origins in ICRP-2.

Radionuclide dependent parameters are provided in Table A-2.

TABLE A-1 PARAMETERS RELATED TO THE ICRP-2 STANDARD MAN

MASS OF BODY ORGANS BY AGE GROUP (GMS)

ORGAN	INFANT	CHILD	TEEN	ADULT
BONE	7.70E+02	1.64E+03	4.90E+03	7.00E+03
LIVER	2.00E+02	5.30E+02	1.20E+03	1.70E+03
TOT.BODY	7.70E+03	1.64E+04	4.90E+04	7.00E+04
THYROID	2.00E+00	5.00E+00	1.50E+01	2.00E+01
KIDNEY	5.50E+01	1.00E+02	2.10E+02	3.00E+02
LUNG	1.10E+02	3.00E+02	5.80E+02	1.00E+03
GI-LLI	1.65E+01	3.51E+01	1.05E+02	1.50E+02

GI-TRACT TRAVEL TIMES BY AGE GROUP (DAYS)

AGE GR.	TO LLI	IN LLI
INFANT	5.958E-02	8.250E-02
CHILD	1.269E-01	1.757E-01
TEEN	3.792E-01	5.250E-01
ADULT	5.417E-01	7.500E-01

TIME INTERVALS(DAYS)

DURATION OF INTAKE: 365.

INFANT AGE DURATION: 365.

CHILD AGE DURATION: 3650.

TEEN AGE DURATION: 2190.

ADULT AGE DURATION: 18250.

BIOLOGICAL HALFLIFE IN LUNG FOR INSOLUBLE MATERIAL = 120 DAYS,  
EXCEPT FOR PU (365 DAYS) AND TH (1460 DAYS).

FRACTION OF INSOLUBLE NUCLIDES RETAINED IN LUNG = 0.125

FRACTION OF RADIOACTIVE EMISSIONS ORIGINATING IN LLI CONTENTS  
WHICH REACH THE LLI WALL = 0.5

TABLE A-2 RADIONUCLIDE DEPENDENT PARAMETERS

		INFANT			CHILD			TEEN			ADULT		
		F <sub>a</sub> or F <sub>e</sub> for GI	F <sub>a</sub> or F <sub>P2P</sub>	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)		
BE-10	BONE	6.40E-04	3.20E-01	4.50E+00	1.04E+02	4.50E+00	1.04E+02	4.50E+00	1.04E+00	4.50E+02	1.04E+00		
	LIVER	2.00E-04	1.00E-01	2.70E+02	2.09E-01	2.70E+02	2.09E-01	2.70E+02	2.09E-01	2.70E+02	2.09E-01		
INSOLUBL	TOTAL BODY	2.00E-03	1.00E+00	1.80E+02	2.09E-01	1.80E+02	2.09E-01	1.80E+02	2.09E-01	1.80E+02	2.09E-01		
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
T-Rad(d)	KIDNEY	6.00E-05	3.00E-02	1.20E+02	2.09E-01	1.20E+02	2.09E-01	1.20E+02	2.09E-01	1.20E+02	2.09E-01		
5.840E+08	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	2.09E-01	1.20E+02	2.09E-01	1.20E+02	2.09E-01	1.20E+02	2.09E-01		
GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	2.09E-01	0.00E-01	2.09E-01	0.00E-01	2.09E-01	0.00E-01	2.09E-01	0.00E-01		
GI-LLI-INH	1.00E+00	6.25E-01	0.00E-01	2.09E-01	0.00E-01	2.09E-01	0.00E-01	2.09E-01	0.00E-01	2.09E-01	0.00E-01		
CR-51	BONE	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LIVER	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
INSOLUBL	TOTAL BODY	5.00E-03	1.00E+00	6.16E+02	1.16E-02	6.16E+02	1.16E-02	6.16E+02	1.16E-02	6.16E+02	1.16E-02		
	THYROID	4.50E-08	9.00E-04	6.16E+02	2.20E-03	6.16E+02	2.80E-03	6.16E+02	3.40E-03	6.16E+02	3.40E-03		
T-Rad(d)	KIDNEY	1.30E-05	2.70E-03	6.16E+02	4.50E-03	6.16E+02	5.30E-03	6.16E+02	6.50E-03	6.16E+02	6.50E-03		
2.770E+01	LUNG-ING	2.00E-04	0.00E-01	6.16E+02	5.30E-03	6.16E+02	6.90E-03	6.16E+02	7.60E-03	6.16E+02	9.00E-03		
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	5.30E-03	1.20E+02	6.90E-03	1.20E+02	7.60E-03	1.20E+02	9.00E-03		
GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	3.10E-03	0.00E-01	3.10E-03	0.00E-01	3.10E-03	0.00E-01	3.10E-03	0.00E-01		
GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	3.10E-03	0.00E-01	3.10E-03	0.00E-01	3.10E-03	0.00E-01	3.10E-03	0.00E-01		
MN-54	BONE	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LIVER	2.00E-02	2.40E-01	2.50E+01	1.22E-01	2.50E+01	1.66E-01	2.50E+01	2.07E-01	2.50E+01	2.27E-01		
INSOLUBL	TOTAL BODY	1.00E-01	1.00E+00	1.70E+01	2.99E-01	1.70E+01	3.92E-01	1.70E+01	4.80E-01	1.70E+01	5.12E-01		
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
T-Rad(d)	KIDNEY	5.00E-03	5.00E-02	6.80E+00	9.94E-02	6.80E+00	1.22E-01	6.80E+00	1.50E-01	6.80E+00	1.66E-01		
3.130E+02	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	1.22E-01	1.20E+02	1.66E-01	1.20E+02	1.87E-01	1.20E+02	2.27E-01		
GI-LLI-ING	9.00E-01	0.00E-01	0.00E-01	6.12E-02	0.00E-01	7.58E-02	0.00E-01	9.94E-02	0.00E-01	1.22E-01	0.00E-01		
GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	6.12E-02	0.00E-01	7.58E-02	0.00E-01	9.94E-02	0.00E-01	1.22E-01	0.00E-01		
FE-59	BONE	1.00E-02	1.00E-01	1.68E+03	8.10E-01	1.68E+03	8.43E-01	1.68E+03	8.96E-01	1.68E+03	9.46E-01		
	LIVER	1.30E-02	1.30E-01	5.44E+02	2.98E-01	5.44E+02	3.57E-01	5.44E+02	4.13E-01	5.44E+02	4.39E-01		
INSOLUBL	TOTAL BODY	1.00E-01	1.00E+00	8.00E+03	5.38E-01	8.00E+03	6.66E-01	8.00E+03	7.90E-01	8.00E+03	8.35E-01		
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
T-Rad(d)	KIDNEY	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
4.460E+01	LUNG-ING	2.00E-03	0.00E-01	3.20E+03	2.98E-01	3.20E+03	3.57E-01	3.20E+03	3.85E-01	3.20E+03	4.39E-01		
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	1.20E-01	1.20E+02	1.57E-01	1.20E+02	1.82E-01	1.20E+02	2.27E-01		
GI-LLI-ING	9.00E-01	0.00E-01	0.00E-01	2.15E-01	0.00E-01	2.35E-01	0.00E-01	2.67E-01	0.00E-01	2.98E-01	0.00E-01		
GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	2.15E-01	0.00E-01	2.35E-01	0.00E-01	2.67E-01	0.00E-01	2.98E-01	0.00E-01		

TABLE A-2 (Continued)

		INFANT			CHILD			TEEN			ADULT		
		F <sub>w</sub> or F <sub>e</sub> for GI	F <sub>a</sub> or F <sub>2P</sub>	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)		
CO-58	BONE	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LIVER	7.00E-03	4.00E-02	9.50E+00	1.69E-01	9.50E+00	2.20E-01	9.50E+00	2.67E-01	9.50E+00	2.92E-01		
	TOTAL BODY	3.00E-01	1.00E+00	9.50E+00	3.77E-01	9.50E+00	4.86E-01	9.50E+00	5.70E-01	9.50E+00	6.28E-01		
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	KIDNEY	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
7.130E+01	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	1.69E-01	1.20E+02	2.26E-01	1.20E+02	2.45E-01	1.20E+02	2.92E-01		
	GI-LLI-ING	7.00E-01	0.00E-01	0.00E-01	9.66E-02	0.00E-01	1.14E-01	0.00E-01	1.42E-01	0.00E-01	1.69E-01		
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	9.66E-02	0.00E-01	1.14E-01	0.00E-01	1.42E-01	0.00E-01	1.69E-01		
	BONE	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LIVER	7.00E-03	4.00E-02	9.50E+00	4.49E-01	9.50E+00	5.73E-01	9.50E+00	6.89E-01	9.50E+00	7.45E-01		
	TOTAL BODY	3.00E-01	1.00E+00	9.50E+00	9.52E-01	9.50E+00	1.22E+00	9.50E+00	1.48E+00	9.50E+00	1.58E+00		
1.924E+03	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	KIDNEY	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	4.49E-01	1.20E+02	5.73E-01	1.20E+02	6.32E-01	1.20E+02	7.45E-01		
	GI-LLI-ING	7.00E-01	0.00E-01	0.00E-01	2.77E-01	0.00E-01	3.18E-01	0.00E-01	3.85E-01	0.00E-01	4.49E-01		
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	2.77E-01	0.00E-01	3.18E-01	0.00E-01	3.85E-01	0.00E-01	4.49E-01		
GA-67	BONE	3.00E-04	3.00E-01	1.20E+01	2.17E-01	1.20E+01	2.17E-01	1.20E+01	2.25E-01	1.20E+01	2.31E-01		
	LIVER	2.50E-04	2.50E-01	4.80E+00	6.21E-02	4.80E+00	6.92E-02	4.80E+00	7.58E-02	4.80E+00	7.90E-02		
	TOTAL BODY	1.00E-03	1.00E+00	6.00E+00	9.09E-02	6.00E+00	1.06E-01	6.00E+00	1.21E-01	6.00E+00	1.26E-01		
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	KIDNEY	2.00E-05	2.00E-02	9.00E+00	5.84E-02	9.00E+00	6.21E-02	9.00E+00	6.57E-02	9.00E+00	6.92E-02		
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
3.261E+00	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	6.21E-02	1.20E+02	6.92E-02	1.20E+02	7.26E-02	1.20E+02	7.90E-02		
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	5.23E-02	0.00E-01	5.46E-02	0.00E-01	5.84E-02	0.00E-01	6.21E-02		
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	5.23E-02	0.00E-01	5.46E-02	0.00E-01	5.84E-02	0.00E-01	6.21E-02		
	BONE	1.50E-02	1.50E-01	1.30E+03	1.80E+00	1.30E+03	1.81E+00	1.30E+03	1.83E+00	1.30E+03	1.85E+00		
	LIVER	3.50E-02	3.50E-01	9.10E+01	4.12E-01	9.10E+01	4.32E-01	9.10E+01	4.56E-01	9.10E+01	4.66E-01		
	TOTAL BODY	1.00E-01	1.00E+00	9.33E+02	5.02E-01	9.33E+02	5.49E-01	9.33E+02	5.94E-01	9.33E+02	6.10E-01		
5.790E-01	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	KIDNEY	4.00E-03	4.00E-02	1.49E+02	4.01E-01	1.49E+02	4.12E-01	1.49E+02	4.23E-01	1.49E+02	4.35E-01		
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	4.12E-01	1.20E+02	4.32E-01	1.20E+02	4.45E-01	1.20E+02	4.66E-01		
	GI-LLI-ING	9.00E-01	0.00E-01	3.81E-01	0.00E-01	3.88E-01	0.00E-01	3.88E-01	4.01E-01	4.01E-01	4.12E-01		
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	3.81E-01	0.00E-01	3.88E-01	0.00E-01	4.01E-01	0.00E-01	4.12E-01		

