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Internal Dose Conversion Factors for Calculation of Dose to the Public

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Assistant Secretary for Environment,
Safety and Health
Washington, D.C. 20545

MASTER

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ABSTRACT

This publication contains 50-year committed dose equivalent factors, in tabular form. The document is intended to be used as the primary reference by the U.S. Department of Energy (DOE) and its contractors for calculating radiation dose equivalents for members of the public, resulting from ingestion or inhalation of radioactive materials. Its application is intended specifically for such materials released to the environment during routine DOE operations, except in those instances where compliance with 40 CFR 61 (National Emission Standards for Hazardous Air Pollutants) requires otherwise. However, the calculated values may be equally applicable to unusual releases or to occupational exposures. The use of these committed dose equivalent tables should ensure that doses to members of the public from internal exposures are calculated in a consistent manner at all DOE facilities.

These tables are to be used with the revised DOE radiation standards for members of the public, which was adopted by the DOE on August 5, 1985, and incorporated in the DOE Order entitled "Radiation Protection of the Public and the Environment." Those standards are based on the system of radiation risk assessment described in Publication 26 et seq. of the International Commission on Radiological Protection (ICRP).

The series of ICRP publications starting with Publication 26 provides the technical base used in calculating the committed dose equivalent factors in these tables. The factors are expressed in committed dose equivalent per unit intake of radioactive materials. For radionuclides with a long effective half-life in the body, the committed dose equivalent may be received over a period of years following the intake; for radionuclides with short effective half-lives, the entire dose equivalent may be received in the year following intake. Accompanying the tables is a discussion that explains how the committed dose equivalent values were derived and how they are to be used. Consistent with ICRP recommendations, the tables incorporate:

- the 50-year committed dose equivalent for specific organs, and
- the effective dose equivalent, corresponding to an equivalent risk of health effects from uniform irradiation of the whole body, using the weighting factors given in ICRP Publication 26.

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INTERNAL DOSE CONVERSION FACTORS FOR CALCULATION OF DOSE TO THE PUBLIC

PART 1

DISCUSSION

PART 1

DISCUSSION

This portion of the document provides a discussion of how the committed dose equivalent factors were derived and how they are to be used. It also provides definitions of applicable terms.

1.1 BASIS FOR PUBLIC POPULATION DOSE CALCULATIONS

The intent of this document is to provide committed dose equivalent factors to be used by the U.S. Department of Energy (DOE) and its contractors in performing dose equivalent calculations for members of the public, based on the most recent recommendations of the International Commission on Radiological Protection (ICRP Publications 26, 30, and 48). It is expected that those calculations will be used for comparison with the revised dose criteria for members of the public, which were implemented for routine DOE operations in 1985 by DOE memoranda[a] and incorporated in the DOE Order entitled "Radiation Protection of the Public and Environment." The primary dose equivalent standard therein is an annual limit of 100 mrem effective dose equivalent to any member of the public from routine DOE operations.

These tables provide conversion factors for only the internal component of the effective dose equivalent. A companion document, External Dose-Rate Conversion Factor Tables for U.S. DOE Population Dose Calculations, provides comparable dose factors for external exposure from immersion or plane surfaces.

The U.S. Environmental Protection Agency (EPA) regulation 40 CFR 61, Subpart H, implementing the Clean Air Act for DOE facilities specifies the use of the AIRDOS-EPA (Moore et al. 1979) model (now called the Clean Air Act Code--CAAC) for determination of compliance, except where other procedures have been found to be suitable by the EPA. Effective dose equivalents calculated using these tables will not correspond exactly to similar doses obtained by AIRDOS-EPA calculation, because the weighting factors and other parameters do not correspond exactly. Where a significant discrepancy appears to exist in the results, the Environmental Guidance Division of the DOE should be notified for resolution.

(a) Memorandum from W. A. Vaughan, Assistant Secretary for Environment, Safety and Health, U.S. Department of Energy, to Distribution; August 5, 1985. Subject: Radiation Standards for Protection of the Public in the Vicinity of DOE Facilities.

Memorandum from D. R. Sheppard, Acting Director of the Office of Operational Safety, U.S. Department of Energy, to Distribution; September 12, 1985. Subject: Radiation Standards for Protection of the Public in the Vicinity of DOE Facilities.

1.1.1 Applicable Definitions

The following definitions are taken from the DOE Order on "Radiation Protection of the Public and Environment":

Absorbed Dose (D) is the energy imparted to matter by ionizing radiation per unit mass of irradiated material at the place of interest in that material. The absorbed dose is expressed in units of rad (or Gy, where 1 rad = 0.01 Gy).

Committed Dose Equivalent (H_{50}) is the predicted total dose equivalent to a tissue or organ over a 50-year period after an intake of radionuclide into the body. It does not include contributions from external dose. Committed dose equivalent is expressed in units of rem (or Sv).

Committed Effective Dose Equivalent ($H_{E,50}$) is the sum of the committed dose equivalents to various tissues in the body, each multiplied by the appropriate weighting factor. Committed effective dose equivalent is expressed in units of rem (or Sv).

Derived Concentration Guide (DCG) is the concentration of a radionuclide in air or water which, under conditions of continuous exposure by one exposure mode (i.e., ingestion of water or submersion or inhalation of air), for 1 year, a "Reference Man" would receive the most restrictive of: 1) an effective dose equivalent of 100 mrem (1 mSv), or 2) a dose equivalent of 5 rem (50 mSv) to any tissue, including skin and lens of the eye. (DCG values are presented in Attachment 1 of the DOE Order, "Radiation Protection of the Public and Environment," and are discussed in Section 1.1.2 of this document.

Dose Equivalent (H) is the product of absorbed dose in rad (or Gy) in tissue, and it is a quality factor. Dose equivalent is expressed in units of rem (or Sv, where 1 rem = 0.01 Sv). The dose equivalent to an organ, tissue, or the whole body will be that received from the direct exposure plus the 50-year committed dose equivalent received from the radionuclides taken into the body during the year.

Effective Dose Equivalent (H_E) is the summation of the products of the dose equivalent received by specified tissues of the body and a tissue-specific weighting factor. This sum is a risk-equivalent value and can be used to estimate the health-effects risk of the exposed individual. The tissue-specific weighting factor represents the fraction of the total health risk resulting from uniform whole-body irradiation that would be contributed by that particular tissue. The effective dose equivalent includes the committed effective dose equivalent from internal deposition of radionuclides, and the effective dose equivalent due to penetrating radiation from sources external to the body. Effective dose equivalent is expressed in units of rem (or Sv).

Quality Factor (Q) is the principal modifying factor that is employed to derive dose equivalent from absorbed dose.

Per ICRP Publication 30, the quality factors used here are:

Radiation Type	Quality Factor
X-rays, gamma rays, positrons, electrons, (including tritium)	1
Protons and singly charged particles of unknown energy with rest mass greater than one atomic mass unit	10
Alpha particles and multiply charged particles (and particles of unknown charge) of unknown energy	20

Weighting Factor (W_T) is tissue-specific and represents the fraction of the total health risk resulting from uniform whole-body irradiation that could be contributed to that particular tissue. The weighting factors recommended by the ICRP (Publication 26) are:

Organ or Tissue	Weighting Factor
Gonads	0.25
Breasts	0.15
Red Bone Marrow	0.12
Lungs	0.12
Thyroid	0.03
Bone Surfaces	0.03
Remainder[a]	0.30

(a) "Remainder" means the five other organs with the highest dose (e.g., liver, kidney, spleen, thymus, adrenals, pancreas, stomach, small intestine or upper and lower large intestine, but excluding skin, lens of the eye, and extremities). The weighting factor for each such organ is 0.06.

1.1.2 Replacement of Concentration Guides

The Concentration Guides for air and water in the Attachment to Chapter XI of DOE Order 5480.1A (Table II for members of the public) were derived from older lung and ingestion models originally used for similar tables in the National Bureau of Standards Handbook No. 69 (NBS 1959); they were nearly

identical with similar tables included in 10 CFR 20 (NRC). Many DOE site contractors have calculated annual doses to members of the public in uncontrolled areas by simple ratios of observed concentrations of air and water (or foods) to the Concentration Guides. For those few nuclides with long effective half-lives, the Concentration Guides were based on continuing uniform intake for 50 years. At the end of this period, the annual dose rate to the critical organ would be 1.5 rem/year (or 0.5 rem/year to the total body). Calculating the concentration ratios for those nuclides actually provided fractions of the maximum permissible annual intakes, or, numerically, the equivalent fraction of the maximum allowable committed dose equivalents for the critical organ for each nuclide. Derivation of the old Concentration Guides from the basic dose equivalent standards also involved numerous assumptions as to the physical and physiological parameters for a "Standard Man" and the ingested quantities and period of exposure.

With the issue of this document, it is intended that dose calculations for inhalation and ingestion at DOE facilities be based on these committed dose equivalent tables. This will permit use of the more current physiological parameters and models (using ICRP recommendations) for internal dosimetry, yet permit a desirable flexibility for site contractors in applying local exposure-pathway parameters.

Subject to the constraints given in the DOE Order on "Radiation Protection of the Public and Environment," default values of annual air and water consumption may still be used to calculate concentrations equivalent to the dose limits specified in Section 1.1, using the committed effective dose equivalent ("C.E.D.E.") value shown for each radionuclide in the accompanying tables. Limiting concentrations so derived are termed Derived Concentration Guides (DCGs), and for DOE use they have been based on an annual consumption of 8,400 m^3 of air and 730 L of water.

Use of the DCGs is approved for direct calculation of population doses by concentration ratio provided the following conditions are met:

- Only a single mode of exposure exists (inhalation or liquid consumption), and year-round occupancy or exposure can be assumed.
- Dose equivalent concentrations are calculated for individual radionuclides. For known mixtures of radionuclides, fractions of derived limits may be summed to calculate the total effective dose equivalent.
- DCGs are applied at the point of actual exposure.

1.1.3 Physiological and Dosimetric Models

For these tables, ICRP dosimetric models have been used. Continuing biomedical research may, in the future, provide improved values for various parameters and give attention to the desirability of adjusting, as warranted, the table values contained herein. Such adjustments should not be undertaken by individual site contractors without the approval of the DOE Environmental Guidance Division.

1.2 USE OF THE 50-YEAR DOSE EQUIVALENT PER UNIT INTAKE TABLES

The tables of committed dose equivalent and committed effective dose equivalent per unit intake (Part 2) are to be used in deriving dose equivalent estimates from radioactive materials that may be inhaled or ingested by members of the public as a result of routine DOE operations. The dose equivalents were derived from the tables in the supplements to Parts 1, 2, and 3 of ICRP Publication 30.

1.2.1 Units and Quantities

Radiation protection agencies in the United States, including the DOE, have not adopted for primary use the new International Standards Organization (S.I.) units for radiation dose, dose equivalent, or radioactivity; the values of Sv/Bq in the ICRP tables have, therefore, been converted to rem/μCi intake by multiplying by 3.7×10^6 (1 Sv = 100 rem, 1 μCi = 3.7×10^4 Bq). The values in the tables herein can be reconverted to Sv/Bq by dividing by 3.7×10^6 or multiplying by 2.7×10^{-7}. Alternatively, the ICRP tables can be used directly, if available. However, the conventional units shall be used in all DOE documentation, with the equivalent S.I. unit values in parentheses.

The effective dose equivalent is defined by the ICRP as the sum of the dose equivalents from external sources plus the committed dose equivalents to specific organs of the body, each times a weighting factor appropriate for each organ. In these tables, the sum of the committed dose equivalents for individual organs, multiplied by the appropriate weighting factors, is listed as the committed effective dose equivalent ("C.E.D.E."). To obtain a total effective dose equivalent for comparison with the dose equivalent criteria embodied in the DOE Order, any effective dose equivalent from external radiation must be added. The organ weighting factors have been defined by the ICRP as a proportionate share of the whole-body risk caused by irradiating the organ. These weighting factors were given in Section 1.1.1.

In providing the committed effective dose equivalent values, the ICRP used several conventions. The higher value between ovary and testes was assigned to the "gonad." The breast was assumed to receive the same committed dose equivalent as muscle. A 10% rule was applied in determining the number of organs or tissues that were calculated and listed (i.e., only enough organs were summed to give about 90% of the total dose equivalent). The contribution to effective dose equivalent from other organs was ignored. However, a "remainder" was included to allow for a sum of a number of different organs required to meet the rule, but not listed individually. This remainder may include up to five different organs, each with a weighting factor of 0.06. This feature has been retained in the dose tables, with the appropriate weighting factor given as "W_T." It is listed only for those radionuclides for which a remainder is required to meet the rule. For external radiation to the skin of the whole body, a separate weighting factor of 0.01 was assigned; this is not included in the "C.E.D.E." values.

Noble gases are not included in the tables. Doses from external exposures should be either measured or calculated by models appropriate to the site, using the companion document, External Dose-Rate Conversion Factor Tables for U.S. DOE Population Dose Calculations.

1.2.2 Adjustment for Particle Size

The calculations for inhalation were based on the ICRP lung model and a particle size of 1 μm (activity median aerodynamic diameter--AMAD). The quantities of radioactive materials in the environments of DOE facilities are low enough that it is unlikely there will be sufficient valid field data or incentive to adjust for different particle sizes routinely. However, the ICRP system for correction of the values to other particle sizes (ICRP Publication 30) is included here. This consists of providing the fraction of the dose equivalent to an organ or tissue that results by absorption in body fluids from each of the three portions of the respiratory tract, as defined in the ICRP lung model illustrated in Figure 1. These are the nasal passages and pharynx (N-P) region, the trachea and bronchi (T-B) region, and the deep lung or pulmonary (P) region. These fractions are given in the tables in Part 2 of this report in the form A/B/C immediately under the 50-year committed effective dose equivalent from inhalation, where "A" is the percentage of the dose equivalent to the organs as a result of deposition in the N-P region, "B" is the percentage from deposition in the T-B region, and C is the percentage from deposition in the P region. The deposition in each of these regions as a function of the activity median aerodynamic diameter of the particles is given in Figure 2.

The correction for other particle sizes can then be made by use of the following equation:

$$\frac{H_{(New)}}{H_{(1\ \mu m)}} = f_{NP}\,\frac{D_{NP_{(New)}}}{D_{NP_{(1\ \mu m)}}} + f_{TB}\,\frac{D_{TB_{(New)}}}{D_{TB_{(1\ \mu m)}}} + f_{P}\,\frac{D_{P_{(New)}}}{D_{P_{(1\ \mu m)}}}$$

where f_{NP}, f_{TB}, and F_P are the fraction of the committed dose equivalent in the reference tissue, resulting from deposition in the N-P, T-B, and P regions, resepctively (see Figure 1); and D_{NP}, D_{TB}, and D_P are the deposition probabilities in the respiratory regions for a given AMAD (see Figure 2).

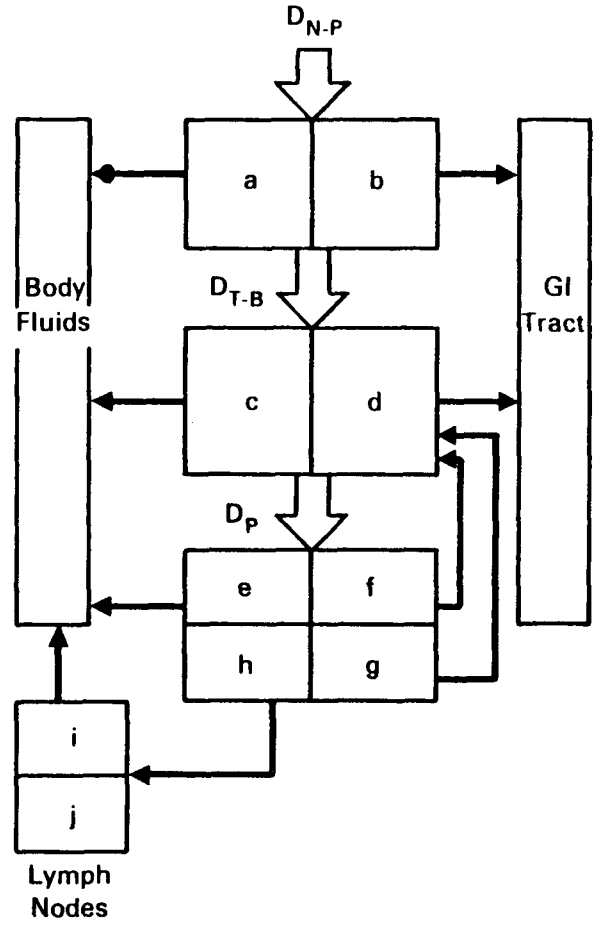
No factors for particle size are given for the "C.E.D.E." values herein. Any such correction must be made by correcting each of the organ dose equivalents, multiplying by the appropriate weighting factor, and summing.

1.2.3 Adjustment for Chemical State

For a number of radionuclides listed in the tables (Part 2), two or three alternate gastrointestinal (GI) absorption factors and lung retention classes are shown. When experimental data have been documented to justify selection

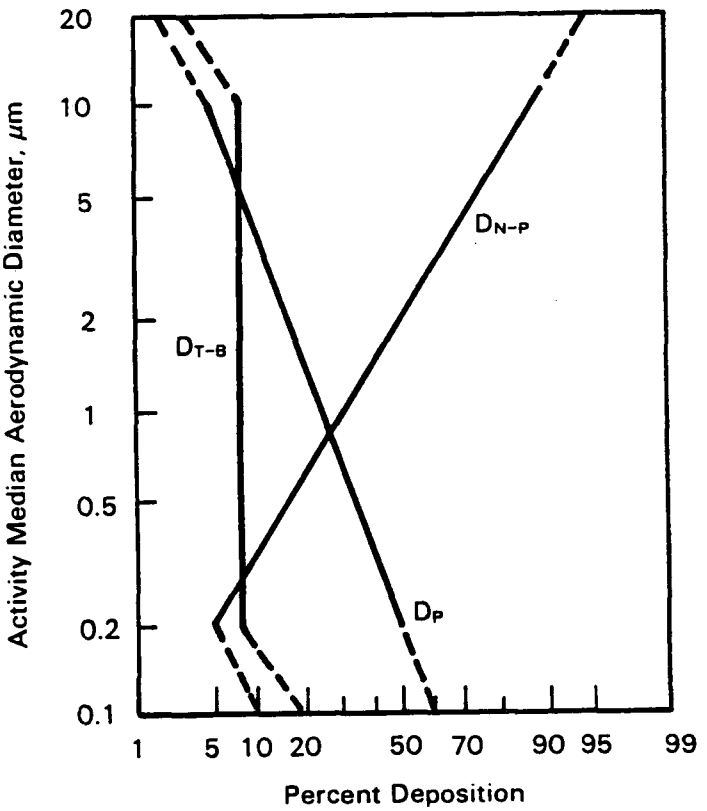
Region	Compartment	Class[a] D T day	D F	W T day	W F	Y T day	Y F
N-P (DN-P = 0.30)	a	0.01	0.5	0.01	0.1	0.01	0.01
	b	0.01	0.5	0.40	0.9	0.40	0.99
T-B (DT-B = 0.08)	c	0.01	0.95	0.01	0.5	0.01	0.01
	d	0.2	0.05	0.2	0.5	0.2	0.99
P (DP = 0.25)	e	0.5	0.8	50	0.15	500	0.05
	f	n.a.[b]	n.a.	1.0	0.4	1.0	0.4
	g	n.a.	n.a.	50	0.4	500	0.4
	h	0.5	0.2	50	0.05	500	0.15
L	i	0.5	1.0	50	1.0	1000	0.9
	j	n.a.	n.a.	n.a.	n.a.	B	0.1

(a) For the Task Group Lung Model (TGLM), D, W, and Y refer to lung-retention classes with clearance half-times of 0.5, 50, and 500 days, respectively. Additional clearance fractions (F) are defined for each compartment (a through i).
n.a. = not applicable.



The values for the removal half-times, T_{a-i}, and compartmental fractions, F_{a-j}, are given in the tabular portion of the figure for each of the three classes of retained materials. The values given for D_{n-p}, D_{t-b}, and D (left column) are the regional depositions for an aerosol with an AMAD of 1 μm. The schematic drawing identifies the various clearance pathways from compartments a through i in the four respiratory regions: N-P, T-B, P, and L.

FIGURE 1. Mathematical Model Used to Describe Clearance from the Respiratory System (from ICRP Publication 30, Part 1)



The percentage of activity or mass of an aerosol deposited in the N-P, T-B, and P regions is given in relation to the Activity Median Aerodynamic Diameter (AMAD) of the aerosol distribution. The model is intended for use with aerosol distributions with AMADs between 0.2 and 10 μm and with geometric standard deviations of less than 4.5. Provisional estimates of deposition further extending the size range are given by the dashed lines. For an unusual distribution with an AMAD of greater than 20 μm, complete deposition in N-P can be assumed. The model does not apply to aerosols with AMADs of less than 0.1 μm.

FIGURE 2. Deposition of Dust in the Respiratory System (from ICRP Publication 30, Part 1).

of a single value, that should be used. If the chemical state for the radionuclide is known, follow the recommendations of ICRP Publication 30, extracted and shown in Section 2.4 of Part 2 (Alternate Absorption Factors). Otherwise, use the most restrictive values.

1.2.4 Adjustment for Age of Exposed Population

The ICRP Publication 23 "Reference Man" data used for dose calculations is basically an adult male. Children and adult females will be present in the

environment, hence the values for adult males will not be completely appropriate. Currently, no generally accepted models for doses to children or fetuses exist, although some efforts to derive such models are under way. For this reason, the present tables must be considered as interim values until such models are available. The ICRP has issued a statement on annual limits of intake and derived air concentrations (ICRP Publication 39) for members of the public. In this statement, the ICRP claims that an exhaustive list of factors for every case would be a difficult and possibly unrewarding task. The statement provides examples for several radionuclides, including ^{129}I, ^{131}I, ^{137}Cs, and ^{239}Pu, for which the annual limit of intake (ALI) for a 6-month-old infant would decrease to about 1/10 to 1/1000 of the ALI for workers. No general guidance can be given at this time, but any DOE facility with a unique release potential is encouraged to bring the potential problem to the attention of the Environmental Guidance Division for possible resolution.

1.2.5 Conventions Used in the Tables

For a number of radionuclides, the committed dose equivalent for a given tissue includes radiation received over a period of years following the exposure, while for others the dose equivalent is delivered in the year of exposure. To distinguish those radionuclides for which less than 90% of the committed dose equivalent is received in the first year, an asterisk (*) appears after the value of the committed dose equivalent. For several nuclides, an asterisk is not shown because of the lack of data for a complete analysis.

The tables are arranged so that the data for each radionuclide include the lung retention class (D, W, Y) for use with the ICRP lung model and the absorption from the GI tract (f_1)used in the metabolic model. The removal half-times for lung-retention classes D, W, and Y are 0.5, 50, and 500 days, respectively.

The values of committed dose equivalent and committed effective dose equivalent in the tables are given to two places. This was done to facilitate calculations. However, major uncertainties exist in calculating these values and in applying them to population exposures. Because of these uncertainties, final effective dose equivalent values should be reported to only one significant digit.

1.2.6 Summary Procedures for Dose Equivalent Calculations

For comparison against the public dose equivalent criteria, three components must be calculated: 1) the committed effective dose equivalent from all sources of ingestion, 2) the committed effective dose equivalent from inhalation, and 3) the effective dose equivalent from external radiation. For routine operations, this will normally be done to include the total calendar year's exposures. Where multiple nuclides and sources of exposure exist, sufficient numbers of each should be included in the final summation to ensure that at least 90% of the total effective dose equivalent is reflected.

Alternative A - Measurements are available for all significant radionuclides and modes of exposure.

1. Calculate the total quantity, in microcuries, for each radionuclide ingested. Multiply by the "C.E.D.E." value given in Part 2 for ingestion. Sum for all radionuclides. If the chemical state is unknown and more than one value is given for GI absorption, use the largest value.

2. Calculate the total quantity, in microcuries, for each radionuclide inhaled. Select the appropriate lung retention class (D, W, or Y), and multiply the quantity by the "C.E.D.E." value given for inhalation. If the class is unknown, use the largest value. Sum for all radionuclides.

3. Calculate the effective dose equivalent (H_{ext}) from external sources, using appropriate occupancy and shielding factors.

4. Sum these three components for comparison with the effective dose equivalent criteria.

Alternative B - Measurements for potentially significant modes of exposure are not available.

1. Determine total quantities released of all radionuclides of potential significance.

2. Apply documented environmental transport and pathway models[(a)] to calculate environmental concentrations and exposure rates.

3-6. Same as steps 1-4 for Alternative A.

Alternative C - Constraints of Section 1.2 are met.

1-2. Same as steps 1-2 for Alternative B.

3. Same as step 3 for Alternative A.

4. Calculate committed effective dose equivalents from inhalation and ingestion from the DCGs in the DOE Order on "Radiation Protection of the Public and Environment." For each exposure mode:

$$H_i = \frac{C_i}{DCG_i} \times H_E$$

where H_i = committed effective dose equivalent for radionuclide i from air (H_a) or water (H_w)

(a) For facilities with airborne releases, the AIRDOS-EPA computer program (Moore et al. 1979) (now called CAAC) or an EPA-approved alternative shall be used to demonstrate compliance with Subpart H of 40 CFR 61.

C_i = average annual concentration of radionuclide i, μCi/mL

H_E = annual effective dose equivalent limit used to calculate DCG, mrem/yr.

5. Calculate effective dose equivalent:

$$H_T = H_{ext} + \sum H_a + \sum H_w$$

1.3 REFERENCES

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INTERNAL DOSE CONVERSION FACTORS FOR CALCULATION OF DOSE TO THE PUBLIC

PART 2

50-YEAR COMMITTED DOSE EQUIVALENT FACTORS--rem/μCi INTAKE

PART 2

50-YEAR COMMITTED DOSE EQUIVALENT FACTORS--rem/μCi INTAKE

Part 2 has four components: Section 2.1--a list of abbreviations used in the tables of committed dose equivalent factors; Section 2.2--a page index of elements in the tables; Section 2.3--the tables of 50-year committed dose equivalent factors; and Section 2.4--a list of alternative absorption factors and lung retention classes for specific chemical compounds of the elements, in alphabetical order, as recommended in ICRP Publications 30 and 48.

In Section 2.3, the dose equivalent factors are given by element in order of atomic number, and an asterisk (*) indicates that less than 90% of the total 50-year committed dose equivalent is received in the year following intake. For inhalation, the fraction of the dose equivalent to an organ or tissue that results by absorption in body fluids from each of the three portions of the respiratory tract are given in the form A/B/C, immediately under the committed dose equivalent. Where three isomers of the radionuclide are listed, the half-life is shown in parentheses for the two higher states.

2.1 ABBREVIATIONS

The following abbreviations are used in the Section 2.3 tables:

D, W, Y	-	Retention class for materials in the lung from inhalation (as per Figure 1 in Part 1)
GI ABSORP	-	Gastrointestinal absorption factor
BLAD WALL	-	Bladder wall
R MARROW	-	Red marrow
BONE SURF	-	Bone surface
ST WALL	-	Stomach wall
SI WALL	-	Small intestine wall
ULI WALL	-	Upper large intestine wall
LLI WALL	-	Lower large intestine wall
W_T	-	Weighting factor for remainder (other organs)
C.E.D.E.	-	Committed effective dose equivalent
(ORG)	-	Organic form
(IN)	-	Inorganic form

(VAP) - As metallic vapor

(CO), (CO2) - As carbon monoxide or dioxide

(___D) - Half-life in days

(___H) - Half-life in hours

(___M) - Half-life in minutes

(___Y) - Half-life in years

2.2 INDEX OF ELEMENTS (for the 50-Year Committed Dose Equivalent Factors)

Element	Page	Element	Page
ACTINIUM	2.154	CHLORINE	2.15
ALUMINUM	2.11	CHROMIUM	2.21
AMERICIUM	2.163	COBALT	2.24
ANTIMONY	2.72	COPPER	2.29
ARSENIC	2.35	CURIUM	2.165
ASTATINE	2.151	DYSPROSIUM	2.106
BARIUM	2.84	EINSTEINIUM	2.170
BERKELIUM	2.167	ERBIUM	2.109
BERYLLIUM	2.6	EUROPIUM	2.98
BISMUTH	2.147	FERMIUM	2.171
BROMINE	2.39	FRANCIUM	2.152
CADMIUM	2.64	FLUORINE	2.8
CALCIUM	2.17	GADOLINIUM	2.101
CALIFORNIUM	2.168	GALLIUM	2.31
CARBON	2.7	GERMANIUM	2.33
CERIUM	2.89	GOLD	2.135
CESIUM	2.81	HAFNIUM	2.116

Element	Page
HOLMIUM	2.107
HYDROGEN	2.5
INDIUM	2.66
IODINE	2.79
IRIDIUM	2.129
IRON	2.23
LANTHANUM	2.86
LEAD	2.144
LUTETIUM	2.113
MAGNESIUM	2.10
MANGANESE	2.22
MENDELEVIUM	2.172
MERCURY	2.137
MOLYBDENUM	2.51
NEODYMIUM	2.92
NEPTUNIUM	2.159
NICKEL	2.26
NIOBIUM	2.49
OSMIUM	2.127
PALLADIUM	2.60
PHOSPHORUS	2.13
PLATINUM	2.133
PLUTONIUM	2.161
POLONIUM	2.150
POTASSIUM	2.16

Element	Page
PRASEODYMIUM	2.90
PROMETHIUM	2.94
PROTACTINIUM	2.156
RADIUM	2.153
RHENIUM	2.124
RHODIUM	2.57
RUBIDIUM	2.41
RUTHENIUM	2.55
SAMARIUM	2.96
SCANDIUM	2.18
SELENIUM	2.37
SILICON	2.12
SILVER	2.61
SODIUM	2.9
STRONTIUM	2.43
SULFUR	2.14
TANTALUM	2.119
TECHNETIUM	2.52
TELLURIUM	2.76
TERBIUM	2.103
THALLIUM	2.142
THORIUM	2.155
THULIUM	2.110
TIN	2.69
TITANIUM	2.19

Element	Page
TUNGSTEN	2.122
URANIUM	2.157
VANADIUM	2.20
YTTERBIUM	2.112
YTTRIUM	2.45
ZINC	2.30
ZIRCONIUM	2.47

2.3 50-YEAR COMMITTED DOSE EQUIVALENT FACTORS--rem/μCi INTAKE

HYDROGEN

^3H (WATER)

	Ingestion	Inhalation
SOFT TISS	6.3E-05	6.3E-05
C.E.D.E.	6.3E-05	6.3E-05

^3H (ELEMENTAL)

Dose equivalent in lung per unit of elemental ^3H in air (rem m^3/μCi hr)

	Ingestion	Inhalation
LUNG	--	3.7E-08
C.E.D.E.	--	4.4E-09

BERYLLIUM

^{7}Be

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-03		5.0E-03	5.0E-03
LUNGS			7.8E-04	1.4E-03
			1/2/97	0/0/100
GONADS	2.1E-04		1.4E-04	1.2E-04
			48/17/35	54/14/32
R MARROW	4.4E-05		1.7E-04	1.5E-04
			23/22/55	11/3/86
BREAST			1.1E-04	1.4E-04
			15/14/71	6/2/92
SI WALL	2.0E-04			
ULI WALL	2.7E-04		1.7E-04	
			48/13/39	
LLI WALL	4.4E-04		2.5E-04	
			54/13/33	
REMAINDER			2.2E-04	3.5E-04
			4/5/91	0/0/100
W_T			0.18	0.12
C.E.D.E.	1.1E-04		2.3E-04	2.7E-04

^{10}Be

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-03		5.0E-03	5.0E-03
LUNGS			1.6E-01	2.9E+00*
			0/1/99	0/0/100
R MARROW	2.7E-03*		6.7E-02*	
			26/33/41	
BONE SURF			2.0E-01*	
			26/33/41	
ULI WALL	1.6E-02			
LLI WALL	4.8E-02			
C.E.D.E.	4.2E-03*		3.3E-02*	3.5E-01*

CARBON

^{11}C (ORG)

	Ingestion	Inhalation
LUNGS	1.1E-05	1.1E-05
GONADS	1.3E-05	1.3E-05
BREAST	1.1E-05	1.1E-05
R MARROW	1.2E-05	1.2E-05
THYROID	1.1E-05	1.1E-05
BONE SURF	1.1E-05	1.1E-05
SI WALL	1.3E-05	1.3E-05
ULI WALL	1.3E-05	1.3E-05
LLI WALL	1.3E-05	1.3E-05
REMAINDER	1.4E-05	1.4E-05
WT	0.12	0.12
C.E.D.E.	1.2E-05	1.2E-05

^{14}C (ORG)

	Ingestion	Inhalation
LUNGS	2.1E-03	2.1E-03
GONADS	2.1E-03	2.1E-03
BREAST	2.1E-03	2.1E-03
R MARROW	2.1E-03	2.1E-03
THYROID	2.1E-03	2.1E-03
BONE SURF	2.1E-03	2.1E-03
ST WALL	2.1E-03	2.1E-03
SI WALL	2.1E-03	2.1E-03
ULI WALL	2.1E-03	2.1E-03
LLI WALL	2.1E-03	2.1E-03
REMAINDER	2.1E-03	2.1E-03
WT	0.06	0.06
C.E.D.E.	2.1E-03	2.1E-03

^{11}C (CO)

	Ingestion	Inhalation
LUNGS		4.1E-06
GONADS		4.4E-06
BREAST		4.1E-06
R MARROW		4.4E-06
THYROID		4.1E-06
BONE SURF		4.1E-06
SI WALL		4.8E-06
ULI WALL		4.8E-06
LLI WALL		4.8E-06
REMAINDER		5.2E-06
WT		0.12
C.E.D.E.		4.5E-06

^{14}C (CO)

	Ingestion	Inhalation
LUNGS		2.9E-06
GONADS		2.9E-06
BREAST		2.9E-06
R MARROW		2.9E-06
THYROID		2.9E-06
BONE SURF		2.9E-06
ST WALL		2.9E-06
SI WALL		2.9E-06
ULI WALL		2.9E-06
LLI WALL		2.9E-06
REMAINDER		2.9E-06
WT		0.06
C.E.D.E.		2.9E-06

^{11}C (CO-2)

	Ingestion	Inhalation
LUNGS		7.4E-06
GONADS		8.1E-06
BREAST		7.0E-06
R MARROW		7.8E-06
THYROID		7.0E-06
BONE SURF		7.4E-06
SI WALL		8.5E-06
ULI WALL		8.5E-06
LLI WALL		8.5E-06
REMAINDER		9.3E-06
WT		0.12
C.E.D.E.		8.0E-06

^{14}C (CO-2)

	Ingestion	Inhalation
LUNGS		2.4E-05
GONADS		2.4E-05
BREAST		2.4E-05
R MARROW		2.4E-05
THYROID		2.4E-05
BONE SURF		2.4E-05
ST WALL		2.4E-05
SI WALL		2.4E-05
ULI WALL		2.4E-05
LLI WALL		2.4E-05
REMAINDER		2.4E-05
WT		0.06
C.E.D.E.		2.4E-05

50-Year Committed Dose Equivalent Factors--rem/µCi Intake (Continued)

FLUORINE

^{18}F

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	1.0E+00
LUNGS		4.1E-04 1/5/94	4.8E-04 0/12/88	5.2E-04 0/19/81
R MARROW	2.2E-04	1.0E-04 67/20/13		
BONE SURF	2.2E-04			
ST WALL	1.1E-03	1.5E-04 93/2/5		
REMAINDER	1.1E-04			
WT	0.06			
C.E.D.E.	1.0E-04	7.0E-05	5.8E-05	6.2E-05

SODIUM

^{22}Na

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	9.3E-03	9.3E-03 30/8/62		
GONADS	1.0E-02	6.7E-03 47/13/40		
BREAST	9.6E-03	5.9E-03 47/12/41		
R MARROW	1.6E-02*	1.0E-02* 47/13/40		
BONE SURF	2.0E-02*	1.3E-02* 47/13/40		
THYROID	9.3E-03	5.9E-03 46/13/41		
ST WALL	1.1E-02			
SI WALL	1.1E-02	7.0E-03 47/13/40		
LLI WALL	1.1E-02	7.0E-03 47/13/40		
REMAINDER	1.5E-02	9.6E-03 47/12/41		
WT	0.12	0.18		
C.E.D.E.	1.2E-02*	8.0E-03*		

^{24}Na

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	9.6E-04	4.4E-03 6/3/91		
GONADS	1.3E-03	6.7E-04 58/15/27		
BREAST	1.0E-03	5.9E-04 50/14/36		
R MARROW	1.4E-03	7.8E-04 53/14/33		
BONE SURF	1.7E-03			
ST WALL	4.4E-03	1.1E-03 70/8/22		
LLI WALL	1.3E-03			
REMAINDER	1.6E-03			
WT	0.18			
C.E.D.E.	1.4E-03	9.5E-04		

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

MAGNESIUM

	^{28}Mg			
	Ingestion	Inhalation		
CLASS		D	W	Y
GI ABSORP	5.0E-01	5.0E-01	5.0E-01	
LUNGS		1.1E-02	2.2E-02	
		3/2/95	1/4/95	
GONADS	3.2E-03	1.1E-03		
		66/12/22		
R MARROW	3.4E-03	3.0E-03		
		49/17/34		
BONE SURF		5.2E-03		
		49/17/34		
ST WALL	7.8E-03			
SI WALL	1.1E-02	2.2E-03		
		82/7/11		
ULI WALL	3.4E-02	5.5E-03	8.9E-03	
		92/4/4	71/13/16	
LLI WALL	5.2E-02	8.5E-03	1.4E-02	
		94/3/3	72/13/15	
C.E.D.E.	7.5E-03	3.1E-03	4.0E-03	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

ALUMINUM

	^{26}Al			
	Ingestion	Inhalation		
CLASS		D	W	Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	
LUNGS		6.3E-02	3.6E-01	
		29/14/57	1/1/98	
GONADS	1.1E-02	7.0E-02	2.4E-02	
		33/16/51	31/26/43	
BREAST		5.9E-02		
		32/16/52		
R MARROW		1.5E-01	4.4E-02	
		32/16/52	23/27/50	
BONE SURF		1.4E-01		
		32/16/52		
SI WALL	1.5E-02	6.7E-02		
		34/15/51		
ULI WALL	4.1E-02	7.0E-02		
		38/15/47		
LLI WALL	1.1E-01	8.9E-02	7.4E-02	
		44/13/43	46/14/40	
REMAINDER		8.1E-02		
		32/16/52		
W_T		0.12		
C.E.D.E.	1.3E-02	7.9E-02	5.9E-02	

SILICON

^{31}Si

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP.	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		1.1E-03	1.3E-03	1.4E-03
		1/4/95	0/11/89	0/17/83
ST WALL	2.0E-03	3.0E-04		
		96/3/1		
SI WALL	2.4E-03	3.6E-04		
		97/2/1		
ULI WALL	3.2E-03	4.8E-04		3.1E-04
		97/2/1		67/29/4
LLI WALL	1.3E-03			
C.E.D.E.	5.4E-04	2.0E-04	1.6E-04	1.9E-04

^{32}Si

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		2.2E-02	3.7E-01	8.5E+00*
		30/15/55	0/0/100	0/0/100
GONADS		2.1E-02		
		32/16/52		
BREAST		2.1E-02		
		32/16/52		
R MARROW		2.1E-02		
		32/16/52		
BONE SURF		2.1E-02		
		32/16/52		
THYROID		2.1E-02		
		32/16/52		
ST WALL		2.1E-02		
		32/16/52		
SI WALL		2.1E-02		
		32/16/52		
ULI WALL	5.9E-03	2.1E-02		
		34/15/51		
LLI WALL	2.3E-02	2.4E-02		
		41/14/45		
REMAINDER		2.1E-02		
		32/16/52		
W_T		0.06		
C.E.D.E.	1.7E-03	2.1E-02	4.4E-02	1.0E+00*

50-Year Committed Dose Equivalent Factors--rem/µCi Intake (Continued)

PHOSPHORUS

^{32}P

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		9.3E-03	9.6E-02	
		9/3/88	1/1/98	
GONADS	2.4E-03	1.8E-03		
		46/13/41		
BREAST	2.4E-03	1.8E-03		
		46/13/41		
R MARROW	3.0E-02	2.2E-02	1.6E-02	
		46/13/41	59/17/24	
BONE SURF	2.9E-02	2.1E-02		
		46/13/41		
ULI WALL	1.1E-02			
LLI WALL	2.7E-02	5.5E-03		
		81/6/13		
C.E.D.E.	7.7E-03	5.5E-03	1.3E-02	

^{33}P

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS	3.5E-04	1.1E-03	1.6E-02	
		11/4/85	1/1/98	
GONADS	3.5E-04	2.6E-04		
		46/13/41		
BREAST	3.5E-04	2.6E-04		
		46/13/41		
R MARROW	1.9E-03	1.4E-03		
		46/13/41		
BONE SURF	4.8E-03	3.6E-03		
		46/13/41		
ST WALL	6.7E-04	3.1E-04		
		54/12/34		
SI WALL	5.2E-04	2.8E-04		
		50/12/38		
ULI WALL	1.3E-03	4.1E-04		
		65/9/26		
LLI WALL	3.1E-03	7.0E-04		
		78/7/15		
C.E.D.E.	8.8E-04	6.1E-04	1.9E-03	

SULFUR

^{35}S

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	1.0E-01	8.0E-01	8.0E-01	
LUNGS	2.8E-04		7.4E-04	1.9E-02	
			13/4/83	0/0/100	
GONADS	2.8E-04		2.1E-04		
			45/13/42		
BREAST	2.8E-04		2.1E-04		
			45/13/42		
R MARROW	2.8E-04		2.1E-04		
			45/13/42		
ST WALL	4.8E-04		2.4E-04		
			52/12/36		
SI WALL	3.7E-04		2.3E-04		
			48/13/39		
ULI WALL	8.9E-04	2.8E-03	3.0E-04		
			61/10/29		
LLI WALL	2.1E-03	8.1E-03	4.8E-04		
			75/7/18		
REMAINDER	2.8E-04		2.1E-04		
			45/13/42		
WT	0.06		0.06		
C.E.D.E.	4.3E-04	6.5E-04	2.9E-04	2.3E-03	

^{35}S (GAS)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI. ABSORP				
LUNGS			3.5E-04	
GONADS			3.5E-04	
BREAST			3.5E-04	
R MARROW			3.5E-04	
THYROID			3.5E-04	
BONE SURF			3.5E-04	
ST WALL			3.5E-04	
SI WALL			3.5E-04	
ULI WALL			3.5E-04	
LLI WALL			3.5E-04	
REMAINDER			3.5E-04	
WT			0.06	
C.E.D.E.			3.5E-04	

CHLORINE

^{36}Cl

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS	3.0E-03	4.8E-03	1.7E-01	
		18/5/77	1/0/99	
GONADS	3.0E-03	1.9E-03		
		47/13/40		
BREAST	3.0E-03	1.9E-03		
		47/13/40		
R MARROW	3.0E-03	1.9E-03		
		47/13/40		
BONE SURF	3.0E-03			
THYROID	3.0E-03			
ST WALL	4.1E-03	2.0E-03		
		52/12/36		
SI WALL	3.0E-03	1.9E-03		
		47/13/40		
ULI WALL	3.0E-03	1.9E-03		
		47/13/40		
LLI WALL	3.0E-03	1.9E-03		
		47/13/40		
REMAINDER	3.0E-03	1.9E-03		
		47/13/40		
W_T	0.06	0.06		
C.E.D.E.	3.0E-03	2.1E-03	2.0E-02	

^{38}Cl

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS		8.1E-04	8.9E-04	
		1/10/89	0/16/84	
ST WALL	3.3E-03	3.7E-04		
		98/1/1		
C.E.D.E.	2.0E-04	1.2E-04	1.1E-04	

^{39}Cl

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS		6.7E-04	7.4E-04	
		2/8/90	0/15/85	
ST WALL	2.3E-03	2.9E-04		
		96/2/2		
C.E.D.E.	1.4E-04	9.7E-05	8.9E-05	

POTASSIUM

^{40}K

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	1.8E-02	1.7E-02 31/9/60		
GONADS	1.9E-02	1.2E-02 47/13/40		
BREAST	1.8E-02	1.1E-02 47/13/40		
R MARROW	1.8E-02	1.1E-02 47/13/40		
BONE SURF	1.8E-02	1.1E-02 47/13/40		
THYROID	1.8E-02	1.1E-02 47/13/40		
ST WALL	2.0E-02	1.2E-02 49/12/39		
SI WALL	1.9E-02	1.2E-02 47/13/40		
LLI WALL	1.9E-02	1.2E-02 47/13/40		
REMAINDER	2.0E-02	1.3E-02 47/13/40		
WT	0.12	0.12		
C.E.D.E.	1.9E-02	1.2E-02		

^{42}K

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	7.8E-04	8.1E-03 3/3/94		
GONADS	7.8E-04	4.1E-04 60/16/24		
BREAST	7.8E-04			
R MARROW	7.8E-04			
ST WALL	6.7E-03			
SI WALL	7.8E-04			
REMAINDER	6.1E-04			
WT	0.18			
C.E.D.E.	1.1E-03	1.1E-03		

^{43}K

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	6.3E-04	2.8E-03 7/3/90		
GONADS	6.7E-04	3.6E-04 56/15/29		
BREAST	5.9E-04	3.6E-04 51/14/35		
R MARROW	6.7E-04	3.7E-04 52/14/34		
THYROID	5.9E-04			
BONE SURF	6.3E-04			
ST WALL	2.3E-03	6.7E-04 68/9/23		
SI WALL	7.4E-04			
REMAINDER	8.1E-04			
WT	0.18			
C.E.D.E.	7.8E-04	5.6E-04		

^{44}K

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		5.2E-04 1/12/87		
ST WALL	2.4E-03	2.3E-04 97/1/2		
C.E.D.E.	1.5E-04	7.6E-05		

^{45}K

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		3.1E-04 1/13/86		
ST WALL	1.8E-03	1.4E-04 97/1/2		
C.E.D.E.	9.3E-05	4.6E-05		

CALCIUM

^{41}Ca

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-01		3.0E-01	
LUNGS			1.7E-03 0/0/100	
R MARROW	6.7E-03*		5.9E-03* 41/19/40	
BONE SURF	1.5E-02*		1.3E-02* 41/19/40	
C.E.D.E.	1.2E-03*		1.3E-03*	

^{45}Ca

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-01		3.0E-01	
LUNGS			3.6E-02 0/0/100	
R MARROW	1.3E-02		1.1E-02 44/21/35	
BONE SURF	1.9E-02		1.6E-02 44/21/35	
ULI WALL	3.7E-03			
LLI WALL	1.0E-02			
C.E.D.E.	3.0E-03		6.1E-03	

^{47}Ca

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-01		3.0E-01	
LUNGS			2.9E-02 1/1/98	
GONADS	2.7E-03			
R MARROW	5.5E-03		3.7E-03 52/25/23	
BONE SURF	1.5E-02			
SI WALL	5.5E-03			
ULI WALL	1.9E-02		7.8E-03 64/11/25	
LLI WALL	4.8E-02		1.9E-02 66/10/24	
C.E.D.E.	6.2E-03		5.5E-03	

SCANDIUM

^{43}Sc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04			1.0E-04
LUNGS				1.3E-03 0/15/85
GONADS	4.4E-04			
ST WALL	1.6E-03			
SI WALL	2.5E-03			3.2E-04 66/28/6
ULI WALL	4.1E-03			5.2E-04 66/28/6
LLI WALL	2.1E-03			2.7E-04 67/28/5
C.E.D.E.	7.3E-04			2.2E-04

^{44M}Sc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04			1.0E-04
LUNGS				2.4E-02 0/2/98
GONADS	6.3E-03			2.7E-03 64/18/18
SI WALL	9.3E-03			5.2E-03 64/17/19
ULI WALL	3.7E-02			1.7E-02 64/18/18
LLI WALL	9.3E-02			3.7E-02 65/18/17
C.E.D.E.	9.9E-03			7.1E-03

^{44}Sc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04			1.0E-04
LUNGS				2.4E-03 0/15/85
GONADS	7.4E-04			
ST WALL	3.0E-03			
SI WALL	4.8E-03			5.9E-04 66/28/6
ULI WALL	7.8E-03			1.0E-03 66/28/6
LLI WALL	4.1E-03			5.2E-04 67/28/5
C.E.D.E.	1.4E-03			4.2E-04

^{46}Sc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04			1.0E-04
LUNGS				1.7E-01 0/0/100
GONADS	7.4E-03			
SI WALL	8.5E-03			
ULI WALL	1.7E-02			
LLI WALL	3.7E-02			
C.E.D.E.	5.6E-03			2.0E-02

^{47}Sc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04			1.0E-04
LUNGS				7.4E-03 0/2/98
ULI WALL	9.3E-03			3.7E-03 64/18/18
LLI WALL	2.3E-02			9.3E-03 64/18/18
C.E.D.E.	1.9E-03			1.7E-03

^{48}Sc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04			1.0E-04
LUNGS				1.0E-02 1/4/95
GONADS	7.4E-03			2.8E-03 64/19/17
SI WALL	1.1E-02			4.1E-03 64/19/17
ULI WALL	2.4E-02			8.9E-03 64/19/17
LLI WALL	4.1E-02			1.5E-02 65/19/16
C.E.D.E.	6.4E-03			3.6E-03

^{49}Sc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04			1.0E-04
LUNGS				7.8E-04 0/21/79
ST WALL	2.0E-03			
SI WALL	1.3E-03			
ULI WALL	7.4E-04			
C.E.D.E.	2.4E-04			9.3E-05

TITANIUM

^{44}Ti

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS	8.5E-03*	4.1E-01*	5.6E-01*	7.4E+00*
		31/16/53	5/6/89	0/0/100
GONADS	1.0E-02*	4.4E-01*	1.2E-01*	
		32/16/52	26/32/42	
BREAST	9.3E-03*	4.1E-01*	1.1E-01*	
		32/16/52	25/30/45	
R MARROW	1.1E-02*	4.4E-01*	1.3E-01*	
		32/16/52	25/31/44	
THYROID		4.1E-01*		
		32/16/52		
BONE SURF		4.1E-01*		
		32/16/52		
SI WALL	2.1E-02	4.8E-01	1.4E-01	
		32/16/52	27/31/42	
ULI WALL	5.2E-02	4.8E-01	1.5E-01	
		33/16/51	30/28/42	
LLI WALL	1.4E-01	5.2E-01	2.0E-01	
		34/15/51	35/24/41	
REMAINDER		5.2E-01	1.5E-01	
		32/16/52	24/30/46	
W_T		0.12	0.12	
C.E.D.E.	1.9E-02*	4.5E-01*	1.7E-01*	8.9E-01*

