NUREG-0172

AGE-SPECIFIC RADIATION DOSE COMMITMENT FACTORS FOR A ONE-YEAR CHRONIC INTAKE

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Date Published: November 1977

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Prepared for the
Office of Standards Development
U. S. Nuclear Regulatory Commission
Under Contract No. B21446

Available from
National Technical Information Service
Springfield, Virginia 22161
Price: Printed Copy $6.50 ; Microfiche $3.00

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FOREWORD

This report was prepared by Battelle Pacific Northwest Laboratories under contract with the Office of Standards Development of the Nuclear Regulatory Commission. This effort was undertaken to remove some inconsistencies from the age-dependent dose conversion factors used in NRC Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I," as published for comment in March 1976. The revised factors in this report are currently being used in evaluations performed by the staff of NRC's Office of Nuclear Reactor Regulation for the purpose of determining compliance with Appendix I of 10 CFR Part 50.

The dose models employed in the derivation of these factors are based primarily upon a 1959 report of Committee 2 of the International Commission on Radiological Protection (ICRP) as updated by ICRP reports 6 and 10. There are on-going efforts by the NRC staff to further refine these conversion factors and to update them using the new physiological and anatomical data in ICRP Report No. 23* and more realistic methods of considering the radiation doses to other target organs from gamma photon emitting radionuclides located in a specific source organ. These modified dose-conversion factors will be published as they become available.

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*International Commission on Radiological Protection, Report of the Task Group on Reference Man, ICRP Report No. 23, Pergamon Press, Oxford, England (1975).

Comments, corrections, and suggestions for improving this compilation would be appreciated and should be transmitted in writing to:

The Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
Attn: Docketing and Service Section

R. B. Minogue, Director
Office of Standards Development

AGE-SPECIFIC RADIATION DOSE COMMITMENT FACTORS FOR A ONE-YEAR CHRONIC INTAKE

INTRODUCTION

During the licensing process for nuclear facilities, radiation doses[a] and dose commitments must be calculated for people in the environs of a nuclear facility. These radiation doses are determined by examining characteristics of population groups, pathways to people, and radionuclides found in those pathways. The pertinent characteristics, which are important in the sense of contributing a significant portion of the total dose, must then be analyzed in depth. Dose factors are generally available for adults, see Reference 1 for example, however numerous improvements in data on decay schemes and half-lives have been made in recent years. In addition, it is advisable to define parameters for calculation of the radiation dose for ages other than adults since the population surrounding nuclear facilities will be composed of various age groups. Further, since infants, children and teens may have higher rates of intake per unit body mass, it is conceivable that the maximally exposed individual may not be an adult. Thus, it was necessary to develop new radiation dose commitment factors for various age groups. Dose commitment factors presented in this report have been calculated for a 50-year time period for four age groups.

[a] In accordance with common practice, the term "dose", when applied to individuals, is used in this report instead of the more precise term "dose equivalent", as defined by the International Commission on Radiological Units and Measurements (ICRU).

CALCULATIONAL METHOD

One system for calculating radiation dose to an individual or population group involves multiplying a dose factor by the concentration of the radionuclide in the medium of interest (i.e., food) and by an appropriate usage factor. The total dose to the body or to a specific organ is obtained by summing the contribution from all radionuclides irradiating that organ or the body.

A basic equation for calculating the radiation dose to people from various pathways is:

$$D_{aj} = \sum R_{aipj} = \sum C_{ip} U_{ap} D_{aipj} \qquad (1)$$

where

D_{aj} = the total dose commitment to a given organ j of an individual in age group a from all nuclides and all pathways,

R_{aipj} = the dose commitment to organ j of an individual in age group a from nuclide i, via path p,

C_{ip} = the concentration of nuclide i in the medium of path p,

U_{ap} = the usage: the usage rate or consumption rate associated with pathway p, for age group a, and

D_{aipj} = the dose factor: a number specific to a given individual's age group a, nuclide i, pathway p, and organ j, which can be used to calculate radiation dose commitment from usage rate and a given concentration of a radionuclide.

Dose factors have been previously calculated for the most important pathway-person type-organ-nuclide combinations of interest.[1] Dose calculations are divided into three principal segments: 1) radiation doses from liquid effluents, 2) radiation dose from gaseous effluents, and 3) radiation doses from contaminated surfaces or volumes (external or direct radiation). In the following discussion, only the dose factors which are used in the calculation of internal exposure to radiation will be considered.

Since radiation doses may vary for people of differing ages, four sets of dose factors have been calculated and presented. The age groups considered are "infant" (0 to 1 year old), "child" (1 to 11 years old), "teen" (11 to 17 years old) and "adult" (17 years and older). The "child" is represented by a typical 4-year old, the "teen" by a 14-year old and the adult by the definition for Standard Man as described in the International Commission on Radiological Protection (ICRP) Publication 2.[2]

The dose factors in this report were calculated for a 50-year dose commitment resulting from a chronic 1-year intake. The initial intake may occur at any point during the life of an individual, but, by choosing the appropriate age-specific dose factor, a radiation dose may be calculated.

DISCUSSION

Equations for calculating internal dose commitment factors were derived from those given by the ICRP[2] for body burden and maximum permissible concentration (MPC). Effective absorbed energies for the radionuclides were calculated from the ICRP model. When necessary, these energies were corrected for the ingrowth of daughter radionuclides following ingestion or inhalation of the parent. All radionuclides treated in this manner are followed by a "+D" in the lists of dose factors and input data. Quality factors, as listed in ICRP Publication 2,[2] were applied to the effective energies, including the value of 1.7 for beta particles and electrons with energies equal to or less than 30 keV. Age-dependent parameters were applied when available, but, where data were lacking, metabolic parameters for the Standard Man[2] were used for other age groups.

Effective absorbed energies used to compute dose factors are controlled by the size of the organ. Thus, as an individual grows and the sizes of his body organs increase, the total amount of radiation absorbed in an organ will also increase but the amount of energy absorbed per unit mass will generally decrease. If an intake of radioactive material occurs before an individual matures, later increases in organ size and mass may affect the dose commitment. In calculating the dose commitment factors listed in Tables 1 through 8, this

change of organ size and mass was considered. To reduce the complexity of the equations, it was necessary to assume that an abrupt change in organ size and mass would occur at the division points between age groups. This assumption significantly simplifies the calculations without underestimating the dose commitment.

The mass of the contents of the gastrointestinal tract (GI tract) was taken to be proportional to total-body mass. The travel time to the lower large intestine (t') and the travel time through the lower large intestine (τ') were also assumed to be proportional to the mass of the total body. Radioactive decay of the radionuclide ingested was accounted for in calculating dose commitment factors for the GI tract.

In certain instances, the energy of a daughter nuclide makes a significant contribution to the effective energy per disintegration of the parent nuclide at the entrance to the lower large intestine (LLI). This occurs when the ratio of daughter decays to parent decays is relatively large. Such a situation arises when the following conditions exist. The parent decays to a daughter nuclide which: 1) is less efficiently absorbed from the small intestine than the parent, 2) has a long enough half-life to persist through the upper large intestine, and 3) has a short enough half-life, compared to the parent, to present a relatively high disintegration rate in the lower large intestine. In these cases, the energy of the radiation absorbed in the lower large intestine per disintegration of the parent was calculated using Equation (A-26) as given in Appendix A. Some radionuclides have daughter products which will be absorbed into the blood stream before reaching the lower large intestine. In these cases, the energy of the daughters was not included in the dose commitment factors for the GI tract even though it was included for other body organs.

Since specific biological half-lives are available as a function of age for hydrogen, iodine and cesium, that information was used when computing the dose commitment factors for the radionuclides of these elements. For other radionuclides contained in this report, the biological half-lives for Standard Man were used for all age groups. Dose commitment factors calculated without using age specific biological half-lives will generally overestimate the

radiation dose for age groups other than adults. This overestimate occurs because biological half-lives for adults tend to be greater than those for younger individuals. Other biological parameters which were assumed to remain constant for all age groups are: fraction reaching organ of reference by ingestion (f_w) and by inhalation (f_a), fraction from GI tract to blood (f_1), and fraction from blood to organ of reference (f_2').[2-4]

The equations used to calculate the dose commitment factors can be found in Appendix A while the parameters needed in these equations are listed in Appendix B. The dose commitment factors calculated using these equations and input parameters are listed in Tables 1 through 8. These dose commitment factors have units of millirem/50 years per picocurie taken in during 1 year. Suggested dietary intake rates for the four age groups may be found in Regulatory Guide 1.109.

APPLICATION

Dose commitment factors have been calculated for most radionuclides released in the nuclear fuel cycle. Factors for any nuclides not found in this report may be calculated using the equations in Appendix A.

The dose commitment factors for adults (Tables 4 and 8) may be applied to an acute intake with an error of 5% or less. For other age groups, the dose commitment factors due to an acute intake may differ significantly from those listed in Tables 1 to 3 and 5 to 7. These differences are largely due to the time relation between the exposure period and the organ mass changes as the individual matures. The acute vs. chronic exposure conditions are especially significant for the infant age group, who in the scheme employed here becomes a child after one year. The portion of the infant dose commitment arising after the year of chronic exposure is derived from the larger organ masses (hence lower organ concentrations) of the older age groups. Thus the dose commitment associated with a unit radionuclide deposition in an organ near the end of the infant chronic exposure period may be significantly different from that assigned to an earlier organ deposition. These considerations are, of course, sensitive to the effective halflife of material in the organ. Thus if the factors in this report are used to calculate dose commitments due to an acute intake for infants, children or teenagers, the results may underestimate the actual dose commitment.

The radiation dose due to absorption through skin has been included in inhalation dose commitment factors for tritium. The authors have increased the dose factors by 50% to account for the radiation dose for this pathway.(5)

REFERENCES

1. J. K. Soldat, N. M. Robinson and D. A. Baker, Models and Computer Codes for Evaluating Environmental Radiation Doses, BNWL-1754, Battelle, Pacific Northwest Laboratory, Richland, WA, February 1974.

2. International Commission on Radiological Protection, Report of ICRP Committee II on Permissible Dose for Internal Radiation, ICRP Publication 2, Pergamon Press, New York, 1959.

3. International Commission on Radiological Protection, ICRP Publication 6, Pergamon Press, New York, NY, 1964.

4. International Commission on Radiological Protection, Report of Committee IV on Evaluation of Radiation Doses to Body Tissues from Internal Contamination Due to Occupational Exposure, ICRP Publication 10, Pergamon Press, New York, NY, 1968.

5. R. V. Osborne, "Absorption of Tritiated Water Vapor by People," Health Physics, vol. 12, pp. 1527-1537, November 1966.

TABLE 1

INFANT INGESTION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
H3	0.	3.08E-07	3.08E-07	3.08E-07	3.08E-07	3.08E-07	3.08E-07
BE10	1.71E-05	2.49E-06	5.16E-07	0.	1.64E-06	0.	2.78E-05
C14	2.37E-05	5.06E-06	5.06E-06	5.06E-06	5.06E-06	5.06E-06	5.06E-06
N13	5.85E-08	5.85E-08	5.85E-08	5.85E-08	5.85E-08	5.85E-08	5.85E-08
F18	5.19E-06	0.	4.43E-07	0.	0.	0.	1.22E-06
NA22	9.83E-05	9.83E-05	9.83E-05	9.83E-05	9.83E-05	9.83E-05	9.83E-05
NA24	1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05	1.01E-05
P32	1.70E-03	1.00E-04	6.59E-05	0.	0.	0.	2.30E-05
AR39	0.	0.	0.	0.	0.	0.	0.
AR41	0.	0.	0.	0.	0.	0.	0.
CA41	3.74E-04	0.	4.08E-05	0.	0.	0.	1.91E-07
SC46	3.75E-08	5.41E-08	1.69E-08	0.	3.56E-08	0.	3.53E-05
CR51	0.	0.	1.41E-08	9.20E-09	2.01E-09	1.79E-08	4.11E-07
MN54	0.	1.99E-05	4.51E-06	0.	4.41E-06	0.	7.31E-06
MN56	0.	8.18E-07	1.41E-07	0.	7.03E-07	0.	7.43E-05
FE55	1.39E-05	8.98E-06	2.40E-06	0.	0.	4.39E-06	1.14E-06
FE59	3.08E-05	5.38E-05	2.12E-05	0.	0.	1.59E-05	2.57E-05
CO57	0.	1.15E-06	1.87E-06	0.	0.	0.	3.92E-06
CO58	0.	3.60E-06	8.95E-06	0.	0.	0.	8.97E-06
CO60	0.	1.08E-05	2.55E-05	0.	0.	0.	2.57E-05
NI59	4.73E-05	1.45E-05	8.17E-06	0.	0.	0.	7.16E-07
NI63	6.34E-04	3.92E-05	2.20E-05	0.	0.	0.	1.95E-06
I65	4.70E-06	5.32E-07	2.42E-07	0.	0.	0.	4.05E-05
CU64	0.	6.09E-07	2.82E-07	0.	1.03E-06	0.	1.25E-05
ZN65	1.84E-05	6.31E-05	2.91E-05	0.	3.06E-05	0.	5.33E-05
ZN69M+D	1.50E-06	3.06E-06	2.79E-07	0.	1.24E-06	0.	4.24E-05
ZN69	9.33E-08	1.68E-07	1.25E-08	0.	6.98E-08	0.	1.37E-05
SE79	0.	2.10E-05	3.90E-06	0.	2.43E-05	0.	5.58E-07
BR82	0.	0.	1.27E-05	0.	0.	0.	0.
BR83+D	0.	0.	3.63E-07	0.	0.	0.	0.
BR84	0.	0.	3.82E-07	0.	0.	0.	0.
BR85	0.	0.	1.94E-08	0.	0.	0.	0.
KR83M	0.	0.	0.	0.	0.	0.	0.
KR85M	0.	0.	0.	0.	0.	0.	0.
KR85	0.	0.	0.	0.	0.	0.	0.
KR87	0.	0.	0.	0.	0.	0.	0.
KR88+D	0.	0.	0.	0.	0.	0.	0.
KR89	0.	0.	0.	0.	0.	0.	0.
RB86	0.	1.70E-04	8.40E-05	0.	0.	0.	4.35E-06
RB87	0.	8.88E-05	3.52E-05	0.	0.	0.	5.98E-07
RB88	0.	4.98E-07	2.73E-07	0.	0.	0.	4.85E-07
RB89+D	0.	2.86E-07	1.97E-07	0.	0.	0.	9.74E-08
SR89+D	2.51E-03	0.	7.20E-05	0.	0.	0.	5.16E-05
SR90+D	1.85E-02	0.	4.71E-03	0.	0.	0.	2.31E-04
SR91+D	5.00E-05	0.	1.81E-06	0.	0.	0.	5.92E-05
SR92+D	1.92E-05	0.	7.13E-07	0.	0.	0.	2.07E-04

TABLE 1 (contd)

INFANT INGESTION DOSE COMMITMENT FACTORS (MREM/SOY PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
Y90	8.69E-08	0.	2.33E-09	0.	0.	0.	1.20E-04
Y91M+D	8.10E-10	0.	2.76E-11	0.	0.	0.	2.70E-06
Y91	1.13E-06	0.	3.01E-08	0.	0.	0.	8.10E-05
Y92	7.65E-09	0.	2.15E-10	0.	0.	0.	1.46E-04
Y93	2.43E-08	0.	6.62E-10	0.	0.	0.	1.92E-04
ZR93+D	1.93E-07	9.18E-08	5.54E-08	0.	2.71E-07	0.	2.39E-05
ZR95+D	2.06E-07	5.02E-08	3.56E-08	0.	5.41E-08	0.	2.50E-05
ZR97+D	1.48E-08	2.54E-09	1.16E-09	0.	2.56E-09	0.	1.62E-04
NB93M	1.23E-07	3.33E-08	1.04E-08	0.	3.25E-08	0.	3.98E-06
NB95	4.20E-08	1.73E-08	1.00E-08	0.	1.24E-08	0.	1.46E-05
NB97	4.59E-10	9.79E-11	3.53E-11	0.	7.65E-11	0.	3.09E-05
MO93	0.	5.65E-05	1.82E-06	0.	1.13E-05	0.	1.21E-06
MO99+D	0.	3.40E-05	6.63E-06	0.	5.08E-05	0.	1.12E-05
TC99M	1.92E-09	3.96E-09	5.10E-08	0.	4.26E-08	2.07E-09	1.15E-06
TC99	1.08E-06	1.46E-06	4.55E-07	0.	1.23E-05	1.42E-07	6.31E-06
TC101	2.27E-09	2.86E-09	2.83E-08	0.	3.40E-08	1.56E-09	4.86E-07
RU103+D	1.48E-06	0.	4.95E-07	0.	3.08E-06	0.	1.80E-05
RU105+D	1.36E-07	0.	4.58E-08	0.	1.00E-06	0.	5.41E-05
RU106+D	2.41E-05	0.	3.01E-06	0.	2.85E-05	0.	1.83E-04
[illegible]05	1.09E-06	7.13E-07	4.79E-07	0.	1.98E-06	0.	1.77E-05
PD107	0.	1.19E-06	8.45E-08	0.	6.79E-06	0.	9.46E-07
PD109	0.	1.50E-06	3.62E-07	0.	5.51E-06	0.	3.68E-05
AG110M+D	9.96E-07	7.27E-07	4.81E-07	0.	1.04E-06	0.	3.77E-05
AG111	5.20E-07	2.02E-07	1.07E-07	0.	4.22E-07	0.	4.82E-05
CD113M	0.	1.77E-05	6.52E-07	0.	1.34E-05	0.	2.66E-05
CD115M	0.	1.42E-05	4.93E-07	0.	7.41E-06	0.	8.09E-05
SN123	2.49E-04	3.89E-06	6.50E-06	3.91E-06	0.	0.	6.58E-05
SN125+D	7.41E-05	1.38E-06	3.29E-06	1.36E-06	0.	0.	1.11E-04
SN126+D	5.53E-04	7.26E-06	1.80E-05	1.91E-06	0.	0.	2.52E-05
SB124	2.14E-05	3.15E-07	6.63E-06	5.68E-08	0.	1.34E-05	6.60E-05
SB125+D	1.23E-05	1.19E-07	2.53E-06	1.54E-08	0.	7.72E-06	1.64E-05
SB126	8.06E-06	1.58E-07	2.91E-06	6.19E-08	0.	5.07E-06	8.35E-05
SB127	2.23E-06	3.98E-08	6.90E-07	2.84E-08	0.	1.15E-06	5.91E-05
TE125M	2.33E-05	7.79E-06	3.15E-06	7.84E-06	0.	0.	1.11E-05
TE127M+D	5.85E-05	1.94E-05	7.08E-06	1.69E-05	1.44E-04	0.	2.36E-05
TE127	1.00E-06	3.35E-07	2.15E-07	8.14E-07	2.44E-06	0.	2.10E-05
TE129M+D	1.00E-04	3.43E-05	1.54E-05	3.84E-05	2.50E-04	0.	5.97E-05
TE129	2.84E-07	9.79E-08	6.63E-08	2.38E-07	7.07E-07	0.	2.27E-05
TE131M+D	1.52E-05	6.12E-06	5.05E-06	1.24E-05	4.21E-05	0.	1.03E-04
TE131+D	1.76E-07	6.50E-08	4.94E-08	1.57E-07	4.50E-07	0.	7.11E-06
TE132+D	2.08E-05	1.03E-05	9.61E-06	1.52E-05	6.44E-05	0.	3.81E-05
TE133M+D	3.91E-07	1.79E-07	1.71E-07	3.45E-07	1.22E-06	0.	1.93E-05
TE134+D	2.67E-07	1.34E-07	1.38E-07	2.39E-07	9.03E-07	0.	3.06E-06
I129	2.86E-05	2.12E-05	1.55E-05	1.36E-02	2.51E-05	0.	4.24E-07
I130	6.00E-06	1.32E-05	5.30E-06	1.48E-03	1.45E-05	0.	2.83E-06
I131+D	3.59E-05	4.23E-05	1.86E-05	1.39E-02	4.94E-05	0.	1.51E-06

TABLE 1 (contd)

INFANT INGESTION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
I132	1.66E-06	3.37E-06	1.20E-06	1.58E-04	3.76E-06	0.	2.73E-06
I133+D	1.25E-05	1.82E-05	5.33E-06	3.31E-03	2.14E-05	0.	3.08E-06
I134	8.69E-07	1.78E-06	6.33E-07	4.15E-05	1.99E-06	0.	1.64E-06
I135+D	3.64E-06	7.24E-06	2.64E-06	6.49E-04	8.07E-06	0.	2.62E-06
XE131M	0.	0.	0.	0.	0.	0.	0.
XE133M	0.	0.	0.	0.	0.	0.	0.
XE133	0.	0.	0.	0.	0.	0.	0.
XE135M	0.	0.	0.	0.	0.	0.	0.
XE135	0.	0.	0.	0.	0.	0.	0.
XE137	0.	0.	0.	0.	0.	0.	0.
XE138+D	0.	0.	0.	0.	0.	0.	0.
CS134M+D	1.76E-07	2.93E-07	1.48E-07	0.	1.13E-07	2.60E-08	2.32E-07
CS134	3.77E-04	7.03E-04	7.10E-05	0.	1.81E-04	7.42E-05	1.91E-06
CS135	1.33E-04	1.21E-04	6.30E-06	0.	3.44E-05	1.31E-05	4.37E-07
CS136	4.59E-05	1.35E-04	5.04E-05	0.	5.38E-05	1.10E-05	2.05E-06
CS137+D	5.22E-04	6.11E-04	4.33E-05	0.	1.64E-04	6.64E-05	1.91E-06
CS138	4.81E-07	7.82E-07	3.79E-07	0.	3.90E-07	6.09E-08	1.25E-06
CS139+D	3.10E-07	4.24E-07	1.62E-07	0.	2.19E-07	3.30E-08	2.66E-08
BA139	8.81E-07	5.84E-10	2.55E-08	0.	3.51E-10	3.54E-10	5.58E-05
BA140+D	1.71E-04	1.71E-07	8.81E-06	0.	4.06E-08	1.05E-07	4.20E-05
BA141+D	4.25E-07	2.91E-10	1.34E-08	0.	1.75E-10	1.77E-10	5.19E-06
BA142+D	1.84E-07	1.53E-10	9.06E-09	0.	8.81E-11	9.26E-11	7.59E-07
LA140	2.11E-08	8.32E-09	2.14E-09	0.	0.	0.	9.77E-05
LA141	2.89E-09	8.38E-10	1.46E-10	0.	0.	0.	9.61E-05
LA142	1.10E-09	4.04E-10	9.67E-11	0.	0.	0.	6.86E-05
CE141	7.87E-08	4.80E-08	5.65E-09	0.	1.48E-08	0.	2.48E-05
CE143+D	1.48E-08	9.82E-06	1.12E-09	0.	2.86E-09	0.	5.73E-05
CE144+D	2.98E-06	1.22E-06	1.67E-07	0.	4.93E-07	0.	1.71E-04
PR143	8.13E-08	3.04E-08	4.03E-09	0.	1.13E-08	0.	4.29E-05
PR144	2.74E-10	1.06E-10	1.38E-11	0.	3.84E-11	0.	4.93E-06
ND147+D	5.53E-08	5.68E-08	3.48E-09	0.	2.19E-08	0.	3.60E-05
PM147	3.88E-07	3.27E-08	1.59E-08	0.	4.88E-08	0.	9.27E-06
PM148M+D	1.65E-07	4.18E-08	3.28E-08	0.	4.80E-08	0.	5.44E-05
PM148	6.32E-08	9.13E-09	4.60E-09	0.	1.09E-08	0.	9.74E-05
PM149	1.38E-08	1.81E-09	7.90E-10	0.	2.20E-09	0.	4.86E-05
PM151	6.18E-09	9.01E-10	4.56E-10	0.	1.07E-09	0.	4.17E-05
SM151	2.90E-07	6.67E-08	1.44E-08	0.	4.53E-08	0.	5.58E-06
SM153	7.72E-09	5.97E-09	4.58E-10	0.	1.25E-09	0.	3.12E-05
EU152	6.74E-07	1.79E-07	1.51E-07	0.	5.02E-07	0.	1.59E-05
EU154	2.64E-06	3.67E-07	2.20E-07	0.	9.95E-07	0.	4.58E-05
EU155	5.42E-07	6.25E-08	3.23E-08	0.	1.40E-07	0.	8.37E-05
EU156	1.14E-07	7.06E-08	1.12E-08	0.	3.26E-08	0.	6.67E-05
TB160	2.59E-07	0.	3.24E-08	0.	7.37E-08	0.	3.45E-05
HO166M	1.25E-06	2.69E-07	2.13E-07	0.	3.57E-07	0.	0.
W181	8.85E-08	2.72E-08	3.04E-09	0.	0.	0.	3.82E-07
W185	3.62E-06	1.13E-06	1.29E-07	0.	0.	0.	1.62E-05
W187	9.03E-07	6.28E-07	2.17E-07	0.	0.	0.	3.69E-05

TABLE 1 (contd)

INFANT INGESTION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
PB210+D	5.28E-02	1.42E-02	2.38E-03	0.	4.33E-02	0.	5.62E-05
BI210+D	4.16E-06	2.68E-05	3.58E-07	0.	2.08E-04	0.	5.27E-05
PO210	3.10E-03	5.93E-03	7.41E-04	0.	1.26E-02	0.	6.61E-05
RN222+D	0.	0.	0.	0.	0.	0.	0.
RA223+D	4.41E-02	6.42E-05	8.82E-03	0.	1.17E-03	0.	3.43E-04
RA224+D	1.46E-02	3.29E-05	2.91E-03	0.	6.00E-04	0.	3.86E-04
RA225+D	5.78E-02	6.52E-05	1.15E-02	0.	1.19E-03	0.	3.24E-04
RA226+D	5.20E-01	4.76E-05	5.14E-01	0.	8.71E-04	0.	3.44E-04
RA228+D	4.32E-01	2.58E-05	4.86E-01	0.	4.73E-04	0.	5.86E-05
AC225	3.92E-05	5.03E-05	2.63E-06	0.	3.69E-06	0.	4.36E-04
AC227+D	4.49E-03	7.67E-04	2.79E-04	0.	1.56E-04	0.	8.50E-05
TH227+D	1.20E-04	2.01E-06	3.45E-06	0.	7.41E-06	0.	5.70E-04
TH228+D	2.47E-03	3.38E-05	8.36E-05	0.	1.58E-04	0.	5.34E-04
TH229	1.48E-02	1.94E-04	7.29E-04	0.	9.29E-04	0.	5.31E-04
TH230	3.80E-03	1.90E-04	1.06E-04	0.	9.12E-04	0.	6.24E-05
TH232+D	4.24E-03	1.63E-04	1.65E-04	0.	7.79E-04	0.	5.31E-05
TH234	5.92E-07	3.77E-08	2.00E-08	0.	1.39E-07	0.	1.19E-04
PA231+D	7.57E-03	2.50E-04	3.02E-04	0.	1.34E-03	0.	7.44E-05
PA233	3.11E-06	6.09E-09	5.43E-09	0.	1.67E-08	0.	1.46E-05
U232+D	2.42E-02	0.	2.16E-03	0.	2.37E-03	0.	7.04E-05
U233+D	5.08E-03	0.	3.87E-04	0.	1.08E-03	0.	6.51E-05
U234	4.68E-03	0.	3.80E-04	0.	1.06E-03	0.	6.37E-05
U235+D	4.67E-03	0.	3.56E-04	0.	9.93E-04	0.	8.10E-05
U236	4.67E-03	0.	3.64E-04	0.	1.01E-03	0.	5.98E-05
U237	4.95E-07	0.	1.32E-07	0.	1.23E-06	0.	2.11E-05
U238+D	4.47E-03	0.	3.33E-04	0.	9.28E-04	0.	5.71E-05
NP237+D	2.53E-03	1.93E-04	1.05E-04	0.	6.34E-04	0.	8.23E-05
NP238	1.24E-07	3.12E-09	1.92E-09	0.	6.81E-09	0.	4.17E-05
NP239	1.11E-08	9.93E-10	5.61E-10	0.	1.98E-09	0.	2.8 E-05
PU238	1.34E-03	1.69E-04	3.40E-05	0.	1.21E-04	0.	7.57E-05
PU239	1.45E-03	1.77E-04	3.54E-05	0.	1.28E-04	0.	6.91E-05
PU240	1.45E-03	1.77E-04	3.54E-05	0.	1.28E-04	0.	7.04E-05
PU241+D	4.38E-05	1.90E-06	8.82E-07	0.	3.17E-06	0.	1.45E-06
PU242	1.35E-03	1.70E-04	3.41E-05	0.	1.23E-04	0.	6.77E-05
PU244	1.57E-03	1.95E-04	3.91E-05	0.	1.41E-04	0.	1.01E-04
AM241	1.53E-03	7.18E-04	1.09E-04	0.	6.55E-04	0.	7.70E-05
AM242M	1.58E-03	7.02E-04	1.13E-04	0.	6.64E-04	0.	9.69E-05
AM243	1.51E-03	6.88E-04	1.06E-04	0.	6.36E-04	0.	9.03E-05
CM242	1.37E-04	1.24E-04	9.10E-06	0.	2.62E-05	0.	8.23E-05
CM243	1.45E-03	6.88E-04	8.98E-05	0.	3.27E-04	0.	8.10E-05
CM244	1.22E-03	6.16E-04	7.59E-05	0.	2.71E-04	0.	7.84E-05
CM245	1.89E-03	7.49E-04	1.13E-04	0.	4.32E-04	0.	7.30E-05
CM246	1.87E-03	7.49E-04	1.13E-04	0.	4.31E-04	0.	7.17E-05
CM247+D	1.82E-03	7.36E-04	1.11E-04	0.	4.24E-04	0.	9.43E-05
CM248	1.51E-02	6.07E-03	9.16E-04	0.	3.50E-03	0.	1.52E-03
CF252	1.24E-03	0.	2.95E-05	0.	0.	0.	2.99E-04

TABLE 2

CHILD INGESTION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
H3	0.	2.03E-07	2.03E-07	2.03E-07	2.03E-07	2.03E-07	2.03E-07
BE10	1.35E-05	1.57E-06	3.39E-07	0.	1.11E-06	0.	2.75E-05
C14	1.21E-05	2.42E-06	2.42E-06	2.42E-06	2.42E-06	2.42E-06	2.42E-06
N13	3.10E-08	3.10E-08	3.10E-08	3.10E-08	3.10E-08	3.10E-08	3.10E-08
F18	2.49E-06	0.	2.47E-07	0.	0.	0.	6.74E-07
NA22	5.88E-05	5.88E-05	5.88E-05	5.88E-05	5.88E-05	5.88E-05	5.88E-05
NA24	5.80E-06	5.80E-06	5.80E-06	5.80E-06	5.80E-06	5.80E-06	5.80E-06
P32	9.25E-04	3.86E-05	3.18E-05	0.	0.	0.	2.28E-05
AR39	0.	0.	0.	0.	0.	0.	0.
AR41	0.	0.	0.	0.	0.	0.	0.
CA41	3.47E-04	0.	3.79E-05	0.	0.	0.	1.90E-07
SC46	1.97E-08	2.70E-08	1.04E-08	0.	2.39E-08	0.	3.95E-05
CR51	0.	0.	8.90E-09	4.94E-09	1.35E-09	9.02E-09	4.72E-07
MN54	0.	1.07E-05	2.85E-06	0.	3.00E-06	0.	8.98E-06
MN56	0.	3.34E-07	7.54E-08	0.	4.04E-07	0.	4.84E-05
FE55	1.15E-05	6.10E-06	1.89E-06	0.	0.	3.45E-06	1.13E-06
FE59	1.65E-05	2.67E-05	1.33E-05	0.	0.	7.74E-06	2.78E-05
CO57	0.	4.93E-07	9.98E-07	0.	0.	0.	4.04E-06
CO58	0.	1.80E-06	5.51E-06	0.	0.	0.	1.05E-05
CO60	0.	5.29E-06	1.56E-05	0.	0.	0.	2.93E-05
NI59	4.02E-05	1.07E-05	6.82E-06	0.	0.	0.	7.10E-07
NI63	5.38E-04	2.88E-05	1.83E-05	0.	0.	0.	1.94E-06
NI65	2.22E-06	2.09E-07	1.22E-07	0.	0.	0.	2.56E-05
CU64	0.	2.45E-07	1.48E-07	0.	5.92E-07	0.	1.15E-05
ZN65	1.37E-05	3.65E-05	2.27E-05	0.	2.30E-05	0.	6.41E-06
ZN69M+D	7.10E-07	1.21E-06	1.43E-07	0.	7.03E-07	0.	3.94E-05
ZN69	4.38E-08	6.33E-08	5.85E-09	0.	3.84E-08	0.	3.99E-06
SE79	0.	8.43E-06	1.87E-06	0.	1.37E-05	0.	5.53E-07
BR82	0.	0.	7.55E-06	0.	0.	0.	0.
BR83+D	0.	0.	1.71E-07	0.	0.	0.	0.
BR84	0.	0.	1.98E-07	0.	0.	0.	0.
BR85	0.	0.	9.12E-09	0.	0.	0.	0.
KR83M	0.	0.	0.	0.	0.	0.	0.
KR85M	0.	0.	0.	0.	0.	0.	0.
KR85	0.	0.	0.	0.	0.	0.	0.
KR87	0.	0.	0.	0.	0.	0.	0.
KR88+D	0.	0.	0.	0.	0.	0.	0.
KR89	0.	0.	0.	0.	0.	0.	0.
RB86	0.	6.70E-05	4.12E-05	0.	0.	0.	4.31E-06
RB87	0.	3.95E-05	1.83E-05	0.	0.	0.	5.92E-07
RB88	0.	1.90E-07	1.32E-07	0.	0.	0.	9.32E-09
RB89+D	0.	1.17E-07	1.04E-07	0.	0.	0.	1.02E-09
SR89+D	1.32E-03	0.	3.77E-05	0.	0.	0.	5.11E-05
SR90+D	1.70E-02	0.	4.31E-03	0.	0.	0.	2.29E-04
SR91+D	2.40E-05	0.	9.06E-07	0.	0.	0.	5.30E-05
SR92+D	9.03E-06	0.	3.62E-07	0.	0.	0.	1.71E-04

TABLE 2 (contd)

CHILD INGESTION DOSE COMMITMENT FACTORS (MREM/SOY PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
Y90	4.11E-08	0.	1.10E-09	0.	0.	0.	1.17E-04
Y91M+D	3.82E-10	0.	1.39E-11	0.	0.	0.	7.48E-07
Y91	6.02E-07	0.	1.61E-08	0.	0.	0.	8.02E-05
Y92	3.60E-09	0.	1.03E-10	0.	0.	0.	1.04E-04
Y93	1.14E-08	0.	3.13E-10	0.	0.	0.	1.70E-04
ZR93+D	1.67E-07	6.25E-08	4.45E-08	0.	2.42E-07	0.	2.37E-05
ZR95+D	1.16E-07	2.55E-08	2.27E-08	0.	3.65E-08	0.	2.66E-05
ZR97+D	6.99E-09	1.01E-09	5.96E-10	0.	1.45E-09	0.	1.53E-04
NB93M	1.05E-07	2.62E-08	8.61E-09	0.	2.83E-08	0.	3.95E-06
NB95	2.25E-08	8.76E-09	6.26E-09	0.	8.23E-09	0.	1.62E-05
NB97	2.17E-10	3.92E-11	1.83E-11	0.	4.35E-11	0.	1.21E-05
MO93	0.	2.41E-05	8.65E-07	0.	6.35E-06	0.	1.22E-06
MO99+D	0.	1.33E-05	3.29E-06	0.	2.84E-05	0.	1.10E-05
TC99M	9.23E-10	1.81E-09	3.00E-08	0.	2.63E-08	9.19E-10	1.03E-06
TC99	5.35E-07	5.96E-07	2.14E-07	0.	7.02E-06	5.27E-08	6.25E-06
TC101	1.07E-09	1.12E-09	1.42E-08	0.	1.91E-08	5.92E-10	3.56E-09
RU103+D	7.31E-07	0.	2.81E-07	0.	1.84E-06	0.	1.89E-05
RU105+D	6.45E-08	0.	2.34E-08	0.	5.67E-07	0.	4.21E-05
RU106+D	1.17E-05	0.	1.46E-06	0.	1.58E-05	0.	1.82E-04
RH105	5.14E-07	2.76E-07	2.36E-07	0.	1.10E-06	0.	1.71E-05
PD107	0.	4.72E-07	4.01E-08	0.	3.95E-06	0.	9.37E-07
109	0.	5.67E-07	1.70E-07	0.	3.04E-06	0.	3.35E-05
AG110M+D	5.39E-07	3.64E-07	2.91E-07	0.	6.78E-07	0.	4.33E-05
AG111	2.48E-07	7.76E-08	5.12E-09	0.	2.34E-07	0.	4.75E-05
CD113M	0.	1.02E-05	4.34E-07	0.	1.05E-05	0.	2.63E-05
CD115M	0.	5.89E-06	2.51E-07	0.	4.38E-06	0.	8.01E-05
SN123	1.33E-04	1.65E-06	3.24E-06	1.75E-06	0.	0.	6.52E-05
SN125+D	3.55E-05	5.35E-07	1.59E-06	5.55E-07	0.	0.	1.10E-04
SN126+D	3.33E-04	4.15E-06	9.46E-06	1.14E-06	0.	0.	2.50E-05
SB124	1.11E-05	1.44E-07	3.89E-06	2.45E-08	0.	6.16E-06	6.94E-05
SB125+D	7.16E-06	5.52E-08	1.50E-06	6.63E-09	0.	3.99E-06	1.71E-05
SB126	4.40E-06	6.73E-08	1.58E-06	2.58E-08	0.	2.10E-06	8.87E-05
SB127	1.06E-05	1.64E-08	3.68E-07	1.18E-08	0.	4.60E-07	5.97E-05
TE125M	1.14E-05	3.09E-06	1.52E-06	3.20E-06	0.	0.	1.10E-05
TE127M+D	2.89E-05	7.78E-06	3.43E-06	6.91E-06	8.24E-05	0.	2.34E-05
TE127	4.71E-07	1.27E-07	1.01E-07	3.26E-07	1.34E-06	0.	1.84E-05
TE129M+D	4.87E-05	1.36E-05	7.56E-06	1.57E-05	1.43E-04	0.	5.94E-05
TE129	1.34E-07	3.74E-08	3.18E-08	9.56E-08	3.92E-07	0.	8.34E-06
TE131M+D	7.20E-06	2.49E-06	2.65E-06	5.12E-06	2.41E-05	0.	1.01E-04
TE131+D	8.30E-08	2.53E-08	2.47E-08	6.35E-08	2.51E-07	0.	4.36E-07
TE132+D	1.01E-05	4.47E-06	5.40E-06	6.51E-06	4.15E-05	0.	4.50E-05
TE133M+D	1.87E-07	7.56E-08	9.37E-08	1.45E-07	7.18E-07	0.	5.77E-06
TE134+D	1.29E-07	5.80E-08	7.74E-08	1.02E-07	5.37E-07	0.	5.89E-07
I129	1.39E-05	8.53E-06	7.62E-06	5.58E-03	1.44E-05	0.	4.29E-07
I130	2.92E-06	5.90E-06	3.04E-06	6.50E-04	8.82E-06	0.	2.76E-06
I131+D	1.72E-05	1.73E-05	9.83E-06	5.72E-03	2.84E-05	0.	1.54E-06

TABLE 2 (contd)

CHILD INGESTION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
I132	8.00E-07	1.47E-06	6.76E-07	6.82E-05	2.25E-06	0.	1.73E-06
I133+D	5.92E-06	7.32E-06	2.77E-06	1.36E-03	1.22E-05	0.	2.95E-06
I134	4.19E-07	7.78E-07	3.58E-07	1.79E-05	1.19E-06	0.	5.16E-07
I135+D	1.75E-06	3.15E-06	1.49E-06	2.79E-04	4.83E-06	0.	2.40E-06
XE131M	0.	0.	0.	0.	0.	0.	0.
XE133M	0.	0.	0.	0.	0.	0.	0.
XE133	0.	0.	0.	0.	0.	0.	0.
XE135M	0.	0.	0.	0.	0.	0.	0.
XE135	0.	0.	0.	0.	0.	0.	0.
XE137	0.	0.	0.	0.	0.	0.	0.
XE138+D	0.	0.	0.	0.	0.	0.	0.
CS134M+D	9.44E-08	1.25E-07	8.16E-08	0.	6.59E-08	1.09E-08	1.58E-07
CS134	2.34E-04	3.84E-04	8.10E-05	0.	1.19E-04	4.27E-05	2.07E-06
CS135	8.30E-05	5.78E-05	5.93E-06	0.	2.04E-05	6.81E-06	4.33E-07
CS136	2.35E-05	6.46E-05	4.18E-05	0.	3.44E-05	5.13E-06	2.27E-06
CS137+D	3.27E-04	3.13E-04	4.62E-05	0.	1.02E-04	3.67E-05	1.96E-06
CS138	2.28E-07	3.17E-07	2.01E-07	0.	2.23E-07	2.40E-08	1.46E-07
CS139+D	1.45E-07	1.61E-07	7.74E-08	0.	1.21E-07	1.22E-08	1.45E-11
BA139	4.14E-07	2.21E-10	1.20E-08	0.	1.93E-10	1.30E-10	2.39E-05
BA140+D	8.31E-05	7.28E-08	4.85E-06	0.	2.37E-08	4.34E-08	4.21E-05
BA141+D	2.00E-07	1.12E-10	6.51E-09	0.	9.69E-11	6.58E-10	1.14E-07
BA142+D	8.74E-08	6.29E-11	4.88E-09	0.	5.09E-11	3.70E-11	1.14E-09
LA140	1.01E-08	3.53E-09	1.19E-09	0.	0.	0.	9.84E-05
LA141	1.36E-09	3.17E-10	6.88E-11	0.	0.	0.	7.05E-05
LA142	5.24E-10	1.67E-10	5.23E-11	0.	0.	0.	3.31E-05
CE141	3.97E-08	1.98E-08	2.94E-09	0.	8.68E-09	0.	2.47E-05
CE143+D	6.99E-09	3.79E-06	5.49E-10	0.	1.59E-09	0.	5.55E-05
CE144+D	2.06E-06	6.52E-07	1.11E-07	0.	3.61E-07	0.	1.70E-04
PR143	3.93E-08	1.18E-08	1.95E-09	0.	6.39E-09	0.	4.24E-05
PR144	1.29E-10	3.99E-11	6.49E-12	0.	2.11E-11	0.	8.59E-08
ND147+D	2.79E-08	2.26E-08	1.75E-09	0.	1.24E-08	0.	3.58E-05
PM147	3.18E-07	2.27E-08	1.22E-08	0.	4.01E-08	0.	9.19E-06
PM148M+D	1.03E-07	2.05E-08	2.05E-08	0.	3.04E-08	0.	5.78E-05
PM148	3.02E-08	3.63E-09	2.35E-09	0.	6.17E-09	0.	9.70E-05
PM149	5.49E-09	6.90E-10	3.74E-10	0.	1.22E-09	0.	4.71E-05
PM151	2.92E-09	3.55E-10	2.31E-10	0.	6.02E-10	0.	4.03E-05
SM151	2.56E-07	3.81E-08	1.20E-08	0.	3.94E-08	0.	5.53E-06
SM153	3.65E-09	2.27E-09	2.19E-10	0.	6.91E-10	0.	3.02E-05
EU152	5.15E-07	1.12E-07	1.33E-07	0.	4.73E-07	0.	1.84E-05
EU154	2.30E-06	2.07E-07	1.89E-07	0.	9.09E-07	0.	4.81E-05
EU155	4.82E-07	3.47E-08	2.72E-08	0.	1.30E-07	0.	8.69E-05
EU156	5.62E-08	3.01E-08	6.23E-09	0.	1.94E-08	0.	6.83E-05
TB160	1.66E-07	0.	2.06E-08	0.	4.94E-08	0.	3.68E-05
HO166M	1.08E-06	2.26E-07	1.91E-07	0.	3.22E-07	0.	0.
W181	4.23E-08	1.04E-08	1.43E-09	0.	0.	0.	3.79E-07
W185	1.73E-06	4.32E-07	6.05E-08	0.	0.	0.	1.61E-05
W187	4.29E-07	2.54E-07	1.14E-07	0.	0.	0.	3.57E-05

TABLE 2 (contd)