TABLE A-2 (Continued)

				INFANT		CHILD		TEEN		ADULT	
				T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)
SR-89	Fw or Fe for GI	Fa or F2P	BONE	2.10E-01	7.00E-01	4.00E+03	2.76E+00	4.00E+03	2.76E+00	4.00E+03	2.76E+00
			LIVER	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
INSOLUBL	TOTAL BODY	THYROID	KIDNEY	3.00E-01	1.00E+00	4.00E+03	5.55E-01	4.00E+03	5.55E-01	4.00E+03	5.55E-01
			LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
T-Rad(d) 5.050E+01	LUNG-ING	LUNG-ING	KIDNEY	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
			LUNG-ING	0.00E-01	1.20E-01	1.20E+02	5.55E-01	1.20E+02	5.55E-01	1.20E+02	5.55E-01
GI-LLI-ING GI-LLI-ING	7.00E-01	6.20E-01	KIDNEY	0.00E-01	0.00E-01	5.55E-01	0.00E-01	5.55E-01	0.00E-01	5.55E-01	0.00E-01
			LUNG-ING	0.00E-01	6.20E-01	5.55E-01	0.00E-01	5.55E-01	0.00E-01	5.55E-01	0.00E-01
SR-90	Fw or Fe for GI	Fa or F2P	BONE	5.10E-02	1.70E-01	4.00E+03	5.65E+00	4.00E+03	5.65E+00	4.00E+03	5.65E+00
			LIVER	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
INSOLUBL	TOTAL BODY	THYROID	KIDNEY	5.10E-02	1.70E-01	4.00E+03	1.14E+00	4.00E+03	1.14E+00	4.00E+03	1.14E+00
			LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
T-Rad(d) 1.059E+04	LUNG-ING	LUNG-ING	KIDNEY	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
			LUNG-ING	0.00E-01	1.20E-01	1.20E+02	1.14E+00	1.20E+02	1.14E+00	1.20E+02	1.14E+00
GI-LLI-ING GI-LLI-ING	7.00E-01	6.20E-01	KIDNEY	0.00E-01	0.00E-01	2.48E+00	0.00E-01	2.48E+00	0.00E-01	2.48E+00	0.00E-01
			LUNG-ING	0.00E-01	6.20E-01	0.00E-01	1.14E+00	0.00E-01	1.14E+00	0.00E-01	1.14E+00
Y-90	Fw or Fe for GI	Fa or F2P	BONE	7.50E-05	7.50E-01	1.80E+01	4.55E+00	1.80E+04	4.55E+00	1.80E+04	4.55E+00
			LIVER	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
INSOLURL	TOTAL BODY	THYROID	KIDNEY	1.00E-04	1.00E+00	1.40E+04	9.17E-01	1.40E+04	9.17E-01	1.40E+04	9.17E-01
			LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
T-Rad(d) 2.670E+00	LUNG-ING	LUNG-ING	KIDNEY	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
			LUNG-ING	0.00E-01	1.20E-01	1.20E+02	9.17E-01	1.20E+02	9.17E-01	1.20E+02	9.17E-01
GI-LLI-ING GI-LLI-ING	1.00E+00	6.20E-01	KIDNEY	0.00E-01	0.00E-01	9.17E-01	0.00E-01	9.17E-01	0.00E-01	9.17E-01	0.00E-01
			LUNG-ING	0.00E-01	6.20E-01	0.00E-01	9.17E-01	0.00E-01	9.17E-01	0.00E-01	9.17E-01
Y-91	Fw or Fe for GI	Fa or F2P	BONE	7.50E-05	7.50E-01	1.80E+01	3.05E+00	1.80E+04	3.05E+00	1.80E+04	3.05E+00
			LIVER	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
INSOLURL	TOTAL BODY	THYROID	KIDNEY	1.00E-04	1.00E+00	1.40E+04	6.11E-01	1.40E+04	6.11E-01	1.40E+04	6.11E-01
			LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
T-Rad(d) 5.860E+01	LUNG-ING	LUNG-ING	KIDNEY	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
			LUNG-ING	0.00E-01	1.20E-01	1.20E+02	6.10E-01	1.20E+02	6.10E-01	1.20E+02	6.10E-01
GI-LLI-ING GI-LLI-ING	1.00E+00	6.20E-01	KIDNEY	0.00E-01	0.00E-01	6.10E-01	0.00E-01	6.10E-01	0.00E-01	6.10E-01	0.00E-01
			LUNG-ING	0.00E-01	6.20E-01	0.00E-01	6.10E-01	0.00E-01	6.10E-01	0.00E-01	6.10E-01

TABLE A-2 (Continued)

	Fa or Fe for G1	Fa or F2P	INFANT			CHILD			TEEN			ADULT		
			T-Biol (days)	E (MeV/dis)										
ZR-93	BONE	3.60E-05	3.60E-01	1.00E+03	1.10E-01									
	LIVER	7.00E-06	7.00E-02	3.20E+02	1.90E-02	3.20E+02	2.00E-02	3.20E+02	2.00E-02	3.20E+02	2.00E-02	3.20E+02	2.00E-02	
INSOLUBL	TOTAL BODY	1.00E-04	1.00E+00	4.50E+02	2.10E-02	4.50E+02	2.20E-02	4.50E+02	2.30E-02	4.50E+02	2.40E-02	4.50E+02	2.30E-02	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
T-Rad(d)	KIDNEY	2.00E-06	2.00E-02	9.00E+02	1.90E-02									
3.468E+08	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	1.90E-02	1.20E+02	2.00E-02	1.20E+02	2.00E-02	1.20E+02	2.00E-02	1.20E+02	2.00E-02	
	6I-LLI-ING	1.00E+00	0.00E-01	0.00E-01	1.80E-02									
	6I-LLI-INH	1.00E+00	6.20E-01	0.00E-01	1.80E-02									
ZR-95	BONE	3.60E-05	3.60E-01	1.00E+03	1.10E-00									
	LIVER	7.00E-06	7.00E-02	3.20E+02	4.04E-01	3.20E+02	4.81E-01	3.20E+02	5.51E-01	3.20E+02	5.51E-01	3.20E+02	5.51E-01	
INSOLURL	TOTAL BODY	1.00E-04	1.00E+00	4.50E+02	7.17E-01	4.50E+02	8.81E-01	4.50E+02	1.04E+00	4.50E+02	1.09E+00	4.50E+02	1.09E+00	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
T-Rad(d)	KIDNEY	2.00E-06	2.00E-02	9.00E+02	3.63E-01	9.00E+02	4.04E-01	9.00E+02	4.41E-01	9.00E+02	5.10E-01	9.00E+02	5.10E-01	
6.550E+01	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	4.04E-01	1.20E+02	4.81E-01	1.20E+02	5.18E-01	1.20E+02	5.89E-01	1.20E+02	5.89E-01	
	6I-LLI-ING	1.00E+00	0.00E-01	0.00E-01	1.88E-01	0.00E-01	2.02E-01	0.00E-01	2.22E-01	0.00E-01	2.43E-01	0.00E-01	2.43E-01	
	6I-LLI-INH	1.00E+00	6.20E-01	0.00E-01	1.88E-01	0.00E-01	2.02E-01	0.00E-01	2.22E-01	0.00E-01	2.38E-01	0.00E-01	2.38E-01	
NB-95	BONE	3.80E-05	3.80E-01	1.00E+03	3.64E-01	1.00E+03	3.87E-01	1.00E+03	4.23E-01	1.00E+03	4.57E-01	1.00E+03	4.57E-01	
	LIVER	9.00E-06	9.00E-02	8.45E+02	1.66E-01	8.45E+02	2.07E-01	8.45E+02	2.44E-01	8.45E+02	2.62E-01	8.45E+02	2.62E-01	
INSOLUBL	TOTAL BODY	1.00E-04	1.00E+00	7.60E+02	3.29E-01	7.60E+02	4.14E-01	7.60E+02	4.95E-01	7.60E+02	5.25E-01	7.60E+02	5.25E-01	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
T-Rad(d)	KIDNEY	2.00E-06	2.00E-02	7.60E+02	1.45E-01	7.60E+02	1.66E-01	7.60E+02	1.87E-01	7.60E+02	2.07E-01	7.60E+02	2.07E-01	
J.510E+01	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	1.66E-01	1.20E+02	2.07E-01	1.20E+02	2.26E-01	1.20E+02	2.62E-01	1.20E+02	2.62E-01	
	6I-LLI-ING	1.00E+00	0.00E-01	0.00E-01	1.10E-01	0.00E-01	1.23E-01	0.00E-01	1.45E-01	0.00E-01	1.66E-01	0.00E-01	1.66E-01	
	6I-LLI-INH	1.00E+00	6.20E-01	0.00E-01	1.10E-01	0.00E-01	1.23E-01	0.00E-01	1.45E-01	0.00E-01	1.66E-01	0.00E-01	1.66E-01	
TC-99	BONE	1.00E-03	2.00E-03	2.50E+01	4.75E-01									
	LIVER	1.50E-03	3.00E-03	3.00E+01	9.50E-02									
INSOLUBL	TOTAL BODY	5.00E-01	1.00E+00	1.00E+00	9.50E-02									
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
T-Rad(d)	KIDNEY	5.00E-03	1.00E-02	2.00E+01	9.50E-02									
>7.75E+07	LUNG-ING	4.50E-04	0.00E-01	5.00E+00	9.50E-02									
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	9.50E-02									
	6I-LLI-ING	5.00E-01	0.00E-01	0.00E-01	9.50E-02									
	6I-LLI-INH	1.00E+00	6.20E-01	0.00E-01	9.50E-02									