^{45}Ti

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		8.9E-04	1.1E-03	1.1E-03
		2/4/94	0/10/90	0/16/84
GONADS	2.5E-04	6.3E-05		
		80/12/8		
ST WALL	1.6E-03	2.7E-04		
		90/4/6		
SI WALL	2.2E-03	3.4E-04		2.4E-04
		95/3/2		66/29/5
ULI WALL	3.2E-03	4.8E-04	2.8E-04	3.5E-04
		96/3/1	75/19/6	66/29/5
LLI WALL	1.4E-03	2.3E-04		
		94/4/2		
C.E.D.E.	5.7E-04	2.0E-04	1.5E-04	1.7E-04

VANADIUM

^{47}V

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	
LUNGS		3.7E-04	4.4E-04	
		1/10/89	0/16/84	
ST WALL	1.7E-03	1.8E-04		
		97/1/2		
SI WALL	7.0E-04	7.8E-05		
		97/2/1		
ULI WALL	2.8E-04			
C.E.D.E.	1.6E-04	6.0E-05	5.3E-05	

^{48}V

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	
LUNGS		4.8E-03	4.1E-02	
		13/7/80	0/1/99	
GONADS	1.0E-02	3.5E-03	4.8E-03	
		61/10/29	58/12/30	
BREAST		2.4E-03		
		36/14/50		
R MARROW		8.5E-03		
		34/15/51		
BONE SURF		8.9E-03		
		33/16/51		
SI WALL	1.2E-02	3.7E-03		
		64/9/27		
ULI WALL	2.3E-02	5.2E-03	1.1E-02	
		75/7/18	58/10/32	
LLI WALL	4.8E-02	9.6E-03	2.1E-02	
		83/6/11	62/10/28	
REMAINDER		3.7E-03		
		32/15/53		
W_T		0.12		
C.E.D.E.	7.5E-03	4.6E-03	8.0E-03	

^{49}V

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	
LUNGS		8.9E-05	2.3E-03	
		14/8/78	0/0/100	
GONADS		4.1E-05		
		32/16/52		
R MARROW		5.9E-04		
		32/16/52		
BONE SURF		1.6E-03		
		32/16/52		
ULI WALL	2.3E-04			
LLI WALL	6.7E-04	1.4E-04		
		80/6/14		
C.E.D.E.	5.4E-05	1.5E-04	2.8E-04	

CHROMIUM

^{48}Cr

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-01	1.0E-01
LUNGS			5.2E-04	2.9E-03	3.5E-03
			17/8/75	1/1/98	1/1/98
GONADS	1.2E-03	1.3E-03	4.4E-04	4.8E-04	5.2E-04
			59/11/30	61/14/25	61/18/21
BREAST			2.8E-04	2.4E-04	
			37/14/49	24/12/64	
R MARROW	3.5E-04	3.1E-04	4.1E-04	3.1E-04	
			40/14/46	32/14/54	
SI WALL	1.3E-03	1.4E-03	5.2E-04		
			59/11/30		
ULI WALL	2.2E-03	2.4E-03	8.3E-04	8.9E-04	9.6E-04
			67/9/24	61/12/27	60/17/23
LLI WALL	3.7E-03	4.1E-03	8.9E-04	1.5E-03	1.6E-03
			75/7/18	63/11/26	63/17/20
REMAINDER	5.9E-04	5.5E-04	4.1E-04		
			46/14/40		
W_T	0.06	0.06	0.12		
C.E.D.E.	8.2E-04	8.6E-04	4.4E-04	6.8E-04	7.1E-04

^{49}Cr

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-01	1.0E-01
LUNGS			3.7E-04	4.1E-04	4.4E-04
			1/9/90	0/15/85	0/22/78
GONADS	4.1E-05	4.1E-05			
ST WALL	1.5E-03	1.5E-03	1.8E-04		
			96/2/2		
SI WALL	7.4E-04	7.8E-04	9.2E-05		
			96/3/1		
ULI WALL	3.7E-04	4.1E-04			
			96/3/1		
C.E.D.E.	1.7E-04	1.7E-04	6.1E-05	4.9E-05	5.3E-05

^{51}Cr

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-01	1.0E-01
LUNGS			1.4E-04	1.4E-03	2.0E-03
			17/8/75	1/1/98	0/0/100
GONADS	1.5E-04	1.5E-04	1.0E-04	8.1E-05	
			47/13/40	54/15/31	
BREAST			7.0E-05		
			35/15/50		
R MARROW	4.4E-05		1.0E-04		
			36/15/49		
BONE SURF			1.0E-04		
			34/15/51		
SI WALL	1.7E-04	1.7E-04	1.1E-04		
			47/13/40		
ULI WALL	4.1E-04	4.1E-04	1.4E-04		
			60/10/30		
LLI WALL	9.3E-04	1.0E-03	2.2E-04	4.1E-04	4.4E-04
			74/7/19	60/10/30	61/17/22
REMAINDER			9.2E-05		
			34/15/51		
W_T			0.12		
C.E.D.E.	1.3E-04	1.3E-04	1.1E-04	2.1E-04	2.6E-04

MANGANESE

^{51}Mn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	
LUNGS		6.3E-04 1/9/90	7.0E-04 0/15/85	
ST WALL	2.3E-03	2.8E-04 98/1/1		
SI WALL	1.2E-03	1.5E-04 97/2/1		
ULI WALL	6.3E-04			
C.E.D.E.	2.5E-04	1.0E-04	8.4E-05	

^{52M}Mn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	
LUNGS		3.7E-04 1/13/86	4.1E-04 0/18/82	
ST WALL	1.9E-03	1.8E-04 97/1/2		
SI WALL	5.5E-04			
C.E.D.E.	1.5E-04	5.5E-05	4.9E-05	

^{52}Mn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	
LUNGS		4.8E-03 19/9/72	1.6E-02 2/2/96	
GONADS	1.0E-02	3.6E-03 62/10/28	4.4E-03 62/13/25	
BREAST		2.4E-03 38/14/48	1.9E-03 29/13/58	
R MARROW	2.8E-03	4.4E-03 38/15/47	2.6E-03 37/18/45	
BONE SURF		4.4E-03 36/16/48		
LIVER		1.2E-02 35/16/49	4.8E-03 33/23/44	
SI WALL	1.1E-02	4.1E-03 60/11/29	4.8E-03 61/13/26	
ULI WALL	1.9E-02	5.5E-03 67/9/24	7.8E-03 62/12/26	
LLI WALL	3.3E-02	7.0E-03 79/7/14	1.3E-02 65/11/24	
REMAINDER	4.8E-03	4.8E-03 35/15/50	3.4E-03 7/6/87	
WT	0.06	0.06	0.06	
C.E.D.E.	6.9E-03	4.5E-03	5.6E-03	

^{53}Mn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	
LUNGS			3.2E-03 0/0/100	
R MARROW	8.1E-05	4.1E-04 34/16/50		
BONE SURF	8.1E-04	4.1E-03 34/16/50	1.4E-03 33/26/41	
LIVER	1.4E-04	7.0E-04 34/16/50		
ULI WALL	2.4E-04			
LLI WALL	7.0E-04			
C.E.D.E.	9.9E-05	2.1E-04	4.3E-04	

^{54}Mn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	
LUNGS	8.5E-04	4.4E-03 30/14/56	2.5E-02 2/2/96	
GONADS	3.5E-03	3.3E-03 42/14/44	2.6E-03 43/14/43	
BREAST	1.0E-03	3.4E-03 34/15/51	3.2E-03 15/10/75	
R MARROW	1.8E-03	6.3E-03 34/15/51	4.1E-03 21/14/65	
BONE SURF		9.6E-03 34/15/51		
LIVER	3.7E-03	1.7E-02 34/15/51	9.3E-03 22/17/61	
SI WALL	3.6E-03			
ULI WALL	5.2E-03	4.8E-03 42/14/44		
LLI WALL	8.1E-03			
REMAINDER	1.9E-03	6.7E-03 34/15/51	6.7E-03 5/4/91	
WT	0.06	0.18	0.18	
C.E.D.E.	2.7E-03	5.4E-03	6.4E-03	

^{56}Mn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	
LUNGS		1.6E-03 1/5/94	2.0E-03 0/11/89	
GONADS	3.1E-04	7.8E-05 78/13/9		
ST WALL	3.3E-03	5.2E-04 92/3/5		
SI WALL	4.1E-03	5.9E-04 95/3/2		
ULI WALL	5.2E-03	7.4E-04 97/2/1		
LLI WALL	2.0E-03			
C.E.D.E.	9.5E-04	3.3E-04	2.4E-04	

IRON

^{52}Fe

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	
LUNGS		6.3E-03 2/3/95	9.3E-03 0/6/94	
GONADS	2.4E-03	6.7E-04 73/12/15	4.8E-04 68/21/11	
ST WALL	5.2E-03			
SI WALL	1.3E-02	2.2E-03 90/5/5	2.3E-03 74/16/10	
ULI WALL	3.2E-02	5.2E-03 95/3/2	5.5E-03 74/16/10	
LLI WALL	3.0E-02	4.8E-03 95/3/2	5.2E-03 74/16/10	
C.E.D.E.	5.4E-03	1.7E-03	2.0E-03	

^{55}Fe

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	
LUNGS	3.7E-04*	1.9E-03* 32/15/53	4.1E-03* 5/4/91	
GONADS	4.1E-04*	1.9E-03* 34/16/50	6.7E-04* 34/26/40	
BREAST	3.7E-04*	1.9E-03* 34/16/50	6.3E-04* 34/26/40	
R MARROW	4.1E-04*	1.9E-03* 34/16/50	6.7E-04* 34/26/40	
LIVER	1.3E-03*	6.3E-03* 34/16/50	2.1E-03* 34/26/40	
SPLEEN	2.1E-03*	1.0E-02* 34/16/50	3.5E-03* 34/26/40	
SI WALL	4.4E-04			
ULI WALL	6.3E-04	1.9E-03 35/15/50		
LLI WALL	1.1E-03	2.0E-03 37/15/48	1.0E-03 41/20/39	
REMAINDER		1.9E-03* 34/16/50		
WT		0.06		
C.E.D.E.	5.8E-04*	2.6E-03*	1.2E-03*	

^{59}Fe

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	
LUNGS	2.4E-03	1.3E-02 29/14/57	5.2E-02 3/2/95	
GONADS	6.3E-03	1.2E-02 37/15/48	5.2E-03 46/23/31	
BREAST	2.7E-03	1.1E-02 34/15/51	4.8E-03 30/22/48	
R MARROW	3.1E-03	1.2E-02 34/15/51		
BONE SURF		1.1E-02 34/16/50		
THYROID		1.1E-02 34/16/50		
SPLEEN	6.7E-03	3.1E-02 34/16/50	1.1E-02	
LIVER	5.5E-03	2.6E-02 34/16/50		
SI WALL	7.8E-03			
ULI WALL	1.4E-02	1.5E-02 41/14/45		
LLI WALL	3.1E-02	1.8E-02 50/12/38	1.7E-02 55/14/31	
REMAINDER		1.7E-02 34/16/50		
WT		0.06		
C.E.D.E.	6.6E-03	1.5E-02	9.9E-03	

^{60}Fe

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	
LUNGS	1.1E-01*	5.6E-01* 34/16/50	2.7E-01* 24/19/57	
GONADS	1.3E-01*	6.3E-01* 34/16/50	2.3E-01* 33/26/41	
BREAST	1.1E-01*	5.6E-01* 34/16/50	2.0E-01* 33/25/42	
R MARROW	1.2E-01*	5.9E-01* 34/16/50	2.1E-01* 33/25/42	
THYROID	1.1E-01*	5.6E-01* 34/16/50	2.0E-01* 33/25/42	
BONE SURF	1.1E-01*	5.6E-01* 34/16/50	2.0E-01* 33/25/42	
LIVER	2.8E-01*	1.4E+00* 34/16/50	4.8E-01* 33/26/41	
SPLEEN	3.4E-01*	1.7E+00* 34/16/50	5.9E-01* 33/26/41	
LLI WALL	1.6E-01		2.5E-01 34/25/41	
REMAINDER	1.9E-01*	9.3E-01* 34/16/50	3.3E-01* 33/25/42	
WT	0.12	0.18	0.12	
C.E.D.E.	1.5E-01*	7.6E-01*	2.7E-01*	

COBALT

^{55}Co

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	3.0E-01		5.0E-02	5.0E-02
LUNGS				6.3E-03	6.7E-03*
				1/4/95	0/7/93
GONADS	2.8E-03	2.3E-03*		7.4E-04*	8.5E-04*
				70/15/15	66/21/13
ST WALL	3.1E-03	3.1E-03			
SI WALL	7.4E-03	5.5E-03		1.8E-03	2.1E-03
				71/14/15	66/21/13
ULI WALL	2.0E-02	1.5E-02		4.8E-03	5.5E-03
				72/13/15	66/22/12
LLI WALL	2.7E-02	2.1E-02		6.7E-03	7.8E-03
				73/13/14	66/22/12
C.E.D.E.	4.1E-03	3.3E-03*		1.7E-03*	1.9E-03*

^{56}Co

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	3.0E-01		5.0E-02	5.0E-02
LUNGS		5.2E-03		1.0E-01	2.2E-01
				1/1/98	0/0/100
GONADS	1.3E-02	1.4E-02		8.5E-03	
				46/15/39	
BREAST	2.3E-03	5.9E-03			
R MARROW	3.2E-03	7.0E-03			
LIVER		1.3E-02			
SI WALL	1.4E-02	1.6E-02			
ULI WALL	2.4E-02	2.3E-02			
LLI WALL	5.2E-02	4.1E-02		2.6E-02	
				54/11/35	
REMAINDER	5.9E-03	1.0E-02			
WT	0.06	0.06			
C.E.D.E.	9.7E-03	1.2E-02		1.6E-02	2.6E-02

^{57}Co

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	3.0E-01		5.0E-02	5.0E-02
LUNGS		5.9E-04*		1.5E-02*	6.3E-02*
				1/1/98	0/0/100
GONADS	6.7E-04*	1.1E-03*			
BREAST		5.9E-04*			
R MARROW	3.3E-04*	1.0E-03*			
LIVER		1.7E-03*			
SI WALL	8.5E-04	1.3E-03			
ULI WALL	2.0E-03	2.1E-03			
LLI WALL	4.8E-03	4.1E-03			
REMAINDER		9.3E-04*			
WT		0.06			
C.E.D.E.	6.6E-04*	1.1E-03*		1.8E-03*	7.5E-03*

^{58M}Co

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	3.0E-01		5.0E-02	5.0E-02
LUNGS				3.3E-04	4.8E-04
				0/4/96	0/4/96
GONADS	1.7E-05	2.0E-05			
ST WALL	9.6E-05	1.0E-04			
SI WALL	1.9E-04	1.6E-04			
ULI WALL	5.2E-04	4.1E-04		1.1E-04	1.3E-04
				69/14/17	64/22/14
LLI WALL	5.9E-04	4.8E-04		1.3E-04	1.5E-04
				68/14/18	65/22/13
C.E.D.E.	8.8E-05	7.4E-05		5.4E-05	7.5E-05

^{58}Co

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	3.0E-01		5.0E-02	5.0E-02
LUNGS		1.5E-03		2.9E-02	5.9E-02
				1/1/98	0/0/100
GONADS	3.7E-03	4.1E-03		2.4E-03	
				48/14/38	
BREAST	6.7E-04	1.7E-03			
R MARROW	9.6E-04	2.0E-03			
LIVER		3.7E-03			
SI WALL	4.1E-03	4.8E-03			
ULI WALL	7.0E-03	7.0E-03			
LLI WALL	1.5E-02	1.2E-02		7.4E-03	
				55/11/34	
REMAINDER	1.8E-03	2.9E-03			
WT	0.06	0.06			
C.E.D.E.	2.8E-03	3.5E-03		4.6E-03	7.1E-03

^{60M}Co

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	3.0E-01		5.0E-02	5.0E-02
LUNGS				1.1E-05	1.6E-05
				0/19/81	0/16/84
ST WALL	5.2E-05	5.2E-05			
SI WALL	7.4E-06	7.4E-06			
C.E.D.E.	3.6E-06	3.6E-06		1.3E-06	1.9E-06

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{60}Co

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	3.0E-01		5.0E-02	5.0E-02
LUNGS	3.2E-03*	1.9E-02*		1.3E-01*	1.3E+00*
				2/2/96	0/0/100
GONADS	1.2E-02*	2.7E-02*		1.5E-02*	
				35/21/44	
BREAST	4.1E-03*	1.9E-02*		1.6E-02*	
				19/17/64	
R MARROW	4.8E-03*	2.0E-02*		1.6E-02*	
				20/17/63	
LIVER	8.5E-03*	4.8E-02*		3.4E-02*	
				21/19/60	
SI WALL	1.3E-02	3.0E-02			
ULI WALL	2.1E-02	3.6E-02			
LLI WALL	4.1E-02	5.2E-02		3.0E-02	
				45/15/40	
REMAINDER	7.8E-03*	3.2E-02*		3.0E-02*	
				10/9/81	
WT	0.06	0.06		0.06	
C.E.D.E.	1.0E-02*	2.6E-02*		3.0E-02*	1.5E-01*

^{61}Co

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	3.0E-01		5.0E-02	5.0E-02
LUNGS				6.7E-04	7.4E-04
				0/12/88	0/19/81
ST WALL	1.4E-03	1.4E-03			
SI WALL	1.3E-03	1.1E-03			
ULI WALL	1.2E-03	1.1E-03			
LLI WALL	3.3E-04	2.9E-04			
C.E.D.E.	2.6E-04	2.4E-04		8.0E-05	8.9E-05

^{62M}Co

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	3.0E-01		5.0E-02	5.0E-02
LUNGS				2.5E-04	2.6E-04
				0/19/81	0/23/77
ST WALL	1.3E-03	1.3E-03			
SI WALL	2.6E-04	2.6E-04			
C.E.D.E.	9.6E-05	9.5E-05		3.0E-05	3.2E-05

NICKEL

^{56}Ni (IN)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		2.6E-03	1.4E-02	
		21/10/69	1/1/98	
GONADS	5.9E-03	2.8E-03	2.9E-03	
		53/12/35	57/14/29	
BREAST		1.8E-03	1.6E-03	
		35/15/50	21/11/68	
R MARROW	1.4E-03	2.1E-03	1.8E-03	
		38/14/48	27/12/61	
SI WALL	5.9E-03	3.1E-03	3.1E-03	
		52/12/36	55/14/31	
ULI WALL	8.5E-03	3.4E-03	4.1E-03	
		57/11/32	57/12/31	
LLI WALL	1.4E-02	4.4E-03	6.3E-03	
		65/9/26	60/12/28	
REMAINDER	2.7E-03	2.7E-03	3.1E-03	
		42/14/44	6/6/88	
W_T	0.06	0.12	0.06	
C.E.D.E.	3.5E-03	2.5E-03	3.8E-03	

^{57}Ni (IN)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		2.1E-03	5.2E-03*	
		5/3/92	1/3/98	
GONADS	3.7E-03*	8.5E-04*	1.2E-03*	
		78/7/15	68/13/19	
BREAST		3.5E-04*		
		44/12/44		
R MARROW		4.1E-04*		
		50/11/39		
ST WALL		6.3E-04		
		61/8/31		
SI WALL	5.9E-03	1.1E-03	1.9E-03	
		83/6/11	68/12/20	
ULI WALL	1.3E-02	2.2E-03	4.1E-03	
		90/4/6	69/12/19	
LLI WALL	2.1E-02	3.5E-03	6.3E-03	
		92/4/4	70/12/18	
REMAINDER		5.5E-04		
		67/10/23		
W_T		0.06		
C.E.D.E.	3.3E-03*	1.0E-03*	1.7E-03*	

^{56}Ni (VAP)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP				
LUNGS			4.1E-03	
GONADS			4.1E-03	
BREAST			3.5E-03	
R MARROW			4.1E-03	
BONE SURF			3.6E-03	
THYROID			3.6E-03	
SI WALL			4.4E-03	
LLI WALL			4.8E-03	
REMAINDER			5.2E-03	
W_T			0.18	
C.E.D.E.			4.2E-03	

^{57}Ni (VAP)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP				
LUNGS			2.0E-03*	
GONADS			5.9E-04*	
BREAST			5.2E-04*	
R MARROW			5.9E-04*	
KIDNEYS			7.8E-04*	
REMAINDER			8.5E-04*	
W_T			0.24	
C.E.D.E.			7.9E-04*	

50-Year Committed Dose Equivalent Factors--rem/µCi Intake (Continued)

^{59}Ni (IN)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS	1.3E-04*	1.3E-03*	4.4E-03*	
		31/15/54	3/3/94	
GONADS	1.4E-04*	1.3E-03*	4.1E-04*	
		33/16/51	30/29/41	
BREAST	1.3E-04*	1.3E-03*	4.1E-04*	
		33/16/51	30/29/41	
R MARROW	1.4E-04*	1.3E-03*		
		33/16/51		
BONE SURF		1.3E-03*		
		33/16/51		
THYROID		1.4E-03*		
		33/16/51		
ST WALL	1.5E-04			
SI WALL	1.5E-04			
ULI WALL	4.4E-04	1.3E-03		
		35/15/50		
LLI WALL	1.0E-03	1.4E-03		
		39/15/46		
REMAINDER	1.4E-04	1.3E-03		
		33/16/51		
WT	0.06	0.18		
C.E.D.E.	2.0E-04*	1.3E-03*	7.0E-04*	

^{63}Ni (IN)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS	3.1E-04*	3.2E-03*	1.1E-02*	
		31/15/54	2/2/96	
GONADS	3.1E-04*	3.0E-03*	9.3E-04*	
		33/16/51	30/29/41	
BREAST	3.1E-04*	3.0E-03*	9.3E-04*	
		33/16/51	30/29/41	
R MARROW	3.1E-04*	3.0E-03*		
		33/16/51		
BONE SURF		3.0E-03*		
		33/16/51		
KIDNEYS		3.0E-03*		
		33/16/51		
THYROID		3.0E-03		
		33/16/51		
ST WALL	3.7E-04	3.1E-03		
		33/16/51		
SI WALL	4.8E-04	3.1E-03		
		33/16/51		
ULI WALL	1.3E-03	3.2E-03		
		36/15/49		
LLI WALL	3.4E-03	2.5E-03	2.5E-03	
		41/14/45	44/16/40	
C.E.D.E.	5.4E-04*	3.0E-03*	1.9E-03*	

^{59}Ni (VAP)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP				
LUNGS			2.6E-03*	
GONADS			2.7E-03*	
BREAST			2.6E-03*	
R MARROW			2.7E-03*	
BONE SURF			2.7E-03*	
THYROID			2.9E-03*	
ULI WALL			2.7E-03	
REMAINDER			2.8E-03*	
WT			0.24	
C.E.D.E.			2.7E-03*	

^{63}Ni (VAP)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP				
LUNGS			6.3E-03*	
GONADS			6.3E-03*	
BREAST			6.3E-03*	
R MARROW			6.3E-03*	
BONE SURF			6.3E-03*	
THYROID			6.3E-03*	
ST WALL			6.3E-03*	
SI WALL			6.3E-03*	
ULI WALL			6.3E-03*	
KIDNEYS			6.3E-03*	
REMAINDER			6.3E-03*	
WT			0.06	
C.E.D.E.			6.3E-03*	

^{65}Ni (IN)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		1.1E-03	1.4E-03	
		1/4/95	0/11/89	
GONADS	8.9E-05			
ST WALL	2.3E-03	3.4E-04		
		96/2/2		
SI WALL	2.7E-03	4.1E-04		
		97/2/1		
ULI WALL	3.4E-03	4.8E-04		
		97/2/1		
LLI WALL	1.4E-03			
C.E.D.E.	6.1E-04	2.1E-04	1.7E-04	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{65}Ni (VAP)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP				
LUNGS			2.5E-03	
C.E.D.E.			3.0E-04	

^{66}Ni (IN)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		1.0E-02*	3.5E-02	
		2/2/96	0/2/98	
SI WALL		2.1E-03		
		84/6/10		
ULI WALL	5.6E-02	8.9E-03	1.9E-02	
		95/3/2	69/11/20	
LLI WALL	1.3E-01	2.0E-02	4.4E-02	
		96/3/1	69/11/20	
C.E.D.E.	1.1E-02	3.1E-03*	8.0E-03	

^{66}Ni (VAP)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP				
LUNGS			8.9E-03	
GONADS			1.0E-03	
BREAST			1.0E-03	
R MARROW			1.0E-03	
KIDNEYS			1.9E-03	
C.E.D.E.			1.7E-03	

COPPER

^{60}Cu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01	5.0E-01	5.0E-01	5.0E-01
LUNGS		3.6E-04	3.7E-04	4.1E-04
		1/12/87	0/17/83	0/23/77
GONADS	5.2E-05			
ST WALL	1.9E-03	1.8E-04		
		94/2/4		
SI WALL	5.2E-04			
ULI WALL	2.3E-04			
C.E.D.E.	1.7E-04	5.4E-05	4.4E-05	4.9E-05

^{61}Cu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01	5.0E-01	5.0E-01	5.0E-01
LUNGS		8.1E-04	1.0E-03	1.1E-03
		2/4/94	1/10/89	0/16/84
GONADS	2.0E-04	5.2E-05		
		77/13/10		
ST WALL	1.4E-03	2.4E-04		
		89/4/7		
SI WALL	1.4E-03	2.2E-04		
		93/4/3		
ULI WALL	2.1E-03	3.2E-04		2.4E-04
		95/3/2		66/28/6
LLI WALL	1.0E-03	1.7E-04		
		92/5/3		
C.E.D.E.	4.1E-04	1.7E-04	1.2E-04	1.4E-04

^{64}Cu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01	5.0E-01	5.0E-01	5.0E-01
LUNGS		7.4E-04	1.3E-03	1.3E-03
		3/3/94	1/5/94	1/9/90
GONADS	1.8E-04	5.9E-05		
		67/13/20		
ST WALL	6.3E-04			
SI WALL	7.8E-04	1.6E-04		
		84/7/9		
ULI WALL	2.3E-03	3.7E-04	4.8E-04	5.5E-04
		92/4/4	72/15/13	67/23/10
LLI WALL	2.8E-03	4.4E-04	5.9E-04	7.0E-04
		93/4/3	74/14/12	67/23/10
C.E.D.E.	4.3E-04	1.6E-04	2.2E-04	2.3E-04

^{67}Cu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01	5.0E-01	5.0E-01	5.0E-01
LUNGS		1.7E-03	5.5E-03	5.9E-03
		6/3/91	1/2/97	1/3/96
GONADS	4.4E-04	2.6E-04		
		51/14/35		
BREAST		2.3E-04		
		44/15/41		
R MARROW		2.7E-04		
		45/15/40		
LIVER		8.5E-04		
		44/15/41		
PANCREAS		8.9E-04		
		44/15/41		
BRAIN		1.0E-03		
		45/15/40		
SI WALL	1.2E-03			
ULI WALL	4.8E-03	9.3E-04	1.6E-03	1.9E-03
		83/6/11	67/12/21	65/18/17
LLI WALL	1.0E-02	1.8E-03	3.6E-03	4.1E-03
		91/4/5	68/11/21	65/18/17
C.E.D.E.	1.1E-03	6.6E-04	9.8E-04	1.1E-03

ZINC

^{62}Zn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01			5.0E-01
LUNGS				1.0E-02 0/10/90
GONADS	1.1E-03			
ST WALL	5.2E-03			
SI WALL	7.0E-03			
ULI WALL	1.9E-02			4.1E-03 67/24/9
LLI WALL	2.0E-02			4.4E-03 67/24/9
C.E.D.E.	3.4E-03			1.8E-03

^{63}Zn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01			5.0E-01
LUNGS				5.9E-04 0/22/78
ST WALL	2.1E-03			
SI WALL	8.1E-04			
ULI WALL	3.7E-04			
C.E.D.E.	2.0E-04			7.1E-05

^{65}Zn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01			5.0E-01
LUNGS	1.1E-02*			7.8E-02* 4/1/95
GONADS	1.3E-02*			7.4E-03* 52/14/34
BREAST	1.2E-02*			1.1E-02* 32/9/59
R MARROW	1.7E-02*			1.3E-02* 38/10/52
THYROID	1.2E-02*			
BONE SURF	1.7E-02*			
SI WALL	1.6E-02			
ULI WALL	1.6E-02			
LLI WALL	1.9E-02			
REMAINDER	1.8E-02*			2.2E-02* 16/4/80
W_T	0.12			0.18
C.E.D.E.	1.4E-02*			1.8E-02*

^{69M}Zn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01			5.0E-01
LUNGS				3.7E-03 1/7/92
GONADS	4.4E-04			
ST WALL	1.0E-03			
SI WALL	1.8E-03			
ULI WALL	6.7E-03			1.8E-03 67/22/11
LLI WALL	8.9E-03			2.3E-03 67/23/10
C.E.D.E.	1.2E-03			6.9E-04

^{69}Zn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01			5.0E-01
LUNGS				3.0E-04 0/21/79
ST WALL	7.8E-04			
SI WALL	4.1E-04			
ULI WALL	2.3E-04			
C.E.D.E.	8.5E-05			3.6E-05

^{71M}Zn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01			5.0E-01
LUNGS				2.2E-03 0/15/85
GONADS	4.4E-04			
ST WALL	2.7E-03			
SI WALL	2.6E-03			
ULI WALL	4.4E-03			5.5E-04 66/28/6
LLI WALL	2.3E-03			
C.E.D.E.	8.3E-04			3.0E-04

^{72}Zn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01			5.0E-01
LUNGS				1.9E-02 2/2/96
GONADS	4.1E-03			1.9E-03 63/17/20
BREAST	1.7E-03			
R MARROW	3.3E-03			
SI WALL	4.4E-03			
ULI WALL	1.3E-02			7.0E-03 63/16/21
LLI WALL	3.7E-02			1.6E-02 64/18/18
C.E.D.E.	4.9E-03			4.2E-03

GALLIUM

^{65}Ga

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS		2.0E-04	2.1E-04	
		1/14/85	0/19/81	
ST WALL	1.1E-03	8.5E-05		
		97/1/2		
SI WALL	2.3E-04			
C.E.D.E.	7.8E-05	2.9E-05	2.6E-05	

^{66}Ga

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03		1.0E-03
LUNGS		5.2E-03		7.8E-03
		2/3/95		0/6/94
GONADS	2.0E-03	5.2E-04		4.1E-04
		75/11/14		69/19/12
R MARROW		5.5E-04		
		49/19/32		
ST WALL	5.2E-03	1.0E-03		
		82/6/12		
SI WALL	1.0E-02	1.7E-03		1.9E-03
		92/4/4		73/16/11
ULI WALL	2.7E-02	4.1E-03		4.8E-03
		95/3/2		74/15/11
LLI WALL	2.7E-02	4.4E-03		4.8E-03
		95/3/2		74/15/11
C.E.D.E.	4.7E-03	1.5E-03		1.7E-03

^{67}Ga

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS		5.5E-04	2.0E-03	
		6/4/90	0/2/98	
GONADS	5.9E-04	1.8E-04	2.3E-04	
		65/10/25	65/14/21	
BREAST		1.0E-04		
		38/15/47		
R MARROW		3.0E-04		
		38/16/46		
BONE SURF		1.5E-03		
		34/17/49		
LIVER		3.0E-04		
		34/16/50		
SPLEEN		2.8E-04		
		35/16/49		
SI WALL	9.3E-04	2.5E-04		
		70/9/21		
ULI WALL	2.7E-03	5.2E-04	1.0E-03	
		85/5/10	67/11/22	
LLI WALL	5.9E-03	1.0E-03	2.1E-03	
		91/4/5	67/11/22	
C.E.D.E.	7.2E-04	3.5E-04	4.8E-04	

^{68}Ga

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS		7.0E-04	7.8E-04	
		1/7/92	0/14/86	
GONADS	7.4E-05			
ST WALL	2.2E-03	2.9E-04		
		96/2/2		
SI WALL	1.6E-03	2.1E-04		
		97/2/1		
ULI WALL	1.1E-03	1.6E-04		
		96/3/1		
LLI WALL	2.4E-04			
C.E.D.E.	3.3E-04	1.2E-04	9.3E-05	

^{70}Ga

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS		2.0E-04	2.1E-04	
		0/13/87	0/18/82	
ST WALL	9.3E-04	8.5E-05		
		99/1/0		
SI WALL	2.6E-04			
C.E.D.E.	7.1E-05	2.9E-05	2.5E-05	

^{72}Ga

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS		3.7E-03	6.3E-03	
		3/3/94	1/5/94	
GONADS	3.1E-03	7.4E-04	7.4E-04	
		77/9/14	70/16/14	
BREAST		3.6E-04		
		45/15/40		
R MARROW		6.7E-04		
		47/17/36		
LIVER		7.4E-04		
		42/17/41		
ST WALL	3.6E-03	8.9E-04		
		73/7/20		
SI WALL	8.5E-03	1.6E-03	1.9E-03	
		88/5/7	71/15/14	
ULI WALL	2.1E-02	3.5E-03	4.8E-03	
		94/3/3	72/14/14	
LLI WALL	2.6E-02	4.1E-03	5.9E-03	
		95/3/2	73/14/13	
C.E.D.E.	4.4E-03	1.4E-03	1.7E-03	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{73}Ga

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS		1.5E-03 1/3/96	2.0E-03 0/8/92	
GONADS	1.7E-04			
ST WALL	2.0E-03	3.3E-04 92/4/4		
SI WALL	3.3E-03	5.2E-04 95/3/2		
ULI WALL	6.7E-03	1.0E-03 97/2/1	8.1E-04 76/17/7	
LLI WALL	4.4E-03	6.7E-04 96/3/1	5.5E-04 76/17/7	
C.E.D.E.	1.0E-03	3.3E-04	3.3E-04	

GERMANIUM

^{66}Ge

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS	1.3E-04	1.3E-03 3/2/95	2.1E-03 1/5/94	
GONADS	1.4E-04	6.7E-05 60/16/24		
BREAST	1.2E-04			
R MARROW	1.3E-04			
KIDNEYS	5.2E-04	2.7E-04 59/15/26		
ST WALL	9.3E-04			
REMAINDER	2.2E-04			
WT	0.18			
C.E.D.E.	2.1E-04	1.9E-04	2.5E-04	

^{67}Ge

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS		3.7E-04 1/13/86	4.1E-04 0/18/82	
ST WALL	1.9E-03	1.7E-04 98/1/1		
C.E.D.E.	1.1E-04	5.4E-05	4.9E-05	

^{68}Ge

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS	8.5E-04	8.9E-03 3/1/96	4.1E-01 0/0/100	
GONADS	8.9E-04	5.5E-04 47/12/41		
BREAST	8.1E-04			
R MARROW	8.5E-04			
BONE SURF	8.5E-04			
THYROID	8.1E-04			
KIDNEYS	2.7E-03	1.8E-03 46/12/42		
ST WALL	2.3E-03			
SI WALL	9.3E-04			
REMAINDER	1.0E-03			
WT	0.12			
C.E.D.E.	1.1E-03	1.3E-03	4.9E-02	

^{69}Ge

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS	2.6E-04	2.0E-03 4/2/94	5.2E-03 1/3/96	
GONADS	2.7E-04	1.6E-04 53/14/33		
BREAST	2.5E-04	1.7E-04 43/12/45		
R MARROW	2.7E-04			
KIDNEYS	7.8E-04	4.4E-04 51/13/36		
ST WALL	1.3E-03			
REMAINDER	3.7E-04			
WT	0.18			
C.E.D.E.	3.6E-04	3.3E-04	6.2E-04	

^{71}Ge

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS	6.3E-06	9.2E-05 2/2/96	1.0E-03 0/1/99	
GONADS	7.0E-06			
BREAST	6.7E-06			
R MARROW	7.0E-06			
THYROID	7.8E-06			
BONE SURF	7.0E-06			
KIDNEYS	2.8E-05			
ST WALL	3.0E-05			
REMAINDER	7.4E-06			
WT	0.18			
C.E.D.E.	9.6E-06	1.1E-05	1.2E-04	

^{75}Ge

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS		4.4E-04 1/6/93	5.2E-04 0/13/87	
ST WALL	1.2E-03	1.6E-04 98/2/0		
C.E.D.E.	7.3E-05	6.3E-05	6.2E-05	

^{77}Ge

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS	3.1E-04	4.1E-03 2/2/96	7.4E-03 1/5/94	
GONADS	3.2E-04			
BREAST	3.0E-04			
R MARROW	3.2E-04			
KIDNEYS	1.4E-03			
ST WALL	3.3E-03			
REMAINDER	4.4E-04			
WT	0.18			
C.E.D.E.	5.6E-04	4.9E-04	8.9E-04	

^{78}Ge

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS		1.6E-03 2/3/95	2.0E-03 0/10/90	
GONADS	1.0E-04			
BREAST	1.0E-04			
KIDNEYS	6.3E-04			
ST WALL	2.2E-03	4.1E-04 94/3/3		
C.E.D.E.	2.1E-04	2.2E-04	2.4E-04	

ARSENIC

^{69}As

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01		5.0E-01	
LUNGS			3.5E-04 0/17/83	
ST WALL	1.6E-03			
SI WALL	3.2E-04			
C.E.D.E.	1.1E-04		4.2E-05	

^{70}As

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01		5.0E-01	
LUNGS			8.1E-04 0/15/85	
ST WALL	2.9E-03			
SI WALL	1.5E-03			
ULI WALL	1.0E-03			
REMAINDER	3.0E-04			
WT	0.06			
C.E.D.E.	3.4E-04		9.8E-05	

^{71}As

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01		5.0E-01	
LUNGS			5.5E-03 1/2/97	
GONADS	1.1E-03		4.4E-04 64/14/22	
ST WALL	1.1E-03			
SI WALL	1.8E-03			
ULI WALL	4.8E-03		1.7E-03 66/12/22	
LLI WALL	9.6E-03		3.4E-03 68/11/21	
C.E.D.E.	1.3E-03		1.1E-03	

^{72}As

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01		5.0E-01	
LUNGS			1.9E-02 1/3/96	
GONADS	2.4E-03			
ST WALL	5.9E-03			
SI WALL	7.8E-03			
ULI WALL	2.6E-02		7.4E-03 70/13/17	
LLI WALL	4.4E-02		1.3E-02 72/12/16	
C.E.D.E.	5.6E-03		3.5E-03	

^{73}As

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01		5.0E-01	
LUNGS			2.6E-02 0/0/100	
GONADS	1.8E-04			
KIDNEYS	7.4E-04			
LIVER	5.9E-04			
ULI WALL	2.1E-03			
LLI WALL	5.9E-03			
C.E.D.E.	6.1E-04		3.1E-03	

^{74}As

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01		5.0E-01	
LUNGS			4.8E-02 1/1/98	
GONADS	2.3E-03			
KIDNEYS	3.1E-03			
SI WALL	3.7E-03			
ULI WALL	1.1E-02			
LLI WALL	2.8E-02		1.2E-02 62/10/28	
C.E.D.E.	3.3E-03		6.5E-03	

^{76}As

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01		5.0E-01	
LUNGS			1.9E-02 1/3/96	
ST WALL	5.2E-03			
SI WALL	6.3E-03			
ULI WALL	2.4E-02		6.7E-03 70/13/17	
LLI WALL	4.4E-02		1.2E-02 71/12/17	
C.E.D.E.	4.8E-03		3.4E-03	

^{77}As

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01		5.0E-01	
LUNGS			5.5E-03 0/3/97	
SI WALL	1.3E-03			
ULI WALL	5.5E-03		1.8E-03 69/12/19	
LLI WALL	1.2E-02		3.7E-03 69/12/19	
C.E.D.E.	1.1E-03		9.9E-04	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{78}As

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-01		5.0E-01	
LUNGS			1.9E-03 0/13/87	
GONADS	1.1E-04			
ST WALL	4.4E-03			
SI WALL	2.8E-03			
ULI WALL	2.5E-03			
LLI WALL	6.7E-04			
C.E.D.E.	6.5E-04		2.3E-04	

SELENIUM

^{75}Se

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	5.0E-02	8.0E-01	8.0E-01	
LUNGS			5.2E-03	2.0E-02	
			41/12/47	9/3/88	
GONADS	6.7E-03	2.2E-03	4.8E-03	4.1E-03	
			46/13/41	50/14/36	
BREAST	5.5E-03	5.2E-04	4.1E-03	4.1E-03	
			45/13/42	41/12/47	
R MARROW	7.8E-03	8.9E-04	5.5E-03	5.5E-03	
			45/13/42	42/12/46	
BONE SURF	6.3E-03		4.8E-03		
			45/13/42		
KIDNEYS	2.7E-02	1.9E-03	2.0E-02	1.7E-02	
			45/13/42	49/14/37	
LIVER	2.1E-02	1.4E-03	1.6E-02	1.4E-02	
			45/13/42	46/13/41	
PANCREAS	1.5E-02		1.1E-02	1.0E-02	
			45/13/42	43/13/44	
SPLEEN	1.3E-02		1.0E-02	9.6E-03	
			45/13/42	43/13/44	
SI WALL		2.2E-03			
ULI WALL		3.5E-03			
LLI WALL		6.7E-03			
REMAINDER	1.0E-02		7.8E-03	7.8E-03	
			45/13/42	41/12/47	
W_T	0.06		0.06	0.06	
C.E.D.E.	8.8E-03	1.7E-03	7.1E-03	8.2E-03	

^{76}Se

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	5.0E-02	8.0E-01	8.0E-01	
LUNGS			8.5E-04	9.6E-04	
			2/6/92	0/13/87	
GONADS	1.5E-04	2.4E-04	4.1E-05		
			76/16/8		
ST WALL	2.4E-03	2.4E-03	3.7E-04		
			92/3/5		
SI WALL	1.1E-03	2.3E-03			
ULI WALL	9.3E-04	1.9E-03			
LLI WALL		4.1E-04			
C.E.D.E.	3.0E-04	4.8E-04	1.3E-04	1.2E-04	

^{73M}Se

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	5.0E-02	8.0E-01	8.0E-01	
LUNGS			2.1E-04	2.8E-04	
			3/6/91	1/10/89	
GONADS	3.3E-05	6.7E-05	1.2E-05		
			69/15/16		
KIDNEYS	7.4E-05				
ST WALL	4.8E-04	4.8E-04	7.0E-05		
			90/4/6		
SI WALL	1.8E-04	4.4E-04			
ULI WALL	2.3E-04	7.0E-04			
LLI WALL	1.6E-04	5.5E-04			
C.E.D.E.	7.6E-05	1.5E-04	3.3E-05	3.4E-05	

^{73}Se

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	5.0E-02	8.0E-01	8.0E-01	
LUNGS	1.8E-04		1.8E-03	2.6E-03	
			4/3/93	1/7/92	
GONADS	4.1E-04	8.5E-04	1.4E-04		
			69/14/17		
BREAST	2.0E-04				
R MARROW	2.4E-04				
KIDNEYS	8.9E-04		5.2E-04		
			58/17/25		
LIVER			3.7E-04		
			55/16/29		
ST WALL	2.1E-03	2.1E-03	4.1E-04		
			82/6/12		
SI WALL	1.3E-03	4.1E-03			
ULI WALL	2.5E-03	8.5E-03	4.8E-04		
			88/6/6		
LLI WALL	2.1E-03	7.4E-03	4.1E-04		
			88/6/6		
C.E.D.E.	7.2E-04	1.5E-03	3.8E-04	3.2E-04	

^{79}Se

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	5.0E-02	8.0E-01	8.0E-01	
LUNGS	3.4E-03*		3.1E-03*	3.6E-02*	
			36/11/53	3/1/96	
GONADS	3.4E-03*		2.5E-03*	2.2E-03*	
			45/13/42	46/14/40	
BREAST	3.4E-03*		2.5E-03*		
			45/13/42		
R MARROW	3.4E-03*		2.5E-03*		
			45/13/42		
KIDNEYS	4.8E-02*	2.9E-03*	3.5E-02*	3.1E-02*	
			45/13/12	46/14/40	
LIVER	2.4E-02*	1.5E-03*	1.8E-02*	1.6E-02*	
			45/13/42	46/14/40	
PANCREAS	1.4E-02*		1.1E-02*	9.6E-03*	
			45/13/42	46/14/40	
SPLEEN	1.6E-02*		1.2E-02*	1.1E-02*	
			45/13/42	46/14/40	
ULI WALL		3.6E-03			
LLI WALL		1.0E-02			
C.E.D.E.	8.3E-03*	1.1E-03*	6.2E-03*	8.9E-03*	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{81M}Se

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	5.0E-02	8.0E-01	8.0E-01	
LUNGS			5.2E-04	5.9E-04	
			1/5/94	0/13/87	
ST WALL	1.3E-03	1.3E-03	2.0E-04		
			98/2/0		
SI WALL	5.9E-04	1.3E-03			
ULI WALL	4.1E-04	8.1E-04			
LLI WALL		1.4E-04			
C.E.D.E.	1.4E-04	2.1E-04	7.4E-05	7.1E-05	

^{81}Se

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	5.0E-02	8.0E-01	8.0E-01	
LUNGS			1.6E-04	1.8E-04	
			0/13/87	0/18/82	
ST WALL	8.1E-04	8.1E-04	7.0E-05		
			99/1/0		
SI WALL	1.4E-04	2.0E-04			
C.E.D.E.	5.7E-05	6.1E-05	2.4E-05	2.1E-05	

^{83}Se

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	5.0E-02	8.0E-01	8.0E-01	
LUNGS			2.9E-04	3.3E-04	
			2/9/89	0/15/85	
GONADS	3.1E-05	3.5E-05			
ST WALL	1.2E-03	1.2E-03	1.3E-04		
			94/2/4		
SI WALL	3.0E-04	5.5E-04			
ULI WALL	2.2E-04	4.8E-04			
LLI WALL		1.6E-04			
C.E.D.E.	1.1E-04	1.5E-04	4.3E-05	4.0E-05	

BROMINE

^{74M}Br

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS		9.3E-04	1.0E-03	
		2/9/89	0/16/84	
ST WALL	3.7E-03	4.4E-04		
		95/2/3		
C.E.D.E.	2.2E-04	1.4E-04	1.2E-04	

^{74}Br

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS		4.8E-04	5.2E-04	
		2/12/86	0/17/83	
ST WALL	2.3E-03	2.4E-04		
		95/2/3		
C.E.D.E.	1.4E-04	7.2E-05	6.2E-05	

^{75}Br

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS		7.4E-04	8.5E-04	
		2/6/92	1/12/87	
GONADS	5.6E-05			
ST WALL	2.0E-03	2.8E-04		
		93/3/4		
C.E.D.E.	1.3E-04	1.1E-04	1.0E-04	

^{76}Br

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS	1.0E-03	5.5E-03	9.6E-03	
		6/3/91	2/5/93	
GONADS	1.2E-03	6.3E-04		
		58/15/27		
BREAST	1.0E-03	5.9E-04		
		52/14/34		
R MARROW	1.1E-03	5.9E-04		
		52/14/34		
THYROID	1.0E-03			
BONE SURF	1.0E-03			
ST WALL	4.8E-03	1.2E-03		
		72/8/20		
SI WALL	1.2E-03			
LLI WALL	1.3E-03			
REMAINDER	1.5E-03			
WT	0.12			
C.E.D.E.	1.4E-03	1.1E-03	1.2E-03	

^{77}Br

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS	2.6E-04	4.1E-04	1.0E-03	
		19/6/75	7/4/89	
GONADS	2.9E-04	1.7E-04	1.3E-04	
		51/14/35	61/18/21	
BREAST	2.5E-04	1.6E-04	1.5E-04	
		47/13/40	44/14/42	
R MARROW	3.0E-04	1.8E-04	1.7E-04	
		48/14/39	47/13/49	
BONE SURF	2.7E-04			
THYROID	2.5E-04			
ST WALL	4.8E-04	2.2E-04	2.4E-04	
		53/11/36	48/13/39	
SI WALL	3.4E-04			
ULI WALL	3.3E-04			
REMAINDER	3.6E-04	2.3E-04	2.5E-04	
		47/12/41	31/10/59	
WT	0.12	0.24	0.18	
C.E.D.E.	3.1E-04	2.1E-04	2.6E-04	

^{80M}Br

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS	1.4E-04	2.1E-03	2.9E-03	
		2/3/95	1/8/91	
GONADS	1.4E-04			
BREAST	1.4E-04			
R MARROW	1.5E-04			
ST WALL	2.3E-03	4.4E-04		
		93/4/3		
C.E.D.E.	2.3E-04	2.8E-04	3.5E-04	

^{80}Br

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS		1.8E-04	2.0E-04	
		1/14/85	0/18/82	
ST WALL	9.3E-04	7.8E-05		
		99/1/0		
C.E.D.E.	5.5E-05	2.7E-05	2.4E-05	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{82}Br

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS	1.4E-03	2.9E-03	6.3E-03	
		15/5/80	6/4/90	
GONADS	1.7E-03	9.3E-04	6.3E-04	
		54/14/32	64/20/16	
BREAST	1.4E-03	8.9E-04	7.8E-04	
		48/13/39	44/14/42	
R MARROW	1.5E-03	9.3E-04	8.1E-04	
		49/13/38	46/15/39	
BONE SURF	1.4E-03			
ST WALL	3.1E-03	1.3E-03	1.4E-03	
		56/11/33	50/13/37	
SI WALL	1.9E-03			
REMAINDER	2.1E-03	1.3E-03	1.3E-03	
		47/13/40	27/10/63	
W_T	0.18	0.24	0.06	
C.E.D.E.	1.7E-03	1.2E-03	1.3E-03	

^{83}Br

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS		5.5E-04	6.7E-04	
		2/5/93	0/11/89	
GONADS	2.7E-05			
ST WALL	1.1E-03	1.6E-04		
		97/2/1		
C.E.D.E.	7.3E-05	7.8E-05	8.0E-05	

^{84}Br

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS		5.9E-04	6.3E-04	
		1/10/89	0/16/84	
ST WALL	2.5E-03	2.7E-04		
		97/1/2		
C.E.D.E.	1.5E-04	8.7E-05	7.5E-05	