CHILD INGESTION DOSE COMMITMENT FACTORS(MREM/50Y PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
PB210+D	4.75E-02	1.22E-02	2.09E-03	0.	3.67E-02	0.	5.57E-05
BI210+D	1.07E-06	1.02E-05	1.69E-07	0.	1.15E-04	0.	5.17E-05
PO210	1.52E-03	2.43E-03	3.67E-04	0.	7.56E-03	0.	6.55E-05
RN222+D	0.	0.	0.	0.	0.	0.	0.
RA223+D	2.12E-02	2.45E-05	4.24E-03	0.	6.50E-04	0.	3.38E-04
RA224+D	6.89E-03	1.25E-05	1.38E-03	0.	3.31E-04	0.	3.78E-04
RA225+D	2.90E-02	2.50E-05	5.59E-03	0.	6.62E-04	0.	3.21E-04
RA226+D	5.75E-01	1.84E-05	4.72E-01	0.	4.89E-04	0.	3.41E-04
RA228+D	3.45E-01	9.99E-06	4.32E-01	0.	2.65E-04	0.	5.81E-05
AC225	1.48E-05	1.94E-05	1.26E-06	0.	2.07E-06	0.	4.31E-04
AC227+D	4.12E-03	6.63E-04	2.55E-04	0.	1.46E-04	0.	8.43E-05
TH227+D	5.85E-05	7.96E-07	1.69E-06	0.	4.22E-06	0.	5.63E-04
TH228+D	2.07E-03	2.65E-05	7.00E-05	0.	1.38E-04	0.	5.79E-04
TH229	1.38E-02	1.81E-04	6.80E-04	0.	8.84E-04	0.	5.27E-04
TH230	3.55E-03	1.78E-04	9.91E-05	0.	8.67E-04	0.	6.19E-05
TH232+D	3.96E-03	1.52E-04	3.01E-04	0.	7.41E-04	0.	5.27E-05
TH234	3.42E-07	1.51E-08	9.88E-09	0.	8.01E-08	0.	1.18E-04
PA231+D	7.07E-03	2.34E-04	2.81E-04	0.	1.28E-03	0.	7.37E-05
PA233	1.81E-08	2.82E-09	3.16E-09	0.	1.04E-08	0.	1.44E-05
U232+D	1.75E-02	0.	1.26E-03	0.	1.34E-03	0.	6.98E-05
U233+D	3.72E-03	0.	2.25E-04	0.	6.10E-04	0.	6.45E-05
U234	3.57E-03	0.	2.21E-04	0.	5.98E-04	0.	6.32E-05
U235+D	3.42E-03	0.	2.07E-04	0.	5.61E-04	0.	8.03E-05
U236	3.42E-03	0.	2.12E-04	0.	5.73E-04	0.	5.92E-05
U237	2.36E-07	0.	6.27E-08	0.	6.81E-07	0.	2.08E-05
U238+D	3.27E-03	0.	1.94E-04	0.	5.24E-04	0.	5.66E-05
NP237+D	2.36E-03	1.81E-04	9.79E-05	0.	6.05E-04	0.	8.16E-05
NP238	5.83E-08	1.18E-09	9.08E-10	0.	3.76E-09	0.	4.04E-05
NP239	5.25E-09	3.77E-10	2.65E-10	0.	1.09E-09	0.	2.79E-05
PU238	1.25E-03	1.56E-04	3.16E-05	0.	1.15E-04	0.	7.50E-05
PU239	1.36E-03	1.65E-04	3.31E-05	0.	1.22E-04	0.	6.85E-05
PU240	1.36E-03	1.65E-04	3.31E-05	0.	1.22E-04	0.	6.98E-05
PU241+D	4.00E-05	1.72E-06	8.04E-07	0.	2.96E-06	0.	1.44E-06
PU242	1.26E-03	1.59E-04	3.19E-05	0.	1.17E-04	0.	6.71E-05
PU244	1.47E-03	1.82E-04	3.65E-05	0.	1.35E-04	0.	1.00E-04
AM241	1.43E-03	6.40E-04	1.02E-04	0.	6.23E-04	0.	7.64E-05
AM242M	1.47E-03	6.25E-04	1.04E-04	0.	6.30E-04	0.	9.61E-05
AM243	1.41E-03	6.14E-04	9.83E-05	0.	6.06E-04	0.	8.95E-05
CM242	8.80E-05	6.73E-05	5.84E-06	0.	1.87E-05	0.	8.16E-05
CM243	1.33E-03	6.03E-04	8.24E-05	0.	3.08E-04	0.	8.03E-05
CM244	1.11E-03	5.36E-04	6.93E-05	0.	2.54E-04	0.	7.77E-05
CM245	1.76E-03	6.64E-04	1.05E-04	0.	4.11E-04	0.	7.24E-05
CM246	1.74E-03	6.64E-04	1.05E-04	0.	4.10E-04	0.	7.11E-05
CM247+D	1.70E-03	6.53E-04	1.03E-04	0.	4.04E-04	0.	9.35E-05
CM248	1.41E-02	5.38E-03	8.52E-04	0.	3.33E-03	0.	1.51E-03
CF252	1.07E-03	0.	2.54E-05	0.	0.	0.	2.96E-04

TABLE 3

TEEN INGESTION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
H3	0.	1.06E-07	1.06E-07	1.06E-07	1.06E-07	1.06E-07	1.06E-07
BE10	4.48E-06	6.94E-07	1.13E-07	0.	5.30E-07	0.	2.84E-05
C14	4.06E-06	8.12E-07	8.12E-07	8.12E-07	8.12E-07	8.12E-07	8.12E-07
N13	1.15E-08	1.15E-08	1.15E-08	1.15E-08	1.15E-08	1.15E-08	1.15E-08
F18	8.64E-07	0.	9.47E-08	0.	0.	0.	7.78E-08
NA22	2.34E-05	2.34E-05	2.34E-05	2.34E-05	2.34E-05	2.34E-05	2.34E-05
NA24	2.30E-06	2.30E-06	2.30E-06	2.30E-06	2.30E-06	2.30E-06	2.30E-06
P32	2.76E-04	1.71E-05	1.07E-05	0.	0.	0.	2.32E-05
AR39	0.	0.	0.	0.	0.	0.	0.
AR41	0.	0.	0.	0.	0.	0.	0.
CA41	1.97E-04	0.	2.13E-05	0.	0.	0.	1.95E-07
SC46	7.24E-09	1.41E-08	4.18E-09	0.	1.35E-08	0.	4.80E-05
CR51	0.	0.	3.60E-09	2.00E-09	7.89E-10	5.14E-09	6.05E-07
MN54	0.	5.90E-06	1.17E-06	0.	1.76E-06	0.	1.21E-05
MN56	0.	1.58E-07	2.81E-08	0.	2.00E-07	0.	1.04E-05
FE55	3.78E-06	2.68E-06	6.25E-07	0.	0.	1.70E-06	1.16E-06
FE59	5.87E-06	1.37E-05	5.29E-06	0.	0.	4.32E-06	3.24E-05
CO57	0.	2.38E-07	3.99E-07	0.	0.	0.	4.44E-06
CO58	0.	9.72E-07	2.24E-06	0.	0.	0.	1.34E-05
CO60	0.	2.81E-06	6.33E-06	0.	0.	0.	3.66E-05
NI59	1.32E-05	4.66E-06	2.24E-06	0.	0.	0.	7.31E-07
NI63	1.77E-04	1.25E-05	6.00E-06	0.	0.	0.	1.99E-06
NI65	7.49E-07	9.57E-08	4.36E-08	0.	0.	0.	5.19E-06
CU64	0.	1.15E-07	5.41E-08	0.	2.91E-07	0.	8.92E-06
ZN65	5.76E-06	2.00E-05	9.33E-06	0.	1.28E-05	0.	8.47E-06
ZN69M+D	2.40E-07	5.66E-07	5.19E-08	0.	3.44E-07	0.	3.11E-05
ZN69	1.47E-08	2.80E-08	1.96E-09	0.	1.83E-08	0.	5.16E-08
SE79	0.	3.73E-06	6.27E-07	0.	6.50E-06	0.	5.70E-07
BR82	0.	0.	3.04E-06	0.	0.	0.	0.
BR83+D	0.	0.	5.74E-08	0.	0.	0.	0.
BR84	0.	0.	7.22E-08	0.	0.	0.	0.
BR85	0.	0.	3.05E-09	0.	0.	0.	0.
KR83M	0.	0.	0.	0.	0.	0.	0.
KR85M	0.	0.	0.	0.	0.	0.	0.
KR85	0.	0.	0.	0.	0.	0.	0.
KR87	0.	0.	0.	0.	0.	0.	0.
KR88+D	0.	0.	0.	0.	0.	0.	0.
KR89	0.	0.	0.	0.	0.	0.	0.
RB86	0.	2.98E-05	1.40E-05	0.	0.	0.	4.41E-06
RB87	0.	1.75E-05	6.11E-06	0.	0.	0.	6.11E-07
RB88	0.	8.52E-08	4.54E-08	0.	0.	0.	7.30E-15
RB89+D	0.	5.50E-08	3.89E-08	0.	0.	0.	8.43E-17
SR89+D	4.40E-04	0.	1.26E-05	0.	0.	0.	5.24E-05
SR90+D	8.30E-03	0.	2.05E-03	0.	0.	0.	2.33E-04
SR91+D	9.07E-06	0.	3.21E-07	0.	0.	0.	3.66E-05
SR92+D	3.05E-06	0.	1.30E-07	0.	0.	0.	7.77E-05

TABLE 3 (contd)

TEEN INGESTION DOSE COMMITMENT FACTORS(MREM/50Y PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
Y90	1.37E-08	0.	3.69E-10	0.	0.	0.	1.13E-04
Y91M+D	1.25E-10	0.	4.93E-12	0.	0.	0.	6.09E-09
Y91	2.01E-07	0.	5.39E-09	0.	0.	0.	8.24E-05
Y92	1.21E-09	0.	3.50E-11	0.	0.	0.	3.32E-05
Y93	3.83E-09	0.	1.05E-10	0.	0.	0.	1.17E-04
ZR93+D	5.53E-08	2.73E-08	1.49E-08	0.	9.65E-08	0.	2.58E-05
ZR95+D	4.12E-08	1.30E-08	8.94E-09	0.	1.91E-08	0.	3.00E-05
ZR97+D	2.37E-09	4.69E-10	2.16E-10	0.	7.11E-10	0.	1.27E-04
NB93M	3.44E-08	1.13E-08	2.83E-09	0.	1.32E-08	0.	4.07E-06
NB95	8.22E-09	4.56E-09	2.51E-09	0.	4.42E-09	0.	1.95E-05
NB97	7.37E-11	1.83E-11	6.68E-12	0.	2.14E-11	0.	4.37E-07
MO93	0.	1.06E-05	2.90E-07	0.	3.04E-06	0.	1.29E-06
MO99+D	0.	6.03E-06	1.15E-06	0.	1.38E-05	0.	1.08E-05
TC99M	3.32E-10	9.26E-10	1.20E-08	0.	1.38E-08	5.14E-10	6.08E-07
TC99	1.79E-07	2.63E-07	7.17E-08	0.	3.34E-06	2.72E-08	6.44E-06
TC101	3.60E-10	5.12E-10	5.03E-09	0.	9.26E-09	3.12E-10	8.75E-17
RU103+D	2.55E-07	0.	1.09E-07	0.	8.99E-07	0.	2.13E-05
RU105+D	2.18E-08	0.	8.46E-09	0.	2.75E-07	0.	1.76E-05
RU106+D	3.92E-06	0.	4.94E-07	0.	7.56E-06	0.	1.88E-04
RH105	1.73E-07	1.25E-07	8.20E-08	0.	5.31E-07	0.	1.59E-05
PD107	0.	2.08E-07	1.34E-08	0.	1.88E-06	0.	9.66E-07
PD109	0.	2.51E-07	5.70E-08	0.	1.45E-06	0.	2.53E-05
AG110M+D	2.05E-07	1.94E-07	1.18E-07	0.	3.70E-07	0.	5.45E-05
AG111	8.29E-08	3.44E-08	1.73E-08	0.	1.12E-07	0.	4.80E-05
CD113M	0.	4.51E-06	1.45E-07	0.	4.99E-06	0.	2.71E-05
CD115M	0.	2.60E-06	8.39E-08	0.	2.08E-06	0.	6.23E-05
SN123	4.44E-05	7.29E-07	1.08E-06	5.84E-07	0.	0.	6.71E-05
SN125+D	1.19E-05	2.37E-07	5.37E-07	1.86E-07	0.	0.	1.12E-04
SN126+D	1.16E-04	2.16E-06	3.30E-06	5.69E-07	0.	0.	2.58E-05
SB124	3.87E-06	7.13E-08	1.51E-06	8.78E-09	0.	3.38E-06	7.80E-05
SB125+D	2.48E-06	2.71E-08	5.80E-07	2.37E-09	0.	2.18E-06	1.93E-05
SB126	1.59E-06	3.25E-08	5.71E-07	8.99E-09	0.	1.14E-06	9.41E-05
SB127	3.63E-07	7.76E-09	1.37E-07	4.08E-09	0.	2.47E-07	6.16E-05
TE125M	3.83E-06	1.38E-06	5.12E-07	1.07E-06	0.	0.	1.13E-05
TE127M+D	9.67E-06	3.43E-06	1.15E-06	2.30E-06	3.92E-05	0.	2.41E-05
TE127	1.58E-07	5.60E-08	3.40E-08	1.09E-07	6.40E-07	0.	1.22E-05
TE129M+D	1.63E-05	6.05E-06	2.58E-06	5.26E-06	6.82E-05	0.	6.12E-05
TE129	4.48E-08	1.67E-08	1.09E-08	3.20E-08	1.88E-07	0.	2.45E-07
TE131M+D	2.44E-06	1.17E-06	9.76E-07	1.76E-06	1.22E-05	0.	9.39E-05
TE131+D	2.79E-08	1.15E-08	8.72E-09	2.15E-08	1.22E-07	0.	2.29E-09
TE132+D	3.49E-06	2.21E-06	2.08E-06	2.33E-06	2.12E-05	0.	7.00E-05
TE133M+D	6.44E-08	3.66E-08	3.56E-08	5.11E-08	3.62E-07	0.	1.48E-07
TE134+D	4.47E-08	2.87E-08	3.00E-08	3.67E-08	2.74E-07	0.	1.66E-09
I129	4.66E-06	3.92E-06	6.54E-06	4.77E-03	7.01E-06	0.	4.57E-07
I130	1.03E-06	2.98E-06	1.19E-06	2.43E-04	4.59E-06	0.	2.29E-06
I131+D	5.85E-06	8.19E-06	4.40E-06	2.39E-03	1.41E-05	0.	1.62E-06

TABLE 3 (contd)

TEEN INGESTION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
I132	2.79E-07	7.30E-07	2.62E-07	2.46E-05	1.15E-06	0.	3.18E-07
I133+D	2.01E-06	3.41E-06	1.04E-06	4.76E-04	5.98E-06	0.	2.58E-06
I134	1.46E-07	3.87E-07	1.39E-07	6.45E-06	6.10E-07	0.	5.10E-09
I135+D	6.10E-07	1.57E-06	5.82E-07	1.01E-04	2.48E-06	0.	1.74E-06
XE131M	0.	0.	0.	0.	0.	0.	0.
XE133M	0.	0.	0.	0.	0.	0.	0.
XE133	0.	0.	0.	0.	0.	0.	0.
XE135M	0.	0.	0.	0.	0.	0.	0.
XE135	0.	0.	0.	0.	0.	0.	0.
XE137	0.	0.	0.	0.	0.	0.	0.
XE138+D	0.	0.	0.	0.	0.	0.	0.
CS134M+D	2.94E-08	6.09E-08	3.13E-08	0.	3.39E-08	5.95E-09	4.05E-08
CS134	8.37E-05	1.97E-04	9.14E-05	0.	6.26E-05	2.39E-05	2.45E-06
CS135	2.78E-05	2.55E-05	5.96E-06	0.	9.73E-06	3.52E-06	4.46E-07
CS136	8.54E-06	3.38E-05	2.27E-05	0.	1.84E-05	2.90E-06	2.72E-06
CS137+D	1.12E-04	1.49E-04	5.19E-05	0.	5.07E-05	1.97E-05	2.12E-06
CS138	7.76E-08	1.49E-07	7.45E-08	0.	1.10E-07	1.28E-08	6.76E-11
CS139+D	4.87E-08	7.17E-08	2.63E-08	0.	5.79E-08	6.34E-09	3.33E-23
BA139	1.39E-07	9.78E-11	4.05E-09	0.	9.22E-11	6.74E-11	1.24E-06
BA140+D	2.84E-05	3.48E-08	1.83E-06	0.	1.18E-08	2.34E-08	4.38E-05
BA141+D	5.71E-08	5.01E-11	2.24E-09	0.	4.65E-11	3.43E-11	1.43E-13
142+D	2.99E-08	2.99E-11	1.84E-09	0.	2.53E-11	1.99E-11	9.18E-20
LA140	3.48E-09	1.71E-09	4.55E-10	0.	0.	0.	9.82E-05
LA141	4.55E-10	1.40E-10	2.31E-11	0.	0.	0.	2.48E-05
LA142	1.79E-10	7.95E-11	1.98E-11	0.	0.	0.	2.42E-06
CE141	1.33E-08	8.88E-09	1.02E-09	0.	4.18E-09	0.	2.54E-05
CE143+D	2.35E-09	1.71E-06	1.91E-10	0.	7.67E-10	0.	5.14E-05
CE144+D	6.96E-07	2.88E-07	3.74E-08	0.	1.72E-07	0.	1.75E-04
PR143	1.31E-08	5.23E-09	6.52E-10	0.	3.04E-09	0.	4.31E-05
PR144	4.30E-11	1.76E-11	2.18E-12	0.	1.01E-11	0.	4.74E-14
ND147+D	9.38E-09	1.02E-08	6.11E-10	0.	5.99E-09	0.	3.68E-05
PM147	1.05E-07	9.96E-09	4.06E-09	0.	1.90E-08	0.	9.47E-06
PM148M+D	4.14E-08	1.05E-08	8.21E-09	0.	1.59E-08	0.	6.61E-05
PM148	1.02E-08	1.66E-09	8.36E-10	0.	3.00E-09	0.	9.90E-05
PM149	2.17E-09	3.05E-10	1.25E-10	0.	5.81E-10	0.	4.49E-05
PM151	9.87E-10	1.63E-10	8.25E-11	0.	2.93E-10	0.	3.66E-05
SM151	8.73E-08	1.68E-08	3.94E-09	0.	1.84E-08	0.	5.70E-06
SM153	1.22E-09	1.01E-09	7.43E-11	0.	3.30E-10	0.	2.85E-05
EU152	2.45E-07	5.90E-08	5.20E-08	0.	2.74E-07	0.	2.17E-05
EU154	7.91E-07	1.02E-07	7.19E-08	0.	4.56E-07	0.	5.39E-05
EU155	1.74E-07	1.68E-08	1.04E-08	0.	6.57E-08	0.	9.63E-05
EU156	1.92E-08	1.44E-08	2.35E-09	0.	9.69E-09	0.	7.36E-05
TB160	6.47E-08	0.	8.07E-09	0.	2.56E-08	0.	4.19E-05
HO166M	3.57E-07	1.10E-07	7.96E-08	0.	1.61E-07	0.	0.
W181	1.42E-08	4.58E-09	4.79E-10	0.	0.	0.	3.90E-07
W185	5.79E-07	1.91E-07	2.02E-08	0.	0.	0.	1.65E-05
W187	1.46E-07	1.19E-07	4.17E-08	0.	0.	0.	3.22E-05

TABLE 3 (contd)

TEEN INGESTION DOSE COMMITMENT FACTORS(MREM/50Y PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
PB210+D	1.81E-02	5.44E-03	7.01E-04	0.	1.72E-02	0.	5.74E-05
BI210+D	5.59E-07	4.51E-06	5.66E-08	0.	5.48E-05	0.	5.15E-05
PO210	5.09E-04	1.07E-03	1.23E-04	0.	3.60E-03	0.	6.75E-05
RN222+D	0.	0.	0.	0.	0.	0.	0.
RA223+D	7.11E-03	1.08E-05	1.42E-03	0.	3.10E-04	0.	3.43E-04
RA224+D	2.31E-03	5.52E-06	4.61E-04	0.	1.58E-04	0.	3.71E-04
RA225+D	9.37E-03	1.10E-05	1.87E-03	0.	3.15E-04	0.	3.27E-04
RA226+D	3.22E-01	8.13E-06	2.39E-01	0.	2.32E-04	0.	3.51E-04
RA228+D	1.37E-01	4.41E-06	1.51E-01	0.	1.26E-04	0.	5.98E-05
AC225	5.29E-06	8.59E-06	4.22E-07	0.	9.85E-07	0.	4.36E-04
AC227+D	2.05E-03	3.03E-04	1.22E-04	0.	8.81E-05	0.	8.68E-05
TH227+D	1.96E-05	3.52E-07	5.65E-07	0.	2.01E-06	0.	5.75E-04
TH228+D	5.80E-04	1.14E-05	2.30E-05	0.	6.41E-05	0.	5.97E-04
TH229	8.39E-03	1.26E-04	4.11E-04	0.	6.10E-04	0.	5.43E-04
TH230	2.16E-03	1.23E-04	6.00E-05	0.	5.99E-04	0.	6.38E-05
TH232+D	2.42E-03	1.05E-04	1.63E-04	0.	5.11E-04	0.	5.43E-05
TH234	1.14E-07	6.68E-09	3.31E-09	0.	3.81E-08	0.	1.21E-04
PA231+D	4.31E-03	1.62E-04	1.68E-04	0.	9.10E-04	0.	7.60E-05
PA233	7.33E-09	1.41E-09	1.26E-09	0.	5.32E-09	0.	1.61E-05
U232+D	5.89E-03	0.	4.21E-04	0.	6.38E-04	0.	7.19E-05
U233+D	1.24E-03	0.	7.54E-05	0.	2.90E-04	0.	6.65E-05
U234	1.19E-03	0.	7.39E-05	0.	2.85E-04	0.	6.51E-05
U235+D	1.14E-03	0.	6.94E-05	0.	2.67E-04	0.	8.28E-05
U236	1.14E-03	0.	7.09E-05	0.	2.73E-04	0.	6.11E-05
U237	7.89E-08	0.	2.10E-08	0.	3.24E-07	0.	2.09E-05
U238+D	1.09E-03	0.	6.49E-05	0.	2.50E-04	0.	5.83E-05
NP237+D	1.44E-03	1.25E-04	5.85E-05	0.	4.33E-04	0.	8.41E-05
NP238	1.95E-09	5.22E-10	3.04E-10	0.	1.79E-09	0.	3.83E-05
NP239	1.76E-09	1.66E-10	9.22E-11	0.	5.21E-10	0.	2.67E-05
PU238	7.21E-04	1.02E-04	1.82E-05	0.	7.80E-05	0.	7.73E-05
PU239	8.27E-04	1.12E-04	2.01E-05	0.	8.57E-05	0.	7.06E-05
PU240	8.26E-04	1.12E-04	2.01E-05	0.	8.56E-05	0.	7.19E-05
PU241+D	1.84E-05	9.42E-07	3.69E-07	0.	1.71E-06	0.	1.48E-06
PU242	7.66E-04	1.08E-04	1.94E-05	0.	8.25E-05	0.	6.92E-05
PU244	8.95E-04	1.23E-04	2.22E-05	0.	9.45E-05	0.	1.03E-04
AM241	8.62E-04	3.29E-04	5.75E-05	0.	4.31E-04	0.	7.87E-05
AM242M	8.70E-04	3.19E-04	5.80E-05	0.	4.30E-04	0.	9.90E-05
AM243	8.60E-04	3.17E-04	5.62E-05	0.	4.22E-04	0.	9.23E-05
CM242	2.94E-05	2.97E-05	1.95E-06	0.	8.89E-06	0.	8.40E-05
CM243	5.91E-04	2.86E-04	4.09E-05	0.	1.91E-04	0.	8.28E-05
CM244	5.32E-04	2.49E-04	3.19E-05	0.	1.49E-04	0.	8.00E-05
CM245	1.07E-03	3.33E-04	6.10E-05	0.	2.85E-04	0.	7.46E-05
CM246	1.06E-03	3.32E-04	6.09E-05	0.	2.84E-04	0.	7.33E-05
CM247+D	1.03E-03	3.27E-04	6.00E-05	0.	2.80E-04	0.	9.63E-05
CM248	8.60E-03	2.69E-03	4.95E-04	0.	2.31E-03	0.	1.55E-03
CF252	3.51E-04	0.	8.37E-06	0.	0.	0.	3.05E-04

TABLE 4

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ADULT INGESTION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
H3	0.	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07	1.05E-07
BE10	3.18E-06	4.91E-07	7.94E-08	0.	3.71E-07	0.	2.68E-05
C14	2.84E-06	5.68E-07	5.68E-07	5.68E-07	5.68E-07	5.68E-07	5.68E-07
N13	8.36E-09	8.36E-09	8.36E-09	8.36E-09	8.36E-09	8.36E-09	8.36E-09
F18	6.24E-07	0.	6.92E-08	0.	0.	0.	1.85E-08
NA22	1.74E-05	1.74E-05	1.74E-05	1.74E-05	1.74E-05	1.74E-05	1.74E-05
NA24	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06	1.70E-06
P32	1.93E-04	1.20E-05	7.46E-06	0.	0.	0.	2.17E-05
AR39	0.	0.	0.	0.	0.	0.	0.
AR41	0.	0.	0.	0.	0.	0.	0.
CA41	1.83E-05	0.	2.00E-05	0.	0.	0.	1.84E-07
SC46	3.51E-09	1.07E-08	3.11E-09	0.	9.99E-09	0.	5.21E-05
CR51	0.	0.	2.66E-09	1.59E-09	5.86E-10	3.53E-09	6.69E-07
MN54	0.	4.57E-06	8.72E-07	0.	1.36E-06	0.	1.40E-05
MN56	0.	1.15E-07	2.04E-08	0.	1.46E-07	0.	3.67E-06
FE55	2.75E-06	1.90E-06	4.43E-07	0.	0.	1.06E-06	1.09E-06
FE59	4.34E-06	1.02E-05	3.91E-06	0.	0.	2.85E-06	3.40E-05
CO57	0.	1.75E-07	2.91E-07	0.	0.	0.	4.44E-06
CO58	0.	7.45E-07	1.67E-06	0.	0.	0.	1.51E-05
CO60	0.	2.14E-06	4.72E-06	0.	0.	0.	4.02E-05
NI59	9.76E-05	3.35E-06	1.63E-06	0.	0.	0.	6.90E-07
NI63	1.30E-04	9.01E-06	4.36E-06	0.	0.	0.	1.88E-06
NI65	5.28E-07	6.86E-08	3.13E-08	0.	0.	0.	1.74E-06
CU64	0.	8.33E-08	3.91E-08	0.	2.10E-07	0.	7.10E-06
ZN65	4.84E-06	1.54E-05	6.96E-06	0.	1.03E-05	0.	9.70E-06
ZN69M+D	1.70E-07	4.08E-07	3.73E-08	0.	2.47E-07	0.	2.49E-05
ZN69	1.03E-08	1.97E-08	1.37E-09	0.	1.28E-08	0.	2.96E-09
SE79	0.	2.63E-06	4.39E-07	0.	4.55E-06	0.	5.38E-07
BR82	0.	0.	2.26E-06	0.	0.	0.	2.59E-06
BR83+D	0.	0.	4.02E-08	0.	0.	0.	5.79E-08
BR84	0.	0.	5.21E-08	0.	0.	0.	4.09E-13
BR85	0.	0.	2.14E-09	0.	0.	0.	0.
KR83M	0.	0.	0.	0.	0.	0.	0.
KR85M	0.	0.	0.	0.	0.	0.	0.
KR85	0.	0.	0.	0.	0.	0.	0.
KR87	0.	0.	0.	0.	0.	0.	0.
KR88+D	0.	0.	0.	0.	0.	0.	0.
KR89	0.	0.	0.	0.	0.	0.	0.
RB86	0.	2.11E-05	9.83E-06	0.	0.	0.	4.16E-06
RB87	0.	1.23E-05	4.28E-06	0.	0.	0.	5.76E-07
RB88	0.	6.05E-08	3.21E-08	0.	0.	0.	8.36E-19
RB89+D	0.	4.01E-08	2.82E-08	0.	0.	0.	2.33E-21
SR89+D	3.08E-04	0.	8.84E-06	0.	0.	0.	4.94E-05
SR90+D	7.58E-03	0.	1.86E-03	0.	0.	0.	2.19E-04
SR91+D	5.67E-06	0.	2.29E-07	0.	0.	0.	2.70E-05
SR92+D	2.15E-06	0.	9.30E-08	0.	0.	0.	4.26E-05

TABLE 4 (contd)

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ADULT INGESTION DOSE COMMITMENT FACTORS(MREM/50Y PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
Y90	9.62E-09	0.	2.58E-10	0.	0.	0.	1.02E-04
Y91M+D	9.09E-11	0.	3.52E-12	0.	0.	0.	2.67E-10
Y91	1.41E-07	0.	3.77E-09	0.	0.	0.	7.76E-05
Y92	9.45E-10	0.	2.47E-11	0.	0.	0.	1.48E-05
Y93	2.68E-09	0.	7.40E-11	0.	0.	0.	8.50E-05
ZR93+D	4.18E-08	2.34E-09	1.09E-09	0.	8.87E-09	0.	2.43E-06
ZR95+D	3.04E-08	9.75E-09	6.60E-09	0.	1.53E-08	0.	3.09E-05
ZR97+D	1.68E-09	3.39E-10	1.55E-10	0.	5.12E-10	0.	1.05E-04
NB93M	2.55E-08	8.32E-09	2.05E-09	0.	9.57E-09	0.	3.84E-06
NB95	6.22E-09	3.46E-09	1.86E-09	0.	3.42E-09	0.	2.10E-05
NB97	5.22E-11	1.32E-11	4.82E-12	0.	1.54E-11	0.	4.87E-08
MO93	0.	7.51E-06	2.03E-07	0.	2.13E-06	0.	1.22E-06
MO99+D	0.	4.31E-06	8.20E-07	0.	9.76E-06	0.	9.99E-06
TC99M	2.47E-10	6.98E-10	8.89E-09	0.	1.06E-08	3.42E-10	4.13E-07
TC99	1.25E-07	1.86E-07	5.02E-08	0.	2.34E-06	1.58E-08	6.08E-06
TC101	2.54E-10	3.66E-10	3.59E-09	0.	6.59E-09	1.87E-10	1.10E-21
RU103+D	1.85E-07	0.	7.97E-08	0.	7.06E-07	0.	2.16E-05
RU105+D	1.54E-08	0.	6.08E-09	0.	1.99E-07	0.	9.42E-06
RU106+D	2.75E-06	0.	3.48E-07	0.	5.31E-06	0.	1.78E-04
RH105	1.21E-07	8.85E-08	5.83E-08	0.	3.76E-07	0.	1.41E-05
PD107	0.	1.47E-07	9.40E-09	0.	1.32E-06	0.	9.11E-07
PD109	0.	1.77E-07	3.99E-08	0.	1.01E-06	0.	1.96E-05
AG110M+D	1.60E-07	1.48E-07	8.79E-08	0.	2.91E-07	0.	6.04E-05
AG111	5.81E-08	2.43E-08	1.21E-08	0.	7.84E-08	0.	4.46E-05
CD113M	0.	3.18E-06	1.02E-07	0.	3.50E-06	0.	2.56E-05
CD115M	0.	1.84E-06	5.87E-08	0.	1.46E-06	0.	7.74E-05
SN123	3.11E-05	5.15E-07	7.59E-07	4.38E-07	0.	0.	6.33E-05
SN125+D	8.33E-06	1.68E-07	3.78E-07	1.39E-07	0.	0.	1.04E-04
SN126+D	8.45E-05	1.67E-06	2.40E-06	4.92E-07	0.	0.	2.43E-05
SB124	2.80E-06	5.29E-08	1.11E-06	6.79E-09	0.	2.18E-06	7.95E-05
SB125+D	1.79E-06	2.00E-08	4.26E-07	1.82E-09	0.	1.38E-06	1.97E-05
SB126	1.15E-06	2.34E-08	4.15E-07	7.04E-09	0.	7.05E-07	9.40E-05
SB127	2.58E-07	5.65E-09	9.90E-08	3.10E-09	0.	1.53E-07	5.90E-05
TE125M	2.68E-06	9.71E-07	3.59E-07	8.06E-07	1.09E-05	0.	1.07E-05
TE127M+D	6.77E-06	2.42E-06	8.25E-07	1.73E-06	2.75E-05	0.	2.27E-05
TE127	1.10E-07	3.95E-08	2.38E-08	8.15E-08	4.48E-07	0.	8.68E-06
TE129M+D	1.15E-05	4.29E-06	1.82E-06	3.95E-06	4.80E-05	0.	5.79E-05
TE129	3.14E-08	1.18E-08	7.65E-09	2.41E-08	1.32E-07	0.	2.37E-08
TE131M+D	1.73E-06	8.46E-07	7.05E-07	1.34E-06	8.57E-06	0.	8.40E-05
TE131+D	1.97E-08	8.23E-09	6.22E-09	1.62E-08	8.63E-08	0.	2.79E-09
TE132+D	2.52E-06	1.63E-06	1.53E-06	1.80E-06	1.57E-05	0.	7.71E-05
TE133M+D	4.62E-08	2.70E-08	2.60E-08	3.91E-08	2.67E-07	0.	6.64E-08
TE134+D	3.24E-08	2.12E-08	1.30E-08	2.83E-08	2.05E-07	0.	3.59E-11
I129	3.27E-06	2.81E-06	9.21E-06	7.23E-03	6.04E-06	0.	4.44E-07
I130	7.56E-07	2.23E-06	8.80E-07	1.89E-04	3.48E-06	0.	1.92E-06
I131+D	4.16E-06	5.95E-06	3.41E-06	1.95E-03	1.02E-05	0.	1.57E-06

TABLE 4 (contd)

ADULT INGESTION DOSE COMMITMENT FACTORS(MREM/50Y PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
I132	2.03E-07	5.43E-07	1.90E-07	1.90E-05	8.65E-07	0.	1.02E-07
I133+D	1.42E-06	2.47E-06	7.53E-07	3.63E-04	4.31E-06	0.	2.22E-06
I134	1.06E-07	2.88E-07	1.03E-07	4.99E-06	4.58E-07	0.	2.51E-10
I135+D	4.43E-07	1.16E-06	4.28E-07	7.65E-05	1.86E-06	0.	1.31E-06
XE131M	0.	0.	0.	0.	0.	0.	0.
XE133M	0.	0.	0.	0.	0.	0.	0.
XE133	0.	0.	0.	0.	0.	0.	0.
XE135M	0.	0.	0.	0.	0.	0.	0.
XE135	0.	0.	0.	0.	0.	0.	0.
XE137	0.	0.	0.	0.	0.	0.	0.
XE138+D	0.	0.	0.	0.	0.	0.	0.
CS134M+D	2.13E-08	4.48E-08	2.29E-08	0.	2.43E-08	3.83E-09	1.58E-08
CS134	6.22E-05	1.48E-04	1.21E-04	0.	4.79E-05	1.59E-05	2.59E-06
CS135	1.95E-05	1.80E-05	7.99E-06	0.	6.81E-06	2.04E-06	4.21E-07
CS136	5.51E-06	2.57E-05	1.85E-05	0.	1.43E-05	1.96E-06	2.92E-06
CS137+D	7.97E-05	1.09E-04	7.14E-05	0.	3.70E-05	1.23E-05	2.11E-06
CS138	5.52E-08	1.09E-07	5.40E-08	0.	8.01E-08	7.91E-09	4.65E-13
BA139	9.70E-08	6.91E-11	2.84E-09	0.	6.46E-11	3.92E-11	1.72E-07
BA140+D	2.03E-05	2.55E-08	1.33E-06	0.	8.67E-09	1.46E-08	4.18E-05
BA141+D	4.71E-08	3.56E-11	1.59E-09	0.	3.31E-11	2.02E-11	2.22E-17
BA142+D	2.13E-08	2.19E-11	1.34E-09	0.	1.85E-11	1.24E-11	3.00E-26
LA140	2.50E-09	1.26E-09	3.33E-10	0.	0.	0.	9.25E-05
LA141	3.19E-10	9.90E-11	1.62E-11	0.	0.	0.	1.18E-05
LA142	1.28E-10	5.82E-11	1.45E-11	0.	0.	0.	4.25E-07
CE141	9.36E-09	6.33E-09	7.18E-10	0.	2.94E-09	0.	2.42E-05
CE143+D	1.65E-09	1.22E-06	1.35E-10	0.	5.37E-10	0.	4.56E-05
CE144+D	4.88E-07	2.04E-07	2.62E-08	0.	1.21E-07	0.	1.65E-04
PR143	9.20E-09	3.69E-09	4.56E-10	0.	2.13E-09	0.	4.03E-05
PR144	3.01E-11	1.25E-11	1.53E-12	0.	7.05E-12	0.	4.33E-18
ND147+D	5.29E-09	7.27E-09	4.35E-10	0.	4.25E-09	0.	3.49E-05
PM147	7.54E-08	7.09E-09	2.87E-09	0.	1.34E-08	0.	8.93E-06
PM148M+D	3.07E-08	7.95E-09	6.08E-09	0.	1.20E-08	0.	6.74E-05
PM148	7.17E-09	1.19E-09	5.99E-10	0.	2.25E-09	0.	9.35E-05
PM149	1.52E-09	2.15E-10	8.78E-11	0.	4.06E-10	0.	4.03E-05
PM151	6.97E-10	1.17E-10	5.91E-11	0.	2.09E-10	0.	3.22E-05
SM151	6.90E-08	1.19E-08	2.85E-09	0.	1.33E-08	0.	5.25E-06
SM153	8.57E-10	7.15E-10	5.22E-11	0.	2.31E-10	0.	2.55E-05
EU152	1.95E-07	4.44E-08	3.90E-08	0.	2.75E-07	0.	2.56E-05
EU154	6.15E-07	7.56E-08	5.38E-08	0.	3.62E-07	0.	5.48E-05
EU155	8.60E-08	1.22E-08	7.87E-09	0.	5.63E-08	0.	9.60E-06
EU156	1.37E-08	1.06E-08	1.71E-09	0.	7.08E-09	0.	7.26E-05
TB160	4.70E-08	0.	5.86E-09	0.	1.94E-08	0.	4.33E-05
HO166M	2.70E-07	8.43E-08	6.40E-08	0.	1.26E-07	0.	0.
W181	9.91E-09	3.23E-09	3.46E-10	0.	0.	0.	3.68E-07
W185	4.05E-07	1.35E-07	1.42E-08	0.	0.	0.	1.56E-05
W187	1.03E-07	8.61E-08	3.01E-08	0.	0.	0.	2.82E-05

TABLE 4 (contd)

ADULT INGESTION DOSE COMMITMENT FACTORS(MREM/50Y PER PCI INGESTED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
PB210+D	1.53E-02	4.37E-03	5.44E-04	0.	1.23E-02	0.	5.42E-05
BI210+D	4.61E-07	3.18E-06	3.96E-08	0.	3.83E-05	0.	4.75E-05
PO210	3.56E-04	7.56E-04	8.59E-05	0.	2.52E-03	0.	6.36E-05
RN222+D	0.	0.	0.	0.	0.	0.	0.
RA223+D	4.97E-03	7.65E-06	9.94E-04	0.	2.17E-04	0.	3.21E-04
RA224+D	1.61E-03	3.90E-06	3.23E-04	0.	1.10E-04	0.	3.40E-04
RA225+D	5.56E-03	7.78E-06	1.31E-03	0.	2.21E-04	0.	3.06E-04
RA226+D	3.02E-01	5.74E-06	2.20E-01	0.	1.63E-04	0.	3.32E-04
RA228+D	1.12E-01	3.12E-06	1.21E-01	0.	8.83E-05	0.	5.64E-05
AC225	4.40E-06	6.06E-06	2.96E-07	0.	6.90E-07	0.	4.07E-04
AC227+D	1.87E-03	2.48E-04	1.11E-04	0.	8.00E-05	0.	8.19E-05
TH227+D	1.37E-05	2.48E-07	3.95E-07	0.	1.41E-06	0.	5.40E-04
TH228+D	4.96E-04	8.40E-06	1.68E-05	0.	4.67E-05	0.	5.63E-04
TH229	7.95E-03	1.19E-04	3.91E-04	0.	5.75E-04	0.	5.12E-04
TH230	2.06E-03	1.17E-04	5.70E-05	0.	5.65E-04	0.	6.02E-05
TH232+D	2.30E-03	1.00E-04	1.50E-04	0.	4.82E-04	0.	5.12E-05
TH234	8.01E-08	4.71E-09	2.31E-09	0.	2.67E-08	0.	1.13E-04
PA231+D	4.10E-03	1.54E-04	1.59E-04	0.	8.64E-04	0.	7.17E-05
PA233	5.26E-09	1.06E-09	9.12E-10	0.	3.99E-09	0.	1.64E-05
U232+D	4.13E-03	0.	2.95E-04	0.	4.47E-04	0.	6.78E-05
U233+D	8.71E-04	0.	5.28E-05	0.	2.03E-04	0.	6.27E-05
U234	8.36E-04	0.	5.17E-05	0.	1.99E-04	0.	6.14E-05
U235+D	8.01E-04	0.	4.86E-05	0.	1.87E-04	0.	7.81E-05
U236	8.01E-04	0.	4.96E-05	0.	1.91E-04	0.	5.76E-05
U237	5.52E-08	0.	1.47E-08	0.	2.27E-07	0.	1.94E-05
U238+D	7.67E-04	0.	4.54E-05	0.	1.75E-04	0.	5.50E-05
NP237+D	1.37E-03	1.19E-04	5.54E-05	0.	4.12E-04	0.	7.94E-05
NP238	1.37E-08	3.69E-10	2.13E-10	0.	1.25E-09	0.	3.43E-05
NP239	1.19E-09	1.17E-10	6.45E-11	0.	3.65E-10	0.	2.40E-05
PU238	6.80E-04	9.58E-05	1.71E-05	0.	7.32E-05	0.	7.30E-05
PU239	7.87E-04	1.06E-04	1.91E-05	0.	8.11E-05	0.	6.66E-05
PU240	7.85E-04	1.06E-04	1.91E-05	0.	8.10E-05	0.	6.78E-05
PU241+D	1.65E-05	8.44E-07	3.32E-07	0.	1.53E-06	0.	1.40E-06
PU242	7.29E-04	1.02E-04	1.84E-05	0.	7.81E-05	0.	6.53E-05
PU244	8.52E-04	1.17E-04	2.11E-05	0.	8.95E-05	0.	9.73E-05
AM241	8.19E-04	2.88E-04	5.41E-05	0.	4.07E-04	0.	7.42E-05
AM242M	8.24E-04	2.78E-04	5.43E-05	0.	4.05E-04	0.	9.34E-05
AM243	8.18E-04	2.78E-04	5.30E-05	0.	3.99E-04	0.	8.70E-05
CM242	2.06E-05	2.10E-05	1.37E-06	0.	6.22E-06	0.	7.92E-05
CM243	5.39E-04	2.41E-04	3.75E-05	0.	1.75E-04	0.	7.81E-05
CM244	4.83E-04	2.07E-04	2.87E-05	0.	1.34E-04	0.	7.55E-05
CM245	1.02E-03	2.87E-04	5.76E-05	0.	2.69E-04	0.	7.04E-05
CM246	1.01E-03	2.87E-04	5.75E-05	0.	2.68E-04	0.	6.91E-05
CM247+D	9.84E-04	2.83E-04	5.67E-05	0.	2.64E-04	0.	9.09E-05
CM248	8.18E-03	2.33E-03	4.67E-04	0.	2.18E-03	0.	1.47E-03
CF252	2.64E-04	0.	6.29E-06	0.	0.	0.	2.88E-04

TABLE 5

INFANT INHALATION DOSE COMMITMENT FACTORS(MREM/50Y PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
H3*	0.	4.62E-07	4.62E-07	4.62E-07	4.62E-07	4.62E-07	4.62E-07
BE10	9.49E-04	1.25E-04	2.65E-05	0.	0.	1.49E-03	1.73E-05
C14	1.89E-05	3.79E-06	3.79E-06	3.79E-06	3.79E-06	3.79E-06	3.79E-06
N13	4.39E-08	4.39E-08	4.39E-08	4.39E-08	4.39E-08	4.39E-08	4.39E-08
F18	3.92E-06	0.	3.33E-07	0.	0.	0.	6.10E-07
NA22	7.37E-05	7.37E-05	7.37E-05	7.37E-05	7.37E-05	7.37E-05	7.37E-05
NA24	7.54E-06	7.54E-06	7.54E-06	7.54E-06	7.54E-06	7.54E-06	7.54E-06
P32	1.45E-03	8.03E-05	5.53E-05	0.	0.	0.	1.15E-05
AR39	0.	0.	0.	0.	0.	1.00E-08	0.
AR41	0.	0.	0.	0.	0.	3.14E-08	0.
CA41	7.48E-05	0.	8.16E-06	0.	0.	6.94E-02	2.96E-07
SC46	3.75E-04	5.41E-04	1.69E-04	0.	3.56E-04	0.	2.19E-05
CR51	0.	0.	6.39E-08	4.11E-08	9.45E-09	9.17E-06	2.55E-07
MN54	0.	1.81E-05	3.56E-06	0.	3.56E-06	7.14E-04	5.04E-06
MN56	0.	1.10E-09	1.58E-10	0.	7.86E-10	8.95E-06	5.12E-05
FE55	1.41E-05	8.39E-06	2.38E-06	0.	0.	6.21E-05	7.82E-07
FE59	9.69E-06	1.68E-05	6.77E-06	0.	0.	7.25E-04	1.77E-05
CO57	0.	4.65E-07	4.58E-07	0.	0.	2.71E-04	3.47E-06
CO58	0.	8.71E-07	1.30E-06	0.	0.	5.55E-04	7.95E-06
CO60	0.	5.73E-06	8.41E-06	0.	0.	3.22E-03	2.28E-05
NI59	1.81E-05	5.44E-06	3.10E-06	0.	0.	5.48E-05	6.34E-07
NI63	2.42E-04	1.46E-05	8.29E-06	0.	0.	1.49E-04	1.73E-06
I65	1.71E-09	2.03E-10	8.79E-11	0.	0.	5.80E-06	3.58E-05
CU64	0.	1.34E-09	5.53E-10	0.	2.84E-09	6.64E-06	1.07E-05
ZN65	1.38E-05	4.47E-05	2.22E-05	0.	2.32E-05	4.62E-04	3.67E-05
ZN69M+D	8.98E-09	1.84E-08	1.67E-09	0.	7.45E-09	1.91E-05	2.92E-05
ZN69	3.65E-11	6.91E-11	5.13E-12	0.	2.87E-11	1.05E-06	9.44E-06
SE79	0.	2.25E-06	4.20E-07	0.	2.47E-06	2.99E-04	3.46E-06
BR82	0.	0.	9.49E-06	0.	0.	0.	0.
BR83+D	0.	0.	2.72E-07	0.	0.	0.	0.
BR84	0.	0.	2.86E-07	0.	0.	0.	0.
BR85	0.	0.	1.46E-08	0.	0.	0.	0.
KR83M	0.	0.	0.	0.	0.	2.50E-09	0.
KR85M	0.	0.	0.	0.	0.	1.31E-08	0.
KR85	0.	0.	0.	0.	0.	1.16E-08	0.
KR87	0.	0.	0.	0.	0.	6.59E-08	0.
KR88+D	0.	0.	0.	0.	0.	1.38E-07	0.
KR89	0.	0.	0.	0.	0.	8.67E-08	0.
RB86	0.	1.36E-04	6.30E-05	0.	0.	0.	2.17E-06
RB87	0.	7.11E-05	2.64E-05	0.	0.	0.	2.99E-07
RB88	0.	3.98E-07	2.05E-07	0.	0.	0.	2.42E-07
RB89+D	0.	2.29E-07	1.47E-07	0.	0.	0.	4.87E-08
SR89+D	2.84E-04	0.	8.15E-06	0.	0.	1.45E-03	4.57E-05
SR90+D	2.92E-02	0.	1.85E-03	0.	0.	8.03E-03	9.36E-05
SR91+D	5.83E-08	0.	2.47E-09	0.	0.	3.76E-05	5.24E-05
SR92+D	7.50E-09	0.	2.79E-10	0.	0.	1.70E-05	1.00E-04

*Includes a 50% increase to account for percutaneous transpiration.