TABLE A-2 (Continued)

		INFANT			CHILD			TEEN			ADULT		
		F <sub>w</sub> or Fe for GI	F <sub>a</sub> or F <sub>2P</sub>	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)		
RU-103	BONE	2.40E-03	8.00E-02	1.60E+01	5.78E-01	1.60E+01	5.93E-01	1.60E+01	6.17E-01	1.60E+01	6.17E-01	6.39E-01	
	LIVER	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	TOTAL BODY	3.00E-02	1.00E+00	7.30E+00	2.82E-01	7.30E+00	3.37E-01	7.30E+00	3.89E-01	7.30E+00	3.89E-01	4.08E-01	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	KIDNEY	6.00E-03	2.00E-01	2.50E+00	1.63E-01	2.50E+00	1.76E-01	2.50E+00	1.81E-01	2.50E+00	1.81E-01	2.03E-01	
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
INSOLUBL	TOTAL BODY	3.00E-02	1.00E+00	7.30E+00	2.82E-01	7.30E+00	3.37E-01	7.30E+00	3.89E-01	7.30E+00	3.89E-01	4.08E-01	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	KIDNEY	6.00E-03	2.00E-01	2.50E+00	1.48E+00	2.50E+00	1.76E-01	2.50E+00	1.81E-01	2.50E+00	1.81E-01	2.03E-01	
	LUNG-ING	0.00E-01	1.20E-01	1.20E+02	1.76E-01	1.20E+02	2.03E-01	1.20E+02	2.15E-01	1.20E+02	2.15E-01	2.39E-01	
	61-LLI-ING	9.70E-01	0.00E-01	0.00E-01	1.40E-01	0.00E-01	1.48E-01	0.00E-01	1.63E-01	0.00E-01	1.63E-01	0.00E-01	
	61-LLI-INH	1.00E+00	6.20E-01	0.00E-01	1.40E-01	0.00E-01	1.48E-01	0.00E-01	1.63E-01	0.00E-01	1.63E-01	0.00E-01	
T-Rad(d)	BONE	2.40E-03	8.00E-02	1.60E+01	5.78E-01	1.60E+00	7.06E+00	1.60E+01	7.07E+00	1.60E+01	7.07E+00	7.08E+00	
	LIVER	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	TOTAL BODY	3.00E-02	1.00E+00	7.30E+00	2.82E-01	7.30E+00	3.37E-01	7.30E+00	3.89E-01	7.30E+00	3.89E-01	4.08E-01	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	KIDNEY	6.00E-03	2.00E-01	2.50E+00	1.43E+00	2.50E+00	1.44E+00	2.50E+00	1.44E+00	2.50E+00	1.44E+00	1.45E+00	
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
3.690E+02	BONE	2.00E-03	6.67E-02	1.20E+01	4.00E-01	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	
	LIVER	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	TOTAL BODY	2.00E-02	6.67E-02	1.20E+01	4.00E-01	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	KIDNEY	6.00E-03	2.00E-01	2.50E+00	1.43E+00	2.50E+00	1.44E+00	2.50E+00	1.44E+00	2.50E+00	1.44E+00	1.45E+00	
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
61-LLI-ING	BONE	9.70E-01	0.00E-01	0.00E-01	1.40E+00	0.00E-01	1.42E+00	0.00E-01	1.42E+00	0.00E-01	1.43E+00	0.00E-01	1.44E+00
	LIVER	9.70E-01	0.00E-01	0.00E-01	1.40E+00	0.00E-01	1.42E+00	0.00E-01	1.42E+00	0.00E-01	1.43E+00	0.00E-01	1.44E+00
	TOTAL BODY	9.70E-01	0.00E-01	0.00E-01	1.40E+00	0.00E-01	1.42E+00	0.00E-01	1.42E+00	0.00E-01	1.43E+00	0.00E-01	1.44E+00
	THYROID	9.70E-01	0.00E-01	0.00E-01	1.40E+00	0.00E-01	1.42E+00	0.00E-01	1.42E+00	0.00E-01	1.43E+00	0.00E-01	1.44E+00
	KIDNEY	9.70E-01	0.00E-01	0.00E-01	1.40E+00	0.00E-01	1.42E+00	0.00E-01	1.42E+00	0.00E-01	1.43E+00	0.00E-01	1.44E+00
	LUNG-ING	9.70E-01	0.00E-01	0.00E-01	1.40E+00	0.00E-01	1.42E+00	0.00E-01	1.42E+00	0.00E-01	1.43E+00	0.00E-01	1.44E+00
AG-110M	BONE	5.00E-04	5.00E-02	3.00E+01	8.16E-01	3.00E+01	8.92E-01	3.00E+01	9.02E-01	3.00E+01	9.02E-01	1.13E+00	
	LIVER	3.00E-04	3.00E-02	1.50E+01	4.77E-01	1.50E+01	5.00E+00	1.50E+01	6.14E-01	1.50E+01	6.14E-01	7.42E-01	
	TOTAL BODY	1.00E-02	1.00E+00	5.00E+00	1.03E+00	5.00E+00	1.32E+00	5.00E+00	1.60E+00	5.00E+00	1.60E+00	1.70E+00	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	KIDNEY	2.00E-04	2.00E-02	1.00E+01	4.00E-01	1.00E+01	4.06E-01	1.00E+01	4.77E-01	1.00E+01	4.77E-01	5.47E-01	
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	6.14E-01	
2.520E+02	BONE	2.00E-03	6.67E-02	1.20E+01	4.00E-01	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	
	LIVER	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	TOTAL BODY	2.00E-02	6.67E-02	1.20E+01	4.00E-01	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	
	THYROID	2.00E-03	6.67E-02	1.20E+01	4.00E-01	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	
	KIDNEY	2.00E-04	2.00E-02	1.00E+01	4.00E-01	1.00E+01	4.06E-01	1.00E+01	4.77E-01	1.00E+01	4.77E-01	5.47E-01	
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	6.14E-01	
61-LLI-ING	BONE	9.90E-01	0.00E-01	0.00E-01	2.87E-01	0.00E-01	3.32E-01	0.00E-01	3.32E-01	0.00E-01	4.06E-01	0.00E-01	4.77E-01
	LIVER	9.90E-01	0.00E-01	0.00E-01	2.87E-01	0.00E-01	3.32E-01	0.00E-01	3.32E-01	0.00E-01	4.06E-01	0.00E-01	4.77E-01
	TOTAL BODY	9.90E-01	0.00E-01	0.00E-01	2.87E-01	0.00E-01	3.32E-01	0.00E-01	3.32E-01	0.00E-01	4.06E-01	0.00E-01	4.77E-01
	THYROID	9.90E-01	0.00E-01	0.00E-01	2.87E-01	0.00E-01	3.32E-01	0.00E-01	3.32E-01	0.00E-01	4.06E-01	0.00E-01	4.77E-01
	KIDNEY	9.90E-01	0.00E-01	0.00E-01	2.87E-01	0.00E-01	3.32E-01	0.00E-01	3.32E-01	0.00E-01	4.06E-01	0.00E-01	4.77E-01
	LUNG-ING	9.90E-01	0.00E-01	0.00E-01	2.87E-01	0.00E-01	3.32E-01	0.00E-01	3.32E-01	0.00E-01	4.06E-01	0.00E-01	4.77E-01
CD-115M	BONE	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
	LIVER	1.90E-03	7.50E-02	2.00E+02	6.10E-01	2.00E+02	6.10E-01	2.00E+02	6.10E-01	2.00E+02	6.10E-01	2.00E+02	6.10E-01
	TOTAL BODY	2.50E-03	1.00E+00	2.00E+02	6.10E-01	2.00E+02	6.10E-01	2.00E+02	6.10E-01	2.00E+02	6.10E-01	2.00E+02	6.10E-01
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
	KIDNEY	2.50E-04	1.00E-01	3.00E+02	6.10E-01	3.00E+02	6.10E-01	3.00E+02	6.10E-01	3.00E+02	6.10E-01	3.00E+02	6.10E-01
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
4.460E+01	BONE	1.00E+00	0.00E+00	1.20E+01	4.00E-01	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	
	LIVER	1.00E+00	0.00E+00	1.20E+01	4.00E-01	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	
	TOTAL BODY	1.00E+00	0.00E+00	1.20E+01	4.00E-01	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	
	THYROID	1.00E+00	0.00E+00	1.20E+01	4.00E-01	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	
	KIDNEY	1.00E+00	0.00E+00	1.20E+01	4.00E-01	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	
	LUNG-ING	1.00E+00	0.00E+00	1.20E+01	4.00E-01	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	4.00E+00	1.20E+01	
61-LLI-ING	BONE	1.00E+00	0.00E+00	6.20E-01	0.00E-01	6.20E-01	0.00E-01	6.20E-01	0.00E-01	6.20E-01	0.00E-01	6.20E-01	
	LIVER	1.00E+00	0.00E+00	6.20E-01	0.00E-01	6.20E-01	0.00E-01	6.20E-01	0.00E-01	6.20E-01	0.00E-01	6.20E-01	
	TOTAL BODY	1.00E											