RUBIDIUM

^{79}Rb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		2.9E-04 1/12/87		
ST WALL	1.4E-03	1.4E-04 97/1/2		
C.E.D.E.	8.7E-05	4.3E-05		

^{81M}Rb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		1.1E-04 3/5/92		
GONADS	1.0E-05			
BREAST	9.6E-06			
R MARROW	1.3E-05			
ST WALL	2.1E-04	3.2E-05 90/4/6		
C.E.D.E.	1.8E-05	1.5E-05		

^{81}Rb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	7.8E-05	6.7E-04 3/4/93		
GONADS	7.8E-05	3.6E-05 65/18/17		
BREAST	7.4E-05			
R MARROW	9.6E-05			
ST WALL	1.0E-03	1.8E-04 86/5/9		
REMAINDER	1.5E-04			
WT	0.12			
C.E.D.E.	1.3E-04	1.0E-04		

^{82M}Rb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	2.8E-04	9.3E-04 9/4/87		
GONADS	3.0E-04	1.4E-04 64/18/18		
BREAST	2.8E-04	1.7E-04 49/13/38		
R MARROW	3.4E-04	1.9E-04 52/14/34		
BONE SURF	3.3E-04			
ST WALL	1.6E-03	3.7E-04 71/7/22		
ULI WALL	3.7E-04			
REMAINDER	5.9E-04	2.6E-04 47/13/40		
WT	0.18	0.24		
C.E.D.E.	4.2E-04	2.8E-04		

^{83}Rb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	6.7E-03	4.8E-03 40/11/49		
GONADS	7.4E-03	4.4E-03 47/13/40		
BREAST	6.3E-03	4.1E-03 47/13/40		
R MARROW	9.6E-03	5.9E-03 47/13/40		
BONE SURF	1.1E-02	7.0E-03 47/13/40		
THYROID	6.3E-03	4.1E-03 47/13/40		
ST WALL	7.4E-03			
SI WALL	7.8E-03	4.8E-03 47/13/40		
ULI WALL	7.8E-03	4.8E-03 47/13/40		
LLI WALL	7.8E-03	4.8E-03 47/13/40		
REMAINDER	9.3E-03	5.9E-03 47/13/40		
WT	0.06	0.12		
C.E.D.E.	7.7E-03	4.9E-03		

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{84}Rb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	8.5E-03	7.4E-03 34/9/57		
GONADS	9.3E-03	5.9E-03 48/13/39		
BREAST	8.5E-03	5.2E-03 47/13/40		
R MARROW	1.3E-02	8.1E-03 47/13/40		
BONE SURF	1.6E-02	1.0E-02 48/13/39		
THYROID	8.5E-03	5.2E-03 47/13/40		
ST WALL	1.0E-02			
SI WALL	1.0E-02	6.3E-03 48/13/39		
ULI WALL		5.9E-03 48/13/39		
LLI WALL	1.0E-02	6.3E-03 48/13/39		
REMAINDER	1.1E-02	7.0E-03 47/13/40		
WT	0.12	0.12		
C.E.D.E.	1.0E-02	6.5E-03		

^{87}Rb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	4.1E-03	4.1E-03 32/9/59		
GONADS	4.1E-03	2.7E-03 47/13/40		
BREAST	4.1E-03	2.7E-03 47/13/40		
R MARROW	7.4E-03	4.8E-03 47/13/40		
BONE SURF	1.4E-02	8.9E-03 47/13/40		
THYROID	4.1E-03	2.7E-03 47/13/40		
ST WALL	4.8E-03	2.7E-03 49/12/39		
SI WALL	4.1E-03	2.7E-03 47/13/40		
ULI WALL	4.1E-03	2.7E-03 47/13/40		
LLI WALL	4.1E-03	2.7E-03 47/13/40		
REMAINDER	4.1E-03	2.7E-03 47/13/40		
WT	0.06	0.06		
C.E.D.E.	4.8E-03	3.3E-03		

^{86}Rb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	7.8E-03	1.2E-02 19/6/75		
GONADS	8.1E-03	4.8E-03 48/13/39		
BREAST	7.8E-03	4.8E-03 48/13/39		
R MARROW	1.4E-02	8.5E-03 48/13/39		
BONE SURF	2.6E-02	1.6E-02 48/13/39		
THYROID	7.8E-03	4.8E-03 48/13/39		
ST WALL	1.1E-02	5.5E-03 52/12/36		
LLI WALL	8.1E-03	5.2E-03 48/13/39		
REMAINDER	8.1E-03	5.2E-03 48/13/39		
WT	0.18	0.18		
C.E.D.E.	9.4E-03	6.6E-03		

^{88}Rb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		5.5E-04 1/13/86		
ST WALL	2.7E-03	2.3E-04 99/1/0		
C.E.D.E.	1.6E-04	8.0E-05		

^{89}Rb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		2.5E-04 1/14/85		
ST WALL	1.3E-03	1.1E-04 96/1/3		
C.E.D.E.	8.0E-05	3.7E-05		

STRONTIUM

^{89}Sr

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-01	1.0E-02	3.0E-01		1.0E-02
LUNGS			1.4E-05 1/6/93		1.7E-05 0/19/81
GONADS	7.0E-07				
ST WALL	2.4E-05	2.4E-05	3.4E-06 96/3/1		
SI WALL	2.4E-05	2.8E-05	3.4E-06 96/3/1		
ULI WALL	2.5E-05	2.8E-05	3.5E-06 96/3/1		
LLI WALL	5.6E-06	5.9E-06			
C.E.D.E.	4.9E-06	5.2E-06	2.3E-06		2.1E-06

^{91}Sr

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-01	1.0E-02	3.0E-01		1.0E-02
LUNGS			4.4E-04 1/10/89		5.5E-04 0/21/79
GONADS	4.8E-05	5.6E-05			
ST WALL	1.9E-03	1.9E-03	2.0E-04 96/2/2		
SI WALL	7.0E-04	7.8E-04			
ULI WALL	4.4E-04	5.2E-04			
LLI WALL		2.1E-04			
C.E.D.E.	1.9E-04	2.2E-04	6.5E-05		6.7E-05

^{93}Sr

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-01	1.0E-02	3.0E-01		1.0E-02
LUNGS			1.7E-03 5/3/92		5.2E-03 0/4/96
GONADS	1.4E-03	1.8E-03	4.1E-04 69/10/21		6.7E-04 65/19/16
BREAST			2.4E-04 43/14/43		
R MARROW			5.5E-04 44/15/41		
BONE SURF			1.4E-03 40/16/44		
ST WALL	1.3E-03		4.1E-04 63/9/28		
SI WALL	2.7E-03	3.5E-03	6.3E-04 77/8/15		1.3E-03 65/19/16
ULI WALL	7.4E-03	1.0E-02	1.3E-03 88/5/7		3.5E-03 65/20/15
LLI WALL	1.2E-02	1.7E-02	2.1E-03 92/4/4		5.9E-03 65/20/15
C.E.D.E.	1.8E-03	2.3E-03	7.2E-04		1.4E-03

^{85M}Sr

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-01	1.0E-02	3.0E-01		1.0E-02
LUNGS			2.4E-05 5/8/87		4.4E-05 0/12/88
GONADS	1.9E-05	2.1E-05	4.8E-06 74/11/15		
BREAST	4.6E-06	4.4E-06	3.3E-06 44/14/42		
R MARROW	8.1E-06	7.0E-06	5.6E-06 45/14/41		
ST WALL	9.2E-05	9.2E-05	1.5E-05 84/4/12		9.3E-06 33/19/48
SI WALL	6.7E-05	7.4E-05	1.1E-05 88/5/7		
ULI WALL	6.3E-05	7.0E-05	1.0E-05 88/5/7		
LLI WALL	2.0E-05	2.1E-05			
REMAINDER	2.3E-05	2.2E-05	6.7E-06 57/10/33		
WT	0.06	0.06	0.12		
C.E.D.E.	2.2E-05	2.4E-05	8.2E-06		5.9E-06

^{85}Sr

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-01	1.0E-02	3.0E-01		1.0E-02
LUNGS	7.4E-04		1.7E-03 28/11/61		2.7E-02 0/0/100
GONADS	2.3E-03	2.1E-03	1.6E-03 46/13/41		
BREAST	9.3E-04		1.4E-03 38/14/48		
R MARROW	2.2E-03	4.8E-04	3.4E-03 38/15/47		
BONE SURF	2.3E-03		3.7E-03 38/15/47		
SI WALL	2.3E-03	2.2E-03	1.6E-03 46/13/41		
ULI WALL	3.2E-03	3.6E-03	1.6E-03 51/12/37		
LLI WALL	5.5E-03	6.7E-03	2.1E-03 58/11/31		
REMAINDER	1.3E-03		2.1E-03 37/14/49		
WT	0.12		0.12		
C.E.D.E.	1.9E-03	1.3E-03	1.9E-03		3.2E-03

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{87M}Sr

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-01	1.0E-02	3.0E-01		1.0E-02
LUNGS			1.7E-04		2.1E-04
			3/5/92		0/17/83
GONADS	7.4E-05	8.5E-05	1.7E-05		
			82/11/7		
ST WALL	3.5E-04	3.6E-04	5.9E-05		
			88/4/8		
SI WALL	4.1E-04	4.8E-04	6.3E-05		4.8E-05
			93/4/3		66/29/5
ULI WALL	5.2E-04	6.3E-04	8.1E-05		6.3E-05
			95/3/2		66/29/5
LLI WALL	2.1E-04	2.5E-04	3.8E-05		
			91/6/3		
C.E.D.E.	1.1E-04	1.2E-04	3.8E-05		3.2E-05

^{91}Sr

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-01	1.0E-02	3.0E-01		1.0E-02
LUNGS			3.4E-03		7.8E-03
			2/3/95		0/7/93
GONADS	7.8E-04	9.3E-04	2.4E-04		
			71/12/17		
R MARROW			4.4E-04		
			45/16/39		
ST WALL	3.2E-03	3.1E-03			
SI WALL	5.2E-03	6.7E-03	8.9E-04		
			90/5/5		
ULI WALL	1.4E-02	1.8E-02	2.2E-03		4.1E-03
			95/3/2		67/24/9
LLI WALL	1.4E-02	1.9E-02	2.3E-03		4.4E-03
			95/3/2		67/23/10
C.E.D.E.	2.4E-03	3.0E-03	8.4E-04		1.4E-03

^{89}Sr

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-01	1.0E-02	3.0E-01		1.0E-02
LUNGS			8.1E-03		3.1E-01
			7/4/89		0/0/100
GONADS			1.6E-03		
			38/15/47		
R MARROW	1.2E-02		2.1E-02		
			38/15/47		
BONE SURF	1.8E-02		3.1E-02		
			38/15/47		
ULI WALL	2.7E-02	3.7E-02	5.5E-03		
			81/6/13		
LLI WALL	7.8E-02	1.1E-01	1.3E-02		
			90/4/6		
C.E.D.E.	8.2E-03	8.7E-03	5.9E-03		3.7E-02

^{92}Sr

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-01	1.0E-02	3.0E-01		1.0E-02
LUNGS			2.6E-03		4.1E-03
			2/2/96		0/12/88
GONADS	3.0E-04				
ST WALL	2.0E-03	1.9E-03			
SI WALL	4.1E-03	5.2E-03	7.0E-04		1.0E-0[illegible]
			93/4/3		6[illegible]
ULI WALL	1.1E-02	1.4E-02	1.7E-03		[illegible]
			97/2/1		6[illegible]
LLI WALL	7.8E-03	1.0E-02	1.2E-03		1.[illegible]
			96/3/1		67/[illegible]
C.E.D.E.	1.6E-03	1.9E-03	5.4E-04		7.7E-[illegible]

^{90}Sr

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-01	1.0E-02	3.0E-01		1.0E-02
LUNGS					1.1E+01*
					0/0/100
R MARROW	7.0E-01*	2.4E-02*	1.2E+00*		
			37/15/48		
BONE SURF	1.6E+00*	5.2E-02*	2.7E+00*		
			37/15/48		
ULI WALL		2.3E-02			
LLI WALL		9.6E-02			
C.E.D.E.	1.3E-01*	1.2E-02*	2.3E-01*		1.3E+00*

YTTRIUM

^{86M}Y

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04		1.0E-04	1.0E-04
LUNGS			2.4E-04	2.6E-04
			1/6/93	1/9/90
GONADS	2.6E-04		5.9E-05	7.0E-05
			71/15/14	66/22/12
R MARROW	5.6E-05		2.7E-05	
			42/21/37	
ST WALL	2.1E-04		5.6E-05	6.3E-05
			55/13/32	52/19/29
SI WALL	4.8E-04		1.1E-04	1.3E-04
			71/14/15	66/22/12
ULI WALL	9.3E-04		2.1E-04	2.5E-04
			72/14/14	66/22/12
LLI WALL	1.0E-03		2.3E-04	2.7E-04
			73/14/13	67/22/11
REMAINDER	1.3E-04			
WT	0.06			
C.E.D.E.	2.4E-04		8.4E-05	9.1E-05

^{86}Y

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04		1.0E-04	1.0E-04
LUNGS			4.1E-03	4.4E-03
			1/5/94	1/8/91
GONADS	4.4E-03		1.1E-03	1.2E-03
			71/15/14	66/22/12
BREAST			3.4E-04	
			35/15/50	
R MARROW	9.6E-04		4.8E-04	
			43/21/36	
ST WALL	3.1E-03		9.6E-04	1.1E-03
			55/13/32	52/19/29
SI WALL	8.1E-03		1.9E-03	2.2E-03
			71/14/15	66/22/12
ULI WALL	1.6E-02		3.7E-03	4.4E-03
			72/14/14	66/22/12
LLI WALL	1.8E-02		4.1E-03	4.8E-03
			73/14/13	67/22/11
REMAINDER	2.2E-03			
WT	0.06			
C.E.D.E.	4.1E-03		1.5E-03	1.6E-03

^{87}Y

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04		1.0E-04	1.0E-04
LUNGS			5.2E-03	5.2E-03
			1/2/97	0/2/98
GONADS	2.6E-03		1.0E-03	1.1E-03
			65/12/23	63/18/19
R MARROW			5.2E-04	
			39/25/36	
SI WALL	3.0E-03		1.3E-03	1.4E-03
			64/12/24	63/17/20
ULI WALL	7.4E-03		2.9E-03	3.3E-03
			66/11/23	63/18/19
LLI WALL	1.6E-02		5.9E-03	6.7E-03
			67/11/22	64/18/18
C.E.D.E.	2.2E-03		1.5E-03	1.6E-03

^{88}Y

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04		1.0E-04	1.0E-04
LUNGS			5.9E-02	1.3E-01
			3/5/92	0/0/100
GONADS	9.6E-03		1.0E-02	6.7E-03
			39/24/37	45/12/43
BREAST			1.1E-02	1.2E-02
			19/22/59	4/1/95
R MARROW			1.8E-02	
			24/29/47	
LIVER			3.6E-02	
			24/31/45	
SI WALL	9.3E-03			
ULI WALL	1.3E-02			
LLI WALL	2.3E-02		1.7E-02	
			47/18/35	
REMAINDER			1.9E-02	3.6E-02
			7/10/83	0/0/100
WT			0.18	0.06
C.E.D.E.	5.2E-03		2.0E-02	2.1E-02

^{90M}Y

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04		1.0E-04	1.0E-04
LUNGS			1.8E-03	1.9E-03
			0/2/98	0/4/96
GONADS	2.0E-04			
SI WALL	8.9E-04			
ULI WALL	3.0E-03		9.3E-04	1.1E-03
			69/11/20	64/19/17
LLI WALL	6.3E-03		2.1E-03	2.4E-03
			68/11/21	65/18/17
C.E.D.E.	6.6E-04		4.0E-04	4.4E-04

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{90}Y

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04		1.0E-04	1.0E-04
LUNGS			3.3E-02	3.4E-02
			0/2/98	0/3/97
ULI WALL	4.8E-02		1.7E-02	2.0E-02
			68/11/21	65/18/17
LLI WALL	1.2E-01		4.1E-02	4.8E-02
			68/11/21	65/18/17
C.E.D.E.	1.0E-02		7.4E-03	8.2E-03

^{91M}Y

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04		1.0E-04	1.0E-04
LUNGS			1.6E-04	2.6E-04
			0/4/96	0/4/96
GONADS	2.6E-05			
ST WALL	1.8E-04			
SI WALL	1.1E-04			
ULI WALL	1.1E-04			
LLI WALL	8.9E-05		3.2E-05	
			58/10/32	
REMAINDER	4.1E-05			
WT	0.06			
C.E.D.E.	3.9E-05		2.1E-05	3.1E-05

^{91}Y

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04		1.0E-04	1.0E-04
LUNGS			2.0E-01	3.7E-01
			0/0/100	0/0/100
R MARROW			2.1E-02	
			32/43/25	
ULI WALL	3.7E-02			
LLI WALL	1.1E-01		5.2E-02	
			58/9/33	
C.E.D.E.	8.9E-03		2.9E-02	4.4E-02

^{92}Y

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04		1.0E-04	1.0E-04
LUNGS			4.4E-03	4.4E-03
			0/10/90	0/16/84
ST WALL	5.2E-03			
SI WALL	7.4E-03			
ULI WALL	1.2E-02		1.2E-03	1.4E-03
			76/18/6	67/28/5
LLI WALL	6.3E-03			
C.E.D.E.	1.9E-03		6.0E-04	6.2E-04

^{93}Y

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04		1.0E-04	1.0E-04
LUNGS			8.9E-03	9.3E-03
			0/6/94	0/10/90
ST WALL	4.8E-03			
SI WALL	9.3E-03			2.1E-03
				67/24/9
ULI WALL	2.9E-02		5.5E-03	6.7E-03
			74/15/11	67/24/9
LLI WALL	3.3E-02		5.9E-03	7.4E-03
			74/15/11	67/24/9
C.E.D.E.	4.5E-03		1.8E-03	2.1E-03

^{94}Y

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04		1.0E-04	1.0E-04
LUNGS			5.2E-04	5.5E-04
			0/18/82	0/23/77
ST WALL	2.4E-03			
SI WALL	6.3E-04			
C.E.D.E.	1.8E-04		6.2E-05	6.7E-05

^{95}Y

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-04		1.0E-04	1.0E-04
LUNGS			2.7E-04	3.0E-04
			0/19/81	0/22/78
ST WALL	1.4E-03			
SI WALL	2.1E-04			
C.E.D.E.	9.7E-05		3.3E-05	3.6E-05

ZIRCONIUM

^{86}Zr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	2.0E-03
LUNGS		1.9E-03 7/4/89	4.4E-03 1/2/97	4.8E-03 1/3/96
GONADS	4.4E-03	1.0E-03 75/8/17	1.6E-03 68/13/19	1.7E-03 65/19/16
BREAST		4.8E-04 42/14/44	4.1E-04 38/14/48	3.7E-04 37/12/51
R MARROW		1.2E-03 42/16/42	6.3E-04 45/21/34	5.2E-04 46/14/40
BONE SURF		1.4E-03 39/18/43		
ST WALL			-	9.3E-04 48/13/39
SI WALL	4.8E-03	1.1E-03 75/8/17	2.0E-03 68/12/20	2.3E-03 64/18/18
ULI WALL	1.1E-02	2.2E-03 86/5/9	4.4E-03 68/12/20	5.2E-03 68/18/16
LLI WALL	2.3E-02	4.1E-03 91/4/5	7.4E-03 71/12/17	8.5E-03 66/20/14
REMAINDER		6.7E-04 59/12/29		
W_T		0.12		
C.E.D.E.	3.5E-03	1.3E-03	1.9E-03	2.1E-03

^{88}Zr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	2.0E-03
LUNGS		1.5E-02 31/15/54	3.5E-02 3/4/93	1.3E-01 0/0/100
GONADS	2.0E-03	1.4E-02 33/16/51	4.4E-03 30/27/43	
BREAST		1.6E-02 32/16/52	5.9E-03 18/23/59	
R MARROW	5.9E-04	4.8E-02 32/16/52	1.4E-02 24/31/45	
BONE SURF		8.5E-02 32/16/52	2.1E-02 26/34/40	
SI WALL	2.0E-03			
ULI WALL	3.5E-03			
LLI WALL	7.4E-03	1.5E-02 37/15/48	7.4E-03 39/20/41	
REMAINDER		2.3E-02 32/16/52	8.5E-03 8/10/82	2.9E-02 0/0/100
W_T		0.24	0.18	0.06
C.E.D.E.	1.3E-03	2.2E-02	1.0E-02	1.7E-02

^{89}Zr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	2.0E-03
LUNGS		2.0E-03 9/5/86	6.7E-03 1/2/97	7.0E-03 0/3/97
GONADS	3.4E-03	1.0E-03 66/10/24	1.3E-03 65/13/22	1.4E-03 63/18/19
BREAST		6.3E-04 38/15/47		
R MARROW		1.9E-03 37/16/47	7.4E-04 40/25/35	
BONE SURF		2.2E-03 35/17/48		
SI WALL	4.8E-03	1.3E-03 70/9/21	1.8E-03 64/13/23	2.0E-03 62/18/20
ULI WALL	1.1E-02	2.2E-03 82/6/12	4.1E-03 66/11/23	4.4E-03 63/18/19
LLI WALL	2.1E-02	3.7E-03 88/5/7	7.8E-03 67/11/22	8.9E-03 64/18/18
REMAINDER		8.5E-04 33/15/52		
W_T		0.12		
C.E.D.E.	3.1E-03	1.4E-03	2.0E-03	2.1E-03

^{93}Zr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	2.0E-03
LUNGS				3.2E-01* 0/0/100
R MARROW	2.7E-03*	6.7E-01* 32/16/52	1.7E-01* 25/33/42	7.0E-02* 7/2/91
BONE SURF	3.4E-02*	8.1E+00* 32/16/52	2.0E+00* 25/33/42	8.9E-01* 7/2/91
LLI WALL	3.7E-03			
C.E.D.E.	1.6E-03*	3.2E-01*	8.1E-02*	7.4E-02*

^{95}Zr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	2.0E-03
LUNGS			7.0E-02 1/1/98	1.5E-01 0/0/100
GONADS	3.0E-03	7.0E-03 36/15/49		
R MARROW		4.8E-02 32/16/52	1.2E-02 27/34/39	
BONE SURF		3.7E-01 32/16/52	8.1E-02 31/39/30	
SI WALL	4.1E-03			
ULI WALL	1.1E-02			
LLI WALL	2.9E-02		1.6E-02 53/11/36	
C.E.D.E.	3.4E-03	1.9E-02	1.3E-02	1.8E-02

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{97}Zr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	2.0E-03
LUNGS		7.8E-03	1.5E-02	1.5E-02
		2/2/96	0/4/96	0/7/93
GONADS	2.3E-03	6.7E-04		
		70/11/19		
R MARROW		1.9E-03		
		42/20/38		
SI WALL	1.3E-02	2.3E-03	3.3E-03	3.7E-03
		89/5/6	72/14/14	66/22/12
ULI WALL	4.4E-02	7.0E-03	1.1E-02	1.3E-02
		95/3/2	73/13/14	66/22/12
LLI WALL	6.7E-02	1.0E-02	1.6E-02	1.9E-02
		96/3/1	73/13/14	67/22/11
C.E.D.E.	8.0E-03	2.5E-03	3.6E-03	4.0E-03

NIOBIUM

^{88}Nb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02		1.0E-02	1.0E-02
LUNGS			1.8E-04	2.0E-04
			0/20/80	0/23/77
ST WALL	1.1E-03			
SI WALL	1.3E-04			
C.E.D.E.	7.2E-05		2.2E-05	2.4E-05

^{89}Nb (66M)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02		1.0E-02	1.0E-02
LUNGS			1.0E-03	1.1E-03
			0/13/87	0/19/81
GONADS	1.9E-04			
ST WALL	2.7E-03			
SI WALL	2.0E-03			
ULI WALL	1.6E-03			
LLI WALL	5.9E-04			
C.E.D.E.	4.6E-04		1.2E-04	1.3E-04

^{89}Nb (122M)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02		1.0E-02	1.0E-02
LUNGS			2.3E-03	2.4E-03
			0/11/89	0/17/83
GONADS	3.0E-04			
ST WALL	4.1E-03			
SI WALL	4.4E-03			
ULI WALL	4.8E-03			4.8E-04
				66/27/7
LLI WALL	2.1E-03			
C.E.D.E.	1.0E-03		2.7E-04	3.2E-04

^{90}Nb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02		1.0E-02	1.0E-02
LUNGS			5.9E-03	6.3E-03
			1/5/94	1/8/91
GONADS	4.8E-03		1.2E-03	1.4E-03
			70/16/14	66/22/12
ST WALL	4.1E-03		1.2E-03	1.4E-03
			56/14/30	54/19/27
SI WALL	1.0E-02		2.3E-03	2.7E-03
			70/15/15	66/22/12
ULI WALL	2.2E-02		5.2E-03	5.9E-03
			72/14/14	66/22/12
LLI WALL	2.6E-02		5.9E-03	7.0E-03
			73/14/13	67/22/11
C.E.D.E.	4.9E-03		1.9E-03	2.1E-03

^{93M}Nb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02		1.0E-02	1.0E-02
LUNGS			1.8E-02	2.4E-01
			0/0/100	0/0/100
GONADS			1.6E-03	
			26/32/42	
R MARROW			3.3E-03	
			26/32/42	
BONE SURF	3.0E-03		3.7E-02	
			26/32/42	
ULI WALL	1.8E-03			
LLI WALL	5.5E-03			
C.E.D.E.	5.3E-04		4.1E-03	2.8E-02

^{94}Nb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02		1.0E-02	1.0E-02
LUNGS			1.6E-01	2.8E+00*
			1/1/98	0/0/100
GONADS	1.9E-03*		1.8E-02*	
			26/32/42	
R MARROW	2.7E-03*		2.3E-02*	
			22/26/52	
SI WALL	8.1E-03			
ULI WALL	1.9E-02			
LLI WALL	4.4E-02			
C.E.D.E.	5.1E-03*		2.6E-02*	3.3E-01*

^{95M}Nb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02		1.0E-02	1.0E-02
LUNGS			9.6E-03	1.1E-02
			0/1/99	0/2/98
ULI WALL	9.6E-03		3.5E-03	4.1E-03
			65/11/24	63/18/19
LLI WALL	2.4E-02		8.9E-03	1.0E-02
			66/11/23	64/18/18
C.E.D.E.	2.0E-03		1.9E-03	2.2E-03

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{95}Nb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02		1.0E-02	1.0E-02
LUNGS			2.0E-02	3.1E-02
			1/1/98	0/0/100
GONADS	3.0E-03		1.8E-03	1.6E-03
			51/16/33	55/15/30
R MARROW			2.5E-03	
			27/26/47	
BONE SURF			8.9E-03	
			33/41/26	
SI WALL	3.4E-03			
ULI WALL	6.7E-03			
LLI WALL	1.5E-02		7.0E-03	7.0E-03
			58/11/31	61/16/23
C.E.D.E.	2.2E-03		3.9E-03	4.5E-03

^{96}Nb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02		1.0E-02	1.0E-02
LUNGS			5.9E-03	5.9E-03
			1/4/95	1/6/93
GONADS	4.4E-03		1.3E-03	1.4E-03
			69/14/17	66/20/14
R MARROW			6.3E-04	
			44/25/31	
ST WALL	2.9E-03			
SI WALL	7.8E-03		2.1E-03	2.5E-03
			70/13/17	66/20/14
ULI WALL	1.8E-02		4.8E-03	5.5E-03
			70/13/17	65/21/14
LLI WALL	2.6E-02		7.0E-03	8.1E-03
			71/13/16	66/21/13
C.E.D.E.	4.4E-03		1.9E-03	2.0E-03

^{97}Nb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02		1.0E-02	1.0E-02
LUNGS			5.2E-04	5.9E-04
			0/14/86	0/20/80
GONADS	5.6E-05			
ST WALL	1.4E-03			
SI WALL	1.1E-03			
ULI WALL	8.1E-04			
LLI WALL	1.7E-04			
C.E.D.E.	2.3E-04		6.2E-05	7.1E-05

^{98}Nb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02		1.0E-02	1.0E-02
LUNGS			7.8E-04	8.5E-04
			0/15/85	0/21/79
GONADS	1.2E-04			
ST WALL	2.7E-03			
SI WALL	1.6E-03			
ULI WALL	1.0E-03			
C.E.D.E.	3.4E-04		9.3E-05	1.0E-04

MOLYBDENUM

^{90}Mo

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	5.0E-02	8.0E-01		5.0E-02
LUNGS			2.0E-03		3.5E-03
			7/3/90		1/7/92
GONADS	8.9E-04	2.3E-03	3.3E-04		7.0E-04
			64/12/24		66/21/13
BREAST	4.1E-04		2.7E-04		
			49/13/38		
R MARROW			4.1E-04		
			52/14/34		
LIVER	2.4E-03		1.5E-03		
			53/16/31		
KIDNEYS	1.9E-03		1.2E-03		
			54/16/30		
ST WALL	1.7E-03	1.7E-03	5.2E-04		
			65/9/26		
SI WALL		4.4E-03			1.4E-03
					66/21/13
ULI WALL	3.0E-03	1.1E-02	7.0E-04		3.3E-03
			78/8/14		66/22/12
LLI WALL	3.7E-03	1.4E-02	7.8E-04		4.1E-03
			83/7/10		67/22/11
C.E.D.E.	1.0E-03	2.5E-03	6.9E-04		1.1E-03

^{93M}Mo

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	5.0E-02	8.0E-01		5.0E-02
LUNGS			8.5E-04		1.1E-03
			8/4/88		1/12/87
GONADS	5.2E-04	1.2E-03	1.6E-04		2.4E-04
			71/13/16		65/25/10
BREAST	2.2E-04	2.1E-04	1.4E-04		9.2E-05
			48/13/39		29/18/53
R MARROW			1.6E-04		
			52/14/34		
LIVER	7.4E-04		4.4E-04		
			54/16/30		
KIDNEYS			3.4E-04		
			57/17/26		
ST WALL	1.3E-03	1.4E-03	3.2E-04		3.4E-04
			71/7/22		52/22/26
SI WALL	1.0E-03	2.9E-03			5.5E-04
					66/25/9
ULI WALL	1.6E-03	4.8E-03	3.3E-04		9.3E-04
			81/8/11		66/25/9
LLI WALL	1.1E-03	3.3E-03			6.3E-04
					67/25/8
REMAINDER		7.8E-04	2.7E-04		
			49/15/36		
WT		0.06	0.06		
C.E.D.E.	5.0E-04	1.1E-03	2.8E-04		3.6E-04

^{93}Mo

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	5.0E-02	8.0E-01		5.0E-02
LUNGS	4.1E-04		4.4E-04		2.3E-01
			31/9/60		0/0/100
GONADS	4.8E-04	9.2E-05	3.4E-04		
			46/13/41		
BREAST	3.7E-04		2.8E-04		
			45/13/42		
R MARROW	1.0E-03		7.8E-04		
			45/13/42		
BONE SURF	4.1E-03		3.2E-03		
			45/13/42		
LIVER	6.7E-03	4.1E-04	4.8E-03		
			45/13/42		
KIDNEYS	5.9E-03	3.7E-04	4.4E-03		
			45/13/42		
SI WALL		1.7E-04			
ULI WALL		6.3E-04			
LLI WALL	6.7E-04	1.6E-03			
C.E.D.E.	1.3E-03	2.2E-04	9.2E-04		2.8E-02

^{99}Mo

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	5.0E-02	8.0E-01		5.0E-02
LUNGS			4.4E-03		1.6E-02
			6/3/91		0/3/97
GONADS	8.1E-04		4.8E-04		
			50/14/36		
BREAST	6.7E-04		4.8E-04		
			48/14/38		
R MARROW	2.0E-03		1.4E-03		
			48/14/38		
BONE SURF	2.8E-03		2.0E-03		
			48/14/38		
LIVER	1.0E-02		7.0E-03		
			49/14/37		
KIDNEYS	9.3E-03		6.3E-03		
			49/14/37		
ST WALL	2.5E-03				
ULI WALL	5.2E-03	2.1E-02	1.2E-03		8.5E-03
			77/7/16		65/18/17
LLI WALL	1.1E-02	5.2E-02	2.1E-03		2.0E-02
			87/5/8		65/18/17
C.E.D.E.	2.9E-03	4.4E-03	2.0E-03		3.6E-03

^{101}Mo

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	5.0E-02	8.0E-01		5.0E-02
LUNGS			2.4E-04		2.8E-04
			1/12/87		0/23/77
ST WALL	1.2E-03	1.2E-03	1.2E-04		
			97/1/2		
SI WALL	2.5E-04	3.5E-04			
C.E.D.E.	8.6E-05	9.2E-05	3.6E-05		3.3E-05

TECHNETIUM

^{93M}Tc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		1.0E-04 5/7/88	1.1E-04 1/14/85	
GONADS	4.4E-05	1.3E-05 75/14/11	5.6E-06 57/29/14	
BREAST	1.9E-05	1.1E-05 47/14/39		
R MARROW	2.1E-05	1.1E-05 50/14/36		
THYROID	1.6E-04	1.1E-04 64/24/12		
ST WALL	4.1E-04	9.6E-05 77/12/11	3.7E-05 53/28/19	
SI WALL	1.5E-04	2.7E-05 85/8/7		
ULI WALL	1.4E-04	2.7E-05 85/7/8		
LLI WALL	5.2E-05			
REMAINDER	7.4E-05	2.6E-05 58/12/30		
WT	0.06	0.06		
C.E.D.E.	7.1E-05	3.2E-05	1.7E-05	

^{93}Tc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS	4.4E-05	1.6E-04 8/6/86	1.8E-04 2/11/87	
GONADS	1.3E-04	3.6E-05 75/14/11	1.6E-05 58/28/14	
BREAST	5.6E-05	3.2E-05 47/13/40	2.2E-05 22/20/58	
R MARROW	5.9E-05	3.2E-05 49/14/37	2.1E-05 24/20/56	
THYROID	3.6E-04	2.3E-04 64/21/15	8.1E-05 49/38/13	
ST WALL	6.3E-04	1.8E-04 71/13/16	8.9E-05 51/26/23	
SI WALL	2.9E-04	5.9E-05 82/9/9		
ULI WALL	3.6E-04	7.0E-05 83/8/9	3.7E-05 63/22/15	
LLI WALL	1.5E-04			
REMAINDER	2.0E-04	7.4E-05 57/11/32	5.2E-05 8/15/77/	
WT	0.06	0.12	0.12	
C.E.D.E.	1.6E-04	7.1E-05	4.8E-05	

^{94M}Tc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		5.9E-04 2/8/90	6.7E-04 0/15/85	
GONADS	6.3E-05			
THYROID	7.0E-04	5.9E-04 66/27/7		
ST WALL	2.4E-03	4.8E-04 84/12/4	1.3E-04 58/35/7	
SI WALL	7.0E-04			
ULI WALL	4.4E-04			
C.E.D.E.	2.5E-04	1.2E-04	8.8E-05	

^{94}Tc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS	1.6E-04	5.9E-04 8/5/87	7.4E-04 3/9/88	
GONADS	4.8E-04	1.2E-04 77/11/12	7.4E-05 65/22/13	
BREAST	1.9E-04	1.1E-04 47/13/40	8.1E-05 27/18/55	
R MARROW	2.1E-04	1.2E-04 50/13/37	8.1E-05 30/19/51	
THYROID	1.8E-03	1.1E-03 62/19/19	4.4E-04 54/33/13	
ST WALL	2.1E-03	7.4E-04 67/15/18	4.1E-04 56/25/19	
SI WALL	9.3E-04	2.1E-04 79/10/11		
ULI WALL	1.3E-03	2.6E-04 82/8/10	1.8E-04 67/20/13	
LLI WALL	7.0E-04			
REMAINDER	5.5E-04	2.5E-04 54/12/34	1.8E-04 35/18/47	
WT	0.06	0.12	0.12	
C.E.D.E.	5.8E-04	2.7E-04	2.0E-04	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{96M}Tc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS	1.0E-05	4.1E-05	8.5E-05	
		8/7/85	3/6/91	
GONADS	2.3E-05	8.1E-06	9.3E-06	
		61/11/28	60/14/26	
BREAST	1.1E-05	7.8E-06	9.6E-06	
		44/12/44	30/10/60	
R MARROW	1.3E-05	8.1E-06	9.6E-06	
		46/12/42	34/10/56	
THYROID	7.4E-05	5.6E-05		
		54/19/27		
ST WALL	1.6E-04	6.3E-05	4.4E-05	
		58/13/29	52/17/31	
SI WALL	4.8E-05	1.4E-05		
		65/10/25		
ULI WALL	4.8E-05	1.4E-05		
		64/10/26		
LLI WALL	4.4E-05	1.3E-05	1.7E-05	
		67/10/23	64/13/23	
REMAINDER	2.5E-05	1.6E-05	1.9E-05	
		46/12/42	33/11/56	
WT	0.06	0.06	0.12	
C.E.D.E.	3.1E-05	1.8E-05	2.1E-05	

^{96}Tc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS	1.1E-03	2.1E-03	7.4E-03	
		18/6/76	4/2/94	
GONADS	2.6E-03	9.3E-04	1.1E-03	
		60/11/29	61/13/26	
BREAST	1.3E-03	8.9E-04	1.1E-03	
		43/12/45	31/9/60	
R MARROW	1.4E-03	9.3E-04	1.1E-03	
		45/12/43	34/10/56	
THYROID	5.5E-03	4.1E-03	3.2E-03	
		46/14/40	51/16/33	
ST WALL	8.5E-03	5.5E-03	4.4E-03	
		48/13/39	51/15/34	
SI WALL	3.1E-03			
ULI WALL	4.1E-03	1.4E-03		
		59/11/30		
LLI WALL	5.2E-03	1.6E-03	2.1E-03	
		67/9/24	64/13/23	
REMAINDER	2.7E-03	1.9E-03	2.2E-03	
		44/12/44	33/10/57	
WT	0.06	0.12	0.18	
C.E.D.E.	2.7E-03	1.6E-03	2.4E-03	

^{97M}Tc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		1.1E-03	3.5E-02	
		6/3/91	0/0/100	
THYROID	5.2E-03	4.1E-03		
		45/13/42		
ST WALL	1.0E-02	7.4E-03		
		46/13/41		
ULI WALL	1.3E-03			
LLI WALL	3.6E-03			
C.E.D.E.	1.1E-03	7.0E-04	4.2E-03	

^{97}Tc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		1.6E-04	7.4E-03	
		8/3/89	0/0/100	
GONADS	6.3E-05	3.7E-05		
		49/12/39		
THYROID	6.7E-04	4.8E-04		
		45/13/42		
ST WALL	1.3E-03	9.6E-04		
		46/13/41		
ULI WALL	1.7E-04			
LLI WALL	3.7E-04			
C.E.D.E.	1.5E-04	1.0E-04	8.9E-04	

^{98}Tc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS	1.7E-03	3.7E-03	1.4E-01	
		15/5/80	0/0/100	
GONADS	2.7E-03	1.3E-03		
		51/12/37		
BREAST	1.7E-03	1.3E-03		
		43/12/45		
R MARROW	1.9E-03	1.3E-03		
		45/12/43		
THYROID	1.3E-02	1.0E-02		
		45/13/42		
ST WALL	2.8E-02	2.0E-02		
		45/13/42		
SI WALL	3.5E-03			
ULI WALL	5.5E-03	2.1E-03		
		58/10/32		
LLI WALL	1.1E-02	2.8E-03		
		70/8/22		
REMAINDER	3.4E-03	2.5E-03		
		43/12/45		
WT	0.06	0.06		
C.E.D.E.	4.8E-03	3.1E-03	1.7E-02	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{99M}Tc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		8.5E-05	1.1E-04	
		4/4/92	1/8/91	
GONADS	3.6E-05	1.0E-05	6.3E-06	
		74/13/13	67/23/10	
BREAST	1.3E-05	7.8E-06		
		48/14/38		
R MARROW	2.3E-05	1.3E-05		
		51/13/36		
THYROID	3.1E-04	1.8E-04	7.8E-05	
		62/19/19	60/33/7	
ST WALL	2.7E-04	1.1E-04	5.6E-05	
		66/16/18	61/27/12	
SI WALL	8.1E-05	1.8E-05		
		82/9/9		
ULI WALL	1.4E-04	2.6E-05		
		86/7/7		
LLI WALL	9.2E-05	1.9E-05		
		86/7/7		
REMAINDER	4.1E-05	1.9E-05		
		54/13/33		
W_T	0.06	0.06		
C.E.D.E.	6.0E-05	3.2E-05	2.1E-05	

^{99}Tc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		1.3E-03	6.3E-02	
		6/3/91	0/0/100	
THYROID	5.9E-03	4.4E-03		
		45/13/42		
ST WALL	1.3E-02	9.3E-03		
		46/13/41		
ULI WALL	1.5E-03			
LLI WALL	4.1E-03			
C.E.D.E.	1.3E-03	8.4E-04	7.5E-03	

^{101}Tc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		1.0E-04	1.1E-04	
		1/15/84	0/19/81	
ST WALL	5.5E-04	5.2E-05		
		93/6/1		
SI WALL	8.5E-05			
C.E.D.E.	3.8E-05	1.6E-05	1.3E-05	

^{104}Tc

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		4.4E-04	4.8E-04	
		1/13/86	0/18/82	
ST WALL	2.3E-03	2.5E-04		
		91/7/2		
SI WALL	4.1E-04			
C.E.D.E.	1.6E-04	6.8E-05	5.8E-05	

RUTHENIUM

^{94}Ru

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		5.5E-04	6.7E-04	7.0E-04
		2/4/94	0/11/89	0/19/81
GONADS	1.6E-04	3.6E-05		
		81/13/6		
ST WALL	1.1E-03	2.2E-04		
		92/3/5		
SI WALL	1.7E-03	2.5E-04		
		96/3/1		
ULI WALL	1.6E-03	2.3E-04		
		95/3/2		
LLI WALL	3.7E-04			
C.E.D.E.	3.3E-04	1.2E-04	8.0E-05	8.4E-05

^{97}Ru

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		4.1E-04	1.2E-03	1.3E-03
		10/6/84	1/2/97	1/3/96
GONADS	8.9E-04	2.7E-04	3.3E-04	3.6E-04
		66/10/24	65/14/21	64/18/18
R MARROW	1.9E-04	1.7E-04	1.3E-04	1.3E-04
		43/14/43	41/15/44	41/13/46
BREAST		1.3E-04		
		39/14/47		
ST WALL		2.0E-04		
		47/13/40		
SI WALL	1.0E-03	2.9E-04	3.7E-04	4.1E-04
		47/13/40	65/13/22	63/18/19
ULI WALL	2.0E-03	4.4E-04	7.4E-04	8.1E-04
		78/7/15	66/12/22	64/18/18
LLI WALL	3.6E-03	6.7E-04	1.3E-03	1.4E-03
		86/5/9	68/11/21	65/18/17
REMAINDER		2.0E-04		
		52/13/35		
W_T		0.06		
C.E.D.E.	6.4E-04	2.6E-04	3.9E-04	4.2E-04

^{103}Ru

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		3.7E-03	3.7E-02	5.9E-02
		20/10/70	1/1/98	0/0/100
GONADS	2.1E-03	2.7E-03		
		40/14/46		
BREAST		2.3E-03		
		33/16/51		
R MARROW		2.5E-03		
		34/15/51		
BONE SURF		2.3E-03		
		33/16/51		
ST WALL		2.7E-03		
		36/15/49		
SI WALL	3.1E-03	3.1E-03		
		42/14/44		
ULI WALL	9.3E-03	4.1E-03		
		55/11/34		
LLI WALL	2.4E-02	6.3E-03	1.1E-02	1.1E-02
		70/8/22	59/10/31	62/16/22
REMAINDER		3.0E-03		
		33/16/51		
W_T		0.06		
C.E.D.E.	2.7E-03	3.0E-03	5.1E-03	7.8E-03

^{105}Ru

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		1.4E-03	2.0E-03	2.1E-03
		2/4/94	0/7/93	0/12/88
GONADS	3.6E-04	1.0E-04		
		74/12/14		
ST WALL	1.9E-03	3.3E-04		
		87/5/8		
SI WALL	2.9E-03	4.8E-04		4.4E-04
		93/4/3		66/26/8
ULI WALL	5.9E-03	9.3E-04	8.5E-04	1.0E-03
		95/3/2	73/16/11	66/25/9
LLI WALL	4.8E-03	7.8E-04	9.6E-04	1.1E-03
		95/3/2	72/14/14	67/22/11
C.E.D.E.	1.0E-03	3.4E-04	3.5E-04	4.1E-04

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{106}Ru

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		8.7E-02	7.8E-01	3.7E+00*
		25/12/63	1/1/98	0/0/100
GONADS		5.2E-02*		
		33/16/51		
BREAST		5.2E-02*		
		33/16/51		
R MARROW		5.2E-02*		
		33/16/51		
BONE SURF		5.2E-02*		
		33/16/51		
THYROID		5.2E-02*		
		33/16/51		
ST WALL		5.2E-02		
		34/16/50		
SI WALL		5.6E-02		
		33/15/50		
ULI WALL	9.3E-02	6.3E-02		
		46/13/41		
LLI WALL	2.6E-01	9.3E-02		
		61/10/29		
REMAINDER		5.2E-02		
		33/16/51		
W_T		0.06		
C.E.D.E.	2.1E-02	5.7E-02*	9.3E-02	4.4E-01*

RHODIUM

^{99M}Rh	Ingestion	Inhalation D	Inhalation W	Inhalation Y
CLASS				
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		2.2E-04	2.7E-04	2.9E-04
		5/4/91	1/9/90	1/14/85
GONADS	3.0E-04	6.3E-05	4.1E-05	4.4E-05
		85/8/7	70/21/9	65/27/8
BREAST		3.0E-05		
		47/14/39		
R MARROW	7.4E-05	3.6E-05		
		54/13/33		
ST WALL	4.4E-04	9.2E-05	7.0E-05	8.1E-05
		77/6/17	57/17/26	53/24/23
SI WALL	7.8E-04	1.3E-04	9.6E-05	1.1E-04
		91/5/4	72/19/9	66/27/7
ULI WALL	1.2E-03	1.9E-04	1.5E-04	1.8E-04
		93/4/3	73/18/9	66/27/7
LLI WALL	6.3E-04	1.1E-04	7.8E-05	9.2E-05
		90/6/4	73/19/8	67/27/6
REMAINDER	1.7E-04	5.2E-05		
		52/10/38		
WT	0.06	0.06		
C.E.D.E.	2.8E-04	8.6E-05	6.7E-05	7.4E-05

^{100}Rh	Ingestion	Inhalation D	Inhalation W	Inhalation Y
CLASS				
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		1.6E-03	2.8E-03	2.9E-03
		8/5/87	2/5/93	1/7/92
GONADS	4.1E-03	1.0E-03	1.1E-03	1.3E-03
		76/9/15	69/15/16	65/21/14
BREAST		4.4E-04	3.6E-04	3.4E-04
		45/13/42	36/15/49	35/15/41
R MARROW	8.9E-04	5.2E-04	4.4E-04	4.1E-04
		49/13/38	44/15/41	42/16/42
ST WALL	2.1E-03	7.4E-04	8.5E-04	8.9E-04
		60/9/31	50/13/37	48/17/35
SI WALL	5.5E-03	1.3E-03	1.6E-03	1.8E-03
		80/7/13	69/14/17	65/21/14
ULI WALL	1.0E-02	1.9E-03	2.7E-03	3.2E-03
		87/5/8	69/14/17	65/21/14
LLI WALL	1.2E-02	2.2E-03	3.2E-03	3.7E-03
		88/5/7	71/14/15	66/21/13
REMAINDER	1.9E-03	6.7E-04	5.9E-04	6.3E-04
		65/12/23	66/17/17	64/21/15
WT	0.06	0.06	0.06	0.06
C.E.D.E.	3.1E-03	9.8E-04	1.3E-03	1.4E-03

^{99}Rh	Ingestion	Inhalation D	Inhalation W	Inhalation Y
CLASS				
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		2.0E-03	1.2E-02	1.4E-02
		19/10/71	1/1/98	0/1/99
GONADS	2.6E-03	1.7E-03	1.3E-03	1.3E-03
		48/13/39	56/16/28	60/16/24
BREAST		1.2E-03		
		35/15/50		
R MARROW	6.7E-04	1.5E-03		
		36/15/49		
SI WALL	2.9E-03	1.9E-03		
		48/13/39		
ULI WALL	5.9E-03	2.3E-03	2.8E-03	2.9E-03
		58/11/31	59/12/29	60/16/24
LLI WALL	1.3E-02	3.4E-03	5.5E-03	5.9E-03
		71/8/21	62/11/27	62/17/21
REMAINDER		1.6E-03		
		33/15/52		
WT		0.12		
C.E.D.E.	2.0E-03	1.7E-03	2.3E-03	2.6E-03

^{101M}Rh	Ingestion	Inhalation D	Inhalation W	Inhalation Y
CLASS				
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		6.3E-04	2.2E-03	2.4E-03*
		12/6/82	1/2/97	1/2/97
GONADS	1.2E-03*	4.1E-04*	4.8E-04*	5.2E-04*
		61/11/28	63/14/23	62/18/21
BREAST		2.3E-04*		
		37/15/48		
R MARROW		3.0E-04*		
		41/14/45		
ST WALL		3.3E-04		
		45/13/42		
SI WALL	1.3E-03	4.8E-04	5.5E-04	5.9E-04
		62/10/28	64/13/23	63/17/20
ULI WALL	2.8E-03	6.7E-04	1.1E-03	1.2E-03
		74/8/18	65/12/23	62/18/20
LLI WALL	5.5E-03	1.1E-03	2.1E-03	2.3E-03
		47/14/39	66/11/23	63/18/19
REMAINDER		3.3E-04		
		47/14/39		
WT		0.06		
C.E.D.E.	8.8E-04*	4.2E-04*	6.1E-04*	6.7E-04*

50-Year Committed Dose Equivalent Factors--rem/µCi Intake (Continued)