TABLE 5 (contd)

INFANT INHALATION DOSE COMMITMENT FACTORS(MREM/50Y PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
Y90	2.35E-06	0.	6.30E-08	0.	0.	1.92E-04	7.43E-05
Y91M+D	2.91E-10	0.	9.90E-12	0.	0.	1.99E-06	1.68E-06
Y91	4.20E-04	0.	1.12E-05	0.	0.	1.75E-03	5.02E-05
Y92	1.17E-08	0.	3.29E-10	0.	0.	1.75E-05	9.04E-05
Y93	1.07E-07	0.	2.91E-09	0.	0.	5.46E-05	1.19E-04
ZR93+D	2.24E-04	9.51E-05	6.18E-05	0.	3.19E-04	1.37E-03	1.48E-05
ZR95+D	8.24E-05	1.99E-05	1.45E-05	0.	2.22E-05	1.25E-03	1.55E-05
ZR97+D	1.07E-07	1.83E-08	8.36E-09	0.	1.85E-08	7.88E-05	1.00E-04
NB93M	1.38E-04	3.59E-05	1.15E-05	0.	3.68E-05	2.09E-04	2.47E-06
NB95	1.12E-05	4.59E-06	2.70E-06	0.	3.37E-06	3.42E-04	9.05E-06
NB97	2.44E-10	5.21E-11	1.88E-11	0.	4.07E-11	2.37E-06	1.92E-05
MO93	0.	6.46E-06	2.22E-07	0.	1.54E-06	3.40E-04	3.76E-06
MO99+D	0.	1.18E-07	2.31E-08	0.	1.89E-07	9.63E-05	3.48E-05
TC99M	9.98E-13	2.06E-12	2.66E-11	0.	2.22E-11	5.79E-07	1.45E-06
TC99	2.09E-07	2.68E-07	8.85E-08	0.	2.49E-06	6.77E-04	7.82E-06
TC101	4.65E-14	5.88E-14	5.80E-13	0.	6.99E-13	4.17E-07	6.03E-07
RU103+D	1.44E-06	0.	4.85E-07	0.	3.03E-06	3.94E-04	1.15E-05
RU105+D	8.74E-10	0.	2.93E-10	0.	6.42E-10	1.12E-05	3.46E-05
RU106+D	6.20E-05	0.	7.77E-06	0.	7.61E-05	8.26E-03	1.17E-04
RH105	8.26E-09	5.41E-09	3.63E-09	0.	1.50E-08	2.08E-05	1.37E-05
PD107	0.	4.92E-07	4.11E-08	0.	2.75E-06	6.34E-05	7.33E-07
PD109	0.	3.92E-09	1.05E-09	0.	1.28E-08	1.68E-05	2.85E-05
AG110M+D	7.13E-06	5.16E-06	3.57E-06	0.	7.80E-06	2.62E-03	2.36E-05
AG111	3.75E-07	1.45E-07	7.75E-08	0.	3.05E-07	2.06E-04	3.02E-05
CD113M	0.	6.67E-04	2.64E-05	0.	5.80E-04	1.40E-03	1.65E-05
CD115M	0.	1.73E-04	6.19E-06	0.	9.41E-05	1.47E-03	5.02E-05
SN123	2.09E-04	4.21E-06	7.28E-06	4.27E-06	0.	2.22E-03	4.08E-05
SN125+D	1.01E-05	2.51E-07	6.00E-07	2.47E-07	0.	6.43E-04	7.26E-05
SN126+D	8.30E-04	1.44E-05	3.52E-05	3.84E-06	0.	4.93E-03	1.65E-05
SB124	2.71E-05	3.97E-07	8.56E-06	7.18E-08	0.	1.89E-03	4.22E-05
SB125+D	3.69E-05	3.41E-07	7.78E-06	4.45E-08	0.	1.17E-03	1.05E-05
SB126	3.08E-06	6.01E-08	1.11E-06	2.35E-08	0.	6.88E-04	5.33E-05
SB127	2.82E-07	5.04E-09	8.76E-08	3.60E-09	0.	1.54E-04	3.78E-05
TE125M	3.40E-06	1.42E-06	4.70E-07	1.16E-06	0.	3.19E-04	9.22E-06
TE127M+D	1.19E-05	4.93E-06	1.48E-06	3.48E-06	2.68E-05	9.37E-04	1.95E-05
TE127	1.59E-09	6.81E-10	3.49E-10	1.32E-09	3.47E-09	7.39E-06	1.74E-05
TE129M+D	1.01E-05	4.35E-06	1.59E-06	3.91E-06	2.27E-05	1.20E-03	4.93E-05
TE129	5.63E-1'	2.48E-11	1.34E-11	4.82E-11	1.25E-10	2.14E-06	1.88E-05
TE131M+D	7.62E-08	3.93E-08	2.59E-08	6.38E-08	1.89E-07	1.42E-04	8.51E-05
TE131+D	1.24E-11	5.87E-12	3.57E-12	1.13E-11	2.85E-11	1.47E-06	5.87E-06
TE132+D	2.66E-07	1.69E-07	1.26E-07	1.99E-07	7.39E-07	2.43E-04	3.15E-05
TE133M+D	5.13E-11	3.59E-11	2.74E-11	5.52E-11	1.72E-10	3.92E-06	1.59E-05
TE134+D	3.18E-11	2.04E-11	1.68E-11	2.91E-11	9.59E-11	2.93E-06	2.53E-06
I129	2.16E-05	1.59E-05	1.16E-05	1.04E-02	1.88E-05	0.	2.12E-07
I130	4.54E-06	9.91E-06	3.98E-06	1.14E-03	1.09E-05	0.	1.42E-06
I131+D	2.71E-05	3.17E-05	1.40E-05	1.06E-02	3.70E-05	0.	7.56E-07

TABLE 5 (contd)

Page 3 of 4

INFANT INHALATION DOSE COMMITMENT FACTORS(MREM/SOY PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
I132	1.21E-06	2.53E-06	8.99E-07	1.21E-04	2.82E-06	0.	1.36E-06
I133+D	9.46E-06	1.37E-05	4.00E-06	2.54E-03	1.60E-05	0.	1.54E-06
I134	6.58E-07	1.34E-06	4.75E-07	3.18E-05	1.49E-06	0.	9.21E-07
I135+D	2.76E-06	5.43E-06	1.98E-06	4.97E-04	6.05E-06	0.	1.31E-06
XE131M	0.	0.	0.	0.	0.	6.77E-09	0.
XE133M	0.	0.	0.	0.	0.	8.89E-09	0.
XE133	0.	0.	0.	0.	0.	7.41E-09	0.
XE135M	0.	0.	0.	0.	0.	8.05E-09	0.
XE135	0.	0.	0.	0.	0.	1.80E-08	0.
XE137	0.	0.	0.	0.	0.	8.30E-08	0.
XE138+D	0.	0.	0.	0.	0.	9.78E-06	0.
CS134M+D	1.32E-07	2.10E-07	1.11E-07	0.	8.50E-08	2.00E-08	1.16E-07
CS134	2.83E-04	5.02E-04	5.32E-05	0.	1.36E-04	5.69E-05	9.53E-07
CS135	1.00E-04	8.66E-05	4.73E-06	0.	2.58E-05	1.01E-05	2.18E-07
CS136	3.45E-05	9.61E-05	3.78E-05	0.	4.03E-05	8.40E-06	1.02E-06
CS137+D	3.92E-04	4.37E-04	3.25E-05	0.	1.23E-04	5.09E-05	9.53E-07
CS138	3.61E-07	5.58E-07	2.84E-07	0.	2.93E-07	4.67E-08	6.26E-07
CS139+D	2.32E-07	3.03E-07	1.22E-07	0.	1.65E-07	2.53E-08	1.33E-08
BA139	1.06E-09	7.03E-13	3.07E-11	0.	4.23E-13	4.25E-06	3.64E-05
BA140+D	4.00E-05	4.00E-08	2.07E-06	0.	9.59E-09	1.14E-03	2.74E-05
BA141+D	1.12E-10	7.70E-14	3.55E-12	0.	4.64E-14	2.12E-06	3.39E-06
BA142+D	2.84E-11	2.36E-14	1.40E-12	0.	1.36E-14	1.11E-06	4.95E-07
LA140	3.61E-07	1.43E-07	3.68E-08	0.	0.	1.20E-04	6.06E-05
LA141	4.85E-09	1.40E-09	2.45E-10	0.	0.	1.22E-05	5.96E-05
LA142	7.36E-10	2.69E-10	6.46E-11	0.	0.	5.87E-06	4.25E-05
CE141	1.98E-05	1.19E-05	1.42E-06	0.	3.75E-06	3.69E-04	1.54E-05
CE143+D	2.09E-07	1.38E-07	1.58E-08	0.	4.03E-08	8.30E-05	3.55E-05
CE144+D	2.28E-03	8.65E-04	1.26E-04	0.	3.84E-04	7.03E-03	1.06E-04
PR143	1.00E-05	3.74E-06	4.99E-07	0.	1.41E-06	3.09E-04	2.66E-05
PR144	3.42E-11	1.32E-11	1.72E-12	0.	4.80E-12	1.15E-06	3.06E-06
ND147+D	5.67E-06	5.81E-06	3.57E-07	0.	2.25E-06	2.30E-04	2.23E-05
PM147	3.91E-04	3.07E-05	1.56E-05	0.	4.93E-05	4.55E-04	5.75E-06
PM148M+D	5.00E-05	1.24E-05	9.94E-06	0.	1.45E-05	1.22E-03	3.37E-05
PM148	3.34E-06	4.82E-07	2.44E-07	0.	5.76E-07	3.20E-04	6.04E-05
PM149	3.10E-07	4.08E-08	1.78E-08	0.	4.96E-08	6.50E-05	3.01E-05
PM151	7.52E-08	1.10E-08	5.55E-09	0.	1.30E-08	3.25E-05	2.58E-05
SM151	3.38E-04	6.45E-05	1.63E-05	0.	5.24E-05	2.98E-04	3.46E-06
SM153	1.53E-07	1.18E-07	9.06E-09	0.	2.47E-08	3.70E-05	1.93E-05
EU152	7.83E-04	1.77E-04	1.72E-04	0.	5.94E-04	1.48E-03	9.88E-06
EU154	2.96E-03	3.46E-04	2.45E-04	0.	1.14F-03	3.05E-03	2.84E-05
EU155	5.97E-04	5.72E-05	3.46E-05	0.	1.58E-04	5.20E-04	5.19E-05
EU156	1.56E-05	9.59E-06	1.54E-06	0.	4.48E-06	6.12E-04	4.14E-05
TB160	1.12E-04	0.	1.40E-05	0.	3.20E-05	1.11E-03	2.14E-05
HO166M	1.45E-03	3.07E-04	2.51E-04	0.	4.22E-04	2.05E-03	1.65E-05
W181	4.86E-08	1.46E-08	1.67E-09	0.	0.	1.33E-05	2.63E-07
W185	1.57E-06	4.83E-07	5.58E-08	0.	0.	4.48E-04	1.12E-05
W187	9.26E-09	6.44E-09	2.23E-09	0.	0.	2.83E-05	2.54E-05

TABLE 5 (contd)

INFANT INHALATION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
PM210+D	8.62E-02	2.02E-02	3.43E-03	0.	6.85E-02	1.76E-01	3.79E-05
BI210+D	0.	1.33E-05	1.18E-06	0.	1.03E-04	9.96E-03	3.27E-05
PO210	2.98E-03	5.63E-03	7.12E-04	0.	1.30E-02	2.40E-01	4.36E-05
RN222+D	0.	0.	0.	0.	0.	9.88E-06	0.
RA223+D	1.56E-03	2.26E-06	3.12E-04	0.	4.16E-05	2.25E-01	3.04E-04
RA224+D	1.77E-04	4.00E-07	3.54E-05	0.	7.30E-06	7.91E-02	3.42E-04
RA225+D	2.57E-03	2.88E-06	5.13E-04	0.	5.31E-05	2.57E-01	2.87E-04
RA226+D	2.48E-01	1.46E-05	2.05E-01	0.	2.94E-04	7.83E-01	3.05E-04
RA228+D	1.60E-01	7.61E-06	1.50E-01	0.	1.53E-04	1.09E+00	5.19E-05
AC225	3.69E-03	4.72E-03	2.48E-04	0.	3.49E-04	1.96E-01	2.71E-04
AC227+D	5.29E+00	8.76E-01	3.28E-01	0.	1.86E-01	1.62E+00	5.27E-05
TH227+D	1.82E-03	3.03E-05	5.24E-05	0.	1.13E-04	3.27E-01	3.53E-04
TH228+D	8.45E-01	1.10E-02	2.86E-02	0.	5.61E-02	4.65E+00	3.62E-04
TH229	1.34E+01	1.82E-01	6.62E-01	0.	8.99E-01	1.22E+01	3.29E-04
TH230	3.46E+00	1.79E-01	9.65E-02	0.	8.82E-01	2.18E+00	3.87E-05
TH232+D	3.86E+00	1.53E-01	2.29E-01	0.	7.54E-01	2.09E+00	3.29E-05
TH234	1.33E-05	7.17E-07	3.84E-07	0.	2.70E-06	1.62E-03	7.40E-05
PA231+D	9.10E+00	3.00E-01	3.62E-01	0.	1.62E+00	3.85E-01	4.61E-05
PA233	6.84E-06	1.32E-06	1.19E-06	0.	3.68E-06	2.19E-04	9.04E-06
U232+D	2.57E-01	0.	2.13E-02	0.	2.40E-02	1.49E+00	4.36E-05
U233+D	5.44E-02	0.	3.83E-03	0.	1.09E-02	3.56E-01	4.03E-05
U234	5.22E-02	0.	3.75E-03	0.	1.07E-02	3.49E-01	3.95E-05
U235+D	5.01E-02	0.	3.52E-03	0.	1.01E-02	3.28E-01	5.02E-05
U236	5.01E-02	0.	3.60E-03	0.	1.03E-02	3.35E-01	3.71E-05
U237	3.25E-07	0.	8.65E-08	0.	8.08E-07	9.13E-05	1.31E-05
U238+D	4.79E-02	0.	3.29E-03	0.	9.40E-03	3.06E-01	3.54E-05
NP237+D	3.03E+00	2.32E-01	1.26E-01	0.	7.69E-01	3.49E-01	5.10E-05
NP238	2.57E-06	6.73E-08	4.16E-08	0.	1.47E-07	9.19E-05	2.58E-05
NP239	2.65E-07	2.37E-08	1.34E-08	0.	4.73E-08	4.25E-05	1.78E-05
PU238	5.02E+00	6.33E-01	1.27E-01	0.	4.64E-01	9.03E-01	4.69E-05
PU239	5.50E+00	6.72E-01	1.34E-01	0.	4.95E-01	8.47E-01	4.28E-05
PU240	5.49E+00	6.71E-01	1.34E-01	0.	4.94E-01	8.47E-01	4.36E-05
PU241+D	1.55E-01	6.69E-03	3.11E-03	0.	1.15E-02	7.62E-04	8.97E-07
PU242	5.09E+00	6.47E-01	1.29E-01	0.	4.77E-01	8.15E-01	4.20E-05
PU244	5.95E+00	7.40E-01	1.48E-01	0.	5.46E-01	9.33E-01	6.26E-05
AM241	1.84E+00	8.44E-01	1.31E-01	0.	7.94E-01	4.06E-01	4.78E-05
AM242M	1.90E+00	8.24E-01	1.35E-01	0.	8.03E-01	1.64E-01	6.01E-05
AM243	1.82E+00	8.10E-01	1.27E-01	0.	7.72E-01	3.85E-01	5.60E-05
CM242	8.58E-02	7.44E-02	5.70E-03	0.	1.69E-02	2.97E-01	5.10E-05
CM243	1.71E+00	7.94E-01	1.06E-01	0.	3.91E-01	4.24E-01	5.02E-05
CM244	1.43E+00	7.04E-01	8.89E-02	0.	3.21E-01	4.08E-01	4.86E-05
CM245	2.26E+00	8.80E-01	1.36E-01	0.	5.23E-01	3.92E-01	4.53E-05
CM246	2.24E+00	8.79E-01	1.36E-01	0.	5.23E-01	3.99E-01	4.45E-05
CM247+D	2.18E+00	8.64E-01	1.33E-01	0.	5.15E-01	3.92E-01	5.85E-05
CM248	1.82E+01	7.12E+00	1.10E+00	0.	4.24E+00	3.23E+00	9.43E-04
CF252	4.26E+00	0.	1.01E-01	0.	0.	1.37E+00	1.85E-04

TABLE 6

CHILD INHALATION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
H3*	0.	3.04E-07	3.04E-07	3.04E-07	3.04E-07	3.04E-07	3.04E-07
BE10	8.43E-04	9.83E-05	2.12E-05	0.	0.	7.41E-04	1.72E-05
C14	9.70E-06	1.82E-06	1.82E-06	1.82E-06	1.82E-06	1.82E-06	1.82E-06
N13	2.33E-08	2.33E-08	2.33E-08	2.33E-08	2.33E-08	2.33E-08	2.33E-08
F18	1.88E-06	0.	1.85E-07	0.	0.	0.	3.37E-07
NA22	4.41E-05	4.41E-05	4.41E-05	4.41E-05	4.41E-05	4.41E-05	4.41E-05
NA24	4.35E-06	4.35E-06	4.35E-06	4.35E-06	4.35E-06	4.35E-06	4.35E-06
P32	7.04E-04	3.09E-05	2.67E-05	0.	0.	0.	1.14E-05
AR39	0.	0.	0.	0.	0.	4.89E-09	0.
AR41	0.	0.	0.	0.	0.	1.68E-08	0.
CA41	7.06E-05	0.	7.70E-06	0.	0.	7.21E-02	2.94E-07
SC46	1.97E-04	2.70E-04	1.04E-04	0.	2.39E-04	0.	2.45E-05
CR51	0.	0.	4.17E-08	2.31E-08	6.57E-09	4.59E-06	2.93E-07
MN54	0.	1.16E-05	2.57E-06	0.	2.71E-06	4.26E-04	6.19E-06
MN56	0.	4.48E-10	8.43E-11	0.	4.52E-10	3.55E-06	3.33E-05
FE55	1.28E-05	6.80E-06	2.10E-06	0.	0.	3.00E-05	7.75E-07
FE59	5.59E-06	9.04E-06	4.51E-06	0.	0.	3.43E-04	1.91E-05
CO57	0.	2.44E-07	2.88E-07	0.	0.	1.37E-04	3.58E-06
CO58	0.	4.79E-07	8.55E-07	0.	0.	2.99E-04	9.29E-06
CO60	0.	3.55E-06	6.12E-06	0.	0.	1.91E-03	2.60E-05
NI59	1.66E-05	4.67E-06	2.83E-06	0.	0.	2.73E-05	6.29E-07
NI63	2.22E-04	1.25E-05	7.56E-06	0.	0.	7.43E-05	1.71E-06
NI65	8.08E-10	7.99E-11	4.44E-11	0.	0.	2.21E-06	2.27E-05
CU64	0.	5.39E-10	2.90E-10	0.	1.63E-09	2.59E-06	9.92E-06
ZN65	1.15E-05	3.06E-05	1.90E-05	0.	1.93E-05	2.69E-04	4.41E-06
ZN69M+D	4.26E-09	7.28E-09	8.59E-10	0.	4.22E-09	7.36E-06	2.71E-05
ZN69	1.81E-11	2.61E-11	2.41E-12	0.	1.58E-11	3.84E-07	2.75E-06
SE79	0.	1.23E-06	2.60E-07	0.	1.71E-06	1.49E-04	3.43E-06
BR82	0.	0.	5.66E-06	0.	0.	0.	0.
BR83+D	0.	0.	1.28E-07	0.	0.	0.	0.
BR84	0.	0.	1.48E-07	0.	0.	0.	0.
BR85	0.	0.	6.84E-09	0.	0.	0.	0.
KR83M	0.	0.	0.	0.	0.	1.22E-09	0.
KR85M	0.	0.	0.	0.	0.	6.58E-09	0.
KR85	0.	0.	0.	0.	0.	5.66E-09	0.
KR87	0.	0.	0.	0.	0.	3.38E-08	0.
KR88+D	0.	0.	0.	0.	0.	6.99E-08	0.
KR89	0.	0.	0.	0.	0.	4.55E-08	0.
RB86	0.	5.36E-05	3.09E-05	0.	0.	0.	2.16E-06
RB87	0.	3.16E-05	1.37E-05	0.	0.	0.	2.96E-07
RB88	0.	1.52E-07	9.90E-08	0.	0.	0.	4.66E-09
RB89+D	0.	9.33E-08	7.83E-08	0.	0.	0.	5.11E-10
SR89+D	1.62E-04	0.	4.66E-06	0.	0.	5.83E-04	4.52E-05
SR90+D	2.73E-02	0.	1.74E-03	0.	0.	3.99E-03	9.28E-05
SR91+D	3.28E-08	0.	1.24E-09	0.	0.	1.44E-05	4.70E-05
SR92+D	3.54E-09	0.	1.42E-10	0.	0.	6.49E-06	6.55E-05

*Includes a 50% increase to account for percutaneous transpiration.

TABLE 6 (contd)

CHILD INHALATION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
Y90	1.11E-06	0.	2.99E-08	0.	0.	7.07E-05	7.24E-05
Y91M+D	1.37E-10	0.	4.98E-12	0.	0.	7.60E-07	4.64E-07
Y91	2.47E-04	0.	6.59E-06	0.	0.	7.10E-04	4.97E-05
Y92	5.50E-09	0.	1.57E-10	0.	0.	6.46E-06	6.46E-05
Y93	5.04E-08	0.	1.38E-09	0.	0.	2.01E-05	1.05E-04
ZR93+D	2.07E-04	7.80E-05	5.55E-05	0.	3.00E-04	7.10E-04	1.47E-05
ZR95+D	5.13E-05	1.13E-05	1.00E-05	0.	1.61E-05	6.03E-04	1.65E-05
ZR97+D	5.07E-08	7.34E-09	4.32E-09	0.	1.05E-08	3.06E-05	9.49E-05
NB93M	1.27E-04	3.17E-05	1.04E-05	0.	3.44E-05	1.04E-04	2.45E-06
NB95	6.35E-06	2.48E-06	1.77E-06	0.	2.33E-06	1.66E-04	1.00E-05
NB97	1.16E-10	2.08E-11	9.74E-12	0.	2.31E-11	9.23E-07	7.52E-06
MO93	0.	3.76E-06	1.35E-07	0.	1.06E-06	1.70E-04	3.78E-06
MO99+D	0.	4.66E-08	1.15E-08	0.	1.06E-07	3.66E-05	3.42E-05
TC99M	4.81E-13	9.41E-13	1.56E-11	0.	1.37E-11	2.57E-07	1.30E-06
TC99	1.34E-07	1.49E-07	5.35E-08	0.	1.75E-06	3.37E-04	7.75E-06
TC101	2.19E-14	2.30E-14	2.91E-13	0.	3.92E-13	1.58E-07	4.41E-09
RU103+D	7.55E-07	0.	2.90E-07	0.	1.90E-06	1.79E-04	1.21E-05
RU105+D	4.13E-10	0.	1.50E-10	0.	3.63E-10	4.30E-06	2.69E-05
RU106+D	3.68E-05	0.	4.57E-06	0.	4.97E-05	3.87E-03	1.16E-04
RH105	3.91E-09	2.10E-09	1.79E-09	0.	8.39E-09	7.82E-06	1.33E-05
PD107	0.	2.65E-07	2.51E-08	0.	1.97E-06	3.16E-05	7.26E-07
PD109	0.	1.48E-09	4.95E-10	0.	7.06E-09	6.16E-06	2.59E-05
AG110M+D	4.56E-06	3.08E-06	2.47E-06	0.	5.74E-06	1.48E-03	2.71E-05
AG111	1.81E-07	5.68E-08	3.75E-08	0.	1.71E-07	7.73E-05	2.98E-05
CD113M	0.	4.93E-04	2.12E-05	0.	5.13E-04	6.94E-04	1.63E-05
CD115M	0.	7.88E-05	3.39E-06	0.	5.93E-05	5.86E-04	4.97E-05
SN123	1.29E-04	2.14E-06	4.19E-06	2.27E-06	0.	9.59E-04	4.05E-05
SN125+D	4.95E-06	9.94E-08	2.95E-07	1.03E-07	0.	2.43E-04	7.17E-05
SN126+D	5.23E-04	1.04E-05	2.36E-05	2.84E-06	0.	3.02E-03	1.63E-05
SB124	1.55E-05	2.00E-07	5.41E-06	3.41E-08	0.	8.76E-04	4.43E-05
SB125+D	2.66E-05	2.05E-07	5.59E-06	2.46E-08	0.	6.27E-04	1.09E-05
SB126	1.72E-06	2.62E-08	6.16E-07	1.00E-08	0.	2.86E-04	5.67E-05
SB127	1.36E-07	2.09E-09	4.70E-08	1.51E-09	0.	6.17E-05	3.82E-05
TE125M	1.82E-06	6.29E-07	2.47E-07	5.20E-07	0.	1.29E-04	9.13E-06
TE127M+D	5.72E-06	2.31E-06	8.16E-07	1.64E-06	1.72E-05	4.00E-04	1.93E-05
TE127	7.49E-10	2.57E-10	1.65E-10	5.30E-10	1.91E-09	2.71E-06	1.52E-05
TE129M+D	5.19E-06	1.85E-06	8.22E-07	1.71E-06	1.36E-05	4.76E-04	4.91E-05
TE129	2.64E-11	9.45E-12	6.44E-12	1.93E-11	6.94E-11	7.93E-07	6.89E-06
TE131M+D	3.63E-08	1.60E-08	1.37E-08	2.64E-08	1.08E-07	5.56E-05	8.32E-05
TE131+D	5.87E-12	2.28E-12	1.78E-12	4.59E-12	1.59E-11	5.55E-07	3.60E-07
TE132+D	1.30E-07	7.36E-08	7.12E-08	8.58E-08	4.79E-07	1.02E-04	3.72E-05
TE133M+D	2.93E-11	1.51E-11	1.50E-11	2.32E-11	1.01E-10	1.60E-06	4.77E-06
TE134+D	1.53E-11	8.81E-12	9.40E-12	1.24E-11	5.71E-11	1.23E-06	4.87E-07
I129	1.05E-05	6.40E-06	5.71E-06	4.28E-03	1.08E-05	0.	2.15E-07
I130	2.21E-06	4.43E-06	2.28E-06	4.99E-04	6.61E-06	0.	1.38E-06
I131+D	1.30E-05	1.30E-05	7.37E-06	4.39E-03	2.13E-05	0.	7.68E-07

TABLE 6 (contd)

CHILD INHALATION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
I132	5.72E-07	1.10E-06	5.07E-07	5.23E-05	1.69E-06	0.	8.65E-07
I133+D	4.48E-06	5.49E-06	2.08E-06	1.04E-03	9.13E-06	0.	1.48E-06
I134	3.17E-07	5.84E-07	2.69E-07	1.37E-05	8.92E-07	0.	2.58E-07
I135+D	1.33E-06	2.36E-06	1.12E-06	2.14E-04	3.62E-06	0.	1.20E-06
XE131M	0.	0.	0.	0.	0.	3.30E-09	0.
XE133M	0.	0.	0.	0.	0.	4.36E-09	0.
XE133	0.	0.	0.	0.	0.	3.66E-09	0.
XE135M	0.	0.	0.	0.	0.	4.48E-09	0.
XE135	0.	0.	0.	0.	0.	9.09E-09	0.
XE137	0.	0.	0.	0.	0.	4.07E-08	0.
XE138+D	0.	0.	0.	0.	0.	5.17E-08	0.
CS134M+D	5.33E-08	8.92E-08	6.12E-08	0.	4.94E-08	8.35E-09	7.92E-08
CS134	1.76E-04	2.74E-04	6.07E-05	0.	8.93E-05	3.27E-05	1.04E-06
CS135	6.23E-05	4.13E-05	4.45E-06	0.	1.53E-05	5.22E-06	2.17E-07
CS136	1.76E-05	4.62E-05	3.14E-05	0.	2.54E-05	3.93E-06	1.13E-06
CS137+D	2.45E-04	2.23E-04	3.47E-05	0.	7.63E-05	2.81E-05	9.78E-07
CS138	1.71E-07	2.27E-07	1.50E-07	0.	1.68E-07	1.84E-08	7.29E-08
CS139+D	1.09E-07	1.15E-07	5.80E-08	0.	9.08E-08	9.36E-09	7.23E-12
BA139	4.98E-10	2.66E-13	1.45E-11	0.	2.33E-13	1.56E-06	1.56E-05
BA140+D	2.00E-05	1.75E-08	1.17E-06	0.	5.71E-09	4.71E-04	2.75E-05
BA141+D	5.29E-11	2.95E-14	1.72E-12	0.	2.56E-14	7.89E-07	7.44E-08
BA142+D	1.35E-11	9.73E-15	7.54E-13	0.	7.87E-15	4.44E-07	7.41E-10
LA140	1.74E-07	6.08E-08	2.04E-08	0.	0.	4.94E-05	6.10E-05
LA141	2.28E-09	5.31E-10	1.15E-10	0.	0.	4.48E-06	4.37E-05
LA142	3.50E-10	1.11E-10	3.49E-11	0.	0.	2.35E-06	2.05E-05
CE141	1.06E-05	5.28E-06	7.83E-07	0.	2.31E-06	1.47E-04	1.53E-05
CE143+D	9.89E-08	5.37E-06	7.77E-09	0.	2.26E-08	3.12E-05	3.44E-05
CE144+D	1.83E-03	5.72E-04	9.77E-05	0.	3.17E-04	3.23E-03	1.05E-04
PR143	4.99E-06	1.50E-06	2.47E-07	0.	8.11E-07	1.17E-04	2.63E-05
PR144	1.61E-11	4.99E-12	8.10E-13	0.	2.64E-12	4.23E-07	5.32E-08
ND147+D	2.92E-06	2.36E-06	1.84E-07	0.	1.30E-06	8.87E-05	2.22E-05
PM147	3.52E-04	2.52E-05	1.36E-05	0.	4.45E-05	2.20E-04	5.70E-06
PM148M+D	3.31E-05	6.55E-06	6.55E-06	0.	9.74E-06	5.72E-04	3.58E-05
PM148	1.61E-06	1.94E-07	1.25E-07	0.	3.30E-07	1.24E-04	6.01E-05
PM149	1.47E-07	1.56E-08	8.45E-09	0.	2.75E-08	2.40E-05	2.92E-05
PM151	3.57E-08	4.33E-09	2.82E-09	0.	7.35E-09	1.24E-05	2.50E-05
SM151	3.14E-04	4.75E-05	1.49E-05	0.	4.89E-05	1.48E-04	3.43E-06
SM153	7.24E-08	4.51E-08	4.35E-09	0.	1.37E-08	1.37E-05	1.87E-05
EU152	7.42E-04	1.37E-04	1.61E-04	0.	5.73E-04	9.00E-04	1.14E-05
EU154	2.74E-03	2.49E-04	2.27E-04	0.	1.09E-03	1.66E-03	2.98E-05
EU155	5.60E-04	4.05E-05	3.18E-05	0.	1.51E-04	2.79E-04	5.39E-05
EU156	7.89E-06	4.23E-06	8.75E-07	0.	2.72E-06	2.54E-04	4.24E-05
TB160	7.79E-05	0.	9.67E-06	0.	2.32E-05	5.34E-04	2.28E-05
HO166M	1.34E-03	2.81E-04	2.37E-04	0.	4.01E-04	1.13E-03	1.63E-05
W181	2.66E-08	6.52E-09	3.99E-10	0.	0.	5.71E-06	2.61E-07
W185	8.31E-07	2.08E-07	2.91E-08	0.	0.	1.86E-04	1.11E-05
W187	4.41E-09	2.61E-09	1.17E-09	0.	0.	1.11E-05	2.46E-05

TABLE 6 (contd)

CHILD INHALATION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
PB210+D	8.03E-02	1.45E-02	3.18E-03	0.	6.31E-02	8.74E-02	3.75E-05
BI210+D	0.	5.11E-06	5.65E-07	0.	5.76E-05	3.70E-03	3.21E-05
PO210	1.70E-03	2.75E-03	4.09E-04	0.	8.85E-03	1.05E-01	4.32E-05
RN222+D	0.	0.	0.	0.	0.	4.82E-06	0.
RA223+D	7.69E-04	8.89E-07	1.54E-04	0.	2.36E-05	8.48E-02	3.00E-04
RA224+D	8.44E-05	1.53E-07	1.69E-05	0.	4.06E-06	2.92E-02	3.34E-04
RA225+D	1.28E-03	1.14E-06	2.56E-04	0.	3.02E-05	9.74E-02	2.84E-04
RA226+D	2.34E-01	7.66E-06	1.92E-01	0.	2.03E-04	3.90E-01	3.02E-04
RA228+D	1.49E-01	3.94E-06	1.68E-01	0.	1.04E-04	5.37E-01	5.14E-05
AC225	1.81E-03	1.87E-03	1.21E-04	0.	1.99E-04	7.37E-02	2.67E-04
AC227+D	4.96E+00	8.05E-01	3.07E-01	0.	1.77E-01	8.04E-01	5.22E-05
TH227+D	9.24E-04	1.26E-05	2.67E-05	0.	6.67E-05	1.26E-01	3.49E-04
TH228+D	8.06E-01	1.04E-02	2.72E-02	0.	5.41E-02	3.34E+00	3.59E-04
TH229	1.28E+01	1.76E-01	6.31E-01	0.	8.68E-01	1.04E+01	3.27E-04
TH230	3.30E+00	1.73E-01	9.20E-02	0.	8.52E-01	1.85E+00	3.84E-05
TH232+D	3.68E+00	1.47E-01	1.26E-01	0.	7.28E-01	1.77E+00	3.27E-05
TH234	6.94E-06	3.07E-07	2.00E-07	0.	1.62E-06	6.31E-04	7.32E-05
PA231+D	8.62E+00	2.86E-01	3.43E-01	0.	1.56E+00	1.92E-01	4.57E-05
PA233	4.14E-06	6.48E-07	7.25E-07	0.	2.38E-06	9.77E-05	8.95E-06
U232+D	2.19E-01	0.	1.56E-02	0.	1.67E-02	7.42E-01	4.33E-05
U233+D	4.64E-02	0.	2.82E-03	0.	7.62E-03	1.77E-01	4.00E-05
U234	4.46E-02	0.	2.76E-03	0.	7.47E-03	1.74E-01	3.92E-05
U235+D	4.27E-02	0.	2.59E-03	0.	7.01E-03	1.63E-01	4.98E-05
U236	4.27E-02	0.	2.65E-03	0.	7.16E-03	1.67E-01	3.67E-05
U237	1.57E-07	0.	4.17E-06	0.	4.53E-07	3.40E-05	1.29E-05
U238+D	4.09E-02	0.	2.42E-03	0.	6.55E-03	1.53E-01	3.51E-05
NP237+D	2.88E+00	2.21E-01	1.19E-01	0.	7.41E-01	1.74E-01	5.06E-05
NP238	1.26E-06	2.56E-08	1.97E-08	0.	8.16E-08	3.39E-05	2.50E-05
NP239	1.26E-07	9.04E-09	6.35E-09	0.	2.63E-08	1.57E-05	1.73E-05
PU238	4.77E+00	6.05E-01	1.21E-01	0.	4.47E-01	6.08E-01	4.65E-05
PU239	5.24E+00	6.44E-01	1.28E-01	0.	4.78E-01	5.72E-01	4.24E-05
PU240	5.23E+00	6.43E-01	1.27E-01	0.	4.77E-01	5.71E-01	4.33E-05
PU241+D	1.46E-01	6.33E-03	2.93E-03	0.	1.10E-02	5.06E-04	8.90E-07
PU242	4.85E+00	6.20E-01	1.23E-01	0.	4.60E-01	5.50E-01	4.16E-05
PU244	5.67E+00	7.10E-01	1.41E-01	0.	5.27E-01	6.30E-01	6.20E-05
AM241	1.74E+00	7.85E-01	1.24E-01	0.	7.63E-01	2.02E-01	4.73E-05
AM242M	1.79E+00	7.65E-01	1.27E-01	0.	7.71E-01	8.14E-02	5.96E-05
AM243	1.72E+00	7.53E-01	1.20E-01	0.	7.42E-01	1.92E-01	5.55E-05
CM242	5.33E-02	4.84E-02	4.20E-03	0.	1.34E-02	1.31E-01	5.06E-05
CM243	1.61E+00	7.33E-01	9.95E-02	0.	3.74E-01	2.10E-01	4.98E-05
CM244	1.33E+00	6.48E-01	8.31E-02	0.	3.06E-01	2.02E-01	4.82E-05
CM245	2.14E+00	8.16E-01	1.28E-01	0.	5.03E-01	1.95E-01	4.49E-05
CM246	2.13E+00	8.15E-01	1.28E-01	0.	5.03E-01	1.99E-01	4.41E-05
CM247+D	2.07E+00	8.02E-01	1.26E-01	0.	4.95E-01	1.95E-01	5.80E-05
CM248	1.72E+01	6.61E+00	1.04E+00	0.	4.08E+00	1.61E+00	9.35E-04
CF252	3.92E+00	0.	9.33E-02	0.	0.	6.62E-01	1.84E-04

TABLE 7

TEEN INHALATION DOSE COMMITMENT FACTORS(MREM/50Y PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
H3*	0.	1.59E-07	1.59E-07	1.59E-07	1.59E-07	1.59E-07	1.59E-07
BE10	2.78E-04	4.33E-05	7.09E-06	0.	0.	3.84E-04	1.77E-05
C14	3.25E-05	6.09E-07	6.09E-07	6.09E-07	6.09E-07	6.09E-07	6.09E-07
N13	8.65E-09	8.65E-09	8.65E-09	8.65E-09	8.65E-09	8.65E-09	8.65E-09
F18	6.52E-07	0.	7.10E-08	0.	0.	0.	3.89E-08
NA22	1.76E-05	1.76E-05	1.76E-05	1.76E-05	1.76E-05	1.76E-05	1.76E-05
NA24	1.72E-06	1.72E-06	1.72E-06	1.72E-06	1.72E-06	1.72E-06	1.72E-06
P32	2.36E-04	1.37E-05	8.95E-06	0.	0.	0.	1.16E-05
AR39	0.	0.	0.	0.	0.	4.00E-09	0.
AR41	0.	0.	0.	0.	0.	1.44E-08	0.
CA41	4.05E-05	0.	4.38E-06	0.	0.	1.01E-01	3.03E-07
SC46	7.24E-05	1.41E-04	4.18E-05	0.	1.35E-04	0.	2.98E-05
CR51	0.	0.	1.69E-08	9.37E-09	3.84E-09	2.62E-06	3.75E-07
MN54	0.	6.39E-06	1.05E-06	0.	1.59E-06	2.48E-04	8.35E-06
MN56	0.	2.12E-10	3.15E-11	0.	2.24E-10	1.90E-06	7.18E-06
FE55	4.18E-06	2.98E-06	6.93E-07	0.	0.	1.55E-05	7.99E-07
FE59	1.99E-06	4.62E-06	1.79E-06	0.	0.	1.91E-04	2.23E-05
CO57	0.	1.18E-07	1.15E-07	0.	0.	7.33E-05	3.93E-06
CO58	0.	2.59E-07	3.47E-07	0.	0.	1.68E-04	1.19E-05
CO60	0.	1.89E-06	2.48E-06	0.	0.	1.09E-03	3.24E-05
NI59	5.44E-06	2.02E-06	9.24E-07	0.	0.	1.41E-05	6.48E-07
NI63	7.25E-05	5.43E-06	2.47E-06	0.	0.	3.84E-05	1.77E-06
I65	2.73E-10	3.66E-11	1.59E-11	0.	0.	1.17E-06	4.59E-06
CU64	0.	2.54E-10	1.06E-10	0.	8.01E-10	1.39E-06	7.68E-06
ZN65	4.82E-06	1.67E-05	7.80E-06	0.	1.08E-05	1.55E-04	5.83E-06
ZN69M+D	1.44E-09	3.39E-09	3.11E-10	0.	2.06E-09	3.92E-06	2.14E-05
ZN69	6.04E-12	1.15E-11	8.07E-13	0.	7.53E-12	1.98E-07	3.56E-08
SE79	0.	5.43E-07	8.71E-08	0.	8.13E-07	7.71E-05	3.53E-06
BR82	0.	0.	2.28E-06	0.	0.	0.	0.
BR83+D	0.	0.	4.30E-08	0.	0.	0.	0.
BR84	0.	0.	5.41E-08	0.	0.	0.	0.
BR85	0.	0.	2.29E-09	0.	0.	0.	0.
KR83M	0.	0.	0.	0.	0.	9.97E-10	0.
KR85M	0.	0.	0.	0.	0.	5.46E-09	0.
KR85	0.	0.	0.	0.	0.	4.63E-09	0.
KR87	0.	0.	0.	0.	0.	2.82E-08	0.
KR88+D	0.	0.	0.	0.	0.	5.81E-08	0.
KR89	0.	0.	0.	0.	0.	3.85E-08	0.
RB86	0.	2.38E-05	1.05E-05	0.	0.	0.	2.21E-06
RB87	0.	1.40E-05	4.58E-06	0.	0.	0.	3.05E-07
RB88	0.	6.82E-08	3.40E-08	0.	0.	0.	3.65E-15
RB89+D	0.	4.40E-08	2.91E-08	0.	0.	0.	4.22E-17
SR89+D	5.43E-05	0.	1.56E-06	0.	0.	3.02E-04	4.64E-05
SR90+D	1.35E-02	0.	8.35E-04	0.	0.	2.06E-03	9.56E-05
SR91+D	1.10E-08	0.	4.39E-10	0.	0.	7.59E-06	3.24E-05
SR92+D	1.19E-09	0.	5.08E-11	0.	0.	3.43E-06	1.49E-05

*Includes a 50% increase to account for percutaneous transpiration.