TABLE A-2 (Continued)

		INFANT		CHILD		TEEN		ADULT		
		F <sub>w</sub> or F <sub>e</sub> for GI	F <sub>a</sub> or F <sub>2P</sub>	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)	
SH-123		BONE	2.00E-02	3.00E-01	1.00E+02	2.61E+00	1.00E+02	2.61E+00	1.00E+02	2.61E+00
	LIVER	5.00E-04	1.00E-02	7.00E+01	5.22E-01	7.00E+01	5.22E-01	7.00E+01	5.22E-01	5.22E-01
INSOLUBL	TOTAL BODY	5.00E-02	1.00E+00	3.50E+01	5.22E-01	3.50E+01	5.22E-01	3.50E+01	5.22E-01	5.22E-01
	THYROID	5.00E-06	1.00E-04	7.00E+01	5.22E-01	7.00E+01	5.22E-01	7.00E+01	5.22E-01	5.22E-01
T-Rad(d)	KIDNEY	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
1.290E+02	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	5.22E-01	1.20E+02	5.22E-01	1.20E+02	5.22E-01	5.22E-01
GI-LLI-ING	9.50E-01	0.00E-01	0.00E-01	5.22E-01	0.00E-01	5.22E-01	0.00E-01	5.22E-01	0.00E-01	5.22E-01
GI-LLI-INH	9.50E-01	6.20E-01	0.00E-01	5.22E-01	0.00E-01	5.22E-01	0.00E-01	5.22E-01	0.00E-01	5.22E-01
SH-124		BONE	3.00E-03	1.00E-01	1.00E+02	2.14E+00	1.00E+02	2.19E+00	1.00E+02	2.28E+00
	LIVER	6.00E-05	2.00E-03	3.80E+01	6.44E-01	3.80E+01	7.39E-01	3.80E+01	8.28E-01	3.80E+01
INSOLUBL	TOTAL BODY	3.00E-02	1.00E+00	3.80E+01	1.03E+00	3.80E+01	1.24E+00	3.80E+01	1.33E+00	3.80E+01
	THYROID	9.00E-07	3.00E-05	4.00E+00	4.59E-01	4.00E+00	4.91E-01	4.00E+00	5.28E-01	4.00E+00
T-Rad(d)	KIDNEY	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
6.020E+01	LUNG-ING	9.00E-04	0.00E-01	1.00E+02	6.44E-01	1.00E+02	7.39E-01	1.00E+02	7.84E-01	1.00E+02
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	6.44E-01	1.20E+02	7.39E-01	1.20E+02	7.84E-01	1.20E+02
GI-LLI-ING	9.70E-01	0.00E-01	0.00E-01	5.13E-01	0.00E-01	5.44E-01	0.00E-01	5.95E-01	0.00E-01	6.44E-01
GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	5.13E-01	0.00E-01	5.44E-01	0.00E-01	5.95E-01	0.00E-01	6.44E-01
SH-125		BONE	3.00E-03	1.00E-01	1.00E+02	5.70E-01	1.00E+02	5.83E-01	1.00E+02	6.04E-01
	LIVER	6.00E-05	2.00E-03	3.60E+01	1.67E-01	3.60E+01	1.90E-01	3.60E+01	2.11E-01	3.60E+01
INSOLUBL	TOTAL BODY	3.00E-02	1.00E+00	3.80E+01	2.56E-01	3.80E+01	3.04E-01	3.80E+01	3.50E-01	3.80E+01
	THYROID	9.00E-07	3.00E-05	4.00E+00	4.00E+00	1.17E-01	4.00E+00	1.25E-01	4.00E+00	1.34E-01
T-Rad(d)	KIDNEY	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
9.960E+02	LUNG-ING	9.00E-04	0.00E-01	1.00E+02	1.75E-01	1.00E+02	1.98E-01	1.00E+02	2.09E-01	1.00E+02
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	1.75E-01	1.20E+02	1.98E-01	1.20E+02	2.09E-01	1.20E+02
GI-LLI-ING	9.70E-01	0.00E-01	0.00E-01	1.22E-01	0.00E-01	1.34E-01	0.00E-01	1.47E-01	0.00E-01	1.59E-01
GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	1.22E-01	0.00E-01	1.34E-01	0.00E-01	1.47E-01	0.00E-01	1.59E-01
TF-125M		BONE	2.30E-02	9.00E-02	3.00E+01	5.57E-01	3.00E+01	5.58E-01	3.00E+01	5.58E-01
	LIVER	1.00E-02	5.00E-02	3.00E+01	1.12E-01	3.00E+01	1.12E-01	3.00E+01	1.13E-01	3.00E+01
INSOLUBL	TOTAL BODY	2.50E-01	1.00E+00	1.50E+01	1.13E-01	1.50E+01	1.13E-01	1.50E+01	1.14E-01	1.50E+01
	THYROID	2.50E-04	1.00E-03	9.00E+00	1.11E-01	9.00E+00	1.11E-01	9.00E+00	1.12E-01	9.00E+00
T-Rad(d)	KIDNEY	2.00E-02	7.00E-02	3.00E+01	1.11E-01	3.00E+01	1.11E-01	3.00E+01	1.12E-01	3.00E+01
5.800E+01	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	1.12E-01	1.20E+02	1.12E-01	1.20E+02	1.12E-01	1.20E+02
GI-LLI-ING	7.50E-01	0.00E-01	0.00E-01	1.12E-01	0.00E-01	1.12E-01	0.00E-01	1.12E-01	0.00E-01	1.12E-01
GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	1.12E-01	0.00E-01	1.12E-01	0.00E-01	1.12E-01	0.00E-01	1.12E-01

TABLE A-2 (Continued)

		INFANT			CHILD			TEEN			ADULT		
		Fa or Fe for 61	Fa or F2P	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)	T-Biol (days)	E (MeV/dis)		
I-129	BONE	7.00E-02	5.30E-02	1.40E+01	3.13E-01	1.40E+01	3.14E-01	1.40E+01	3.15E-01	1.40E+01	3.16E-01		
	LIVER	1.20E-01	9.00E-02	7.00E+00	6.94E-02	7.00E+00	7.28E-02	7.00E+00	7.57E-02	7.00E+00	7.69E-02		
	TOTAL BODY	1.00E+00	7.50E-01	2.00E+01	8.08E-02	2.00E+01	8.44E-02	5.00E+01	8.66E-02	1.00E+02	8.72E-02		
	THYROID	3.00E-01	2.30E-01	2.00E+01	6.12E-02	2.00E+01	6.28E-02	5.00E+01	6.45E-02	1.00E+02	6.52E-02		
	KIDNEY	4.00E-02	3.00E-02	7.00E+00	6.74E-02	7.00E+00	6.94E-02	7.00E+00	7.11E-02	7.00E+00	8.76E-02		
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
5.804E+09	LUNG-IND	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	GI-LLI-ING	5.00E-02	0.00E-01	0.00E-01	6.38E-02	0.00E-01	6.52E-02	0.00E-01	6.74E-02	0.00E-01	6.94E-02		
	GI-LLI-IND	5.00E-02	5.00E-01	0.00E-01	6.38E-02	0.00E-01	6.52E-02	0.00E-01	6.74E-02	0.00E-01	6.94E-02		
	BONE	7.00E-02	5.30E-02	1.40E+01	1.06E+00	1.40E+01	1.07E+00	1.40E+01	1.09E+00	1.40E+01	1.10E+00		
	LIVER	1.20E-01	9.00E-02	7.00E+00	2.57E-01	7.00E+00	2.77E-01	7.00E+00	2.96E-01	7.00E+00	3.05E-01		
	TOTAL BODY	1.00E+00	7.50E-01	2.00E+01	3.38E-01	2.00E+01	3.80E-01	5.00E+01	4.20E-01	1.00E+02	4.34E-01		
I-131	THYROID	3.00E-01	2.30E-01	2.00E+01	2.18E-01	2.00E+01	2.25E-01	5.00E+01	2.33E-01	1.00E+02	2.36E-01		
	KIDNEY	4.00E-02	3.00E-02	7.00E+00	2.47E-01	7.00E+00	2.57E-01	7.00E+00	2.67E-01	7.00E+00	2.77E-01		
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	2.57E-01	0.00E-01	2.77E-01	0.00E-01	2.87E-01	0.00E-01	3.05E-01		
	LUNG-IND	0.00E-01	0.00E-01	0.00E-01	2.57E-01	0.00E-01	2.77E-01	0.00E-01	2.87E-01	0.00E-01	3.05E-01		
	GI-LLI-ING	5.00E-02	0.00E-01	0.00E-01	2.29E-01	0.00E-01	2.36E-01	0.00E-01	2.47E-01	0.00E-01	2.57E-01		
	GI-LLI-IND	5.00E-02	5.00E-01	0.00E-01	2.29E-01	0.00E-01	2.36E-01	0.00E-01	2.47E-01	0.00E-01	2.57E-01		
CS-134	BONE	4.00E-02	3.00E-02	1.40E+02	1.05E+00	1.40E+02	1.10E+00	1.40E+02	1.18E+00	1.40E+02	1.25E+00		
	LIVER	7.00E-02	5.00E-02	9.00E+01	4.05E-01	9.00E+01	4.89E-01	9.00E+01	5.68E-01	9.00E+01	6.04E-01		
	TOTAL BODY	1.00E+00	7.50E-01	1.00E+01	7.45E-01	2.00E+01	9.22E-01	6.00E+01	1.09E+00	1.15E+00			
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	KIDNEY	1.00E-02	7.50E-03	4.20E+01	3.61E-01	4.20E+01	4.05E-01	4.20E+01	4.47E-01	4.20E+01	4.89E-01		
	LUNG-ING	3.00E-03	0.00E-01	1.40E+02	4.05E-01	1.40E+02	4.89E-01	1.40E+02	5.29E-01	1.40E+02	6.04E-01		
7.520E+02	LUNG-IND	0.00E-01	2.30E-03	1.40E+02	4.05E-01	1.40E+02	4.89E-01	1.40E+02	5.29E-01	1.40E+02	6.04E-01		
	GI-LLI-ING	5.00E-02	0.00E-01	0.00E-01	2.87E-01	0.00E-01	3.15E-01	0.00E-01	3.61E-01	0.00E-01	4.05E-01		
	GI-LLI-IND	5.00E-02	5.00E-01	0.00E-01	2.87E-01	0.00E-01	3.15E-01	0.00E-01	3.61E-01	0.00E-01	4.05E-01		
	BONE	4.00E-02	3.00E-02	1.40E+02	1.30E+00	1.40E+02	1.31E+00	1.40E+02	1.34E+00	1.40E+02	1.37E+00		
	LIVER	7.00E-02	5.00E-02	9.00E+01	3.29E-01	9.00E+01	3.59E-01	9.00E+01	3.87E-01	9.00E+01	4.00E-01		
	TOTAL BODY	1.00E+00	7.50E-01	1.00E+01	4.50E-01	2.00E+01	5.13E-01	6.00E+01	5.73E-01	1.15E+02	5.94E-01		
1.099E+04	THYROID	0.00E-01	0.00E-01	0.00E-01	2.69E-01	0.00E-01	2.80E-01	0.00E-01	2.92E-01	0.00E-01	2.97E-01		
	KIDNEY	1.00E-02	7.50E-03	4.20E+01	3.13E-01	4.20E+01	3.29E-01	4.20E+01	3.44E-01	4.20E+01	3.59E-01		
	LUNG-ING	3.00E-03	0.00E-01	1.40E+02	3.29E-01	1.40E+02	3.59E-01	1.40E+02	3.73E-01	1.40E+02	4.00E-01		
	LUNG-IND	0.00E-01	2.30E-03	1.40E+02	3.29E-01	1.40E+02	3.59E-01	1.40E+02	3.73E-01	1.40E+02	4.00E-01		
	GI-LLI-ING	5.00E-02	0.00E-01	0.00E-01	2.87E-01	0.00E-01	2.97E-01	0.00E-01	3.13E-01	0.00E-01	3.29E-01		
	GI-LLI-IND	5.00E-02	5.00E-01	0.00E-01	2.87E-01	0.00E-01	2.97E-01	0.00E-01	3.13E-01	0.00E-01	3.29E-01		