^{101}Rh

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS	8.9E-04*	9.3E-03*	3.3E-02*	2.7E-01*
		30/15/55	2/2/96	0/0/100
GONADS	2.4E-03*	1.0E-02*	3.7E-03*	
		34/15/51	34/25/41	
BREAST	9.6E-04*	8.1E-03*	3.3E-03*	
		33/16/51	24/22/54	
R MARROW	1.5E-03*	1.1E-02*	4.4E-03*	
		33/16/51	25/23/52	
BONE SURF		1.0E-02*		
		33/16/51		
ST WALL	1.5E-03			
SI WALL	2.6E-03	1.1E-02		
		34/15/51		
ULI WALL	4.8E-03			
LLI WALL	1.0E-02	1.1E-02	7.4E-03	
		41/14/45	44/16/40	
REMAINDER	1.7E-03	1.1E-02		
		32/16/52		
WT	0.06	0.18		
C.E.D.E.	2.3E-03*	1.0E-02*	6.4E-03*	3.2E-02*

^{102}Rh

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS	4.8E-03*	4.8E-02*	8.1E-02*	5.9E-01*
		32/15/53	5/5/90	0/0/100
GONADS	6.3E-03*	5.6E-02*	1.7E-02*	
		33/16/51	31/29/40	
BREAST	5.5E-03*	4.4E-02*	1.9E-02*	5.2E-02*
		33/16/51	22/20/58	4/1/95
R MARROW	6.7E-03*	5.2E-02*	2.1E-02*	
		33/16/51	24/21/55	
BONE SURF		4.4E-02*		
		33/16/51		
THYROID		4.4E-02*		
		33/16/51		
SI WALL	1.4E-02	5.9E-02		
		34/15/51		
ULI WALL	1.8E-02	5.9E-02		
		35/15/50		
LLI WALL	2.7E-02	6.3E-02	2.8E-02	
		36/15/49	39/21/40	
REMAINDER	9.6E-03*	6.3E-02*	3.0E-02*	1.4E-01*
		33/16/51	14/13/73	1/0/99
WT	0.12	0.12	0.24	0.06
C.E.D.E.	8.5E-03*	5.4E-02	2.8E-02*	8.7E-02*

^{102M}Rh

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		1.1E-02	9.6E-02	3.5E-01*
		26/13/61	1/1/98	0/0/100
GONADS	1.1E-03*	9.3E-03*		
		33/16/51		
BREAST		8.5E-03*		
		33/16/51		
R MARROW		9.3E-03*		
		33/16/51		
BONE SURF		8.5E-03*		
		33/16/51		
THYROID		8.5E-03*		
		33/16/51		
SI WALL	4.4E-03	1.0E-02		
		36/15/49		
ULI WALL	1.4E-02	1.2E-02		
		43/14/43		
LLI WALL	3.6E-02	1.5E-02	2.0E-02	
		56/11/33	52/11/37	
REMAINDER		1.1E-02		
		33/16/51		
WT		0.12		
C.E.D.E.	3.5E-03*	1.0E-02*	1.3E-02	4.2E-02*

^{103M}Rh

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		2.9E-05	3.3E-05	3.5E-05
		1/8/91	0/14/86	0/21/79
ST WALL	9.6E-05	1.2E-05		
		99/1/0		
SI WALL	5.9E-05	7.4E-06		
		98/2/0		
ULI WALL	3.4E-05			
C.E.D.E.	1.1E-05	4.6E-06	3.9E-06	4.2E-06

^{105}Rh

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		1.4E-03	3.4E-03	3.6E-03
		3/3/94	0/3/97	0/5/95
GONADS		1.3E-04		
		52/15/33		
SI WALL	1.6E-03	3.5E-04		
		80/7/13		
ULI WALL	7.0E-03	1.1E-03	2.1E-03	2.5E-03
		92/4/4	70/12/18	65/20/15
LLI WALL	1.4E-02	2.2E-03	4.4E-03	5.2E-03
		95/3/2	70/12/18	65/20/15
C.E.D.E.	1.4E-03	4.2E-04	8.1E-04	8.9E-04

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

	^{106M}Rh			
	Ingestion	Inhalation		
CLASS		D	W	Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		7.4E-04	8.5E-04	9.3E-04
		3/5/92	1/12/87	0/18/82
GONADS	4.8E-04	1.0E-04	4.4E-05	
		83/10/7	65/26/9	
BREAST		5.9E-05		
		48/15/37		
ST WALL	2.0E-03	3.3E-04	1.7E-04	2.0E-04
		86/4/10	60/19/21	54/28/18
SI WALL	2.3E-03	3.5E-04		1.9E-04
		93/4/3		64/30/6
ULI WALL	2.7E-03	4.1E-04	1.9E-04	2.3E-04
		94/3/3	72/21/7	64/30/6
LLI WALL	8.9E-04	1.6E-04		
		89/7/4		
REMAINDER	3.5E-04			
W_T	0.06			
C.E.D.E.	8.1E-04	2.0E-04	1.3E-04	1.5E-04

	^{107}Rh			
	Ingestion	Inhalation		
CLASS		D	W	Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		1.4E-04	1.6E-04	1.7E-04
		1/12/87	0/18/82	0/23/77
ST WALL	7.0E-04	6.3E-05		
		98/1/1		
SI WALL	2.0E-04			
C.E.D.E.	5.4E-05	2.1E-05	1.9E-05	2.0E-05

PALLADIUM

^{100}Pd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-03	5.0E-03	5.0E-03	5.0E-03
LUNGS		2.6E-03	1.1E-02	1.1E-02
		16/8/76	1/1/98	0/1/99
GONADS	5.2E-03	1.4E-03	2.7E-03	2.9E-03
		70/8/22	62/11/27	61/16/23
BREAST		9.3E-04	9.3E-04	
		37/14/49	26/10/64	
R MARROW		1.4E-03	1.2E-03	
		39/14/47	34/13/53	
KIDNEYS		1.6E-02	3.3E-03	
		33/16/51	39/44/17	
LIVER		1.3E-02	3.2E-03	
		33/16/51	32/36/32	
SI WALL	4.8E-03		2.9E-03	3.0E-03
			60/11/29	59/15/26
ULI WALL	1.0E-02	3.0E-03	5.5E-03	5.9E-03
		66/9/25	61/11/28	61/15/24
LLI WALL	2.7E-02	4.4E-03	1.1E-02	1.3E-02
		91/4/5	65/10/25	63/17/20
REMAINDER		3.7E-03		
		33/16/51		
W_T		0.06		
C.E.D.E.	3.8E-03	3.4E-03	3.9E-03	3.4E-03

^{101}Pd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-03	5.0E-03	5.0E-03	5.0E-03
LUNGS		3.2E-04	5.9E-04	6.3E-04
		4/4/92	1/5/94	0/8/92
GONADS	3.7E-04	7.4E-05	9.2E-05	1.0E-04
		85/6/9	69/14/17	65/21/14
BREAST		3.5E-05		
		44/13/43		
R MARROW		5.2E-05		
		48/14/38		
KIDNEYS		4.4E-04		
		41/19/41		
LIVER		3.2E-04		
		39/19/42		
ST WALL	3.7E-04			
SI WALL	8.9E-04	1.6E-04	1.8E-04	2.1E-04
		87/5/8	71/15/14	65/23/12
ULI WALL	1.8E-03	3.0E-04	3.6E-04	4.1E-04
		91/4/5	71/15/14	66/23/11
LLI WALL	1.7E-03	2.8E-04	4.1E-04	4.8E-04
		95/3/2	71/13/16	65/22/13
C.E.D.E.	3.8E-04	1.6E-04	1.5E-04	1.7E-04

^{103}Pd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-03	5.0E-03	5.0E-03	5.0E-03
LUNGS		5.5E-04	7.8E-03	1.0E-02
		2/2/96	0/0/100	0/1/99
KIDNEYS		7.0E-03		
		32/16/52		
LIVER		3.7E-03		
		32/16/52		
ULI WALL	3.1E-03			
LLI WALL	8.5E-03	1.3E-03	3.6E-03	4.1E-03
		96/3/1	63/9/28	62/17/21
C.E.D.E.	6.9E-04	7.9E-04	1.1E-03	1.4E-03

^{107}Pd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-03	5.0E-03	5.0E-03	5.0E-03
LUNGS			5.5E-03	1.1E-01
			0/0/100	0/0/100
KIDNEYS		2.4E-03		
		32/16/52		
LIVER		1.2E-03		
		32/16/52		
ULI WALL	5.9E-04			
LLI WALL	1.7E-03	2.7E-04		
		96/3/1		
C.E.D.E.	1.4E-04	2.3E-04	6.7E-04	1.3E-02

^{109}Pd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-03	5.0E-03	5.0E-03	5.0E-03
LUNGS		2.4E-03	4.4E-03	4.4E-03
		1/2/97	0/5/95	0/9/91
KIDNEYS		2.0E-03		
		43/22/35		
LIVER		1.1E-03		
		43/22/35		
ST WALL	1.8E-03			
SI WALL	3.7E-03	5.9E-04		9.6E-04
		95/3/2		67/23/10
ULI WALL	1.3E-02	2.0E-03	2.8E-03	3.4E-03
		97/2/1	73/14/13	67/23/10
LLI WALL	1.7E-02	2.7E-03	3.7E-03	4.4E-03
		98/2/0	73/14/13	67/23/10
C.E.D.E.	2.1E-03	7.9E-04	9.2E-04	1.1E-03

SILVER

^{102}Ag

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		1.9E-04 1/15/84	2.0E-04 0/19/81	2.1E-04 0/23/77
ST WALL	1.1E-03	8.5E-05 94/2/4		
SI WALL	2.1E-04			
C.E.D.E.	7.9E-05	2.8E-05	2.4E-05	2.5E-05

^{103}Ag

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		2.6E-04 2/7/91	3.1E-04 0/13/87	3.4E-04 0/19/81
GONADS	5.6E-05			
LIVER		5.9E-05 44/20/36		
ST WALL	8.9E-04	1.2E-04 94/2/4		
SI WALL	6.3E-04	8.5E-05 96/3/1		
ULI WALL	4.8E-04	6.7E-05 95/3/2		
LLI WALL	1.2E-04			
C.E.D.E.	1.4E-04	5.1E-05	3.8E-05	4.1E-05

^{104M}Ag

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		3.0E-04 2/10/88	3.3E-04 0/16/84	3.5E-04 0/22/78
GONADS	6.7E-05	1.4E-05 81/13/6		
ST WALL	1.3E-03	1.5E-04 94/2/4		
SI WALL	6.3E-04	7.8E-05 95/3/2		
ULI WALL	3.7E-04			
C.E.D.E.	1.5E-04	5.3E-05	3.9E-05	4.2E-05

^{104}Ag

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		2.1E-04 5/8/87	2.3E-04 1/14/85	2.5E-04 0/21/79
GONADS	2.0E-04	3.6E-05 84/10/6	1.2E-05 58/29/13	
BREAST	4.8E-05	2.6E-05 45/14/41		
R MARROW	5.6E-05	2.8E-05 50/14/36		
LIVER		6.3E-05 47/20/33		
ST WALL	9.3E-04	1.4E-04 85/4/11	5.6E-05 50/21/29	6.3E-05 47/28/25
SI WALL	7.0E-04	1.0E-04 92/5/3		
ULI WALL	7.0E-04	1.0E-04 91/5/4		
LLI WALL	1.8E-04			
REMAINDER	2.3E-04	6.3E-05 60/9/31		
W_T	0.06	0.06		
C.E.D.E.	2.3E-04	7.0E-05	3.4E-05	3.4E-05

^{105}Ag

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		3.7E-03 28/14/58	1.5E-02 2/2/96	2.3E-02 1/0/99
GONADS	2.4E-03	1.3E-03 50/12/38	1.3E-03 53/13/34	1.3E-03 56/15/29
BREAST	4.1E-04	1.7E-03 34/15/51		
R MARROW	6.7E-04	1.9E-03 35/15/50		
LIVER	4.1E-03	3.7E-02 33/16/51	9.6E-03 34/33/33	
SI WALL	2.6E-03			
ULI WALL	4.4E-03	3.7E-03 43/14/43		
LLI WALL	8.9E-03		4.1E-03 58/10/32	
REMAINDER		5.9E-03 33/16/51		
W_T		0.18		
C.E.D.E.	1.9E-03	4.7E-03	2.9E-03	3.1E-03

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{106M}Ag

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		6.3E-03	1.4E-02	1.6E-02
		26/12/62	3/4/93	1/2/97
GONADS	9.6E-03	3.3E-03	4.4E-03	4.4E-03
		62/10/28	61/12/27	61/17/22
BREAST		2.9E-03	2.1E-03	1.9E-03
		36/15/49	25/14/61	22/7/71
R MARROW	2.1E-03	3.0E-03	2.3E-03	2.2E-03
		38/14/48	31/13/56	29/9/62
LIVER	5.5E-03	4.4E-02	1.1E-02	5.2E-03
		34/16/50	38/35/27	37/10/53
SI WALL	1.0E-02		4.8E-03	4.8E-03
			58/15/27	60/16/24
ULI WALL	1.5E-02	7.0E-03	7.0E-03	7.0E-03
		53/12/35	59/14/27	60/16/24
LLI WALL	2.4E-02		1.0E-02	1.1E-02
			63/11/26	63/17/20
REMAINDER	4.1E-03	9.3E-03	4.1E-03	4.1E-03
		34/16/50	25/19/56	3/2/95
WT	0.06	0.18	0.06	0.06
C.E.D.E.	6.1E-03	7.1E-03	5.7E-03	5.4E-03

^{108}Ag

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		1.9E-04	2.0E-04	2.2E-04
		1/12/87	0/17/83	0/23/77
ST WALL	8.9E-04	8.9E-05		
		97/1/2		
SI WALL	2.8E-04			
ULI WALL	9.6E-05			
C.E.D.E.	7.6E-05	2.8E-05	2.4E-05	2.6E-05

^{108M}Ag

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS	2.2E-03	2.2E-02	1.0E-01	1.7E+00
		30/15/55	2/2/96	0/0/100
GONADS	7.0E-03	7.0E-03	5.5E-03	
		42/14/44	41/14/45	
BREAST	1.9E-03	1.1E-02	8.1E-03	
		33/16/51	15/12/73	
R MARROW	2.4E-03			
LIVER	2.6E-02	2.4E-01	8.1E-02	
		33/16/51	27/26/47	
SI WALL	8.5E-03			
ULI WALL	1.5E-02			
LLI WALL	2.8E-02			
REMAINDER	4.4E-03	4.1E-02		
		33/16/51		
WT	0.06	0.18		
C.E.D.E.	7.5E-03	2.8E-02	1.9E-02	2.0E-01

^{110M}Ag

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS	3.1E-03	3.0E-02	1.2E-01	4.4E-01
		30/15/55	2/2/96	0/0/100
GONADS	1.1E-02	1.2E-02	8.5E-03	
		41/14/45	42/15/43	
BREAST	2.8E-03	1.5E-02	1.1E-02	
		33/15/52	16/13/71	
R MARROW	3.5E-03			
LIVER	3.2E-02	3.0E-01	9.6E-02	
		39/15/46	29/28/43	
SI WALL	1.3E-02			
ULI WALL	2.2E-02	3.1E-02		
		33/16/51		
LLI WALL	4.1E-02			
REMAINDER	5.9E-03	5.2E-02	2.6E-02	
		33/16/51	19/18/63	
WT	0.06	0.18	0.12	
C.E.D.E.	1.1E-02	3.8E-02	2.7E-02	5.3E-02

^{111}Ag

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		4.1E-03	2.9E-02	3.2E-02
		3/2/95	0/1/99	0/1/99
LIVER		3.2E-02	6.7E-03	
		34/16/50	45/44/11	
ULI WALL	2.0E-02	3.4E-03	7.8E-03	8.9E-03
		92/4/4	65/10/25	63/17/20
LLI WALL	5.6E-02	8.5E-03	2.1E-02	2.4E-02
		95/3/2	65/10/25	63/17/20
C.E.D.E.	4.5E-03	3.1E-03	5.6E-03	5.9E-03

^{112}Ag

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		3.0E-03	3.7E-03	4.1E-03
		1/4/95	0/10/90	0/16/84
LIVER		5.9E-04		
		55/27/18		
ST WALL	5.2E-03	7.8E-04		
		95/3/2		
SI WALL	6.7E-03	9.6E-04		
		97/2/1		
ULI WALL	1.0E-02	1.4E-03	8.9E-04	1.1E-03
		97/2/1	75/19/6	67/29/4
LLI WALL	4.8E-03	7.0E-04		
		96/3/1		
C.E.D.E.	1.6E-03	6.2E-04	5.0E-04	5.5E-04

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{115}Ag

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		3.4E-04	4.4E-04	4.4E-04
		1/12/87	0/14/86	0/19/81
LIVER		9.6E-05		
		38/18/44		
ST WALL	1.5E-03	1.4E-04		
		97/1/2		
SI WALL	4.4E-04			
ULI WALL	2.4E-04			
LLI WALL	3.4E-04		1.1E-04	1.3E-04
			69/11/20	64/19/17
C.E.D.E.	1.5E-04	5.5E-05	6.0E-05	6.1E-05

CADMIUM

^{104}Cd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		2.0E-04 5/5/90	2.3E-04 1/12/87	2.5E-04 1/18/81
GONADS	2.3E-04	4.4E-05 86/8/6	1.7E-05 65/26/9	1.8E-05 61/30/9
BREAST	4.4E-05	2.6E-05 48/14/38		
R MARROW	5.9E-05	3.0E-05 54/14/32		
KIDNEYS		8.9E-05 60/24/16		
ST WALL	5.2E-04	1.1E-04 83/5/12	6.3E-05 56/20/24	7.0E-05 51/28/21
SI WALL	7.8E-04	1.3E-04 93/4/3	5.2E-05 71/22/7	5.9E-05 63/31/6
ULI WALL	8.9E-04	1.4E-04 93/4/3	5.6E-05 70/22/8	6.7E-05 63/30/7
LLI WALL	2.5E-04			
REMAINDER	1.7E-04	5.6E-05 57/11/32		
WT	0.06	0.06		
C.E.D.E.	2.3E-04	7.4E-05	4.3E-05	4.6E-05

^{113M}Cd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS				1.5E+00* 0/0/100
KIDNEYS	2.1E+00*	2.0E+01* 33/16/51	5.9E+00* 30/29/41	2.9E+00* 26/7/67
LIVER	3.6E-01*	3.5E+00* 33/16/51	1.0E+00* 30/29/41	4.8E-01* 26/7/67
C.E.D.E.	1.5E-01*	1.4E+00*	4.2E-01*	3.8E-01*

^{113}Cd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS				1.1E+00* 0/0/100
KIDNEYS	2.3E+00*	2.2E+01* 33/16/51	6.7E+00* 30/29/41	3.5E+00* 23/6/71
LIVER	4.1E-01*	3.7E+00* 33/16/51	1.1E+00* 30/29/41	5.9E-01* 23/6/71
C.E.D.E.	1.6E-01*	1.6E+00*	4.7E-01*	3.7E-01*

^{107}Cd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		3.5E-04 1/3/96	4.8E-04 0/7/93	5.2E-04 0/12/88
GONADS	3.7E-05			
KIDNEYS		3.1E-04 50/24/26		
ST WALL	3.7E-04			
SI WALL	6.7E-04	1.0E-04 95/3/2		1.2E-04 67/26/7
ULI WALL	1.6E-03	2.4E-04 97/2/1	2.3E-04 75/16/9	2.8E-04 67/26/7
LLI WALL	1.3E-03	2.0E-04 97/2/1	1.9E-04 75/16/9	2.3E-04 67/26/7
C.E.D.E.	2.4E-04	9.3E-05	8.3E-05	1.0E-04

^{115M}Cd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS			1.7E-01 0/1/99	2.9E-01 0/0/100
KIDNEYS	9.6E-02	9.3E-01 33/16/51	2.2E-01 39/37/24	
LIVER	1.7E-02	1.6E-01 33/16/51	3.7E-02 38/37/25	
ULI WALL	3.7E-02			
LLI WALL	1.1E-01		4.8E-02 58/10/32	
C.E.D.E.	1.5E-02	6.5E-02	3.9E-02	3.5E-02

^{109}Cd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS			5.6E-02* 2/2/96	2.9E-01* 0/0/100
KIDNEYS	1.5E-01*	1.4E+00* 33/16/51	4.1E-01* 31/30/39	1.3E-01* 43/12/45
LIVER	2.7E-02*	2.6E-01* 33/16/51	7.8E-02* 31/30/39	
LLI WALL	1.7E-02			
C.E.D.E.	1.2E-02*	1.0E-01*	3.6E-02*	4.2E-02 *

^{115}Cd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		4.4E-03 3/2/95	1.5E-02 0/2/98	1.6E-02 0/3/97
KIDNEYS		3.2E-02 36/18/46	6.7E-03 47/47/6	
LIVER		6.3E-03 36/17/47		
ULI WALL	2.3E-02	4.1E-03 91/4/5	8.1E-03 68/11/21	9.6E-03 65/18/17
LLI WALL	5.6E-02	8.9E-03 95/3/2	1.9E-02 69/11/20	2.2E-02 64/19/17
C.E.D.E.	4.7E-03	3.6E-03	3.8E-03	3.8E-03

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{117M}Cd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		1.4E-03	1.7E-03	1.9E-03
		3/4/93	1/9/90	0/15/85
GONADS	7.8E-04	1.7E-04	8.9E-05	9.6E-05
		82/10/8	68/23/9	64/28/8
KIDNEYS		8.1E-04		
		56/25/19		
ST WALL	2.1E-03	4.4E-04		3.7E-04
		84/5/11		58/26/16
SI WALL	3.7E-03	6.3E-04	4.1E-04	4.8E-04
		93/4/3	74/19/7	66/28/6
ULI WALL	6.3E-03	9.6E-04	6.3E-04	7.4E-04
		95/3/2	74/19/7	66/28/6
LLI WALL	3.0E-03	4.8E-04		
		93/4/3		
C.E.D.E.	1.1E-03	4.1E-04	2.9E-04	3.4E-04

^{117}Cd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	5.0E-02
LUNGS		1.7E-03	2.2E-03	2.3E-03
		1/3/96	0/9/91	0/15/85
GONADS	3.2E-04	8.5E-05		
		77/13/10		
KIDNEYS		8.9E-04		
		55/27/18		
ST WALL	2.3E-03	4.1E-04		
		90/4/6		
SI WALL	4.1E-03	6.3E-04		5.2E-04
		95/3/2		67/28/5
ULI WALL	7.0E-03	1.0E-03	6.7E-04	8.1E-04
		97/2/1	75/19/6	66/29/5
LLI WALL	3.4E-03	5.2E-04		
		96/3/1		
C.E.D.E.	1.1E-03	4.3E-04	3.0E-04	3.6E-04

INDIUM

^{109}In

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		2.4E-04 5/5/90	3.2E-04 1/9/90	
GONADS	2.7E-04	5.9E-05 80/9/11	3.6E-05 68/22/10	
R MARROW	7.4E-05	1.7E-04 39/17/44	5.6E-05 32/30/38	
BREAST		3.1E-05 46/14/40		
KIDNEYS		2.0E-04 40/17/43		
LIVER		1.3E-04 39/17/44		
ST WALL	4.8E-04		7.0E-05 58/18/24	
SI WALL	8.1E-04	1.4E-04 90/5/5	9.2E-05 72/19/9	
ULI WALL	1.2E-03	2.0E-04 92/4/4	1.4E-04 73/18/9	
LLI WALL	6.3E-04	1.1E-04 88/6/6	7.4E-05 72/19/9	
REMAINDER	1.6E-04			
WT	0.06			
C.E.D.E.	2.7E-04	1.1E-04	7.6E-05	

^{110}In (5H)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		5.5E-04 8/6/86	6.7E-04 2/10/88	
GONADS	1.4E-03	2.7E-04 85/8/7	1.9E-04 70/20/10	
R MARROW	3.2E-04	1.9E-04 54/15/31	1.1E-04 35/22/43	
BREAST		1.3E-04 48/13/39	9.6E-05 28/18/54	
LIVER		2.7E-04 45/17/38		
ST WALL	1.4E-03	3.4E-04 72/7/21	2.7E-04 52/17/31	
SI WALL	2.7E-03	4.8E-04 88/6/6	3.5E-04 71/19/10	
ULI WALL	3.7E-03	6.3E-04 90/5/5	4.8E-04 72/18/10	
LLI WALL	1.8E-03	3.5E-04 87/7/6	2.4E-04 72/20/8	
REMAINDER	8.1E-04		1.8E-04 32/17/51	
WT	0.06		0.06	
C.E.D.E.	1.0E-03	3.0E-04	2.5E-04	

^{110}In (69M)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		6.3E-04 1/7/92	7.0E-04 0/14/86	
GONADS	1.1E-04			
ST WALL	2.1E-03	2.8E-04 95/2/3		
SI WALL	1.5E-03	2.0E-04 96/3/1		
ULI WALL	1.1E-03	1.6E-04 95/3/2		
LLI WALL	2.5E-04			
C.E.D.E.	3.3E-04	1.1E-04	8.4E-05	

^{111}In

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		8.1E-04 10/6/84	2.3E-03 1/2/97	
GONADS	1.6E-03	4.8E-04 65/10/25	5.9E-04 65/14/21	
BREAST		2.4E-04 39/15/46		
R MARROW	4.1E-04	1.2E-03 37/17/46	4.1E-04 42/29/29	
BONE SURF		6.3E-04 36/17/47		
KIDNEYS		1.7E-03 36/17/47		
LIVER		1.2E-03 35/17/48		
SPLEEN		6.3E-04 35/16/49		
SI WALL	1.8E-03		7.0E-04 65/14/21	
ULI WALL	4.1E-03	8.9E-04 77/7/16	1.4E-03 67/12/21	
LLI WALL	7.4E-03	1.4E-03 86/5/9	2.6E-03 68/11/21	
C.E.D.E.	1.2E-03	7.7E-04	7.6E-04	

50-Year Committed Dose Equivalent Factors--rem/µCi Intake (Continued)

^{112}In

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		5.6E-05	5.9E-05	
		1/15/84	0/19/81	
ST WALL	3.0E-04	2.3E-05		
		98/1/1		
SI WALL	5.9E-05			
C.E.D.E.	2.1E-05	8.0E-06	7.1E-06	

^{113M}In

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		1.8E-04	2.1E-04	
		1/6/93	0/12/88	
GONADS	3.6E-05			
ST WALL	4.8E-04	7.0E-05		
		95/2/3		
SI WALL	4.8E-04	6.7E-05		
		96/3/1		
ULI WALL	4.4E-04	6.3E-05		
		96/3/1		
LLI WALL	1.2E-04			
C.E.D.E.	1.0E-04	3.4E-05	2.6E-05	

^{114M}In

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS			2.7E-01	
			0/1/99	
R MARROW	1.3E-02	3.1E-01	6.7E-02	
		32/16/52	35/40/25	
BONE SURF		1.6E-01		
		32/16/52		
KIDNEYS		3.5E-01	7.4E-02	
		32/16/52	35/40/25	
LIVER		1.7E-01		
		32/16/52		
SPLEEN		8.5E-02		
		32/16/52		
ULI WALL	5.6E-02			
LLI WALL	1.6E-01		7.4E-02	
			58/10/52	
C.E.D.E.	1.5E-02	7.8E-02	4.9E-02	

^{115M}In

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		5.2E-04	6.7E-04	
		1/3/96	0/9/91	
GONADS	8.1E-05			
R MARROW		7.0E-05		
		52/25/23		
ST WALL	7.0E-04	1.2E-04		
		92/4/4		
SI WALL	1.1E-03	1.7E-04		
		95/3/2		
ULI WALL	2.1E-03	3.2E-04	2.4E-04	
		97/2/1	75/18/7	
LLI WALL	1.3E-03	2.0E-04	1.5E-04	
		96/3/1	75/18/7	
C.E.D.E.	3.4E-04	1.2E-04	1.0E-04	

^{115}In

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
R MARROW	5.6E-01*	1.4E+01*	3.7E+00*	
		32/16/52	27/31/42	
BONE SURF	2.9E-01*	7.0E+00*	1.9E+00*	
		32/16/52	27/31/42	
KIDNEYS	6.3E-01*	1.5E+01*	4.1E+00*	
		32/16/52	27/31/42	
LIVER	3.1E-01*	7.4E+00*	2.0E+00*	
		32/16/52	27/31/42	
SPLEEN	1.6E-01*	3.7E+00*	1.0E+00*	
		32/16/52	27/31/42	
C.E.D.E.	1.4E-01*	3.4E+00*	9.3E-01*	

^{116M}In

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		3.1E-04	3.4E-04	
		2/8/90	0/15/85	
GONADS	1.2E-04	2.4E-05		
		80/13/7		
ST WALL	1.3E-03	1.7E-04		
		91/3/6		
SI WALL	8.1E-04	1.1E-04		
		94/4/2		
ULI WALL	5.9E-04	8.1E-05		
		92/4/4		
LLI WALL	1.3E-04			
REMAINDER	1.7E-04			
WT	0.06			
C.E.D.E.	2.1E-04	6.4E-05	4.1E-05	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{117M}In

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		8.1E-04	9.6E-04	
		1/5/94	0/11/89	
GONADS	8.1E-05			
ST WALL	1.7E-03	2.5E-04		
		95/3/2		
SI WALL	2.0E-03	2.9E-04		
		97/2/1		
ULI WALL	2.3E-03	3.2E-04		
		97/2/1		
LLI WALL	7.4E-04			
C.E.D.E.	4.2E-04	1.5E-04	1.2E-04	

^{117}In

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		1.8E-04	2.0E-04	
		1/9/90	0/15/85	
GONADS	2.9E-05			
ST WALL	7.4E-04	8.9E-05		
		95/2/3		
SI WALL	3.7E-04	4.8E-05		
		96/3/1		
ULI WALL	2.1E-04			
C.E.D.E.	8.7E-05	3.0E-05	2.4E-05	

^{119M}In

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		2.8E-04	3.0E-04	
		0/13/87	0/18/82	
ST WALL	1.4E-03	1.1E-04		
		99/1/0		
SI WALL	3.3E-04			
C.E.D.E.	1.0E-04	4.0E-05	3.6E-05	

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^{110}Sn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		1.7E-03	2.4E-03	
		2/2/96	0/7/93	
GONADS	7.0E-04	1.7E-04		
		84/8/8		
ST WALL	1.4E-03			
SI WALL	4.4E-03	7.4E-04	6.3E-04	
		95/3/2	74/18/8	
ULI WALL	9.6E-03	1.4E-03	1.1E-03	
		97/2/1	75/18/7	
LLI WALL	5.5E-03	8.9E-04	6.3E-04	
		95/3/2	75/18/7	
C.E.D.E.	1.5E-03	4.3E-04	4.3E-04	

^{111}Sn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		1.3E-04	1.6E-04	
		1/10/89	0/14/86	
GONADS	2.7E-05	6.3E-06		
		78/12/10		
ST WALL	5.2E-04	6.3E-05		
		95/2/3		
SI WALL	2.5E-04	3.0E-05		
		95/3/2		
ULI WALL	1.5E-04			
LLI WALL	8.5E-05			
C.E.D.E.	6.7E-05	2.2E-05	1.9E-05	

^{113}Sn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		3.5E-03	6.7E-02	
		17/9/74	0/0/100	
GONADS	1.4E-03	2.1E-03		
		38/15/47		
BREAST		2.0E-03		
		32/16/52		
R MARROW		9.3E-03		
		32/16/52		
BONE SURF		1.9E-02		
		32/16/52		
SI WALL		2.3E-03		
		42/14/44		
ULI WALL	1.0E-02	3.4E-03		
		62/10/28		
LLI WALL	2.9E-02	6.7E-03	1.4E-02	
		77/7/16	56/9/35	
REMAINDER		2.4E-03		
		32/16/52		
W_T		0.12		
C.E.D.E.	2.7E-03	3.9E-03	8.9E-03	

^{117M}Sn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		2.1E-03	2.3E-02	
		4/3/93	0/1/99	
GONADS	8.1E-04			
R MARROW		4.1E-03		
		33/16/51		
BONE SURF		4.1E-02		
		33/16/51		
ULI WALL	1.1E-02			
LLI WALL	2.9E-02	4.8E-03	1.2E-02	
		94/3/3	63/10/27	
C.E.D.E.	2.6E-03	2.3E-03	3.4E-03	

^{119M}Sn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		1.7E-03*	4.4E-02*	
		15/8/77	0/0/100	
GONADS		8.1E-04*		
		33/16/51		
BREAST		8.1E-04*		
		32/16/52		
R MARROW		6.7E-03*		
		32/16/52		
BONE SURF		1.6E-02*		
		32/16/52		
ULI WALL	5.2E-03	1.6E-03		
		65/9/26		
LLI WALL	1.5E-02	3.1E-03		
		80/6/14		
C.E.D.E.	1.2E-03	2.1E-03*	5.3E-03*	

^{121M}Sn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		3.3E-03*	7.4E-02*	
		25/12/63	0/0/100	
R MARROW	8.5E-04*	2.0E-02*		
		32/16/52		
GONADS		2.6E-03*		
		32/16/52		
BREAST		2.6E-03*		
		32/16/52		
BONE SURF		5.6E-02*		
		32/16/52		
ULI WALL	4.1E-03			
LLI WALL	1.7E-02	5.2E-03		
		65/9/26		
C.E.D.E.	1.3E-03*	5.8E-03*	8.9E-03*	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{121}Sn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		8.5E-04 1/2/97	2.0E-03 0/3/97	
R MARROW		1.8E-04 39/19/42		
BONE SURF		2.0E-03 39/19/42		
SI WALL	1.1E-03	1.8E-04 92/4/4		
ULI WALL	4.8E-03	7.4E-04 96/3/1	1.3E-03 71/12/17	
LLI WALL	8.9E-03	1.3E-03 97/2/1	2.4E-03 71/12/17	
C.E.D.E.	8.9E-04	3.2E-04	4.7E-04	

^{123M}Sn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		2.6E-04 1/9/90	2.9E-04 0/16/84	
ST WALL	1.0E-03	1.2E-04 98/1/1		
SI WALL	4.8E-04	5.9E-05 98/2/0		
ULI WALL	2.1E-04			
C.E.D.E.	1.0E-04	4.2E-05	3.5E-05	

^{123}Sn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		8.5E-03 10/6/84	2.3E-01 0/0/100	
GONADS		2.8E-03 32/16/52		
BREAST		2.8E-03 32/16/52		
R MARROW		2.1E-02 32/16/52		
BONE SURF		5.9E-02 32/16/52		
ULI WALL	3.2E-02	7.8E-03 74/7/19		
LLI WALL	9.6E-02	1.7E-02 87/5/8	4.8E-02 55/9/36	
C.E.D.E.	7.7E-03	7.9E-03	3.0E-02	

^{125}Sn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		9.6E-03 3/2/95	8.1E-02 0/1/99	
GONADS		9.6E-04* 43/14/43		
R MARROW		1.3E-02* 33/16/51		
BONE SURF		1.9E-02* 33/16/51		
ULI WALL	4.8E-02	8.1E-03 91/4/5	2.0E-02 64/10/26	
LLI WALL	1.4E-01	2.2E-02 95/3/2	5.6E-02 64/10/26	
C.E.D.E.	1.1E-02	5.4E-03*	1.4E-02	

^{126}Sn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		5.9E-02* 27/14/59	5.6E-01* 1/1/98	
GONADS	8.9E-03*	5.2E-02* 33/16/51		
R MARROW	1.0E-02*	2.1E-01* 32/16/52	6.3E-02* 25/28/47	
BREAST		5.2E-02* 32/16/52		
BONE SURF		4.4E-01* 32/16/52		
SI WALL	1.6E-02	5.2E-02 35/15/50		
ULI WALL	5.9E-02	5.9E-02 42/14/44		
LLI WALL	1.6E-01	7.8E-02 52/12/36		
REMAINDER		7.0E-02 32/16/52		
W_T		0.12		
C.E.D.E.	1.7E-02*	8.6E-02*	7.4E-02*	

^{127}Sn

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		1.0E-03 2/5/93	1.7E-03 0/8/92	
GONADS	3.4E-04	7.8E-05 79/10/11		
R MARROW		1.4E-04 43/17/40		
ST WALL	2.3E-03	3.6E-04 90/3/7		
SI WALL	2.6E-03	4.1E-04 94/3/3		
ULI WALL	3.4E-03	5.2E-04 95/3/2	4.4E-04 69/15/16	
LLI WALL	2.6E-03	4.1E-04 94/4/2	7.0E-04 67/12/21	
C.E.D.E.	7.4E-04	2.6E-04	2.7E-04	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

	^{128}Sn			
	Ingestion	Inhalation		
CLASS		D	W	Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		1.0E-03	1.1E-03	
		1/6/93	0/13/87	
GONADS	1.8E-04			
ST WALL	3.1E-03	4.8E-04		
		95/2/3		
SI WALL	2.6E-03	3.5E-04		
		97/2/1		
ULI WALL	1.9E-03	2.5E-04		
		95/3/2		
LLI WALL	3.6E-04			
C.E.D.E.	5.2E-04	1.8E-04	1.4E-04	

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^{115}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			1.3E-04 2/10/88	1.4E-04 0/16/84	
GONADS	2.2E-05	2.2E-05			
ST WALL	5.9E-04	5.9E-04	6.7E-05 94/2/4		
SI WALL	2.4E-04	2.5E-04	2.8E-05 95/3/2		
ULI WALL	1.3E-04	1.3E-04			
C.E.D.E.	6.3E-05	6.3E-05	2.1E-05	1.7E-05	

^{116M}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			2.5E-04 4/8/88	2.8E-04 1/15/84	
GONADS	1.8E-04	1.9E-04	3.5E-05 84/10/6		
BREAST	4.8E-05	4.8E-05	2.7E-05 45/15/40		
R MARROW	5.9E-05	5.9E-05	2.9E-05 49/15/36		
ST WALL	1.1E-03	1.1E-03	1.6E-04 88/3/9	5.9E-05 51/21/28	
SI WALL	7.8E-04	7.8E-04	1.1E-04 93/4/3		
ULI WALL	7.0E-04	7.0E-04	1.0E-04 91/5/4		
LLI WALL	1.7E-04	1.8E-04			
REMAINDER	2.5E-04	2.5E-04	6.3E-05 62/8/30		
WT	0.06	0.06	0.06		
C.E.D.E.	2.4E-04	2.4E-04	7.2E-05	3.7E-05	

^{116}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			1.2E-04 1/14/85	1.3E-04 0/19/81	
GONADS	1.7E-05	1.8E-05			
ST WALL	7.0E-04	7.0E-04	5.9E-05 93/2/5		
SI WALL	1.6E-04	1.6E-04			
C.E.D.E.	5.6E-05	5.6E-05	1.8E-05	1.6E-05	

^{117}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			8.9E-05 2/5/93	1.1E-04 0/11/89	
GONADS	5.6E-05	5.9E-05	1.1E-05 85/9/6	5.6E-06 69/24/7	
R MARROW	1.9E-05	1.9E-05	9.6E-06 55/15/30		
ST WALL	1.9E-04	2.0E-04	3.3E-05 88/4/8		
SI WALL	2.5E-04	2.6E-04	3.7E-05 94/4/2	2.2E-05 74/20/6	
ULI WALL	3.4E-04	3.5E-04	5.2E-05 95/3/2	2.9E-05 74/20/6	
LLI WALL	1.3E-04	1.4E-04	2.1E-05 92/5/3		
C.E.D.E.	7.0E-05	7.4E-05	2.3E-05	1.7E-05	

^{118M}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			5.5E-04 6/5/89	7.0E-04 2/9/89	
GONADS	1.0E-03	1.1E-03	2.1E-04 86/7/7	1.5E-04 70/20/10	
BREAST	1.8E-04	1.9E-04	1.1E-04 47/13/40	8.1E-05 28/18/54	
R MARROW	2.7E-04	2.8E-04	1.3E-04 53/13/34	9.2E-05 35/19/46	
LIVER			1.8E-04 44/14/42		
ST WALL	1.3E-03	1.3E-03	2.9E-04 74/6/20	2.4E-04 53/17/30	
SI WALL	2.3E-03	2.4E-03	4.1E-04 90/5/5	3.2E-04 72/18/10	
ULI WALL	3.4E-03	3.6E-03	5.5E-04 92/4/4	4.8E-04 72/18/10	
LLI WALL	1.7E-03	1.9E-03	3.2E-04 89/6/5	2.4E-04 73/19/8	
REMAINDER	6.7E-04	7.0E-04		1.6E-04 5/12/83	
WT	0.06	0.06		0.06	
C.E.D.E.	8.9E-04	9.3E-04	2.6E-04	2.3E-04	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{119}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			3.0E-04	7.8E-04	
			2/2/96	0/3/97	
GONADS	1.3E-04	1.4E-04	3.7E-05	4.8E-05	
			70/10/20	68/14/18	
R MARROW			6.3E-05		
			42/17/41		
BONE SURF			3.1E-04		
			39/18/43		
LIVER			8.1E-05		
			38/18/44		
SI WALL	4.1E-04	4.4E-04	7.8E-05		
			84/6/10		
ULI WALL	1.4E-03	1.6E-03	2.4E-04	4.8E-04	
			94/3/3	70/12/18	
LLI WALL	2.8E-03	3.0E-03	4.4E-04	9.3E-04	
			95/3/2	69/12/19	
C.E.D.E.	3.1E-04	3.4E-04	1.1E-04	1.9E-04	

^{122}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			5.9E-03	2.1E-02	
			3/2/95	0/2/98	
GONADS			5.9E-04		
			55/13/32		
R MARROW			1.4E-03		
			38/17/45		
LIVER			2.1E-03		
			37/17/46		
SI WALL			1.4E-03		
			79/7/14		
ULI WALL	2.8E-02	3.1E-02	4.8E-03	1.1E-02	
			92/4/4	68/11/21	
LLI WALL	6.7E-02	7.4E-02	1.1E-02	2.5E-02	
			95/3/2	68/11/21	
C.E.D.E.	5.7E-03	6.3E-03	2.2E-03	4.7E-03	

^{124M}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			4.1E-05	7.0E-05	
			2/12/86	0/10/90	
GONADS	5.9E-06	5.9E-06			
ST WALL	2.0E-04	2.0E-04	2.1E-05		
			94/2/4		
SI WALL	6.3E-05	6.3E-05			
ULI WALL	2.9E-05	3.0E-05			
LLI WALL		2.1E-05			
C.E.D.E.	1.9E-05	2.0E-05	6.1E-06	8.4E-06	

^{126}Sb (16M)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			7.8E-05	8.5E-05	
			1/14/85	0/19/81	
ST WALL	4.1E-04	4.1E-04	3.4E-05		
			97/1/2		
SI WALL	9.2E-05	9.2E-05			
C.E.D.E.	3.0E-05	3.0E-05	1.1E-05	1.0E-05	

^{126}Sb (8D)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			2.7E-03	1.1E-02	
			14/7/79	1/2/97	
GONADS	7.4E-03	8.1E-03	2.1E-03	3.3E-03	
			68/9/23	63/12/25	
R MARROW	1.9E-03	1.7E-03	1.8E-03	1.6E-03	
			41/14/45	33/12/55	
BREAST			1.2E-03	1.3E-03	
			39/13/48	25/10/65	
LIVER			3.1E-03		
			35/15/50		
BONE SURF			2.8E-03		
			36/15/49		
SI WALL	8.1E-03	8.9E-03	2.4E-03	3.7E-03	
			66/9/25	61/12/27	
ULI WALL	1.3E-02	1.4E-02	3.2E-03	5.9E-04	
			73/8/19	63/11/26	
LLI WALL	2.3E-02	2.6E-02	4.8E-03	1.0E-02	
			82/6/12	65/11/24	
REMAINDER	3.4E-03	3.5E-03	1.8E-03	2.4E-03	
			34/14/52	3/4/93	
W_T	0.06	0.06	0.06	0.06	
C.E.D.E.	5.0E-03	5.4E-03	2.2E-03	3.5E-03	

^{124}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			7.4E-03	1.5E-01	
			11/6/83	0/0/100	
GONADS	6.3E-03	6.7E-03	3.4E-03		
			51/12/37		
BREAST			2.4E-03		
			36/15/49		
R MARROW			5.5E-03		
			35/15/50		
BONE SURF			1.3E-02		
			34/15/51		
LIVER			9.3E-03		
			34/15/51		
SI WALL	1.0E-02	1.0E-02	4.1E-03		
			56/11/33		
ULI WALL	3.0E-02	3.3E-02	7.0E-03		
			74/7/19		
LLI WALL	7.8E-02	8.5E-02	1.5E-02	4.1E-02	
			86/5/9	58/9/33	
REMAINDER			3.7E-03		
			34/15/51		
W_T			0.06		
C.E.D.E.	8.7E-03	9.3E-03	5.5E-03	2.1E-02	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{125}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			2.4E-03	8.1E-02	
			14/7/79	0/0/100	
GONADS	1.9E-03	2.0E-03	1.2E-03		
			48/13/39		
BREAST			9.3E-04		
			35/15/50		
R MARROW			2.4E-03		
			35/15/50		
BONE SURF			1.0E-02		
			34/15/51		
LIVER			4.1E-03		
			34/15/51		
SI WALL	2.8E-03	2.9E-03	1.4E-03		
			51/12/37		
ULI WALL	8.1E-03	8.9E-03	2.3E-03		
			67/9/24		
LLI WALL	2.1E-02	2.3E-02	4.1E-03		
			82/6/12		
REMAINDER			1.3E-03		
			33/15/52		
W_T			0.06		
C.E.D.E.	2.4E-03	2.6E-03	2.1E-03	9.8E-03	

^{126M}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			1.8E-04	2.1E-04	
			1/13/86	0/17/83	
ST WALL	9.6E-04	9.6E-04	8.9E-05		
			95/2/3		
SI WALL	2.6E-04	2.6E-04			
C.E.D.E.	7.3E-05	7.3E-05	2.8E-05	2.5E-05	

^{126}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			6.7E-03	5.2E-02	
			11/6/83	0/1/99	
GONADS	1.0E-02	1.1E-02	3.4E-03	4.8E-03	
			62/10/28	59/12/29	
BREAST			2.2E-03		
			37/14/49		
R MARROW			4.1E-03		
			38/14/48		
BONE SURF			6.3E-03		
			35/15/50		
LIVER			7.0E-03		
			34/15/51		
SI WALL	1.3E-02	1.3E-02	4.1E-03		
			62/10/28		
ULI WALL	2.9E-02	3.1E-02	6.7E-03	1.4E-02	
			75/7/18	61/10/29	
LLI WALL	6.7E-02	7.0E-02	1.2E-02	3.0E-02	
			86/5/9	63/10/27	
REMAINDER			3.3E-03		
			33/14/53		
W_T			0.06		
C.E.D.E.	9.0E-03	9.6E-03	4.6E-03	1.0E-02	

^{127}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			5.2E-03	2.6E-02	
			4/3/93	0/1/99	
GONADS	2.2E-03	2.3E-03	8.5E-04		
			58/11/31		
BREAST			5.9E-04		
			38/15/47		
R MARROW			1.8E-03		
			37/16/47		
LIVER			2.7E-03		
			36/16/48		
SI WALL			1.4E-03		
			72/8/20		
ULI WALL	2.5E-02	2.7E-02	4.4E-03	1.1E-02	
			88/5/7	66/10/24	
LLI WALL	6.7E-02	7.4E-02	1.1E-02	2.7E-02	
			94/3/3	67/10/23	
C.E.D.E.	6.0E-03	6.6E-03	2.3E-03	5.4E-03	

^{128}Sb (9H)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			4.8E-03	7.0E-03	
			2/3/95	0/6/94	
GONADS	1.7E-03	1.8E-03	4.1E-04	3.5E-04	
			78/10/12	70/19/11	
ST WALL	4.8E-03	4.8E-03			
SI WALL	8.9E-03	9.6E-03	1.5E-03	1.7E-03	
			92/4/4	73/16/11	
ULI WALL	2.3E-02	2.5E-02	3.6E-03	4.4E-03	
			95/3/2	74/15/11	
LLI WALL	2.3E-02	2.4E-02	3.6E-03	4.4E-03	
			95/3/2	75/15/10	
C.E.D.E.	4.0E-03	4.3E-03	1.2E-03	1.6E-03	

^{128}Sb (10M)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			9.2E-05	9.6E-05	
			1/16/83	0/20/80	
GONADS	1.4E-05	1.4E-05			
ST WALL	5.9E-04	5.9E-04	4.1E-05		
			92/2/6		
SI WALL	1.0E-04	1.0E-04			
REMAINDER	7.8E-05	7.8E-05			
W_T	0.06	0.06			
C.E.D.E.	5.0E-05	5.0E-05	1.4E-05	1.2E-05	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{129}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			2.4E-03	3.3E-03	
			2/3/95	0/8/92	
GONADS	5.5E-04	5.5E-04	1.4E-04		
			77/12/11		
ST WALL	2.7E-03	2.7E-03	5.2E-04		
			87/5/8		
SI WALL	5.2E-03	5.5E-03	8.1E-04	7.0E-04	
			95/3/2	74/18/8	
ULI WALL	1.1E-02	1.1E-02	1.6E-03	1.3E-03	
			97/2/1	75/17/8	
LLI WALL	6.7E-03	7.0E-03	1.0E-03	8.5E-04	
			95/3/2	75/17/8	
C.E.D.E.	1.7E-03	1.7E-03	5.6E-04	5.7E-04	

^{130}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			4.8E-04	5.2E-04	
			2/9/89	0/16/84	
GONADS	1.1E-04	1.1E-04			
ST WALL	2.1E-03	2.1E-03	2.6E-04		
			94/2/4		
SI WALL	1.0E-03	1.0E-03	1.3E-04		
			95/3/2		
ULI WALL	5.9E-04	6.3E-04			
C.E.D.E.	2.5E-04	2.6E-04	8.1E-05	6.2E-05	

^{131}Sb

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-02	1.0E-01	1.0E-02	
LUNGS			4.1E-04	4.8E-04	
			1/9/90	0/15/85	
GONADS	4.1E-05	4.1E-05			
THYROID	3.4E-03	3.4E-03	2.1E-03	2.1E-03	
			47/13/40	47/13/40	
ST WALL	1.7E-03	1.7E-03	2.1E-04		
			96/2/2		
SI WALL	8.1E-04	8.1E-04			
ULI WALL	3.7E-04	3.7E-04			
C.E.D.E.	2.9E-04	2.9E-04	1.3E-04	1.2E-04	

TELLURIUM

^{116}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS		1.0E-03 2/4/94	1.3E-03 0/10/90	
GONADS	4.1E-04	9.6E-05 81/11/8		
ST WALL	1.8E-03	3.6E-04 88/4/8		
SI WALL	2.7E-03	4.4E-04 95/3/2		
ULI WALL	3.6E-03	5.5E-04 95/3/2	2.8E-04 74/20/6	
LLI WALL	1.3E-03	2.3E-04 91/6/3		
C.E.D.E.	6.7E-04	2.4E-04	1.7E-04	