TABLE 7 (contd)

TEEN INHALATION DOSE COMMITMENT FACTORS(MREM/50Y PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
Y90	3.73E-07	0.	1.00E-08	0.	0.	3.66E-05	6.99E-05
Y91M+D	4.63E-11	0.	1.77E-12	0.	0.	4.00E-07	3.77E-09
Y91	8.26E-05	0.	2.21E-06	0.	0.	3.67E-04	5.11E-05
Y92	1.84E-09	0.	5.36E-11	0.	0.	3.35E-06	2.06E-05
Y93	1.69E-08	0.	4.65E-10	0.	0.	1.04E-05	7.24E-05
ZR93+D	6.83E-05	3.38E-05	1.84E-05	0.	1.16E-04	3.67E-04	1.60E-05
ZR95+D	1.82E-05	5.73E-06	3.94E-06	0.	8.42E-06	3.36E-04	1.86E-05
ZR97+D	1.72E-08	3.40E-09	1.57E-09	0.	5.15E-09	1.62E-05	7.88E-05
NB93M	4.14E-05	1.36E-05	3.41E-06	0.	1.59E-05	5.36E-05	2.52E-06
NB95	2.32E-06	1.29E-06	7.08E-07	0.	1.25E-06	9.39E-05	1.21E-05
NB97	3.92E-11	9.72E-12	3.55E-12	0.	1.14E-11	4.91E-07	2.71E-07
MO93	0.	1.66E-06	4.52E-08	0.	5.06E-07	8.81E-05	3.99E-06
MO99+D	0.	2.11E-08	4.03E-09	0.	5.14E-08	1.92E-05	3.36E-05
TC99M	1.73E-13	4.83E-13	6.24E-12	0.	7.20E-12	1.44E-07	7.66E-07
TC99	4.48E-08	6.58E-08	1.79E-08	0.	8.35E-07	1.74E-04	7.99E-06
TC101	7.40E-15	1.05E-14	1.03E-13	0.	1.90E-13	8.34E-08	1.09E-16
RU103+D	2.63E-07	0.	1.12E-07	0.	9.29E-07	9.79E-05	1.36E-05
RU105+D	1.40E-10	0.	5.42E-11	0.	1.76E-10	2.27E-06	1.13E-05
RU106+D	1.23E-05	0.	1.55E-06	0.	2.38E-05	2.01E-03	1.20E-04
RH105	1.32E-09	9.48E-10	6.24E-10	0.	4.04E-09	4.09E-06	1.23E-05
PD107	0.	1.17E-07	8.39E-09	0.	9.39E-07	1.63E-05	7.49E-07
PD109	0.	6.56E-10	1.66E-10	0.	3.36E-09	3.19E-06	1.96E-05
AG110M+D	1.73E-06	1.64E-06	9.99E-07	0.	3.13E-06	8.44E-04	3.41E-05
AG111	6.07E-08	2.52E-08	1.26E-08	0.	8.17E-08	4.00E-05	3.00E-05
CD113M	0.	2.17E-04	7.10E-06	0.	2.43E-04	3.59E-04	1.68E-05
CD115M	0.	3.48E-05	1.14E-06	0.	2.82E-05	3.03E-04	5.10E-05
SN123	4.31E-05	9.44E-07	1.40E-06	7.55E-07	0.	4.96E-04	4.16E-05
SN125+D	1.66E-06	4.42E-08	9.99E-08	3.45E-08	0.	1.26E-04	7.29E-05
SN126+D	2.18E-04	5.39E-06	8.24E-06	1.42E-06	0.	1.72E-03	1.68E-05
SB124	5.38E-06	9.92E-08	2.10E-06	1.22E-08	0.	4.81E-04	4.98E-05
SB125+D	9.23E-06	1.01E-07	2.15E-06	8.80E-09	0.	3.42E-04	1.24E-05
SB126	6.19E-07	1.27E-08	2.23E-07	3.50E-09	0.	1.55E-04	6.01E-05
SB127	4.64E-08	9.92E-10	1.75E-08	5.21E-10	0.	3.31E-05	3.94E-05
TE125M	5.10E-07	2.80E-07	8.34E-08	1.75E-07	0.	6.70E-05	9.38E-06
TE127M+D	2.25E-06	1.02E-06	2.73E-07	5.48E-07	8.17E-06	2.07E-04	1.99E-05
TE127	2.51E-10	1.14E-10	5.52E-11	1.77E-10	9.10E-10	1.40E-06	1.01E-05
TE129M+D	1.74E-06	8.23E-07	2.81E-07	5.72E-07	6.49E-06	2.47E-04	5.06E-05
TE129	8.87E-12	4.22E-12	2.20E-12	6.48E-12	3.32E-11	4.12E-07	2.02E-07
TE131M+D	1.23E-08	7.51E-09	5.03E-09	9.06E-09	5.49E-08	2.97E-05	7.76E-05
TE131+D	1.97E-12	1.04E-12	6.30E-13	1.55E-12	7.72E-12	2.92E-07	1.89E-09
TE132+D	4.50E-08	3.63E-08	2.74E-08	3.07E-08	2.44E-07	5.61E-05	5.79E-05
TE133M+D	1.01E-11	7.33E-12	5.71E-12	8.18E-12	5.07E-11	8.71E-07	1.23E-07
TE134+D	5.31E-12	4.35E-12	3.64E-12	4.46E-12	2.91E-11	6.75E-07	1.37E-09
I129	3.53E-06	2.94E-06	4.90E-06	3.66E-03	5.26E-06	0.	2.29E-07
I130	7.80E-07	2.24E-06	8.96E-07	1.86E-04	3.44E-06	0.	1.14E-06
I131+D	4.43E-06	6.14E-06	3.30E-06	1.83E-03	1.05E-05	0.	8.11E-07

TABLE 7 (contd)

TEEN INHALATION DOSE COMMITMENT FACTORS(MREM/SOY PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
I132	1.99E-07	5.47E-07	1.97E-07	1.89E-05	8.65E-07	0.	1.59E-07
I133+D	1.52E-06	2.56E-06	7.78E-07	3.65E-04	4.49E-06	0.	1.29E-06
I134	1.11E-07	2.90E-07	1.05E-07	4.94E-06	4.58E-07	0.	2.55E-09
I135+D	4.62E-07	1.18E-06	4.36E-07	7.76E-05	1.86E-06	0.	8.69E-07
XE131M	0.	0.	0.	0.	0.	2.70E-09	0.
XE133M	0.	0.	0.	0.	0.	3.59E-09	0.
XE133	0.	0.	0.	0.	0.	2.99E-09	0.
XE135M	0.	0.	0.	0.	0.	3.88E-09	0.
XE135	0.	0.	0.	0.	0.	7.55E-09	0.
XE137	0.	0.	0.	0.	0.	3.33E-08	0.
XE138+D	0.	0.	0.	0.	0.	4.38E-08	0.
CS134M+D	2.20E-08	4.35E-08	2.35E-08	0.	2.54E-08	4.56E-09	2.02E-08
CS134	6.28E-05	1.01E-04	6.86E-05	0.	4.69E-05	1.83E-05	1.22E-06
CS135	2.08E-05	1.82E-05	4.47E-06	0.	7.30E-06	2.70E-06	2.23E-07
CS136	6.44E-06	2.42E-05	1.71E-05	0.	1.38E-05	2.22E-06	1.36E-06
CS137+D	8.38E-05	1.06E-04	3.89E-05	0.	3.80E-05	1.51E-05	1.06E-06
CS138	5.82E-08	1.07E-07	5.58E-08	0.	8.28E-08	9.84E-09	3.38E-11
CS139+D	3.65E-08	5.12E-08	1.97E-08	0.	4.34E-08	4.86E-09	1.66E-23
BA139	1.67E-10	1.18E-13	4.87E-12	0.	1.11E-13	8.08E-07	8.06E-07
BA140+D	6.84E-06	8.38E-09	4.40E-07	0.	2.85E-09	2.54E-04	2.86E-05
BA141+D	1.78E-11	1.32E-14	5.93E-13	0.	1.23E-14	4.11E-07	9.33E-14
BA142+D	4.62E-12	4.63E-15	2.84E-13	0.	3.92E-15	2.39E-07	5.99E-20
LA140	5.99E-08	2.95E-08	7.82E-09	0.	0.	2.68E-05	6.09E-05
LA141	7.63E-10	2.35E-10	3.87E-11	0.	0.	2.31E-06	1.54E-05
LA142	1.20E-10	5.31E-11	1.32E-11	0.	0.	1.27E-06	1.50E-06
CE141	3.55E-06	2.37E-06	2.71E-07	0.	1.11E-06	7.67E-05	1.58E-05
CE143+D	3.32E-08	2.42E-08	2.70E-09	0.	1.08E-08	1.63E-05	3.19E-05
CE144+D	6.11E-04	2.53E-04	3.28E-05	0.	1.51E-04	1.67E-03	1.08E-04
PR143	1.67E-06	6.64E-07	8.28E-08	0.	3.86E-07	6.04E-05	2.67E-05
PR144	5.37E-12	2.20E-12	2.72E-13	0.	1.26E-12	2.19E-07	2.94E-14
ND147+D	9.83E-07	1.07E-06	6.41E-08	0.	6.28E-07	4.55E-05	2.28E-05
PM147	1.15E-04	1.10E-05	4.50E-06	0.	2.10E-05	1.14E-04	5.87E-06
PM148M+D	1.32E-05	3.35E-06	2.62E-06	0.	5.07E-06	3.20E-04	4.10E-05
PM148	5.44E-07	8.88E-08	4.48E-08	0.	1.60E-07	6.52E-05	6.14E-05
PM149	4.91E-08	6.89E-09	2.84E-09	0.	1.31E-08	1.24E-05	2.79E-05
PM151	1.20E-08	1.99E-09	1.01E-09	0.	3.57E-09	6.56E-06	2.27E-05
SM151	1.07E-04	2.10E-05	4.86E-06	0.	2.27E-05	7.68E-05	3.53E-06
SM153	2.43E-08	2.01E-08	1.47E-09	0.	6.56E-09	7.11E-06	1.77E-05
EU152	2.96E-04	7.19E-05	6.30E-05	0.	3.34E-04	5.01E-04	1.35E-05
EU154	9.43E-04	1.23E-04	8.60E-05	0.	5.44E-04	9.12E-04	3.34E-05
EU155	2.00E-04	1.96E-05	1.21E-05	0.	7.65E-05	1.51E-03	5.97E-05
EU156	2.70E-06	2.03E-06	3.30E-07	0.	1.36E-06	1.37E-04	4.56E-05
TB160	3.04E-05	0.	3.79E-06	0.	1.20E-05	2.97E-04	2.60E-05
HO166M	4.40E-04	1.36E-04	9.87E-05	0.	2.00E-04	6.24E-04	1.68E-05
W181	8.90E-09	2.88E-09	3.01E-10	0.	0.	2.95E-06	2.69E-07
W185	2.78E-07	9.17E-08	9.73E-09	0.	0.	9.60E-05	1.14E-05
W187	1.50E-09	1.22E-09	4.29E-10	0.	0.	5.92E-06	2.21E-05

TABLE 7 (contd)

TEEN INHALATION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
PB210+D	3.09E-02	8.28E-03	1.07E-03	0.	2.95E-02	4.52E-02	3.87E-05
BI210+D	0.	2.26E-06	1.89E-07	0.	2.74E-05	1.91E-03	3.19E-05
PO210	5.68E-04	1.22E-03	1.37E-04	0.	4.21E-03	5.41E-02	4.45E-05
RN222+D	0.	0.	0.	0.	0.	3.94E-06	0.
RA223+D	2.57E-04	3.93E-07	5.14E-05	0.	1.12E-05	4.39E-02	3.04E-04
RA224+D	2.83E-05	6.77E-08	5.65E-06	0.	1.93E-06	1.51E-02	3.29E-04
RA225+D	4.28E-04	5.04E-07	8.56E-05	0.	1.44E-05	5.04E-02	2.89E-04
RA226+D	1.33E-01	3.38E-06	9.87E-02	0.	9.67E-05	2.02E-01	3.11E-04
RA228+D	5.34E-02	1.74E-06	5.88E-02	0.	4.97E-05	2.78E-01	5.30E-05
AC225	6.04E-04	8.25E-04	4.06E-05	0.	9.47E-05	3.81E-02	2.70E-04
AC227+D	2.49E+00	3.69E-01	1.48E-01	0.	1.07E-01	4.16E-01	5.38E-05
TH227+D	3.09E-04	5.56E-06	8.93E-06	0.	3.18E-05	6.50E-02	3.57E-04
TH228+D	2.60E-01	4.37E-03	8.78E-03	0.	2.45E-02	1.69E+00	3.70E-04
TH229	9.06E+00	1.36E-01	4.45E-01	0.	6.67E-01	5.05E+00	3.36E-04
TH230	2.34E+00	1.34E-01	6.49E-02	0.	6.55E-01	8.98E-01	3.95E-05
TH232+D	2.61E+00	1.14E-01	9.21E-02	0.	5.60E-01	8.60E-01	3.36E-05
TH234	2.32E-05	1.35E-07	6.71E-08	0.	7.73E-07	3.26E-04	7.49E-05
PA231+D	5.32E+00	2.00E-01	2.07E-01	0.	1.12E+00	9.91E-02	4.71E-05
PA233	1.68E-06	3.24E-07	2.89E-07	0.	1.22E-06	5.39E-05	1.00E-05
U232+D	7.31E-02	0.	5.23E-03	0.	7.94E-03	3.84E-01	4.46E-05
U233+D	1.55E-02	0.	9.42E-04	0.	3.63E-03	9.18E-02	4.12E-05
U234	1.48E-02	0.	9.23E-04	0.	3.55E-03	8.99E-02	4.04E-05
U235+D	1.42E-02	0.	8.67E-04	0.	3.34E-03	8.44E-02	5.13E-05
U236	1.42E-02	0.	8.86E-04	0.	3.41E-03	8.62E-02	3.79E-05
U237	5.25E-08	0.	1.40E-08	0.	2.16E-07	1.76E-05	1.29E-05
U238+D	1.36E-02	0.	8.10E-04	0.	3.12E-03	7.89E-02	3.62E-05
NP237+D	1.77E+00	1.54E-01	7.21E-02	0.	5.35E-01	8.99E-02	5.22E-05
NP238	4.23E-07	1.13E-08	6.59E-09	0.	3.88E-08	1.75E-05	2.38E-05
NP239	4.23E-08	3.99E-09	2.21E-09	0.	1.25E-08	8.11E-06	1.65E-05
PU238	2.86E+00	4.06E-01	7.22E-02	0.	3.10E-01	3.12E-01	4.79E-05
PU239	3.31E+00	4.50E-01	8.05E-02	0.	3.44E-01	2.93E-01	4.37E-05
PU240	3.31E+00	4.49E-01	8.04E-02	0.	3.43E-01	2.93E-01	4.46E-05
PU241+D	5.97E-02	3.57E-03	1.40E-03	0.	6.47E-03	2.60E-04	9.17E-07
PU242	3.07E+00	4.33E-01	7.75E-02	0.	3.31E-01	2.82E-01	4.29E-05
PU244	3.59E+00	4.96E-01	8.88E-02	0.	3.79E-01	3.23E-01	6.39E-05
AM241	1.06E+00	4.07E-01	7.10E-02	0.	5.32E-01	1.05E-01	4.88E-05
AM242M	1.07E+00	3.93E-01	7.15E-02	0.	5.30E-01	4.21E-02	6.14E-05
AM243	1.06E+00	3.92E-01	6.95E-02	0.	5.21E-01	9.91E-02	5.72E-05
CM242	2.12E-02	2.14E-02	1.41E-03	0.	6.40E-03	6.76E-02	5.21E-05
CM243	8.45E-01	3.50E-01	5.00E-02	0.	2.34E-01	1.09E-01	5.13E-05
CM244	6.46E-01	3.03E-01	3.88E-02	0.	1.81E-01	1.05E-01	4.96E-05
CM245	1.32E+00	4.11E-01	7.53E-02	0.	3.52E-01	1.01E-01	4.63E-05
CM246	1.31E+00	4.11E-01	7.52E-02	0.	3.51E-01	1.03E-01	4.54E-05
CM247+D	1.28E+00	4.04E-01	7.41E-02	0.	3.46E-01	1.01E-01	5.97E-05
CM248	1.06E+01	3.33E+00	6.11E-01	0.	2.85E+00	8.32E-01	9.63E-04
CF252	1.29E+00	0.	3.07E-02	0.	0.	3.43E-01	1.89E-04

TABLE 8

ADULT INHALATION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
H3*	0.	1.58E-07	1.58E-07	1.58E-07	1.58E-07	1.58E-07	1.58E-07
BE10	1.98E-04	3.06E-05	4.96E-06	0.	0.	2.22E-04	1.67E-05
C14	2.27E-06	4.26E-07	4.26E-07	4.26E-07	4.26E-07	4.26E-07	4.26E-07
N13	6.27E-09	6.27E-09	6.27E-09	6.27E-09	6.27E-09	6.27E-09	6.27E-09
F18	4.71E-07	0.	5.19E-08	0.	0.	0.	9.24E-09
NA22	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05	1.30E-05
NA24	1.28E-06	1.28E-06	1.28E-06	1.28E-06	1.28E-06	1.28E-06	1.28E-06
P32	1.65E-04	9.64E-06	6.26E-06	0.	0.	0.	1.08E-05
AR39	0.	0.	0.	0.	0.	2.08E-09	0.
AR41	0.	0.	0.	0.	0.	8.06E-09	0.
CA41	3.83E-05	0.	4.13E-06	0.	0.	3.83E-06	2.86E-07
SC46	5.51E-05	1.07E-04	3.11E-05	0.	9.99E-05	0.	3.23E-05
CR51	0.	0.	1.25E-08	7.44E-09	2.85E-09	1.80E-06	4.15E-07
MN54	0.	4.95E-06	7.87E-07	0.	1.23E-06	1.75E-04	9.67E-06
MN56	0.	1.55E-10	2.29E-11	0.	1.63E-10	1.18E-06	2.53E-06
FE55	3.07E-06	2.12E-06	4.93E-07	0.	0.	9.01E-06	7.54E-07
FE59	1.47E-06	3.47E-06	1.32E-06	0.	0.	1.27E-04	2.35E-05
CO57	0.	8.65E-08	8.39E-08	0.	0.	4.62E-05	3.93E-06
CO58	0.	1.98E-07	2.59E-07	0.	0.	1.16E-04	1.33E-05
CO60	0.	1.44E-06	1.85E-06	0.	0.	7.46E-04	3.56E-05
NI59	4.06E-06	1.46E-06	6.77E-07	0.	0.	8.20E-06	6.11E-07
NI63	5.40E-05	3.93E-06	1.81E-06	0.	0.	2.23E-05	1.67E-06
NI65	1.92E-10	2.62E-11	1.14E-11	0.	0.	7.00E-07	1.54E-06
CU64	0.	1.83E-10	7.69E-11	0.	5.78E-10	8.45E-07	6.12E-06
ZN65	4.05E-06	1.29E-05	5.82E-06	0.	8.62E-06	1.08E-04	6.68E-06
ZN69M+D	1.02E-09	2.45E-09	2.24E-10	0.	1.48E-09	2.38E-06	1.71E-05
ZN69	4.23E-12	8.14E-12	5.65E-13	0.	5.27E-12	1.15E-07	2.04E-09
SE79	0.	3.83E-07	6.09E-08	0.	5.69E-07	4.47E-05	3.33E-06
BR82	0.	0.	1.69E-06	0.	0.	0.	1.30E-06
BR83+D	0.	0.	3.01E-08	0.	0.	0.	2.90E-08
BR84	0.	0.	3.91E-08	0.	0.	0.	2.05E-13
BR85	0.	0.	1.60E-09	0.	0.	0.	0.
KR83M	0.	0.	0.	0.	0.	5.19E-10	0.
KR85M	0.	0.	0.	0.	0.	2.91E-09	0.
KR85	0.	0.	0.	0.	0.	2.41E-09	0.
KR87	0.	0.	0.	0.	0.	1.53E-08	0.
KR88+D	0.	0.	0.	0.	0.	3.13E-08	0.
KR89	0.	0.	0.	0.	0.	2.13E-08	0.
RB86	0.	1.69E-05	7.37E-06	0.	0.	0.	2.08E-06
RB87	0.	9.86E-06	3.21E-06	0.	0.	0.	2.88E-07
RB88	0.	4.84E-08	2.41E-08	0.	0.	0.	4.18E-19
RB89+D	0.	3.20E-08	2.12E-08	0.	0.	0.	1.16E-21
SR89+D	3.80E-05	0.	1.09E-06	0.	0.	1.75E-04	4.37E-05
SR90+D	1.24E-02	0.	7.62E-04	0.	0.	1.20E-03	9.02E-05
SR91+D	7.74E-09	0.	3.13E-10	0.	0.	4.56E-06	2.39E-05
SR92+D	8.43E-10	0.	3.64E-11	0.	0.	2.06E-06	5.38E-06

*Includes a 50% increase to account for percutaneous transpiration.

TABLE 8 (contd)

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ADULT INHALATION DOSE COMMITMENT FACTORS(MREM/50Y PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
Y90	2.61E-07	0.	7.01E-09	0.	0.	2.12E-05	6.32E-05
Y91M+D	3.26E-11	0.	1.27E-12	0.	0.	2.40E-07	1.66E-10
Y91	5.78E-05	0.	1.55E-06	0.	0.	2.13E-04	4.81E-05
Y92	1.29E-09	0.	3.77E-11	0.	0.	1.96E-06	9.19E-06
Y93	1.18E-08	0.	3.26E-10	0.	0.	6.06E-06	5.27E-05
ZR93+D	5.22E-05	2.92E-06	1.37E-06	0.	1.11E-05	2.13E-05	1.51E-06
ZR95+D	1.34E-05	4.30E-06	2.91E-06	0.	6.77E-06	2.21E-04	1.88E-05
ZR97+D	1.21E-08	2.45E-09	1.13E-09	0.	3.71E-09	9.84E-06	6.54E-05
NB93M	3.10E-05	1.01E-05	2.49E-06	0.	1.16E-05	3.11E-05	2.38E-06
NB95	1.76E-06	9.77E-07	5.26E-07	0.	9.67E-07	6.31E-05	1.30E-05
NB97	2.78E-11	7.03E-12	2.56E-12	0.	8.18E-12	3.00E-07	3.02E-08
MO93	0.	1.17E-06	3.17E-08	0.	3.55E-07	5.11E-05	3.79E-06
MO99+D	0.	1.51E-08	2.87E-09	0.	3.64E-08	1.14E-05	3.10E-05
TC99M	1.29E-13	3.64E-13	4.63E-12	0.	5.52E-12	9.55E-08	5.20E-07
TC99	3.13E-08	4.64E-08	1.25E-08	0.	5.85E-07	1.01E-04	7.54E-06
TC101	5.22E-15	7.52E-15	7.38E-14	0.	1.35E-13	4.99E-08	1.36E-21
RU103+D	1.91E-07	0.	8.23E-08	0.	7.29E-07	6.31E-05	1.38E-05
RU105+D	9.88E-11	0.	3.89E-11	0.	1.27E-10	1.37E-06	6.02E-06
RU106+D	8.64E-06	0.	1.09E-06	0.	1.67E-05	1.17E-03	1.14E-04
RH105	9.24E-10	6.73E-10	4.43E-10	0.	2.86E-09	2.41E-06	1.09E-05
PD107	0.	8.27E-08	5.87E-09	0.	6.57E-07	9.47E-06	7.06E-07
PD109	0.	4.63E-10	1.16E-10	0.	2.35E-09	1.85E-06	1.52E-05
AG110M+D	1.35E-06	1.25E-06	7.43E-07	0.	2.46E-06	5.79E-04	3.78E-05
AG111	4.25E-08	1.78E-08	8.87E-09	0.	5.74E-08	2.33E-05	2.79E-05
CD113M	0.	1.54E-04	4.97E-06	0.	1.71E-04	2.08E-04	1.59E-05
CD115M	0.	2.46E-05	7.95E-07	0.	1.98E-05	1.76E-04	4.80E-05
SN123	3.02E-05	6.67E-07	9.82E-07	5.67E-07	0.	2.88E-04	3.92E-05
SN125+D	1.16E-06	3.12E-08	7.03E-08	2.59E-08	0.	7.37E-05	6.81E-05
SN126+D	1.58E-04	4.18E-06	6.00E-06	1.23E-06	0.	1.17E-03	1.59E-05
SB124	3.90E-06	7.36E-08	1.55E-06	9.44E-09	0.	3.10E-04	5.08E-05
SB125+D	6.67E-06	7.44E-08	1.58E-06	6.75E-09	0.	2.18E-04	1.26E-05
SB126	4.50E-07	9.13E-09	1.62E-07	2.75E-09	0.	9.57E-05	6.01E-05
SB127	3.30E-08	7.22E-10	1.27E-08	3.97E-10	0.	2.05E-05	3.77E-05
TE125M	4.27E-07	1.98E-07	5.84E-08	1.31E-07	1.55E-06	3.92E-05	8.83E-06
TE127M+D	1.58E-06	7.21E-07	1.96E-07	4.11E-07	5.72E-06	1.20E-04	1.87E-05
TE127	1.75E-10	8.03E-11	3.87E-11	1.32E-10	6.37E-10	8.14E-07	7.17E-06
TE129M+D	1.22E-06	5.84E-07	1.98E-07	4.30E-07	4.57E-06	1.45E-04	4.79E-05
TE129	6.22E-12	2.99E-12	1.55E-12	4.87E-12	2.34E-11	2.42E-07	1.96E-08
TE131M+D	5.74E-09	5.45E-09	3.63E-09	6.86E-09	3.86E-08	1.82E-05	6.95E-05
TE131+D	1.39E-12	7.44E-13	4.49E-13	1.17E-12	5.46E-12	1.74E-07	2.30E-09
TE132+D	3.25E-08	2.69E-08	2.02E-08	2.37E-08	1.82E-07	3.60E-05	6.37E-05
TE133M+D	7.24E-12	5.40E-12	4.17E-12	6.27E-12	3.74E-11	5.51E-07	5.49E-08
TE134+D	3.84E-12	3.22E-12	1.57E-12	3.44E-12	2.18E-11	4.34E-07	2.97E-11
I129	2.48E-06	2.11E-06	6.91E-06	5.54E-03	4.53E-06	0.	2.22E-07
I130	5.72E-07	1.68E-06	6.60E-07	1.42E-04	2.61E-06	0.	9.61E-07
I131+D	3.15E-06	4.47E-06	2.56E-06	1.49E-03	7.66E-06	0.	7.85E-07

TABLE 8 (contd)

ADULT INHALATION DOSE COMMITMENT FACTORS (MREM/SOY PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
I132	1.45E-07	4.07E-07	1.45E-07	1.43E-05	6.48E-07	0.	5.08E-08
I133+D	1.08E-06	1.85E-06	5.65E-07	2.69E-04	3.23E-06	0.	1.11E-06
I134	8.05E-08	2.16E-07	7.69E-08	3.73E-06	3.44E-07	0.	1.26E-10
I135+D	3.35E-07	8.73E-07	3.21E-07	5.60E-05	1.39E-06	0.	6.56E-07
XE131M	0.	0.	0.	0.	0.	1.40E-09	0.
XE133M	0.	0.	0.	0.	0.	1.89E-09	0.
XE133	0.	0.	0.	0.	0.	1.57E-09	0.
XE135M	0.	0.	0.	0.	0.	2.22E-09	0.
XE135	0.	0.	0.	0.	0.	4.05E-09	0.
XE137	0.	0.	0.	0.	0.	1.74E-08	0.
XE138+D	0.	0.	0.	0.	0.	2.44E-08	0.
CS134M+D	1.59E-08	3.20E-08	1.72E-08	0.	1.83E-08	2.93E-09	7.92E-09
CS134	4.66E-05	1.06E-04	9.10E-05	0.	3.59E-05	1.22E-05	1.30E-06
CS135	1.46E-05	1.29E-05	5.99E-06	0.	5.11E-06	1.57E-06	2.11E-07
CS136	4.88E-06	1.83E-05	1.38E-05	0.	1.07E-05	1.50E-06	1.46E-06
CS137+D	5.98E-05	7.76E-05	5.35E-05	0.	2.78E-05	9.40E-06	1.05E-06
CS138	4.14E-08	7.76E-08	4.05E-08	0.	6.00E-08	6.07E-09	2.33E-13
CS139+D	2.56E-08	3.63E-08	1.39E-08	0.	3.05E-08	2.84E-09	5.49E-31
BA139	1.17E-10	8.32E-14	3.42E-12	0.	7.78E-14	4.70E-07	1.12E-07
BA140+D	4.88E-06	6.13E-09	3.21E-07	0.	2.09E-09	1.59E-04	2.73E-05
BA141+D	1.25E-11	9.41E-15	4.20E-13	0.	8.75E-15	2.42E-07	1.45E-17
BA142+D	3.29E-12	3.38E-15	2.07E-13	0.	2.86E-15	1.49E-07	1.96E-26
LA140	4.30E-08	2.17E-08	5.73E-09	0.	0.	1.70E-05	5.73E-05
LA141	5.34E-10	1.66E-10	2.71E-11	0.	0.	1.35E-06	7.31E-06
LA142	8.54E-11	3.88E-11	9.65E-12	0.	0.	7.91E-07	2.64E-07
CE141	2.49E-06	1.69E-06	1.91E-07	0.	7.83E-07	4.52E-05	1.50E-05
CE143+D	2.33E-08	1.72E-08	1.91E-09	0.	7.60E-09	9.97E-06	2.83E-05
CE144+D	4.29E-04	1.79E-04	2.30E-05	0.	1.06E-04	9.72E-04	1.02E-04
PR143	1.17E-06	4.69E-07	5.80E-08	0.	2.70E-07	3.51E-05	2.50E-05
PR144	3.76E-12	1.56E-12	1.91E-13	0.	8.81E-13	1.27E-07	2.69E-18
ND147+D	6.59E-07	7.62E-07	4.56E-08	0.	4.45E-07	2.76E-05	2.16E-05
PM147	8.37E-05	7.87E-06	3.19E-06	0.	1.49E-05	6.60E-05	5.54E-06
PM148M+D	9.82E-06	2.54E-06	1.94E-06	0.	3.85E-06	2.14E-04	4.18E-05
PM148	3.84E-07	6.37E-08	3.20E-08	0.	1.20E-07	3.91E-05	5.80E-05
PM149	3.44E-08	4.87E-09	1.99E-09	0.	9.19E-09	7.21E-06	2.50E-05
PM151	8.50E-09	1.42E-09	7.21E-10	0.	2.55E-09	3.94E-06	2.00E-05
SM151	8.59E-05	1.48E-05	3.55E-06	0.	1.66E-05	4.45E-05	3.25E-06
SM153	1.70E-08	1.42E-08	1.04E-09	0.	4.59E-09	4.14E-06	1.58E-05
EU152	2.38E-04	5.41E-05	4.76E-05	0.	3.35E-04	3.43E-04	1.59E-05
EU154	7.40E-04	9.10E-05	6.48E-05	0.	4.36E-04	5.84E-04	3.40E-05
EU155	1.01E-04	1.43E-05	9.21E-06	0.	6.59E-05	9.46E-05	5.95E-06
EU156	1.93E-06	1.48E-06	2.40E-07	0.	9.95E-07	8.56E-05	4.50E-05
TB160	2.21E-05	0.	2.75E-06	0.	9.10E-06	1.92E-04	2.68E-05
HO166M	3.37E-04	1.05E-04	8.00E-05	0.	1.57E-04	3.94E-04	1.59E-05
W181	6.23E-09	2.03E-09	2.17E-10	0.	0.	1.71E-06	2.53E-07
W185	1.95E-07	6.47E-08	6.81E-09	0.	0.	5.57E-05	1.07E-05
W187	1.06E-09	8.85E-10	3.10E-10	0.	0.	3.63E-06	1.94E-05

TABLE 8 (contd)

ADULT INHALATION DOSE COMMITMENT FACTORS (MREM/50Y PER PCI INHALED IN FIRST YR)

ISOTOPE	BONE	LIVER	TOTAL BODY	THYROID	KIDNEY	LUNG	GI-LLI
PB210+D	2.64E-03	6.73E-03	8.37E-04	0.	2.12E-02	2.62E-02	3.65E-05
BI210+D	0.	1.59E-06	1.32E-07	0.	1.92E-05	1.11E-03	2.95E-05
PO210	3.97E-04	8.60E-04	9.58E-05	0.	2.95E-03	3.14E-02	4.19E-05
RN222+D	0.	0.	0.	0.	0.	2.05E-06	0.
RA223+D	1.80E-04	2.77E-07	3.60E-05	0.	7.85E-06	2.55E-02	2.84E-04
RA224+D	1.94E-05	4.78E-06	3.96E-06	0.	1.35E-06	8.77E-03	3.01E-04
RA225+D	3.00E-04	3.56E-07	5.99E-05	0.	1.01E-05	2.92E-02	2.71E-04
RA226+D	1.25E-01	2.39E-06	9.14E-02	0.	6.77E-05	1.17E-01	2.94E-04
RA228+D	4.41E-02	1.23E-06	4.78E-02	0.	3.48E-05	1.61E-01	5.00E-05
AC225	4.23E-04	5.82E-04	2.84E-05	0.	6.63E-05	2.21E-02	2.52E-04
AC227+D	2.30E+00	3.05E-01	1.36E-01	0.	9.82E-02	2.41E-01	5.08E-05
TH227+D	2.17E-04	3.92E-06	6.25E-06	0.	2.22E-05	3.77E-02	3.34E-04
TH228+D	2.00E-01	3.34E-03	6.77E-03	0.	1.89E-02	1.01E+00	3.49E-04
TH229	9.88E+00	1.33E-01	4.36E-01	0.	6.52E-01	3.49E+00	3.17E-04
TH230	2.29E+00	1.31E-01	6.36E-02	0.	6.40E-01	6.21E-01	3.73E-05
TH232+D	2.56E+00	1.12E-01	9.04E-02	0.	5.47E-01	5.96E-01	3.17E-05
TH234	1.63E-05	9.56E-08	4.70E-08	0.	5.41E-07	1.89E-04	7.03E-05
PA231+D	5.08E+00	1.91E-01	1.95E-01	0.	1.07E+00	5.75E-02	4.44E-05
PA233	1.21E-06	2.42E-07	2.09E-07	0.	9.15E-07	3.52E-05	1.02E-05
U232+D	5.14E-02	0.	3.66E-03	0.	5.56E-03	2.22E-01	4.21E-05
U233+D	1.09E-02	0.	6.60E-04	0.	2.54E-03	5.32E-02	3.89E-05
U234	1.04E-02	0.	6.46E-04	0.	2.49E-03	5.22E-02	3.81E-05
U235+D	1.00E-02	0.	6.07E-04	0.	2.34E-03	4.90E-02	4.84E-05
U236	1.00E-02	0.	6.20E-04	0.	2.39E-03	5.00E-02	3.57E-05
U237	3.67E-08	0.	9.77E-09	0.	1.51E-07	1.02E-05	1.20E-05
U238+D	9.58E-03	0.	5.67E-04	0.	2.18E-03	4.58E-02	3.41E-05
NP237+D	1.69E+00	1.47E-01	6.87E-02	0.	5.10E-01	5.22E-02	4.92E-05
NP238	2.96E-07	8.00E-09	4.61E-09	0.	2.72E-08	1.02E-05	2.13E-05
NP239	2.87E-08	2.82E-09	1.55E-09	0.	8.75E-09	4.70E-06	1.49E-05
PU238	2.74E+00	3.87E-01	6.90E-02	0.	2.96E-01	1.82E-01	4.52E-05
PU239	3.19E+00	4.31E-01	7.75E-02	0.	3.30E-01	1.72E-01	4.13E-05
PU240	3.18E+00	4.30E-01	7.73E-02	0.	3.29E-01	1.72E-01	4.21E-05
PU241+D	5.41E-02	3.28E-03	1.29E-03	0.	5.93E-03	1.52E-04	8.65E-07
PU242	2.95E+00	4.15E-01	7.46E-02	0.	3.17E-01	1.65E-01	4.05E-05
PU244	3.45E+00	4.76E-01	8.54E-02	0.	3.64E-01	1.89E-01	6.03E-05
AM241	1.01E+00	3.59E-01	6.71E-02	0.	5.04E-01	6.06E-02	4.60E-05
AM242M	1.02E+00	3.46E-01	6.73E-02	0.	5.01E-01	2.44E-02	5.79E-05
AM243	1.01E+00	3.47E-01	6.57E-02	0.	4.95E-01	5.75E-02	5.40E-05
CM242	1.48E-02	1.51E-02	9.84E-04	0.	4.48E-03	3.92E-02	4.91E-05
CM243	7.86E-01	2.97E-01	4.61E-02	0.	2.15E-01	6.31E-02	4.84E-05
CM244	5.90E-01	2.54E-01	3.51E-02	0.	1.64E-01	6.06E-02	4.68E-05
CM245	1.26E+00	3.59E-01	7.14E-02	0.	3.33E-01	5.85E-02	4.36E-05
CM246	1.25E+00	3.59E-01	7.13E-02	0.	3.33E-01	5.96E-02	4.29E-05
CM247+D	1.22E+00	3.53E-01	7.03E-02	0.	3.28E-01	5.85E-02	5.63E-05
CM248	1.01E+01	2.91E+00	5.79E-01	0.	2.70E+00	4.82E-01	9.09E-04
CF252	9.78E-01	0.	2.33E-02	0.	0.	1.99E-01	1.78E-04

APPENDIX A

EQUATIONS USED TO CALCULATE AGE SPECIFIC RADIATION DOSE COMMITMENT FACTOR

The system used to calculate dose commitment factors for this report conforms to the following general format:

$$D_{aipj} = K_{ipj} \sum_{a} P_{aipj} \qquad \text{(A-1)}$$

where:

D_{aipj} = the dose commitment factor: a number specific to a given individual's age group a, nuclide i, pathway p, and organ j, which can be used to calculate radiation dose commitment from usage rate and a given concentration of a radionuclide.

K_{ipj} = a constant, which is independent of age, determined by the nuclide i, pathway p, and organ j,

P_{aipj} = that portion of the dose commitment factor which is dependent on age group a, nuclide i, pathway p and organ j.

This general format holds for all body organs except the gastrointestinal tract (GI tract) and for all radionuclides except the noble gases. The values of K_{ipj} and P_{aipj} were determined by the equations listed below. These equations have been separated into compartments according to age group and pathway to make them easier to follow. Equations for the special cases of the GI tract and the noble gases have been placed toward the end of the list.

CONSTANTS

For ingestion pathway including dose factors for total body, thyroid, bone, lung, liver and kidney

$$K_{ilj} = 18.7 * f_w / (T_1 * \lambda_e^{\circ})^2 \qquad \text{(A-2)}$$

where:

f_w = fraction of ingested nuclide reaching the organ of interest

T_1 = time of intake (365 days)

λ_e^o = effective decay constant (1/day) for the organ of interest

$$18.7 = (2.22 \frac{dpm}{pCi})(5.26 \times 10^5 \text{ min/y})(1.602 \times 10^{-8} \frac{g\text{-rad}}{MeV})(10^3 \frac{mrem}{rem})$$

For Inhalation Pathway

For soluble nuclides including dose factors for total-body, thyroid, bone, lung, liver and kidney; and for insoluble nuclides for dose factors for lung.

$$K_{i2j} = 18.7 * f_a / (T_1 * \lambda_e^o)^2 \qquad \text{(A-3)}$$

where:

f_a = fraction of inhaled nuclide reaching the organ of interest

For insoluble nuclides including dose factors for total-body, thyroid, bone, liver and kidney.

$$K_{i3j} = \frac{0.0064 * \lambda_B^L * f_2'}{T_1 * (\lambda_e^o - \lambda_e^L)} \qquad \text{(A-4)}$$

where:

f_2' = fraction from blood to organ of interest

λ_B^L = biological decay constant for the lung

λ_e^L = effective decay constant for lung

$$0.0064 = (2.22 \frac{dpm}{pCi})(1.44 \times 10^3 \text{ min/d})(1.602 \times 10^{-8} \frac{g\text{-rad}}{MeV})$$

$$(10^3 \frac{mrem}{rem})(1/8)(\text{fraction retained in lung})$$

EQUATIONS FOR INGESTION PATHWAY AND FOR INHALATION OF SOLUBLE NUCLIDES INCLUDING DOSE FACTORS FOR TOTAL BODY, THYROID, BONE, LUNG, LIVER AND KIDNEY

Infant Portion

If intake occurs when individual is an infant,

$$P_{1ipj} = (\varepsilon/m)_I * [T_1 * \lambda_e^\circ - 1 + EXP(-T_I * \lambda_e^\circ)] \quad (A\text{-}5)$$

where:

$(\varepsilon/m)_I$ = the ratio of effective absorbed energy (MeV) to mass of the organ (g) of interest for an infant

T_I = time during which individual is an infant (365 days)

If intake occurs when individual is past infancy,

$$P_{1ipj} = 0$$

Child Portion

If intake occurs when individual is an infant,

$$P_{2ipj} = (\varepsilon/m)_C * \left[1 - EXP(-T_I * \lambda_e^\circ) - EXP\left(-(T_C+T_I-T_1) * \lambda_e^\circ\right) + EXP\left(-(T_C+T_I)*\lambda_e^\circ\right)\right] \quad (A\text{-}6)$$

where:

$(\varepsilon/m)_C$ = the ratio of effective absorbed energy to mass of the organ of interest for a child

T_C = time during which individual is a child (3650 days, 10 years)

If intake occurs when individual is a child,

$$P_{2ipj} = (\varepsilon/m)_C * \left[T_i\lambda_e^\circ - EXP\left(-(T_C-T_1)*\lambda_e^\circ\right) + EXP(-T_C*\lambda_e^\circ)\right] \quad (A\text{-}7)$$

In intake occurs when individual is past childhood,

$$P_{2ipj} = 0$$

Teen Portion

If intake occurs when individual is an infant or a child,

$$P_{3ipj} = (\varepsilon/m)_T * \left[EXP\left(-(T_C+T_I-T_1)*\lambda_e^\circ\right) - EXP\left(-(T_C+T_I)*\lambda_e^\circ\right) - EXP\left(-(T_T+T_C+T_I-T_1)*\lambda_e^\circ\right) + EXP\left(-(T_T+T_C+T_I)*\lambda_e^\circ\right)\right] \quad (A\text{-}8)$$

where:

$(\varepsilon/m)_T$ = ratio of effective absorbed energy to mass of the organ of interest for a teen

T_T = time during which individual is a teen (2190 days, 6 years)

If intake occurs when individual is a teen,

$$P_{3ipj} = (\varepsilon/m)_T * \left[T_1*\lambda_e^\circ - EXP\left(-(T_T-T_1)*\lambda_e^\circ\right) + EXP(-T_T*\lambda_e^\circ)\right] \quad (A\text{-}9)$$

If intake occurs when individual is an adult,

$$P_{3ipj} = 0$$

Adult Portion

If intake occurs when individual is an infant, a child or a teen,

$$P_{4ipj} = (\varepsilon/m)_A * \left[EXP\left(-(T_T+T_C+T_I-T_1)*\lambda_e^\circ\right) - EXP\left(-(T_T+T_C+T_I)*\lambda_e^\circ\right) - EXP\left(-(T_A-T_1)*\lambda_e^\circ\right) + EXP(-T_A*\lambda_e^\circ)\right] \quad (A\text{-}10)$$

where:

$(\epsilon/m)_A$ = ratio of effective absorbed energy to mass of the organ of interest for an adult

T_A = total time over which dose commitment is calculated (18,250 days, 50 years)

If intake occurs when individual is an adult,

$$P_{4ipj} = (\epsilon/m)_A * \left[T_1 * \lambda_e^{\circ} - EXP\left(-(T_A - T_1) * \lambda_e^{\circ}\right) + EXP(T_A * \lambda_e^{\circ})\right] \qquad \text{(A-11)}$$

Argument for last exponent should be: -T(a)*Lambda(e)

EQUATIONS FOR INHALATION PATHWAY FOR INSOLUBLE NUCLIDES INCLUDING DOSE FACTORS FOR TOTAL-BODY, THYROID, BONE, LIVER AND KIDNEY(a)

Infant Portion

If intake occurs when individual is an infant,

$$P_{1ipj} = (\epsilon/m)_I * \left\{\left[T_1 * \lambda_e^{L} - 1 + EXP(-T_1 * \lambda_e^{L})\right] \Big/ (\lambda_e^{L})^2 - \left[T_1 * \lambda_e^{\circ} - 1 + EXP(-T_1 * \lambda_e^{\circ})\right] \Big/ (\lambda_e^{\circ})^2 \right\} \qquad \text{(A-12)}$$

If intake occurs when individual is past infancy,

$$P_{1ipj} = 0$$

Child Portion

If intake occurs when individual is an infant,

(a) Use Equation (A-2) to calculate dose factors for lung dose due to inhalation of insoluble material.

$$P_{2ipj} = (\epsilon/m)_c * \left\{\left[1-EXP(-T_I*\lambda_e^L) - EXP\left(-(T_C+T_I-T_1) * \lambda_e^L\right)\right.\right.$$
$$\left. + EXP\left(-(T_C+T_I)*\lambda_e^L\right)\right] \Big/ (\lambda_e^L)^2 - \left[1-EXP(-T_I*\lambda_e^\circ) - EXP\left(-(T_C+T_I-T_1)*\lambda_e^\circ\right)\right.$$
$$\left.\left. + EXP\left(-(T_C+T_I)*\lambda_e^\circ\right)\right] \Big/ (\lambda_e^\circ)^2 \right\} \qquad \text{(A-13}$$

If intake occurs when individual is a child,

$$P_{2ipj} = (\epsilon/m)_C * \left\{\left[T_1*\lambda_e^L - EXP\left(-(T_C-T_1)*\lambda_e^L\right) + EXP\ (-T_C*\lambda_e^L)\right] \Big/ (\lambda_e^L)^2\right.$$
$$\left. - \left[T_1*\lambda_e^\circ - EXP\left(-(T_C-T_1)*\lambda_e^\circ\right) + EXP\ (-T_c*\lambda_e^\circ)\right] \Big/ (\lambda_e^\circ)^2 \right\} \qquad \text{(A-1}$$

If intake occurs when individual is past childhood,

$$P_{2ipj} = 0$$

Teen Portion

If intake occurs when individual is an infant or a child,

$$P_{3ipj} = (\epsilon/m)_T * \left\{\left[EXP\left(-(T_C+T_I-T_1)*\lambda_e^L\right) - EXP\ \left(-(T_C+T_I)*\lambda_e^L\right)\right.\right.$$
$$\left. - EXP\left(-(T_T+T_C+T_I-T_1)*\lambda_e^L\right) + EXP\left(-(T_T+T_C+T_I)*\lambda_e^L\right)\right] \Big/ (\lambda_e^L)^2$$
$$- \left[EXP\left(-(T_C+T_I-T_I)*\lambda_e^\circ\right) - EXP\left(-(T_C+T_I)*\lambda_e^\circ\right)\right.$$
$$\left.\left. - EXP\left(-(T_T+T_C+T_I-T_1)*\lambda_e^\circ\right) + EXP\left(-(T_T+T_C+T_I)*\lambda_e^\circ\right)\right] (\lambda_e^\circ)^2 \right\} \qquad \text{(A-15)}$$

If intake occurs when individual is a teen,

$$P_{3ipj} = (\varepsilon/m)_T * \left\{ \left[T_1 I \lambda_e^L - EXP\left(-(T_T-T_1)*\lambda_e^L\right) + EXP(-T_T*\lambda_e^L) \right] \Big/ (\lambda_e^L)^2 \right.$$
$$\left. - \left[T_1*\lambda_e^\circ - EXP\left(-(T_T-T_1)*\lambda_e^\circ + EXP(-T_T*\lambda_e^\circ)\right) \right] \Big/ (\lambda_e^\circ)^2 \right\} \qquad \text{(A-16)}$$

If intake occurs when individual is an adult,

$$P_{3ipj} = 0$$

Adult Portion

If intake occurs when individual is an infant, a child or a teen,

$$(\varepsilon/m)_A * \left\{ \left[EXP\left(-(T_T+T_C+T_I-T_1)*\lambda_e^L\right) - EXP\left(-(T_T+T_C+T_I)*\lambda_e^L\right) \right.\right.$$
$$\left. - EXP\left(-(T_A-T_1)*\lambda_e^L\right) + EXP\left(-T_A*\lambda_e^L\right) \right] \Big/ (\lambda_e^L)^2$$
$$- \left[EXP\left(-(T_T+T_C+T_I-T_1)*\lambda_e^\circ\right) - EXP\left(-(T_T+T_C+T_I-T_1)*\lambda_e^\circ\right) \right.$$
$$\left.\left. - EXP\left(-(T_A-T_1)*\lambda_e^\circ\right) + EXP(-T_A*\lambda_e^\circ) \right] \Big/ (\lambda_e^\circ)^2 \right\} \qquad \text{(A-17)}$$

If intake occurs when individual is an adult,

$$(\varepsilon/m)_A * \left\{ \left[T_1*\lambda_e^L - EXP\left(-(T_A-T_1)*\lambda_e^L\right) + EXP\left(-T_A*\lambda_e^L\right) \right] \Big/ (\lambda_e^L)^2 \right.$$
$$\left. - \left[T_1*\lambda_e^\circ - EXP\left(-(T_A-T_1)*\lambda_e^\circ\right) + EXP\left(-T_A*\lambda_e^\circ\right) \right] \Big/ (\lambda_e^\circ)^2 \right\} \qquad \text{(A-18)}$$

Equations (A-1 through A-18) were used in the appropriate manner to calculate dose commitment factors for all organs except for GI tract and for all nuclides except the noble gases. The format as shown in Equation (A-1) of this appendix was used to make the calculations. For each radionuclide, first select the pathway and organ to be considered, then select the equation which applies for intake during the particular age group of interest. Add to this the equation(s) for all successive age groups and evaluate. Then, multiply by the constant which applies for that pathway, organ and nuclide.