TABLE A-2 (Continued)

	Fa or Fe for GI	INFANT			CHILD			TEEN			ADULT		
		Fa or F2P	T-Biol (days)	E (MeV/dis)									
BA-140	BONE	3.50E-02	7.00E-01	6.50E+01	4.86E+00	6.50E+01	4.93E+00	6.50E+01	5.04E+00	6.50E+01	5.14E+00		
	LIVER	3.00E-05	6.00E-04	9.75E+02	1.24E+00	9.75E+02	1.38E+00	9.75E+02	1.49E+00	9.75E+02	1.55E+00		
	TOTAL BODY	5.00E-02	1.00E+00	6.50E+01	1.75E+00	6.50E+01	2.02E+00	6.50E+01	2.27E+00	6.50E+01	2.36E+00		
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	KIDNEY	5.00E-06	1.00E-04	8.50E+00	1.19E+00	8.50E+00	1.26E+00	8.50E+00	1.32E+00	8.50E+00	1.38E+00		
	LUNG-ING	1.00E-05	0.00E-01	6.50E+03	1.26E+00	6.50E+03	1.38E+00	6.50E+03	1.44E+00	6.50E+03	1.55E+00		
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	1.26E+00	1.20E+02	1.38E+00	1.20E+02	1.44E+00	1.20E+02	1.55E+00		
GI-LLI-ING	9.50E-01	0.00E-01	0.00E-01	3.34E-01	0.00E-01	3.34E-01	0.00E-01	3.39E-01	0.00E-01	3.47E-01	0.00E-01	3.54E-01	
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	3.34E-01	0.00E-01	3.39E-01	0.00E-01	3.47E-01	0.00E-01	3.54E-01		
	BONE	4.00E-05	4.00E-01	1.00E+03	3.29E+00	1.00E+03	3.35E+00	1.00E+03	3.44E+00	1.00E+03	3.54E+00		
	LIVER	1.50E-05	1.50E-01	4.00E+02	9.03E-01	4.00E+02	1.01E+00	4.00E+02	1.11E+00	4.00E+02	1.16E+00		
	TOTAL BODY	1.00E-04	1.00E+00	5.00E+02	1.34E+00	5.00E+02	1.58E+00	5.00E+02	1.80E+00	5.00E+02	1.89E+00		
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	KIDNEY	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
LA-140	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02		
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	7.54E-01	0.00E-01	7.89E-01	0.00E-01	8.47E-01	0.00E-01	9.03E-01		
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	7.54E-01	0.00E-01	7.89E-01	0.00E-01	8.47E-01	0.00E-01	9.03E-01		
	BONE	3.00E-05	3.00E-01	1.50E+03	9.20E-01	1.50E+03	9.22E-01	1.50E+03	9.25E-01	1.50E+03	9.28E-01		
	LIVER	2.50E-05	2.50E-01	2.93E+02	1.91E-01	2.93E+02	1.94E-01	2.93E+02	1.97E-01	2.93E+02	1.99E-01		
	TOTAL BODY	1.00E-04	1.00E+00	5.63E+02	2.04E-01	5.63E+02	2.12E-01	5.63E+02	2.19E-01	5.63E+02	2.21E-01		
T-Rad(d) 1.680E+00	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	KIDNEY	2.00E-06	2.00E-02	5.63E+02	1.89E-01	5.63E+02	1.91E-01	5.63E+02	1.93E-01	5.63E+02	1.94E-01		
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02		
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	7.54E-01	0.00E-01	7.89E-01	0.00E-01	8.47E-01	0.00E-01	9.03E-01		
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	7.54E-01	0.00E-01	7.89E-01	0.00E-01	8.47E-01	0.00E-01	9.03E-01		
	BONE	3.00E-05	3.00E-01	1.50E+03	9.20E-01	1.50E+03	9.22E-01	1.50E+03	9.25E-01	1.50E+03	9.28E-01		
INSOLUBL	LIVER	2.50E-05	2.50E-01	2.93E+02	1.91E-01	2.93E+02	1.94E-01	2.93E+02	1.97E-01	2.93E+02	1.99E-01		
	TOTAL BODY	1.00E-04	1.00E+00	5.63E+02	2.04E-01	5.63E+02	2.12E-01	5.63E+02	2.19E-01	5.63E+02	2.21E-01		
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	KIDNEY	2.00E-06	2.00E-02	5.63E+02	1.89E-01	5.63E+02	1.91E-01	5.63E+02	1.93E-01	5.63E+02	1.94E-01		
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02		
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	7.54E-01	0.00E-01	7.89E-01	0.00E-01	8.47E-01	0.00E-01	9.03E-01		
CE-141	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	7.54E-01	0.00E-01	7.89E-01	0.00E-01	8.47E-01	0.00E-01	9.03E-01		
	BONE	3.00E-05	3.00E-01	1.50E+03	9.20E-01	1.50E+03	9.22E-01	1.50E+03	9.25E-01	1.50E+03	9.28E-01		
	LIVER	2.50E-05	2.50E-01	2.93E+02	1.91E-01	2.93E+02	1.94E-01	2.93E+02	1.97E-01	2.93E+02	1.99E-01		
	TOTAL BODY	1.00E-04	1.00E+00	5.63E+02	2.04E-01	5.63E+02	2.12E-01	5.63E+02	2.19E-01	5.63E+02	2.21E-01		
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	KIDNEY	2.00E-06	2.00E-02	5.63E+02	1.89E-01	5.63E+02	1.91E-01	5.63E+02	1.93E-01	5.63E+02	1.94E-01		
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
INSOLUBL	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02		
	TOTAL BODY	1.00E-04	1.00E+00	5.63E+02	1.30E+00	5.63E+02	1.31E+00	5.63E+02	1.31E+00	5.63E+02	1.31E+00		
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	KIDNEY	2.00E-06	2.00E-02	5.63E+02	1.29E+00	5.63E+02	1.29E+00	5.63E+02	1.29E+00	5.63E+02	1.29E+00		
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02		
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	1.29E+00	0.00E-01	1.29E+00	0.00E-01	1.29E+00	0.00E-01	1.29E+00		
2.840E+02	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	1.29E+00	0.00E-01	1.29E+00	0.00E-01	1.29E+00	0.00E-01	1.29E+00		
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	1.29E+00	0.00E-01	1.29E+00	0.00E-01	1.29E+00	0.00E-01	1.29E+00		
CE-144	BONE	3.00E-05	3.00E-01	1.50E+03	6.43E+00	1.50E+03	6.44E+00	1.50E+03	6.44E+00	1.50E+03	6.44E+00		
	LIVER	2.50E-05	2.50E-01	2.93E+02	1.29E+02	2.93E+02	1.29E+02	2.93E+02	1.29E+02	2.93E+02	1.29E+02		
INSOLUBL	TOTAL BODY	1.00E-04	1.00E+00	5.63E+02	1.30E+00	5.63E+02	1.31E+00	5.63E+02	1.31E+00	5.63E+02	1.31E+00		
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	KIDNEY	2.00E-06	2.00E-02	5.63E+02	1.29E+00	5.63E+02	1.29E+00	5.63E+02	1.29E+00	5.63E+02	1.29E+00		
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01		
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02	1.20E+02		
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	1.29E+00	0.00E-01	1.29E+00	0.00E-01	1.29E+00	0.00E-01	1.29E+00		
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	1.29E+00	0.00E-01	1.29E+00	0.00E-01	1.29E+00	0.00E-01	1.29E+00		