^{121M}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS			5.9E-02 1/1/98	
GONADS	2.7E-03*	4.4E-03* 38/15/47		
R MARROW	1.4E-02*	3.5E-02* 36/15/49	1.6E-02* 38/21/41	
BONE SURF	1.0E-01*	2.6E-01* 36/15/49	1.0E-01* 41/23/36	
ULI WALL	6.7E-03			
LLI WALL	1.6E-02			
C.E.D.E.	6.7E-03*	1.3E-02*	1.2E-02*	

^{121}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS		1.1E-03 21/9/70	7.0E-03 2/1/97	
GONADS	2.2E-03	1.0E-03 54/12/34	1.1E-03 58/13/29	
BREAST	4.8E-04	7.4E-04 37/14/49	7.4E-04 23/10/67	
R MARROW	1.1E-03	1.8E-03 38/15/47	1.1E-03 34/16/50	
BONE SURF		3.7E-03 36/15/49		
SI WALL	2.3E-03	1.0E-03 55/11/34		
ULI WALL	3.5E-03	1.2E-03 62/10/28	1.7E-03 57/11/32	
LLI WALL	6.3E-03	1.7E-03 70/8/22	2.8E-03 61/11/28	
REMAINDER	9.6E-04	1.1E-03 35/15/50		
W_T	0.06	0.12		
C.E.D.E.	1.5E-03	1.2E-03	1.6E-03	

^{123M}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS			4.8E-02 0/0/100	
R MARROW	8.5E-03*	2.1E-02* 36/15/49	8.9E-03* 40/23/37	
BONE SURF	8.9E-02*	2.3E-01* 36/15/49	8.9E-02* 42/24/34	
ULI WALL	6.3E-03			
LLI WALL	1.7E-02			
C.E.D.E.	5.1E-03*	9.3E-03*	9.5E-03*	

^{123}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
R MARROW	8.5E-03*	2.2E-02* 36/15/49	9.6E-03* 38/22/40	
BONE SURF	1.0E-01*	2.6E-01* 36/15/49	1.1E-01* 38/22/40	
C.E.D.E.	4.1E-03*	1.1E-02*	4.6E-03*	

^{125M}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS			3.7E-02 0/0/100	
R MARROW	4.4E-03	1.1E-02 36/15/49	4.1E-03 44/25/31	
BONE SURF	4.8E-02	1.2E-01 36/15/49	4.4E-02 45/26/29	
ULI WALL	6.3E-03			
LLI WALL	1.7E-02		8.1E-03 58/9/33	
C.E.D.E.	3.4E-03	4.9E-03	6.7E-03	

^{127M}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS			1.2E-01 0/0/100	
R MARROW	2.0E-02	5.2E-02 36/15/49	2.0E-02 43/24/33	
BONE SURF	7.8E-02	1.9E-01 36/15/49	7.4E-02 43/24/33	
ULI WALL	1.1E-02			
LLI WALL	4.1E-02			
C.E.D.E.	7.9E-03	1.2E-02	1.9E-02	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{127}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS		1.0E-03	1.6E-03	
		1/3/96	0/6/94	
ST WALL	8.9E-04			
SI WALL	1.4E-03	2.4E-04		
		93/4/3		
ULI WALL	4.4E-03	8.7E-04	7.8E-04	
		97/2/1	74/15/11	
LLI WALL	4.8E-03	7.0E-04	8.5E-04	
		97/2/1	74/15/11	
C.E.D.E.	6.9E-04	2.2E-04	2.9E-04	

^{129M}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS		8.1E-03	1.5E-01	
		7/3/90	0/0/100	
R MARROW	1.3E-02	3.3E-02		
		36/15/49		
BONE SURF	3.0E-02	7.4E-02		
		36/15/49		
ULI WALL	3.1E-02			
LLI WALL	9.3E-02	1.6E-02	4.1E-02	
		91/4/5	60/9/31	
C.E.D.E.	9.9E-03	8.0E-03	2.0E-02	

^{129}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS		4.8E-04	5.5E-04	
		1/7/92	0/14/86	
ST WALL	1.5E-03	1.9E-04		
		98/2/0		
SI WALL	1.0E-03	1.3E-04		
		98/2/0		
ULI WALL	7.0E-04			
C.E.D.E.	1.9E-04	7.7E-05	8.7E-05	

^{131M}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS		3.4E-03	8.1E-03	
		4/3/93	1/3/96	
GONADS	3.1E-02			
THYROID	1.4E-01	1.1E-01	1.2E-01	
		43/12/45	42/11/47	
ULI WALL	1.7E-02			
LLI WALL	3.0E-02		8.9E-03	
			71/12/17	
C.E.D.E.	1.5E-02	3.6E-03	5.5E-03	

^{131}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS		2.7E-04	3.0E-04	
		1/6/93	0/12/88	
THYROID	3.3E-03	2.1E-03	2.1E-03	
		48/12/40	47/13/40	
ST WALL	1.2E-03			
SI WALL	4.1E-04			
ULI WALL	1.4E-05			
C.E.D.E.	2.0E-04	9.6E-05	9.9E-05	

^{132}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS			6.3E-03	
			7/3/90	
THYROID	2.2E-01	2.2E-01	2.3E-01	
		40/13/47	35/10/55	
LLI WALL	1.4E-02			
C.E.D.E.	7.4E-03	6.5E-03	7.7E-03	

^{133M}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS		6.7E-04	7.8E-04	
		2/8/90	1/14/85	
THYROID	1.6E-02	9.6E-03	9.6E-03	
		47/13/40	47/13/40	
ST WALL	2.4E-03			
SI WALL	1.5E-03			
ULI WALL	1.0E-03			
C.E.D.E.	7.6E-04	3.7E-04	3.8E-04	

^{133}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS		1.6E-04	1.7E-04	
		1/15/84	0/19/81	
THYROID	3.5E-03	2.2E-03	2.2E-03	
		47/13/40	47/13/40	
ST WALL	8.9E-04			
C.E.D.E.	1.6E-04	8.5E-05	8.6E-05	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{134}Te

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01	2.0E-01	
LUNGS		2.2E-04 7/10/83	2.4E-04 5/15/80	
GONADS	7.4E-05	3.3E-05 55/13/32	2.8E-05 47/15/38	
THYROID	3.3E-03	2.0E-03 47/13/40	2.1E-03 47/13/40	
ST WALL	8.5E-04	1.3E-04 85/4/11		
SI WALL	4.4E-04			
ULI WALL	2.7E-04			
C.E.D.E.	2.1E-04	1.0E-04	9.8E-05	

IODINE

^{120M}I

CLASS	Ingestion	Inhalation D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		1.1E-03		
		2/8/90		
THYROID	4.8E-03	2.1E-03		
		71/23/6		
ST WALL	4.1E-03	5.2E-04		
		94/2/4		
C.E.D.E.	3.9E-04	2.2E-04		

^{120}I

CLASS	Ingestion	Inhalation D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		1.6E-03		
		2/6/92		
THYROID	1.3E-02	5.9E-03		
		71/22/7		
ST WALL	4.8E-03	6.3E-04		
		95/2/3		
C.E.D.E.	6.7E-04	4.1E-04		

^{121}I

CLASS	Ingestion	Inhalation D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		1.7E-04		
		3/5/92		
THYROID	5.2E-03	2.8E-03		
		56/15/29		
ST WALL	4.1E-04			
C.E.D.E.	1.8E-04	1.0E-04		

^{123}I

CLASS	Ingestion	Inhalation D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		2.4E-04		
		3/2/95		
THYROID	1.6E-02	8.1E-03		
		59/16/25		
C.E.D.E.	4.9E-04	2.7E-04		

^{124}I

CLASS	Ingestion	Inhalation D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
THYROID	1.0E+00	6.3E-01		
		50/13/37		
C.E.D.E.	3.1E-02	1.9E-02		

^{125}I

CLASS	Ingestion	Inhalation D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
THYROID	1.3E+00	8.1E-01		
		48/13/39		
C.E.D.E.	3.8E-02	2.4E-02		

^{126}I

CLASS	Ingestion	Inhalation D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
THYROID	2.4E+00	1.4E+00		
		48/13/39		
C.E.D.E.	7.1E-02	4.3E-02		

^{128}I

CLASS	Ingestion	Inhalation D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		2.7E-04		
		1/12/87		
THYROID	4.1E-04	2.0E-04		
		70/26/4		
ST WALL	1.2E-03	1.2E-04		
		99/1/0		
C.E.D.E.	8.5E-05	4.5E-05		

^{129}I

CLASS	Ingestion	Inhalation D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
THYROID	9.3E+00*	5.9E+00*		
		47/13/40		
C.E.D.E.	2.8E-01*	1.8E-01*		

^{130}I

CLASS	Ingestion	Inhalation D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		2.2E-03		
		3/3/94		
THYROID	1.4E-01	7.4E-02		
		60/16/24		
C.E.D.E.	4.3E-03	2.5E-03		

^{131}I

CLASS	Ingestion	Inhalation D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
THYROID	1.8E+00	1.1E+00		
		49/13/38		
C.E.D.E.	5.3E-02	3.2E-02		

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{132M}I

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		6.7E-04 3/3/94		
THYROID	1.4E-02	5.9E-03 69/20/11		
ST WALL	1.0E-03			
C.E.D.E.	4.7E-04	2.6E-04		

^{132}I

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		1.0E-03 3/5/92		
THYROID	1.4E-02	6.3E-03 70/20/10		
ST WALL	2.3E-03	3.7E-04 90/3/7		
C.E.D.E.	5.7E-04	3.3E-04		

^{133}I

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
THYROID	3.4E-01	1.8E-01 57/15/28		
C.E.D.E.	1.0E-02	5.4E-03		

^{134}I

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		5.2E-04 2/8/90		
THYROID	2.3E-03	1.1E-03 71/23/6		
ST WALL	2.0E-03	2.6E-04 94/2/4		
C.E.D.E.	1.9E-04	1.1E-04		

^{135}I

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		1.6E-03 2/3/95		
THYROID	6.7E-02	3.1E-02 64/18/18		
C.E.D.E.	2.0E-03	1.1E-03		

CESIUM

^{125}Cs

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		2.3E-04		
		0/8/92		
ST WALL	9.3E-04	1.1E-04		
		97/1/2		
C.E.D.E.	5.5E-05	3.4E-05		

^{127}Cs

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	5.6E-05	2.2E-04		
		7/4/89		
GONADS	5.6E-05	2.6E-05		
		63/17/20		
BREAST	4.8E-05	2.9E-05		
		49/14/47		
R MARROW	6.3E-05	3.5E-05		
		52/14/34		
ST WALL	3.4E-04	7.8E-05		
		75/7/18		
ULI WALL	6.7E-05			
REMAINDER	1.1E-04	4.8E-05		
		52/11/37		
WT	0.18	0.12		
C.E.D.E.	8.0E-05	5.2E-05		

^{129}Cs

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	1.8E-04	4.1E-04		
		14/5/81		
GONADS	2.0E-04	1.1E-04		
		54/14/32		
BREAST	1.7E-04	1.0E-04		
		48/13/39		
R MARROW	2.3E-04	1.4E-04		
		50/13/37		
BONE SURF	2.1E-04			
ST WALL	4.1E-04	1.6E-04		
		58/11/31		
SI WALL	2.3E-04			
REMAINDER	2.5E-04	1.4E-04		
		48/12/40		
WT	0.18	0.24		
C.E.D.E.	2.2E-04	1.5E-04		

^{130}Cs

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		1.8E-04		
		1/11/88		
ST WALL	8.1E-04	8.5E-05		
		97/1/2		
C.E.D.E.	4.9E-05	2.6E-05		

^{131}Cs

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	2.3E-04	2.7E-04		
		26/7/67		
GONADS	2.3E-04	1.4E-04		
		49/13/38		
BREAST	2.0E-04	1.2E-04		
		48/13/39		
R MARROW	3.7E-04	2.3E-04		
		48/13/39		
BONE SURF	3.3E-04	2.1E-04		
		48/13/39		
ST WALL	2.7E-04	1.4E-04		
		51/12/37		
SI WALL	2.4E-04	1.5E-04		
		49/13/38		
ULI WALL	2.4E-04	1.5E-04		
		49/13/38		
REMAINDER	2.4E-04	1.4E-04		
		48/13/39		
WT	0.12	0.12		
C.E.D.E.	2.4E-04	1.6E-04		

^{132}Cs

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	1.7E-03	1.6E-03		
		32/9/59		
GONADS	1.9E-03	1.2E-03		
		49/13/38		
BREAST	1.6E-03	1.0E-03		
		47/13/40		
R MARROW	1.9E-03	1.2E-03		
		48/13/39		
BONE SURF	1.7E-03	1.1E-03		
		48/13/39		
THYROID		1.0E-03		
		47/13/40		
ST WALL	2.2E-03			
SI WALL	2.1E-03	1.3E-03		
		49/13/38		
ULI WALL		1.3E-03		
		49/13/38		
LLI WALL	2.1E-03	1.3E-03		
		49/13/38		
REMAINDER	2.3E-03	1.4E-03		
		47/13/40		
WT	0.12	0.12		
C.E.D.E.	1.9E-03	1.2E-03		

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{134M}Cs

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	2.4E-05	2.4E-04 3/4/93		
GONADS	2.5E-05	1.3E-05 56/16/28		
BREAST	2.3E-05			
R MARROW	2.6E-05			
ST WALL	4.4E-04	7.0E-05 90/4/6		
C.E.D.E.	4.2E-05	3.6E-05		

^{134}Cs

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	6.7E-02	4.4E-02 45/12/43		
GONADS	7.8E-02	4.8E-02 47/13/40		
BREAST	6.3E-02	4.1E-02 47/13/40		
R MARROW	7.0E-02	4.4E-02 47/13/40		
THYROID	6.7E-02	4.1E-02 47/13/40		
BONE SURF	6.3E-02	4.1E-02 47/13/40		
SI WALL	8.1E-02	5.2E-02 47/13/40		
LLI WALL	8.1E-02	5.2E-02 47/13/40		
REMAINDER	8.5E-02	5.8E-02 47/13/40		
WT	0.18	0.18		
C.E.D.E.	7.4E-02	4.7E-02		

^{135M}Cs

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	2.4E-05	8.5E-05 6/9/85		
GONADS	1.6E-05	7.4E-06 70/23/7		
BREAST	2.1E-05	1.2E-05 44/15/41		
R MARROW		1.1E-05 45/16/39		
ST WALL	4.1E-04	6.3E-05 85/4/11		
REMAINDER	1.2E-04	2.8E-05 61/8/31		
WT	0.12	0.24		
C.E.D.E.	4.9E-05	2.8E-05		

^{135}Cs

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	7.0E-03*	5.2E-03* 41/11/48		
GONADS	7.0E-03*	4.4E-03* 47/13/40		
BREAST	7.0E-03*	4.4E-03* 47/13/40		
R MARROW	7.0E-03*	4.4E-03* 47/13/40		
THYROID	7.0E-03*	4.4E-03* 47/13/40		
BONE SURF	7.0E-03*	4.4E-03* 47/13/40		
ST WALL	7.4E-03	4.4E-03 48/13/39		
SI WALL	7.0E-03	4.4E-03 47/13/40		
ULI WALL	7.0E-03	4.4E-03 47/13/40		
LLI WALL	7.0E-03	4.4E-03 47/13/40		
REMAINDER	7.0E-03*	4.4E-03* 47/13/40		
WT	0.06	0.06		
C.E.D.E.	7.1E-03*	4.5E-03*		

^{136}Cs

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	9.6E-03	8.5E-03 34/9/57		
GONADS	1.1E-02	7.0E-03 48/13/39		
BREAST	9.6E-03	6.3E-03 47/13/40		
R MARROW	1.1E-02	7.0E-03 47/13/40		
THYROID	1.0E-02	6.3E-03 47/13/40		
BONE SURF	1.0E-02	6.3E-03 48/13/39		
SI WALL	1.3E-02	7.8E-03 48/13/39		
LLI WALL	1.3E-02	7.8E-03 48/13/39		
REMAINDER	1.4E-02	8.9E-03 48/13/39		
WT	0.18	0.18		
C.E.D.E.	1.1E-02	7.5E-03		

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{137}Cs

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	4.8E-02	3.3E-02 43/12/45		
GONADS	5.2E-02	3.3E-02 47/13/40		
BREAST	4.4E-02	2.9E-02 47/13/40		
R MARROW	4.8E-02	3.1E-02 47/13/40		
THYROID	4.8E-02	2.9E-02 47/13/40		
BONE SURF	4.8E-02	2.9E-02 47/13/40		
SI WALL	5.2E-02	3.4E-02 47/13/40		
ULI WALL	5.2E-02	3.3E-02 47/13/40		
LLI WALL	5.2E-02	3.4E-02 47/13/40		
REMAINDER	5.6E-02	3.5E-02 47/13/40		
WT	0.12	0.12		
C.E.D.E.	5.0E-02	3.2E-02		

^{138}Cs

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		5.9E-04 1/10/89		
ST WALL	2.6E-03	2.8E-04 97/1/2		
C.E.D.E.	1.6E-04	8.8E-05		

BARIUM

^{126}Ba

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01		
LUNGS		1.9E-03 1/5/94		
GONADS	1.6E-04			
ST WALL	4.8E-03	6.7E-04 96/2/2		
SI WALL	4.4E-03	5.9E-04 97/2/1		
ULI WALL	4.1E-03	5.5E-04 97/2/1		
LLI WALL	1.0E-03			
C.E.D.E.	9.0E-04	3.3E-04		

^{128}Ba

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01		
LUNGS		8.5E-03 1/2/97		
GONADS	2.9E-03	7.4E-04 71/9/20		
R MARROW		1.3E-03 40/16/44		
SI WALL	1.1E-02	2.0E-03 87/5/8		
ULI WALL	4.4E-02	7.4E-03 95/3/2		
LLI WALL	1.0E-01	1.6E-02 96/3/1		
C.E.D.E.	1.0E-02	2.9E-03		

^{131M}Ba

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01		
LUNGS		2.6E-05 1/14/85		
ST WALL	1.3E-04	1.1E-05 97/1/2		
SI WALL	2.9E-05			
C.E.D.E.	9.7E-06	3.8E-06		

^{131}Ba

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01		
LUNGS		9.6E-04 6/4/90		
GONADS	1.9E-03	4.8E-04 73/8/19		
BREAST		2.1E-04 39/12/49		
R MARROW		6.3E-04 40/14/46		
BONE SURF		2.6E-03 35/16/49		
ST WALL		3.1E-04 53/10/37		
SI WALL	2.3E-03	5.5E-04 75/7/18		
ULI WALL	5.2E-03	9.6E-04 85/5/10		
LLI WALL	1.1E-02	2.0E-03 91/4/5		
REMAINDER		2.8E-04 58/11/31		
W_T		0.06		
C.E.D.E.	1.6E-03	6.7E-04		

^{133M}Ba

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01		
LUNGS		1.9E-03 1/2/97		
R MARROW		2.1E-04 40/17/43		
SI WALL	2.2E-03	3.7E-04 90/4/6		
ULI WALL	1.0E-02	1.6E-03 96/3/1		
LLI WALL	2.0E-02	3.1E-03 96/3/1		
C.E.D.E.	2.0E-03	5.6E-04		

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{133}Ba

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01		
LUNGS	8.1E-04*	4.8E-03*		
		27/13/60		
GONADS	2.7E-03*	4.1E-03*		
		38/15/47		
BREAST	1.0E-03*	4.1E-03*		
		34/15/51		
R MARROW	5.5E-03*	2.4E-02*		
		34/15/51		
BONE SURF	7.4E-03*	3.5E-02*		
		34/16/50		
SI WALL	3.0E-03			
ULI WALL	6.3E-03			
LLI WALL	1.4E-02	6.3E-03		
		55/11/34		
REMAINDER		5.2E-03		
		34/15/51		
W_T		0.06		
C.E.D.E.	3.2E-03*	6.9E-03*		

^{135M}Ba

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01		
LUNGS		1.6E-03		
		1/2/97		
SI WALL	2.0E-03	3.4E-04		
		91/4/5		
ULI WALL	8.5E-03	1.3E-03		
		96/3/1		
LLI WALL	1.6E-02	2.4E-03		
		96/3/1		
C.E.D.E.	1.6E-03	4.4E-04		

^{139}Ba

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01		
LUNGS		9.3E-04		
		1/6/93		
ST WALL	2.6E-03	3.4E-04		
		99/1/0		
SI WALL	2.0E-03	2.7E-04		
		98/2/0		
ULI WALL	1.6E-03	2.1E-04		
		98/2/0		
LLI WALL	3.7E-04			
C.E.D.E.	3.9E-04	1.6E-04		

^{140}Ba

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01		
LUNGS		6.3E-03		
		5/3/92		
GONADS	3.7E-03	1.6E-03		
		55/11/34		
BREAST		1.1E-03		
		36/14/50		
R MARROW		4.8E-03		
		35/15/50		
BONE SURF		8.9E-03		
		34/16/50		
SI WALL		2.0E-03		
		64/9/27		
ULI WALL	2.8E-02	5.5E-03		
		85/5/10		
LLI WALL	9.6E-02	1.6E-02		
		93/4/3		
C.E.D.E.	8.4E-03	3.6E-03		

^{141}Ba

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01		
LUNGS		4.4E-04		
		1/9/90		
ST WALL	1.4E-03	1.4E-04		
		97/2/1		
SI WALL	7.0E-04	8.5E-05		
		97/2/1		
ULI WALL	8.1E-04	1.1E-04		
		97/2/1		
LLI WALL	4.4E-04			
C.E.D.E.	2.0E-04	7.4E-05		

^{142}Ba

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01		
LUNGS		2.0E-04		
		1/9/90		
GONADS	3.7E-05			
ST WALL	7.4E-04	8.1E-05		
		94/2/4		
SI WALL	4.1E-04	5.6E-05		
		95/3/2		
ULI WALL	3.5E-04	4.8E-05		
		95/3/2		
LLI WALL	8.9E-05			
C.E.D.E.	1.0E-04	3.6E-05		

LANTHANUM

^{131}La

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS		2.0E-04 2/8/90	2.5E-04 0/13/87	
GONADS	5.2E-05	1.3E-05 74/13/13		
LIVER		8.9E-05 36/18/46		
ST WALL	7.0E-04	9.6E-05 91/3/6		
SI WALL	4.8E-04	6.7E-05 92/4/4		
ULI WALL	3.5E-04	5.2E-05 88/5/7		
LLI WALL	1.1E-04			
C.E.D.E.	1.1E-04	4.5E-05	3.0E-05	

^{132}La

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS		1.9E-03 2/4/94	2.4E-03 0/9/91	
GONADS	8.9E-04	1.9E-04 83/9/8	1.2E-04 70/21/9	
LIVER		5.9E-04 50/23/27		
ST WALL	2.8E-03	5.2E-04 85/5/10		
SI WALL	4.8E-03	7.4E-04 93/4/3	5.9E-04 74/18/8	
ULI WALL	8.5E-03	1.3E-03 95/3/2	1.0E-03 75/17/8	
LLI WALL	5.2E-03	8.1E-04 95/3/2	6.3E-04 75/18/7	
C.E.D.E.	1.5E-03	5.1E-04	4.5E-04	

^{135}La

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS		9.6E-05 4/3/93	1.8E-04 1/4/95	
GONADS	1.3E-04	2.4E-05 86/6/8	3.2E-05 71/14/15	
R MARROW	3.7E-05	2.5E-05 49/15/36		
BREAST		8.9E-06 42/13/45		
LIVER		1.3E-04 40/20/40		
BONE SURF		5.9E-05 41/19/40		
ST WALL	8.1E-05	2.0E-05 73/7/20		
SI WALL	2.4E-04	4.1E-05 89/5/6	5.9E-05 71/14/15	
ULI WALL	5.5E-04	9.2E-05 93/4/3	1.4E-04 72/13/15	
LLI WALL	7.4E-04	1.1E-04 95/3/2	1.8E-04 72/13/15	
C.E.D.E.	1.3E-04	4.7E-05	5.2E-05	

^{137}La

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS		4.1E-02* 31/16/53	1.7E-02* 14/19/67	
GONADS	2.9E-04*			
R MARROW	2.6E-04*	8.5E-02* 32/16/52	2.2E-02* 25/33/42	
BONE SURF	7.8E-04*	3.7E-01* 32/16/52	9.3E-02* 25/33/42	
LIVER	1.6E-03*	7.8E-01* 32/16/52	1.9E-01* 25/33/42	
SI WALL	3.7E-04			
ULI WALL	9.3E-04			
LLI WALL	2.1E-03			
C.E.D.E.	4.3E-04*	7.3E-02*	1.9E-02*	

50-Year Committed Dose Equivalent Factors--rem/µCi Intake (Continued)

^{138}La

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS	2.1E-03*	9.3E-01*	3.0E-01*	
		31/16/53	20/27/53	
GONADS	5.5E-03*	5.6E-01*	1.4E-01*	
		32/16/52	25/33/42	
BREAST	1.8E-03*	5.9E-01*	1.5E-01*	
		32/16/52	25/32/43	
R MARROW	2.8E-03*	8.9E-01*	2.3E-01*	
		32/16/52	25/33/42	
BONE SURF	5.2E-03*	2.3E+00*	5.9E-01*	
		32/16/52	25/33/42	
LIVER	1.9E-02*	8.9E+00*	2.2E+00*	
		32/16/52	25/33/42	
SI WALL	6.3E-03			
ULI WALL	1.0E-02	8.9E-01	2.3E-01	
		32/16/52	26/33/41	
LLI WALL	1.9E-02			
REMAINDER	4.1E-03	1.7E+00	4.4E-01	
		32/16/52	25/33/42	
WT	-0.06	0.18	0.18	
C.E.D.E.	5.9E-03*	1.4E+00*	3.7E-01*	

^{140}La

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS		6.3E-03	1.6E-02	
		5/4/91	1/3/96	
GONADS	4.8E-03	1.3E-03	1.7E-03	
		71/9/20	67/14/19	
BREAST		7.4E-04		
		41/15/44		
R MARROW		1.7E-03		
		41/16/43		
LIVER		1.3E-02		
		37/18/45		
SI WALL	1.1E-02	2.4E-03	3.6E-03	
		79/7/14	67/13/20	
ULI WALL	3.4E-02	5.9E-03	1.1E-02	
		88/5/7	69/12/19	
LLI WALL	6.3E-02	1.0E-02	2.0E-02	
		95/3/2	69/12/19	
REMAINDER		1.6E-03		
		36/17/47		
WT		0.06		
C.E.D.E.	7.7E-03	3.4E-03	4.4E-03	

^{141}La

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS		2.4E-03	3.3E-03	
		1/4/95	0/9/91	
LIVER		7.8E-04		
		44/22/34		
ST WALL	3.4E-03	5.2E-04		
		95/3/2		
SI WALL	5.2E-03	7.8E-04		
		97/2/1		
ULI WALL	9.3E-03	1.3E-03	9.6E-04	
		97/2/1	75/18/7	
LLI WALL	5.2E-03	8.1E-04		
		97/2/1		
C.E.D.E.	1.4E-03	5.4E-04	4.5E-04	

^{142}La

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS		1.1E-03	1.3E-03	
		2/6/92	0/13/87	
GONADS	2.6E-04	5.9E-05		
		80/13/7		
ST WALL	3.1E-03	4.4E-04		
		94/2/4		
SI WALL	2.9E-03	4.1E-04		
		96/3/1		
ULI WALL	2.7E-03	3.7E-04		
		95/3/2		
LLI WALL	7.0E-04			
C.E.D.E.	6.3E-04	2.2E-04	1.6E-04	

^{143}La

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	
LUNGS		3.1E-04	4.1E-04	
		1/14/85	0/15/85	
LIVER		7.8E-05		
		36/18/46		
ST WALL	1.4E-03	1.1E-04		
		98/1/1		
SI WALL	3.2E-04			
ULI WALL	2.0E-04			
LLI WALL	3.1E-04		1.0E-04	
			69/12/19	
C.E.D.E.	1.4E-04	4.8E-05	5.5E-05	

CERIUM

^{134}Ce

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			3.0E-02	3.2E-02
			0/2/98	0/3/97
ULI WALL	4.4E-02		1.5E-02	1.8E-02
			67/11/22	64/18/18
LLI WALL	1.0E-01		3.6E-02	4.1E-02
			67/11/22	65/18/17
C.E.D.E.	8.9E-03		6.7E-03	7.4E-03

^{135}Ce

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			4.1E-03	4.4E-03
			1/5/94	0/7/93
GONADS	3.0E-03		7.8E-04	8.9E-04
			71/14/15	66/21/13
ST WALL	2.3E-03			
SI WALL	5.9E-03		1.5E-03	1.7E-03
			71/14/15	66/21/13
ULI WALL	1.4E-02		3.5E-03	4.1E-03
			71/14/15	67/21/12
LLI WALL	1.9E-02		4.8E-03	5.5E-03
			72/13/15	67/21/12
C.E.D.E.	3.2E-03		1.3E-03	1.4E-03

^{137M}Ce

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			4.8E-03	5.2E-03
			0/3/97	0/4/96
SI WALL	2.4E-03			
ULI WALL	1.0E-02		3.2E-03	3.7E-03
			70/12/18	66/19/15
LLI WALL	2.1E-02		6.3E-03	7.4E-03
			70/12/18	65/20/15
C.E.D.E.	2.0E-03		1.1E-03	1.3E-03

^{137}Ce

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.5E-04	1.6E-04
			0/6/94	0/11/89
GONADS	6.3E-05		1.2E-05	1.4E-05
			73/17/10	67/24/9
ST WALL	1.1E-04			
SI WALL	2.3E-04		4.1E-05	4.8E-05
			74/16/10	68/24/8
ULI WALL	5.5E-04		9.6E-05	1.1E-04
			75/15/10	68/24/8
LLI WALL	4.8E-04		8.9E-05	1.1E-04
			75/15/10	68/24/8
C.E.D.E.	9.8E-05		3.5E-05	3.9E-05

^{139}Ce

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			2.3E-02	6.3E-02*
			2/3/95	0/0/100
GONADS	9.6E-04*			
R MARROW			3.4E-03*	
			25/31/44	
BONE SURF			1.6E-02*	
			28/37/35	
LIVER			2.5E-02*	
			28/37/35	
SPLEEN			1.7E-02*	
			28/37/35	
SI WALL	1.3E-03			
ULI WALL	3.4E-03			
LLI WALL	8.9E-03		4.8E-03	
			53/11/36	
C.E.D.E.	1.1E-03*		6.4E-03*	7.5E-03*

^{141}Ce

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			4.1E-02	6.3E-02
			0/0/100	0/0/100
LIVER			1.3E-02	
			34/46/20	
SPLEEN			1.0E-02	
			34/45/21	
ULI WALL	1.1E-02			
LLI WALL	3.2E-02		1.4E-02	1.5E-02
			60/9/31	61/17/22
C.E.D.E.	2.6E-03		7.1E-03	8.5E-03

^{143}Ce

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.3E-02	1.4E-02
			0/2/98	0/3/97
SI WALL	5.2E-03			
ULI WALL	2.1E-02		6.7E-03	7.8E-03
			69/12/19	66/19/15
LLI WALL	4.4E-02		1.4E-02	1.6E-02
			69/11/20	65/19/16
C.E.D.E.	4.2E-03		2.8E-03	3.2E-03

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{144}Ce

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			6.7E-01	2.9E+00*
			0/1/99	0/0/100
R MARROW			1.0E-01*	
			27/36/37	
LIVER			9.3E-01*	
			27/36/37	
SPLEEN			7.8E-01*	
			27/36/37	
ULI WALL	8.1E-02			
LLI WALL	2.4E-01			
C.E.D.E.	2.0E-02		1.9E-01*	3.5E-01*

PRASEODYMIUM

^{136}Pr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.7E-04	1.8E-04
			0/19/81	0/23/77
ST WALL	9.6E-04			
SI WALL	1.8E-04			
C.E.D.E.	6.8E-05		2.1E-05	2.2E-05

^{137}Pr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			2.8E-04	3.0E-04
			0/13/87	0/19/81
GONADS	5.6E-05			
ST WALL	7.0E-04			
SI WALL	5.9E-04			
ULI WALL	5.2E-04			
LLI WALL	1.8E-04			
C.E.D.E.	1.3E-04		3.3E-05	3.6E-05

^{138M}Pr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			6.3E-04	6.7E-04
			0/12/88	0/18/82
GONADS	4.1E-04			3.6E-05
				62/29/9
R MARROW	1.1E-04			
ST WALL	1.6E-03		1.3E-04	1.6E-04
			59/18/23	53/28/19
SI WALL	1.7E-03			1.4E-04
				64/30/6
ULI WALL	2.0E-03		1.4E-04	1.7E-04
			73/19/8	64/30/6
LLI WALL	6.7E-04			
REMAINDER	3.0E-04			
WT	0.06			
C.E.D.E.	4.9E-04		9.1E-05	1.2E-04

^{139}Pr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			2.3E-04	3.0E-04
			0/8/92	0/10/90
GONADS	6.7E-05			
LIVER			4.8E-05	
			30/38/32	
ST WALL	2.4E-04			
SI WALL	4.1E-04		4.8E-05	
			74/17/9	
ULI WALL	7.0E-04		8.5E-05	1.0E-04
			74/17/9	66/27/7
LLI WALL	4.4E-04		5.2E-05	6.7E-05
			74/16/10	67/26/7
C.E.D.E.	1.2E-04		4.2E-05	4.7E-05

^{142M}Pr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.3E-04	1.4E-04
			0/4/96	0/7/93
SI WALL	9.2E-05			2.8E-05
				67/21/12
ULI WALL	3.7E-04		9.2E-05	1.1E-04
			72/13/15	67/21/12
LLI WALL	5.9E-04		1.5E-04	1.8E-04
			72/13/15	67/21/12
C.E.D.E.	6.3E-05		3.1E-05	3.6E-05

^{142}Pr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.1E-02	1.1E-02
			0/4/96	0/7/93
SI WALL	7.4E-03			
ULI WALL	2.9E-02		7.4E-03	8.9E-03
			72/13/15	67/21/12
LLI WALL	4.8E-02		1.2E-02	1.4E-02
			72/13/15	67/21/12
C.E.D.E.	5.1E-03		2.4E-03	2.7E-03

^{143}Pr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			4.1E-02	4.8E-02
			0/0/100	0/1/99
ULI WALL	1.9E-02			
LLI WALL	5.6E-02		2.3E-02	2.5E-02
			63/10/27	63/17/20
C.E.D.E.	4.5E-03		6.2E-03	7.3E-03

^{144}Pr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			3.3E-04	3.5E-04
			0/18/82	0/23/77
ST WALL	1.5E-03			
SI WALL	3.6E-04			
C.E.D.E.	1.1E-04		3.9E-05	4.2E-05

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{145}Pr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			3.2E-03	3.4E-03
			0/8/92	0/13/87
ST WALL	2.6E-03			
SI WALL	4.4E-03			7.4E-04
				67/26/7
ULI WALL	1.0E-02		1.4E-03	1.8E-03
			76/16/8	67/26/7
LLI WALL	8.1E-03		1.1E-03	1.4E-03
			76/16/8	67/26/7
C.E.D.E.	1.5E-03		5.4E-04	6.4E-04

^{147}Pr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			2.1E-04	2.3E-04
			0/17/83	0/20/80
ST WALL	9.3E-04			
SI WALL	1.8E-05			
C.E.D.E.	5.7E-05		2.5E-05	2.7E-05

NEODYMIUM

^{136}Nd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			7.0E-04	7.8E-04
			0/13/87	0/21/79
GONADS	1.3E-04			
ST WALL	2.0E-03			
SI WALL	1.7E-03			
ULI WALL	1.1E-03			
LLI WALL	2.1E-04			
C.E.D.E.	3.3E-04		8.4E-05	9.3E-05

^{138}Nd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			4.8E-03	5.2E-03
			0/8/92	0/14/86
GONADS	4.8E-04			
ST WALL	4.8E-03			
SI WALL	7.8E-03			1.2E-03
				67/27/6
ULI WALL	1.6E-02		2.0E-03	2.5E-03
			75/17/8	67/27/6
LLI WALL	1.1E-02		1.4E-03	1.7E-03
			76/17/7	67/27/6
C.E.D.E.	2.5E-03		7.8E-04	9.4E-04

^{139M}Nd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.2E-03	1.4E-03
			1/7/92	0/11/89
GONADS	9.6E-04		1.4E-04	1.7E-04
			72/17/11	65/26/9
ST WALL	1.3E-03		2.5E-04	3.0E-04
			60/15/25	55/23/22
SI WALL	2.7E-03		4.1E-04	4.8E-04
			74/16/10	66/26/8
ULI WALL	5.2E-03		7.4E-04	9.3E-04
			74/16/10	66/26/8
LLI WALL	3.6E-03		5.2E-04	6.3E-04
			75/16/9	67/26/7
REMAINDER	5.2E-04			
WT	0.06			
C.E.D.E.	1.0E-03		3.0E-04	3.5E-04

^{139}Nd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.3E-04	1.4E-04
			0/15/85	0/19/81
GONADS	1.7E-05			
ST WALL	4.4E-04			
SI WALL	2.1E-04			
ULI WALL	1.6E-04			
LLI WALL	6.3E-05			
C.E.D.E.	5.7E-05		1.5E-05	1.7E-05

^{141}Nd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			5.2E-05	5.6E-05
			0/11/89	0/17/83
GONADS	2.1E-05			
ST WALL	1.0E-04			
SI WALL	1.2E-04			1.1E-05
				67/29/4
ULI WALL	1.6E-04		1.2E-05	1.5E-05
			75/19/6	67/29/4
LLI WALL	5.6E-05			
C.E.D.E.	3.2E-05		6.9E-06	8.2E-06

^{147}Nd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			3.1E-02*	4.1E-02*
			0/1/99	0/1/99
ULI WALL	1.7E-02		7.0E-03	
			63/10/27	
LLI WALL	4.8E-02		1.9E-02	2.2E-02
			64/10/26	63/17/20
C.E.D.E.	3.9E-03		5.3E-03*	6.2E-03*

^{149}Nd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.1E-03	1.2E-03
			0/9/91	0/14/86
GONADS	5.9E-05			
ST WALL	1.7E-03			
SI WALL	1.7E-03			
ULI WALL	2.1E-03		2.9E-04	3.5E-04
			70/14/16	66/22/12
LLI WALL	1.9E-03		4.8E-04	5.9E-04
			70/11/19	65/19/16
C.E.D.E.	4.6E-04		1.8E-04	2.0E-04

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{151}Nd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.8E-04	1.9E-04
			0/15/85	0/19/81
ST WALL	7.4E-04			
SI WALL	1.6E-04			
ULI WALL	1.4E-04			
LLI WALL	2.0E-04		5.6E-05	6.3E-05
			71/12/17	66/20/14
C.E.D.E.	7.4E-05		2.5E-05	2.6E-05

PROMETHIUM

^{141}Pm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			2.3E-04	2.4E-04
			0/17/83	0/23/77
ST WALL	1.0E-03			
SI WALL	3.0E-04			
ULI WALL	1.1E-04			
C.E.D.E.	8.4E-05		2.7E-05	2.9E-05

^{143}Pm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.7E-02*	5.9E-02*
			5/7/88	0/0/100
GONADS	1.4E-03*		2.2E-03*	
			35/26/39	
BREAST			3.0E-03*	
			21/26/53	
R MARROW	3.4E-04*		7.4E-03*	
			25/32/43	
LIVER			3.5E-02	
			26/35/39	
BONE SURF			2.0E-02*	
			26/35/39	
SI WALL	1.5E-03			
ULI WALL	2.5E-03		4.4E-03	
			33/27/40	
LLI WALL	5.2E-03			
REMAINDER			7.8E-03	
			23/30/47	
W_T			0.18	
C.E.D.E.	9.5E-04*		8.3E-03*	7.1E-03*

^{144}Pm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			7.4E-02*	2.6E-01*
			8/11/81	0/0/100
GONADS	6.7E-03*		1.3E-02*	
			33/27/40	
BREAST			1.9E-02*	2.1E-02*
			22/28/50	3/1/96
R MARROW	1.4E-03*		3.7E-02*	
			24/31/45	
BONE SURF			5.2E-02*	
			25/33/42	
LIVER			2.0E-01*	5.6E-02*
			26/34/40	10/3/87
SI WALL	6.7E-03			
ULI WALL	1.0E-02		2.7E-02	
			31/29/40	
LLI WALL	1.9E-02			
REMAINDER			5.2E-02	5.6E-02
			23/31/46	1/0/99
W_T			0.18	0.06
C.E.D.E.	3.9E-03*		4.4E-02*	4.1E-02*

^{145}Pm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.7E-02	1.7E-01*
			8/10/82	0/0/100
GONADS	3.0E-04			
R MARROW	2.0E-04*		3.7E-02*	
			25/33/42	
BONE SURF	7.4E-04*		2.8E-01*	1.0E-01
			25/33/42	7/2/91
LIVER	3.5E-04*		1.4E-01*	5.2E-02*
			25/33/42	7/2/91
SI WALL	4.4E-04			
ULI WALL	1.3E-03			
LLI WALL	3.5E-03			
C.E.D.E.	4.6E-04*		2.3E-02*	2.7E-02*

^{146}Pm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.3E-01	8.5E-01*
			9/12/79	0/0/100
GONADS	3.3E-03		2.0E-02	
			27/31/42	
BREAST			3.1E-02	
			24/31/45	
R MARROW			1.4E-01*	
			25/33/42	
BONE SURF			2.0E-01*	
			25/33/42	
LIVER			6.3E-01*	2.1E-01*
			25/34/41	8/2/90
SI WALL	4.1E-03			
ULI WALL	1.0E-02			
LLI WALL	2.6E-02			
REMAINDER			8.9E-02	
			24/32/44	
W_T			0.18	
C.E.D.E.	3.2E-03		1.0E-01*	1.1E-01*

^{147}Pm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			3.6E-02	2.8E-01*
			0/0/100	0/0/100
R MARROW			3.0E-02*	
			26/34/40	
BONE SURF			3.7E-01*	
			26/34/40	
LIVER			1.0E-01*	
			26/34/40	
ULI WALL	4.1E-03			
LLI WALL	1.2E-02			
C.E.D.E.	9.5E-04		2.5E-02*	3.4E-02*

50-Year Committed Dose Equivalent Factors--rem/µCi Intake (Continued)

^{148M}Pm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			8.1E-02	1.3E-01
			1/2/97	0/0/100
GONADS	8.1E-03		5.2E-03	
			50/17/33	
R MARROW			1.1E-02	
			28/32/40	
BONE SURF			3.3E-02	
			32/42/26	
LIVER			4.1E-02	
			30/39/31	
SI WALL	9.6E-03			
ULI WALL	2.1E-02			
LLI WALL	5.2E-02		2.4E-02	
			58/10/32	
C.E.D.E.	7.0E-03		1.7E-02	1.6E-02

^{148}Pm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			4.8E-02	5.2E-02
			0/1/99	0/2/98
ULI WALL	4.4E-02		1.7E-02	1.9E-02
			66/10/24	63/18/19
LLI WALL	1.1E-01		4.4E-02	4.8E-02
			66/10/24	63/18/19
C.E.D.E.	9.5E-03		9.4E-03	1.0E-02

^{149}Pm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.1E-02	1.1E-02
			0/2/98	0/3/97
ULI WALL	1.9E-02		6.3E-03	7.0E-03
			69/11/20	65/19/16
LLI WALL	4.1E-02		1.4E-02	1.6E-02
			69/11/20	65/19/16
C.E.D.E.	3.6E-03		2.6E-03	2.8E-03

^{150}Pm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			2.0E-03	2.1E-03
			0/11/89	0/17/83
GONADS	3.0E-04			
ST WALL	3.2E-03			
SI WALL	4.1E-03			
ULI WALL	5.5E-03		4.1E-04	5.2E-04
			75/19/6	67/29/4
LLI WALL	2.2E-03			
C.E.D.E.	9.8E-04		2.6E-04	2.9E-04

^{151}Pm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			5.9E-03	5.9E-03
			0/3/97	0/5/95
GONADS	7.8E-04			
SI WALL	3.7E-03			1.3E-03
				66/20/14
ULI WALL	1.4E-02		4.1E-03	4.8E-03
			71/12/17	66/20/14
LLI WALL	2.6E-02		7.4E-03	8.9E-03
			71/12/17	66/20/14
C.E.D.E.	2.8E-03		1.4E-03	1.6E-03

SAMARIUM

^{141M}Sm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			4.1E-04 0/15/85	
GONADS	4.8E-05			
ST WALL	1.6E-03			
SI WALL	7.8E-04			
ULI WALL	3.7E-04			
C.E.D.E.	1.8E-04		4.9E-05	

^{141}Sm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			2.3E-04 0/18/82	
ST WALL	1.1E-03			
SI WALL	3.0E-04			
C.E.D.E.	8.4E-05		2.0E-05	

^{142}Sm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.6E-03 0/13/87	
ST WALL	4.1E-03			
SI WALL	3.1E-03			
ULI WALL	2.3E-03			
LLI WALL	4.8E-04			
C.E.D.E.	6.0E-04		1.9E-04	

^{145}Sm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			2.4E-02 2/3/95	
GONADS	5.9E-04*			
R MARROW			1.3E-02* 26/34/40	
BONE SURF			9.6E-02* 26/35/39	
LIVER			4.4E-02 26/35/39	
SI WALL	9.3E-04			
ULI WALL	2.9E-03			
LLI WALL	7.8E-03			
C.E.D.E.	8.5E-04*		1.0E-02*	

^{146}Sm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
R MARROW	2.8E-01*		1.1E+02* 25/33/42	
BONE SURF	3.5E+00*		1.4E+03* 25/33/42	
LIVER	9.6E-01*		3.7E+02* 25/33/42	
C.E.D.E.	2.0E-01*		7.8E+01*	

^{147}Sm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
R MARROW	2.6E-01*		1.0E+02* 25/33/42	
BONE SURF	3.2E+00*		1.3E+03* 25/33/42	
LIVER	8.9E-01*		3.5E+02* 25/33/42	
C.E.D.E.	1.8E-01*		7.1E+01*	

^{151}Sm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
BONE SURF	1.3E-03*		5.2E-01* 25/33/42	
R MARROW			4.1E-02* 25/33/42	
LIVER			1.4E-01* 25/33/42	
ULI WALL	1.3E-03			
LLI WALL	3.7E-03			
C.E.D.E.	3.4E-04*		2.9E-02*	

^{153}Sm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			7.4E-03 0/2/98	
ULI WALL	1.4E-02		4.4E-03 69/11/20	
LLI WALL	3.0E-02		9.6E-03 69/11/20	
C.E.D.E.	2.6E-03		1.7E-03	

50-Year Committed Dose Equivalent Factors--rem/µCi Intake (Continued)

^{155}Sm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			2.0E-04 0/17/83	
ST WALL	8.5E-04			
SI WALL	2.5E-04			
C.E.D.E.	6.6E-05		2.4E-05	

^{156}Sm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			3.2E-03 0/3/97	
GONADS	2.4E-04			
ST WALL	9.3E-04			
SI WALL	1.9E-03			
ULI WALL	5.5E-03		1.2E-03 70/14/16	
LLI WALL	7.4E-03		1.9E-03 69/12/19	
C.E.D.E.	1.0E-03		5.7E-04	

EUROPIUM

^{145}Eu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			7.4E-03 2/3/95	
GONADS	4.8E-03		2.0E-03 63/12/25	
BREAST			8.1E-04* 26/13/61	
R MARROW	1.0E-03*		1.3E-03* 33/22/45	
LIVER			3.4E-03* 30/36/34	
SI WALL	5.2E-03		2.3E-03 61/13/26	
ULI WALL	8.5E-03		3.6E-03 62/12/26	
LLI WALL	1.5E-02		5.9E-03 65/11/24	
REMAINDER	2.0E-03			
WT	0.06			
C.E.D.E.	3.2E-03*		2.6E-03*	

^{146}Eu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			9.6E-03 2/3/95	
GONADS	8.1E-03		3.2E-03 64/12/24	
BREAST			1.2E-03 28/13/59	
R MARROW			1.6E-03 36/19/45	
LIVER			3.7E-03 31/36/33	
ST WALL			2.1E-03 36/11/53	
SI WALL	8.9E-03		3.7E-03 63/12/25	
ULI WALL	1.4E-02		5.9E-03 63/12/25	
LLI WALL	2.5E-02		9.6E-03 66/11/23	
REMAINDER	3.4E-03			
WT	0.06			
C.E.D.E.	5.1E-03		3.8E-03	

^{147}Eu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			1.4E-02 1/2/97	
GONADS	2.1E-03		1.1E-03 55/14/31	
R MARROW			1.7E-03 29/29/42	
BONE SURF			5.9E-03 34/44/22	
LIVER			5.2E-03 31/39/30	
SI WALL	2.5E-03			
ULI WALL	5.5E-03			
LLI WALL	1.3E-02		5.5E-03 61/10/29	
C.E.D.E.	1.8E-03		3.0E-03	

^{148}Eu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			4.4E-02 3/4/93	
GONADS	8.9E-03		5.9E-03 48/17/35	
R MARROW	1.8E-03		8.9E-03 24/26/50	
BREAST			5.9E-03 18/18/64	
LIVER			3.6E-02 28/36/36	
SI WALL	8.5E-03			
ULI WALL	1.3E-02			
LLI WALL	2.4E-02		1.3E-02 55/12/33	
REMAINDER			1.3E-02 20/25/55	
WT			0.18	
C.E.D.E.	5.2E-03		1.4E-02	

50-Year Committed Dose Equivalent Factors--rem/µCi Intake (Continued)

^{149}Eu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			7.4E-03	
			1/2/97	
GONADS	4.4E-04			
R MARROW			1.4E-03	
			27/32/41	
BONE SURF			6.3E-03	
			29/39/32	
LIVER			4.8E-03	
			29/37/34	
SI WALL	5.5E-04			
ULI WALL	1.3E-03			
LLI WALL	3.2E-03		1.6E-03	
			55/10/35	
C.E.D.E.	4.2E-04		1.6E-03	