For example, if an intake of radioactive material were to occur during the childhood of an individual and we were interested in the dose commitment factor to the total body due to inhalation of an insoluble radionuclide, the following procedure would be used.

1. Inhalation of insoluble material during childhood
   Equation (A-14) for P_{2ipj}
   (and $P_{1ipj} = 0$ since no intake occurred during infancy)
2. Add to Equation (A-14), Equations (A-15) and (A-17) to account for fifty years of dose commitment.
3. Then multiply this sum by the constant evaluated using Equation (A-4).
4. Using Equation numbers the form would be:

$$D_{aipj} = (A\text{-}4) \times [(A\text{-}14) + (A\text{-}15) + (A\text{-}17)$$

For the GI-tract and inhalation of noble gases, the equations listed below must be used to calculate the dose commitment factors.

SPECIAL CASE FOR THE LUNG

Dose factors for lung due to inhalation of noble gases

$$D_{aipj} = G_{ai} * \epsilon_{ai} \qquad (A\text{-}19)$$

where:

ε_{ai} = energy per disintegration absorbed in lung (MeV) for age group a and nuclide i

G_{ai} = constant determined by age-specific biological parameters listed in Table B-4

SPECIAL CASE FOR GI-TRACT

Ingestion Pathway

$$D_{aipj} = 0.0256 * \tau_a' * f^* * (\varepsilon/m)_a * EXP(-\lambda_R * t_a') \qquad \text{(A-20)}$$

where:

τ_a' = travel time (days) in LLI for age group a

$(\varepsilon/m)_a$ = ratio of effective absorbed energy to mass of the contents of the LLI for age group a

λ_R = radiological decay constant (1/day)

t_a' = travel time to LLI for age group a (in days)

$f^* = 1-f_1$ = fraction of radionuclide remaining at entrance to LLI

Inhalation Pathway

$$D_{aipj} = 0.0256 * \tau_a' * f^* * f_a * (\varepsilon/m)_a * EXP\ (-\lambda_R * t_a') \qquad \text{(A-21)}$$

In the instances where daughter products may contribute significantly to the effective absorbed energy per disintegration of the parent at the entrance to the lower intestine, the equations listed below should be applied.

EFFECTIVE ENERGIES IN THE GI-TRACT FOR DAUGHTER PRODUCTS OF RADIONUCLIDES WITH SHORT HALF-LIVES

Number of Atoms of Parent Radionuclide

- N_o^P = number of atoms of parent at time of ingestion
- N_1^P = number of atoms entering small intestines (SI)
- N_2^P = number of atoms entering upper-large intestines (ULI)
- N_3^P = number of atoms entering lower-large intestines (LLI)

Number of Atoms of Daughter Products

- N_o^D = number of atoms of daughter at time of ingestion = 0
- N_1^D = number of atoms entering small intestines
- N_2^D = number of atoms entering upper-large intestines
- N_3^D = number of atoms entering lower-large intestines

Time Factors

- t' = total travel time (days) from mouth to entrance of LLI = $t_s + t_{si} + t_u$
- t_s = travel time through stomach (days)
- t_{si} = travel time through small intestine (days)
- t_u = travel time through upper large intestine (days)

Fraction Remaining

- $f_*^P = 1 - f_1^P$ = fraction of parent remaining at entrance to ULI (w/o decay correction)
- $f_*^D = 1 - f_1^D$ = fraction of daughter remaining at entrance to ULI (w/o decay correction)

Decay Constants

- λ_R = radiological decay constant
- $\lambda_A^P = \ln (f_*^P)/t_{si}$ = Removal constant for absorption of parent in small intestine
- $\lambda_A^D = \ln (f_*^D)/t_{si}$ = Removal constant for absorption of daughter in small intestine

Relations of N's

(a) Parent

$$N_1^P = N_o^P * EXP(-\lambda_R^P * t_s) \quad \text{(A-22)}$$

$$N_2^P = N_o^P * f_*^P * EXP\left[-\lambda_R^P * (t_s + t_{si})\right] \quad \text{(A-23)}$$

$$N_3^P = N_o^P * f_*^P * EXP(-\lambda_R^P * t') \quad \text{(A-24)}$$

(b) Daughter

$$N_1^D = \left[\lambda_R^P * N_o^P/(\lambda_R^D - \lambda_R^P)\right] * \left[EXP(-\lambda_R^P * t_s) - EXP(-\lambda_R^D * t_s)\right] \quad \text{(A-25)}$$

$$N_2^D = \left\{\lambda_R^P * N_o^P * EXP\left(-\lambda_R^P * t_s\right)\Big/(\lambda_R^D - \lambda_R^P + \lambda_A^D - \lambda_A^P)\right.$$
$$\left. * \left[f_*^P * EXP(-\lambda_R^P * t_{si}) - f_*^D * EXP(-\lambda_R^D * t_{si})\right]\right\}$$
$$+ N_1^D * f_*^D * EXP(-\lambda_R^D * t_{si}) \quad \text{(A-26)}$$

$$N_3^D = \left\{\lambda_R^P * N_o^P * f_*^P * EXP\left[-\lambda_R^P * (t_s + t_{si})\right]\Big/(\lambda_R^D - \lambda_R^P) *\right.$$
$$\left[EXP(-\lambda_R^P * t_u) - EXP(-\lambda_R^D * t_u)\right.$$
$$\left.\left. + N_2^D * EXP(-\lambda_R^D * t_u)\right]\right\} \quad \text{(A-27)}$$

Ratio of Activities at Entrance to LLI

$$R = \left(\lambda_R^D * N_3^D\right) / \left(\lambda_R^P * N_3^P\right) \qquad \text{(A-28)}$$

Effective Energy at Entrance to LLI

(MeV per Disintegration of Parent)

$$\varepsilon_{LLI} = \varepsilon_{LLI}^P + \left(R * \varepsilon_{LLI}^D\right) \qquad \text{(A-29)}$$

APPENDIX B

DATA USED TO CALCULATE AGE SPECIFIC RADIATION DOSE COMMITMENT FACTORS

This appendix contains the parameters which were used in the equations listed in Appendix A to calculate the dose commitment factors in this report. The biological, chemical and radiological parameters needed to calculate the dose commitment factors are listed in the following tables.

The masses and radii for the total body and six internal organs for all age groups are listed in Table B-1. The parameters for the adult are taken from the description of Standard Man in ICRP Publication 2.[1] Organ masses for the other age groups were taken from Spector,[2] Cook and Snyder,[3] Altman and Dittmer,[4] Spiers[5] and Cowser et al.[6] The radius of the organs were assumed to be proportional to the cube root of the mass.

Table B-2 lists the travel time to and through the lower large intestine (LLI) of the gastrointestional tract. The travel times for the adult were taken from ICRP Publication 2 and those for the other age groups were assumed to be proportional to total-body mass.

The biological parameters used to calculate the dose commitment factors for the lung due to inhalation of noble gases are listed in Table B-4.

Table B-5 lists chemical, radiological and biological parameters used to calculate the dose commitment factors. In most cases, the metabolic parameters were taken from ICRP Publications 2 and 6,[1,7] but for radioiodine the fractions reaching the thyroid (and total body) calculated from data in ICRP Publication 10.[8] The 187 radionuclides are listed beside the left-hand margin along with the solubility class for inhalation and the radiological half-life (T-RADIOL). The biological half-life (T-BIOL), effective half-life (T-EFF), fraction reaching organ of reference (F-W, F-A or F-2PRM) and fraction not absorbed before reaching the LLI (F-*) are all assumed to remain constant over all age groups for each radionuclide except tritium, radioiodine and radiocesium. For the latter isotopes, information was available on the variation of biological half-life with age (see Table B-3). The effective energies (EPSILON) for the age groups are listed in the last four columns of Table B-5.

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12. R. D. Lloyd, "Cesium-137 Half-Times in Humans," Health Physics, vol. 25, p. 605, New York, 1973.

TABLE B-1. Mass and Radius of Body Organs for the Four Age Groups[1-6]

Organ	Infant[2-6]		Child[2-6]		Teenager[2-6]		Adult[1]	
	Mass (g)	Radius (cm)[a]	Mass (g)	Radius (cm)	Mass (g)	Radius (cm)	Mass (g)	Radius (cm)
Bone	770	2.4	1,640	3	4,900	4	7,000	5
Liver	200	5	530	7	1,200	9	1,700	10
Total Body	7700	14	16,400	20	49,000	27	70,000	30
Thyroid	2	1.4	5	2	15	2.7	20	3
Kidney	55	4	100	5	210	6	300	7
Lung	110	5	300	7	580	8	1,000	10
GI-LLI	16[b]	2.4	35[b]	3	100[b]	4	150	5

(a) Radius (x) is assumed to be proportional to cube root of the mass.

$$(x)_{age} = \left(\frac{x}{(mass)^{1/3}}\right)_{adult} \left(mass\right)^{1/3}_{age}$$

(b) Mass of contents assumed to be proportional to total-body mass.

TABLE B-2. GI Tract Travel Times for the Four Age Groups[a]

	Travel Time to LLI (t') (days)	Travel Time in LLI (τ') (days)
Infant	0.058	0.082
Child	0.12	0.18
Teenager	0.36	0.50
Adult	0.54	0.75

(a) Assumed to be proportional to mass of contents.

TABLE B-3. Elements Having Age Dependent Biological Half Lives

Element	Organ	Half-lives (days)			
		Infant	Child	Teenager	Adult[8]
Tritium[9]	Total Body	3.2	4.5	7.0	10
Iodine[9-11]	Total Body and Thyroid	20	20	50	100
Cesium[12]	Total Body	10	20	60	115

TABLE B-4. Biological Parameters Used to Calculate Dose Commitment Factor to Lung for the Noble Gases

Age Group	Vital Capacity of the Lung (liters)	Mass[a] (g)	Ratio vc/m (ℓ/g)	Breathing Rate (m^3/y)	Age-specific Conversion factor, G_{ai}(d)
Infant	0.6	110	5.4×10^{-3}	2045	4.94×10^{-8}
Child	1	300	3.3×10^{-3}	2560	2.41×10^{-8}
Teen	3[b]	580	5.2×10^{-3}	4930	1.97×10^{-8}
Adult	4[c]	1000	4.0×10^{-3}	7300	1.025×10^{-8}

(a) From Handbook of Biological Data.[2]
(b) Spector lists (page 267) 3.7 liters male, 2.7 liters female.[2]
(c) ICRP Publication 2[1] lists 3-4 liters for adult male and 2.3 liters for female; Handbook of Biological Data[2] lists 4.5 liters for males and 2.3 liters for females, aged 18-65 years.
(d) $G_{ai} = (10^{-3}\ m^3/\ell)\ (2.22\ dpm/pCi)\ (5.26 \times 10^5\ min/y)(1.602 \times 10^{-8}\ g\text{-}rad/MeV)\ (10^3\ mrem/rem)$ $(vc/m\ \ell/g) \div (m^3/y)$

Age Group	Vital Capacity of the Lung (liters)	Mass[a] (g)	Ratio vc/m (ℓ/g)	Breathing Rate (m^3/y)	Age-specific Conversion factor, G_{ai}[d]
Infant	0.6	110	5.4×10^{-3}	2045	4.94×10^{-8}
Child	1	300	3.3×10^{-3}	2560	2.41×10^{-8}
Teen	3[b]	580	5.2×10^{-3}	4930	1.97×10^{-8}
Adult	4[c]	1000	4.0×10^{-3}	7300	1.025×10^{-8}

(a) From Handbook of Biological Data.[2]
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(c) ICRP Publication 2[1] lists 3-4 liters for adult male and 2.3 liters for female; Handbook of Biological Data[2] lists 4.5 liters for males and 2.3 liters for females, aged 18-65 years.

(d) $G_{ai} = (10^{-3}\ m^3/\ell)\ (2.22\ dpm/pCi)\ (5.26 \times 10^5\ min/y)(1.602 \times 10^{-8}\ g\text{-}rad/MeV)\ (10^3\ mrem/rem)$ $(vc/m\ \ell/g) \div (m^3/y)$

TABLE B-5. Radiological, Biological and Chemical Parameters Used to Calculate Dose Commitment Factors

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-0 FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
H3	BONE	0.	0.	0.	0.	0.	0.	0.	0.
	LIVER		USE TOTAL BODY DOSE FACTOR						
SOLUBLE	TOTAL BODY	10.00(b)	9.978	1.000	1.000	1.0000E-02	1.0000E-02	1.0000E-02	1.0000E-02
	THYROID		USE TOTAL BODY DOSE FACTOR						
	KIDNEY		USE TOTAL BODY DOSE FACTOR						
T-RADIOL =	LUNG INGES		USE TOTAL BODY DOSE FACTOR						
12.3 Y	LUNG INHAL		USE TOTAL BODY DOSE FACTOR						
4.500E+03 DAY	GI-LLI INGES		USE TOTAL BODY DOSE FACTOR						
	GI-LLI INHAL		USE TOTAL BODY DOSE FACTOR						
BE10	BONE	450.0	450.0	6.4000E-04	.3200	1.045	1.045	1.045	1.045
(a)	LIVER	270.0	270.0	2.0000E-04	.1000	.2090	.2090	.2090	.2090
INSOLUBL	TOTAL BODY	180.0	180.0	2.0000E-03	1.000	.2090	.2090	.2090	.2090
	THYROID	0.	0.	0.	0.	.2090	.2090	.2090	.2090
	KIDNEY	120.0	120.0	6.0000E-05	3.0000E-02	.2090	.2090	.2090	.2090
T-RADIOL =	LUNG INGES	0.	0.	0.		.2090	.2090	.2090	.2090
1.600E+06 Y	LUNG INHAL	120.0	120.0		.1200	.2090	.2090	.2090	.2090
5.840E+08 DAY	GI-LLI INGES			1.000		.2090	.2090	.2090	.2090
	GI-LLI INHAL			1.000	.6250	.2090	.2090	.2090	.2090
C14	BONE	40.00	40.00	2.5000E-02	2.0000E-02	.2090	.2090	.2090	.2090
	LIVER		USE TOTAL BODY DOSE FACTOR						
SOLUBLE	TOTAL BODY	10.00	10.00	1.000	.7500	5.3800E-02	5.3800E-02	5.3800E-02	5.3800E-02
	THYROID		USE TOTAL BODY DOSE FACTOR						
	KIDNEY		USE TOTAL BODY DOSE FACTOR						
T-RADIOL =	LUNG INGES		USE TOTAL BODY DOSE FACTOR						
5.730E+03 Y	LUNG INHAL		USE TOTAL BODY DOSE FACTOR						
2.091E+06 DAY	GI-LLI INGES		USE TOTAL BODY DOSE FACTOR						
	GI-LLI INHAL		USE TOTAL BODY DOSE FACTOR						

(a) For inhalation only. All nuclides, except noble gases, assumed to be soluble for ingestion pathway.

(b) See Table B-3 for age dependent biological half-life.

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
N13	BONE		USE TOTAL BODY DOSE FACTOR						
	LIVER		USE TOTAL BODY DOSE FACTOR						
SOLUBLE	TOTAL BODY	90.00	6.9231E-03	1.000	.7500	.8800	.9950	1.104	1.143
	THYROID		USE TOTAL BODY DOSE FACTOR						
	KIDNEY		USE TOTAL BODY DOSE FACTOR						
T-RADIOL =	LUNG INGES		USE TOTAL BODY DOSE FACTOR						
9.97 M	LUNG INHAL		USE TOTAL BODY DOSE FACTOR						
6.924E-03 DAY	GI-LLI INGES		USE TOTAL BODY DOSE FACTOR						
	GI-LLI INHAL		USE TOTAL BODY DOSE FACTOR						
P14	BONE	1450.	7.6246E-02	.5300	.4000	1.339	1.369	1.417	1.462
	LIVER	0.	0.	0.	0.	.3910	.4450	.4940	.5180
SOLUBLE	TOTAL BODY	808.0	7.6243E-02	1.000	.7500	.6060	.7180	.8230	.8600
	THYROID	0.	0.	0.	0.	.2860	.3040	.3250	.3340
	KIDNEY	0.	0.	0.	0.	.3630	.3910	.4210	.4450
T-RADIOL =	LUNG INGES	0.	0.	0.		.3910	.4450	.4700	.5180
110. M	LUNG INHAL	0.	0.		0.	.3910	.4450	.4700	.5180
7.625E-02 DAY	GI-LLI INGES			5.0000E-02		.3170	.3340	.3630	.3910
	GI-LLI INHAL			5.0000E-02	.5000	.3170	.3340	.3630	.3910
NA22	BONE		USE TOTAL BODY DOSE FACTOR						
	LIVER		USE TOTAL BODY DOSE FACTOR						
SOLUBLE	TOTAL BODY	11.00	10.87	1.000	.7500	.9590	1.199	1.429	1.513
	THYROID		USE TOTAL BODY DOSE FACTOR						
	KIDNEY		USE TOTAL BODY DOSE FACTOR						
T-RADIOL =	LUNG INGES		USE TOTAL BODY DOSE FACTOR						
2.60 Y	LUNG INHAL		USE TOTAL BODY DOSE FACTOR						
949. DAY	GI-LLI INGES		USE TOTAL BODY DOSE FACTOR						
	GI-LLI INHAL		USE TOTAL BODY DOSE FACTOR						
NA24	BONE		USE TOTAL BODY DOSE FACTOR						
	LIVER		USE TOTAL BODY DOSE FACTOR						
SOLUBLE	TOTAL BODY	11.00	.5921	1.000	.7500	1.771	2.174	2.574	2.725
	THYROID		USE TOTAL BODY DOSE FACTOR						
	KIDNEY		USE TOTAL BODY DOSE FACTOR						
T-RADIOL =	LUNG INGES		USE TOTAL BODY DOSE FACTOR						
15.0 H	LUNG INHAL		USE TOTAL BODY DOSE FACTOR						
.626 DAY	GI-LLI INGES		USE TOTAL BODY DOSE FACTOR						
	GI-LLI INHAL		USE TOTAL BODY DOSE FACTOR						

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-A FOR GI	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
P32	BONE	1155.	14.11	.3750	.3200	3.459	3.459	3.459	3.459
	LIVER	18.00	7.963	5.0000E-02	4.0000E-02	.6960	.6960	.6960	.6960
SOLUBLE	TOTAL BODY	257.0	13.53	.7500	.6300	.6960	.6960	.6960	.6960
	THYROID	0.	0.	0.	0.	.6960	.6960	.6960	.6960
	KIDNEY	0.	0.	0.	0.	.6960	.6960	.6960	.6960
T-RADIOL =	LUNG INGES	0.	0.	0.		.6960	.6960	.6960	.6960
14.3 D	LUNG INHAL	0.	0.		0.	.6960	.6960	.6960	.6960
14.3 DAY	GI-LLI INGES			.2500		.6960	.6960	.6960	.6960
	GI-LLI INHAL			.2500	.5000	.6960	.6960	.6960	.6960
AR39	BONE	0.	0.	0.	0.	0.	0.	0.	1.103
	LIVER	0.	0.	0.	0.	0.	0.	0.	.2030
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	.2030
	THYROID	0.	0.	0.	0.	0.	0.	0.	.2030
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.2030
T-RADIOL =	LUNG INGES	0.	0.	0.		.2030	.2030	.2030	.2030
269. Y	LUNG INHAL	0.	0.		0.	.2030	.2030	.2030	.2030
9.819E+04 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.
AR41	BONE	0.	0.	0.	0.	0.	0.	0.	2.602
	LIVER	0.	0.	0.	0.	0.	0.	0.	.7860
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	1.210
	THYROID	0.	0.	0.	0.	0.	0.	0.	.5690
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.6980
T-RADIOL =	LUNG INGES	0.	0.	0.		.6360	.6980	.7290	.7850
1.83 H	LUNG INHAL	0.	0.		0.	.6360	.6980	.7290	.7860
7.625E-02 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.
CA41	BONE	1.8000E+04	1.7993E+04	.5400	.9000	3.6000E-03	3.6000E-03	3.6000E-03	3.6000E-03
	LIVER	0.	0.	0.	0.	3.6000E-03	3.6000E-03	3.6000E-03	3.6000E-03
INSOLUBL	TOTAL BODY	1.6400E+04	1.6394E+04	.6000	1.000	3.6000E-03	3.6000E-03	3.6000E-03	3.6000E-03
	THYROID	0.	0.	0.	0.	3.6000E-03	3.6000E-03	3.6000E-03	3.6000E-03
	KIDNEY	0.	0.	0.	0.	3.6000E-03	3.6000E-03	3.6000E-03	3.6000E-03
T-RADIOL =	LUNG INGES	0.	0.	0.		3.6000E-03	3.6000E-03	3.6000E-03	0.
1.300E+05 Y	LUNG INHAL	120.0	120.0		.1200	3.6000E-03	3.6000E-03	3.6000E-03	0.
4.745E+07 DAY	GI-LLI INGES			.4000		3.6000E-03	3.6000E-03	3.6000E-03	3.6000E-03
	GI-LLI INHAL			1.000	.6200	3.6000E-03	3.6000E-03	3.6000E-03	3.6000E-03

		ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-A FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
SC46		BONE	33.00	23.68	2.0000E-05	.2000	.8650	.9220	1.014	1.101
		LIVER	36.00	25.18	1.5000E-05	.1500	.4090	.5120	.6080	.6540
	SOLUBLE	TOTAL BODY	30.00	22.09	1.0000E-04	1.000	.8250	1.045	1.255	1.333
		THYROID	0.	0.	0.	0.	.2080	.2430	.2830	.3000
		KIDNEY	75.00	39.58	2.0000E-06	2.0000E-02	.3550	.4090	.4860	.5120
T-RADIOL =		LUNG INGES	0.	0.	0.		.4090	.5120	.5610	.6540
83.8	D	LUNG INHAL	0.	0.		0.	.4090	.5120	.5610	.6540
83.8	DAY	GI-LLI INGES			1.000		.2660	.3000	.3550	.4090
		GI-LLI INHAL			1.000	.6200	.2660	.3000	.3550	.4090
CR51		BONE	0.	0.	0.	0.	4.9000E-03	5.8000E-03	7.2000E-03	8.6000E-03
		LIVER	0.	0.	0.	0.	5.3000E-03	6.9000E-03	8.3000E-03	9.0000E-03
	INSOLUBL	TOTAL BODY	616.0	26.52	5.0000E-03	1.000	1.1600E-02	1.4900E-02	1.8000E-02	1.9000E-02
		THYROID	616.0	26.52	4.5000E-06	9.0000E-04	2.2000E-03	2.8000E-03	3.4000E-03	3.6000E-03
		KIDNEY	616.0	26.52	1.3000E-05	2.7000E-03	4.5000E-03	5.3000E-03	6.5000E-03	6.9000E-03
T-RADIOL =		LUNG INGES	616.0	26.52	2.0000E-04		5.3000E-03	6.9000E-03	7.6000E-03	9.0000E-03
27.7	D	LUNG INHAL	120.0	22.51		.1200	5.3000E-03	6.9000E-03	7.6000E-03	9.0000E-03
27.7	DAY	GI-LLI INGES			1.000		3.1000E-03	3.6000E-03	4.5000E-03	5.3000E-03
		GI-LLI INHAL			1.000	.6200	3.1000E-03	3.6000E-03	4.5000E-03	5.3000E-03
MN54		BONE	0.	0.	0.	0.	.1080	.1320	.1710	.2080
		LIVER	25.00	23.15	2.0000E-02	.2400	.1220	.1660	.2070	.2270
	INSOLUBL	TOTAL BODY	17.00	16.12	.1000	1.000	.2990	.3920	.4800	.5120
		THYROID	0.	0.	0.	0.	3.6400E-02	6.1200E-02	7.5800E-02	7.5800E-02
		KIDNEY	6.800	6.655	5.0000E-03	5.0000E-02	9.9400E-02	.1220	.1500	.1660
T-RADIOL =		LUNG INGES	0.	0.	0.		.1220	.1660	.1870	.2270
313.	D	LUNG INHAL	120.0	86.71		.1200	.1220	.1660	.1870	.2270
313.	DAY	GI-LLI INGES			.9000		6.1200E-02	7.5800E-02	9.9400E-02	.1220
		GI-LLI INHAL			1.000	.6200	6.1200E-02	7.5800E-02	9.9400E-02	.1220
MN56		BONE	0.	0.	0.	0.	4.169	4.243	4.319	4.391
		LIVER	25.00	.1071	2.0000E-02	.2400	1.033	1.117	1.197	1.236
	INSOLUBL	TOTAL BODY	17.00	.1069	.1000	1.000	1.378	1.564	1.743	1.810
		THYROID	0.	0.	0.	0.	.8670	.8960	.9290	.9430
		KIDNEY	6.800	.1059	5.0000E-03	5.0000E-02	.9880	1.033	1.075	1.117
T-RADIOL =		LUNG INGES	0.	0.	0.		1.033	1.117	1.158	1.236
2.58	H	LUNG INHAL	120.0	.1075		.1200	1.033	1.117	1.158	1.236
.108	DAY	GI-LLI INGES			.9000		.9150	.9430	.9880	1.033
		GI-LLI INHAL			1.000	.6200	.9150	.9430	.9880	1.033

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
FE55	BONE	1680.	621.1	1.0000E-02	.1000	4.1700E-02	4.1700E-02	4.1700E-02	4.2000E-02
	LIVER	554.0	354.6	1.3000E-02	.1300	9.5000E-03	9.5000E-03	9.5000E-03	9.5000E-03
INSOLUBL	TOTAL BODY	800.0	441.6	.1000	1.000	9.5000E-03	9.5000E-03	9.5000E-03	9.5000E-03
	THYROID	0.	0.	0.	0.	9.5000E-03	9.5000E-03	9.5000E-03	9.5000E-03
	KIDNEY	0.	0.	0.	0.	9.5000E-03	9.5000E-03	9.5000E-03	9.5000E-03
T-RADIOL =	LUNG INGES	3200.	753.5	2.0000E-03		9.5000E-03	9.5000E-03	9.5000E-03	9.5000E-03
2.70 Y	LUNG INHAL	120.0	107.0		.1200	9.5000E-03	9.5000E-03	9.5000E-03	9.5000E-03
985. DAY	GI-LLI INGES			.9000		9.5000E-03	9.5000E-03	9.5000E-03	9.5000E-03
	GI-LLI INHAL			1.000	.6200	9.5000E-03	9.5000E-03	9.5000E-03	9.5000E-03
FE59	BONE	1680.	43.45	1.0000E-02	.1000	.8100	.8430	.8960	.9460
	LIVER	554.0	41.28	1.3000E-02	.1300	.2980	.3570	.4130	.4390
INSOLUBL	TOTAL BODY	8000.	44.35	.1000	1.000	.5360	.6660	.7900	.8350
	THYROID	0.	0.	0.	0.	.1820	.2020	.2250	.2350
	KIDNEY	0.	0.	0.	0.	.2670	.2980	.3280	.3570
T-RADIOL =	LUNG INGES	3200.	43.99	2.0000E-03		.2960	.3570	.3850	.4390
44.6 D	LUNG INHAL	120.0	32.52		.1200	.2980	.3570	.3850	.4390
44.6 DAY	GI-LLI INGES			.9000		.2150	.2350	.2670	.2980
	GI-LLI INHAL			1.000	.6200	.2150	.2350	.2670	.2980
CO57	BONE	0.	0.	0.	0.	.1720	.1760	.1820	.1870
	LIVER	9.500	9.178	7.0000E-03	4.0000E-02	4.9600E-02	5.5000E-02	6.0200E-02	6.2600E-02
INSOLUBL	TOTAL BODY	9.500	9.178	.3000	1.000	7.1900E-02	8.0400E-02	9.6000E-02	.1000
	THYROID	0.	0.	0.	0.	3.9000E-02	4.0900E-02	4.3100E-02	4.3900E-02
	KIDNEY	0.	0.	0.	0.	4.6800E-02	4.9600E-02	5.2600E-02	5.5000E-02
T-RADIOL =	LUNG INGES	0.	0.	0.		4.9600E-02	5.5600E-02	5.7600E-02	6.2600E-02
271. D	LUNG INHAL	120.0	83.17		.1200	4.9600E-02	5.5600E-02	5.7600E-02	6.2600E-02
271. DAY	GI-LLI INGES			.7000		4.2200E-02	4.3900E-02	4.6800E-02	4.9600E-02
	GI-LLI INHAL			1.000	.6200	4.2200E-02	4.3900E-02	4.6800E-02	4.9600E-02
CO58	BONE	0.	0.	0.	0.	.2480	.2770	.3230	.3670
	LIVER	9.500	8.383	7.0000E-03	4.0000E-02	.1690	.2200	.2690	.2920
INSOLUBL	TOTAL BODY	9.500	8.383	.3000	1.000	.3770	.4860	.5900	.6280
	THYROID	0.	0.	0.	0.	6.7200E-02	8.4900E-02	.1050	.1140
	KIDNEY	0.	0.	0.	0.	.1420	.1690	.1980	.2200
T-RADIOL =	LUNG INGES	0.	0.	0.		.1690	.2260	.2450	.2920
71.3 D	LUNG INHAL	120.0	44.73		.1200	.1690	.2260	.2450	.2920
71.3 DAY	GI-LLI INGES			.7000		9.6600E-02	.1140	.1420	.1690
	GI-LLI INHAL			1.000	.6200	9.6600E-02	.1140	.1420	.1690

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
C060	BONE	0.	0.	0.	0.	.8320	.9010	1.011	1.116
	LIVER	9.500	9.453	7.0000E-03	4.0000E-02	.4490	.5730	.6890	.7450
INSOLUBL	TOTAL BODY	9.500	9.453	.3000	1.000	.9520	1.221	1.479	1.575
	THYROID	0.	0.	0.	0.	.2080	.2500	.2980	.3180
	KIDNEY	0.	0.	0.	0.	.3850	.4490	.5110	.5730
	LUNG INGES	0.	0.	0.		.4490	.5730	.6320	.7450
T-RADIOL =	LUNG INHAL	120.0	113.0		.1200	.4490	.5730	.6320	.7450
5.27 Y	GI-LLI INGES			.7000		.2770	.3180	.3850	.4490
1.924E+03 DAY	GI-LLI INHAL			1.000	.6200	.2770	.3180	.3850	.4490
N159	BONE	800.0	800.0	.1500	.5000	7.7000E-03	7.7000E-03	7.7000E-03	7.7000E-03
	LIVER	500.0	500.0	2.0000E-02	7.0000E-02	7.7000E-03	7.7000E-03	7.7000E-03	7.7000E-03
INSOLUBL	TOTAL BODY	667.0	667.0	.3000	1.000	7.7000E-03	7.7000E-03	7.7000E-03	7.7000E-03
	THYROID	0.	0.	0.	0.	7.7000E-03	7.7000E-03	7.7000E-03	0.
	KIDNEY	0.	0.	0.	0.	7.7000E-03	7.7000E-03	7.7000E-03	0.
	LUNG INGES	0.	0.	0.		7.7000E-03	7.7000E-03	7.7000E-03	7.7000E-03
T-RADIOL =	LUNG INHAL	120.0	120.0		.1200	7.7000E-03	7.7000E-03	7.7000E-03	7.7000E-03
8.000E+04 Y	GI-LLI INGES			.7000		7.7000E-03	7.7000E-03	7.7000E-03	7.7000E-03
2.920E+07 DAY	GI-LLI INHAL			1.000	.6200	7.7000E-03	7.7000E-03	7.7000E-03	7.7000E-03
N163	BONE	800.0	782.8	.1500	.5000	.1050	.1050	.1050	.1050
	LIVER	500.0	493.2	2.0000E-02	7.0000E-02	2.1000E-02	2.1000E-02	2.1000E-02	2.1000E-02
INSOLUBL	TOTAL BODY	667.0	655.0	.3000	1.000	2.1000E-02	2.1000E-02	2.1000E-02	2.1000E-02
	THYROID	0.	0.	0.	0.	2.1000E-02	2.1000E-02	2.1000E-02	2.1000E-02
	KIDNEY	0.	0.	0.	0.	2.1000E-02	2.1000E-02	2.1000E-02	2.1000E-02
	LUNG INGES	0.	0.	0.		2.1000E-02	2.1000E-02	2.1000E-02	2.1000E-02
T-RADIOL =	LUNG INHAL	120.0	119.6		.1200	2.1000E-02	2.1000E-02	2.1000E-02	2.1000E-02
100. Y	GI-LLI INGES			.7000		2.1000E-02	2.1000E-02	2.1000E-02	2.1000E-02
3.650E+04 DAY	GI-LLI INHAL			1.000	.6200	2.1000E-02	2.1000E-02	2.1000E-02	2.1000E-02
N165	BONE	800.0	.1050	.1500	.5000	3.112	3.127	3.152	3.176
	LIVER	500.0	.1050	2.0000E-02	7.0000E-02	.6860	.7140	.7400	.7520
INSOLUBL	TOTAL BODY	667.0	.1050	.3000	1.000	.7990	.8600	.9180	.9400
	THYROID	0.	0.	0.	0.	.6320	.6410	.6520	.6560
	KIDNEY	0.	0.	0.	0.	.6710	.6860	.7000	.7140
	LUNG INGES	0.	0.	0.		.6660	.7140	.7270	.7520
T-RADIOL =	LUNG INHAL	120.0	.1049		.1200	.6860	.7140	.7270	.7520
2.52 H	GI-LLI INGES			.7000		.6470	.6560	.6710	.6860
.105 DAY	GI-LLI INHAL			1.000	.6200	.6470	.6560	.6710	.6860

		ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
CU64		BONE	0.	0.	0.	0.	.6540	.6600	.6700	.6790
		LIVER	150.0	.5290	2.0000E-02	8.0000E-02	.1560	.1660	.1770	.1810
INSOLUBL		TOTAL BODY	80.00	.5273	.2800	1.000	.1990	.2220	.2430	.2510
		THYROID	0.	0.	0.	0.	.1340	.1380	.1420	.1440
		KIDNEY	16.00	.5138	1.0000E-02	5.0000E-02	.1500	.1560	.1610	.1660
T-RADIOL =		LUNG INGES	0.	0.	0.		.1560	.1660	.1720	.1810
12.7	H	LUNG INHAL	120.0	.5285		.1200	.1560	.1660	.1720	.1810
.531	DAY	GI-LLI INGES			.7200		.1410	.1440	.1500	.1560
		GI-LLI INHAL			1.000	.6200	.1410	.1440	.1500	.1560
ZN65		BONE	1300.	205.2	1.5000E-02	.1500	8.3400E-02	9.9000E-02	.1240	.1490
		LIVER	91.00	66.26	3.5000E-02	.3500	8.4300E-02	.1130	.1400	.1530
INSOLUBL		TOTAL BODY	933.0	193.2	.1000	1.000	.2000	.2610	.3200	.3410
		THYROID	0.	0.	0.	0.	2.8500E-02	3.8300E-02	.4940	5.4000E-02
		KIDNEY	149.0	92.47	4.0000E-03	4.0000E-02	6.9400E-02	8.4300E-02	9.8700E-02	.1130
T-RADIOL =		LUNG INGES	0.	0.	0.		8.4300E-02	.1130	.1260	.1520
244.	D	LUNG INHAL	120.0	80.41		.1200	8.4300E-02	.1130	.1260	.1520
244.	DAY	GI-LLI INGES			.9000		.4460	5.4100E-02	6.9400E-02	8.4300E-02
		GI-LLI INHAL			1.000	.6200	.4460	5.4100E-02	6.9400E-02	8.4300E-02
ZN69M+D		BONE	1300.	.5789	1.5000E-02	.1500	1.800	1.813	1.833	1.852
		LIVER	91.00	.5755	3.5000E-02	.3500	.4120	.4320	.4560	.4660
INSOLUBL		TOTAL BODY	933.0	.5788	.1000	1.000	.5020	.5490	.5940	.6100
		THYROID	0.	0.	0.	0.	.3680	.3760	.3850	.3880
		KIDNEY	149.0	.5769	4.0000E-03	4.0000E-02	.4010	.4120	.4230	.4350
T-RADIOL =		LUNG INGES	0.	0.	0.		.4120	.4320	.4450	.4660
13.9	H	LUNG INHAL	120.0	.5764		.1200	.4120	.4320	.4450	.4660
.579	DAY	GI-LLI INGES			.9000		.3810	.3880	.4010	.4120
		GI-LLI INHAL			1.000	.6200	.3810	.3880	.4010	.4120
ZN69		BONE	1300.	3.9582E-02	1.5000E-02	.1500	1.638	1.638	1.638	1.638
		LIVER	91.00	3.9566E-02	3.5000E-02	.3500	.3280	.3280	.3280	.3280
INSOLUBL		TOTAL BODY	933.0	3.9582E-02	.1000	1.000	.3280	.3280	.3280	.3280
		THYROID	0.	0.	0.	0.	.3280	.3280	.3280	.3280
		KIDNEY	149.0	3.9573E-02	4.0000E-03	4.0000E-02	.3280	.3280	.3280	.3280
T-RADIOL =		LUNG INGES	0.	0.	0.		.3280	.3280	.3280	.3280
57.0	H	LUNG INHAL	120.0	3.9570E-02		.1200	.3280	.3280	.3280	.3280
3.958E-02	DAY	GI-LLI INGES			.9000		.3280	.3280	.3280	.3280
		GI-LLI INHAL			1.000	.6200	.3280	.3280	.3280	.3280

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
SE79	BONE	0.	0.	0.	0.	0.	0.	0.	0.
	LIVER	24.00	24.00	6.0000E-02	7.0000E-02	4.2000E-02	4.2000E-02	4.2000E-02	4.2000E-02
INSOLUBL	TOTAL BODY	11.00	11.00	.9000	1.000	4.2000E-02	4.2000E-02	4.2000E-02	4.2000E-02
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	11.00	11.00	4.0000E-02	4.0000E-02	4.2000E-02	4.2000E-02	4.2000E-02	4.2000E-02
T-RADIOL =	LUNG INGES	0.	0.	0.		4.2000E-02	4.2000E-02	4.2000E-02	4.2000E-02
6.500E+04 Y	LUNG INHAL	120.0	120.0		.1200	4.2000E-02	4.2000E-02	4.2000E-02	4.2000E-02
2.373E+07 DAY	GI-LLI INGES			.1000		4.2000E-02	4.2000E-02	4.2000E-02	4.2000E-02
	GI-LLI INHAL			1.000	.6200	4.2000E-02	4.2000E-02	4.2000E-02	4.2000E-02
BR82	BONE	0.	0.	0.	0.	0.	0.	0.	1.900
	LIVER	0.	0.	0.	0.	0.	0.	0.	.8400
SOLUBLE	TOTAL BODY	8.000	1.245	1.000	.7500	1.061	1.345	1.616	1.715
	THYROID	0.	0.	0.	0.	0.	0.	0.	.3810
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.6560
T-RADIOL =	LUNG INGES	0.	0.	0.		0.	0.	0.	.8400
35.4 H	LUNG INHAL	0.	0.		0.	0.	0.	0.	.8400
1.48 DAY	GI-LLI INGES			5.0000E-02		.3360	.3810	.4530	.5220
	GI-LLI INHAL			5.0000E-02	.5000	.3360	.3810	.4530	.5220
BR83+D	BONE	0.	0.	0.	0.	0.	0.	0.	1.900
	LIVER	0.	0.	0.	0.	0.	0.	0.	.3820
SOLUBLE	TOTAL BODY	8.000	9.8765E-02	1.000	.7500	.3830	.3840	.3850	.3850
	THYROID	0.	0.	0.	0.	0.	0.	0.	.3810
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.3820
T-RADIOL =	LUNG INGES	0.	0.	0.		0.	0.	0.	.3820
2.40 H	LUNG INHAL	0.	0.		0.	0.	0.	0.	.3820
.100 DAY	GI-LLI INGES			5.0000E-02		.3810	.3810	.3810	.3820
	GI-LLI INHAL			5.0000E-02	.5000	.3810	.3810	.3810	.3820
BR84	BONE	0.	0.	0.	0.	0.	0.	0.	6.601
	LIVER	0.	0.	0.	0.	0.	0.	0.	1.665
SOLUBLE	TOTAL BODY	8.000	2.2023E-02	1.000	.7500	1.806	1.990	2.172	2.241
	THYROID	0.	0.	0.	0.	0.	0.	0.	1.381
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	1.550
T-RADIOL =	LUNG INGES	0.	0.	0.		0.	0.	0.	1.665
31.8 H	LUNG INHAL	0.	0.		0.	0.	0.	0.	1.665
2.208E-02 DAY	GI-LLI INGES			5.0000E-02		1.355	1.381	1.425	1.468
	GI-LLI INHAL			5.0000E-02	.5000	1.355	1.381	1.425	1.468