TABLE A-2 (Continued)

TABLE A-2 (Continued)

	Fe or Fe for GI	Fa or F2P	INFANT			CHILD			TEEN			ADULT		
			(days)	(MeV/dis)	T-Biol E	(days)	(MeV/dis)	T-Biol E	(days)	(MeV/dis)	T-Biol E	(days)	(MeV/dis)	
HO-166H	BONE	6.40E-05	6.40E-01	1.00E+03	4.00E-01	1.00E+03	4.00E-01	1.00E+03	4.00E-01	1.00E+03	4.00E-01	1.00E+03	4.00E-01	
	LIVER	6.00E-06	6.00E-02	8.75E+02	2.80E-01	8.75E+02	3.20E-01	8.75E+02	3.60E-01	8.75E+02	3.70E-01	8.75E+02	3.70E-01	
INSOLUBL	TOTAL BODY	1.00E-04	1.00E+00	7.50E+02	4.60E-01	7.50E+02	5.80E-01	7.50E+02	7.30E-01	7.50E+02	8.10E-01	7.50E+02	8.10E-01	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
T-Rad(d)	KIDNEY	2.00E-06	2.00E-02	8.00E+02	2.60E-01	8.00E+02	2.80E-01	8.00E+02	3.00E-01	8.00E+02	3.20E-01	8.00E+02	3.20E-01	
4.380E+05	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	2.80E-01	1.20E+02	3.20E-01	1.20E+02	3.20E-01	1.20E+02	3.40E-01	1.20E+02	3.70E-01	
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	2.00E-01	0.00E-01	2.00E-01	0.00E-01	2.00E-01	0.00E-01	2.00E-01	0.00E-01	2.00E-01	
IL-201	BONE	2.50E-02	5.50E-02	7.00E+00	2.37E-01	7.00E+00	2.37E-01	7.00E+00	2.37E-01	7.00E+00	2.43E-01	7.00E+00	2.48E-01	
	LIVER	2.00E-02	4.00E-02	5.00E+00	5.74E-02	5.00E+00	6.14E-02	5.00E+00	6.52E-02	5.00E+00	6.70E-02	5.00E+00	6.70E-02	
INSOLUBL	TOTAL BODY	4.50E-01	1.00E+00	5.00E+00	7.38E-02	5.00E+00	8.28E-02	5.00E+00	9.16E-02	5.00E+00	9.49E-02	5.00E+00	9.49E-02	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
T-Rad(d)	KIDNEY	2.30E-02	5.00E-02	7.00E+00	5.53E-02	7.00E+00	5.74E-02	7.00E+00	5.94E-02	7.00E+00	6.14E-02	7.00E+00	6.14E-02	
3.040E+00	LUNG-ING	2.70E-03	0.00E-01	6.00E+00	5.74E-02	6.00E+00	6.14E-02	6.00E+00	6.33E-02	6.00E+00	6.70E-02	6.00E+00	6.70E-02	
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	5.74E-02	1.20E+02	6.14E-02	1.20E+02	6.33E-02	1.20E+02	6.70E-02	1.20E+02	6.70E-02	
	GI-LLI-ING	5.50E-01	0.00E-01	0.00E-01	5.18E-02	0.00E-01	5.32E-02	0.00E-01	5.53E-02	0.00E-01	5.74E-02	0.00E-01	5.74E-02	
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	5.18E-02	0.00E-01	5.32E-02	0.00E-01	5.53E-02	0.00E-01	5.74E-02	0.00E-01	5.74E-02	
PR-210	BONE	2.00E-02	2.80E-01	3.65E+03	2.90E+01	3.65E+03	2.90E+01	3.65E+03	2.90E+01	3.65E+03	2.90E+01	3.65E+03	2.90E+01	
	LIVER	6.40E-03	8.00E-02	1.95E+03	1.00E+01	1.95E+03	1.00E+01	1.95E+03	1.00E+01	1.95E+03	1.00E+01	1.95E+03	1.00E+01	
INSOLUBL	TOTAL BODY	8.00E-02	1.00E+00	1.46E+03	5.20E+00	1.46E+03	5.20E+00	1.46E+03	5.20E+00	1.46E+03	5.20E+00	1.46E+03	5.20E+00	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
T-Rad(d)	KIDNEY	1.00E-02	1.40E-01	5.31E+02	1.00E+01	5.31E+02	1.00E+01	5.31E+02	1.00E+01	5.31E+02	1.00E+01	5.31E+02	1.00E+01	
8.139E+03	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	2.50E+01	1.20E+02	2.50E+01	1.20E+02	2.50E+01	1.20E+02	2.50E+01	1.20E+02	2.50E+01	
	GI-LLI-ING	9.20E-01	0.00E-01	0.00E-01	1.90E-02	0.00E-01	1.90E-02	0.00E-01	1.90E-02	0.00E-01	1.90E-02	0.00E-01	1.90E-02	
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	1.90E-02	0.00E-01	1.90E-02	0.00E-01	1.90E-02	0.00E-01	1.90E-02	0.00E-01	1.90E-02	
BI-210	BONE	3.00E-04	3.00E-02	1.33E+01	4.00E+01	1.33E+01	4.00E+01	1.33E+01	4.00E+01	1.33E+01	4.00E+01	1.33E+01	4.00E+01	
	LIVER	1.50E-03	1.50E-01	1.50E+01	1.30E+01	1.50E+01	1.30E+01	1.50E+01	1.30E+01	1.50E+01	1.30E+01	1.50E+01	1.30E+01	
INSOLUBL	TOTAL BODY	1.00E-02	1.00E+00	5.00E+00	1.00E+01	5.00E+00	1.00E+01	5.00E+00	1.00E+01	5.00E+00	1.00E+01	5.00E+00	1.00E+01	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
T-Rad(d)	KIDNEY	3.00E-03	3.00E-01	6.00E+00	1.90E+01	6.00E+00	1.90E+01	6.00E+00	1.90E+01	6.00E+00	1.90E+01	6.00E+00	1.90E+01	
5.010E+00	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	2.60E+01	1.20E+02	2.60E+01	1.20E+02	2.60E+01	1.20E+02	2.60E+01	1.20E+02	2.60E+01	
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	

TABLE A-2 (Continued)

		INFANT			CHILD			TEEN			ADULT		
		Fw or Fe for GI	Fa or F2P	T-Biol (days)	E (MeV/dis)								
TH-229		BONE	7.00E-05	7.00E-01	7.30E+03	1.60E+04	7.30E+04	1.60E+03	7.30E+04	1.60E+03	7.30E+04	1.60E+03	1.60E+03
	LIVER	5.00E-06	5.00E-02	5.70E+04	1.60E+02								
INSOLUBL	TOTAL BODY	1.00E-04	1.00E+00	5.70E+04	1.90E+02								
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
T-Rad(d)	KIDNEY	5.00E-06	5.00E-02	2.20E+04	1.60E+02								
2.679E+06	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
	LUNG-INH	0.00E-01	1.20E-01	1.46E+03	2.80E+02								
GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	6.10E-01	0.00E-01	6.10E-01	0.00E-01	6.10E-01	0.00E-01	6.10E-01	0.00E-01	6.10E-01	0.00E-01
GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	6.10E-01	0.00E-01	6.10E-01	0.00E-01	6.10E-01	0.00E-01	6.10E-01	0.00E-01	6.10E-01	0.00E-01
TH-232	BONE	7.00E-05	7.00E-01	7.30E+04	2.70E+02								
	LIVER	5.00E-06	5.00E-02	5.70E+04	4.10E+01								
INSOLUBL	TOTAL BODY	1.00E-04	1.00E+00	5.70E+04	6.20E+01								
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
T-Rad(d)	KIDNEY	5.00E-06	5.00E-02	2.20E+04	4.10E+01								
5.110E+12	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
	LUNG-INH	0.00E-01	1.20E-01	1.46E+03	4.60E-01	1.46E+03	4.60E+01	1.46E+03	4.60E+01	1.46E+03	4.60E+01	1.46E+03	4.60E+01
GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	0.00E-01
GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	0.00E-01	4.00E-01	0.00E-01
II-232	BONE	1.10E-03	1.10E-01	3.00E+02	1.20E+03								
	LIVER	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
INSOLUBL	TOTAL BODY	1.00E-02	1.00E+00	1.00E+02	2.80E+02								
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
T-Rad(d)	KIDNEY	1.10E-03	1.10E-01	1.50E+01	1.10E+02								
2.628E+04	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	2.10E+02								
GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01	0.00E-01
GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01	0.00E-01
U-234	BONE	1.10E-03	1.10E-01	3.00E+02	2.40E+02								
	LIVER	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
INSOLUBL	TOTAL BODY	1.00E-02	1.00E+00	1.00E+02	4.90E+01								
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
T-Rad(d)	KIDNEY	1.10E-03	1.10E-01	1.50E+01	4.90E+01								
8.906E+07	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	4.90E+01								
GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	4.80E-01	0.00E-01	4.80E-01	0.00E-01	4.80E-01	0.00E-01	4.80E-01	0.00E-01	4.80E-01	0.00E-01
GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	4.80E-01	0.00E-01	4.80E-01	0.00E-01	4.80E-01	0.00E-01	4.80E-01	0.00E-01	4.80E-01	0.00E-01

TABLE A-2 (Continued)