^{150}Eu (12H)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			2.9E-03	
			0/5/95	
ST WALL	1.3E-03			
SI WALL	2.7E-03			
ULI WALL	8.9E-03		1.9E-03	
			74/14/12	
LLI WALL	1.2E-02		2.4E-03	
			74/14/12	
C.E.D.E.	1.5E-03		6.1E-04	

^{150}Eu (34Y)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS	1.5E-03		2.4E-01	
			18/23/59	
GONADS	7.0E-03*		7.4E-02*	
			26/32/42	
BREAST	1.6E-03*		1.1E-01*	
			24/32/44	
R MARROW	3.7E-03*		3.0E-01*	
			25/33/42	
BONE SURF			4.4E-01*	
			25/33/42	
KIDNEYS			2.4E-01*	
			25/33/42	
LIVER	1.3E-02*		1.6E+00*	
			25/33/42	
SI WALL	7.4E-03			
ULI WALL	1.2E-02		1.6E-01	
			26/32/42	
LLI WALL	2.3E-02			
REMAINDER	3.0E-03		3.3E-01	
			25/33/42	
W_T	0.06		0.12	
C.E.D.E.	6.2E-03*		2.7E-01*	

^{152M}Eu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			3.7E-03	
			0/6/94	
ST WALL	2.2E-03			
SI WALL	4.4E-03		7.8E-04	
			74/15/11	
ULI WALL	1.2E-02		2.2E-03	
			74/15/11	
LLI WALL	1.3E-02		2.3E-03	
			74/15/11	
C.E.D.E.	1.9E-03		7.6E-04	

^{152}Eu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			2.1E-01	
			11/15/74	
GONADS	4.8E-03		4.8E-02	
			26/32/42	
BREAST			6.3E-02	
			24/32/44	
R MARROW	3.4E-03*		2.9E-01*	
			25/33/42	
BONE SURF	7.8E-03		8.9E-01	
			25/33/42	
KIDNEYS			1.4E-01	
			25/33/42	
LIVER	1.1E-02		1.3E+00	
			25/33/42	
SI WALL	6.3E-03			
ULI WALL	1.6E-02			
LLI WALL	3.7E-02			
REMAINDER			1.9E-01	
			25/32/43	
W_T			0.12	
C.E.D.E.	6.0E-03*		2.2E-01*	

^{154}Eu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			2.9E-01	
			7/10/83	
GONADS	5.2E-03		4.4E-02	
			27/32/41	
R MARROW	4.1E-03*		4.1E-01*	
			25/33/42	
BONE SURF	1.7E-02*		1.9E+00*	
			25/33/42	
LIVER	1.4E-02*		1.6E+00*	
			25/33/42	
SI WALL	8.1E-03			
ULI WALL	2.6E-02			
LLI WALL	6.7E-02			
REMAINDER			1.6E-01	
			24/32/44	
W_T			0.06	
C.E.D.E.	9.1E-03*		2.6E-01*	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{155}Eu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			4.4E-02 2/3/95	
GONADS	3.6E-04			
R MARROW			5.2E-02 25/33/42	
BONE SURF	4.8E-03		5.6E-01 25/34/41	
LIVER	1.5E-03		1.8E-01 25/34/41	
ULI WALL	4.4E-03			
LLI WALL	1.3E-02			
C.E.D.E.	1.3E-03		3.9E-02	

^{156}Eu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			8.7E-02 0/1/99	
GONADS	4.4E-03			
SI WALL	8.9E-03			
ULI WALL	3.2E-02		1.4E-02 61/11/28	
LLI WALL	8.5E-02		3.5E-02 62/10/28	
C.E.D.E.	8.7E-03		1.1E-02	

^{157}Eu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			4.4E-03 0/5/95	
GONADS	4.4E-04			
SI WALL	4.1E-03		8.9E-04 72/14/14	
ULI WALL	1.3E-02		3.0E-03 74/13/13	
LLI WALL	1.9E-02		4.4E-03 74/13/13	
C.E.D.E.	2.3E-03		1.0E-03	

^{158}Eu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			7.0E-04 0/15/85	
ST WALL	2.4E-03			
SI WALL	1.3E-03			
ULI WALL	6.7E-04			
C.E.D.E.	2.6E-04		8.4E-05	

GADOLINIUM

^{145}Gd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04	3.0E-04	3.0E-04	
LUNGS		2.1E-04	2.5E-04	
		1/12/87	0/16/84	
GONADS	4.1E-05			
ST WALL	1.1E-03	1.1E-04		
		94/1/5		
SI WALL	3.6E-04			
ULI WALL	1.7E-04			
C.E.D.E.	1.1E-04	3.2E-05	3.0E-05	

^{146}Gd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04	3.0E-04	3.0E-04	
LUNGS		2.0E-02	9.3E-02	
		29/15/56	1/2/97	
GONADS	3.3E-03	9.6E-03		
		35/15/50		
R MARROW		5.2E-02	1.4E-02	
		32/16/52	25/31/44	
BREAST		1.3E-02		
		32/16/52		
BONE SURF		2.5E-01	5.2E-02	
		32/16/52	31/41/28	
KIDNEYS		3.4E-02		
		32/16/52		
LIVER		1.8E-01	4.1E-02	
		32/16/52	28/36/36	
SI WALL	4.1E-03			
ULI WALL	1.2E-02	1.9E-02		
		38/15/47		
LLI WALL	3.4E-02		2.0E-02	
			52/11/37	
REMAINDER		3.5E-02		
		32/16/52		
W_T		0.12		
C.E.D.E.	3.8E-03	3.8E-02	1.8E-02	

^{147}Gd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04	3.0E-04	3.0E-04	
LUNGS		1.4E-03	4.1E-03	
		9/5/86	1/3/96	
GONADS	3.4E-03	7.0E-04	1.1E-03	
		82/6/12	68/12/20	
BREAST		3.6E-04	3.4E-04	
		41/13/46	31/12/57	
R MARROW	7.4E-04	1.1E-03	5.5E-04	
		40/15/45	40/20/40	
KIDNEYS		1.3E-03		
		38/17/45		
LIVER		3.3E-03	9.6E-04	
		35/17/48	31/32/37	
BONE SURF		4.1E-03		
		34/17/49		
SI WALL	4.4E-03	9.3E-04	1.4E-03	
		79/7/14	67/12/21	
ULI WALL	8.1E-03	1.6E-03	2.7E-03	
		85/5/10	68/12/20	
LLI WALL	1.3E-02	2.1E-03	4.1E-03	
		93/3/4	68/12/20	
REMAINDER	1.5E-03			
W_T	0.06			
C.E.D.E.	2.6E-03	1.2E-03	1.4E-03	

^{148}Gd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04	3.0E-04	3.0E-04	
R MARROW	3.3E-01*	5.2E+02*	1.3E+02*	
		32/16/52	25/33/42	
BONE SURF	4.1E+00*	6.7E+03*	1.7E+03*	
		32/16/52	25/33/42	
LIVER	7.4E-01*	1.2E+03*	3.0E+02*	
		32/16/52	25/33/42	
C.E.D.E.	2.1E-01*	3.3E+02*	8.4E+01*	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{149}Gd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04	3.0E-04	3.0E-04	
LUNGS		1.6E-03	8.9E-03	
		14/8/78	1/1/98	
GONADS	1.9E-03	5.9E-04	8.1E-04	
		65/9/26	61/12/27	
BREAST		4.8E-04		
		35/15/50		
R MARROW		3.2E-03	1.0E-03	
		34/16/50	33/29/38	
BONE SURF		1.6E-02		
		32/16/52		
KIDNEYS		2.4E-03		
		33/16/51		
LIVER		8.9E-03	2.0E-03	
		32/16/52	31/38/31	
SI WALL	2.4E-03			
ULI WALL	5.9E-03	1.5E-03	2.6E-03	
		72/8/20	62/11/27	
LLI WALL	1.4E-02	2.4E-03	5.5E-03	
		90/4/6	64/10/26	
REMAINDER		1.3E-03		
		32/16/52		
W_T		0.06		
C.E.D.E.	1.8E-03	2.3E-03	2.0E-03	

^{151}Gd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04	3.0E-04	3.0E-04	
LUNGS			1.8E-02	
			0/1/99	
GONADS	4.4E-04			
R MARROW		1.5E-02	3.5E-03	
		32/16/52	28/35/37	
BONE SURF		1.3E-01	2.9E-02	
		32/16/52	29/39/32	
LIVER		3.6E-02	8.1E-03	
		32/16/52	28/38/34	
SI WALL	7.8E-04			
ULI WALL	2.7E-03			
LLI WALL	7.4E-03		3.7E-03	
			56/9/35	
C.E.D.E.	7.7E-04	7.9E-03	4.1E-03	

^{152}Gd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04	3.0E-04	3.0E-04	
R MARROW	2.4E-01*	3.7E+02*	9.8E+01*	
		32/16/52	25/33/42	
BONE SURF	3.0E+00*	4.8E+03*	1.2E+03*	
		32/16/52	25/33/42	
LIVER	5.6E-01*	8.9E+02*	2.2E+02*	
		32/16/52	25/33/42	
C.E.D.E.	1.5E-01*	2.4E+02*	6.1E+01*	

^{153}Gd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04	3.0E-04	3.0E-04	
LUNGS			2.9E-02	
			1/1/98	
GONADS	7.4E-04			
R MARROW		4.1E-02	1.0E-02	
		32/16/52	26/34/40	
BONE SURF		3.4E-01	7.8E-02	
		32/16/52	27/36/37	
LIVER		9.6E-02	2.3E-02	
		32/16/52	27/35/38	
SI WALL	1.2E-03			
ULI WALL	3.7E-03			
LLI WALL	1.0E-02			
C.E.D.E.	1.1E-03	2.1E-02	8.4E-03	

^{159}Gd

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04	3.0E-04	3.0E-04	
LUNGS		2.0E-03	4.1E-03	
		0/2/98	0/4/96	
R MARROW		3.7E-04		
		42/20/38		
KIDNEYS		4.8E-04		
		41/21/38		
LIVER		8.5E-04		
		40/21/39		
SI WALL	2.8E-03	4.4E-04		
		98/2/0		
ULI WALL	1.1E-02	1.7E-03	2.7E-03	
		98/2/0	72/13/15	
LLI WALL	1.7E-02	2.6E-03	4.1E-03	
		98/2/0	72/13/15	
C.E.D.E.	1.9E-03	6.4E-04	8.9E-04	

TERBIUM

^{147}Tb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.1E-03 0/11/89	
GONADS	3.4E-04		6.3E-05 67/14/19	
ST WALL	2.2E-03			
SI WALL	2.2E-03			
ULI WALL	2.3E-03		2.3E-04 70/16/14	
LLI WALL	1.1E-03			
C.E.D.E.	5.6E-04		1.6E-04	

^{149}Tb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			5.6E-02 0/9/91	
GONADS	6.3E-04			
ST WALL	1.9E-03			
SI WALL	3.1E-03			
ULI WALL	5.2E-03			
LLI WALL	3.1E-03			
C.E.D.E.	9.5E-04		6.7E-03	

^{150}Tb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.7E-03 0/10/90	
GONADS	4.8E-04			
ST WALL	2.6E-03			
SI WALL	3.6E-03			
ULI WALL	5.5E-03		4.8E-04 75/18/7	
LLI WALL	2.5E-03			
C.E.D.E.	9.7E-04		2.3E-04	

^{151}Tb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.8E-03 1/4/95	
GONADS	1.6E-03		3.7E-04 71/14/15	
R MARROW	3.7E-04		2.1E-04 42/22/36	
ST WALL	1.0E-03			
SI WALL	2.7E-03		6.7E-04 71/14/15	
ULI WALL	5.5E-03		1.4E-03 72/13/15	
LLI WALL	7.0E-03		1.7E-03 72/13/15	
C.E.D.E.	1.4E-03		5.5E-04	

^{153}Tb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			2.3E-03 0/2/98	
GONADS	6.9E-04		3.0E-04 67/12/21	
R MARROW			3.1E-04 37/28/35	
BONE SURF			1.5E-03 33/42/25	
SI WALL	1.4E-03		4.8E-04 67/12/21	
ULI WALL	3.7E-03		1.3E-03 68/11/21	
LLI WALL	7.8E-03		2.6E-03 68/11/21	
C.E.D.E.	9.9E-04		7.0E-04	

^{154}Tb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			2.7E-03 1/4/95	
GONADS	3.7E-03		1.0E-03 70/13/17	
BREAST			2.8E-04 35/12/53	
R MARROW	7.8E-04		4.1E-04 43/18/39	
LIVER			5.9E-04 31/26/43	
ST WALL	1.9E-03		7.0E-04 50/12/38	
SI WALL	5.2E-03		1.4E-03 70/13/17	
ULI WALL	9.6E-03		2.6E-03 70/13/17	
LLI WALL	1.2E-02		3.1E-03 71/13/16	
REMAINDER	1.7E-03			
WT	0.06			
C.E.D.E.	2.8E-03		1.2E-03	

^{155}Tb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			2.8E-03 0/1/99	
GONADS	7.4E-04		2.8E-04 65/11/24	
R MARROW			3.1E-04 38/27/35	
SI WALL	1.1E-03			
ULI WALL	2.9E-03		1.1E-03 65/11/24	
LLI WALL	6.7E-03		2.6E-03 66/10/24	
C.E.D.E.	8.2E-04		6.7E-04	

^{156M}Tb (24H)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			2.6E-03 1/2/97	
GONADS	7.4E-04		3.7E-04 60/11/29	
R MARROW			3.0E-04 34/25/41	
LIVER			5.2E-04 29/35/36	
SI WALL	8.5E-04			
ULI WALL	2.1E-03		1.0E-03 61/11/28	
LLI WALL	5.5E-03		2.3E-03 65/10/25	
C.E.D.E.	7.0E-04		6.6E-04	

^{156M}Tb (5H)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			8.1E-04 1/4/95	
GONADS	2.1E-04		9.6E-05 63/12/25	
ST WALL	3.6E-04			
SI WALL	7.0E-04		1.7E-04 67/13/20	
ULI WALL	1.5E-03		3.5E-04 68/13/19	
LLI WALL	1.9E-03		5.5E-04 68/11/21	
C.E.D.E.	3.2E-04		1.9E-04	

^{158}Tb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.2E-02 1/2/97	
GONADS	5.9E-03		2.5E-03 63/12/25	
R MARROW			1.6E-03 36/23/41	
LIVER			2.6E-03 29/33/38	
SI WALL	7.4E-03		3.0E-03 62/12/26	
ULI WALL	1.5E-02		5.9E-03 64/11/25	
LLI WALL	2.9E-02		1.1E-02 65/11/24	
C.E.D.E.	4.6E-03		3.6E-03	

^{157}Tb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			4.4E-03 2/3/95	
R MARROW			1.6E-02* 25/33/42	
BONE SURF	4.1E-04*		1.6E-01* 25/33/42	
LIVER			2.8E-02* 25/33/42	
ULI WALL	3.7E-04			
LLI WALL	1.1E-03			
C.E.D.E.	1.0E-04*		9.0E-03*	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{158}Tb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.8E-01	
			12/16/72	
GONADS	3.4E-03		5.2E-02	
			26/32/42	
BREAST			6.7E-02	
			24/32/44	
R MARROW	1.8E-03*		4.4E-01*	
			25/33/42	
BONE SURF	5.9E-03*		2.3E+00*	
			25/33/42	
KIDNEYS			1.2E-01*	
			25/33/42	
LIVER			1.0E+00*	
			25/33/42	
SI WALL	4.4E-03			
ULI WALL	1.2E-02			
LLI WALL	3.0E-02			
REMAINDER			1.6E-01	
			24/33/43	
W_T			0.12	
C.E.D.E.	4.0E-03*		2.5E-01*	

^{160}Tb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.1E-01	
			1/1/98	
GONADS	4.4E-03			
R MARROW			1.6E-02	
			29/36/35	
BONE SURF			9.3E-02	
			31/40/29	
LIVER			3.4E-02	
			28/38/34	
SI WALL	7.0E-03			
ULI WALL	2.2E-02			
LLI WALL	5.9E-02		2.8E-02	
			56/10/34	
C.E.D.E.	6.4E-03		2.2E-02	

^{161}Tb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.6E-02	
			0/1/99	
BONE SURF			7.8E-03	
			40/53/7	
ULI WALL	1.2E-02		4.8E-03	
			65/10/25	
LLI WALL	3.2E-02		1.3E-02	
			65/10/25	
C.E.D.E.	2.6E-03		3.1E-03	

DYSPROSIUM

^{155}Dy

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			6.7E-04 1/4/95	
GONADS	6.7E-04		1.4E-04 71/14/15	
R MARROW	1.7E-04		8.5E-05 41/22/37	
ST WALL	4.8E-04			
SI WALL	1.1E-03		2.4E-04 72/14/14	
ULI WALL	2.1E-03		4.4E-04 71/14/15	
LLI WALL	2.2E-03		5.2E-04 70/13/17	
REMAINDER	3.3E-04			
WT	0.06			
C.E.D.E.	5.6E-04		2.0E-04	

^{157}Dy

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			2.2E-04 1/7/92	
GONADS	3.6E-04		5.9E-05 73/16/11	
BREAST			1.9E-05 31/13/56	
R MARROW	9.2E-05		3.3E-05 41/18/41	
ST WALL	2.8E-04		6.3E-05 56/14/30	
SI WALL	6.3E-04		1.1E-04 74/15/11	
ULI WALL	1.0E-03		1.7E-04 74/15/11	
LLI WALL	7.4E-04		1.3E-04 75/15/10	
REMAINDER	1.7E-04			
WT	0.06			
C.E.D.E.	2.7E-04		7.6E-05	

^{159}Dy

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			8.9E-03 1/1/98	
GONADS	3.7E-04			
R MARROW			3.0E-03* 27/34/39	
BONE SURF			1.9E-02* 28/38/34	
LIVER			2.0E-03* 25/33/42	
SI WALL	4.8E-04			
ULI WALL	1.3E-03			
LLI WALL	3.3E-03			
C.E.D.E.	4.0E-04		2.1E-03*	

^{165}Dy

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			8.9E-04 0/11/89	
ST WALL	1.5E-03			
SI WALL	1.7E-03			
ULI WALL	2.1E-03			
LLI WALL	7.8E-04			
C.E.D.E.	3.6E-04		1.1E-04	

^{166}Dy

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			3.4E-02 0/0/100	
ULI WALL	2.2E-02		1.1E-02 63/9/28	
LLI WALL	8.1E-02		3.6E-02 65/10/25	
C.E.D.E.	6.2E-03		6.9E-03	

HOLMIUM

^{155}Ho

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			2.4E-04 0/12/88	
GONADS	7.4E-05		1.2E-05 70/15/15	
ST WALL	6.7E-04			
SI WALL	4.4E-04			
ULI WALL	3.7E-04			
LLI WALL	2.2E-04			
C.E.D.E.	1.2E-04		3.2E-05	

^{157}Ho

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			2.8E-05 0/17/83	
GONADS	1.3E-05		1.7E-06 71/16/13	
PANCREAS	1.9E-05			
ST WALL	1.4E-04			
SI WALL	4.1E-05			
ULI WALL	4.1E-05			
LLI WALL	2.3E-05			
C.E.D.E.	1.9E-05		3.7E-06	

^{159}Ho

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			4.1E-05 0/16/84	
GONADS	1.3E-05			
PANCREAS	2.7E-05			
ST WALL	1.8E-04			
SI WALL	7.8E-05			
ULI WALL	4.8E-05			
C.E.D.E.	2.3E-05		4.9E-06	

^{161}Ho

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			8.9E-05 0/11/89	
GONADS	2.3E-05			
ST WALL	1.6E-04			
SI WALL	2.0E-04			
ULI WALL	2.5E-04		1.8E-05 76/19/5	
LLI WALL	8.9E-05			
C.E.D.E.	4.7E-05		1.2E-05	

^{162M}Ho

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.6E-04 0/13/87	
GONADS	5.6E-05			
PANCREAS	6.3E-05			
ST WALL	4.4E-04			
SI WALL	3.7E-04			
ULI WALL	3.2E-04			
LLI WALL	7.4E-05			
C.E.D.E.	9.0E-05		1.9E-05	

^{162}Ho

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.7E-05 0/19/81	
ST WALL	9.2E-05			
SI WALL	1.9E-05			
C.E.D.E.	6.7E-06		2.1E-06	

^{164M}Ho

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.4E-04 0/14/86	
ST WALL	3.7E-04			
SI WALL	2.8E-04			
ULI WALL	1.6E-04			
C.E.D.E.	4.9E-05		1.7E-05	

^{164}Ho

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			6.7E-05 0/17/83	
ST WALL	2.7E-04			
SI WALL	1.0E-04			
ULI WALL	3.3E-05			
C.E.D.E.	2.4E-05		8.0E-06	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{166M}Ho

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			4.1E-01 17/22/61	
GONADS	7.8E-03		1.1E-01 26/32/42	
BREAST			1.8E-01 24/32/44	
R MARROW	3.0E-03*		5.9E-01* 25/33/42	
BONE SURF	8.5E-03*		3.3E+00* 25/33/42	
LIVER	7.4E-03*		2.8E+00* 25/33/42	
PANCREAS	1.1E-02*		4.1E+00* 25/33/42	
SI WALL	8.9E-03			
ULI WALL	1.9E-02			
LLI WALL	4.1E-02			
REMAINDER			5.8E-01 25/33/42	
W_T			0.06	
C.E.D.E.	7.8E-03*		7.2E-01*	

^{166}Ho

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.2E-02 0/3/97	
SI WALL	6.7E-03			
ULI WALL	2.9E-02		8.1E-03 71/12/17	
LLI WALL	5.6E-02		1.5E-02 71/12/17	
C.E.D.E.	5.5E-03		2.8E-03	

^{167}Ho

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			6.3E-04 0/10/90	
GONADS	1.2E-04			
ST WALL	9.3E-04			
SI WALL	1.3E-03			
ULI WALL	1.8E-03		1.6E-04 76/18/6	
LLI WALL	8.1E-04			
C.E.D.E.	3.2E-04		8.5E-05	

ERBIUM

^{161}Er

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			3.7E-04 1/9/90	
GONADS	3.0E-04		3.3E-05 70/21/9	
R MARROW	8.5E-05			
ST WALL	5.9E-04		8.5E-05 60/17/23	
SI WALL	1.0E-03		1.1E-04 73/19/8	
ULI WALL	1.6E-03		1.7E-04 74/18/8	
LLI WALL	7.4E-04		7.8E-05 74/20/6	
REMAINDER	1.9E-04			
WT	0.06			
C.E.D.E.	3.3E-04		7.9E-05	

^{165}Er

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.0E-04 0/6/94	
GONADS	7.0E-05		1.4E-05 73/16/11	
R MARROW	3.1E-05		1.3E-05 44/22/34	
ST WALL	7.4E-05			
SI WALL	1.7E-04		3.4E-05 74/15/11	
ULI WALL	3.7E-04		7.0E-05 74/15/11	
LLI WALL	3.5E-04		6.7E-05 74/15/11	
C.E.D.E.	7.9E-05		2.7E-05	

^{169}Er

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.0E-02 0/1/99	
BONE SURF			6.7E-03 39/53/8	
ULI WALL	6.3E-03		2.5E-03 64/10/26	
LLI WALL	1.7E-02		7.0E-03 64/10/26	
C.E.D.E.	1.4E-03		2.0E-03	

^{171}Er

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			2.6E-03* 0/7/93	
GONADS	3.4E-04*			
ST WALL	1.9E-03			
SI WALL	3.5E-03		5.5E-04 74/16/10	
ULI WALL	8.9E-03		1.4E-03 74/16/10	
LLI WALL	8.1E-03		1.3E-03 75/16/9	
C.E.D.E.	1.4E-03*		5.0E-04*	

^{172}Er

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.7E-02 0/1/99	
GONADS	1.9E-03			
ULI WALL	1.4E-02		6.3E-03 63/10/27	
LLI WALL	4.1E-02		1.8E-02 65/10/25	
C.E.D.E.	3.7E-03		3.5E-03	

THULIUM

^{162}Tm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.5E-04 0/18/82	
GONADS	2.3E-05			
ST WALL	7.4E-04			
SI WALL	2.3E-04			
ULI WALL	1.0E-04			
C.E.D.E.	7.0E-05		1.8E-05	

^{166}Tm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.1E-03 1/7/92	
GONADS	1.3E-03		2.3E-04 71/18/11	
R MARROW	3.1E-04		1.3E-04 40/22/38	
ST WALL	1.3E-03		3.0E-04 56/15/29	
SI WALL	2.8E-03		4.8E-04 73/16/11	
ULI WALL	5.2E-03		8.5E-04 73/16/11	
LLI WALL	3.7E-03		6.3E-04 74/16/10	
REMAINDER	7.0E-04			
WT	0.06			
C.E.D.E.	1.2E-03		3.5E-04	

^{167}Tm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.3E-02 0/1/99	
GONADS	7.8E-04			
BONE SURF			7.8E-03 39/52/9	
ULI WALL	8.5E-03		3.5E-03 64/10/26	
LLI WALL	2.3E-02		9.3E-03 64/10/26	
C.E.D.E.	2.1E-03		2.6E-03	

^{170}Tm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.4E-01 0/0/100	
R MARROW			3.4E-02 29/39/32	
ULI WALL	2.1E-02			
LLI WALL	6.3E-02		3.0E-02 55/9/36	
C.E.D.E.	5.0E-03		2.3E-02	

^{171}Tm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.5E-02 0/1/99	
R MARROW			1.4E-02* 26/34/40	
BONE SURF			1.7E-01 26/34/40	
ULI WALL	1.6E-03			
LLI WALL	4.8E-03			
C.E.D.E.	3.9E-04		8.8E-03*	

^{172}Tm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.9E-02 0/2/98	
ULI WALL	2.9E-02		1.0E-02 68/11/21	
LLI WALL	7.0E-02		2.4E-02 68/11/21	
C.E.D.E.	6.0E-03		4.3E-03	

^{173}Tm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			2.1E-03 0/7/93	
GONADS	3.6E-04			
ST WALL	1.5E-03			
SI WALL	2.9E-03		4.8E-04 74/16/10	
ULI WALL	7.4E-03		1.2E-03 75/15/10	
LLI WALL	7.0E-03		1.2E-03 75/15/10	
C.E.D.E.	1.2E-03		4.3E-04	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{175}Tm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	
LUNGS			1.6E-04	
			0/17/83	
ST WALL	7.4E-04			
SI WALL	1.6E-04			
C.E.D.E.	5.4E-05		2.0E-05	

YTTERBIUM

^{162}Yb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.4E-04	1.5E-04
			0/15/85	0/22/78
GONADS	3.1E-05			
ST WALL	5.2E-04			
SI WALL	3.1E-04			
ULI WALL	1.6E-04			
REMAINDER	5.2E-05			
WT	0.06			
C.E.D.E.	7.0E-05		1.7E-05	1.8E-05

^{166}Yb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			7.4E-03	7.8E-03
			1/1/98	0/2/98
GONADS	4.4E-03		1.9E-03	2.1E-03
			66/11/23	64/17/19
R MARROW			9.6E-04	7.8E-04
			41/21/38	41/12/47
SI WALL	4.8E-03		2.3E-03	2.6E-03
			65/10/25	62/17/21
ULI WALL	1.2E-02		5.2E-03	5.9E-03
			66/10/24	63/17/20
LLI WALL	2.7E-02		1.0E-02	1.2E-02
			68/11/21	65/18/17
C.E.D.E.	3.8E-03		2.5E-03	2.8E-03

^{167}Yb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			4.8E-05	5.2E-05
			0/12/88	0/15/85
GONADS	4.8E-06			
ST WALL	1.6E-04			
SI WALL	4.1E-05			
ULI WALL	2.7E-05			
LLI WALL	3.3E-05		1.2E-05	1.4E-05
			64/10/26	63/17/20
C.E.D.E.	1.7E-05		6.5E-06	7.0E-06

^{169}Yb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			3.4E-02	5.2E-02
			0/0/100	0/0/100
GONADS	1.8E-03			
R MARROW			3.7E-03	
			30/36/34	
BONE SURF			2.7E-02	
			34/45/21	
SI WALL	3.0E-03			
ULI WALL	1.0E-02			
LLI WALL	2.6E-02		1.2E-02	1.3E-02
			60/9/31	61/17/22
C.E.D.E.	2.8E-03		6.1E-03	7.0E-03

^{175}Yb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			6.7E-03	7.0E-03
			0/1/99	0/2/98
BONE SURF			2.9E-03	
			41/55/4	
ULI WALL	7.4E-03		2.7E-03	3.1E-03
			67/10/23	64/18/18
LLI WALL	1.9E-02		7.0E-03	8.1E-03
			67/10/23	64/18/18
C.E.D.E.	1.6E-03		1.5E-03	1.5E-03

^{177}Yb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			8.5E-04	9.3E-04
			0/10/90	0/16/84
ST WALL	1.4E-03			
SI WALL	1.4E-03			
ULI WALL	1.6E-03			
LLI WALL	7.4E-04			
C.E.D.E.	3.1E-04		1.0E-04	1.1E-04

^{178}Yb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.0E-03	1.1E-03
			0/12/88	0/19/81
ST WALL	1.8E-03			
SI WALL	2.3E-03			
ULI WALL	2.0E-03			
LLI WALL	4.4E-04			
C.E.D.E.	3.9E-04		1.2E-04	1.4E-04

LETETIUM

^{169}Lu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			3.7E-03	4.4E-03
			1/2/97	0/2/98
GONADS	2.3E-03		7.4E-04	8.5E-04
			68/12/20	65/19/16
R MARROW	5.5E-04		5.2E-04	
			38/26/36	
BONE SURF			2.0E-03	
			35/45/20	
ST WALL	1.1E-03			
SI WALL	3.2E-03		1.0E-03	1.2E-03
			68/12/20	64/19/17
ULI WALL	6.3E-03		2.0E-03	2.4E-03
			68/12/20	65/19/16
LLI WALL	1.0E-02		3.3E-03	3.7E-03
			69/11/20	65/19/16
REMAINDER	1.1E-03			
WT	0.06			
C.E.D.E.	2.0E-03		1.1E-03	1.2E-03

^{170}Lu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			5.5E-03	5.9E-03
			1/3/96	1/4/95
GONADS	5.5E-03		1.9E-03	2.2E-03
			67/12/21	63/19/18
BREAST			5.5E-04	5.5E-04
			33/11/56	32/11/57
R MARROW	1.2E-03		8.9E-04	7.4E-04
			41/20/39	41/13/46
ST WALL			1.2E-03	1.3E-03
			45/9/46	44/14/42
SI WALL	7.0E-03		2.4E-03	2.8E-03
			66/12/22	64/18/18
ULI WALL	1.4E-02		4.4E-03	5.2E-03
			68/11/21	63/19/18
LLI WALL	2.2E-02		7.4E-03	8.5E-03
			69/11/20	65/19/16
REMAINDER	2.5E-03			
WT	0.06			
C.E.D.E.	4.3E-03		2.3E-03	2.5E-03

^{171}Lu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.1E-02	1.3E-02
			0/1/99	0/1/99
GONADS	2.7E-03		1.2E-03	1.3E-03
			62/12/26	61/17/22
R MARROW			1.2E-03	
			35/30/35	
BONE SURF			5.2E-03	
			38/50/12	
SI WALL	3.6E-03			
ULI WALL	8.9E-03		3.6E-03	4.1E-03
			63/10/27	62/17/21
LLI WALL	2.0E-02		8.1E-03	8.9E-03
			65/10/25	63/17/20
C.E.D.E.	2.6E-03		2.6E-03	2.6E-03

^{172}Lu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.6E-02	1.7E-02
			1/1/98	0/1/99
GONADS	6.3E-03		2.7E-03	2.9E-03
			62/12/26	61/17/22
R MARROW			2.0E-03	
			35/26/39	
SI WALL	7.8E-03		3.3E-03	3.6E-03
			62/11/27	60/17/23
ULI WALL	1.6E-02		6.7E-03	7.4E-03
			64/10/26	61/17/22
LLI WALL	3.3E-02		1.3E-02	1.5E-02
			65/10/25	63/17/20
C.E.D.E.	5.0E-03		4.2E-03	4.4E-03

^{173}Lu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			2.7E-02	1.6E-01*
			1/2/97	0/0/100
GONADS	7.8E-04			
R MARROW			2.2E-02*	
			26/34/40	
BONE SURF			1.7E-01*	
			26/35/39	
SI WALL	1.1E-03			
ULI WALL	3.3E-03			
LLI WALL	8.5E-03			
C.E.D.E.	9.7E-04		1.1E-02*	1.9E-02*

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{174M}Lu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			5.6E-02	1.9E-01*
			0/0/100	0/0/100
R MARROW			1.9E-02*	
			27/36/37	
BONE SURF			2.0E-01*	
			28/37/35	
ULI WALL	7.8E-03			
LLI WALL	2.3E-02		1.1E-02	
			55/9/36	
C.E.D.E.	1.8E-03		1.6E-02*	2.3E-02*

^{174}Lu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			3.2E-02	2.6E-01*
			2/3/95	0/0/100
GONADS	6.3E-04			
R MARROW			4.4E-02*	
			25/34/41	
BONE SURF			4.1E-01*	
			26/34/40	
SI WALL	1.1E-03			
ULI WALL	3.5E-03			
LLI WALL	9.3E-03			
C.E.D.E.	9.9E-04		2.1E-02*	3.2E-02*

^{176M}Lu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.4E-03	1.6E-03
			0/9/91	0/16/84
ST WALL	1.7E-03			
SI WALL	2.4E-03			
ULI WALL	4.1E-03		4.1E-04	5.2E-04
			76/18/6	67/28/5
LLI WALL	2.3E-03			
C.E.D.E.	6.3E-04		2.0E-04	2.2E-04

^{176}Lu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS				3.7E+00*
				0/0/100
GONADS	2.5E-03			
R MARROW	3.1E-03*		1.0E+00*	4.4E-01*
			25/33/42	6/2/92
BONE SURF	2.7E-02*		1.1E+01*	4.4E+00*
			25/33/42	6/2/92
ULI WALL	2.1E-02			
LLI WALL	5.9E-02			
C.E.D.E.	6.6E-03*		4.4E-01*	6.3E-01*

^{177M}Lu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.7E-01	5.2E-01*
			0/1/99	0/0/100
GONADS	4.8E-03			
R MARROW			4.8E-02*	
			27/35/38	
BONE SURF			4.4E-01*	
			28/38/34	
SI WALL	7.4E-03			
ULI WALL	2.3E-02			
LLI WALL	6.3E-02		3.3E-02	
			53/10/37	
C.E.D.E.	6.8E-03		4.1E-02*	6.2E-02*

^{177}Lu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.1E-02	1.2E-02
			0/1/99	0/1/99
BONE SURF			6.7E-03	
			40/54/6	
ULI WALL	8.9E-03		3.4E-03	4.1E-03
			65/10/25	64/17/19
LLI WALL	2.4E-02		9.3E-03	1.0E-02
			65/10/25	64/17/19
C.E.D.E.	2.0E-03		2.3E-03	2.3E-03

^{178M}Lu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			2.3E-04	2.4E-04
			0/17/83	0/23/77
ST WALL	1.0E-03			
SI WALL	3.2E-04			
ULI WALL	1.1E-04			
C.E.D.E.	8.8E-05		2.8E-05	2.9E-05

^{178}Lu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			3.4E-04	3.7E-04
			0/17/83	0/22/78
ST WALL	1.4E-03			
SI WALL	4.8E-04			
ULI WALL	1.5E-04			
C.E.D.E.	1.2E-04		4.1E-05	4.4E-05

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{179}Lu

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	3.0E-04		3.0E-04	3.0E-04
LUNGS			1.7E-03	1.9E-03
			0/8/92	0/14/86
ST WALL	1.7E-03			
SI WALL	2.7E-03			3.7E-04
				67/27/6
ULI WALL	5.5E-03		6.3E-04	7.8E-04
			76/17/7	67/27/6
LLI WALL	3.5E-03		4.1E-04	4.8E-04
			76/17/7	67/27/6
C.E.D.E.	8.1E-04		2.7E-04	3.2E-04

HAFNIUM

^{178}Hf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	
LUNGS		1.3E-03 7/5/88	3.1E-03 1/3/96	
GONADS	2.2E-03	6.3E-04 69/9/22	8.5E-04 66/13/21	
BREAST		3.3E-04 40/14/46	2.5E-04 33/14/53	
R MARROW		8.5E-04 40/16/44	4.1E-04 41/22/37	
BONE SURF		2.7E-03 38/19/43		
ST WALL		4.1E-04 55/10/35		
SI WALL	3.1E-03	7.4E-04 74/8/18	1.1E-03 66/13/21	
ULI WALL	7.0E-03	1.3E-03 85/5/10	2.3E-03 67/12/21	
LLI WALL	1.2E-02	2.1E-03 88/5/7	4.1E-03 69/12/19	
REMAINDER		4.4E-04 34/15/51		
W_T		0.06		
C.E.D.E.	1.9E-03	8.5E-04	1.1E-03	

^{173}Hf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	
LUNGS		6.3E-04 5/4/91	1.3E-03 1/4/95	
GONADS	9.6E-04	2.2E-04 77/8/15	2.8E-04 70/14/16	
BREAST		1.0E-04 43/14/43		
R MARROW	3.0E-04*	4.4E-04* 41/16/43	2.1E-04* 41/24/35	
BONE SURF		2.5E-03* 35/18/47	5.9E-04* 33/40/27	
ST WALL	5.9E-04	1.8E-04 64/9/27		
SI WALL	1.6E-03	3.3E-04 83/6/11	4.4E-04 69/14/17	
ULI WALL	3.7E-03	6.3E-04 91/4/5	1.0E-03 71/13/16	
LLI WALL	5.5E-03	8.9E-04 92/4/4	1.5E-03 71/13/16	
REMAINDER		1.5E-04 66/11/23		
W_T		0.06		
C.E.D.E.	9.6E-04*	4.0E-04*	4.4E-04*	

^{172}Hf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	
LUNGS			2.0E-01 2/3/95	
GONADS	2.1E-03	7.0E-02 32/16/52	2.0E-02 26/31/43	
R MARROW	3.5E-03*	7.0E-01* 32/16/52	1.8E-01* 25/33/42	
BONE SURF	2.3E-02*	5.6E+00* 32/16/52	1.3E+00* 26/34/40	
ULI WALL	1.0E-02			
LLI WALL	3.1E-02			
C.E.D.E.	4.1E-03*	2.7E-01*	9.1E-02*	

^{175}Hf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	
LUNGS		2.7E-03 23/12/65	2.4E-02 1/1/98	
GONADS	1.8E-03	2.0E-03 41/14/45	1.3E-03 47/18/35	
BREAST		2.0E-03 32/16/52		
R MARROW		1.6E-02 32/16/52	4.4E-03 27/32/41	
BONE SURF		5.2E-02 32/16/52	1.1E-02 30/39/31	
SI WALL	2.1E-03			
ULI WALL	5.2E-03			
LLI WALL	1.2E-02	4.1E-03 63/10/27	6.3E-03 55/11/34	
C.E.D.E.	1.6E-03	4.9E-03	4.5E-03	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{177M}Hf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	
LUNGS		4.4E-04	4.8E-04	
		2/8/90	0/15/85	
GONADS	1.3E-04	2.6E-05		
		82/13/5		
ST WALL	1.7E-03	2.2E-04		
		93/2/5		
SI WALL	1.0E-03	1.4E-04		
		96/3/1		
ULI WALL	7.0E-04	9.6E-05		
		94/4/2		
REMAINDER	2.0E-04			
WT	0.06			
C.E.D.E.	2.5E-04	8.7E-05	5.8E-05	

^{178M}Hf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	
LUNGS			4.1E-01	
			10/13/77	
GONADS	1.3E-02	5.9E-01	1.6E-01	
		32/16/52	26/32/42	
BREAST	4.1E-03			
R MARROW	2.7E-02*	5.9E+00*	1.5E+00*	
		32/16/52	25/33/42	
BONE SURF	1.6E-01*	3.7E+01*	9.6E+00*	
		32/16/52	25/33/42	
SI WALL	1.5E-02			
ULI WALL	3.4E-02			
LLI WALL	8.1E-02			
C.E.D.E.	2.0E-02*	2.0E+00*	5.6E-01*	

^{179M}Hf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	
LUNGS		4.8E-03	4.8E-02	
		15/8/77	0/1/99	
GONADS	4.1E-03	2.8E-03		
		47/13/40		
R MARROW		2.0E-02	4.8E-03	
		32/16/52	31/34/35	
BONE SURF		1.5E-01	2.8E-02	
		32/16/52	35/46/19	
SI WALL	5.9E-03			
ULI WALL	1.7E-02			
LLI WALL	4.1E-02	8.9E-03	1.9E-02	
		80/6/14	60/10/30	
C.E.D.E.	4.8E-03	8.6E-03	8.3E-03	

^{180M}Hf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	
LUNGS		6.3E-04	8.5E-04	
		3/4/93	1/8/91	
GONADS	6.3E-04	1.3E-04	9.2E-05	
		84/8/8	71/20/9	
BREAST		5.9E-05		
		48/14/38		
R MARROW		1.1E-04		
		53/17/30		
BONE SURF		2.8E-04		
		49/24/27		
ST WALL	1.0E-03	2.1E-04	1.7E-04	
		80/6/14	61/17/22	
SI WALL	1.9E-03	3.2E-04	2.6E-04	
		92/4/4	73/18/9	
ULI WALL	3.4E-03	5.2E-04	4.4E-04	
		95/3/2	74/17/9	
LLI WALL	2.2E-03	3.6E-04	2.9E-04	
		93/4/3	74/18/8	
REMAINDER	3.4E-04			
WT	0.06			
C.E.D.E.	6.9E-04	2.2E-04	2.0E-04	

^{181}Hf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	
LUNGS			6.3E-02	
			0/1/99	
GONADS	2.4E-03			
R MARROW		3.0E-02	6.7E-03	
		32/16/52	31/38/31	
BONE SURF		3.0E-01	5.9E-02	
		32/16/52	33/44/23	
SI WALL	4.4E-03			
ULI WALL	1.6E-02			
LLI WALL	4.1E-02		2.0E-02	
			58/10/32	
C.E.D.E.	4.3E-03	1.3E-02	1.1E-02	

^{182M}Hf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	
LUNGS		2.3E-04	2.8E-04	
		2/8/90	0/13/87	
GONADS	6.7E-05	1.6E-05		
		76/13/11		
R MARROW		3.5E-05		
		40/17/43		
BONE SURF		2.0E-04		
		35/17/48		
ST WALL	8.5E-04	1.1E-04		
		93/2/5		
SI WALL	5.9E-04	7.8E-05		
		95/3/2		
ULI WALL	4.4E-04	5.9E-05		
		93/4/3		
LLI WALL	1.0E-04			
REMAINDER	8.5E-05			
WT	0.06			
C.E.D.E.	1.4E-04	5.7E-05	3.4E-05	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{182}Hf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	
GONADS	3.3E-03			
R MARROW	3.1E-02*	7.4E+00*	1.9E+00*	
		32/16/52	25/33/42	
BONE SURF	2.7E-01*	6.3E+01*	1.6E+01*	
		32/16/52	25/33/42	
LLI WALL	2.1E-02			
C.E.D.E.	1.4E-02*	2.8E+00*	7.1E-01*	

^{183}Hf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	
LUNGS		4.4E-04	6.7E-04	
		1/7/92	0/10/90	
GONADS	6.7E-05			
R MARROW		6.3E-05		
		39/18/43		
BONE SURF		4.8E-04		
		34/17/49		
ST WALL	1.4E-03	1.8E-04		
		95/2/3		
SI WALL	1.0E-03	1.3E-04		
		95/3/2		
ULI WALL	8.5E-04	1.2E-04		
		94/3/3		
LLI WALL	6.3E-04	1.0E-04	1.9E-04	
		92/5/3	66/11/23	
C.E.D.E.	2.5E-04	1.1E-04	9.1E-05	

^{184}Hf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-03	2.0E-03	2.0E-03	
LUNGS		2.3E-03	3.5E-03	
		2/3/95	0/6/94	
GONADS	8.5E-04	2.1E-04	1.9E-04	
		77/10/13	70/18/12	
R MARROW		3.4E-04		
		48/21/31		
ST WALL	2.2E-03			
SI WALL	4.8E-03	7.8E-04	8.9E-04	
		92/4/4	73/16/11	
ULI WALL	1.2E-02	1.9E-03	2.2E-03	
		95/3/2	74/15/11	
LLI WALL	1.2E-02	1.9E-03	2.2E-03	
		96/3/1	75/15/10	
C.E.D.E.	2.1E-03	6.5E-04	7.9E-04	

TANTALUM

^{172}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			3.3E-04	4.1E-04
			0/16/84	0/19/81
GONADS	4.8E-05			
ST WALL	1.3E-03			
SI WALL	5.9E-04			
ULI WALL	3.1E-04			
C.E.D.E.	1.4E-04		4.0E-05	4.9E-05

^{173}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			1.4E-03	1.5E-03
			0/9/91	0/14/86
GONADS	3.6E-04		7.4E-05	8.1E-05
			69/18/13	65/23/12
ST WALL	1.6E-03			
SI WALL	2.4E-03		3.0E-04	3.6E-04
			74/17/9	67/26/7
ULI WALL	4.1E-03		5.2E-04	6.3E-04
			74/16/10	66/26/8
LLI WALL	2.8E-03		4.4E-04	5.2E-04
			73/15/12	66/24/10
C.E.D.E.	7.4E-04		2.6E-04	2.9E-04

^{174}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			4.4E-04	4.8E-04
			0/14/86	0/20/80
GONADS	5.6E-05			
ST WALL	1.2E-03			
SI WALL	8.9E-04			
ULI WALL	6.7E-04			
LLI WALL	1.5E-04			
C.E.D.E.	1.9E-04		5.3E-05	5.8E-05

^{175}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			1.0E-03	1.2E-03
			1/5/94	0/7/93
GONADS	9.3E-04		2.0E-04	2.2E-04
			70/17/13	66/23/11
R MARROW	2.5E-04		1.2E-04	
			39/21/39	
ST WALL	8.1E-04		2.2E-04	2.5E-04
			54/15/31	50/20/30
SI WALL	1.9E-03		4.1E-04	4.4E-04
			71/16/13	66/23/11
ULI WALL	3.7E-03		7.4E-04	8.5E-04
			72/15/13	67/23/10
LLI WALL	3.4E-03		7.0E-04	8.1E-04
			72/15/13	67/23/10
REMAINDER	4.8E-04			
WT	0.06			
C.E.D.E.	8.8E-04		3.1E-04	3.4E-04

^{176}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			1.3E-03	1.3E-03
			1/7/92	1/11/88
GONADS	1.4E-03		2.7E-04	3.0E-04
			71/18/11	66/24/10
BREAST			1.1E-04	
			32/18/50	
R MARROW	3.5E-04		1.4E-04	
			40/20/40	
ST WALL	1.4E-03		3.4E-04	3.7E-04
			55/15/30	52/22/26
SI WALL	3.2E-03		5.5E-04	6.7E-04
			71/17/12	66/24/10
ULI WALL	5.5E-03		9.6E-04	1.1E-03
			73/16/11	67/24/9
LLI WALL	4.4E-03		7.4E-04	8.9E-04
			74/16/10	67/25/8
REMAINDER	8.1E-04			
WT	0.06			
C.E.D.E.	1.3E-03		4.1E-04	4.2E-04

^{177}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			9.6E-04	1.0E-03
			0/2/98	0/3/97
GONADS	2.9E-04		1.0E-04	1.1E-04
			66/14/20	64/19/17
SI WALL	5.5E-04		2.0E-04	2.2E-04
			67/13/20	64/19/17
ULI WALL	1.7E-03		5.5E-04	6.7E-04
			68/12/20	64/19/17
LLI WALL	3.4E-03		1.1E-03	1.3E-03
			69/11/20	64/19/17
C.E.D.E.	4.1E-04		2.6E-04	2.8E-04

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{178}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			4.1E-04 1/12/87	4.4E-04 0/18/82
GONADS	2.2E-04			
R MARROW	7.0E-05			
ST WALL	8.9E-04			8.9E-05 56/28/16
SI WALL	1.0E-03			8.9E-05 65/30/5
ULI WALL	1.2E-03		8.5E-05 73/21/6	1.0E-04 65/30/5
LLI WALL	4.1E-04			
REMAINDER	1.5E-04			
WT	0.06			
C.E.D.E.	2.9E-04		5.4E-05	7.0E-05

^{179}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			7.0E-03 1/1/98	4.8E-02 0/0/100
GONADS	2.3E-04			
R MARROW			8.1E-04 20/23/57	
SI WALL	3.1E-04			
ULI WALL	8.1E-04			
LLI WALL	2.0E-03			
C.E.D.E.	2.5E-04		9.4E-04	5.8E-03

^{180M}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			3.7E-04 0/7/93	4.1E-04 0/11/89
GONADS	6.3E-05			
ST WALL	2.6E-04			
SI WALL	5.2E-04		8.5E-05 74/16/10	1.0E-04 67/25/8
ULI WALL	1.3E-03		2.1E-04 74/16/10	2.6E-04 67/25/8
LLI WALL	1.2E-03		2.0E-04 74/16/10	2.4E-04 67/25/8
C.E.D.E.	2.1E-04		7.4E-05	8.5E-05

^{180}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			9.6E-02 1/1/98	1.8E+00 0/0/100
GONADS	2.8E-03			
SI WALL	3.7E-03			
ULI WALL	1.1E-02			
LLI WALL	2.9E-02			
C.E.D.E.	3.3E-03		1.2E-02	2.1E-01

^{182M}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			7.8E-05 0/16/84	1.0E-04 0/16/84
ST WALL	3.3E-04			
SI WALL	7.4E-05			
C.E.D.E.	2.4E-05		9.3E-06	1.2E-05

^{182}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			1.2E-01 0/1/99	3.1E-01 0/0/100
GONADS	4.8E-03			
SI WALL	7.0E-03			
ULI WALL	2.0E-02			
LLI WALL	5.2E-02		2.7E-02 54/11/35	
C.E.D.E.	6.0E-03		1.6E-02	3.7E-02

^{183}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			2.2E-02 0/1/99	2.4E-02 0/2/98
ULI WALL	2.1E-02		8.1E-03 65/11/24	9.3E-03 63/18/19
LLI WALL	5.6E-02		2.1E-02 66/10/24	2.4E-02 63/18/19
C.E.D.E.	4.6E-03		4.4E-03	4.8E-03