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-M OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
BR85	BONE	0.	0.	0.	0.	0.	0.	0.	5.075
	LIVER	0.	0.	0.	0.	0.	0.	0.	1.015
SOLUBLE	TOTAL BODY	8.000	1.9926E-03	1.000	.7500	1.015	1.015	1.015	1.015
	THYROID	0.	0.	0.	0.	0.	0.	0.	1.015
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	1.015
T-RADIOL =	LUNG INGES	0.	0.	0.		0.	0.	0.	1.015
2.87 M	LUNG INHAL	0.	0.		0.	0.	0.	0.	1.015
1.993E-03 DAY	GI-LLI INGES			5.0000E-02		1.015	1.015	1.015	1.015
	GI-LLI INHAL			5.0000E-02	.5000	1.015	1.015	1.015	1.015
KR83M	BONE	0.	0.	0.	0.	0.	0.	0.	.2140
	LIVER	0.	0.	0.	0.	0.	0.	0.	5.0600E-02
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	5.0600E-02
	THYROID	0.	0.	0.	0.	0.	0.	0.	5.0600E-02
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	5.0600E-02
T-RADIOL =	LUNG INGES	0.	0.	0.		5.0600E-02	5.0600E-02	5.0600E-02	5.0600E-02
1.86 H	LUNG INHAL	0.	0.		0.	5.0600E-02	5.0600E-02	5.0600E-02	5.0600E-02
7.750E-02 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.
KR85M	BONE	0.	0.	0.	0.	0.	0.	0.	1.261
	LIVER	0.	0.	0.	0.	0.	0.	0.	.2840
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	.3370
	THYROID	0.	0.	0.	0.	0.	0.	0.	.2580
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.2730
T-RADIOL =	LUNG INGES	0.	0.	0.		.2660	.2730	.2770	.2840
4.48 H	LUNG INHAL	0.	0.		0.	.2660	.2730	.2770	.2840
.187 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.
KR85	BONE	0.	0.	0.	0.	0.	0.	0.	1.171
	LIVER	0.	0.	0.	0.	0.	0.	0.	.2350
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	.2360
	THYROID	0.	0.	0.	0.	0.	0.	0.	.2340
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.2350
T-RADIOL =	LUNG INGES	0.	0.	0.		.2350	.2350	.2350	.2350
10.7 Y	LUNG INHAL	0.	0.		0.	.2350	.2350	.2350	.2350
3.916E+03 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-0 FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
KR87	BONE	0.	0.	0.	0.	0.	0.	0.	6.073
	LIVER	0.	0.	0.	0.	0.	0.	0.	1.495
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	1.958
	THYROID	0.	0.	0.	0.	0.	0.	0.	1.265
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	1.402
T-RADIOL =	LUNG INGES	0.	0.	0.		1.335	1.402	1.434	1.495
76.0 H	LUNG INHAL	0.	0.		0.	1.335	1.402	1.434	1.495
5.278E-02 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.
KR88+D	BONE	0.	0.	0.	0.	0.	0.	0.	3.270
	LIVER	0.	0.	0.	0.	0.	0.	0.	.6740
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	.7060
	THYROID	0.	0.	0.	0.	0.	0.	0.	.6580
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.6680
T-RADIOL =	LUNG INGES	0.	0.	0.		2.793	2.900	2.951	3.051
2.80 H	LUNG INHAL	0.	0.		0.	2.793	2.900	2.951	3.051
.117 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.
KR89	BONE	0.	0.	0.	0.	0.	0.	0.	0.
	LIVER	0.	0.	0.	0.	0.	0.	0.	0.
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	0.
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	0.
T-RADIOL =	LUNG INGES	0.	0.	0.		1.753	1.889	1.953	2.076
3.16 H	LUNG INHAL	0.	0.		0.	1.753	1.889	1.953	2.076
2.194E-03 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.
KR86	BONE	0.	0.	0.	0.	3.259	3.261	3.266	3.270
	LIVER	63.00	14.39	5.0000E-02	4.0000E-02	.6630	.6680	.6720	.6740
SOLUBLE	TOTAL BODY	45.00	13.19	1.000	.7500	.6820	.6930	.7020	.7060
	THYROID	0.	0.	0.	0.	.6530	.6550	.6570	.6580
	KIDNEY	0.	0.	0.	0.	.6600	.6630	.6660	.6680
T-RADIOL =	LUNG INGES	0.	0.	0.		.6630	.6680	.6700	.6740
18.7 D	LUNG INHAL	0.	0.		0.	.6630	.6680	.6700	.6740
18.7 DAY	GI-LLI INGES			5.0000E-02		.6560	.6580	.6600	.6630
	GI-LLI INHAL			5.0000E-02	.5000	.6560	.6580	.6600	.6630

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
RB87	BONE	0.	0.	0.	0.	0.	0.	0.	0.
	LIVER	63.00	63.00	5.0000E-02	4.0000E-02	9.0000E-02	9.0000E-02	9.0000E-02	9.0000E-02
SOLUBLE	TOTAL BODY	45.00	45.00	1.000	.7500	9.0000E-02	9.0000E-02	9.0000E-02	9.0000E-02
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	0.
T-RADIOL =	LUNG INGES	0.	0.	0.		0.	0.	0.	0.
4.700E+10 Y	LUNG INHAL	0.	0.		0.	0.	0.	0.	0.
1.716E+13 DAY	GI-LLI INGES			5.0000E-02		9.0000E-02	9.0000E-02	9.0000E-02	9.0000E-02
	GI-LLI INHAL			5.0000E-02	.5000	9.0000E-02	9.0000E-02	9.0000E-02	9.0000E-02
RB88	BONE	0.	0.	0.	0.	10.60	10.70	10.70	10.70
	LIVER	63.00	1.2289E-02	5.0000E-02	4.0000E-02	2.193	2.223	2.251	2.265
SOLUBLE	TOTAL BODY	45.00	1.2288E-02	1.000	.7500	2.316	2.383	2.448	2.473
	THYROID	0.	0.	0.	0.	2.135	2.145	2.157	2.180
	KIDNEY	0.	0.	0.	0.	2.178	2.193	2.208	0.
T-RADIOL =	LUNG INGES	0.	0.	0.		2.193	2.223	2.237	2.280
17.7 H	LUNG INHAL	0.	0.		0.	2.193	2.223	2.237	2.280
1.229E-02 DAY	GI-LLI INGES			5.0000E-02		2.152	2.162	2.178	2.193
	GI-LLI INHAL			5.0000E-02	.5000	2.152	2.162	2.178	2.193
RB89+D	BONE	0.	0.	0.	0.	6.010	6.080	6.180	6.280
	LIVER	63.00	1.0554E-02	5.0000E-02	4.0000E-02	1.469	1.584	1.693	1.746
SOLUBLE	TOTAL BODY	45.00	1.0553E-02	1.000	.7500	1.940	2.194	2.441	2.533
	THYROID	0.	0.	0.	0.	1.244	1.288	1.328	1.347
	KIDNEY	0.	0.	0.	0.	1.409	1.469	1.532	1.584
T-RADIOL =	LUNG INGES	0.	0.	0.		1.469	1.584	1.644	1.746
15.2 H	LUNG INHAL	0.	0.		0.	1.469	1.584	1.644	1.746
1.056E-02 DAY	GI-LLI INGES			5.0000E-02		.7540	.7920	.8540	.9140
	GI-LLI INHAL			5.0000E-02	.5000	.7540	.7920	.8540	.9140
SR89+D	BONE	1.8000E+04	50.36	.2100	.7000	2.760	2.760	2.760	2.760
	LIVER	0.	0.	0.	0.	.5550	.5550	.5550	.5550
INSOLUBLE	TOTAL BODY	1.3000E+04	50.30	.3000	1.000	.5550	.5550	.5550	.5550
	THYROID	0.	0.	0.	0.	.5550	.5550	.5550	.5550
	KIDNEY	0.	0.	0.	0.	.5550	.5550	.5550	.5550
T-RADIOL =	LUNG INGES	0.	0.	0.		.5550	.5550	.5550	.5550
50.5 D	LUNG INHAL	120.0	35.54		.1200	.5550	.5550	.5550	.5550
50.5 DAY	GI-LLI INGES			.7000		.5550	.5550	.5550	.5550
	GI-LLI INHAL			1.000	.6200	.5550	.5550	.5550	.5550

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
SR90+D	BONE	1.8000E+04	6665.	2.2500E-02	.3000	5.650	5.650	5.650	5.650
	LIVER	0.	0.	0.	0.	1.137	1.137	1.137	1.137
INSOLUBL	TOTAL BODY	1.3000E+04	5834.	.3000	1.000	1.137	1.137	1.137	1.137
	THYROID	0.	0.	0.	0.	1.137	1.137	1.137	1.137
	KIDNEY	0.	0.	0.	0.	1.137	1.137	1.137	1.137
T-RADIOL =	LUNG INGES	0.	0.	0.		1.137	1.137	1.137	1.137
29.0 Y	LUNG INHAL	120.0	118.7		.1200	1.137	1.137	1.137	1.137
1.059E+04 DAY	GI-LLI INGES			.7000		2.480	2.480	2.450	2.440
	GI-LLI INHAL			1.000	.6200	1.137	1.137	1.137	1.137
SR91+D	BONE	1.8000E+04	.3950	.2100	.7000	6.290	6.428	6.450	6.470
	LIVER	0.	0.	0.	0.	1.387	1.437	1.484	1.507
INSOLUBL	TOTAL BODY	1.3000E+04	.3950	.3000	1.000	1.590	1.696	1.797	1.834
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	0.
T-RADIOL =	LUNG INGES	0.	0.	0.		1.186	1.236	1.260	1.305
9.48 H	LUNG INHAL	120.0	.3937		.1200	1.186	1.236	1.260	1.305
.395 DAY	GI-LLI INGES			.7000		.7070	.7230	.7500	.7770
	GI-LLI INHAL			1.000	.6200	.7070	.7230	.7500	.7770
SR92+D	BONE	1.8000E+04	.1129	.2100	.7000	8.417	8.452	8.533	8.602
	LIVER	0.	0.	0.	0.	1.867	1.947	2.023	2.060
INSOLUBL	TOTAL BODY	1.3000E+04	.1129	.3000	1.000	2.194	2.369	2.538	2.601
	THYROID	0.	0.	0.	0.	0.	0.	0.	1.782
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	1.947
T-RADIOL =	LUNG INGES	0.	0.	0.		1.867	1.947	1.986	2.060
2.71 H	LUNG INHAL	120.0	.1128		.1200	1.867	1.947	1.986	2.060
.113 DAY	GI-LLI INGES			.7000		3.212	4.120	8.431	13.08
	GI-LLI INHAL			1.000	.6200	1.755	1.782	1.825	1.867
Y90	BONE	1.8000E+04	2.666	7.5000E-05	.7500	4.555	4.555	4.555	4.555
	LIVER	0.	0.	0.	0.	.9170	.9170	.9170	.9170
INSOLUBL	TOTAL BODY	1.4000E+04	2.666	1.0000E-04	1.000	.9170	.9170	.9170	.9170
	THYROID	0.	0.	0.	0.	.9170	.9170	.9170	.9170
	KIDNEY	0.	0.	0.	0.	.9170	.9170	.9170	.9170
T-RADIOL =	LUNG INGES	0.	0.	0.		.9170	.9170	.9170	.9170
64.0 H	LUNG INHAL	120.0	2.609		.1200	.9170	.9170	.9170	.9170
2.67 DAY	GI-LLI INGES			1.000		.9170	.9170	.9170	.9170
	GI-LLI INHAL			1.000	.6200	.9170	.9170	.9170	.9170

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
Y91M+0	BONE	1.8000E+04	3.4514E-02	7.5000E-05	.7500	3.260	3.276	3.301	3.325
	LIVER	0.	0.	0.	0.	.7170	.7450	.7720	.7850
INSOLUBL	TOTAL BODY	1.4000E+04	3.4514E-02	1.0000E-04	1.000	.8320	.8910	.9470	.9670
	THYROID	0.	0.	0.	0.	.6620	.6720	.6830	.6870
	KIDNEY	0.	0.	0.	0.	.7030	.7170	.7310	.7450
T-RADIOL =	LUNG INGES	0.	0.	0.		.7170	.7450	.7590	.7850
49.7 H	LUNG INHAL	120.0	3.4504E-02		.1200	.7170	.7450	.7590	.7850
3.451E-02 DAY	GI-LLI INGES			1.000		6.7900E-02	7.7300E-02	9.2500E-02	.1070
	GI-LLI INHAL			1.000	.6200	6.7900E-02	7.7300E-02	9.2500E-02	.1070
Y91	BONE	1.8000E+04	58.41	7.5000E-05	.7500	3.049	3.049	3.049	3.049
	LIVER	0.	0.	0.	0.	.6100	.6100	.6100	.6110
INSOLUBL	TOTAL BODY	1.4000E+04	58.36	1.0000E-04	1.000	.6110	.6110	.6120	.6120
	THYROID	0.	0.	0.	0.	.6100	.6100	.6100	.6100
	KIDNEY	0.	0.	0.	0.	.6100	.6100	.6100	.6100
T-RADIOL =	LUNG INGES	0.	0.	0.		.6100	.6100	.6100	.6100
58.6 D	LUNG INHAL	120.0	39.37		.1200	.6100	.6100	.6100	.6100
58.6 DAY	GI-LLI INGES			1.000		.6100	.6100	.6100	.6100
	GI-LLI INHAL			1.000	.6200	.6100	.6100	.6100	.6100
Y92	BONE	1.8000E+04	.1471	7.5000E-05	.7500	1.228	1.235	1.246	1.257
	LIVER	0.	0.	0.	0.	1.473	1.487	1.499	1.505
INSOLUBL	TOTAL BODY	1.4000E+04	.1471	1.0000E-04	1.000	1.526	1.553	1.579	1.589
	THYROID	0.	0.	0.	0.	1.450	1.464	1.479	1.487
	KIDNEY	0.	0.	0.	0.	1.468	1.475	1.481	1.505
T-RADIOL =	LUNG INGES	0.	0.	0.		1.473	1.487	1.493	1.505
3.53 H	LUNG INHAL	120.0	.1469		.1200	1.473	1.487	1.493	1.505
.147 DAY	GI-LLI INGES			1.000		1.457	1.461	1.468	1.475
	GI-LLI INHAL			1.000	.6200	1.457	1.461	1.468	1.475
Y93	BONE	1.8000E+04	.4250	7.5000E-05	.7500	1.955	1.958	1.962	1.967
	LIVER	0.	0.	0.	0.	1.602	1.607	1.612	1.614
INSOLUBL	TOTAL BODY	1.4000E+04	.4250	1.0000E-04	1.000	1.623	1.633	1.644	1.648
	THYROID	0.	0.	0.	0.	1.593	1.596	1.596	1.597
	KIDNEY	0.	0.	0.	0.	1.600	1.602	1.605	1.607
T-RADIOL =	LUNG INGES	0.	0.	0.		1.602	1.607	1.610	1.614
10.2 H	LUNG INHAL	120.0	.4235		.1200	1.602	1.607	1.610	1.614
.425 DAY	GI-LLI INGES			1.000		1.595	1.597	1.600	1.602
	GI-LLI INHAL			1.000	.6200	1.595	1.597	1.600	1.602

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
ZR93+D	BONE	1000.	1000.	3.6000E-05	.3600	.1100	.1100	.1100	.1100
	LIVER	320.0	320.0	7.0000E-06	7.0000E-02	.1900	.2000	.2000	2.4000E-02
INSOLUBL	TOTAL BODY	450.0	450.0	1.0000E-04	1.000	.2100	.2200	.2300	2.3000E-02
	THYROID	0.	0.	0.	0.	.1700	.1800	.1900	0.
	KIDNEY	900.0	900.0	2.0000E-06	2.0000E-02	.1900	.1900	.1900	2.0000E-02
T-RADIOL =	LUNG INGES	0.	0.	0.		.1900	.2000	.2000	2.0000E-02
9.500E+05 Y	LUNG INHAL	120.0	120.0		.1200	.1900	.2000	.2000	2.0000E-02
3.468E+08 DAY	GI-LLI INGES			1.000		.1800	.1800	.1900	1.9000E-02
	GI-LLI INHAL			1.000	.6200	.1800	.1800	.1900	1.9000E-02
ZR95+D	BONE	1000.	61.47	3.6000E-05	.3600	1.100	1.165	1.234	1.299
	LIVER	320.0	54.37	7.0000E-06	7.0000E-02	.4040	.4810	.5540	.5890
INSOLUBL	TOTAL BODY	450.0	57.18	1.0000E-04	1.000	.7170	.8810	1.036	1.093
	THYROID	0.	0.	0.	0.	.2510	.2770	.3080	.3120
	KIDNEY	900.0	61.06	2.0000E-06	2.0000E-02	.3630	.4040	.4440	.5100
T-RADIOL =	LUNG INGES	0.	0.	0.		.4040	.4810	.5180	.5890
65.5 D	LUNG INHAL	120.0	42.37		.1200	.4040	.4810	.5180	.5890
65.5 DAY	GI-LLI INGES			1.000		.1880	.2020	.2220	.2430
	GI-LLI INHAL			1.000	.6200	.1880	.2020	.2220	.2380
ZR97+D	BONE	1000.	.6995	3.6000E-05	.3600	6.119	6.163	6.234	6.300
	LIVER	320.0	.6985	7.0000E-06	7.0000E-02	1.406	1.485	1.559	1.594
INSOLUBL	TOTAL BODY	450.0	.6989	1.0000E-04	1.000	1.725	1.891	2.050	2.107
	THYROID	0.	0.	0.	0.	1.251	1.277	1.308	1.322
	KIDNEY	900.0	.6995	2.0000E-06	2.0000E-02	1.365	1.406	1.445	1.485
T-RADIOL =	LUNG INGES	0.	0.	0.		1.406	1.485	1.522	1.594
16.8 H	LUNG INHAL	120.0	.6959		.1200	1.406	1.485	1.522	1.594
.700 DAY	GI-LLI INGES			1.000		1.295	1.322	1.365	1.406
	GI-LLI INHAL			1.000	.6200	1.295	1.322	1.365	1.406
NB93M	BONE	1000.	614.1	3.8000E-05	.3800	7.8000E-02	7.8000E-02	7.8000E-02	7.8000E-02
	LIVER	445.0	408.3	9.0000E-06	9.0000E-02	3.0000E-02	3.0000E-02	3.0000E-02	3.0000E-02
INSOLUBL	TOTAL BODY	760.0	647.6	1.0000E-04	1.000	3.0000E-02	3.0000E-02	3.0000E-02	3.0000E-02
	THYROID	0.	0.	0.	0.	3.0000E-02	3.0000E-02	3.0000E-02	0.
	KIDNEY	760.0	647.6	2.0000E-06	2.0000E-02	3.0000E-02	3.0000E-02	3.0000E-02	3.0000E-02
T-RADIOL =	LUNG INGES	0.	0.	0.		3.0000E-02	3.0000E-02	3.0000E-02	3.0000E-02
12.0 Y	LUNG INHAL	120.0	110.8		.1200	3.0000E-02	3.0000E-02	3.0000E-02	3.0000E-02
4.380E+03 DAY	GI-LLI INGES			1.000		3.0000E-02	3.0000E-02	3.0000E-02	3.0000E-02
	GI-LLI INHAL			1.000	.6200	3.0000E-02	3.0000E-02	3.0000E-02	3.0000E-02

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-P FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
NB95	BONE	1000.	33.91	3.8000E-05	.3800	.3640	.3870	.4230	.4570
	LIVER	845.0	33.70	9.0000E-06	9.0000E-02	.1660	.2070	.2440	.2620
INSOLUBL	TOTAL BODY	760.0	33.55	1.0000E-04	1.000	.3290	.4140	.4950	.5250
	THYROID	0.	0.	0.	0.	8.6600E-02	.1000	.1160	.1230
	KIDNEY	760.0	33.55	2.0000E-06	2.0000E-02	.1450	.1660	.1870	.2070
T-RADIOL =	LUNG INGES	0.	0.	0.		.1660	.2070	.2260	.2620
35.1 D	LUNG INHAL	120.0	27.16		.1200	.1660	.2070	.2260	.2620
35.1 DAY	GI-LLI INGES			1.000		.1100	.1230	.1450	.1660
	GI-LLI INHAL			1.000	.6200	.1100	.1230	.1450	.1660
NB97	BONE	1000.	5.1108E-02	3.8000E-05	.3800	2.464	2.484	2.516	2.546
	LIVER	845.0	5.1108E-02	9.0000E-06	9.0000E-02	.5760	.6110	.6450	.6610
INSOLUBL	TOTAL BODY	760.0	5.1108E-02	1.0000E-04	1.000	.7200	.7950	.9670	.8930
	THYROID	0.	0.	0.	0.	.5050	.5170	.5310	.5370
	KIDNEY	760.0	5.1108E-02	2.0000E-06	2.0000E-02	.5570	.5760	.5940	.6110
T-RADIOL =	LUNG INGES	0.	0.	0.		.5760	.6110	.6280	.6610
73.6 H	LUNG INHAL	120.0	5.1089E-02		.1200	.5760	.6110	.6280	.6610
5.111E-02 DAY	GI-LLI INGES			1.000		.5250	.5370	.5570	.5760
	GI-LLI INHAL			1.000	.6200	.5250	.5370	.5570	.5760
MO93	BONE	0.	0.	0.	0.	.1830	.1830	.1830	.1830
	LIVER	45.00	45.00	8.0000E-02	.1000	4.7700E-02	4.8000E-02	4.8000E-02	4.8000E-02
INSOLUBL	TOTAL BODY	5.000	5.000	.8000	1.000	4.8000E-02	4.8000E-02	4.8000E-02	4.8000E-02
	THYROID	0.	0.	0.	0.	4.4200E-02	4.5300E-02	4.6000E-02	4.6300E-02
	KIDNEY	3.000	3.000	6.0000E-02	8.0000E-02	4.7000E-02	4.7700E-02	4.8000E-02	4.8000E-02
T-RADIOL =	LUNG INGES	0.	0.	0.		4.7700E-02	4.8000E-02	4.8000E-02	4.8000E-02
3.000E+03 Y	LUNG INHAL	120.0	120.0		.1200	4.7700E-02	4.8000E-02	4.8000E-02	4.8000E-02
1.095E+06 DAY	GI-LLI INGES			.2000		4.5700E-02	4.6300E-02	4.7400E-02	4.7700E-02
	GI-LLI INHAL			1.000	.6200	4.5700E-02	4.6300E-02	4.7400E-02	4.7700E-02
MO99+D	BONE	0.	0.	0.	0.	2.089	2.097	2.109	2.121
	LIVER	45.00	2.592	8.0000E-02	.1000	.4470	.4600	.4720	.4780
INSOLUBL	TOTAL BODY	5.000	1.775	.8000	1.000	.4880	.5140	.5380	.5470
	THYROID	0.	0.	0.	0.	.4220	.4260	.4310	.4330
	KIDNEY	3.000	1.435	6.0000E-02	8.0000E-02	.4400	.4470	.4540	.4600
T-RADIOL =	LUNG INGES	0.	0.	0.		.4470	.4600	.4660	.4780
66.0 H	LUNG INHAL	120.0	2.689		.1200	.4470	.4600	.4660	.4780
2.75 DAY	GI-LLI INGES			.2000		.4290	.4330	.4400	.4470
	GI-LLI INHAL			1.000	.6200	.4290	.4330	.4400	.4470

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
TC99M	BONE	25.00	.2483	1.0000E-03	2.0000E-03	8.0400E-02	8.2500E-02	8.8500E-02	9.4200E-02
	LIVER	30.00	.2488	1.5000E-03	3.0000E-03	2.8700E-02	3.4700E-02	4.0300E-02	4.3000E-02
INSOLUBL	TOTAL BODY	1.000	.2005	.5000	1.000	5.3000E-02	6.6300E-02	7.9200E-02	8.4000E-02
	THYROID	0.	0.	0.	0.	1.7200E-02	1.9200E-02	2.1500E-02	2.2500E-02
	KIDNEY	20.00	.2477	5.0000E-03	1.0000E-02	2.5600E-02	2.8700E-02	3.1700E-02	3.4700E-02
T-RADIOL =	LUNG INGES	5.000	.2389	4.5000E-04		2.8700E-02	3.4700E-02	3.7500E-02	4.3000E-02
6.02 H	LUNG INHAL	120.0	.2503		.1200	2.8700E-02	3.4700E-02	3.7500E-02	4.3000E-02
.251 DAY	GI-LLI INGES			.5000		2.0500E-02	2.2500E-02	2.5600E-02	2.8700E-02
	GI-LLI INHAL			1.000	.6300	2.0500E-02	2.2500E-02	2.5600E-02	2.8700E-02
TC99	BONE	25.00	25.00	1.0000E-03	2.0000E-03	.4750	.4750	.4750	.4750
	LIVER	30.00	30.00	1.5000E-03	3.0000E-03	9.5000E-02	9.5000E-02	9.5000E-02	9.5000E-02
INSOLUBL	TOTAL BODY	1.000	1.000	.5000	1.000	9.5000E-02	9.5000E-02	9.5000E-02	9.5000E-02
	THYROID	0.	0.	0.	0.	9.5000E-02	9.5000E-02	9.5000E-02	9.5000E-02
	KIDNEY	20.00	20.00	5.0000E-03	1.0000E-02	9.5000E-02	9.5000E-02	9.5000E-02	9.5000E-02
T-RADIOL =	LUNG INGES	5.000	5.000	4.5000E-04		9.5000E-02	9.5000E-02	9.5000E-02	9.5000E-02
2.130E+05 Y	LUNG INHAL	120.0	120.0		.1200	9.5000E-02	9.5000E-02	9.5000E-02	9.5000E-02
7.775E+07 DAY	GI-LLI INGES			.5000		9.5000E-02	9.5000E-02	9.5000E-02	9.5000E-02
	GI-LLI INHAL			1.000	.6200	9.5000E-02	9.5000E-02	9.5000E-02	9.5000E-02
TC101	BONE	25.00	9.8572E-03	1.0000E-03	2.0000E-03	2.395	2.405	2.424	2.441
	LIVER	30.00	9.8579E-03	1.5000E-03	3.0000E-03	.5240	.5430	.5620	.5700
INSOLUBL	TOTAL BODY	1.000	9.7648E-03	.5000	1.000	.6030	.6440	.6830	.6970
	THYROID	0.	0.	0.	0.	.4850	.4920	.5000	.5000
	KIDNEY	20.00	9.8563E-03	5.0000E-03	1.0000E-02	.5140	.5240	.5340	.5430
T-RADIOL =	LUNG INGES	5.000	9.8417E-03	4.5000E-04		.5240	.5430	.5530	.5700
14.2 H	LUNG INHAL	120.0	9.8603E-03		.1200	.5240	.5430	.5530	.5700
9.861E-03 DAY	GI-LLI INGES			.5000		.4970	.5030	.5140	.5240
	GI-LLI INHAL			1.000	.6200	.4970	.5030	.5140	.5240
RU103+D	BONE	16.00	11.40	2.4000E-03	8.0000E-02	.5760	.5930	.6170	.6390
	LIVER	0.	0.	0.	0.	.1760	.2030	.2270	.2390
INSOLUBL	TOTAL BODY	7.300	6.164	3.0000E-02	1.000	.2820	.3370	.3890	.4080
	THYROID	0.	0.	0.	0.	.1250	.1340	.1440	.1480
	KIDNEY	2.500	2.352	6.0000E-03	.2000	.1630	.1760	.1810	.2030
T-RADIOL =	LUNG INGES	0.	0.	0.		.1760	.2030	.2150	.2390
39.6 D	LUNG INHAL	120.0	29.77		.1200	.1760	.2030	.2150	.2390
39.6 DAY	GI-LLI INGES			.9700		.1400	.1480	.1630	.1760
	GI-LLI INHAL			1.000	.6200	.1400	.1480	.1630	.1760

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
RU105+D	BONE	16.00	.1629	2.4000E-03	8.0000E-02	3.239	3.259	3.293	3.325
	LIVER	0.	0.	0.	0.	.7510	.7890	.8250	0.
INSOLUBL	TOTAL BODY	7.300	.1804	3.0000E-02	1.000	.8810	.9610	1.036	1.063
	THYROID	0.	0.	0.	0.	.6760	.6880	.7040	0.
	KIDNEY	2.500	.1723	6.0000E-03	2.0000E-02	.7220	.7420	.7560	.7800
T-RADIOL =	LUNG INGES	0.	0.	0.		.7490	.7670	.8050	.8390
4.44 H	LUNG INHAL	120.0	.1847		.1200	.7490	.7670	.8050	.8390
.185 DAY	GI-LLI INGES			.9700		.5260	.5370	.5560	.5740
	GI-LLI INHAL			1.000	.6200	.5260	.5370	.5560	.5740
RU106+D	BONE	16.00	15.34	2.4000E-03	8.0000E-02	7.053	7.059	7.069	7.078
	LIVER	0.	0.	0.	0.	1.436	1.447	1.457	1.462
INSOLUBL	TOTAL BODY	7.300	7.158	3.0000E-02	1.000	1.481	1.504	1.526	1.534
	THYROID	0.	0.	0.	0.	1.414	1.418	1.422	1.424
	KIDNEY	2.500	2.483	6.0000E-03	.2000	1.430	1.436	1.442	1.447
T-RADIOL =	LUNG INGES	0.	0.	0.		1.436	1.447	1.452	1.462
369. D	LUNG INHAL	120.0	90.55		.1200	1.436	1.447	1.452	1.462
369. DAY	GI-LLI INGES			.9700		1.421	1.424	1.430	1.436
	GI-LLI INHAL			1.000	.6200	1.421	1.424	1.430	1.436
RH105	BONE	16.60	1.358	1.0000E-02	5.0000E-02	.8380	.8400	.8440	.8470
	LIVER	18.20	1.368	8.0000E-03	4.0000E-02	.1770	.1810	.1850	.1860
INSOLUBL	TOTAL BODY	10.40	1.295	.2000	1.000	.1930	.2020	.2100	.2130
	THYROID	0.	0.	0.	0.	.1690	.1700	.1720	.1730
	KIDNEY	28.00	1.405	6.0000E-03	3.0000E-02	.1750	.1770	.1790	.1810
T-RADIOL =	LUNG INGES	0.	0.	0.		.1770	.1810	.1830	.1860
35.5 H	LUNG INHAL	120.0	1.461		.1200	.1770	.1810	.1830	.1860
1.48 DAY	GI-LLI INGES			.8000		.1710	.1730	.1750	.1770
	GI-LLI INHAL			1.000	.6200	.1710	.1730	.1750	.1770
PU107	BONE	0.	0.	0.	0.	0.	0.	0.	0.
	LIVER	19.00	19.00	2.0000E-02	9.0000E-02	8.9000E-03	8.9000E-03	8.9000E-03	8.9000E-03
INSOLUBL	TOTAL BODY	5.000	5.000	.2000	1.000	8.9000E-03	8.9000E-03	8.9000E-03	8.9000E-03
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	30.00	30.00	2.0000E-02	8.0000E-02	8.9000E-03	8.9000E-03	8.9000E-03	8.9000E-03
T-RADIOL =	LUNG INGES	0.	0.	0.		8.9000E-03	8.9000E-03	8.9000E-03	8.9000E-03
6.500E+06 Y	LUNG INHAL	120.0	120.0		.1200	8.9000E-03	8.9000E-03	8.9000E-03	8.9000E-03
2.373E+09 DAY	GI-LLI INGES			.8000		8.9000E-03	8.9000E-03	8.9000E-03	8.9000E-03
	GI-LLI INHAL			1.000	.6200	8.9000E-03	8.9000E-03	8.9000E-03	8.9000E-03

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-0 FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
PU109	BONE	0.	0.	0.	0.	1.864	1.865	1.865	1.865
	LIVER	19.00	.5448	2.0000E-02	9.0000E-02	.3730	.3730	.3740	.3740
INSOLUBL	TOTAL BODY	5.000	.5043	.2000	1.000	.3740	.3750	.3750	.3750
	THYROID	0.	0.	0.	0.	.3730	.3730	.3730	.3730
	KIDNEY	30.00	.5505	2.0000E-02	8.0000E-02	.3730	.3730	.3730	.3730
T-RADIOL =	LUNG INGES	0.	0.	0.		.3730	.3730	.3740	.3740
13.5 H	LUNG INHAL	120.0	.5582		.1200	.3730	.3730	.3740	.3740
.561 DAY	GI-LLI INGES			.8000		.3730	.3730	.3730	.3730
	GI-LLI INHAL			1.000	.6200	.3730	.3730	.3730	.3730
AG110M+D	BONE	30.00	26.81	5.0000E-04	5.0000E-02	.8160	.8920	1.014	1.129
	LIVER	15.00	14.16	3.0000E-04	3.0000E-02	.4770	.6140	.7420	.8030
INSOLUBL	TOTAL BODY	5.000	4.903	1.0000E-02	1.000	1.029	1.319	1.596	1.697
	THYROID	0.	0.	0.	0.	.2090	.2560	.3100	.3320
	KIDNEY	10.00	9.618	2.0000E-04	2.0000E-02	.4060	.4770	.5470	.6140
T-RADIOL =	LUNG INGES	0.	0.	0.		.4770	.6140	.6790	.8030
252. D	LUNG INHAL	120.0	81.29		.1200	.4770	.6140	.6790	.8030
252. DAY	GI-LLI INGES			.9900		.2870	.3320	.4060	.4770
	GI-LLI INHAL			1.000	.6200	.2870	.3320	.4060	.4770
AG111	BONE	30.00	5.981	5.0000E-04	5.0000E-02	1.836	1.837	1.838	1.840
	LIVER	15.00	4.987	3.0000E-04	3.0000E-02	.3700	.3720	.3730	.3740
INSOLUBL	TOTAL BODY	5.000	2.995	1.0000E-02	1.000	.3760	.3790	.3820	.3830
	THYROID	0.	0.	0.	0.	.3680	.3680	.3690	.3690
	KIDNEY	10.00	4.276	2.0000E-04	2.0000E-02	.3700	.3700	.3710	.3720
T-RADIOL =	LUNG INGES	0.	0.	0.		.3700	.3720	.3720	.3740
7.47 D	LUNG INHAL	120.0	1.032		.1200	.3700	.3720	.3720	.3740
7.47 DAY	GI-LLI INGES			.9900		.3690	.3690	.3700	.3700
	GI-LLI INHAL			1.000	.6200	.3690	.3690	.3700	.3700
CD113M	BONE	0.	0.	0.	0.	0.	0.	0.	0.
	LIVER	200.0	192.8	1.9000E-03	.7500	.2000	.2000	.2000	.2000
INSOLUBL	TOTAL BODY	200.0	192.8	2.5000E-03	1.000	.2000	.2000	.2000	.2000
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	300.0	284.0	2.5000E-04	.1000	.2000	.2000	.2000	.2000
T-RADIOL =	LUNG INGES	0.	0.	0.		.2000	.2000	.2000	.2000
14.6 Y	LUNG INHAL	120.0	117.4		.1200	.2000	.2000	.2000	.2000
5.329E+03 DAY	GI-LLI INGES			1.000		.2000	.2000	.2000	.2000
	GI-LLI INHAL			1.000	.6200	.2000	.2000	.2000	.2000

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-0 FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
CD115M	BONE	0.	0.	0.	0.	0.	0.	0.	0.
	LIVER	200.0	36.47	1.9000E-03	.7500	.6100	.6100	.6100	.6100
INSOLUBL	TOTAL BODY	200.0	36.47	2.5000E-03	1.000	.6100	.6100	.6100	.6100
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	300.0	38.83	2.5000E-04	.1000	.6100	.6100	.6100	.6100
T-RADIOL =	LUNG INGES	0.	0.	0.		.6100	.6100	.6100	.6100
44.6 D	LUNG INHAL	120.0	32.52		.1200	.6100	.6100	.6100	.6100
44.6 DAY	GI-LLI INGES			1.000		.6100	.6100	.6100	.6100
	GI-LLI INHAL			1.000	.6200	.6100	.6100	.6100	.6100
SN123	BONE	100.0	56.33	2.0000E-02	.3000	2.611	2.611	2.611	2.611
	LIVER	70.00	45.38	5.0000E-04	1.0000E-02	.5220	.5220	.5220	.5220
INSOLUBL	TOTAL BODY	35.00	27.53	5.0000E-02	1.000	.5220	.5220	.5220	.5220
	THYROID	70.00	45.38	5.0000E-06	1.0000E-04	.5220	.5220	.5220	.5220
	KIDNEY	0.	0.	0.	0.	.5220	.5220	.5220	.5220
T-RADIOL =	LUNG INGES	0.	0.	0.		.5220	.5220	.5220	.5220
129. D	LUNG INHAL	120.0	62.17		.1200	.5220	.5220	.5220	.5220
129. DAY	GI-LLI INGES			.9500		.5220	.5220	.5220	.5220
	GI-LLI INHAL			.9500	.6200	.5220	.5220	.5220	.5220
SN125+D	BONE	100.0	8.801	2.0000E-02	.3000	4.467	4.470	4.476	4.482
	LIVER	70.00	8.481	5.0000E-04	1.0000E-02	.8990	.9040	.9090	.9110
INSOLUBL	TOTAL BODY	35.00	7.564	5.0000E-02	1.000	.9200	.9310	.9420	.9460
	THYROID	70.00	8.481	5.0000E-06	1.0000E-04	.8840	.8860	.8880	.8880
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	0.
T-RADIOL =	LUNG INGES	0.	0.	0.		.9130	.9200	.9210	.9300
9.65 D	LUNG INHAL	120.0	8.932		.1200	.9130	.9200	.9210	.9300
9.65 DAY	GI-LLI INGES			.9500		.8860	.8870	.8900	.8920
	GI-LLI INHAL			1.000	.6200	.8860	.8870	.8900	.8920
SN126+D	BONE	100.0	100.0	2.0000E-02	.3000	3.540	3.690	3.850	4.000
	LIVER	70.00	70.00	5.0000E-04	1.0000E-02	.6500	.8500	1.000	1.100
INSOLUBL	TOTAL BODY	35.00	35.00	5.0000E-02	1.000	1.150	1.200	1.250	1.300
	THYROID	70.00	70.00	5.0000E-06	1.0000E-04	.1700	.2200	.3300	.3800
	KIDNEY	0.	0.	0.	0.	.5200	.6500	.7600	0.
T-RADIOL =	LUNG INGES	0.	0.	0.		.6500	.8500	.9400	1.100
1.000E+03 Y	LUNG INHAL	120.0	120.0		.1200	.6500	.8500	.9400	1.100
3.650E+07 DAY	GI-LLI INGES			.9500		.2000	.2000	.2000	.2000
	GI-LLI INHAL			1.000	.6200	.2000	.2000	.2000	.2000

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
SB124	BONE	100.0	37.58	3.0000E-03	.1000	2.138	2.191	2.275	2.356
	LIVER	38.00	23.30	6.0000E-05	2.0000E-03	.6440	.7390	.8280	.8710
INSOLUBL	TOTAL BODY	38.00	23.30	3.0000E-02	1.000	1.029	1.235	1.433	1.507
	THYROID	4.000	3.751	9.0000E-07	3.0000E-05	.4590	.4910	.5280	.5440
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.7390
T-RADIOL =	LUNG INGES	100.0	37.58	9.0000E-04		.6440	.7390	.7840	.8710
60.2 D	LUNG INHAL	120.0	40.09		.1200	.6440	.7390	.7840	.8710
60.2 DAY	GI-LLI INGES			.9700		.5130	.5440	.5950	.6440
	GI-LLI INHAL			1.000	.6200	.5130	.5440	.5950	.6440
SB125*D	BONE	100.0	90.58	3.0000E-03	.1000	.5700	.5830	.6040	.6230
	LIVER	36.00	34.74	6.0000E-05	2.0000E-03	.1670	.1900	.2110	.2210
INSOLUBL	TOTAL BODY	38.00	36.60	3.0000E-02	1.000	.2560	.3040	.3500	.3670
	THYROID	4.000	3.984	9.0000E-07	3.0000E-05	.1170	.1250	.1340	.1370
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	0.
T-RADIOL =	LUNG INGES	100.0	90.88	9.0000E-04		.1750	.1980	.2090	.2290
2.73 Y	LUNG INHAL	120.0	107.1		.1200	.1750	.1980	.2090	.2290
996. DAY	GI-LLI INGES			.9700		.1270	.1340	.1470	.1590
	GI-LLI INHAL			1.000	.6200	.1270	.1340	.1470	.1590
SB126	BONE	100.0	11.03	3.0000E-03	.1000	2.590	2.950	3.180	3.300
	LIVER	38.00	9.349	6.0000E-05	2.0000E-03	.7800	.8600	.9400	.9600
INSOLUBL	TOTAL BODY	38.00	9.349	3.0000E-02	1.000	1.100	1.250	1.350	1.400
	THYROID	4.000	3.024	9.0000E-07	3.0000E-05	.6200	.6400	.6700	.7000
	KIDNEY	0.	0.	0.	0.	.7300	.7800	.8200	0.
T-RADIOL =	LUNG INGES	100.0	11.03	9.0000E-04		.7800	.8600	.9000	.9600
12.4 D	LUNG INHAL	120.0	11.24		.1200	.7800	.8600	.9000	.9600
12.4 DAY	GI-LLI INGES			.9700		.6500	.7000	.7300	.7800
	GI-LLI INHAL			1.000	.6200	.6500	.7000	.7300	.7800
SB127	BONE	100.0	3.661	3.0000E-03	.1000	2.127	2.151	2.190	2.226
	LIVER	38.00	3.455	6.0000E-05	2.0000E-03	.5240	.5670	.6080	.6270
INSOLUBL	TOTAL BODY	38.00	3.455	3.0000E-02	1.000	.6960	.7880	.8740	.9050
	THYROID	4.000	1.949	9.0000E-07	3.0000E-05	.4400	.4550	.4720	.4790
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.5670
T-RADIOL =	LUNG INGES	100.0	3.661	9.0000E-04		.5240	.5670	.5880	.6270
3.80 D	LUNG INHAL	120.0	3.683		.1200	.5240	.5670	.5880	.6270
3.80 DAY	GI-LLI INGES			.9700		.4640	.4790	.5020	.5240
	GI-LLI INHAL			1.000	.6200	.4640	.4790	.5020	.5240

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
TE125M	BONE	30.00	19.77	2.3000E-02	9.0000E-02	.5570	.5580	.5580	.5580
	LIVER	30.00	19.77	1.0000E-02	5.0000E-02	.1120	.1120	.1130	.1130
INSOLUBL	TOTAL BODY	15.00	11.92	.2500	1.000	.1130	.1130	.1140	.1140
	THYROID	9.000	7.791	2.5000E-04	1.0000E-03	.1110	.1110	.1120	.1120
	KIDNEY	30.00	19.77	2.0000E-02	7.0000E-02	0.	0.	0.	.1120
T-RADIOL =	LUNG INGES	0.	0.	0.		.1120	.1120	.1120	.1130
58.0 D	LUNG INHAL	120.0	39.10		.1200	.1120	.1120	.1120	.1130
58.0 DAY	GI-LLI INGES			.7500		.1120	.1120	.1120	.1120
	GI-LLI INHAL			1.000	.6200	.1120	.1120	.1120	.1120
TE127M+D	BONE	30.00	23.53	2.3000E-02	9.0000E-02	1.185	1.185	1.185	1.185
	LIVER	30.00	23.53	1.0000E-02	5.0000E-02	.2370	.2370	.2370	.2370
INSOLUBL	TOTAL BODY	15.00	13.19	.2500	1.000	.2300	.2310	.2310	.2370
	THYROID	9.000	8.314	2.5000E-04	1.0000E-03	.2250	.2250	.2250	.2250
	KIDNEY	30.00	23.53	2.0000E-02	7.0000E-02	.2370	.2370	.2370	.2370
T-RADIOL =	LUNG INGES	0.	0.	0.		.2370	.2370	.2370	.2370
109. D	LUNG INHAL	120.0	57.12		.1200	.2370	.2370	.2370	.2370
109. DAY	GI-LLI INGES			.7500		.2370	.2370	.2370	.2370
	GI-LLI INHAL			1.000	.6200	.2370	.2370	.2370	.2370
TE127	BONE	30.00	.3866	2.3000E-02	9.0000E-02	1.175	1.175	1.175	1.175
	LIVER	30.00	.3866	1.0000E-02	5.0000E-02	.2350	.2350	.2350	.2350
INSOLUBL	TOTAL BODY	15.00	.3817	.2500	1.000	.2350	.2360	.2360	.2360
	THYROID	9.000	.3753	2.5000E-04	1.0000E-03	.2350	.2350	.2350	.2350
	KIDNEY	30.00	.3866	2.0000E-02	7.0000E-02	.2350	.2350	.2350	.2350
T-RADIOL =	LUNG INGES	0.	0.	0.		.2350	.2350	.2350	.2350
9.40 H	LUNG INHAL	120.0	.3904		.1200	.2350	.2350	.2350	.2350
.392 DAY	GI-LLI INGES			.7500		.2350	.2350	.2350	.2350
	GI-LLI INHAL			1.000	.6200	.2350	.2350	.2350	.2350
TE129M+D	BONE	30.00	15.80	2.3000E-02	9.0000E-02	2.970	2.975	2.980	2.985
	LIVER	30.00	15.80	1.0000E-02	5.0000E-02	.6100	.6160	.6220	.6250
INSOLUBL	TOTAL BODY	15.00	10.35	.2500	1.000	.6450	.6480	.6610	.6650
	THYROID	9.000	7.090	2.5000E-04	1.0000E-03	.5960	.5990	.6020	.6030
	KIDNEY	30.00	15.80	2.0000E-02	7.0000E-02	.6060	.6100	.6130	.6160
T-RADIOL =	LUNG INGES	0.	0.	0.		.6100	.6160	.6190	.6250
33.4 D	LUNG INHAL	120.0	26.13		.1200	.6100	.6160	.6190	.6250
33.4 DAY	GI-LLI INGES			.7500		.6000	.6030	.6060	.6100
	GI-LLI INHAL			1.000	.6200	.6000	.6030	.6060	.6100