Fw or Fr for GI	Fa or F2P	INFANT			CHILD			TEEN			ADULT		
		T-Biol (days)	E (MeV/dis)										
U-235	BONE	1.10E-03	1.10E-01	3.00E+02	2.30E+02								
	LIVER	0.00E-01	0.00E-01										
INSOLUBL	TOTAL BODY	1.00E-02	1.00E+00	1.00E+02	4.60E+01								
	THYROID	0.00E-01	0.00E-01										
T-Rad(d)	KIDNEY	1.10E-03	1.10E-01	1.50E+01	4.60E+01								
2.570E+11	LUNG-ING	0.00E-01	0.00E-01										
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	4.60E+01								
6I-LLI-ING	1.00E+00	0.00E-01	0.00E-01	6.10E-01	0.00E-01								
	6I-LLI-INH	1.00E+00	6.20E-01	0.00E-01	6.10E-01								
U-236	BONE	1.10E-03	1.10E-01	3.00E+02	2.30E+02								
	LIVER	0.00E-01	0.00E-01										
INSOLUBL	TOTAL BODY	1.00E-02	1.00E+00	1.00E+02	4.70E+01								
	THYROID	0.00E-01	0.00E-01										
T-Rad(d)	KIDNEY	1.10E-03	1.10E-01	1.50E+01	4.70E+01								
8.548E+09	LUNG-ING	0.00E-01	0.00E-01										
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	4.70E+01								
GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	4.50E-01	0.00E-01								
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	4.50E-01								
U-238	BONE	1.10E-03	1.10E-01	3.00E+02	2.20E+02								
	LIVER	0.00E-01	0.00E-01										
INSOLUBL	TOTAL BODY	1.00E-02	1.00E+00	1.00E+02	4.30E+01								
	THYROID	0.00E-01	0.00E-01										
T-Rad(d)	KIDNEY	1.10E-03	1.10E-01	1.50E+01	4.30E+01								
1.632E+12	LUNG-ING	0.00E-01	0.00E-01										
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	4.30E+01								
6I-LLI-ING	1.00E+00	0.00E-01	0.00E-01	4.30E-01	0.00E-01								
	6I-LLI-INH	1.00E+00	6.20E-01	0.00E-01	4.30E-01								
NP-237	BONE	4.50E-05	4.50E-01	3.65E+04	2.50E+02								
	LIVER	5.00E-06	4.50E-01	1.46E+04	4.90E+01								
INSOLUBL	TOTAL BODY	1.00E-04	1.00E+00	3.90E+04	4.90E+01								
	THYROID	0.00E-01	0.00E-01										
T-Rad(d)	KIDNEY	3.00E-06	3.00E-02	6.40E+04	4.90E+01								
7.811E+08	LUNG-ING	0.00E-01	0.00E-01										
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	4.90E+01								
6I-LLI-ING	1.00E+00	0.00E-01	0.00E-01	6.20E-01	0.00E-01								
	6I-LLI-INH	1.00E+00	6.20E-01	0.00E-01	6.20E-01								

TABLE A-2 (Continued)

	Fu or Fe for GI	F <sub>a</sub> or F2P	T-Bio <sub>1</sub> (days)	E (MeV/dis)								
NP-239	BONE	4.50E-05	4.50E-01	3.65E+04	1.10E+00	3.65E+04	1.10E+00	3.65E+04	1.11E+00	3.65E+04	1.11E+00	
	LIVER	5.00E-06	4.50E-01	1.46E+04	2.30E-01	1.46E+04	2.30E-01	1.46E+04	2.30E-01	1.46E+04	2.30E-01	
INSOLUBL	TOTAL BODY	1.00E-04	1.00E+00	3.90E+04	2.50E-01	3.90E+04	2.50E-01	3.90E+04	2.60E-01	3.90E+04	2.60E-01	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
T-Rad(d)	KIDNEY	3.00E-06	3.00E-02	6.40E+04	2.10E-01	6.40E+04	2.10E-01	6.40E+04	2.10E-01	6.40E+04	2.10E-01	
2.350E+00	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	LUNG-IND	0.00E-01	1.20E-01	1.20E+02	2.30E-01	1.20E+02	2.30E-01	1.20E+02	2.30E-01	1.20E+02	2.30E-01	
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	2.20E-01	0.00E-01	2.20E-01	0.00E-01	2.20E-01	0.00E-01	2.20E-01	
	GI-LLI-IND	1.00E+00	6.20E-01	0.00E-01	2.20E-01	0.00E-01	2.20E-01	0.00E-01	2.20E-01	0.00E-01	2.20E-01	
FU-236	BONE	2.40E-05	4.50E-01	3.65E+04	2.88E+02	3.65E+04	2.88E+02	3.65E+04	2.88E+02	3.65E+04	2.88E+02	
	LIVER	4.50E-06	4.50E-01	1.46E+04	5.76E+01	1.46E+04	5.76E+01	1.46E+04	5.76E+01	1.46E+04	5.76E+01	
INSOLUBL	TOTAL BODY	3.00E-05	1.00E+00	6.50E+04	5.76E+01	6.50E+04	5.76E+01	6.50E+04	5.76E+01	6.50E+04	5.76E+01	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
T-Rad(d)	KIDNEY	6.00E-07	2.00E-02	3.20E+04	5.76E+01	3.20E+04	5.76E+01	3.20E+04	5.76E+01	3.20E+04	5.76E+01	
1.041E+03	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	LUNG-IND	0.00E-01	1.20E-01	3.65E+02	5.76E+01	3.65E+02	5.76E+01	3.65E+02	5.76E+01	3.65E+02	5.76E+01	
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	5.76E-01	0.00E-01	5.76E-01	0.00E-01	5.76E-01	0.00E-01	5.76E-01	
	GI-LLI-IND	1.00E+00	6.20E-01	0.00E-01	5.76E-01	0.00E-01	5.76E-01	0.00E-01	5.76E-01	0.00E-01	5.76E-01	
FU-238	BONE	2.40E-05	4.50E-01	3.65E+04	2.80E+02	3.65E+04	2.80E+02	3.65E+04	2.80E+02	3.65E+04	2.80E+02	
	LIVER	4.50E-06	4.50E-01	1.46E+04	5.70E+01	1.46E+04	5.70E+01	1.46E+04	5.70E+01	1.46E+04	5.70E+01	
INSOLUBL	TOTAL BODY	3.00E-05	1.00E+00	6.50E+04	5.70E+01	6.50E+04	5.70E+01	6.50E+04	5.70E+01	6.50E+04	5.70E+01	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
T-Rad(d)	KIDNEY	6.00E-07	2.00E-02	3.20E+04	5.70E+01	3.20E+04	5.70E+01	3.20E+04	5.70E+01	3.20E+04	5.70E+01	
3.205E+04	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	LUNG-IND	0.00E-01	1.20E-01	3.65E+02	5.70E+01	3.65E+02	5.70E+01	3.65E+02	5.70E+01	3.65E+02	5.70E+01	
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	5.70E-01	0.00E-01	5.70E-01	0.00E-01	5.70E-01	0.00E-01	5.70E-01	
	GI-LLI-IND	1.00E+00	6.20E-01	0.00E-01	5.70E-01	0.00E-01	5.70E-01	0.00E-01	5.70E-01	0.00E-01	5.70E-01	
FU-239	BONE	2.40E-05	4.50E-01	3.65E+04	2.70E+02	3.65E+04	2.70E+02	3.65E+04	2.70E+02	3.65E+04	2.70E+02	
	LIVER	4.50E-06	4.50E-01	1.46E+04	5.30E+01	1.46E+04	5.30E+01	1.46E+04	5.30E+01	1.46E+04	5.30E+01	
INSOLUBL	TOTAL BODY	3.00E-05	1.00E+00	6.50E+04	5.30E+01	6.50E+04	5.30E+01	6.50E+04	5.30E+01	6.50E+04	5.30E+01	
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
T-Rad(d)	KIDNEY	6.00E-07	2.00E-02	3.20E+04	5.30E+01	3.20E+04	5.30E+01	3.20E+04	5.30E+01	3.20E+04	5.30E+01	
8.902E+06	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	LUNG-IND	0.00E-01	1.20E-01	3.65E+02	5.30E+01	3.65E+02	5.30E+01	3.65E+02	5.30E+01	3.65E+02	5.30E+01	
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	5.20E-01	0.00E-01	5.20E-01	0.00E-01	5.20E-01	0.00E-01	5.20E-01	
	GI-LLI-IND	1.00E+00	6.20E-01	0.00E-01	5.20E-01	0.00E-01	5.20E-01	0.00E-01	5.20E-01	0.00E-01	5.20E-01	

TABLE A-2 (Continued)