^{184}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			4.1E-03 0/7/93	4.4E-03 0/11/89
GONADS	1.4E-03		2.8E-04 70/19/11	3.1E-04 66/24/10
ST WALL	3.1E-03			
SI WALL	6.3E-03		1.1E-03 73/16/11	1.3E-03 67/24/9
ULI WALL	1.5E-02		2.6E-03 74/15/11	3:2E-03 67/24/9
LLI WALL	1.4E-02		2.5E-03 75/15/10	3.0E-03 68/24/8
C.E.D.E.	2.7E-03		9.3E-04	1.1E-03

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{185}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			5.5E-04	6.3E-04
			0/14/86	0/20/80
ST WALL	1.7E-03			
SI WALL	1.0E-03			
ULI WALL	5.2E-04			
C.E.D.E.	2.0E-04		6.7E-05	7.5E-05

^{186}Ta

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			1.8E-04	1.9E-04
			0/20/80	0/24/76
ST WALL	9.6E-04			
SI WALL	1.5E-04			
C.E.D.E.	6.7E-05		2.2E-05	2.3E-05

TUNGSTEN

^{176}W

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	3.0E-01	3.0E-01		
LUNGS			3.4E-04 1/2/97		
GONADS	4.8E-04	3.7E-04	5.6E-05 95/2/3		
R MARROW	1.3E-04	1.0E-04			
ST WALL	5.2E-04	4.8E-04	8.5E-05 80/2/18		
SI WALL	1.1E-03	8.9E-04	1.3E-04 96/2/2		
ULI WALL	2.1E-03	1.6E-03	2.4E-04 97/2/1		
LLI WALL	1.7E-03	1.3E-03	1.9E-04 98/2/0		
REMAINDER	2.6E-04	2.0E-04			
WT	0.06	0.06			
C.E.D.E.	4.8E-04	3.7E-04	9.4E-05		

^{177}W

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	3.0E-01	3.0E-01		
LUNGS			2.5E-04 1/4/95		
GONADS	1.9E-04	1.6E-04	2.3E-05 95/2/3		
R MARROW	6.3E-05	5.6E-05			
ST WALL	6.7E-04	6.7E-04	1.0E-04 90/1/9		
SI WALL	8.1E-04	6.7E-04	9.6E-05 98/1/1		
ULI WALL	1.0E-03	8.5E-04	1.2E-04 98/1/1		
LLI WALL	4.4E-04	3.7E-04	5.2E-05 97/2/1		
REMAINDER	1.3E-04	1.2E-04			
WT	0.06	0.06			
C.E.D.E.	2.4E-04	2.1E-04	5.8E-05		

^{178}W

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	3.0E-01	3.0E-01		
LUNGS			5.9E-04 1/1/98		
GONADS	6.3E-04	4.4E-04	7.8E-05 90/4/6		
R MARROW			1.3E-04 46/11/43		
KIDNEYS			5.9E-04 38/15/47		
LIVER			1.6E-04 37/13/50		
SPLEEN			5.2E-04 38/15/47		
SI WALL	1.0E-03	7.4E-04			
ULI WALL	3.3E-03	2.4E-03	3.7E-04 95/3/2		
LLI WALL	8.5E-03	6.3E-03	9.6E-04 97/3/0		
C.E.D.E.	9.3E-04	6.7E-04	2.6E-04		

^{179}W

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	3.0E-01	3.0E-01		
LUNGS			1.9E-05 0/9/91		
GONADS	3.3E-06	3.1E-06			
ST WALL	7.8E-05	7.8E-05	8.9E-06 96/1/3		
SI WALL	3.7E-05	3.5E-05	3.7E-06 99/1/0		
ULI WALL	2.1E-05	2.0E-05			
C.E.D.E.	9.0E-06	8.7E-06	3.0E-06		

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{181}W

CLASS	Ingestion		Inhalation D	W	Y
GI ABSORP	1.0E-02	3.0E-01	3.0E-01		
LUNGS			2.0E-04 4/2/94		
GONADS	2.7E-04	2.0E-04	4.1E-05 81/6/13		
BREAST			2.2E-05 40/11/49		
R MARROW		1.8E-04	1.8E-04 40/14/46		
BONE SURF			2.6E-04 38/14/48		
KIDNEYS		2.7E-04	4.4E-04 38/15/47		
LIVER			1.2E-04 37/14/49		
SPLEEN		2.4E-04	4.1E-04 37/15/48		
SI WALL	3.7E-04	2.8E-04			
ULI WALL	1.0E-03	7.4E-04	1.3E-04 90/4/6		
LLI WALL	2.6E-03	1.9E-03	3.0E-04 95/3/2		
C.E.D.E.	3.1E-04	2.7E-04	1.5E-04		

^{185}W

CLASS	Ingestion		Inhalation D	W	Y
GI ABSORP	1.0E-02	3.0E-01	3.0E-01		
LUNGS			1.4E-03 0/1/99		
R MARROW			3.1E-04 37/15/48		
BONE SURF			9.3E-04 37/15/48		
KIDNEYS			2.6E-03 37/15/48		
LIVER			4.4E-04 37/15/48		
SPLEEN			2.2E-03 37/15/48		
ULI WALL	7.8E-03	5.5E-03	8.5E-04 97/3/0		
LLI WALL	2.3E-02	1.7E-02	2.6E-03 97/3/0		
C.E.D.E.	1.9E-03	1.3E-03	7.5E-04		

^{187}W

CLASS	Ingestion		Inhalation D	W	Y
GI ABSORP	1.0E-02	3.0E-01	3.0E-01		
LUNGS			2.2E-03 0/2/98		
GONADS	9.6E-04	7.0E-04	1.1E-04 95/3/2		
SI WALL	3.7E-03	2.8E-03			
ULI WALL	1.3E-02	9.6E-03	1.4E-03 98/2/0		
LLI WALL	2.2E-02	1.6E-02	2.4E-03 98/2/0		
C.E.D.E.	2.6E-03	1.9E-03	5.3E-04		

^{188}W

CLASS	Ingestion		Inhalation D	W	Y
GI ABSORP	1.0E-02	3.0E-01	3.0E-01		
LUNGS			5.2E-03 0/0/100		
R MARROW			2.0E-03 37/15/48		
BONE SURF			6.3E-03 37/15/48		
KIDNEYS		9.6E-03	1.7E-02 37/15/48		
LIVER			3.0E-03 37/15/48		
SPLEEN			1.4E-02 37/15/48		
ULI WALL	2.8E-02	1.9E-02	3.1E-03 97/3/0		
LLI WALL	1.2E-01	8.5E-02	1.3E-02 97/3/0		
C.E.D.E.	9.0E-03	6.8E-03	4.1E-03		

RHENIUM

^{177}Re

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		1.1E-04	1.2E-04	
		2/12/86	0/16/84	
GONADS	1.4E-05			
THYROID		7.0E-05		
		65/24/11		
ST WALL	5.2E-04	7.4E-05		
		83/10/7		
SI WALL	1.0E-04			
ULI WALL	6.3E-05			
C.E.D.E.	4.4E-05	1.9E-05	1.4E-05	

^{178}Re

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		1.3E-04	1.5E-04	
		1/15/84	0/17/83	
ST WALL	7.0E-04	7.0E-05		
		87/7/6		
SI WALL	1.0E-04			
C.E.D.E.	4.8E-05	1.9E-05	1.8E-05	

^{181}Re

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		1.3E-03	2.6E-03	
		5/3/92	2/4/94	
GONADS	5.2E-04	1.7E-04	1.5E-04	
		65/12/23	66/18/16	
BREAST	2.3E-04	1.5E-04		
		47/13/40		
R MARROW	3.0E-04	1.8E-04		
		49/13/38		
THYROID	5.5E-03	3.7E-03	2.0E-03	
		54/16/30	63/24/13	
ST WALL	4.8E-03	2.6E-03	1.6E-03	
		56/15/29	62/22/16	
SI WALL	9.3E-04			
ULI WALL	1.9E-03	4.1E-04	5.2E-04	
		81/7/12	70/14/16	
LLI WALL	2.6E-03	5.2E-04	7.0E-04	
		86/6/8	71/14/15	
REMAINDER	4.8E-04	2.9E-04		
		48/13/39		
WT	0.06	0.06		
C.E.D.E.	1.0E-03	5.8E-04	5.7E-04	

^{182}Re (64H)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS	8.5E-04	3.4E-03	1.1E-02	
		8/3/89	2/2/96	
GONADS	2.0E-03	7.8E-04	8.1E-04	
		60/11/29	62/15/23	
BREAST	9.6E-04	6.7E-04		
		45/12/43		
R MARROW	1.2E-03	7.8E-04		
		46/12/42		
THYROID	1.4E-02	1.0E-02	6.3E-03	
		48/14/38	61/19/20	
ST WALL	1.6E-02	1.0E-02	7.0E-03	
		49/14/37	59/18/23	
SI WALL	2.7E-03			
ULI WALL	5.2E-03	1.4E-03		
		70/9/21		
LLI WALL	8.9E-03	1.9E-03	3.2E-03	
		80/7/13	67/12/21	
REMAINDER	2.0E-03	1.3E-03		
		46/12/42		
WT	0.06	0.12		
C.E.D.E.	3.4E-03	2.0E-03	2.3E-03	

^{182}Re (12H)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS	1.7E-04	8.9E-04	1.4E-03	
		6/3/91	2/6/92	
GONADS	4.8E-04	1.4E-04	1.2E-04	
		69/12/19	66/19/15	
BREAST	2.0E-04	1.3E-04		
		47/13/40		
R MARROW	2.6E-04	1.5E-04		
		49/13/38		
THYROID	3.5E-03	2.2E-03	1.1E-03	
		56/17/27	62/26/12	
ST WALL	2.9E-03	1.4E-03	8.9E-04	
		59/15/26	61/23/16	
SI WALL	8.5E-04	2.2E-04		
		73/10/17		
ULI WALL	1.5E-03	3.2E-04	3.4E-04	
		80/8/12	69/16/15	
LLI WALL	1.5E-03	3.1E-04	3.4E-04	
		83/7/10	72/16/12	
REMAINDER	4.8E-04	2.6E-04		
		50/13/37		
WT	0.06	0.06		
C.E.D.E.	7.4E-04	4.0E-04	3.3E-04	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{184M}Re

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		2.4E-03	9.6E-02	
		11/4/85	0/0/100	
GONADS	1.1E-03	6.3E-04		
		50/12/38		
THYROID	9.6E-03	7.4E-03		
		45/13/42		
ST WALL	2.1E-02	1.5E-02		
		45/13/42		
ULI WALL	3.1E-03			
LLI WALL	7.0E-03	1.6E-03		
		76/7/17		
C.E.D.E.	2.4E-03	1.7E-03	1.2E-02	

^{184}Re

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS	8.1E-04	1.7E-03	2.7E-02	
		16/5/79	1/0/99	
GONADS	1.4E-03	6.3E-04		
		54/11/35		
BREAST	8.5E-04	6.3E-04		
		43/12/45		
R MARROW	1.0E-03	7.0E-04		
		44/12/44		
THYROID	5.5E-03	4.1E-03		
		45/13/42		
ST WALL	1.1E-02	7.4E-03	7.4E-03	
		46/13/41	43/13/43	
SI WALL	1.8E-03			
ULI WALL	2.7E-03	1.0E-03		
		58/10/32		
LLI WALL	4.8E-03	1.3E-03		
		69/8/23		
REMAINDER	1.7E-03	1.3E-03		
		44/12/44		
W_T	0.06	0.12		
C.E.D.E.	2.2E-03	1.4E-03	3.6E-03	

^{186M}Re

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		2.5E-03	2.7E-01	
		10/4/86	0/0/100	
THYROID	1.0E-02	8.5E-03		
		41/12/47		
ST WALL	4.1E-02	3.0E-02		
		44/13/43		
LLI WALL	8.9E-03			
C.E.D.E.	3.3E-03	2.3E-03	3.3E-02	

^{186}Re

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		3.6E-03	1.6E-02	
		3/2/95	1/1/98	
THYROID	1.8E-02	1.3E-02	8.1E-03	
		48/14/38	62/19/19	
ST WALL	2.0E-02	1.3E-02	8.9E-03	
		48/14/38	62/19/19	
ULI WALL	4.4E-03			
LLI WALL	1.0E-02	1.8E-03	3.7E-03	
		91/4/5	67/11/22	
C.E.D.E.	2.6E-03	1.7E-03	3.0E-03	

^{187}Re

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		8.5E-06	4.1E-04	
		6/3/91	0/0/100	
THYROID	4.1E-05	2.9E-05		
		45/13/42		
ST WALL	8.1E-05	5.9E-05		
		46/13/41		
ULI WALL	9.6E-06			
LLI WALL	2.7E-05			
C.E.D.E.	8.3E-06	5.5E-06	4.9E-05	

^{188M}Re

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		1.2E-04	2.0E-04	
		2/5/93	1/6/93	
THYROID	4.4E-04	3.0E-04	1.5E-04	
		55/17/28	64/26/10	
ST WALL	4.4E-04	1.9E-04	1.1E-04	
		60/15/25	65/24/11	
SI WALL	5.9E-05			
ULI WALL	1.3E-04			
LLI WALL	1.8E-04	2.9E-05	4.1E-05	
		93/4/3	72/14/14	
C.E.D.E.	6.2E-05	3.8E-05	3.7E-05	

^{188}Re

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		4.8E-03	9.3E-03	
		2/2/96	1/4/95	
THYROID	2.4E-02	1.6E-02	8.1E-03	
		55/16/29	65/25/10	
ST WALL	1.8E-02	9.6E-03	5.5E-03	
		57/16/27	65/24/11	
SI WALL	1.9E-03			
ULI WALL	6.3E-03	1.1E-03		
		91/4/5		
LLI WALL	9.3E-03	1.6E-03	2.3E-03	
		93/4/3	72/14/14	
C.E.D.E.	2.8E-03	1.8E-03	1.8E-03	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{189}Re

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	8.0E-01	8.0E-01	8.0E-01	
LUNGS		2.6E-03	5.5E-03	
		2/2/96	1/3/96	
THYROID	1.3E-02	8.5E-03	4.8E-03	
		52/16/32	65/23/12	
ST WALL	1.0E-02	5.9E-03	3.6E-03	
		55/15/30	65/22/13	
ULI WALL	3.3E-03			
LLI WALL	5.5E-03	9.6E-04	1.6E-03	
		92/4/4	71/13/16	
C.E.D.E.	1.5E-03	9.8E-04	1.1E-03	

OSMIUM

^{180}Os

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		8.1E-05	8.5E-05	9.2E-05
		2/11/87	0/17/83	0/23/77
GONADS	2.2E-05			
ST WALL	4.1E-04	4.8E-05		
		93/2/5		
SI WALL	1.5E-04	1.6E-05		
		93/4/3		
ULI WALL	7.8E-05			
REMAINDER	5.6E-05			
WT	0.06			
C.E.D.E.	4.7E-05	1.4E-05	1.0E-05	1.1E-05

^{181}Os

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		3.3E-04	4.8E-04	5.2E-04
		4/5/91	1/8/91	0/13/87
GONADS	2.9E-04	5.9E-05	4.8E-05	5.2E-05
		81/9/10	68/18/14	65/23/12
BREAST		3.3E-05		
		46/14/40		
R MARROW	8.1E-05	4.4E-05		
		51/14/35		
LIVER		1.0E-04		
		41/18/41		
ST WALL	7.4E-04	1.4E-04		
		82/5/13		
SI WALL	9.8E-04	1.6E-04	1.1E-04	1.3E-04
		90/5/5	70/17/13	66/24/10
ULI WALL	1.4E-03	2.3E-04	2.3E-04	2.7E-04
		92/4/4	71/15/14	66/23/11
LLI WALL	1.2E-03	2.0E-04	2.8E-04	3.3E-04
		93/4/3	71/14/15	66/22/12
REMAINDER	1.7E-04			
WT	0.06			
C.E.D.E.	3.5E-04	1.1E-04	1.1E-04	1.2E-04

^{182}Os

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		1.3E-03	3.1E-03	3.2E-03
		7/4/89	1/3/96	1/4/95
GONADS	2.5E-03	5.9E-04	8.5E-04	9.6E-04
		75/8/17	69/13/18	65/19/16
BREAST		2.8E-04		
		42/14/44		
R MARROW		3.7E-04	3.5E-04	3.5E-04
		48/13/39	46/14/40	45/14/41
KIDNEYS		1.1E-03		
		39/18/43		
LIVER		1.3E-03		
		37/17/46		
SPLEEN		1.0E-03		
		38/17/45		
SI WALL	3.2E-03		1.3E-03	1.4E-03
			67/13/20	65/18/17
ULI WALL	7.8E-03	1.5E-03	2.8E-03	3.2E-03
		86/5/9	69/12/19	65/19/16
LLI WALL	1.5E-02	2.5E-03	4.8E-03	5.5E-03
		92/4/4	71/12/17	66/20/14
C.E.D.E.	2.2E-03	8.4E-04	1.2E-03	1.3E-03

^{185}Os

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		7.4E-03	2.4E-02	5.2E-02
		29/15/56	2/3/95	0/0/100
GONADS	3.1E-03	5.5E-03	2.7E-03	
		37/15/48	44/20/36	
BREAST		5.5E-03	2.6E-03	
		32/16/52	17/18/65	
R MARROW	7.8E-04	6.7E-03	3.1E-03	
		33/16/51	20/19/61	
KIDNEYS		2.6E-02	6.7E-03	
		32/16/52	28/32/40	
LIVER		3.1E-02	9.3E-03	
		32/16/52	24/29/47	
SPLEEN		2.2E-02	7.0E-03	
		32/16/52	23/27/50	
SI WALL	3.2E-03			
ULI WALL	5.2E-03			
LLI WALL	1.0E-02		6.3E-03	
			50/15/35	
REMAINDER	1.3E-03	1.2E-02	5.2E-03	
		32/16/52	17/19/64	
WT	0.06	0.12	0.06	
C.E.D.E.	2.1E-03	1.0E-02	8.4E-03	6.2E-03

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{189m}Os

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		1.0E-04	1.4E-04	1.6E-04
		1/3/96	0/8/92	0/13/87
ST WALL	1.1E-04			
SI WALL	1.9E-04	3.0E-05		3.3E-05
		95/3/2		67/26/7
ULI WALL	4.4E-04	6.7E-05	6.3E-05	7.8E-05
		97/2/1	76/16/8	67/26/7
LLI WALL	3.6E-04	5.6E-05	4.8E-05	5.9E-05
		97/2/1	75/17/8	67/26/7
C.E.D.E.	6.6E-05	2.2E-05	2.4E-05	2.9E-05

^{191m}Os

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		4.4E-04	1.3E-03	1.6E-03
		3/3/94	0/3/97	0/4/96
GONADS		3.6E-05		
		42/16/42		
KIDNEYS		3.7E-04		
		35/17/48		
LIVER		3.4E-04		
		35/17/48		
SPLEEN		3.3E-04		
		35/17/48		
SI WALL	5.9E-04			
ULI WALL	2.1E-03	3.6E-04	5.2E-04	5.9E-04
		91/4/5	71/13/16	66/21/13
LLI WALL	3.3E-03	5.2E-04	8.9E-04	1.0E-03
		94/3/3	69/12/19	66/20/14
C.E.D.E.	3.6E-04	1.8E-04	2.4E-04	2.8E-04

^{191}Os

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		2.2E-03	2.1E-02	2.5E-02
		10/6/84	0/1/99	0/1/99
GONADS		7.0E-04		
		38/15/47		
R MARROW		8.5E-04		
		34/16/50		
BREAST		6.3E-04		
		33/16/51		
KIDNEYS		8.1E-03		
		32/16/52		
LIVER		7.4E-03		
		32/16/52		
SPLEEN		7.0E-03		
		32/16/52		
ULI WALL	8.5E-03	2.0E-03		
		75/7/18		
LLI WALL	2.4E-02	4.4E-03	1.0E-02	1.1E-02
		87/5/8	62/10/28	62/17/21
C.E.D.E.	2.0E-03	2.4E-03	3.1E-03	3.7E-03

^{193}Os

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		3.0E-03	7.0E-03	7.4E-03
		2/2/96	0/3/97	0/5/95
GONADS		1.6E-04		
		49/16/35		
KIDNEYS		1.5E-03		
		38/19/43		
LIVER		1.3E-03		
		38/19/43		
SPLEEN		1.3E-03		
		38/19/43		
SI WALL	3.7E-03			
ULI WALL	1.6E-02	2.6E-03	4.8E-03	5.5E-03
		95/3/2	71/12/17	66/20/14
LLI WALL	3.1E-02	4.8E-03	9.3E-03	1.1E-02
		96/3/1	71/12/17	66/20/14
C.E.D.E.	3.1E-03	1.1E-03	1.7E-03	1.9E-03

^{194}Os

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		4.1E-02*	5.2E-01*	5.6E+00*
		28/14/58	1/1/98	0/0/100
GONADS		3.7E-02*		
		32/16/52		
BREAST		3.7E-02*		
		32/16/52		
KIDNEYS	1.2E-02	5.9E-01*	1.5E-01*	
		32/16/52	26/33/41	
R MARROW		3.7E-02*		
		32/16/52		
LIVER		4.8E-01*	1.3E-01*	
		32/16/52	26/32/42	
SPLEEN		4.8E-01*	1.3E-01*	
		32/16/52	26/33/41	
ULI WALL	2.5E-02			
LLI WALL	1.1E-01			
C.E.D.E.	9.1E-03*	1.2E-01*	8.7E-02*	6.7E-01*

IRIDIUM

^{182}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		2.4E-04 1/14/85	2.8E-04 0/17/83	2.9E-04 0/21/79
GONADS	4.1E-05			
ST WALL	1.2E-03	1.0E-04 94/2/4		
SI WALL	2.9E-04			
ULI WALL	1.6E-04			
LLI WALL	1.8E-04			6.3E-05 66/20/14
C.E.D.E.	1.2E-04	3.5E-05	3.3E-05	3.9E-05

^{184}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		7.8E-04 3/5/92	9.6E-04 1/10/89	1.0E-03 0/17/83
GONADS	4.8E-04	1.0E-04 84/9/7	5.2E-05 67/24/9	5.6E-05 64/28/8
ST WALL	1.7E-03	2.9E-04 86/4/10		2.1E-04 57/27/16
SI WALL	2.3E-03	3.6E-04 93/4/3	2.1E-04 73/20/7	2.6E-04 65/29/6
ULI WALL	3.3E-03	4.8E-04 95/3/2	2.9E-04 74/19/7	3.5E-04 65/29/6
LLI WALL	1.4E-03	2.3E-04 92/5/3		
C.E.D.E.	6.4E-04	2.0E-04	1.6E-04	1.9E-04

^{185}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		9.3E-04 4/4/92	1.7E-03 1/5/94	1.9E-03 0/7/93
GONADS	7.8E-04	2.1E-04 71/10/19	2.0E-04 68/17/15	2.1E-04 65/22/13
BREAST		1.1E-04 42/15/43		
R MARROW		1.5E-04 46/14/40		
KIDNEYS		4.8E-04 41/18/41		
LIVER		5.2E-04 38/18/44		
ST WALL	8.5E-04			
SI WALL	2.0E-03	4.1E-04 81/7/12	4.8E-04 70/15/15	5.5E-04 66/22/12
ULI WALL	5.2E-03	8.9E-04 90/4/6	1.1E-03 72/14/14	1.4E-03 67/22/11
LLI WALL	6.3E-03	1.0E-03 92/4/4	1.4E-03 72/14/14	1.6E-03 67/22/11
C.E.D.E.	1.1E-03	4.0E-04	4.3E-04	4.9E-04

^{186}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		1.3E-03 5/4/91	2.2E-03 1/5/94	2.3E-03 1/8/91
GONADS	2.3E-03	4.8E-04 82/7/11	5.5E-04 71/15/14	6.7E-04 66/22/12
BREAST		2.2E-04 46/13/41	1.8E-04 36/15/49	
R MARROW	5.5E-04	2.8E-04 52/12/36	2.4E-04 43/16/41	2.4E-04 43/17/40
KIDNEYS		6.3E-04 46/18/36		
LIVER		7.0E-04 41/18/41		
ST WALL	1.6E-03		5.2E-04 55/14/31	5.5E-04 52/19/29
SI WALL	4.1E-03	7.8E-04 85/6/9	9.6E-04 70/15/15	1.1E-03 66/22/12
ULI WALL	8.1E-03	1.4E-03 91/4/5	1.9E-03 72/14/14	2.3E-03 66/22/12
LLI WALL	9.6E-03	1.6E-03 92/4/4	2.2E-03 72/14/14	2.6E-03 67/22/11
REMAINDER	1.1E-03			
WT	0.06			
C.E.D.E.	2.1E-03	6.5E-04	7.9E-04	8.6E-04

^{187}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		4.4E-04 3/3/94	6.7E-04 1/6/93	7.0E-04 0/10/90
GONADS	4.1E-04	8.5E-05 82/8/10	8.5E-05 71/17/12	9.6E-05 67/23/10
BREAST		4.1E-05 47/14/39		
R MARROW		5.9E-05 53/13/34		
KIDNEYS		1.3E-04 48/20/32		
LIVER		1.3E-04 44/19/37		
ST WALL	4.8E-04			
SI WALL	1.1E-03	1.9E-04 89/5/6	2.1E-04 72/16/12	2.6E-04 67/23/10
ULI WALL	2.4E-03	4.1E-04 94/3/3	4.8E-04 73/15/12	5.5E-04 67/23/10
LLI WALL	2.4E-03	3.7E-04 95/3/2	4.8E-04 74/15/11	5.5E-04 67/24/9
C.E.D.E.	4.8E-04	1.8E-04	1.7E-04	1.9E-04

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{188}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		1.4E-03	3.3E-03	3.4E-03
		10/5/85	2/3/95	1/4/95
GONADS	3.6E-03	9.3E-04	1.2E-03	1.4E-03
		73/9/18	67/13/20	64/19/17
BREAST		4.4E-04	3.6E-04	3.4E-04
		42/14/44	34/14/52	33/12/55
R MARROW	8.1E-04	5.5E-04	4.8E-04	4.8E-04
		46/13/41	42/14/44	42/14/44
KIDNEYS		1.5E-03		
		39/17/44		
LIVER		1.7E-03	7.0E-04	
		37/17/46	30/25/45	
SPLEEN		1.3E-03		
		37/16/47		
ST WALL			8.1E-04	8.1E-04
			45/13/42	45/14/41
SI WALL	4.4E-03		1.6E-03	1.7E-03
			67/13/20	64/19/17
ULI WALL	8.5E-03	1.7E-03	2.8E-03	3.2E-03
		82/6/12	68/12/20	64/19/17
LLI WALL	1.3E-02	2.4E-03	4.1E-03	4.8E-03
		88/5/7	69/12/19	65/19/16
REMAINDER	1.6E-03			
WT	0.06			
C.E.D.E.	2.7E-03	1.1E-03	1.4E-03	1.5E-03

^{189}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		1.0E-03	7.8E-03	9.3E-03
		12/6/82	0/1/99	0/1/99
GONADS	4.4E-04	3.7E-04		
		44/14/42		
BREAST		3.1E-04		
		33/16/51		
R MARROW		4.8E-04		
		35/15/50		
KIDNEYS		3.3E-03		
		33/16/51		
LIVER		3.1E-03		
		32/16/52		
SPLEEN		2.8E-03		
		32/16/52		
ULI WALL	3.7E-03	9.6E-04	1.6E-03	
		71/8/21	62/11/27	
LLI WALL	1.0E-02	1.9E-03	4.1E-03	4.4E-03
		86/5/9	63/16/27	63/17/20
C.E.D.E.	9.3E-04	1.0E-03	1.3E-03	1.4E-03

^{190M}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		4.4E-05	1.3E-04	1.4E-04
		9/8/83	1/4/95	0/5/95
GONADS	2.5E-05	1.4E-05	1.3E-05	1.2E-05
		51/13/36	58/15/27	61/16/23
BREAST		1.0E-05		
		35/16/49		
R MARROW		1.3E-05		
		36/15/49		
KIDNEYS		5.6E-05		
		33/16/51		
LIVER		6.3E-05		
		33/16/51		
SPLEEN		4.8E-05		
		33/16/51		
ST WALL	7.4E-05			
SI WALL	7.8E-05			
ULI WALL	9.6E-05	2.8E-05	3.0E-05	3.1E-05
		65/9/26	61/13/26	61/17/22
LLI WALL	1.4E-04	3.3E-05	5.9E-05	6.3E-05
		77/7/16	63/11/26	62/17/21
C.E.D.E.	3.0E-05	2.6E-05	2.4E-05	2.6E-05

^{190}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		4.8E-03	2.4E-02	2.8E-02
		19/10/71	1/2/97	0/1/99
GONADS	6.3E-03	3.2E-03	3.0E-03	2.9E-03
		52/12/36	58/15/27	61/16/23
BREAST		2.5E-03		
		34/15/51		
R MARROW		3.2E-03		
		36/15/49		
KIDNEYS		1.4E-02		
		33/16/51		
LIVER		1.5E-02		
		33/16/51		
SPLEEN		1.2E-02		
		33/16/51		
SI WALL	7.0E-03			
ULI WALL	1.5E-02	5.5E-03	7.0E-03	7.0E-03
		58/11/31	59/13/28	61/16/23
LLI WALL	3.3E-02	7.4E-03	1.4E-02	1.5E-02
		76/7/17	62/11/27	62/17/21
C.E.D.E.	4.9E-03	5.4E-03	4.9E-03	5.4E-03

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{192M}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS	5.9E-04*	2.8E-02*	7.8E-02*	2.8E+00*
		32/16/52	2/3/95	0/0/100
GONADS	1.3E-03*	2.4E-02*	7.4E-03*	
		32/16/52	25/28/47	
BREAST	5.5E-04*	2.3E-02*	7.8E-03*	
		32/16/52	20/25/55	
R MARROW	8.1E-04*	2.8E-02*	9.6E-03*	
		32/16/52	21/25/54	
KIDNEYS	4.1E-03*	1.9E-01*	5.2E-02*	
		32/16/52	24/30/46	
LIVER	4.1E-03*	1.9E-01*	5.6E-02*	
		32/16/52	23/29/48	
SPLEEN	3.4E-03*	1.6E-01*	4.8E-02*	
		32/16/52	23/29/48	
ULI WALL	1.7E-03			
LLI WALL	2.8E-03			
REMAINDER		4.4E-02		
		32/16/52		
W_T		0.12		
C.E.D.E.	1.5E-03*	5.4E-02*	2.3E-02*	3.3E-01*

^{192}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		1.2E-02	9.3E-02	1.9E-01
		24/12/64	1/1/98	0/0/100
GONADS	3.7E-03	8.1E-03		
		36/15/49		
BREAST		7.8E-03		
		32/16/52		
R MARROW		8.9E-03		
		33/16/51		
KIDNEYS		6.3E-02		
		32/16/52		
LIVER		6.3E-02		
		32/16/52		
SPLEEN		5.6E-02		
		32/16/52		
SI WALL	5.9E-03			
ULI WALL	1.8E-02			
LLI WALL	4.8E-02	1.5E-02	2.4E-02	
		63/10/27	55/11/34	
REMAINDER		1.5E-02		
		32/16/52		
W_T		0.06		
C.E.D.E.	5.3E-03	1.8E-02	1.3E-02	2.3E-02

^{194M}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		3.6E-02	1.4E-01	4.1E-01
		29/15/56	2/2/96	0/0/100
GONADS	1.0E-02	2.7E-02	1.1E-02	
		35/15/50	39/23/38	
BREAST		2.7E-02	1.2E-02	
		32/16/52	18/20/62	
R MARROW	2.6E-03	3.1E-02		
		32/16/52		
KIDNEYS		1.5E-01	4.1E-02	
		32/16/52	27/32/41	
LIVER		1.7E-01	4.8E-02	
		32/16/52	24/29/47	
SPLEEN		1.3E-01	3.7E-02	
		32/16/52	24/28/48	
SI WALL	1.2E-02			
ULI WALL	2.3E-02			
LLI WALL	5.2E-02		3.2E-02	
			49/14/37	
REMAINDER		5.9E-02		
		32/16/52		
W_T		0.12		
C.E.D.E.	8.1E-03	5.3E-02	3.1E-02	4.9E-02

^{194}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		5.5E-03	1.1E-02	1.1E-02
		1/2/97	0/4/96	0/7/93
KIDNEYS		1.8E-03		
		41/20/39		
LIVER		1.6E-03		
		41/20/39		
SPLEEN		1.6E-03		
		41/20/39		
SI WALL	7.4E-03			
ULI WALL	2.9E-02	4.4E-03	7.4E-03	8.9E-03
		96/3/1	72/13/15	67/21/12
LLI WALL	4.8E-02	7.4E-03	1.2E-02	1.4E-02
		96/3/1	72/13/15	67/21/12
C.E.D.E.	5.1E-03	1.7E-03	2.4E-03	2.7E-03

^{195M}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		1.0E-03	1.3E-03	1.4E-03
		1/4/95	0/9/91	0/15/85
GONADS	1.7E-04			
ST WALL	1.5E-03	2.4E-04		
		92/4/4		
SI WALL	2.3E-03	3.5E-04		2.9E-04
		96/3/1		67/28/5
ULI WALL	4.1E-03	5.9E-04	4.1E-04	4.8E-04
		97/2/1	76/18/6	67/28/5
LLI WALL	2.1E-03	3.3E-04		2.7E-04
		96/3/1		67/28/5
C.E.D.E.	6.4E-04	2.1E-04	1.8E-04	2.3E-04

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{195}Ir

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02	1.0E-02	1.0E-02
LUNGS		6.7E-04	8.1E-04	8.9E-04
		1/5/94	0/11/89	0/17/83
ST WALL	1.3E-03	1.9E-04		
		97/2/1		
SI WALL	1.6E-03	2.2E-04		
		97/2/1		
ULI WALL	2.0E-03	2.8E-04		1.8E-04
		97/2/1		66/30/4
LLI WALL	7.8E-04			
C.E.D.E.	3.4E-04	1.2E-04	9.8E-05	1.2E-04

PLATINUM

^{186}Pt

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02		
LUNGS		4.1E-04 3/3/94		
GONADS	3.2E-04	6.3E-05 85/8/7		
BREAST		3.4E-05 48/15/37		
R MARROW		4.4E-05 54/14/32		
KIDNEYS		1.1E-04 57/23/20		
ST WALL	5.9E-04	1.3E-04 81/6/13		
SI WALL	1.3E-03	2.2E-04 93/4/3		
ULI WALL	2.1E-03	3.3E-04 95/3/2		
LLI WALL	8.5E-04	1.4E-04 92/5/3		
C.E.D.E.	3.7E-04	1.3E-04		

^{189}Pt

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02		
LUNGS		4.1E-04 3/3/94		
GONADS	4.1E-04	9.2E-05 80/8/12		
BREAST		4.4E-05 45/14/41		
R MARROW		7.0E-05 51/13/36		
KIDNEYS		3.5E-04 42/19/39		
ADRENALS		1.1E-04 38/17/45		
ST WALL	4.4E-04			
SI WALL	1.0E-03	1.9E-04 88/5/7		
ULI WALL	2.3E-03	3.7E-04 92/4/4		
LLI WALL	2.6E-03	4.1E-04 94/3/3		
C.E.D.E.	4.9E-04	1.7E-04		

^{188}Pt

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02		
LUNGS		2.6E-03 15/8/77		
GONADS	3.1E-03	1.8E-03 49/12/39		
BREAST		1.3E-03 33/15/52		
R MARROW		1.7E-03 35/15/50		
KIDNEYS		1.4E-02 32/16/52		
LIVER		4.4E-03 32/16/52		
SPLEEN		3.7E-03 32/16/52		
ADRENALS		4.4E-03 32/16/52		
SI WALL	3.4E-03			
ULI WALL	8.9E-03			
LLI WALL	2.6E-02	5.2E-03 80/6/14		
C.E.D.E.	3.0E-03	3.1E-03		

^{191}Pt

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02		
LUNGS		9.6E-04 6/4/90		
GONADS	1.1E-03	3.2E-04 69/9/22		
BREAST		1.7E-04 39/14/47		
R MARROW		2.8E-04 45/13/42		
KIDNEYS		2.0E-03 35/17/48		
LIVER		5.5E-04 35/16/49		
ADRENALS		5.5E-04 34/17/49		
SI WALL	1.9E-03			
ULI WALL	5.2E-03	9.6E-04 86/5/9		
LLI WALL	1.0E-02	1.7E-03 92/4/4		
C.E.D.E.	1.3E-03	6.0E-04		

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{193M}Pt

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02		
LUNGS		1.5E-03		
		3/3/94		
GONADS		1.4E-04		
		38/16/46		
KIDNEYS		4.1E-03		
		34/17/49		
LIVER		7.4E-04		
		34/17/49		
ADRENALS		9.3E-04		
		34/17/49		
ULI WALL	7.8E-03	1.3E-03		
		91/4/5		
LLI WALL	2.0E-02	3.2E-03		
		95/3/2		
C.E.D.E.	1.7E-03	8.3E-04		

^{193}Pt

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02		
LUNGS		1.4E-04		
		11/6/83		
GONADS		5.2E-05		
		33/16/51		
KIDNEYS		1.8E-03		
		32/16/52		
LIVER		3.0E-04		
		32/16/52		
SPLEEN		3.1E-04		
		32/16/52		
ADRENALS		3.7E-04		
		32/16/52		
ULI WALL	4.4E-04			
LLI WALL	1.3E-03	2.6E-04		
		85/5/10		
C.E.D.E.	1.1E-04	2.1E-04		

^{195M}Pt

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02		
LUNGS		2.1E-03		
		3/3/94		
GONADS		2.5E-04		
		48/14/38		
KIDNEYS		5.5E-03		
		34/17/49		
LIVER		1.0E-03		
		34/17/49		
ADRENALS		1.3E-03		
		34/17/49		
ULI WALL	1.1E-02	1.9E-03		
		90/4/6		
LLI WALL	2.7E-02	4.4E-03		
		95/3/2		
C.E.D.E.	2.2E-03	1.2E-03		

^{197M}Pt

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02		
LUNGS		5.2E-04		
		1/5/94		
KIDNEYS		1.4E-04		
		45/22/33		
ST WALL	1.0E-03	1.4E-04		
		95/3/2		
SI WALL	1.0E-03	1.5E-04		
		95/3/2		
ULI WALL	1.6E-03	2.3E-04		
		96/3/1		
LLI WALL	1.5E-03	2.3E-04		
		96/3/1		
C.E.D.E.	3.1E-04	1.2E-04		

^{197}Pt

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02		
LUNGS		1.7E-03		
		1/2/97		
KIDNEYS		1.2E-03		
		41/21/38		
SI WALL	2.3E-03	4.1E-04		
		90/5/5		
ULI WALL	8.9E-03	1.4E-03		
		96/3/1		
LLI WALL	1.4E-02	2.2E-03		
		96/3/1		
C.E.D.E.	1.5E-03	5.2E-04		

^{199}Pt

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02		
LUNGS		2.4E-04		
		1/10/89		
ST WALL	1.0E-03	1.1E-04		
		98/1/1		
SI WALL	4.1E-04			
ULI WALL	1.9E-04			
LLI WALL	1.5E-04			
C.E.D.E.	1.0E-04	3.6E-05		

^{200}Pt

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-02	1.0E-02		
LUNGS		5.2E-03		
		1/2/97		
KIDNEYS		2.9E-03		
		44/22/34		
SI WALL	8.1E-03	1.4E-03		
		92/4/4		
ULI WALL	3.0E-02	4.4E-03		
		96/3/1		
LLI WALL	3.7E-02	5.9E-03		
		97/2/1		
C.E.D.E.	4.5E-03	1.5E-03		

GOLD

^{193}Au

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	1.0E-01
LUNGS		4.8E-04	9.3E-04	1.0E-03
		0/2/98	0/4/96	0/7/93
GONADS	3.4E-04	1.3E-04	9.6E-05	1.0E-04
		64/13/23	68/19/13	66/22/12
BLAD WALL	8.5E-04	3.4E-03	8.5E-04	2.8E-04
		43/20/37	50/46/4	68/22/10
ST WALL	4.1E-04			
SI WALL	9.3E-04		2.3E-04	2.7E-04
			72/14/14	66/22/12
ULI WALL	2.6E-03	4.1E-04	6.3E-04	7.4E-04
		95/3/2	73/13/14	66/22/12
LLI WALL	3.7E-03	6.3E-04	8.9E-04	1.1E-03
		91/4/5	72/14/14	66/22/12
C.E.D.E.	6.0E-04	3.8E-04	2.9E-04	2.9E-04

^{194}Au

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	1.0E-01
LUNGS		7.8E-04	2.3E-03	2.3E-03
		2/2/96	1/1/97	1/4/95
GONADS	2.4E-03	1.1E-03	8.9E-04	9.3E-04
		57/13/30	65/17/18	65/19/16
BREAST			2.4E-04	2.4E-04
			35/14/51	34/12/54
R MARROW	5.5E-04		3.1E-04	3.2E-04
			42/12/46	42/14/44
BLAD WALL	3.2E-03	1.1E-02	2.9E-03	1.3E-03
		39/18/43	51/41/8	66/19/15
ST WALL				5.5E-04
				45/15/40
SI WALL	3.0E-03		1.0E-03	1.1E-03
			66/14/20	64/19/17
ULI WALL	5.5E-03		1.8E-03	2.1E-03
			68/12/20	64/19/17
LLI WALL	8.5E-03	2.1E-03	2.8E-03	3.2E-03
		75/8/17	68/14/18	66/19/15
REMAINDER	1.4E-03	1.8E-03	7.0E+16	
		43/17/40	58/28/14	
WT	0.06	0.06	0.06	
C.E.D.E.	2.0E-03	1.3E-03	4.2E+15	1.1E-03

^{195}Au

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	1.0E-01
LUNGS			2.9E-02	1.0E-01
			0/0/100	0/0/100
GONADS	5.2E-04			
BLAD WALL	3.6E-03	1.7E-02		
		34/16/50		
ULI WALL	3.5E-03			
LLI WALL	9.6E-03	1.8E-03		
		86/5/9		
C.E.D.E.	1.1E-03	1.1E-03	3.5E-03	1.2E-02

^{198M}Au

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	1.0E-01
LUNGS		3.5E-03	1.9E-02	2.0E-02
		0/1/99	0/1/99	0/2/98
GONADS	2.4E-03		1.0E-03	1.0E-03
			62/17/21	63/18/19
BLAD WALL	1.3E-02	5.9E-02	1.4E-02	6.3E-03
		35/16/49	50/39/11	65/18/17
SI WALL	4.8E-03			
ULI WALL	1.9E-02		7.4E-03	8.5E-03
			66/10/24	64/17/19
LLI WALL	4.8E-02	8.5E-03	1.9E-02	2.2E-02
		91/4/5	66/11/23	63/18/19
C.E.D.E.	5.7E-03	4.5E-03	5.0E-03	4.9E-03

^{198}Au

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	1.0E-01
LUNGS		3.7E-04	1.5E-03	1.6E-03
		0/1/99	0/2/98	0/3/97
GONADS	1.3E-03			
BLAD WALL	9.3E-03	4.1E-02	1.0E-02	4.1E-03
		37/17/46	50/41/9	65/19/16
SI WALL	4.1E-03			
ULI WALL	1.7E-02		5.9E-03	7.0E-03
			68/11/21	65/18/17
LLI WALL	2.4E-03	6.7E-03	1.4E-02	1.6E-02
		94/3/3	68/11/21	65/18/17
C.E.D.E.	2.3E-03	2.9E-03	2.0E-03	1.8E-03

^{199}Au

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	1.0E-01
LUNGS		1.4E-03	5.9E-03	6.3E-03
		0/1/99	0/1/99	0/3/97
BLAD WALL	4.1E-03	1.9E-02	4.4E-03	1.9E-03
		36/17/47	50/41/9	66/18/16
ULI WALL	7.4E-03		2.6E-03	3.0E-03
			67/11/22	64/18/18
LLI WALL	1.8E-02	2.8E-03	6.3E-03	7.4E-03
		95/3/2	67/11/22	64/18/18
C.E.D.E.	1.6E-03	1.5E-03	1.5E-03	1.5E-03

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{200M}Au

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	1.0E-01
LUNGS		3.2E-03	8.3E-03	8.7E-03
		1/1/98	0/4/96	0/7/93
GONADS	3.6E-03	1.3E-03	1.0E-03	1.1E-03
		64/13/23	67/19/14	66/21/13
BLAD WALL	6.7E-03	2.6E-02	6.3E-03	2.3E-03
		43/20/37	50/45/5	68/21/11
ST WALL	2.8E-03			
SI WALL	7.4E-03		1.9E-03	2.2E-03
			71/14/15	66/21/13
ULI WALL	1.9E-02	3.2E-03	4.8E-03	5.5E-03
		92/4/4	72/13/15	67/21/12
LLI WALL	2.7E-02	4.8E-03	6.7E-03	7.8E-03
		88/5/7	72/14/14	67/21/12
C.E.D.E.	4.6E-03	2.7E-03	2.2E-03	2.1E-03

^{200}Au

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	1.0E-01
LUNGS		4.8E-04	5.5E-04	5.9E-04
		0/8/92	0/15/85	0/21/79
ST WALL	1.7E-03	2.0E-04		
		98/1/1		
SI WALL	9.6E-04	1.1E-04		
		99/1/0		
ULI WALL	4.8E-04			
BLAD WALL		8.5E-04	2.5E-04	
		62/31/7	43/57/0	
C.E.D.E.	1.9E-04	1.3E-04	8.1E-05	7.1E-05

^{201}Au

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	1.0E-01
LUNGS		1.6E-04	1.7E-04	1.8E-04
		1/11/89	0/17/83	0/23/77
ST WALL	7.0E-04	7.0E-05		
		100/0/0		
SI WALL	2.4E-04			
BLAD WALL		2.2E-04	6.3E-05	
		63/32/5	43/57/0	
C.E.D.E.	5.7E-05	3.6E-05	2.5E-05	2.2E-05

MERCURY

^{193M}Hg (ORG)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	4.0E-01	1.0E+00		
LUNGS	2.7E-04		1.3E-03 6/3/91		
GONADS	3.0E-04	9.6E-04	1.5E-04 57/16/27		
BREAST	2.7E-04		1.6E-04 50/13/37		
R MARROW	3.7E-04	3.6E-04	2.2E-04 51/14/35		
KIDNEYS	2.1E-03	9.3E-04	1.1E-03 58/15/27		
BRAIN	1.4E-03		7.4E-04 58/16/26		
ST WALL	1.3E-03	1.3E-03	3.4E-04 70/8/22		
SI WALL		2.1E-03			
ULI WALL		4.8E-03			
LLI WALL		6.3E-03			
REMAINDER	4.8E-04				
WT	0.12				
C.E.D.E.	5.4E-04	1.2E-03	3.8E-04		

^{193}Hg (ORG)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	4.0E-01	1.0E+00		
LUNGS	4.4E-05		4.1E-04 3/4/93		
GONADS	4.4E-05	1.2E-04	2.2E-05 62/17/21		
BREAST	4.1E-05				
R MARROW	6.7E-05				
KIDNEYS	3.5E-04	1.4E-04	1.7E-04 61/16/23		
BRAIN	2.1E-04		1.1E-04 61/17/22		
ST WALL	5.9E-04	5.9E-04	1.0E-04 86/5/9		
SI WALL		6.7E-04			
ULI WALL		1.3E-03			
LLI WALL		1.0E-03			
REMAINDER	7.8E-05				
WT	0.12				
C.E.D.E.	1.1E-04	2.5E-04	7.7E-05		

^{193M}Hg (IN)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02		2.0E-02	2.0E-02	
LUNGS			1.3E-03 4/3/93	2.3E-03 1/5/94	
GONADS	1.3E-03		3.3E-04 77/9/14	3.2E-04 70/17/13	
BREAST			1.6E-04 45/15/40		
R MARROW			2.2E-04 50/14/36		
KIDNEYS			8.5E-04 44/20/36		
ST WALL	1.3E-03		3.5E-04 68/9/23		
SI WALL	3.1E-03		5.9E-04 85/6/9	7.4E-04 71/15/14	
ULI WALL	7.4E-03		1.3E-03 92/4/4	1.7E-03 72/14/14	
LLI WALL	9.3E-03		1.6E-03 93/4/3	2.2E-03 72/14/14	
C.E.D.E.	1.6E-03		5.6E-04	6.3E-04	

^{193}Hg (IN)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02		2.0E-02	2.0E-02	
LUNGS			4.1E-04 2/4/94	5.9E-04 0/8/92	
GONADS	1.6E-04		4.1E-05 76/11/13	3.1E-05 69/19/12	
KIDNEYS			1.3E-04 47/22/31		
ST WALL	5.9E-04		1.0E-04 86/5/9		
SI WALL	9.3E-04		1.5E-04 92/4/4	1.3E-04 73/17/10	
ULI WALL	1.8E-03		2.8E-04 95/3/2	2.7E-04 74/15/11	
LLI WALL	1.5E-03		2.4E-04 95/3/2	2.9E-04 73/14/13	
C.E.D.E.	3.3E-04		1.1E-04	1.2E-04	

^{193M}Hg (VAP)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP					
LUNGS				4.8E-03	
C.E.D.E.				5.8E-04	

^{193}Hg (VAP)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP					
LUNGS				1.4E-03	
C.E.D.E.				1.6E-04	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{194}Hg (ORG)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	4.0E-01	1.0E+00		
LUNGS	1.4E-01*	5.6E-02*	8.9E-02* 47/13/40		
GONADS	1.7E-01*	7.0E-02*	1.1E-01* 47/13/40		
BREAST	1.4E-01*	5.9E-02*	9.3E-02* 47/13/40		
R MARROW	2.2E-01*	8.9E-02*	1.4E-01* 47/13/40		
KIDNEYS	1.1E+00*	4.4E-01*	7.0E-01* 47/13/40		
BRAIN	9.3E-01*	3.7E-01*	5.9E-01* 47/13/40		
REMAINDER	2.9E-01*	1.1E-01*	1.8E-01* 47/13/40		
WT	0.18	0.18	0.18		
C.E.D.E.	2.8E-01*	1.1E-01*	1.8E-01*		