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
TE133M+D	BONE	30.00	3.8423E-02	2.3000E-02	9.0000E-02	4.614	4.699	4.831	4.955
	LIVER	30.00	3.8423E-02	1.0000E-02	5.0000E-02	1.264	1.410	1.548	1.614
INSOLUBL	TOTAL BODY	15.00	3.8374E-02	.2500	1.000	1.858	2.168	2.463	2.570
	THYROID	9.000	3.8308E-02	2.5000E-04	1.0000E-03	.9740	1.024	1.082	1.106
	KIDNEY	30.00	3.8423E-02	2.0000E-02	7.0000E-02	1.186	1.264	1.337	1.410
T-RADIOL =	LUNG INGES	0.	0.	0.		1.264	1.410	1.481	1.614
55.4 H	LUNG INHAL	120.0	3.8460E-02		.1200	1.264	1.410	1.481	1.614
3.847E-02 DAY	GI-LLI INGES			.7500		.5710	.6080	1.370	11.62
	GI-LLI INHAL			1.000	.6200	.5710	.6080	1.370	11.62
TE134+D	BONE	30.00	2.9138E-02	2.3000E-02	9.0000E-02	4.158	4.259	4.420	4.572
	LIVER	30.00	2.9138E-02	1.0000E-02	5.0000E-02	1.247	1.428	1.597	1.677
INSOLUBL	TOTAL BODY	15.00	2.9110E-02	.2500	1.000	1.977	2.361	2.729	1.687
	THYROID	9.000	2.9072E-02	2.5000E-04	1.0000E-03	.8910	.9530	1.025	1.054
	KIDNEY	30.00	2.9138E-02	2.0000E-02	7.0000E-02	1.153	1.247	1.337	1.428
T-RADIOL =	LUNG INGES	0.	0.	0.		1.247	1.428	1.513	1.677
42.0 H	LUNG INHAL	120.0	2.9160E-02		.1200	1.247	1.428	1.513	1.677
2.917E-02 DAY	GI-LLI INGES			.7500		.1280	.1310	.1360	.1400
	GI-LLI INHAL			1.000	.6200	.1280	.1310	.1360	.1400
I129	BONE	14.00	14.00	7.0000E-02	5.3000E-02	.3130	.3140	.3150	.3160
	LIVER	7.000	7.000	.1200	9.0000E-02	6.9400E-02	7.2800E-02	7.5700E-02	7.6900E-02
SOLUBLE	TOTAL BODY	100.0(b)	100.0	1.000	.7500	8.0800E-02	8.4400E-02	8.6600E-02	8.7200E-02
	THYROID	100.0(b)	100.0	.3000	.2300	6.1200E-02	6.2800E-02	6.4500E-02	6.5200E-02
	KIDNEY	7.000	7.000	4.0000E-02	3.0000E-02	6.7400E-02	6.9400E-02	7.1100E-02	8.7600E-02
T-RADIOL =	LUNG INGES	0.	0.	0.		6.9400E-02	7.2800E-02	7.4300E-02	8.7200E-02
1.590E+07 Y	LUNG INHAL	0.	0.		0.	6.9400E-02	7.2800E-02	7.4300E-02	8.7200E-02
5.804E+09 DAY	GI-LLI INGES			5.0000E-02		6.3800E-02	6.5200E-02	6.7400E-02	6.9400E-02
	GI-LLI INHAL			5.0000E-02	.5000	6.3800E-02	6.5200E-02	6.7400E-02	6.9400E-02
I130	BONE	14.00	.4983	7.0000E-02	5.3000E-02	1.794	1.857	1.958	2.053
	LIVER	7.000	.4812	.1200	9.0000E-02	.6200	.7330	.8390	.8900
SOLUBLE	TOTAL BODY	100.0(b)	.5140	1.000	.7500	1.076	1.314	1.540	1.622
	THYROID	100.0(b)	.5140	.2000	.1500	.3970	.4360	.4810	.4990
	KIDNEY	7.000	.4812	4.0000E-02	3.0000E-02	.5610	.6200	.6770	.7330
T-RADIOL =	LUNG INGES	0.	0.	0.		.6200	.7330	.7870	.8900
12.4 H	LUNG INHAL	0.	0.		0.	.6200	.7330	.7870	.8900
.517 DAY	GI-LLI INGES			5.0000E-02		.4620	.4990	.5610	.6200
	GI-LLI INHAL			5.0000E-02	.5000	.4620	.4990	.5610	.6200

		ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-P FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
I131+D		BONE	14.00	5.107	7.0000E-02	5.3000E-02	1.056	1.067	1.085	1.102
		LIVER	7.000	3.742	.1200	9.0000E-02	.2570	.2770	.2960	.3050
SOLUBLE		TOTAL BODY	100.0 (b)	7.442	1.000	.7500	.3380	.3800	.4200	.4340
		THYROID	100.0 (b)	7.442	.3000	.2300	.2180	.2250	.2330	.2360
		KIDNEY	7.000	3.742	4.0000E-02	3.0000E-02	.2470	.2570	.2670	.2770
T-RADIOL =		LUNG INGES	0.	0.	0.		.2570	.2770	.2870	.3050
8.04	D	LUNG INHAL	0.	0.		0.	.2570	.2770	.2870	.3050
8.04	DAY	GI-LLI INGES			5.0000E-02		.2290	.2360	.2470	.2570
		GI-LLI INHAL			5.0000E-02	.5000	.2290	.2360	.2470	.2570
I132		BONE	14.00	9.4565E-02	7.0000E-02	5.0000E-02	2.613	2.683	2.794	2.899
		LIVER	7.000	9.3931E-02	.1200	9.0000E-02	.8100	.9340	1.051	1.107
SOLUBLE		TOTAL BODY	100.0 (b)	9.5118E-02	1.000	.7500	1.313	1.578	1.829	1.921
		THYROID	100.0 (b)	9.5118E-02	8.0000E-02	6.0000E-02	.5650	.6080	.6570	.6770
		KIDNEY	7.000	9.3931E-02	4.0000E-02	3.0000E-02	.7450	.8100	.8720	.9340
T-RADIOL =		LUNG INGES	0.	0.	0.		.8100	.9340	.9940	1.107
2.29	H	LUNG INHAL	0.	0.		0.	.8100	.9340	.9940	1.107
9.521E-02	DAY	GI-LLI INGES			5.0000E-02		.6360	.6770	.7450	.8100
		GI-LLI INHAL			5.0000E-02	.5000	.6360	.6770	.7450	.8100
I133+D		BONE	14.00	.8161	7.0000E-02	5.3000E-02	2.281	2.300	2.330	2.358
		LIVER	7.000	.7712	.1200	9.0000E-02	.5340	.5670	.5980	.6130
SOLUBLE		TOTAL BODY	100.0 (b)	.8592	1.000	.7500	.6670	.7390	.8060	.8300
		THYROID	100.0 (b)	.8592	.2300	.1700	.4660	.4790	.4920	.4980
		KIDNEY	7.000	.7712	4.0000E-02	3.0000E-02	.5160	.5340	.5510	.5670
T-RADIOL =		LUNG INGES	0.	0.	0.		.5340	.5670	.5830	.6130
20.8	H	LUNG INHAL	0.	0.		0.	.5340	.5670	.5830	.6130
.867	DAY	GI-LLI INGES			5.0000E-02		.4870	.4980	.5160	.5340
		GI-LLI INHAL			5.0000E-02	.5000	.4870	.4980	.5160	.5340
I134		BONE	14.00	3.6433E-02	7.0000E-02	5.3000E-02	3.550	3.647	3.801	3.947
		LIVER	7.000	3.6338E-02	.1200	9.0000E-02	1.107	1.280	1.442	1.519
SOLUBLE		TOTAL BODY	100.0 (b)	3.6514E-02	1.000	.7500	1.807	2.176	2.530	2.660
		THYROID	100.0 (b)	3.6514E-02	4.0000E-02	3.0000E-02	.7680	.8270	.8950	.9230
		KIDNEY	7.000	3.6338E-02	4.0000E-02	3.0000E-02	1.017	1.107	1.193	1.280
T-RADIOL =		LUNG INGES	0.	0.	0.		1.107	1.280	1.362	1.519
52.6	H	LUNG INHAL	0.	0.		0.	1.107	1.280	1.362	1.519
3.653E-02	DAY	GI-LLI INGES			5.0000E-02		.8660	.9230	1.017	1.107
		GI-LLI INHAL			5.0000E-02	.5000	.8660	.9230	1.017	1.107

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-P FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
I135+D	BONE	14.00	.2691	7.0000E-02	5.3000E-02	2.014	2.062	2.147	2.227
	LIVER	7.000	.2640	.1200	9.0000E-02	.6190	.7130	.8030	.8450
SOLUBLE	TOTAL BODY	100.0	.2736	1.000	.7500	1.004	1.211	1.410	1.483
	THYROID	100.0	.2736	.1500	.1100	.4330	.4660	.5030	.5030
	KIDNEY	7.000	.2640	4.0000E-02	3.0000E-02	.5690	.6190	.6660	.7130
T-RADIOL =	LUNG INGES	0.	0.	0.		.6190	.7130	.7590	.8450
6.59 H	LUNG INHAL	0.	0.		0.	.6190	.7130	.7590	.8450
.274 DAY	GI-LLI INGES			5.0000E-02		.4590	.5070	.6690	.8020
	GI-LLI INHAL			5.0000E-02	.5000	.4590	.5070	.6690	.8020
XE131M	BONE	0.	0.	0.	0.	0.	0.	0.	.6810
	LIVER	0.	0.	0.	0.	0.	0.	0.	.1370
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	.1390
	THYROID	0.	0.	0.	0.	0.	0.	0.	.1360
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.1370
T-RADIOL =	LUNG INGES	0.	0.	0.		.1370	.1370	.1370	.1370
12.0 D	LUNG INHAL	0.	0.		0.	.1370	.1370	.1370	.1370
12.0 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.
XE133M	BONE	0.	0.	0.	0.	0.	0.	0.	.8820
	LIVER	0.	0.	0.	0.	0.	0.	0.	.1840
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	.1960
	THYROID	0.	0.	0.	0.	0.	0.	0.	.1780
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.1810
T-RADIOL =	LUNG INGES	0.	0.	0.		.1800	.1810	.1820	.1840
2.23 D	LUNG INHAL	0.	0.		0.	.1800	.1810	.1820	.1840
2.23 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.
XE133	BONE	0.	0.	0.	0.	0.	0.	0.	.7450
	LIVER	0.	0.	0.	0.	0.	0.	0.	.1530
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	.1630
	THYROID	0.	0.	0.	0.	0.	0.	0.	.1490
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.1520
T-RADIOL =	LUNG INGES	0.	0.	0.		.1500	.1520	.1520	.1530
5.29 D	LUNG INHAL	0.	0.		0.	.1500	.1520	.1520	.1530
5.29 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-0 FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
XE135M	BONE	0.	0.	0.	0.	0.	0.	0.	.6050
	LIVER	0.	0.	0.	0.	0.	0.	0.	.2170
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	.3630
	THYROID	0.	0.	0.	0.	0.	0.	0.	.1390
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.1860
T-RADIOL =	LUNG INGES	0.	0.	0.		.1630	.1860	.1970	.2170
15.3 H	LUNG INHAL	0.	0.		0.	.1630	.1860	.1970	.2170
1.062E-02 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.
XE135	BONE	0.	0.	0.	0.	0.	0.	0.	1.708
	LIVER	0.	0.	0.	0.	0.	0.	0.	.3950
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	.4780
	THYROID	0.	0.	0.	0.	0.	0.	0.	.3510
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.3770
T-RADIOL =	LUNG INGES	0.	0.	0.		.3650	.3770	.3830	.3950
9.17 H	LUNG INHAL	0.	0.		0.	.3650	.3770	.3830	.3950
.382 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.
XE137	BONE	0.	0.	0.	0.	0.	0.	0.	8.327
	LIVER	0.	0.	0.	0.	0.	0.	0.	1.700
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	1.752
	THYROID	0.	0.	0.	0.	0.	0.	0.	1.672
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	1.688
T-RADIOL =	LUNG INGES	0.	0.	0.		1.680	1.688	1.692	1.700
3.84 M	LUNG INHAL	0.	0.		0.	1.680	1.688	1.692	1.700
2.667E-03 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.
XE138+D	BONE	0.	0.	0.	0.	0.	0.	0.	2.559
	LIVER	0.	0.	0.	0.	0.	0.	0.	.7820
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	0.	0.	0.	1.225
	THYROID	0.	0.	0.	0.	0.	0.	0.	.5600
	KIDNEY	0.	0.	0.	0.	0.	0.	0.	.6920
T-RADIOL =	LUNG INGES	0.	0.	0.		1.980	2.146	2.225	2.378
14.2 M	LUNG INHAL	0.	0.		0.	1.980	2.146	2.225	2.378
9.861E-03 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			0.	0.	0.	0.	0.	0.

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-0 FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
CS134M+D	BONE	140.0	.1207	4.0000E-02	3.0000E-02	.3790	.3880	.4030	.4170
	LIVER	90.00	.1207	7.0000E-02	5.0000E-02	9.4000E-02	.1060	.1170	.1220
SOLUBLE	TOTAL BODY	115.0 (b)	.1207	1.000	.7500	.1280	.1500	.1720	.1800
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	42.00	.1205	1.0000E-02	7.5000E-03	7.0000E-02	7.4000E-02	8.0000E-02	8.2000E-02
T-RADIOL =	LUNG INGES	140.0	.1207	3.0000E-03		.1070	.1220	.1290	.1430
2.90 H	LUNG INHAL	140.0	.1207		2.3000E-03	.1070	.1220	.1290	.1430
.121 DAY	GI-LLI INGES			5.0000E-02		4.9400E-02	5.0700E-02	5.2800E-02	5.4800E-02
	GI-LLI INHAL			5.0000E-02	.5000	4.9400E-02	5.0700E-02	5.2800E-02	5.4800E-02
CS134	BONE	140.0	118.0	4.0000E-02	3.0000E-02	1.154	1.101	1.176	1.247
	LIVER	90.00	80.38	7.0000E-02	5.0000E-02	.4050	.4890	.5680	.6060
SOLUBLE	TOTAL BODY	115.0 (b)	99.74	1.000	.7500	.7450	.9220	1.091	1.152
	THYROID	0.	0.	0.	0.	.2393	.2680	.3010	.3150
	KIDNEY	42.00	39.78	1.0000E-02	7.5000E-03	.3610	.4050	.4470	.4890
T-RADIOL =	LUNG INGES	140.0	118.0	3.0000E-03		.4050	.4890	.5290	.6060
2.06 Y	LUNG INHAL	140.0	118.0		2.3000E-03	.4050	.4890	.5290	.6060
752. DAY	GI-LLI INGES			5.0000E-02		.2870	.3150	.3610	.4050
	GI-LLI INHAL			5.0000E-02	.5000	.2870	.3150	.3610	.4050
CS135	BONE	140.0	140.0	4.0000E-02	3.0000E-02	.3290	.3290	.3290	.3290
	LIVER	90.00	90.00	7.0000E-02	5.0000E-02	6.5800E-02	6.5800E-02	6.5800E-02	6.5800E-02
SOLUBLE	TOTAL BODY	115.0 (b)	115.0	1.000	.7500	6.5800E-02	6.5800E-02	6.5800E-02	6.5800E-02
	THYROID	0.	0.	0.	0.	6.5800E-02	6.5800E-02	6.5800E-02	6.5800E-02
	KIDNEY	42.00	42.00	1.0000E-02	7.5000E-03	6.5800E-02	6.5800E-02	6.5800E-02	6.5800E-02
T-RADIOL =	LUNG INGES	140.0	140.0	3.0000E-03		6.5800E-02	6.5800E-02	6.5800E-02	6.5800E-02
2.300E+06 Y	LUNG INHAL	140.0	140.0		2.3000E-03	6.5800E-02	6.5800E-02	6.5800E-02	6.5800E-02
8.395E+08 DAY	GI-LLI INGES			5.0000E-02		6.5800E-02	6.5800E-02	6.5800E-02	6.5800E-02
	GI-LLI INHAL			5.0000E-02	.5000	6.5800E-02	6.5800E-02	6.5800E-02	6.5800E-02
CS136	BONE	140.0	11.90	4.0000E-02	3.0000E-02	1.030	1.094	1.197	1.295
	LIVER	90.00	11.36	7.0000E-02	5.0000E-02	.4690	.5830	.6910	.7420
SOLUBLE	TOTAL BODY	115.0 (b)	11.68	1.000	.7500	.9330	1.178	1.411	1.497
	THYROID	0.	0.	0.	0.	.2440	.2830	.3280	.3470
	KIDNEY	42.00	9.927	1.0000E-02	7.5000E-03	.4090	.4690	.5260	.5830
T-RADIOL =	LUNG INGES	140.0	11.90	3.0000E-03		.4690	.5830	.6380	.7420
13.0 D	LUNG INHAL	140.0	11.90		2.3000E-03	.4690	.5830	.6380	.7420
13.0 DAY	GI-LLI INGES			5.0000E-02		.3090	.3470	.4090	.4690
	GI-LLI INHAL			5.0000E-02	.5000	.3090	.3470	.4090	.4690

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
CS137+D	BONE	140.0	138.2	4.0000E-02	3.0000E-02	1.296	1.313	1.340	1.365
	LIVER	90.00	89.27	7.0000E-02	5.0000E-02	.3290	.3590	.3870	.4000
SOLUBLE	TOTAL BODY	115.0 (b)	113.8	1.000	.7500	.4500	.5130	.5730	.5940
	THYROID	0.	0.	0.	0.	.2690	.2800	.2920	.2970
	KIDNEY	42.00	41.84	1.0000E-02	7.5000E-03	.3130	.3290	.3440	.3590
T-RADIOL =	LUNG INGES	140.0	138.2	3.0000E-03		.3290	.3590	.3730	.4000
30.1 Y	LUNG INHAL	140.0	138.2		2.3000E-03	.3290	.3590	.3730	.4000
1.099E+04 DAY	GI-LLI INGES			5.0000E-02		.2670	.2970	.3130	.3290
	GI-LLI INHAL			5.0000E-02	.5000	.2670	.2970	.3130	.3290
CS138	BONE	140.0	2.2358E-02	4.0000E-02	3.0000E-02	5.608	5.665	5.756	5.842
	LIVER	90.00	2.2356E-02	7.0000E-02	5.0000E-02	1.352	1.454	1.550	1.596
SOLUBLE	TOTAL BODY	115.0 (b)	2.2357E-02	1.000	.7500	1.767	1.990	2.208	2.289
	THYROID	0.	0.	0.	0.	1.155	1.189	1.229	1.245
	KIDNEY	42.00	2.2349E-02	1.0000E-02	7.5000E-03	1.300	1.352	1.403	1.454
T-RADIOL =	LUNG INGES	140.0	2.2358E-02	3.0000E-03		1.352	1.454	1.502	1.596
32.2 M	LUNG INHAL	140.0	2.2358E-02		2.3000E-03	1.352	1.454	1.502	1.596
2.236E-02 DAY	GI-LLI INGES			5.0000E-02		1.212	1.245	1.300	1.352
	GI-LLI INHAL			5.0000E-02	.5000	1.212	1.245	1.300	1.352
CS139+D	BONE	140.0	6.4580E-03	4.0000E-02	3.0000E-02	12.50	12.50	12.50	12.50
	LIVER	90.00	6.4579E-03	7.0000E-02	5.0000E-02	2.536	2.557	2.575	2.584
SOLUBLE	TOTAL BODY	115.0 (b)	6.4580E-03	1.000	.7500	2.616	2.658	2.697	2.711
	THYROID	0.	0.	0.	0.	2.501	2.508	2.516	2.518
	KIDNEY	42.00	6.4573E-03	1.0000E-02	7.5000E-03	2.528	2.536	2.547	2.557
T-RADIOL =	LUNG INGES	140.0	6.4580E-03	3.0000E-03		2.536	2.557	2.566	2.584
9.30 M	LUNG INHAL	140.0	6.4580E-03		2.3000E-03	2.536	2.557	2.566	2.584
6.458E-03 DAY	GI-LLI INGES			5.0000E-02		2.513	2.518	2.528	2.536
	GI-LLI INHAL			5.0000E-02	.5000	2.513	2.518	2.528	2.536
BA139	BONE	65.00	5.7796E-02	3.5000E-02	.7000	4.536	4.537	4.539	4.540
	LIVER	975.0	5.7844E-02	3.0000E-05	6.0000E-04	.9110	.9130	.9150	.9160
INSOLUBL	TOTAL BODY	65.00	5.7796E-02	5.0000E-02	1.000	.9200	.9250	.9290	.9310
	THYROID	0.	0.	0.	0.	.9070	.9080	.9090	.9090
	KIDNEY	8.500	5.7456E-02	5.0000E-06	1.0000E-04	.9100	.9110	.9120	.9130
T-RADIOL =	LUNG INGES	6500.	5.7847E-02	1.0000E-05		.9110	.9130	.9140	.9160
83.3 M	LUNG INHAL	120.0	5.7819E-02		.1200	.9110	.9130	.9140	.9160
5.785E-02 DAY	GI-LLI INGES			.9500		.9080	.9090	.9100	.9110
	GI-LLI INHAL			1.000	.6200	.9080	.9090	.9100	.9110

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
BA140+D	BONE	65.00	10.69	3.5000E-02	.7000	4.856	4.928	5.036	5.139
	LIVER	975.0	12.62	3.0000E-05	6.0000E-04	1.257	1.379	1.493	1.548
INSOLUBL	TOTAL BODY	65.00	10.69	5.0000E-02	1.000	1.751	2.015	2.270	2.364
	THYROID	0.	0.	0.	0.	1.019	1.061	1.108	1.128
	KIDNEY	8.500	5.106	5.0000E-06	1.0000E-04	1.194	1.257	1.318	1.379
T-RADIOL =	LUNG INGES	6500.	12.76	1.0000E-05		1.257	1.379	1.437	1.548
12.8 D	LUNG INHAL	120.0	11.56		.1200	1.257	1.379	1.437	1.548
12.8 DAY	GI-LLI INGES			.9500		.3340	.3390	.3470	.3540
	GI-LLI INHAL			1.000	.6200	.3340	.3390	.3470	.3540
BA141+D	BONE	65.00	1.2706E-02	3.5000E-02	.7000	9.958	9.976	10.01	10.04
	LIVER	975.0	1.2708E-02	3.0000E-05	6.0000E-04	2.067	2.101	2.132	2.147
INSOLUBL	TOTAL BODY	65.00	1.2706E-02	5.0000E-02	1.000	2.202	2.273	2.339	2.365
	THYROID	0.	0.	0.	0.	2.003	2.014	2.027	2.032
	KIDNEY	8.500	1.2689E-02	5.0000E-06	1.0000E-04	2.055	2.067	2.084	2.116
T-RADIOL =	LUNG INGES	6500.	1.2708E-02	1.0000E-05		2.067	2.101	2.116	2.147
18.3 H	LUNG INHAL	120.0	1.2707E-02		.1200	2.067	2.101	2.116	2.147
1.271E-02 DAY	GI-LLI INGES			.9500		1.085	1.095	1.112	1.129
	GI-LLI INHAL			1.000	.6200	1.085	1.095	1.112	1.129
BA142+D	BONE	65.00	7.4297E-03	3.5000E-02	.7000	7.366	7.460	7.612	7.755
	LIVER	975.0	7.4305E-03	3.0000E-05	6.0000E-04	1.855	2.022	2.181	2.257
INSOLUBL	TOTAL BODY	65.00	7.4297E-03	5.0000E-02	1.000	2.541	2.913	3.275	3.409
	THYROID	0.	0.	0.	0.	1.528	1.585	1.710	1.677
	KIDNEY	8.500	7.4241E-03	5.0000E-06	1.0000E-04	1.767	1.855	1.940	2.022
T-RADIOL =	LUNG INGES	6500.	7.4305E-03	1.0000E-05		1.855	2.022	2.103	2.257
10.7 H	LUNG INHAL	120.0	7.4301E-03		.1200	1.855	2.022	2.103	2.257
7.431E-03 DAY	GI-LLI INGES			.9500		1.622	1.677	1.767	1.855
	GI-LLI INHAL			1.000	.6200	1.622	1.677	1.767	1.855
LA140	BONE	1000.	1.673	4.0000E-05	.4000	3.269	3.349	3.445	3.536
	LIVER	400.0	1.669	1.5000E-05	.1500	.9030	1.011	1.112	1.160
INSOLUBL	TOTAL BODY	500.0	1.671	1.0000E-04	1.000	1.341	1.577	1.804	1.889
	THYROID	0.	0.	0.	0.	.6930	.7300	.7720	.7890
	KIDNEY	0.	0.	0.	0.	.8470	.9030	.9580	1.011
T-RADIOL =	LUNG INGES	0.	0.	0.		.9030	1.011	1.062	1.160
40.2 H	LUNG INHAL	120.0	1.653		.1200	.9030	1.011	1.062	1.160
1.68 DAY	GI-LLI INGES			1.000		.7540	.7890	.8470	.9030
	GI-LLI INHAL			1.000	.6200	.7540	.7890	.8470	.9030

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
LA141	BONE	1000.	.1612	4.0000E-05	.4000	4.677	4.679	4.680	4.680
	LIVER	400.0	.1612	1.5000E-05	.1500	.9380	.9400	.9410	.9420
INSOLUBL	TOTAL BODY	500.0	.1612	1.0000E-04	1.000	.9440	.9470	.9490	.9510
	THYROID	0.	0.	0.	0.	.9360	.9360	.9370	.9370
	KIDNEY	0.	0.	0.	0.	.9380	.9380	.9390	.9400
T-RADIOL =	LUNG INGES	0.	0.	0.		.9380	.9400	.9400	.9420
3.87 H	LUNG INHAL	120.0	.1610		.1200	.9360	.9400	.9400	.9420
.161 DAY	GI-LLI INGES			1.000		.9370	.9370	.9380	.9380
	GI-LLI INHAL			1.000	.6200	.9370	.9370	.9380	.9380
LA142	BONE	1000.	6.4163E-02	4.0000E-05	.4000	4.473	4.532	4.628	4.718
	LIVER	400.0	6.4156E-02	1.5000E-05	.1500	1.135	1.241	1.342	1.390
INSOLUBL	TOTAL BODY	500.0	6.4158E-02	1.0000E-04	1.000	1.571	1.810	2.045	2.133
	THYROID	0.	0.	0.	0.	.9290	.9650	1.006	1.023
	KIDNEY	0.	0.	0.	0.	1.080	1.135	1.189	1.241
T-RADIOL =	LUNG INGES	0.	0.	0.		1.135	1.241	1.292	1.390
92.4 H	LUNG INHAL	120.0	6.4132E-02		.1200	1.135	1.241	1.292	1.390
6.417E-02 DAY	GI-LLI INGES			1.000		.9880	1.023	1.080	1.135
	GI-LLI INHAL			1.000	.6200	.9880	1.023	1.080	1.135
CE141	BONE	1500.	31.84	3.0000E-05	.3000	.9200	.9220	.9250	.9280
	LIVER	293.0	29.26	2.5000E-05	.2500	.1910	.1940	.1970	.1990
INSOLUBL	TOTAL BODY	563.0	30.75	1.0000E-04	1.000	.2040	.2120	.2190	.2210
	THYROID	0.	0.	0.	0.	.1850	.1860	.1870	.1880
	KIDNEY	563.0	30.75	2.0000E-06	2.0000E-02	.1890	.1910	.1930	.1940
T-RADIOL =	LUNG INGES	0.	0.	0.		.1910	.1940	.1960	.1990
32.5 D	LUNG INHAL	120.0	25.59		.1200	.1910	.1940	.1960	.1990
32.5 DAY	GI-LLI INGES			1.000		.1870	.1880	.1890	.1910
	GI-LLI INHAL			1.000	.6200	.1870	.1880	.1890	.1910
CE143+D	BONE	1500.	1.374	3.0000E-05	.3000	3.752	3.762	3.777	3.791
	LIVER	293.0	1.369	2.5000E-02	.2500	.7790	.7950	.8110	.8180
INSOLUBL	TOTAL BODY	563.0	1.372	1.0000E-04	1.000	.8530	.8880	.9210	.9330
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	563.0	1.372	2.0000E-06	2.0000E-02	.7770	.7860	.7940	.7950
T-RADIOL =	LUNG INGES	0.	0.	0.		.7600	.7760	.7840	.8270
33.0 H	LUNG INHAL	120.0	1.359		.1200	.7600	.7760	.7840	.8270
1.38 DAY	GI-LLI INGES			1.000		.4450	.4500	.4590	.4680
	GI-LLI INHAL			1.000	.6200	.4450	.4500	.4590	.4680

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
CE144+D	BONE	1500.	239.1	3.0000E-05	.3000	6.433	6.439	6.441	6.443
	LIVER	293.0	144.3	2.5000E-05	.2500	1.292	1.295	1.297	1.298
INSOLUBL	TOTAL BODY	563.0	189.0	1.0000E-04	1.000	1.301	1.306	1.311	1.313
	THYROID	0.	0.	0.	0.	1.288	1.289	1.290	1.290
	KIDNEY	563.0	189.0	2.0000E-06	2.0000E-02	1.291	1.292	1.294	1.295
T-RADIOL =	LUNG INGES	0.	0.	0.		1.292	1.295	1.296	1.298
284. D	LUNG INHAL	120.0	84.39		.1200	1.292	1.295	1.296	1.298
284. DAY	GI-LLI INGES			1.000		1.289	1.290	1.290	1.292
	GI-LLI INHAL			1.000	.6200	1.289	1.290	1.290	1.292
PR143	BONE	1500.	13.46	4.0000E-05	.4000	1.618	1.618	1.618	1.618
	LIVER	375.0	13.11	2.0000E-05	.2000	.3240	.3240	.3240	.3240
INSOLUBL	TOTAL BODY	750.0	13.34	1.0000E-04	1.000	.3240	.3240	.3240	.3240
	THYROID	0.	0.	0.	0.	.3240	.3240	.3240	.3240
	KIDNEY	750.0	13.34	2.0000E-06	2.0000E-02	.3240	.3240	.3240	.3240
T-RADIOL =	LUNG INGES	0.	0.	0.		.3240	.3240	.3240	.3240
13.6 D	LUNG INHAL	120.0	12.20		.1200	.3240	.3240	.3240	.3240
13.6 DAY	GI-LLI INGES			1.000		.3240	.3240	.3240	.3240
	GI-LLI INHAL			1.000	.6200	.3240	.3240	.3240	.3240
PR144	BONE	1500.	1.2000E-02	4.0000E-05	.4000	5.941	5.941	5.943	5.944
	LIVER	375.0	1.2000E-02	2.0000E-05	.2000	1.191	1.193	1.194	1.195
INSOLUBL	TOTAL BODY	750.0	1.2000E-02	1.0000E-04	1.000	1.197	1.200	1.203	1.205
	THYROID	0.	0.	0.	0.	1.189	1.189	1.190	1.190
	KIDNEY	750.0	1.2000E-02	2.0000E-06	2.0000E-02	1.191	1.191	1.192	1.193
T-RADIOL =	LUNG INGES	0.	0.	0.		1.191	1.193	1.193	1.195
17.3 H	LUNG INHAL	120.0	1.1999E-02		.1200	1.191	1.193	1.193	1.195
1.200E-02 DAY	GI-LLI INGES			1.000		1.189	1.190	1.191	1.191
	GI-LLI INHAL			1.000	.6200	1.189	1.190	1.191	1.191
ND147+D	BONE	1500.	10.91	3.5000E-05	.3500	1.541	1.621	1.629	1.560
	LIVER	131.0	10.14	5.0000E-05	.5000	.3110	.3190	.3270	.3300
INSOLUBL	TOTAL BODY	656.0	10.81	1.0000E-04	1.000	.3430	.3600	.3750	.3810
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	656.0	10.81	5.0000E-06	5.0000E-02	.3070	.3110	.3150	.3190
T-RADIOL =	LUNG INGES	0.	0.	0.		.2900	.2980	.3020	.3090
11.0 D	LUNG INHAL	120.0	10.07		.1200	.2900	.2980	.3020	.3090
11.0 DAY	GI-LLI INGES			1.000		.2720	.2740	.2780	.2820
	GI-LLI INHAL			1.000	.6200	.2720	.2740	.2780	.2820

		ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
PM147		BONE	1500.	584.5	3.5000E-05	.3500	.3490	.3490	.3490	.3490
		LIVER	656.0	389.3	6.0000E-06	6.0000E-02	6.9800E-02	6.9800E-02	6.9800E-02	6.9800E-02
INSOLUBL		TOTAL BODY	656.0	389.3	1.0000E-04	1.000	6.9800E-02	6.9800E-02	6.9800E-02	6.9800E-02
		THYROID	0.	0.	0.	0.	6.9800E-02	6.9800E-02	6.9800E-02	6.9800E-02
		KIDNEY	656.0	389.3	2.0000E-06	2.0000E-02	6.9800E-02	6.9800E-02	6.9800E-02	6.9800E-02
T-RADIOL =		LUNG INGES	0.	0.	0.		6.9800E-02	6.9800E-02	6.9800E-02	6.9800E-02
2.62	Y	LUNG INHAL	120.0	106.6		.1200	6.9800E-02	6.9800E-02	6.9800E-02	6.9800E-02
958.	DAY	GI-LLI INGES			1.000		6.9800E-02	6.9800E-02	6.9800E-02	6.9800E-02
		GI-LLI INHAL			1.000	.6200	6.9800E-02	6.9800E-02	6.9800E-02	6.9800E-02
PM148M+D		BONE	1500.	40.19	3.5000E-05	.3500	1.310	1.630	1.950	2.067
		LIVER	656.0	38.85	6.0000E-06	6.0000E-02	.5300	.6300	.7300	.7840
INSOLUBL		TOTAL BODY	656.0	38.85	1.0000E-04	1.000	.9400	1.170	1.400	1.481
		THYROID	0.	0.	0.	0.	.3800	.3900	.4350	0.
		KIDNEY	656.0	38.85	2.0000E-06	2.0000E-02	.4900	.5300	.5800	.6290
T-RADIOL =		LUNG INGES	0.	0.	0.		.5300	.6300	.6800	.7840
41.3	D	LUNG INHAL	120.0	30.73		.1200	.5300	.6300	.6800	.7840
41.3	DAY	GI-LLI INGES			1.000		.4100	.4400	.4900	.5310
		GI-LLI INHAL			1.000	.6200	.4100	.4400	.4900	.5310
PM148		BONE	1500.	5.351	3.5000E-05	.3500	3.555	3.573	3.601	3.627
		LIVER	656.0	5.326	6.0000E-06	6.0000E-02	.7830	.8140	.8430	.8570
INSOLUBL		TOTAL BODY	656.0	5.326	1.0000E-04	1.000	.9090	.9770	1.041	1.065
		THYROID	0.	0.	0.	0.	.7220	.7320	.7440	.7490
		KIDNEY	656.0	5.326	2.0000E-06	2.0000E-02	.7660	.7830	.7990	.8570
T-RADIOL =		LUNG INGES	0.	0.	0.		.7830	.8140	.8290	.8570
5.37	D	LUNG INHAL	120.0	5.140		.1200	.7830	.8140	.8290	.8570
5.37	DAY	GI-LLI INGES			1.000		.7390	.7490	.7660	.7830
		GI-LLI INHAL			1.000	.6200	.7390	.7490	.7660	.7830
PM149		BONE	1500.	2.209	3.5000E-05	.3500	1.862	1.862	1.863	1.863
		LIVER	656.0	2.205	6.0000E-06	6.0000E-02	.3730	.3740	.3740	.3740
INSOLUBL		TOTAL BODY	656.0	2.205	1.0000E-04	1.000	.3750	.3760	.3770	.3770
		THYROID	0.	0.	0.	0.	.3730	.3730	.3730	.3730
		KIDNEY	656.0	2.205	2.0000E-06	2.0000E-02	.3730	.3730	.3740	.3740
T-RADIOL =		LUNG INGES	0.	0.	0.		.3730	.3740	.3740	.3740
53.1	H	LUNG INHAL	120.0	2.172		.1200	.3730	.3740	.3740	.3740
2.21	DAY	GI-LLI INGES			1.000		.3730	.3730	.3730	.3730
		GI-LLI INHAL			1.000	.6200	.3730	.3730	.3730	.3730

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
PM151	BONE	1500.	1.182	3.5000E-05	.3500	1.559	1.568	1.581	1.594
	LIVER	656.0	1.181	6.0000E-06	6.0000E-02	.3450	.3590	.3730	.3790
INSOLUBL	TOTAL BODY	656.0	1.181	1.0000E-04	1.000	.4030	.4340	.4630	.4740
	THYROID	0.	0.	0.	0.	.3160	.3210	.3270	.3300
	KIDNEY	656.0	1.181	2.0000E-06	2.0000E-02	.3370	.3450	.3520	.3590
T-RADIOL =	LUNG INGES	0.	0.	0.		.3450	.3590	.3660	.3790
28.4 H	LUNG INHAL	120.0	1.172		.1200	.3450	.3590	.3660	.3790
1.18 DAY	GI-LLI INGES			1.000		.3250	.3300	.3370	.3450
	GI-LLI INHAL			1.000	.6200	.3250	.3300	.3370	.3450
SM151	BONE	1500.	1437.	3.5000E-05	.3500	.1300	.1300	.1300	.1300
	LIVER	187.0	186.0	3.5000E-05	.3500	4.2000E-02	4.2000E-02	4.2000E-02	4.2000E-02
INSOLUBL	TOTAL BODY	656.0	643.6	1.0000E-04	1.000	4.2000E-02	4.2000E-02	4.2000E-02	4.2000E-02
	THYROID	0.	0.	0.	0.	4.2000E-02	4.2000E-02	4.2000E-02	0.
	KIDNEY	656.0	643.6	2.0000E-06	2.0000E-02	4.2000E-02	4.2000E-02	4.2000E-02	4.2000E-02
T-RADIOL =	LUNG INGES	0.	0.	0.		4.2000E-02	4.2000E-02	4.2000E-02	4.2000E-02
93.0 Y	LUNG INHAL	120.0	119.6		.1200	4.2000E-02	4.2000E-02	4.2000E-02	4.2000E-02
3.395E+04 DAY	GI-LLI INGES			1.000		4.2000E-02	4.2000E-02	4.2000E-02	4.1000E-02
	GI-LLI INHAL			1.000	.6200	4.2000E-02	4.2000E-02	4.2000E-02	4.1000E-02
SM153	BONE	1500.	1.935	3.5000E-05	.3500	1.193	1.195	1.197	1.199
	LIVER	187.0	1.918	3.5000E-05	.3500	.2420	.2430	.2450	.2450
INSOLUBL	TOTAL BODY	656.0	1.932	1.0000E-04	1.000	.2480	.2520	.2550	.2560
	THYROID	0.	0.	0.	0.	.2390	.2390	.2400	.2400
	KIDNEY	656.0	1.932	2.0000E-06	2.0000E-02	.2410	.2420	.2430	.2430
T-RADIOL =	LUNG INGES	0.	0.	0.		.2420	.2430	.2440	.2450
46.5 H	LUNG INHAL	120.0	1.907		.1200	.2420	.2430	.2440	.2450
1.94 DAY	GI-LLI INGES			1.000		.2400	.2400	.2410	.2420
	GI-LLI INHAL			1.000	.6200	.2400	.2400	.2410	.2420
EU152	BONE	1500.	1140.	3.6000E-05	.3600	.2900	.3600	.4300	.4500
	LIVER	127.0	123.7	2.5000E-05	.2500	.2000	.2600	.3100	.3300
INSOLUBL	TOTAL BODY	635.0	560.1	1.0000E-04	1.000	.4200	.5300	.6300	.6600
	THYROID	0.	0.	0.	0.	.1200	.1200	.1200	0.
	KIDNEY	1480.	1128.	3.0000E-06	3.0000E-02	.1600	.2000	.2300	.3300
T-RADIOL =	LUNG INGES	0.	0.	0.		.2000	.2600	.2800	.3300
13.0 Y	LUNG INHAL	120.0	117.0		.1200	.2000	.2600	.2800	.3300
4.745E+03 DAY	GI-LLI INGES			1.000		.1200	.1400	.1600	.2000
	GI-LLI INHAL			1.000	.6200	.1200	.1400	.1600	.2000

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
EU154	BONE	1500.	1015.	3.6000E-05	.3600	1.457	1.490	1.544	1.595
	LIVER	127.0	122.1	2.5000E-05	.2500	.4280	.4870	.5430	.5700
INSOLUBL	TOTAL BODY	635.0	528.2	1.0000E-04	1.000	.6700	.7980	.9200	.9650
	THYROID	0.	0.	0.	0.	.3110	.3310	.3550	0.
	KIDNEY	1480.	1006.	3.0000E-06	3.0000E-02	.3970	.4280	.4590	.4870
T-RADIOL =	LUNG INGES	0.	0.	0.		.4280	.4870	.5160	.5700
8.60 Y	LUNG INHAL	120.0	115.6		.1200	.4280	.4870	.5160	.5700
3.139E+03 DAY	GI-LLI INGES			1.000		.3450	.3650	.3970	.4280
	GI-LLI INHAL			1.000	.6200	.3450	.3650	.3970	.4280
EU155	BONE	1500.	808.1	3.6000E-05	.3600	.3200	.3800	.4400	.2800
	LIVER	127.0	118.4	2.5000E-05	.2500	7.5000E-02	8.4000E-02	9.2000E-02	9.5000E-02
INSOLUBL	TOTAL BODY	635.0	466.1	1.0000E-04	1.000	.1100	.1300	.1500	.1600
	THYROID	0.	0.	0.	0.	5.9000E-02	6.1000E-02	6.5000E-02	0.
	KIDNEY	1480.	802.3	3.0000E-06	3.0000E-02	6.1000E-02	7.5000E-02	8.0000E-02	9.5000E-02
T-RADIOL =	LUNG INGES	0.	0.	0.		7.5000E-02	8.4000E-02	.8800	9.5000E-02
4.80 Y	LUNG INHAL	120.0	112.3		.1200	7.5000E-02	8.4000E-02	.8800	9.5000E-02
1.752E+03 DAY	GI-LLI INGES			1.000		.6300	.6600	.7100	7.5000E-02
	GI-LLI INHAL			1.000	.6200	.6300	.6600	.7100	7.5000E-02
EU156	BONE	1500.	15.05	3.6000E-05	.3600	2.271	2.302	2.352	2.399
	LIVER	127.0	13.58	2.5000E-05	.2500	.5810	.6370	.6900	.7150
INSOLUBL	TOTAL BODY	635.0	14.84	1.0000E-04	1.000	.8090	.9310	1.049	1.092
	THYROID	0.	0.	0.	0.	.4730	.4910	.5130	.5220
	KIDNEY	1480.	15.05	3.0000E-06	3.0000E-02	.5520	.5810	.6100	.6370
T-RADIOL =	LUNG INGES	0.	0.	0.		.5810	.6370	.6640	.7150
15.2 D	LUNG INHAL	120.0	13.49		.1200	.5810	.6370	.6640	.7150
15.2 DAY	GI-LLI INGES			1.000		.5040	.5220	.5520	.5810
	GI-LLI INHAL			1.000	.6200	.5040	.5220	.5520	.5810
TB160	BONE	1000.	67.43	6.0000E-05	.6000	.7500	.9100	1.060	1.100
	LIVER	0.	0.	0.	0.	.3400	.4000	.4500	0.
INSOLUBL	TOTAL BODY	670.0	65.26	1.0000E-04	1.000	.5800	.7000	.8200	.8500
	THYROID	0.	0.	0.	0.	.2200	.2500	.2700	0.
	KIDNEY	700.0	65.53	3.0000E-06	3.0000E-02	.3100	.3400	.3700	.4000
T-RADIOL =	LUNG INGES	0.	0.	0.		.3400	.4000	.4300	.4800
72.3 D	LUNG INHAL	120.0	45.12		.1200	.3400	.4000	.4300	.4800
72.3 DAY	GI-LLI INGES			1.000		.2600	.2800	.3100	.3400
	GI-LLI INHAL			1.000	.6200	.2600	.2800	.3100	.3400

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
H0166M	BONE	1000.	997.7	6.4000E-05	.6400	.4000	.4000	.4000	.4000
	LIVER	875.0	873.3	6.0000E-06	6.0000E-02	.2800	.3200	.3600	.3700
INSOLUBL	TOTAL BODY	750.0	748.7	1.0000E-04	1.000	.4600	.5800	.7300	.8100
	THYROID	0.	0.	0.	0.	.2000	.2200	.2400	0.
	KIDNEY	800.0	798.5	2.0000E-06	2.0000E-02	.2600	.2800	.3000	.3200
T-RADIOL =	LUNG INGES	0.	0.	0.		.2800	.3200	.3400	.3700
1.200E+03 Y	LUNG INHAL	120.0	120.0		.1200	.2800	.3200	.3400	.3700
4.380E+05 DAY	GI-LLI INGES			0.		0.	0.	0.	0.
	GI-LLI INHAL			1.000	.6200	.2000	.2000	.2000	.2000
W181	BONE	9.000	8.379	7.0000E-03	7.0000E-02	1.6000E-02	1.6000E-02	1.6000E-02	1.6000E-02
	LIVER	4.000	3.873	6.0000E-03	6.0000E-02	3.2000E-03	3.2000E-03	3.2000E-03	3.2000E-03
INSOLUBL	TOTAL BODY	1.000	.9918	.1000	1.000	3.2000E-03	3.2000E-03	3.2000E-03	3.3000E-03
	THYROID	0.	0.	0.	0.	3.2000E-03	3.2000E-03	3.2000E-03	3.2000E-03
	KIDNEY	0.	0.	0.	0.	3.2000E-03	3.2000E-03	3.2000E-03	3.2000E-03
T-RADIOL =	LUNG INGES	0.	0.	0.		3.2000E-03	3.2000E-03	3.2000E-03	3.2000E-03
122. D	LUNG INHAL	120.0	60.37		.1200	3.2000E-03	3.2000E-03	3.2000E-03	3.2000E-03
122. DAY	GI-LLI INGES			.9000		3.2000E-03	3.2000E-03	3.2000E-03	3.2000E-03
	GI-LLI INHAL			1.000	.6200	3.2000E-03	3.2000E-03	3.2000E-03	3.2000E-03
W185	BONE	9.000	8.036	7.0000E-03	7.0000E-02	.6820	.6820	.6820	.6820
	LIVER	4.000	3.797	6.0000E-03	6.0000E-02	.1360	.1360	.1360	.1360
INSOLUBL	TOTAL BODY	1.000	.9868	.1000	1.000	.1360	.1360	.1360	.1360
	THYROID	0.	0.	0.	0.	.1360	.1360	.1360	.1360
	KIDNEY	0.	0.	0.	0.	.1360	.1360	.1360	.1360
T-RADIOL =	LUNG INGES	0.	0.	0.		.1360	.1360	.1360	.1360
75.0 D	LUNG INHAL	120.0	46.15		.1200	.1360	.1360	.1360	.1360
75.0 DAY	GI-LLI INGES			.9000		.1360	.1360	.1360	.1360
	GI-LLI INHAL			1.000	.6200	.1360	.1360	.1360	.1360
W187	BONE	9.000	.8966	7.0000E-03	7.0000E-02	1.501	1.515	1.537	1.558
	LIVER	4.000	.7973	6.0000E-03	6.0000E-02	.3560	.3810	.4030	.4140
INSOLUBL	TOTAL BODY	1.000	.4990	.1000	1.000	.4540	.5060	.5540	.5720
	THYROID	0.	0.	0.	0.	.3080	.3170	.3260	.3300
	KIDNEY	0.	0.	0.	0.	.3430	.3560	.3690	.3810
T-RADIOL =	LUNG INGES	0.	0.	0.		.3560	.3810	.3920	.4140
23.9 H	LUNG INHAL	120.0	.9876		.1200	.3560	.3810	.3920	.4140
.996 DAY	GI-LLI INGES			.9000		.3220	.3300	.3430	.3560
	GI-LLI INHAL			1.000	.6200	.3220	.3300	.3430	.3560