	Fw or Fe for GI	Fa or F2P	INFANT			CHILD			TEEN			ADULT		
			(days)	(MeV/dis)	T-Biol E	(days)	(MeV/dis)	T-Biol E	(days)	(MeV/dis)	T-Biol E	(days)	(MeV/dis)	
T-Rad(d) 2.387E+06	INSOLUBL	BONE	2.40E-05	4.50E-01	3.65E+04	2.70E+02	3.65E+04	2.70E+02	3.65E+04	2.70E+02	3.65E+04	2.70E+02	3.65E+04	2.70E+02
		LIVER	4.50E-06	4.50E-01	1.46E+04	5.30E+01	1.46E+04	5.30E+01	1.46E+04	5.30E+01	1.46E+04	5.30E+01	1.46E+04	5.30E+01
		TOTAL BODY	3.00E-05	1.00E+00	6.50E+04	5.30E+01	6.50E+04	5.30E+01	6.50E+04	5.30E+01	6.50E+04	5.30E+01	6.50E+04	5.30E+01
	LUNG-ING	THYROID	0.00E-01	0.00E-01	0.00E-01									
		KIDNEY	6.00E-07	2.00E-02	3.20E+04	5.30E+01	3.20E+04	5.30E+01	3.20E+04	5.30E+01	3.20E+04	5.30E+01	3.20E+04	5.30E+01
		LUNG-INH	0.00E-01	0.00E-01	0.00E-01									
		GI-LLI-ING	1.00E-01	1.20E-01	3.65E+02	5.30E+01	3.65E+02	5.30E+01	3.65E+02	5.30E+01	3.65E+02	5.30E+01	3.65E+02	5.30E+01
	GI-LLI-INH	GI-LLI-ING	1.00E+00	1.00E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01
		GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01	0.00E-01	5.30E-01
T-Rad(d) 5.475E+03	INSOLUBL	BONE	2.40E-05	4.50E-01	3.65E+04	1.40E+01	3.65E+04	1.40E+01	3.65E+04	1.40E+01	3.65E+04	1.40E+01	3.65E+04	1.40E+01
		LIVER	4.50E-06	4.50E-01	1.46E+04	9.99E-01	1.46E+04	9.99E-01	1.46E+04	9.99E-01	1.46E+04	9.99E-01	1.46E+04	9.99E-01
		TOTAL BODY	3.00E-05	1.00E+00	6.50E+04	2.26E+00	6.50E+04	2.26E+00	6.50E+04	2.26E+00	6.50E+04	2.26E+00	6.50E+04	2.26E+00
	LUNG-ING	THYROID	0.00E-01	0.00E-01	0.00E-01									
		KIDNEY	6.00E-07	2.00E-02	3.20E+04	2.37E+00	3.20E+04	2.37E+00	3.20E+04	2.37E+00	3.20E+04	2.37E+00	3.20E+04	2.37E+00
		LUNG-ING	0.00E-01	0.00E-01	0.00E-01									
		LUNG-INH	0.00E-01	1.20E-01	3.65E+02	5.00E-02	3.65E+02	5.00E-02	3.65E+02	5.00E-02	3.65E+02	5.00E-02	3.65E+02	5.00E-02
	GI-LLI-ING	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	1.09E-02	0.00E-01	1.09E-02	0.00E-01	1.09E-02	0.00E-01	1.09E-02	0.00E-01	1.09E-02
		GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	1.09E-02	0.00E-01	1.09E-02	0.00E-01	1.09E-02	0.00E-01	1.09E-02	0.00E-01	1.09E-02
T-Rad(d) 1.413E+08	INSOLUBL	BONE	2.40E-05	4.50E-01	3.65E+04	2.50E+02	3.65E+04	2.50E+02	3.65E+04	2.50E+02	3.65E+04	2.50E+02	3.65E+04	2.50E+02
		LIVER	4.50E-06	4.50E-01	1.46E+04	5.10E+01	1.46E+04	5.10E+01	1.46E+04	5.10E+01	1.46E+04	5.10E+01	1.46E+04	5.10E+01
		TOTAL BODY	3.00E-05	1.00E+00	6.50E+04	5.10E+01	6.50E+04	5.10E+01	6.50E+04	5.10E+01	6.50E+04	5.10E+01	6.50E+04	5.10E+01
	LUNG-ING	THYROID	0.00E-01	0.00E-01	0.00E-01									
		KIDNEY	6.00E-07	2.00E-02	3.20E+04	5.10E+01	3.20E+04	5.10E+01	3.20E+04	5.10E+01	3.20E+04	5.10E+01	3.20E+04	5.10E+01
		LUNG-INH	0.00E-01	1.20E-01	3.65E+02	5.10E+01	3.65E+02	5.10E+01	3.65E+02	5.10E+01	3.65E+02	5.10E+01	3.65E+02	5.10E+01
		GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	5.10E-01	0.00E-01	5.10E-01	0.00E-01	5.10E-01	0.00E-01	5.10E-01	0.00E-01	5.10E-01
	GI-LLI-INH	GI-LLI-ING	1.00E+00	6.20E-01	0.00E-01	5.10E-01	0.00E-01	5.10E-01	0.00E-01	5.10E-01	0.00E-01	5.10E-01	0.00E-01	5.10E-01
		GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	5.10E-01	0.00E-01	5.10E-01	0.00E-01	5.10E-01	0.00E-01	5.10E-01	0.00E-01	5.10E-01
T-Rad(d) 3.030E+10	INSOLUBL	BONE	2.40E-05	4.50E-01	3.65E+04	2.92E+02	3.65E+04	2.92E+02	3.65E+04	2.92E+02	3.65E+04	2.92E+02	3.65E+04	2.92E+02
		LIVER	4.50E-06	4.50E-01	1.46E+04	5.84E+01	1.46E+04	5.84E+01	1.46E+04	5.84E+01	1.46E+04	5.84E+01	1.46E+04	5.84E+01
		TOTAL BODY	3.00E-05	1.00E+00	6.50E+04	5.84E+01	6.50E+04	5.84E+01	6.50E+04	5.84E+01	6.50E+04	5.84E+01	6.50E+04	5.84E+01
	LUNG-ING	THYROID	0.00E-01	0.00E-01	0.00E-01									
		KIDNEY	6.00E-07	2.00E-02	3.20E+04	5.84E+01	3.20E+04	5.84E+01	3.20E+04	5.84E+01	3.20E+04	5.84E+01	3.20E+04	5.84E+01
		LUNG-INH	0.00E-01	1.20E-01	3.65E+02	5.84E+01	3.65E+02	5.84E+01	3.65E+02	5.84E+01	3.65E+02	5.84E+01	3.65E+02	5.84E+01
		GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	7.60E-01	0.00E-01	7.60E-01	0.00E-01	7.60E-01	0.00E-01	7.60E-01	0.00E-01	7.60E-01
	GI-LLI-INH	GI-LLI-ING	1.00E+00	6.20E-01	0.00E-01	7.60E-01	0.00E-01	7.60E-01	0.00E-01	7.60E-01	0.00E-01	7.60E-01	0.00E-01	7.60E-01
		GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	7.60E-01	0.00E-01	7.60E-01	0.00E-01	7.60E-01	0.00E-01	7.60E-01	0.00E-01	7.60E-01

TABLE A-2 (Continued)

	Fu or Fe for GI	Fa or F2P	INFANT			CHILD			TEEN			ADULT		
			E (MeV/dis)	T-Biol (days)	E (MeV/dis)									
AM-241	BONE	2.50E-05	4.50E-01	3.65E+04	2.80E+02									
	LIVER	3.50E-05	4.50E-01	1.46E+04	5.70E+01									
	TOTAL BODY	1.00E-04	1.00E+00	2.00E+04	5.70E+01									
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	KIDNEY	3.00E-06	3.00E-02	2.70E+04	5.70E+01									
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
T-Rad(d) 1.580E+05	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	5.70E+01									
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	5.80E-01									
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	5.80E-01									
	BONE	2.50E-05	4.50E-01	3.65E+04	3.02E+02									
	LIVER	3.50E-05	4.50E-01	1.46E+04	5.70E+01									
	TOTAL BODY	1.00E-04	1.00E+00	2.00E+04	6.10E+01									
T-Rad(d) 5.548E+04	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	KIDNEY	3.00E-06	3.00E-02	2.70E+04	6.05E+01									
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	2.30E+01									
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	7.30E-01									
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	7.30E-01									
AM-242N	BONE	2.50E-05	4.50E-01	3.65E+04	2.70E+02									
	LIVER	3.50E-05	4.50E-01	1.46E+04	5.40E+01									
	TOTAL BODY	1.00E-04	1.00E+00	2.00E+04	5.40E+01									
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	KIDNEY	3.00E-06	3.00E-02	2.70E+04	5.40E+01									
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
T-Rad(d) 2.690E+06	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	2.30E+01									
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	7.30E-01									
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	7.30E-01									
	BONE	3.00E-05	4.50E-01	3.65E+04	4.00E+02									
	LIVER	4.00E-05	4.50E-01	1.46E+04	5.70E+01									
	TOTAL BODY	1.00E-04	1.00E+00	2.40E+04	8.00E+01									
T-Rad(d) 1.630E+02	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	KIDNEY	2.00E-06	2.00E-02	2.40E+04	7.80E+01									
	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01	
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	6.40E+01									
	GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	6.20E-01									
	GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	6.20E-01									
CH-242														

TABLE A-2 (Continued)

			INFANT	CHILD	TEEN	ADULT
	Fw or Fe for GI	Fa or F2P	T-Biol (days)	T-Biol (days)	T-Biol (days)	T-Biol (days)
CN-243	BONE	3.00E-05	4.50E-01	3.65E+04	2.99E+02	3.65E+04
	LIVER	4.00E-05	4.50E-01	1.46E+04	6.00E+01	1.46E+04
INSOLUBL	TOTAL BODY	1.00E-04	1.00E+00	2.40E+04	6.00E+01	2.40E+04
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
T-Rad(d)	KIDNEY	2.00E-06	2.00E-02	2.40E+04	6.00E+01	2.40E+04
1.022E+04	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	6.00E+01	1.20E+02
GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	6.10E-01	0.00E-01	6.00E+01
GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	6.10E-01	0.00E-01	6.10E-01
CM-244	BONE	3.00E-05	4.50E-01	3.65E+04	2.90E+02	3.65E+04
	LIVER	4.00E-05	4.50E-01	1.46E+04	5.80E+01	1.46E+04
INSOLUBL	TOTAL BODY	1.00E-04	1.00E+00	2.40E+04	5.80E+01	2.40E+04
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
T-Rad(d)	KIDNEY	2.00E-06	2.00E-02	2.40E+04	5.80E+01	2.40E+04
6.533E+03	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	5.80E+01	1.20E+02
GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	5.90E-01	0.00E-01	5.80E+01
GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	5.90E-01	0.00E-01	5.90E-01
CF-252	BONE	2.40E-05	4.50E-01	3.65E+04	1.10E+03	3.65E+04
	LIVER	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
INSOLUBL	TOTAL BODY	3.00E-05	1.00E-00	6.50E+04	2.10E+02	6.50E+04
	THYROID	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
T-Rad(d)	KIDNEY	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
9.600E+02	LUNG-ING	0.00E-01	0.00E-01	0.00E-01	0.00E-01	0.00E-01
	LUNG-INH	0.00E-01	1.20E-01	1.20E+02	2.10E+02	1.20E+02
GI-LLI-ING	1.00E+00	0.00E-01	0.00E-01	2.25E+00	0.00E-01	2.25E+00
GI-LLI-INH	1.00E+00	6.20E-01	0.00E-01	2.25E+00	0.00E-01	2.25E+00
TT1 -- STOP						