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
PB210-D	BONE	3650.	2520.	2.0000E-02	.2800	29.00	29.00	29.00	29.00
	LIVER	1947.	1571.	6.4000E-03	8.0000E-02	10.00	10.00	10.00	10.00
INSOLUBL	TOTAL BODY	1460.	1238.	8.0000E-02	1.000	5.200	5.200	5.200	5.200
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	531.0	498.5	1.0000E-02	.1400	10.00	10.00	10.00	10.00
T-RADIOL =	LUNG INGES	0.	0.	0.		25.00	25.00	25.00	25.00
22.3 Y	LUNG INHAL	120.0	118.3		.1200	25.00	25.00	25.00	25.00
8.139E+03 DAY	GI-LLI INGES			.9200		.4600	.4600	.4600	.4600
	GI-LLI INHAL			1.000	.6200	.4600	.4600	.4600	.4600
BI210-D	BONE	13.30	3.639	3.0000E-04	0.	40.00	40.00	40.00	40.00
	LIVER	15.00	3.756	1.5000E-03	.1500	13.00	13.00	13.00	13.00
INSOLUBL	TOTAL BODY	5.000	2.502	1.5000E-03	1.000	10.00	10.00	10.00	10.00
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	6.000	2.730	3.0000E-03	.3000	19.00	19.00	19.00	19.00
T-RADIOL =	LUNG INGES	0.	0.	0.		26.00	26.00	26.00	26.00
5.01 D	LUNG INHAL	120.0	4.809		.1200	26.00	26.00	26.00	26.00
5.01 DAY	GI-LLI INGES			1.000		.4000	.4000	.4000	.4000
	GI-LLI INHAL			1.000	.6200	.4000	.4000	.4000	.4000
PO210	BONE	24.00	20.45	6.0000E-03	.1000	275.0	275.0	275.0	275.0
	LIVER	41.00	31.63	1.0000E-02	.1700	55.00	55.00	55.00	55.00
INSOLUBL	TOTAL BODY	30.00	24.65	6.0000E-02	1.000	55.00	55.00	55.00	55.00
	THYROID	0.	0.	0.	0.	55.00	55.00	55.00	0.
	KIDNEY	70.00	46.49	4.0000E-03	7.0000E-02	55.00	55.00	55.00	55.00
T-RADIOL =	LUNG INGES	0.	0.	0.		55.00	55.00	55.00	55.00
138. D	LUNG INHAL	120.0	64.27		.1200	55.00	55.00	55.00	55.00
138. DAY	GI-LLI INGES			.9400		.5300	.5300	.5300	.5300
	GI-LLI INHAL			1.000	.6200	.5300	.5300	.5300	.5300
RN222-D	BONE	0.	0.	0.	0.	200.0	200.0	200.0	200.0
	LIVER	0.	0.	0.	0.	200.0	200.0	200.0	0.
NOBLE GA	TOTAL BODY	0.	0.	0.	0.	200.0	200.0	200.0	200.0
	THYROID	0.	0.	0.	0.	200.0	200.0	200.0	0.
	KIDNEY	0.	0.	0.		200.0	200.0	200.0	0.
T-RADIOL =	LUNG INGES	0.	0.	0.		200.0	200.0	200.0	200.0
3.82 D	LUNG INHAL	0.	0.		0.	200.0	200.0	200.0	200.0
3.82 DAY	GI-LLI INGES			0.		3.200	3.200	3.200	3.200
	GI-LLI INHAL			0.	0.	3.200	3.200	3.200	3.200

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
RA223+D	BONE	1.6400E+04	11.42	.1500	.5000	275.0	275.0	275.0	275.0
	LIVER	10.00	5.334	1.2000E-04	4.0000E-04	275.0	275.0	275.0	275.0
INSOLUBL	TOTAL BODY	8100.	11.41	.3000	1.000	275.0	275.0	275.0	275.0
	THYROID	0.	0.	0.	0.	275.0	275.0	275.0	0.
	KIDNEY	10.00	5.334	6.0000E-04	2.0000E-03	275.0	275.0	275.0	275.0
T-RADIOL =	LUNG INGES	0.	0.	0.		275.0	275.0	275.0	275.0
11.4 D	LUNG INHAL	120.0	10.44		.1200	275.0	275.0	275.0	275.0
11.4 DAY	GI-LLI INGES			.7000		3.700	3.700	3.700	3.700
	GI-LLI INHAL			1.000	.6200	3.700	3.700	3.700	3.700
RA224+D	BONE	1.6400E+04	3.639	.1500	.5000	280.0	280.0	280.0	280.0
	LIVER	10.00	2.669	1.2000E-04	4.0000E-04	280.0	280.0	280.0	280.0
INSOLUBL	TOTAL BODY	8100.	3.638	.3000	1.000	280.0	280.0	280.0	280.0
	THYROID	0.	0.	0.	0.	280.0	280.0	280.0	0.
	KIDNEY	10.00	2.669	6.0000E-04	2.0000E-03	280.0	280.0	280.0	280.0
T-RADIOL =	LUNG INGES	0.	0.	0.		280.0	280.0	280.0	280.0
3.64 D	LUNG INHAL	120.0	3.533		.1200	280.0	280.0	280.0	280.0
3.64 DAY	GI-LLI INGES			.7000		4.200	4.200	4.200	4.200
	GI-LLI INHAL			1.000	.6200	4.200	4.200	4.200	4.200
RA225+D	BONE	1.6400E+04	14.79	.1500	.5000	250.0	250.0	250.0	250.0
	LIVER	10.00	5.968	1.2000E-04	4.0000E-04	250.0	250.0	250.0	250.0
INSOLUBL	TOTAL BODY	8100.	14.77	.3000	1.000	250.0	250.0	250.0	250.0
	THYROID	0.	0.	0.	0.	250.0	250.0	250.0	0.
	KIDNEY	10.00	5.968	6.0000E-04	2.0000E-03	250.0	250.0	250.0	250.0
T-RADIOL =	LUNG INGES	0.	0.	0.		250.0	250.0	250.0	250.0
14.8 D	LUNG INHAL	120.0	13.18		.1200	250.0	250.0	250.0	250.0
14.8 DAY	GI-LLI INGES			.7000		3.500	3.500	3.500	3.500
	GI-LLI INHAL			1.000	.6200	3.500	3.500	3.500	3.500
RA226+D	BONE	1.6400E+04	1.5952E+04	3.0000E-02	.1000	110.0	110.0	110.0	110.0
	LIVER	10.00	10.00	1.2000E-04	4.0000E-04	110.0	110.0	110.0	110.0
INSOLUBL	TOTAL BODY	8100.	7989.	.3000	1.000	110.0	110.0	110.0	110.0
	THYROID	0.	0.	0.	0.	110.0	110.0	110.0	0.
	KIDNEY	10.00	10.00	6.0000E-04	2.0000E-03	110.0	110.0	110.0	110.0
T-RADIOL =	LUNG INGES	0.	0.	0.		110.0	110.0	110.0	110.0
1.600E+03 Y	LUNG INHAL	120.0	120.0		.1200	110.0	110.0	110.0	110.0
5.840E+05 DAY	GI-LLI INGES			.7000		3.700	3.700	3.700	3.700
	GI-LLI INHAL			1.000	.6200	3.700	3.700	3.700	3.700

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
RA228+D	BONE	1.6400E+04	1861.	3.0000E-02	.1000	190.0	190.0	190.0	190.0
	LIVER	10.00	9.953	1.2000E-04	4.0000E-04	60.00	60.00	60.00	60.00
INSOLUB	TOTAL BODY	8100.	1667.	.3000	1.000	230.0	230.0	230.0	230.0
	THYROID	0.	0.	0.	0.	60.00	60.00	60.00	0.
	KIDNEY	10.00	9.953	6.0000E-04	2.0000E-03	60.00	60.00	60.00	60.00
T-RADIOL =	LUNG INGES	0.	0.	0.		160.0	160.0	160.0	160.0
5.75 Y	LUNG INHAL	120.0	113.5		.1200	160.0	160.0	160.0	160.0
2.099E+03 JAY	GI-LLI INGES			.7000		.6300	.6300	.6300	.6300
	GI-LLI INHAL			1.000	.6200	.6300	.6300	.6300	.6300
AC225	BONE	7.3000E+04	9.999	3.0000E-05	.3000	1390.	1390.	1390.	1390.
	LIVER	2400.	9.959	5.0000E-05	.5000	280.0	280.0	280.0	280.0
INSOLUB	TOTAL BODY	2.4000E+04	9.996	1.0000E-04	1.000	280.0	280.0	280.0	280.0
	THYROID	0.	0.	0.	0.	280.0	280.0	280.0	0.
	KIDNEY	2.4000E+04	9.996	1.0000E-06	1.0000E-02	280.0	280.0	280.0	280.0
T-RADIOL =	LUNG INGES	0.	0.	0.		270.0	270.0	270.0	270.0
10.0 Y	LUNG INHAL	120.0	9.231		.1200	270.0	270.0	270.0	270.0
10.0 JAY	GI-LLI INGES			1.000		3.300	3.300	3.300	3.300
	GI-LLI INHAL			1.000	.6200	3.300	3.300	3.300	3.300
AC227+D	BONE	7.3000E+04	7166.	3.0000E-05	.3000	1000.	1000.	1000.	1000.
	LIVER	2400.	1843.	5.0000E-05	.5000	62.00	62.00	62.00	62.00
INSOLUB	TOTAL BODY	2.4000E+04	5970.	1.0000E-04	1.000	200.0	200.0	200.0	200.0
	THYROID	0.	0.	0.	0.	62.00	62.00	62.00	0.
	KIDNEY	2.4000E+04	5970.	1.0000E-06	1.0000E-02	62.00	62.00	62.00	62.00
T-RADIOL =	LUNG INGES	0.	0.	0.		230.0	230.0	230.0	230.0
21.8 Y	LUNG INHAL	120.0	116.2		.1200	230.0	230.0	230.0	230.0
7.946E+03 JAY	GI-LLI INGES			1.000		.6400	.6400	.6400	.6400
	GI-LLI INHAL			1.000	.6200	.6400	.6400	.6400	.6400
TH227+D	BONE	7.3000E+04	18.72	7.0000E-05	.7000	990.0	990.0	990.0	990.0
	LIVER	5.7000E+04	18.71	5.0000E-06	5.0000E-02	61.00	61.00	61.00	61.00
INSOLUB	TOTAL BODY	5.7000E+04	18.71	1.0000E-04	1.000	200.0	200.0	200.0	200.0
	THYROID	0.	0.	0.	0.	61.00	61.00	61.00	0.
	KIDNEY	2.2000E+04	18.70	5.0000E-06	5.0000E-02	61.00	61.00	61.00	61.00
T-RADIOL =	LUNG INGES	0.	0.	0.		230.0	230.0	230.0	230.0
18.7 Y	LUNG INHAL	1460.	18.48		.1200	230.0	230.0	230.0	230.0
18.7 JAY	GI-LLI INGES			1.000		4.300	4.300	4.300	4.300
	GI-LLI INHAL			1.000	.6200	4.300	4.300	4.300	4.300

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-0 FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
TH228+D	BONE	7.3000E+04	691.6	7.0000E-05	.7000	970.0	970.0	970.0	970.0
	LIVER	5.7000E+04	689.8	5.0000E-06	5.0000E-02	56.00	56.00	56.00	56.00
INSOLUBL	TOTAL BODY	5.7000E+04	689.8	1.0000E-04	1.000	230.0	230.0	230.0	230.0
	THYROID	0.	0.	0.	0.	56.00	56.00	56.00	0.
	KIDNEY	2.2000E+04	676.8	5.0000E-06	5.0000E-02	56.00	56.00	56.00	56.00
T-RADIOL =	LUNG INGES	0.	0.	0.		240.0	240.0	240.0	240.0
1.91 Y	LUNG INHAL	1460.	472.3		.1200	240.0	240.0	240.0	240.0
698. DAY	GI-LLI INGES			1.000		4.400	4.400	4.400	4.400
	GI-LLI INHAL			1.000	.6200	4.400	4.400	4.400	4.400
TH229	BONE	7.3000E+04	7.1064E+04	7.0000E-05	.7000	940.0	940.0	940.0	940.0
	LIVER	5.7000E+04	5.5813E+04	5.0000E-06	5.0000E-02	49.00	49.00	49.00	49.00
INSOLUBL	TOTAL BODY	5.7000E+04	5.5813E+04	1.0000E-04	1.000	330.0	330.0	330.0	330.0
	THYROID	0.	0.	0.	0.	49.00	49.00	49.00	0.
	KIDNEY	2.2000E+04	2.1821E+04	5.0000E-06	5.0000E-02	49.00	49.00	49.00	49.00
T-RADIOL =	LUNG INGES	0.	0.	0.		270.0	270.0	270.0	270.0
7.340E+03 Y	LUNG INHAL	1460.	1459.		.1200	270.0	270.0	270.0	270.0
2.679E+06 DAY	GI-LLI INGES			1.000		4.000	4.000	4.000	4.000
	GI-LLI INHAL			1.000	.6200	4.000	4.000	4.000	4.000
TH230	BONE	7.3000E+04	7.2811E+04	7.0000E-05	.7000	242.0	242.0	242.0	242.0
	LIVER	5.7000E+04	5.6885E+04	5.0000E-06	5.0000E-02	48.00	48.00	48.00	48.00
INSOLUBL	TOTAL BODY	5.7000E+04	5.6885E+04	1.0000E-04	1.000	48.00	48.00	48.00	48.00
	THYROID	0.	0.	0.	0.	48.00	48.00	48.00	0.
	KIDNEY	2.2000E+04	2.1983E+04	5.0000E-06	5.0000E-02	48.00	48.00	48.00	48.00
T-RADIOL =	LUNG INGES	0.	0.	0.		48.00	48.00	48.00	48.00
7.700E+04 Y	LUNG INHAL	1460.	1460.		.1200	48.00	48.00	48.00	48.00
2.811E+07 DAY	GI-LLI INGES			1.000		.4700	.4700	.4700	.4700
	GI-LLI INHAL			1.000	.6200	.4700	.4700	.4700	.4700
TH232+D	BONE	7.3000E+04	7.3000E+04	7.0000E-05	.7000	270.0	270.0	270.0	270.0
	LIVER	5.7000E+04	5.7000E+04	5.0000E-06	5.0000E-02	41.00	41.00	41.00	41.00
INSOLUBL	TOTAL BODY	5.7000E+06	5.7000E+06	2.0000E-04	1.000	62.00	62.00	62.00	62.00
	THYROID	0.	0.	0.	0.	41.00	41.00	41.00	0.
	KIDNEY	2.2000E+04	2.2000E+04	5.0000E-06	5.0000E-02	41.00	41.00	41.00	41.00
T-RADIOL =	LUNG INGES	0.	0.	0.		46.00	46.00	46.00	46.00
1.400E+10 Y	LUNG INHAL	1460.	1460.		.1200	46.00	46.00	46.00	46.00
5.110E+12 DAY	GI-LLI INGES			1.000		.4000	.4000	.4000	.4000
	GI-LLI INHAL			1.000	.6200	.4000	.4000	.4000	.4000

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
TH234	BONE	7.3000E+04	24.09	7.0000E-05	.7000	4.500	4.500	4.500	4.500
	LIVER	5.7000E+04	24.09	5.0000E-06	5.0000E-02	.9000	.9000	.9000	.9000
INSOLUBL	TOTAL BODY	5.7000E+04	24.09	1.0000E-04	1.000	.9100	.9100	.9100	.9100
	THYROID	0.	0.	0.	0.	.9000	.9000	.9000	0.
	KIDNEY	2.2000E+04	24.07	5.0000E-06	5.0000E-02	.9000	.9000	.9000	.9000
T-RADIOL =	LUNG INGES	0.	0.	0.		.9000	.9000	.9000	.9000
24.1 D	LUNG INHAL	1460.	23.71		.1200	.9000	.9000	.9000	.9000
24.1 DAY	GI-LLI INGES			1.000		.9000	.9000	.9000	.9000
	GI-LLI INHAL			1.000	.6200	.9000	.9000	.9000	.9000
PA231+D	BONE	7.3000E+04	7.2554E+04	4.5000E-05	.4500	750.0	750.0	750.0	750.0
	LIVER	5.8000E+04	5.7718E+04	5.0000E-06	5.0000E-02	63.00	63.00	63.00	63.00
INSOLUBL	TOTAL BODY	4.1000E+04	4.0859E+04	1.0000E-04	1.000	140.0	140.0	140.0	140.0
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	5.1000E+04	5.0782E+04	4.0000E-06	4.0000E-02	79.00	79.00	79.00	79.00
T-RADIOL =	LUNG INGES	0.	0.	0.		54.00	54.00	54.00	54.00
3.250E+04 Y	LUNG INHAL	120.0	120.0		.1200	54.00	54.00	54.00	54.00
1.186E+07 DAY	GI-LLI INGES			1.000		.5600	.5600	.5600	.5600
	GI-LLI INHAL			1.000	.6200	.5600	.5600	.5600	.5600
PA233	BONE	7.3000E+04	26.99	4.5000E-05	.4500	.2800	.3300	.4000	.4100
	LIVER	5.8000E+04	26.99	5.0000E-06	5.0000E-02	.1300	.1500	.1700	.1800
INSOLUBL	TOTAL BODY	4.1000E+04	26.98	1.0000E-04	1.000	.2200	.2600	.3100	.3200
	THYROID	0.	0.	0.	0.	.1100	.1100	.1100	0.
	KIDNEY	5.1000E+04	26.99	4.0000E-06	4.0000E-02	.1200	.1300	.1400	.1500
T-RADIOL =	LUNG INGES	0.	0.	0.		.1300	.1500	.1600	.1800
27.0 D	LUNG INHAL	120.0	22.04		.1200	.1300	.1500	.1600	.1800
27.0 DAY	GI-LLI INGES			1.000		.1100	.1100	.1200	.1300
	GI-LLI INHAL			1.000	.6200	.1100	.1100	.1200	.1300
U232+D	BONE	300.0	296.6	1.1000E-03	.1100	1200.	1200.	1200.	1200.
	LIVER	0.	0.	0.	0.	0.	0.	0.	0.
INSOLUBL	TOTAL BODY	100.0	99.62	1.0000E-02	1.000	280.0	280.0	280.0	280.0
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	15.00	14.99	1.1000E-03	.1100	110.0	110.0	110.0	110.0
T-RADIOL =	LUNG INGES	0.	0.	0.		210.0	210.0	210.0	210.0
72.0 Y	LUNG INHAL	120.0	119.5		.1200	210.0	210.0	210.0	210.0
2.628E+04 DAY	GI-LLI INGES			1.000		.5300	.5300	.5300	.5300
	GI-LLI INHAL			1.000	.6200	.5300	.5300	.5300	.5300

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
U233+D	BONE	300.0	300.0	1.1000E-03	.1100	250.0	250.0	250.0	250.0
	LIVER	0.	0.	0.	0.	50.00	50.00	50.00	0.
INSOLUBL	TOTAL BODY	100.0	100.0	1.0000E-02	1.000	50.00	50.00	50.00	50.00
	THYROID	0.	0.	0.	0.	50.00	50.00	50.00	0.
	KIDNEY	15.00	15.00	1.1000E-03	.1100	50.00	50.00	50.00	50.00
T-RADIOL =	LUNG INGES	0.	0.	0.		50.00	50.00	50.00	50.00
1.580E+05 Y	LUNG INHAL	120.0	120.0		.1200	50.00	50.00	50.00	50.00
5.767E+07 DAY	GI-LLI INGES			1.000		.4900	.4900	.4900	.4900
	GI-LLI INHAL			1.000	.6200	.4900	.4900	.4900	.4900
U234	BONE	300.0	300.0	1.1000E-03	.1100	240.0	240.0	240.0	240.0
	LIVER	0.	0.	0.	0.	49.00	49.00	49.00	0.
INSOLUBL	TOTAL BODY	100.0	100.0	1.0000E-02	1.000	49.00	49.00	49.00	49.00
	THYROID	0.	0.	0.	0.	49.00	49.00	49.00	0.
	KIDNEY	15.00	15.00	1.1000E-03	.1100	49.00	49.00	49.00	49.00
T-RADIOL =	LUNG INGES	0.	0.	0.		49.00	49.00	49.00	49.00
2.440E+05 Y	LUNG INHAL	120.0	120.0		.1200	49.00	49.00	49.00	49.00
8.906E+07 DAY	GI-LLI INGES			1.000		.4800	.4800	.4800	.4800
	GI-LLI INHAL			1.000	.6200	.4800	.4800	.4800	.4800
U235+D	BONE	300.0	300.0	1.1000E-03	.1100	230.0	230.0	230.0	230.0
	LIVER	0.	0.	0.	0.	0.	0.	0.	0.
INSOLUBL	TOTAL BODY	100.0	100.0	1.0000E-02	1.000	46.00	46.00	46.00	46.00
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	15.00	15.00	1.1000E-03	.1100	46.00	46.00	46.00	46.00
T-RADIOL =	LUNG INGES	0.	0.	0.		46.00	46.00	46.00	46.00
7.040E+08 Y	LUNG INHAL	120.0	120.0		.1200	46.00	46.00	46.00	46.00
2.570E+11 DAY	GI-LLI INGES			1.000		.6100	.6100	.6100	.6100
	GI-LLI INHAL			1.000	.6200	.6100	.6100	.6100	.6100
U236	BONE	300.0	300.0	1.1000E-03	.1100	230.0	230.0	230.0	230.0
	LIVER	0.	0.	0.	0.	0.	0.	0.	0.
INSOLUBL	TOTAL BODY	100.0	100.0	1.0000E-02	1.000	47.00	47.00	47.00	47.00
	THYROID	0.	0.	0.	0.	47.00	47.00	47.00	0.
	KIDNEY	15.00	15.00	1.1000E-03	.1100	47.00	47.00	47.00	47.00
T-RADIOL =	LUNG INGES	0.	0.	0.		47.00	47.00	47.00	47.00
2.342E+07 Y	LUNG INHAL	120.0	120.0		.1200	47.00	47.00	47.00	47.00
8.548E+09 DAY	GI-LLI INGES			1.000		.4500	.4500	.4500	.4500
	GI-LLI INHAL			1.000	.6200	.4500	.4500	.4500	.4500

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-S FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
U237	BONE	300.0	6.601	1.1000E-03	.1100	.7200	.7200	.7200	.7200
	LIVER	0.	0.	0.	0.	0.	0.	0.	.1800
INSOLUB_	TOTAL BODY	100.0	6.323	1.0000E-02	1.000	.2200	.2200	.2200	.2200
	THYROID	0.	0.	0.	0.	0.	0.	0.	.1600
	KIDNEY	15.00	4.655	1.1000E-03	.1100	.1800	.1800	.1800	.1800
T-RADIOL =	LUNG INGES	0.	0.	0.		.1800	.1800	.1800	.1800
6.75 D	LUNG INHAL	120.0	6.391		.1200	.1800	.1800	.1800	.1800
6.75 DAY	GI-LLI INGES			1.000		.1600	.1600	.1600	.1600
	GI-LLI INHAL			1.000	.6200	.1600	.1600	.1600	.1600
U235+D	BONE	300.0	300.0	1.1000E-03	.1100	220.0	220.0	220.0	220.0
	LIVER	0.	0.	0.	0.	0.	0.	0.	0.
INSOLUB_	TOTAL BODY	100.0	100.0	1.0000E-02	1.000	43.00	43.00	43.00	43.00
	THYROID	0.	0.	0.	0.	43.00	43.00	43.00	0.
	KIDNEY	15.00	15.00	1.1000E-03	.1100	43.00	43.00	43.00	43.00
T-RADIOL =	LUNG INGES	0.	0.	0.		43.00	43.00	43.00	43.00
4.470E+09 Y	LUNG INHAL	120.0	120.0		.1200	43.00	43.00	43.00	43.00
1.632E+12 DAY	GI-LLI INGES			1.000		.4300	.4300	.4300	.4300
	GI-LLI INHAL			1.000	.6200	.4300	.4300	.4300	.4300
NP237+D	BONE	7.3000E+04	7.2993E+04	4.5000E-03	.4500	250.0	250.0	250.0	250.0
	LIVER	5.4000E+04	5.3996E+04	5.0000E-06	5.0000E-02	49.00	49.00	49.00	49.00
INSOLUB_	TOTAL BODY	3.9000E+04	3.8999E+04	1.0000E-04	1.000	49.00	49.00	49.00	49.00
	THYROID	0.	0.	0.	0.	49.00	49.00	49.00	0.
	KIDNEY	6.4000E+04	6.3995E+04	3.0000E-06	3.0000E-02	49.00	49.00	49.00	49.00
T-RADIOL =	LUNG INGES	0.	0.	0.		49.00	49.00	49.00	49.00
2.140E+05 Y	LUNG INHAL	120.0	120.0		.1200	49.00	49.00	49.00	49.00
7.911E+08 DAY	GI-LLI INGES			1.000		.6200	.6200	.6200	.6200
	GI-LLI INHAL			1.000	.6200	.6200	.6200	.6200	.6200
NP23F	BONE	7.3000E+04	2.120	4.5000E-03	.4500	13.56	13.56	13.56	13.56
	LIVER	5.4000E+04	2.120	5.0000E-06	5.0000E-02	.8000	.8000	.8000	.8000
INSOLUB_	TOTAL BODY	3.9000E+04	2.120	1.0000E-04	1.000	.9500	.9500	.9500	.9500
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	6.4000E+04	2.120	3.0000E-06	3.0000E-02	.8000	.8000	.8000	.8000
T-RADIOL =	LUNG INGES	0.	0.	0.		.5500	.5500	.5500	.5500
2.12 D	LUNG INHAL	120.0	2.083		.1200	.5500	.5500	.5500	.5500
2.12 DAY	GI-LLI INGES			1.000		.3200	.3200	.3200	.3200
	GI-LLI INHAL			1.000	.6200	.3200	.3200	.3200	.3200

	ORGAN	T-HIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
NP239	BONE	7.3000E+04	2.350	4.5000E-05	.4500	1.098	1.101	1.105	1.070
	LIVER	5.4000E+04	2.350	5.0000E-06	5.0000E-02	.2300	.2300	.2300	.2300
INSOLUBL	TOTAL BODY	3.9000E+04	2.350	1.0000E-04	1.000	.2500	.2500	.2600	.2600
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	6.4000E+04	2.350	3.0000E-06	3.0000E-02	.2100	.2100	.2100	.2100
T-RADIOL =	LUNG INGES	0.	0.	0.		.2300	.2300	.2300	.2300
2.35 D	LUNG INHAL	120.0	2.305		.1200	.2300	.2300	.2300	.2300
2.35 DAY	GI-LLI INGES			1.000		.2200	.2200	.2200	.2200
	GI-LLI INHAL			1.000	.6200	.2200	.2200	.2200	.2200
PU238	BONE	7.3000E+04	2.2270E+04	2.4000E-05	.8000	280.0	280.0	280.0	280.0
	LIVER	3.0000E+04	1.5495E+04	4.5000E-06	.1500	57.00	57.00	57.00	57.00
INSOLUBL	TOTAL BODY	6.5000E+04	2.1464E+04	3.0000E-05	1.000	57.00	57.00	57.00	57.00
	THYROID	0.	0.	0.	0.	57.00	57.00	57.00	0.
	KIDNEY	3.2000E+04	1.6012E+04	6.0000E-07	2.0000E-02	57.00	57.00	57.00	57.00
T-RADIOL =	LUNG INGES	0.	0.	0.		57.00	57.00	57.00	57.00
87.8 Y	LUNG INHAL	365.0	360.9		.1200	57.00	57.00	57.00	57.00
3.205E+04 DAY	GI-LLI INGES			1.000		.5700	.5700	.5700	.5700
	GI-LLI INHAL			1.000	.6200	.5700	.5700	.5700	.5700
PU239	BONE	7.3000E+04	7.2406E+04	2.4000E-05	.8000	270.0	270.0	270.0	270.0
	LIVER	3.0000E+04	2.9899E+04	4.5000E-06	.1500	53.00	53.00	53.00	53.00
INSOLUBL	TOTAL BODY	6.5000E+04	6.4529E+04	3.0000E-05	1.000	53.00	53.00	53.00	53.00
	THYROID	0.	0.	0.	0.	53.00	53.00	53.00	0.
	KIDNEY	3.2000E+04	3.1885E+04	6.0000E-07	2.0000E-02	53.00	53.00	53.00	53.00
T-RADIOL =	LUNG INGES	0.	0.	0.		53.00	53.00	53.00	53.00
2.439E+04 Y	LUNG INHAL	365.0	365.0		.1200	53.00	53.00	53.00	53.00
8.902E+06 DAY	GI-LLI INGES			1.000		.5200	.5200	.5200	.5200
	GI-LLI INHAL			1.000	.6200	.5200	.5200	.5200	.5200
PU240	BONE	7.3000E+04	7.0834E+04	2.4000E-05	.8000	270.0	270.0	270.0	270.0
	LIVER	3.0000E+04	2.9628E+04	4.5000E-06	.1500	53.00	53.00	53.00	53.00
INSOLUBL	TOTAL BODY	6.5000E+04	6.3277E+04	3.0000E-05	1.000	53.00	53.00	53.00	53.00
	THYROID	0.	0.	0.	0.	53.00	53.00	53.00	0.
	KIDNEY	3.2000E+04	3.1577E+04	6.0000E-07	2.0000E-02	53.00	53.00	53.00	53.00
T-RADIOL =	LUNG INGES	0.	0.	0.		53.00	53.00	53.00	53.00
6.540E+03 Y	LUNG INHAL	365.0	364.9		.1200	53.00	53.00	53.00	53.00
2.387E+06 DAY	GI-LLI INGES			1.000		.5300	.5300	.5300	.5300
	GI-LLI INHAL			1.000	.6200	.5300	.5300	.5300	.5300

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
PU241-D	BONE	7.3000E+04	5093.	2.4000E-05	.8000	14.00	14.00	14.00	14.00
	LIVER	3.0000E+04	4630.	4.5000E-06	.1500	.9990	.9990	.9990	.9990
INSOLUBL	TOTAL BODY	6.5000E+04	5050.	3.0000E-05	1.000	2.262	2.262	2.262	2.262
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	3.2000E+04	4675.	6.0000E-07	2.0000E-02	2.372	2.372	2.372	2.372
T-RADIOL =	LUNG INGES	0.	0.	0.		5.0000E-02	5.0000E-02	5.0000E-02	5.0000E-02
15.0 Y	LUNG INHAL	365.0	342.2		.1200	5.0000E-02	5.0000E-02	5.0000E-02	5.0000E-02
5.475E+03 DAY	GI-LLI INGES			1.000		1.0900E-02	1.0900E-02	1.0900E-02	1.0900E-02
	GI-LLI INHAL			1.000	.6200	1.0900E-02	1.0900E-02	1.0900E-02	1.0900E-02
PU242	BONE	7.3000E+04	7.2962E+04	2.4000E-05	.8000	250.0	250.0	250.0	250.0
	LIVER	3.0000E+04	2.9994E+04	4.5000E-06	.1500	51.00	51.00	51.00	51.00
INSOLUBL	TOTAL BODY	6.5000E+04	6.4970E+04	3.0000E-05	1.000	51.00	51.00	51.00	51.00
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	3.2000E+04	3.1993E+04	6.0000E-07	2.0000E-02	51.00	51.00	51.00	51.00
T-RADIOL =	LUNG INGES	0.	0.	0.		51.00	51.00	51.00	51.00
3.870E+05 Y	LUNG INHAL	365.0	365.0		.1200	51.00	51.00	51.00	51.00
1.413E+08 DAY	GI-LLI INGES			1.000		.5100	.5100	.5100	.5100
	GI-LLI INHAL			1.000	.6200	.5100	.5100	.5100	.5100
PU244	BONE	7.3000E+04	7.3000E+04	2.4000E-05	.8000	292.0	292.0	292.0	292.0
	LIVER	3.0000E+04	3.0000E+04	4.5000E-06	.1500	58.40	58.40	58.40	58.40
INSOLUBL	TOTAL BODY	6.5000E+04	6.5000E+04	3.0000E-05	1.000	58.40	58.40	58.40	58.40
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	3.2000E+04	3.2000E+04	6.0000E-07	2.0000E-02	58.40	58.40	58.40	58.40
T-RADIOL =	LUNG INGES	0.	0.	0.		58.40	58.40	58.40	58.40
8.300E+07 Y	LUNG INHAL	365.0	365.0		.1200	58.40	58.40	58.40	58.40
3.030E+10 DAY	GI-LLI INGES			1.000		.7600	.7600	.7600	.7600
	GI-LLI INHAL			1.000	.6200	.7600	.7600	.7600	.7600
AM241	BONE	7.3000E+04	4.9935E+04	2.5000E-05	.2500	280.0	280.0	280.0	280.0
	LIVER	3480.	3405.	3.5000E-05	.3500	57.00	57.00	57.00	57.00
INSOLUBL	TOTAL BODY	2.0000E+04	1.7753E+04	1.0000E-04	1.000	57.00	57.00	57.00	57.00
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	2.7000E+04	2.3060E+04	3.0000E-06	3.0000E-02	57.00	57.00	57.00	57.00
T-RADIOL =	LUNG INGES	0.	0.	0.		57.00	57.00	57.00	57.00
433. Y	LUNG INHAL	120.0	119.9		.1200	57.00	57.00	57.00	57.00
1.580E+05 DAY	GI-LLI INGES			1.000		.5800	.5800	.5800	.5800
	GI-LLI INHAL			1.000	.6200	.5800	.5800	.5800	.5800

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-S FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
AM242M	BONE	7.3000E+04	3.1523E+04	2.5000E-05	.2500	302.0	302.0	302.0	302.0
	LIVER	3480.	3275.	3.5000E-05	.3500	57.00	57.00	57.00	57.00
INSOLUBL	TOTAL BODY	2.0000E+04	1.4701E+04	1.0000E-04	1.000	61.00	61.00	61.00	61.00
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	2.7000E+04	1.8161E+04	3.0000E-06	3.0000E-02	60.50	60.50	60.50	60.50
T-RADIOL =	LUNG INGES	0.	0.	0.		23.00	23.00	23.00	23.00
152. Y	LUNG INHAL	120.0	119.7		.1200	23.00	23.00	23.00	23.00
5.548E+04 DAY	GI-LLI INGES			1.000		.7300	.7300	.7300	.7300
	GI-LLI INHAL			1.000	.6200	.7300	.7300	.7300	.7300
AM243	BONE	7.3000E+04	7.1071E+04	2.5000E-05	.2500	270.0	270.0	270.0	270.0
	LIVER	3480.	3476.	3.5000E-05	.3500	54.00	54.00	54.00	54.00
INSOLUBL	TOTAL BODY	2.0000E+04	1.9852E+04	1.0000E-04	1.000	54.00	54.00	54.00	54.00
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	2.7000E+04	2.6732E+04	3.0000E-06	3.0000E-02	54.00	54.00	54.00	54.00
T-RADIOL =	LUNG INGES	0.	0.	0.		54.00	54.00	54.00	54.00
7.370E+03 Y	LUNG INHAL	120.0	120.0		.1200	54.00	54.00	54.00	54.00
2.690E+06 DAY	GI-LLI INGES			1.000		.6800	.6800	.6800	.6800
	GI-LLI INHAL			1.000	.6200	.6800	.6800	.6800	.6800
CM242	BONE	7.3000E+04	162.6	3.0000E-05	.3000	400.0	400.0	400.0	400.0
	LIVER	3000.	154.6	4.0000E-05	.4000	78.00	78.00	78.00	78.00
INSOLUBL	TOTAL BODY	2.4000E+04	161.9	1.0000E-04	1.000	80.00	80.00	80.00	80.00
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	2.4000E+04	161.9	2.0000E-06	2.0000E-02	78.00	78.00	78.00	78.00
T-RADIOL =	LUNG INGES	0.	0.	0.		64.00	64.00	64.00	64.00
163. J	LUNG INHAL	120.0	69.12		.1200	64.00	64.00	64.00	64.00
163. DAY	GI-LLI INGES			1.000		.6200	.6200	.6200	.6200
	GI-LLI INHAL			1.000	.6200	.6200	.6200	.6200	.6200
CM243	BONE	7.3000E+04	8965.	3.0000E-05	.3000	299.0	299.0	299.0	299.0
	LIVER	3000.	2319.	4.0000E-05	.4000	60.00	60.00	60.00	60.00
INSOLUBL	TOTAL BODY	2.4000E+04	7168.	1.0000E-04	1.000	60.00	60.00	60.00	60.00
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	2.4000E+04	7168.	2.0000E-06	2.0000E-02	60.00	60.00	60.00	60.00
T-RADIOL =	LUNG INGES	0.	0.	0.		60.00	60.00	60.00	60.00
28.0 Y	LUNG INHAL	120.0	118.6		.1200	60.00	60.00	60.00	60.00
1.022E+04 DAY	GI-LLI INGES			1.000		.6100	.6100	.6100	.6100
	GI-LLI INHAL			1.000	.6200	.6100	.6100	.6100	.6100

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
CM244	BONE	7.3000E+04	5997.	3.0000E-05	.3000	290.0	290.0	290.0	290.0
	LIVER	3000.	2056.	4.0000E-05	.4000	58.00	58.00	58.00	58.00
INSOLUBL	TOTAL BODY	2.4000E+04	5135.	1.0000E-04	1.000	58.00	58.00	58.00	58.00
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	2.4000E+04	5135.	2.0000E-06	2.0000E-02	58.00	58.00	58.00	58.00
T-RADIOL =	LUNG INGES	0.	0.	0.		58.00	58.00	58.00	58.00
17.9 Y	LUNG INHAL	120.0	117.8		.1200	58.00	58.00	58.00	58.00
6.533E+03 DAY	GI-LLI INGES			1.000		.5900	.5900	.5900	.5900
	GI-LLI INHAL			1.000	.6200	.5900	.5900	.5900	.5900
CM245	BONE	7.3000E+04	7.1322E+04	3.0000E-05	.3000	280.0	280.0	280.0	280.0
	LIVER	3000.	2997.	4.0000E-05	.4000	56.00	56.00	56.00	56.00
INSOLUBL	TOTAL BODY	2.4000E+04	2.3816E+04	1.0000E-04	1.000	56.00	56.00	56.00	56.00
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	2.4000E+04	2.3816E+04	2.0000E-06	2.0000E-02	56.00	56.00	56.00	56.00
T-RADIOL =	LUNG INGES	0.	0.	0.		55.00	55.00	55.00	55.00
8.500E+03 Y	LUNG INHAL	120.0	120.0		.1200	55.00	55.00	55.00	55.00
3.103E+06 DAY	GI-LLI INGES			1.000		.5500	.5500	.5500	.5500
	GI-LLI INHAL			1.000	.6200	.5500	.5500	.5500	.5500
CM246	BONE	7.3000E+04	7.0056E+04	3.0000E-05	.3000	278.0	278.0	278.0	278.0
	LIVER	3000.	2995.	4.0000E-05	.4000	56.00	56.00	56.00	56.00
INSOLUBL	TOTAL BODY	2.4000E+04	2.3673E+04	1.0000E-04	1.000	56.00	56.00	56.00	56.00
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	2.4000E+04	2.3673E+04	2.0000E-06	2.0000E-02	56.00	56.00	56.00	56.00
T-RADIOL =	LUNG INGES	0.	0.	0.		56.00	56.00	56.00	56.00
4.760E+03 Y	LUNG INHAL	120.0	120.0		.1200	56.00	56.00	56.00	56.00
1.737E+06 DAY	GI-LLI INGES			1.000		.5400	.5400	.5400	.5400
	GI-LLI INHAL			1.000	.6200	.5400	.5400	.5400	.5400
CM247+D	BONE	7.3000E+04	7.2999E+04	3.0000E-05	.3000	270.0	270.0	270.0	270.0
	LIVER	3000.	3000.	4.0000E-05	.4000	55.00	55.00	55.00	55.00
INSOLUBL	TOTAL BODY	2.4000E+04	2.4000E+04	1.0000E-04	1.000	55.00	55.00	55.00	55.00
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	2.4000E+04	2.4000E+04	2.0000E-06	2.0000E-02	55.00	55.00	55.00	55.00
T-RADIOL =	LUNG INGES	0.	0.	0.		55.00	55.00	55.00	55.00
1.540E+07 Y	LUNG INHAL	120.0	120.0		.1200	55.00	55.00	55.00	55.00
5.621E+09 DAY	GI-LLI INGES			1.000		.7100	.7100	.7100	.7100
	GI-LLI INHAL			1.000	.6200	.7100	.7100	.7100	.7100

	ORGAN	T-BIOL (DAY)	T-EFF (DAY)	F-W (F-* FOR GI)	F-A OR F-2PRM	EPSILON INFANT	EPSILON CHILD	EPSILON TEEN	EPSILON ADULT
CM24M	BONE	7.3000E+04	7.2958E+04	3.0000E-05	.3000	2244.	2244.	2244.	2244.
	LIVER	3000.	3000.	4.0000E-05	.4000	453.3	453.3	453.3	453.3
INSOLUB_	TOTAL BODY	2.4000E+04	2.3995E+04	1.0000E-04	1.000	453.3	453.3	453.3	453.3
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	2.4000E+04	2.3995E+04	2.0000E-06	2.0000E-02	453.3	453.3	453.3	453.3
T-RADIOL =	LUNG INGES	0.	0.	0.		453.3	453.3	453.3	453.3
3.500E+05 Y	LUNG INHAL	120.0	120.0		.1200	453.3	453.3	453.3	453.3
1.278E+08 DAY	GI-LLI INGES			1.000		11.45	11.45	11.45	11.45
	GI-LLI INHAL			1.000	.6200	11.45	11.45	11.45	11.45
CF25Y	BONE	7.3000E+04	947.5	2.4000E-05	.8000	1100.	1100.	1100.	1100.
	LIVER	0.	0.	0.	0.	210.0	210.0	210.0	0.
INSOLUB_	TOTAL BODY	6.5000E+04	940.0	3.0000E-05	1.000	210.0	210.0	210.0	210.0
	THYROID	0.	0.	0.	0.	0.	0.	0.	0.
	KIDNEY	0.	0.	0.	0.	210.0	210.0	210.0	0.
T-RADIOL =	LUNG INGES	0.	0.	0.		210.0	210.0	210.0	210.0
2.63 Y	LUNG INHAL	120.0	100.7		.1200	210.0	210.0	210.0	210.0
960. DAY	GI-LLI INGES			1.000		2.250	2.250	2.250	2.250
	GI-LLI INHAL			1.000	.6200	2.250	2.250	2.250	2.250

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U.S. NUCLEAR REGULATORY COMMISSION

BIBLIOGRAPHIC DATA SHEET

1. REPORT NUMBER *(Assigned by DDC)*: NUREG-0172

4. TITLE AND SUBTITLE *(Add Volume No., if appropriate)*: Age- Specific Radiation Dose Commitment Factors for a One Year Chronic Intake

2. *(Leave blank)*

3. RECIPIENT'S ACCESSION NO.

7. AUTHOR(S): G. R. Hoenes and J. K. Soldat

5. DATE REPORT COMPLETED: MONTH September YEAR 1977

9. PERFORMING ORGANIZATION NAME AND MAILING ADDRESS *(Include Zip Code)*:
Battelle Pacific Northwest Laboratories
Battelle Boulevard
Richland, Washington 99352

DATE REPORT ISSUED: MONTH November YEAR 1977

6. *(Leave blank)*

8. *(Leave blank)*

12. SPONSORING ORGANIZATION NAME AND MAILING ADDRESS *(Include Zip Code)*:
U. S. Nuclear Regulatory Commission
Environmental Standards Branch
Office of Standards Development
Eashington, D. C. 20555

10. PROJECT/TASK/WORK UNIT NO.

11. CONTRACT NO.: B21446

13. TYPE OF REPORT

PERIOD COVERED *(Inclusive dates)*

15. SUPPLEMENTARY NOTES

14. *(Leave blank)*

16. ABSTRACT *(200 words or less)*

Age dependent dose conversion factors for internal radiation exposure via inhalation or ingestion are computed adn tabulated. Results are presented in units of millirem received over a 50-year dose commitment interval per picocurie inhaled or ingested. Four age groups and seven target organs are considered using calculational models presnted in the International Commission on Radiological Protection (ICRP) 1959 Report of Committee2, as updated by ICRP Reports 6 and 10.

17. KEY WORDS AND DOCUMENT ANALYSIS

17a. DESCRIPTORS

17b. IDENTIFIERS/OPEN-ENDED TERMS

18. AVAILABILITY STATEMENT: Unlimited Availability

19. SECURITY CLASS *(This report)*

20. SECURITY CLASS *(This page)*

21. NO. OF PAGES: 112

22. PRICE: PC A06-A01

NRC FORM 335 (7-77)