^{195M}Hg (ORG)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	4.0E-01	1.0E+00		
LUNGS	4.8E-04*		1.9E-03* 8/3/89		
GONADS	5.2E-04*	7.4E-04*	3.0E-04* 51/14/35		
BREAST	4.8E-04*		2.9E-04* 50/13/37		
R MARROW	7.0E-04*		4.1E-04* 50/13/37		
KIDNEYS	7.4E-03*	2.8E-03*	4.1E-03* 52/14/34		
BRAIN	4.4E-03*	1.7E-03*	2.5E-03* 52/14/34		
ST WALL	1.3E-03		4.4E-04 61/11/28		
SI WALL		1.7E-03			
ULI WALL		5.9E-03			
LLI WALL		1.3E-02			
C.E.D.E.	1.1E-03*	1.7E-03*	8.2E-04*		

^{194}Hg (IN)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS	3.1E-03*	7.4E-02* 32/16/52	8.1E-02* 7/8/85	
GONADS	5.5E-03*	9.6E-02* 32/16/52	2.7E-02* 28/30/42	
BREAST	3.3E-03*	7.4E-02* 32/16/52	2.3E-02* 24/28/48	
R MARROW	4.4E-03*	9.6E-02* 32/16/52	2.9E-02* 25/28/47	
KIDNEYS	2.1E-02*	5.2E-01* 32/16/52	1.4E-01* 27/31/42	
SI WALL	5.5E-03	1.0E-01 32/16/52		
ULI WALL	6.7E-03			
LLI WALL	1.3E-02		3.4E-02 31/26/43	
REMAINDER	6.3E-03*	1.4E-01* 32/16/52	4.4E-02* 25/28/47	
WT	0.06	0.18	0.18	
C.E.D.E.	6.0E-03*	1.2E-01*	4.2E-02*	

^{195M}Hg (IN)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		1.9E-03* 5/3/92	5.5E-03* 0/2/98	
GONADS	8.9E-04*	4.1E-04* 58/12/30	3.5E-04* 65/16/19	
BREAST		2.6E-04* 38/16/46		
R MARROW		3.5E-04* 41/16/43		
KIDNEYS		3.0E-03* 36/18/46		
ST WALL		4.1E-04 55/12/33		
SI WALL	2.5E-03	6.7E-04 71/9/20		
ULI WALL	9.6E-03	1.7E-03 88/5/7	3.2E-03 68/12/20	
LLI WALL	2.1E-02	3.4E-03 92/4/4	6.7E-03 69/12/19	
C.E.D.E.	2.2E-03	9.5E-04	1.3E-03	

^{194}Hg (VAP)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP				
LUNGS			1.1E-01*	
GONADS			1.4E-01*	
BREAST			1.1E-01*	
R MARROW			1.4E-01*	
KIDNEYS			7.4E-01*	
SI WALL			1.5E-01	
REMAINDER			2.1E-01*	
WT			0.18	
C.E.D.E.			1.7E-01	

^{195M}Hg (VAP)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP				
LUNGS			9.3E-03*	
KIDNEYS			2.7E-03*	
C.E.D.E.			1.3E-03*	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{195}Hg (ORG)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	4.0E-01	1.0E+00		
LUNGS	6.3E-05*		4.1E-04*		
			5/3/92		
GONADS	6.7E-05*	1.7E-04*	3.4E-05*		
			58/16/26		
BREAST	6.3E-05*		3.6E-05*		
			51/14/35		
R MARROW	9.6E-05*	8.1E-05*	5.6E-05*		
			52/14/34		
KIDNEYS	6.3E-04*	2.5E-04*	3.3E-04*		
			57/15/28		
BRAIN	3.7E-04*		2.0E-04*		
			57/15/28		
ST WALL	4.1E-04	4.1E-04	9.6E-05		
			76/7/17		
SI WALL		5.9E-04			
ULI WALL		1.4E-03			
LLI WALL		1.4E-03			
REMAINDER	1.0E-04*				
WT	0.12				
C.E.D.E.	1.4E-04*	3.0E-04*	1.1E-04*		

^{195}Hg (IN)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		4.1E-04*	6.7E-04*	
		3/3/94	0/6/94	
GONADS	2.3E-04*	5.9E-05*	4.8E-05*	
		74/10/16	69/19/12	
BREAST		3.2E-05*		
		45/16/39		
R MARROW		4.8E-05*		
		49/15/36		
KIDNEYS		2.1E-04		
		44/20/36		
ST WALL	4.1E-04	9.2E-05		
		75/8/17		
SI WALL	8.5E-04	1.6E-04	1.7E-04	
		88/5/7	72/16/12	
ULI WALL	2.1E-03	3.4E-04	4.1E-04	
		94/3/3	73/15/12	
LLI WALL	2.1E-03	3.4E-04	4.1E-04	
		94/3/3	73/15/12	
C.E.D.E.	3.8E-04*	1.4E-04*	1.5E-04*	

^{195}Hg (VAP)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP				
LUNGS			1.4E-03*	
C.E.D.E.			1.7E-04*	

^{197M}Hg (ORG)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	4.0E-01	1.0E+00		
LUNGS	2.8E-04		1.8E-03		
			5/3/92		
GONADS	2.9E-04	2.9E-04	1.6E-04		
			54/14/32		
BREAST	2.7E-04		1.6E-04		
			52/14/34		
R MARROW	3.7E-04		2.1E-04		
			52/14/34		
KIDNEYS	4.8E-03	1.8E-03	2.6E-03		
			54/14/32		
BRAIN	2.6E-03		1.5E-03		
			54/14/32		
ST WALL	1.2E-03				
SI WALL		1.8E-03			
ULI WALL		5.9E-03			
LLI WALL		1.1E-02			
C.E.D.E.	7.1E-04	1.3E-03	5.5E-04		

^{197M}Hg (IN)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		1.8E-03	4.4E-03	
		3/3/94	0/3/97	
GONADS		1.8E-04		
		52/15/33		
R MARROW		1.8E-04		
		41/17/42		
KIDNEYS		1.9E-03		
		38/19/43		
SI WALL	2.3E-03	4.8E-04		
		80/7/13		
ULI WALL	9.3E-03	1.6E-03	2.7E-03	
		92/4/4	71/12/17	
LLI WALL	1.7E-02	2.8E-03	5.2E-03	
		95/3/2	70/12/18	
C.E.D.E.	1.7E-03	6.9E-04	1.0E-03	

^{197M}Hg (VAP)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP				
LUNGS			8.1E-03	
C.E.D.E.			9.8E-04	

50-Year Committed Dose Equivalent Factors--rem/µCi Intake (Continued)

^{197}Hg (ORG)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	4.0E-01	1.0E+00		
LUNGS	2.2E-04		8.1E-04		
			8/3/89		
GONADS	2.3E-04	2.7E-04	1.3E-04		
			51/14/35		
BREAST	2.1E-04		1.3E-04		
			50/13/37		
R MARROW	3.6E-04		2.1E-04		
			50/13/37		
KIDNEYS	3.6E-03	1.4E-03	2.1E-03		
			51/14/35		
BRAIN	2.1E-03	8.1E-04	1.2E-03		
			51/14/35		
ST WALL	5.5E-04				
SI WALL		7.0E-04			
ULI WALL		2.5E-03			
LLI WALL		5.5E-03			
C.E.D.E.	5.3E-04	7.3E-04	3.7E-04		

^{197}Hg (IN)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02		2.0E-02	2.0E-02	
LUNGS			8.1E-04	2.7E-03	
			5/3/92	0/2/98	
GONADS	3.1E-04		1.6E-04		
			53/13/34		
BREAST			1.1E-04		
			37/16/47		
R MARROW			1.8E-04		
			40/15/45		
KIDNEYS			1.5E-03		
			35/17/48		
ST WALL			1.8E-04		
			54/12/34		
SI WALL	1.0E-03		2.8E-04		
			70/9/21		
ULI WALL	4.1E-03		7.0E-04	1.4E-03	
			87/5/8	68/11/21	
LLI WALL	8.9E-03		1.5E-03	3.1E-03	
			92/4/4	68/11/21	
C.E.D.E.	9.1E-04		4.3E-04	5.9E-04	

^{197}Hg (VAP)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP					
LUNGS				4.8E-04	
KIDNEYS				8.9E-05	
C.E.D.E.				6.3E-05	

^{199M}Hg (ORG)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	4.0E-01	1.0E+00		
LUNGS			2.1E-04		
			1/9/90		
ST WALL	8.1E-04	8.1E-04	9.2E-05		
			98/1/1		
SI WALL		3.7E-04			
ULI WALL		1.7E-04			
C.E.D.E.	4.9E-05	8.1E-05	3.1E-05		

^{199M}Hg (IN)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02		2.0E-02	2.0E-02	
LUNGS			2.1E-04	2.4E-04	
			1/9/90	0/15/85	
ST WALL	8.1E-04		9.2E-05		
			98/1/1		
SI WALL	4.1E-04		4.8E-05		
			98/2/0		
ULI WALL	1.9E-04				
C.E.D.E.	8.5E-05		3.4E-05	2.8E-05	

^{199M}Hg (VAP)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP					
LUNGS				5.5E-04	
C.E.D.E.				6.7E-05	

^{203}Hg (ORG)

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	4.0E-01	1.0E+00		
LUNGS	4.4E-03	1.8E-03	4.1E-03		
			33/9/58		
GONADS	5.2E-03	2.7E-03	3.2E-03		
			48/13/39		
BREAST	4.4E-03	1.9E-03	2.9E-03		
			47/13/40		
R MARROW	6.3E-03	2.6E-03	4.1E-03		
			47/13/40		
KIDNEYS	7.0E-02	2.8E-02	4.4E-02		
			48/13/39		
BRAIN	4.4E-02	1.7E-02	2.7E-02		
			48/13/39		
SI WALL		3.4E-03			
ULI WALL		6.7E-03			
LLI WALL		1.4E-02			
C.E.D.E.	1.0E-02	5.6E-03	6.5E-03		

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{203}Hg (IN)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-02	2.0E-02	2.0E-02	
LUNGS		3.3E-03	3.3E-02	
		20/10/70	0/1/99	
GONADS	1.2E-03	2.4E-03		
		37/15/48		
BREAST		2.0E-03		
		33/16/51		
R MARROW		2.4E-03		
		33/16/51		
KIDNEYS		2.5E-02		
		32/16/52		
SI WALL	2.1E-03	2.7E-03		
		39/14/47		
ULI WALL	7.4E-03	3.5E-03		
		53/12/35		
LLI WALL	2.0E-02	5.2E-03	9.6E-03	
		70/8/22	58/10/32	
REMAINDER		2.8E-03		
		32/16/52		
W_T		0.06		
C.E.D.E.	2.1E-03	4.0E-03	4.5E-03	

^{203}Hg (VAP)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP				
LUNGS			1.2E-02	
GONADS			3.2E-03	
BREAST			2.9E-03	
R MARROW			3.5E-03	
KIDNEYS			3.6E-02	
REMAINDER			4.1E-03	
W_T			0.24	
C.E.D.E.			6.2E-03	

THALLIUM

^{194M}Tl

	Ingestion	Inhalation D	Inhalation W	Inhalation Y
CLASS		D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		2.1E-04 3/10/87		
ST WALL	1.0E-03	1.2E-04 93/2/5		
REMAINDER	1.4E-04			
WT	0.06			
C.E.D.E.	7.1E-05	3.3E-05		

^{194}Tl

	Ingestion	Inhalation D	Inhalation W	Inhalation Y
CLASS		D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS		3.5E-05 5/11/84		
GONADS	5.6E-06	2.1E-06 67/22/11		
BREAST		3.6E-06 41/15/44		
R MARROW		4.1E-06 42/17/41		
ST WALL	2.0E-04	2.4E-05 88/3/9		
REMAINDER	4.8E-05	1.0E-05 62/8/30		
WT	0.12	0.12		
C.E.D.E.	1.9E-05	8.4E-06		

^{195}Tl

	Ingestion	Inhalation D	Inhalation W	Inhalation Y
CLASS		D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	3.3E-05	2.0E-04 4/6/90		
GONADS	3.2E-05	1.4E-05 66/19/15		
BREAST	3.1E-05	1.7E-05 48/15/37		
R MARROW	3.4E-05	2.0E-05 50/15/35		
KIDNEYS	1.0E-04	4.8E-05 63/18/19		
ST WALL	5.9E-04	8.9E-05 86/4/10		
REMAINDER	1.2E-04			
WT	0.12			
C.E.D.E.	7.7E-05	4.0E-05		

^{197}Tl

	Ingestion	Inhalation D	Inhalation W	Inhalation Y
CLASS		D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	3.5E-05	2.0E-04 5/4/91		
GONADS	3.6E-05	1.7E-05 61/17/22		
BREAST	3.3E-05	1.9E-05 51/14/35		
R MARROW	4.4E-05	2.5E-05 52/14/34		
KIDNEYS	1.4E-04	7.0E-05 59/16/25		
ST WALL	3.7E-04	7.0E-05 83/5/12		
REMAINDER	8.1E-05			
WT	0.18			
C.E.D.E.	6.9E-05	4.3E-05		

^{198M}Tl

	Ingestion	Inhalation D	Inhalation W	Inhalation Y
CLASS		D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	7.4E-05	4.4E-04 5/5/90		
GONADS	7.8E-05	3.5E-05 66/18/16		
BREAST	7.0E-05	4.1E-05 51/14/35		
R MARROW	8.1E-05	4.4E-05 52/15/33		
KIDNEYS	2.4E-04	1.1E-04 64/18/18		
ST WALL	1.1E-03	1.8E-04 85/4/11		
REMAINDER	2.0E-04			
WT	0.18			
C.E.D.E.	1.6E-04	9.1E-05		

^{198}Tl

	Ingestion	Inhalation D	Inhalation W	Inhalation Y
CLASS		D	W	Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	1.6E-04	4.8E-04 9/5/86		
GONADS	1.9E-04	8.9E-05 64/17/19		
BREAST	1.6E-04	9.2E-05 49/13/38		
R MARROW	1.7E-04	1.0E-04 50/14/36		
KIDNEYS	4.1E-04	2.0E-04 60/16/24		
ST WALL	9.3E-04	2.2E-04 71/7/22		
REMAINDER	4.1E-04	1.7E-04 53/11/36		
WT	0.18	0.18		
C.E.D.E.	2.6E-04	1.8E-04		

ear Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{199}Tl

S	Ingestion	Inhalation D	Inhalation W	Inhalation Y
BSORP	1.0E+00	1.0E+00		
S	4.8E-05	3.1E-04 5/3/92		
DS	4.8E-05	2.4E-05 63/17/20		
AST	4.4E-05	2.6E-05 52/14/34		
ARROW	6.3E-05	3.6E-05 53/14/33		
NEYS	1.9E-04	9.2E-05 61/17/22		
WALL	3.7E-04	7.8E-05 79/7/14		
MAINDER	8.9E-05			
WT	0.18			
E.D.E.	8.2E-05	6.1E-05		

^{200}Tl

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	4.8E-04	1.0E-03 14/5/81		
GONADS	5.9E-04	3.1E-04 55/14/31		
BREAST	4.8E-04	3.1E-04 48/13/39		
R MARROW	5.9E-04	3.6E-04 49/13/38		
BONE SURF	5.2E-04			
KIDNEYS	1.4E-03	7.8E-04 53/14/33		
ST WALL	1.2E-03	4.8E-04 57/10/33		
REMAINDER	8.5E-04	5.2E-04 48/13/39		
WT	0.18	0.18		
C.E.D.E.	8.7E-04	4.6E-04		

^{201}Tl

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	2.1E-04	6.3E-04 10/4/86		
GONADS	2.3E-04	1.4E-04 50/14/36		
BREAST	2.0E-04	1.2E-04 49/13/38		
R MARROW	3.2E-04	2.0E-04 49/13/38		
BONE SURF	2.9E-04			
KIDNEYS	1.0E-03	5.9E-04 50/14/36		
ST WALL	4.4E-04	1.7E-04 58/11/31		
SI WALL	2.5E-04			
REMAINDER	2.7E-04	1.6E-04 48/13/39		
WT	0.12	0.18		
C.E.D.E.	2.9E-04	2.3E-04		

^{202}Tl

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	1.2E-03	1.3E-03 28/8/64		
GONADS	1.3E-03	8.1E-04 48/13/39		
BREAST	1.1E-03	7.0E-04 46/13/41		
R MARROW	1.5E-03	9.3E-04 47/13/40		
BONE SURF	1.3E-03	8.1E-04 47/13/40		
KIDNEYS	3.4E-03	2.1E-03 48/13/39		
ST WALL	1.7E-03			
SI WALL	1.5E-03	9.3E-04 48/13/39		
REMAINDER	1.7E-03	1.1E-03 47/12/41		
WT	0.12	0.18		
C.E.D.E.	1.5E-03	9.8E-04		

^{204}Tl

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	2.4E-03	4.1E-03 17/5/78		
GONADS	2.4E-03	1.5E-03 47/13/40		
BREAST	2.4E-03	1.5E-03 47/13/40		
R MARROW	2.4E-03	1.6E-03 47/13/40		
KIDNEYS	1.7E-02	1.1E-02 47/13/40		
ST WALL	3.4E-03	1.7E-03 52/12/36		
SI WALL	2.4E-03	1.5E-03 47/13/40		
REMAINDER	2.4E-03	1.5E-03 47/13/40		
WT	0.12	0.12		
C.E.D.E.	3.2E-03	2.3E-03		

LEAD

^{195M}Pb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01		
LUNGS		1.3E-04 2/11/87		
GONADS	4.1E-05	8.1E-06 80/12/8		
ST WALL	6.3E-04	6.3E-05 92/2/6		
SI WALL	2.4E-04	3.0E-05 93/4/3		
ULI WALL	2.0E-04	2.8E-05 91/5/4		
LLI WALL	9.2E-05			
REMAINDER	7.8E-05			
WT	0.06			
C.E.D.E.	8.5E-05	2.5E-05		

^{198}Pb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01		
LUNGS		2.1E-04 5/6/89		
GONADS	1.3E-04	3.7E-05 67/11/22		
BREAST	2.7E-05	2.7E-05 42/15/43		
R MARROW	5.6E-05	6.3E-05 43/16/41		
LIVER		1.1E-04 39/16/45		
BONE SURF		1.0E-04 43/19/38		
ST WALL	4.4E-04	8.5E-05 79/6/15		
SI WALL	5.2E-04	9.2E-05 85/5/10		
ULI WALL	6.3E-04	1.1E-04 86/5/9		
LLI WALL	3.0E-04	6.3E-05 81/7/12		
REMAINDER	7.8E-05			
WT	0.06			
C.E.D.E.	1.6E-04	7.7E-05		

^{199}Pb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01		
LUNGS		2.1E-04 4/6/90		
GONADS	1.8E-04	3.7E-05 84/9/7		
BREAST	4.1E-05	2.3E-05 47/14/39		
R MARROW	6.3E-05	3.7E-05 52/16/32		
LIVER		5.2E-05 46/17/37		
ST WALL	6.3E-04	1.0E-04 84/4/12		
SI WALL	6.3E-04	1.0E-04 92/4/4		
ULI WALL	8.1E-04	1.3E-04 93/4/3		
LLI WALL	4.1E-04	7.0E-05 91/6/3		
REMAINDER	1.6E-04			
WT	0.06			
C.E.D.E.	2.2E-04	7.0E-05		

^{200}Pb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01		
LUNGS		1.3E-03 7/4/89		
GONADS	1.5E-03	4.1E-04 71/9/20		
R MARROW	6.3E-04	7.4E-04 43/16/41		
BREAST		2.4E-04 42/14/44		
SI WALL	2.2E-03	5.5E-04 74/8/18		
ULI WALL	5.5E-03	1.1E-03 85/5/10		
LLI WALL	1.0E-02	1.7E-03 91/4/5		
KIDNEYS		6.7E-04 41/16/43		
LIVER		1.4E-03 40/17/43		
BONE SURF		2.8E-03 43/18/39		
C.E.D.E.	1.5E-03	7.9E-04		

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{201}Pb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01		
LUNGS		5.5E-04 5/4/91		
GONADS	6.7E-04	1.4E-04 83/7/10		
BREAST		7.4E-05 46/13/41		
R MARROW	2.4E-04	2.1E-04 47/16/37		
BONE SURF		2.3E-05 40/17/43		
KIDNEYS		1.7E-04 48/17/35		
LIVER		3.3E-04 44/17/39		
ST WALL	7.0E-04			
SI WALL	1.4E-03	2.6E-04 87/6/7		
ULI WALL	2.7E-03	4.4E-04 91/4/5		
LLI WALL	2.8E-03	4.8E-04 93/4/3		
REMAINDER	3.6E-04			
WT	0.06			
C.E.D.E.	6.7E-04	2.4E-04		

^{202M}Pb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01		
LUNGS		4.4E-04 5/5/90		
GONADS	5.9E-04	1.2E-04 85/8/7		
BREAST	1.1E-04	6.7E-05 48/13/39		
R MARROW	1.6E-04	9.2E-05 53/15/32		
LIVER		1.5E-04 47/17/36		
ST WALL	1.1E-03	2.2E-04 79/5/16		
SI WALL	1.6E-03	2.6E-04 91/5/4		
ULI WALL	2.2E-03	3.5E-04 92/4/4		
LLI WALL	9.6E-04	1.7E-04 89/6/5		
REMAINDER	3.7E-04			
WT	0.06			
C.E.D.E.	5.5E-04	1.7E-04		

^{202}Pb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01		
LUNGS	2.4E-02*	5.9E-02* 35/15/50		
GONADS	2.1E-02*	5.6E-02* 36/15/49		
BREAST	2.4E-02*	5.9E-02* 36/15/49		
R MARROW	9.6E-02*	2.5E-01* 36/15/49		
BONE SURF	1.4E-01*	3.5E-01* 36/15/49		
KIDNEYS	3.5E-02*	8.9E-02* 36/15/49		
LIVER	5.6E-02*	1.4E-01* 35/15/50		
LLI WALL	2.3E-02*	5.6E-02 36/15/49		
REMAINDER	3.7E-02*	1.0E-01* 36/15/49		
WT	0.12	0.12		
C.E.D.E.	3.9E-02*	9.9E-02*		

^{203}Pb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01		
LUNGS		7.8E-04 7/4/89		
GONADS	8.9E-04	2.2E-04 74/8/18		
R MARROW	4.4E-04	5.5E-04 42/16/42		
BONE SURF		2.8E-03 40/17/43		
BREAST		1.3E-04 42/14/44		
KIDNEYS		4.4E-04 41/16/43		
LIVER		9.6E-04 39/16/45		
SI WALL	1.3E-03	3.1E-04 76/8/16		
ULI WALL	3.4E-03	6.3E-04 86/5/9		
LLI WALL	6.7E-03	1.1E-03 92/4/4		
C.E.D.E.	9.6E-04	5.2E-04		

^{205}Pb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01		
R MARROW	6.3E-03*	1.6E-02* 36/15/49		
BONE SURF	1.4E-02*	3.6E-02* 36/15/49		
KIDNEYS	1.6E-03*	4.1E-03* 36/15/49		
LIVER	3.4E-03*	8.5E-03* 36/15/49		
C.E.D.E.	1.5E-03*	3.7E-03*		

50-Year Committed Dose Equivalent Factors--rem/µCi Intake (Continued)

^{209}Pb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01		
LUNGS		4.4E-04 1/4/95		
BONE SURF		2.1E-04 57/26/17		
ST WALL	7.0E-04	1.0E-04 97/2/1		
SI WALL	8.1E-04	1.2E-04 97/2/1		
ULI WALL	1.3E-03	1.9E-04 98/2/0		
LLI WALL	6.3E-04	9.6E-05 96/3/1		
C.E.D.E.	2.1E-04	9.0E-05		

^{210}Pb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01		
R MARROW	5.6E+00*	1.4E+01* 36/15/49		
BONE SURF	8.1E+01*	2.0E+02* 36/15/49		
KIDNEYS	1.0E+01*	2.6E+01* 36/15/49		
LIVER	2.3E+01*	5.6E+01* 36/15/49		
C.E.D.E.	5.1E+00*	1.3E+01*		

^{211}Pb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01		
LUNGS		6.7E-02 1/9/90		
ST WALL	4.4E-03			
SI WALL	2.1E-03			
ULI WALL	8.5E-04			
C.E.D.E.	4.4E-04	8.0E-03		

^{212}Pb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01		
LUNGS		7.4E-01 1/1/98		
R MARROW	5.6E-02	1.2E-01 48/21/31		
BONE SURF	6.3E-01	1.4E+00 49/21/30		
LIVER	8.1E-02	1.8E-01 48/21/31		
KIDNEYS	4.1E-02			
ULI WALL	6.3E-02			
LLI WALL	7.4E-02			
C.E.D.E.	4.1E-02	1.8E-01		

^{214}Pb

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01	2.0E-01		
LUNGS		5.6E-02 1/6/93		
GONADS	1.2E-04			
R MARROW	4.1E-04			
BONE SURF	4.1E-03			
ST WALL	3.3E-03			
SI WALL	2.1E-03			
ULI WALL	9.3E-04			
C.E.D.E.	5.8E-04	6.7E-03		

BISMUTH

^{200}Bi

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		1.9E-04 2/9/89	2.6E-04 0/12/88	
GONADS	1.3E-04	2.2E-05 84/8/8	2.2E-05 65/14/21	
KIDNEYS		2.4E-04 49/24/27	6.7E-05 42/47/11	
ST WALL	8.5E-04	1.1E-04 88/3/9		
SI WALL	4.4E-04	6.3E-05 91/4/5		
ULI WALL	4.4E-04	6.7E-05 90/5/5	7.0E-05 67/13/20	
LLI WALL	4.1E-04	6.7E-05 94/4/2	1.1E-04 70/12/18	
REMAINDER	1.6E-04			
WT	0.06			
C.E.D.E.	1.7E-04	6.1E-05	5.1E-05	

^{201}Bi

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		5.2E-04 2/5/93	7.0E-04 0/10/90	
GONADS	3.3E-04	5.9E-05 88/6/6	4.8E-05 70/18/12	
KIDNEYS		7.8E-04 53/26/21	2.1E-04 43/51/6	
ST WALL	1.3E-03	2.1E-04 88/3/9		
SI WALL	1.5E-03	2.3E-04 94/3/3		
ULI WALL	1.9E-03	2.9E-04 95/3/2	2.2E-04 73/16/11	
LLI WALL	1.1E-03	1.7E-04 95/3/2	1.8E-04 72/14/14	
REMAINDER	2.0E-04			
WT	0.06			
C.E.D.E.	4.5E-04	1.8E-04	1.3E-04	

^{202}Bi

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		3.1E-04 3/6/91	3.6E-04 1/13/86	
GONADS	3.3E-04	5.6E-05 88/7/5	2.3E-05 65/24/11	
BREAST	7.0E-05	3.5E-05 45/12/43		
R MARROW	9.6E-05	4.1E-05 51/13/36		
KIDNEYS		4.1E-04 59/28/13	1.3E-04 41/50/9	
ST WALL	1.1E-03	1.9E-04 84/4/12	8.9E-05 53/20/27	
SI WALL	1.1E-03	1.7E-04 93/4/3		
ULI WALL	1.2E-03	1.8E-04 93/4/3	7.4E-05 69/22/9	
LLI WALL	3.6E-04			
REMAINDER	2.9E-04	9.6E-05 59/11/30		
WT	0.06	0.06		
C.E.D.E.	3.6E-04	1.2E-04	6.6E-05	

^{203}Bi

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		1.1E-03 4/3/93	2.1E-03 1/5/94	
GONADS	2.5E-03	4.4E-04 87/5/8	5.5E-04 70/15/15	
R MARROW	5.9E-04	2.5E-04 53/11/36	2.5E-04 42/14/44	
BREAST		1.8E-04 47/10/43	1.9E-04 33/13/54	
KIDNEYS		3.4E-03 44/20/36	9.3E-04 46/43/11	
ST WALL	1.7E-03		5.2E-04 52/13/35	
SI WALL	4.1E-03	7.8E-04 88/5/7	9.6E-04 70/15/15	
ULI WALL	7.8E-03	1.3E-03 91/4/5	1.7E-03 71/14/15	
LLI WALL	8.1E-03	1.3E-03 95/3/2	2.0E-03 72/13/15	
REMAINDER	1.3E-03	4.8E-04 41/17/42		
WT	0.06	0.06		
C.E.D.E.	2.1E-03	7.4E-04	8.2E-04	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{205}Bi

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		1.5E-03 8/4/88	1.6E-02 0/1/99	
GONADS	5.5E-03	1.3E-03 77/7/16	2.6E-03 59/10/31	
R MARROW	1.2E-03	7.8E-04 44/12/44		
BREAST		5.5E-04 41/11/48	1.4E-03 16/5/79	
KIDNEYS		1.3E-02 34/16/50	3.7E-03 36/31/33	
SI WALL	5.9E-03	1.5E-03 71/8/21		
ULI WALL	9.6E-03	2.1E-03 79/6/15	4.4E-03 57/10/33	
LLI WALL	1.9E-02	3.2E-03 90/4/6	7.8E-03 62/10/28	
REMAINDER	2.4E-03	2.0E-03 33/15/52	3.2E-03 1/1/98	
W_T	0.06	0.06	0.06	
C.E.D.E.	3.7E-03	2.0E-03	3.9E-03	

^{206}Bi

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		3.5E-03 6/3/91	2.1E-02 0/1/99	
GONADS	1.1E-02	2.2E-03 80/6/14	4.4E-03 63/11/26	
R MARROW	2.3E-03	1.3E-03 47/11/42		
KIDNEYS		2.4E-02 34/16/50	6.3E-03 42/36/22	
SI WALL	1.2E-02	2.8E-03 75/7/18	5.2E-03 62/11/27	
ULI WALL	2.3E-02	4.4E-03 84/5/11	9.3E-03 63/10/27	
LLI WALL	4.4E-02	7.4E-03 92/4/4	1.7E-02 65/10/25	
REMAINDER	4.4E-03	3.3E-03 33/15/52		
W_T	0.06	0.06		
C.E.D.E.	8.0E-03	3.7E-03	5.9E-03	

^{207}Bi

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		2.6E-03 6/3/91	1.2E-01 0/0/100	
GONADS	5.9E-03	1.4E-03 74/7/19		
KIDNEYS		2.6E-02 33/16/51		
SI WALL	7.0E-03			
ULI WALL	1.5E-02	3.1E-03 80/6/14		
LLI WALL	3.4E-02	5.9E-03 92/4/4		
REMAINDER		2.6E-03 32/15/53		
W_T		0.06		
C.E.D.E.	4.9E-03	2.9E-03	1.4E-02	

^{210M}Bi

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		1.1E+00 1/1/98	6.3E+01 0/0/100	
KIDNEYS	1.1E+00	1.1E+01 33/16/51		
LLI WALL	2.9E-01			
C.E.D.E.	8.6E-02	8.0E-01	7.5E+00	

^{210}Bi

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS			1.6E+00 0/0/100	
KIDNEYS	2.2E-02	2.1E-01 31/15/54		
ULI WALL	2.1E-02			
LLI WALL	5.6E-02			
C.E.D.E.	5.9E-03	1.3E-02	1.9E-01	

^{212}Bi

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		1.3E-01 0/7/93	1.4E-01 0/14/86	
KIDNEYS	4.1E-03	1.0E-01 61/31/8		
ST WALL	5.9E-03			
SI WALL	4.1E-03			
ULI WALL	2.4E-03			
C.E.D.E.	9.9E-04	2.1E-02	1.7E-02	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{213}Bi

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		1.0E-01 0/8/92	1.2E-01 0/15/85	
KIDNEYS	2.2E-03	7.0E-02 62/31/7		
ST WALL	4.8E-03			
SI WALL	2.7E-03			
ULI WALL	1.6E-03			
C.E.D.E.	6.8E-04	1.7E-02	1.4E-02	

^{214}Bi

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	5.0E-02	5.0E-02	
LUNGS		4.4E-02 0/13/87	4.8E-02 0/18/82	
KIDNEYS		1.6E-02 64/32/4		
ST WALL	3.2E-03			
SI WALL	8.5E-04			
C.E.D.E.	2.4E-04	6.3E-03	5.8E-03	

POLONIUM

^{203}Po

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	
LUNGS		2.5E-04 3/8/89	3.2E-04 1/12/87	
SPLEEN		1.4E-04 45/19/36		
KIDNEYS		8.9E-05 47/19/34		
GONADS	1.8E-04	4.1E-05 78/10/12	3.4E-05 68/18/14	
BREAST	3.4E-05	2.4E-05 45/15/40		
R MARROW	4.8E-05	2.8E-05 49/15/36		
ST WALL	7.0E-04	1.1E-04 82/5/13		
SI WALL	4.8E-04			
ULI WALL	5.9E-04	1.0E-04 88/5/7	1.0E-04 70/15/15	
LLI WALL	4.8E-04	8.5E-05 88/6/6	1.0E-04 70/15/15	
REMAINDER	1.3E-04			
WT	0.06			
C.E.D.E.	2.0E-04	7.9E-05	5.9E-05	

^{207}Po

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	
LUNGS		4.4E-04 6/5/89	5.5E-04 1/8/91	
SPLEEN		3.3E-04 49/21/30	1.4E-04 36/32/32	
KIDNEYS		2.2E-04 54/20/26		
GONADS	6.7E-04	1.4E-04 84/8/8	1.0E-04 71/19/10	
BREAST	1.1E-04	7.4E-05 47/14/39	5.2E-05 30/18/52	
R MARROW	1.8E-04	8.9E-05 53/13/34	6.3E-05 36/19/45	
ST WALL	8.5E-04		1.7E-04 55/17/28	
SI WALL	1.6E-03	2.8E-04 88/6/6	2.3E-04 72/18/10	
ULI WALL	2.5E-03	4.1E-04 92/4/4	3.5E-04 73/17/10	
LLI WALL	1.5E-03	2.6E-04 89/6/5	2.1E-04 73/18/9	
REMAINDER	4.1E-04			
WT	0.06			
C.E.D.E.	8.1E-04	2.0E-04	1.7E-04	

^{205}Po

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	
LUNGS		4.1E-04 4/6/90	5.2E-04 1/11/88	
SPLEEN		3.0E-04 41/18/41		
KIDNEYS		1.9E-04 43/18/39		
GONADS	2.3E-04	6.3E-05 71/11/18	3.2E-05 59/22/19	
BREAST	4.8E-05	4.4E-05 44/15/41		
R MARROW	7.0E-05	5.2E-05 46/15/39		
ST WALL	6.7E-04	1.5E-04 73/7/20		
SI WALL	7.0E-04	1.4E-04 82/7/11		
ULI WALL	8.1E-04	1.5E-04 84/6/10		
LLI WALL	3.2E-04			
REMAINDER	1.8E-04			
WT	0.06			
C.E.D.E.	2.4E-04	1.3E-04	7.0E-05	

^{210}Po

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-01	1.0E-01	1.0E-01	
LUNGS			4.8E+01 0/0/100	
KIDNEYS	9.3E+00	4.4E+01 34/16/50	1.4E+01 37/29/34	
LIVER	1.6E+00	8.1E+00 34/16/50		
SPLEEN	1.6E+01	8.1E+01 34/16/50	2.5E+01 37/29/34	
C.E.D.E.	1.6E+00	8.0E+00	8.1E+00	

ASTATINE

^{207}At

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS	7.8E-04	1.6E-02	1.9E-02	
		2/5/93	0/12/88	
GONADS	8.1E-04			
BREAST	7.8E-04			
R MARROW	8.1E-04			
THYROID	7.8E-04			
BONE SURF	7.8E-04			
ST WALL	1.8E-03			
REMAINDER	9.3E-04			
WT	0.24			
C.E.D.E.	8.9E-04	1.9E-03	2.3E-03	

^{211}At

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00	1.0E+00	
LUNGS	4.1E-02	5.6E-01	7.8E-01	
		2/3/95	1/7/92	
GONADS	4.1E-02			
BREAST	4.1E-02			
R MARROW	4.1E-02			
THYROID	4.1E-02			
BONE SURF	4.1E-02			
ST WALL	4.4E-02			
SI WALL	4.1E-02			
ULI WALL	4.1E-02			
REMAINDER	4.1E-02			
WT	0.12			
C.E.D.E.	4.1E-02	6.7E-02	9.3E-02	

FRANCIUM

^{222}Fr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	2.1E-03	9.3E-02 1/14/85		
GONADS	2.1E-03*			
BREAST	2.1E-03*			
R MARROW	2.1E-03*			
THYROID	2.1E-03*			
BONE SURF	2.1E-03*			
ST WALL	7.4E-03			
ULI WALL	2.1E-03			
REMAINDER	2.1E-03*			
WT	0.18			
C.E.D.E.	2.5E-03*	1.1E-02		

^{223}Fr

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E+00	1.0E+00		
LUNGS	8.5E-03	1.3E-02 20/6/74		
GONADS	8.5E-03	5.2E-03 48/13/39		
BREAST	8.5E-03	5.2E-03 48/13/39		
R MARROW	8.5E-03	5.2E-03 48/13/39		
THYROID	8.5E-03	5.2E-03 48/13/39		
BONE SURF	8.5E-03	5.2E-03 48/13/39		
ST WALL	9.3E-03	5.5E-03 49/13/38		
SI WALL	8.5E-03			
ULI WALL	8.5E-03			
REMAINDER	8.5E-03	5.2E-03 48/13/39		
WT	0.12	0.24		
C.E.D.E.	8.8E-03	8.1E-03		

RADIUM

^{223}Ra

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01		2.0E-01	
LUNGS			6.3E+01 0/1/99	
GONADS	1.6E-01			
R MARROW	1.0E+00			
BONE SURF	1.1E+01			
LLI WALL	1.0E+00			
C.E.D.E.	5.5E-01		7.5E+00	

^{224}Ra

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01		2.0E-01	
LUNGS			2.4E+01 0/1/99	
GONADS	7.8E-02			
R MARROW	5.6E-01			
BONE SURF	5.9E+00			
ULI WALL	3.1E-01			
LLI WALL	7.4E-01			
C.E.D.E.	3.3E-01		2.9E+00	

^{225}Ra

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01		2.0E-01	
LUNGS			6.3E+01 0/0/100	
GONADS	1.3E-01			
R MARROW	6.3E-01			
BONE SURF	6.7E+00			
C.E.D.E.	3.1E-01		7.5E+00	

^{226}Ra

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01		2.0E-01	
LUNGS			5.9E+01 0/0/100	
GONADS	3.4E-01*			
R MARROW	2.2E+00*			
BONE SURF	2.5E+01*		2.8E+01* 38/22/40	
C.E.D.E.	1.1E+00*		7.9E+00*	

^{227}Ra

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01		2.0E-01	
LUNGS			1.2E-03 0/4/96	
R MARROW	1.6E-04*		1.8E-04* 38/23/39	
BONE SURF	3.1E-03*		3.6E-03* 38/22/40	
ST WALL	1.0E-03			
SI WALL	4.8E-04			
ULI WALL	2.3E-04			
C.E.D.E.	2.2E-04*		2.7E-04*	

^{228}Ra

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-01		2.0E-01	
LUNGS	5.9E-01*		2.7E+01* 1/1/98	
GONADS	5.9E-01*			
BREAST	5.9E-01*			
R MARROW	2.4E+00*		2.7E+00* 37/21/42	
BONE SURF	2.1E+01*		2.4E+01* 38/21/41	
C.E.D.E.	1.2E+00*		4.2E+00*	

ACTINIUM

^{224}Ac

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	1.0E-03
LUNGS		2.2E-01	8.5E-01	8.9E-01
		0/2/98	0/2/98	0/4/96
GONADS		2.2E-02		
		35/18/47		
R MARROW		1.4E-01		
		34/17/49		
BONE SURF		1.8E+00		
		34/17/49		
LIVER		4.8E-01		
		34/17/49		
SI WALL	4.1E-03			
ULI WALL	1.2E-02			
LLI WALL	2.7E-02			
C.E.D.E.	2.6E-03	1.3E-01	1.0E-01	1.1E-01

^{225}Ac

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	1.0E-03
LUNGS		5.9E+00	5.6E+01	6.7E+01
		0/1/99	0/1/99	0/1/99
R MARROW		1.4E+01		
		32/16/52		
BONE SURF	3.7E-01	1.7E+02	2.9E+01	
		32/16/52	39/52/9	
LIVER		4.8E+01		
		32/16/52		
ULI WALL	3.6E-01			
LLI WALL	1.0E+00			
C.E.D.E.	9.5E-02	1.0E+01	7.5E+00	8.0E+00

^{226}Ac

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	1.0E-03
LUNGS		3.4E+00	8.5E+00	8.9E+00
		0/1/99	0/3/97	0/5/95
GONADS		2.1E-01*		
		37/19/44		
R MARROW		1.2E+00		
		37/19/44		
BONE SURF		1.6E+01		
		37/19/44		
LIVER		4.1E+00		
		37/19/44		
SI WALL	4.4E-02			
ULI WALL	2.1E-01			
LLI WALL	4.1E-01			
C.E.D.E.	4.0E-02	1.3E+00*	1.0E+00	1.1E+00

^{227}Ac

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	1.0E-03
LUNGS				5.6E+03
				0/0/100
GONADS	3.1E+00	1.5E+03	3.7E+02	
		32/16/52	25/33/42	
R MARROW	2.0E+01	9.6E+03	2.4E+03	8.5E+02
		32/16/52	25/33/42	8/2/90
BONE SURF	2.5E+02	1.2E+05	3.0E+04	1.1E+04
		32/16/52	25/33/42	8/2/90
LIVER	5.6E+01	2.7E+04	7.0E+03	2.5E+03
		32/16/52	25/33/42	8/2/90
C.E.D.E.	1.4E+01	6.7E+03	1.7E+03	1.2E+03

^{228}Ac

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-03	1.0E-03	1.0E-03
LUNGS			1.3E-01*	9.3E-01*
			0/0/100	0/0/100
GONADS	6.7E-04*			
R MARROW	1.0E-03*	4.1E-01*	1.0E-01*	
		32/16/52	26/34/40	
BONE SURF	1.1E-02*	5.2E+00*	1.3E+00*	
		32/16/52	26/34/40	
LIVER	3.0E-03	1.4E+00*	3.4E-01*	
		32/16/52	26/34/40	
ST WALL	2.3E-03			
SI WALL	4.1E-03			
ULI WALL	8.9E-03			
LLI WALL	7.0E-03			
C.E.D.E.	2.1E-03*	2.9E-01*	8.7E-02*	1.1E-01*

THORIUM

^{226}Th

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-04		2.0E-04	2.0E-04
LUNGS			2.7E-01	2.9E-01
			0/16/84	0/22/78
ST WALL	1.0E-02			
SI WALL	4.1E-03			
ULI WALL	1.3E-03			
C.E.D.E.	9.2E-04		3.2E-02	3.5E-02

^{227}Th

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-04		2.0E-04	2.0E-04
LUNGS			8.9E+01	1.3E+02
			0/0/100	0/0/100
R MARROW	2.1E-02		8.9E+00	
			35/47/18	
BONE SURF	2.5E-01		1.1E+02	
			35/47/18	
ULI WALL	9.3E-02			
LLI WALL	3.4E-01			
C.E.D.E.	3.6E-02		1.5E+01	1.6E+01

^{228}Th

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-04		2.0E-04	2.0E-04
LUNGS			3.5E+02	2.6E+03*
			0/1/99	0/0/100
R MARROW	7.0E-01*		4.1E+02*	
			26/34/40	
BONE SURF	8.9E+00*		5.2E+03*	
			26/34/40	
LLI WALL	4.8E-01			
C.E.D.E.	3.8E-01*		2.5E+02*	3.1E+02*

^{229}Th

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-04		2.0E-04	2.0E-04
LUNGS				7.4E+03*
				0/0/100
R MARROW	7.0E+00*		4.1E+03*	1.7E+03*
			25/33/42	6/2/92
BONE SURF	8.9E+01*		5.2E+04*	2.1E+04*
			25/33/42	6/2/92
C.E.D.E.	3.5E+00*		2.0E+03*	1.7E+03*

^{230}Th

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-04		2.0E-04	2.0E-04
LUNGS				1.1E+03*
				0/0/100
R MARROW	1.1E+00*		6.3E+02*	2.6E+02*
			25/33/42	6/2/92
BONE SURF	1.3E+01*		8.1E+03*	3.2E+03*
			25/33/42	6/2/92
C.E.D.E.	5.3E-01*		3.2E+02*	2.6E+02*

^{231}Th

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-04		2.0E-04	2.0E-04
LUNGS			2.9E-03	3.3E-03*
			0/3/97	0/5/95
R MARROW			2.9E-04*	
			30/39/31	
BONE SURF			3.4E-03*	
			29/40/31	
SI WALL	1.7E-03			
ULI WALL	7.0E-03		2.0E-03	2.3E-03
			72/12/16	67/20/13
LLI WALL	1.3E-02		3.5E-03	4.1E-03
			72/12/16	67/20/13
C.E.D.E.	1.3E-03		8.1E-04*	7.7E-04*

^{232}Th

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-04		2.0E-04	2.0E-04
LUNGS				3.5E+03*
				0/0/100
R MARROW	5.6E+00*		3.3E+03*	1.5E+03*
			25/33/42	6/2/92
BONE SURF	7.0E+01*		4.1E+04*	1.9E+04*
			25/33/42	6/2/92
C.E.D.E.	2.8E+00*		1.6E+03*	1.1E+03*

^{234}Th

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	2.0E-04		2.0E-04	2.0E-04
LUNGS			1.7E-01	2.4E-01
			0/0/100	0/0/100
ULI WALL	5.6E-02			
LLI WALL	1.6E-01		7.0E-02	7.4E-02
			62/9/29	62/17/21
C.E.D.E.	1.3E-02		2.5E-02	3.3E-02

PROTACTINIUM

^{227}Pa

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			3.7E-01	4.1E-01
			0/14/86	0/20/80
ST WALL	1.2E-02			
SI WALL	6.7E-03			
ULI WALL	2.6E-03			
C.E.D.E.	1.3E-03		4.4E-02	4.9E-02

^{228}Pa

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			5.9E-01	3.4E+00
			0/0/100	0/0/100
GONADS	2.0E-03			
R MARROW	3.3E-03		3.3E-01	
			26/35/39	
BONE SURF	3.6E-02		4.1E+00	
			26/35/39	
SI WALL	4.1E-03			
ULI WALL	1.1E-02			
LLI WALL	1.9E-02			
C.E.D.E.	4.0E-03		2.3E-01	4.1E-01

^{230}Pa

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			7.0E+00	1.2E+01*
			0/0/100	0/0/100
GONADS	2.5E-03			
R MARROW	6.7E-03*			
BONE SURF	7.4E-02*		7.0E+00*	
			32/43/25	
ULI WALL	8.5E-03			
LLI WALL	2.4E-02			
C.E.D.E.	5.6E-03*		1.1E+00*	1.5E+00*

^{231}Pa

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS				2.8E+03*
				0/0/100
R MARROW	2.1E+01*		2.6E+03*	1.1E+03*
			25/33/42	7/2/91
BONE SURF	2.7E+02*		3.2E+04*	1.3E+04*
			25/33/42	7/2/91
C.E.D.E.	1.1E+01*		1.3E+03*	8.6E+02

^{232}Pa

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS				2.8E-01*
				0/0/100
GONADS	2.0E-03*			
R MARROW	1.9E-03*		1.8E-01*	7.0E-02*
			25/33/42	7/2/91
BONE SURF	1.9E-02*		2.3E+00*	8.9E-01*
			25/33/42	7/2/91
SI WALL	4.1E-03			
ULI WALL	1.1E-02			
LLI WALL	1.9E-02			
C.E.D.E.	3.4E-03*		8.9E-02*	6.8E-02*

^{233}Pa

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			4.4E-02	6.3E-02*
			0/0/100	0/0/100
GONADS	9.6E-04*			
BONE SURF			2.7E-02*	
			34/45/21	
ULI WALL	1.3E-02			
LLI WALL	3.7E-02		1.7E-02	1.8E-02
			61/9/30	62/17/21
C.E.D.E.	3.3E-03*		7.1E-03*	8.6E-03*

^{234}Pa

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			3.1E-03	3.3E-03
			0/7/93	0/12/88
GONADS	1.2E-03		1.8E-04	2.3E-04
			73/16/11	66/25/9
ST WALL	2.9E-03			
SI WALL	5.5E-03		8.1E-04	1.0E-03
			74/16/10	67/25/8
ULI WALL	1.1E-02		1.7E-03	2.1E-03
			75/16/9	67/25/8
LLI WALL	9.3E-03		1.3E-03	1.7E-03
			75/16/9	68/25/7
C.E.D.E.	2.1E-03		6.5E-04	7.4E-04

URANIUM

^{238}U

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	2.0E-03	5.0E-02	5.0E-02	2.0E-03
LUNGS			7.4E+00 1/1/98	1.2E+02 0/0/100	1.6E+02* 0/0/100
R MARROW	1.0E+00*		1.0E+01* 33/16/51		
BONE SURF	1.3E+01*	5.2E-01*	1.2E+02* 33/16/51		
KIDNEYS	4.4E+00*	1.8E-01*	4.4E+01* 33/16/51		
ULI WALL		4.1E-01			
LLI WALL	1.2E+00	1.2E+00			
C.E.D.E.	8.4E-01*	1.2E-01*	8.4E+00*	1.4E+01	2.0E+01*

^{233}U

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	2.0E-03	5.0E-02	5.0E-02	2.0E-03
LUNGS			1.2E+00 3/2/95	5.9E+01 0/0/100	1.1E+03* 0/0/100
R MARROW	2.7E-01*	1.1E-02*	2.6E+00* 33/16/51		
BONE SURF	4.4E+00*	1.7E-01*	4.1E+01* 33/16/51		
KIDNEYS	1.7E+00*	7.0E-02*	1.7E+01* 33/16/51		
ULI WALL		5.9E-02			
LLI WALL		1.9E-01			
C.E.D.E.	2.7E-01*	2.5E-02*	2.7E+00*	7.1E+00	1.3E+02*

^{231}U

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	2.0E-03	5.0E-02	5.0E-02	2.0E-03
LUNGS			8.9E-04 2/2/96	4.4E-03 0/1/99	5.5E-03 0/2/98
GONADS	3.4E-04	3.6E-04	9.2E-05 70/9/21		
R MARROW			4.8E-04 36/16/48		
BONE SURF			4.4E-03 34/17/49		
KIDNEYS			2.7E-03 35/17/48		
SI WALL	1.1E-03	1.1E-03			
ULI WALL	4.4E-03	4.8E-03	7.4E-04 94/3/3	1.7E-03 66/11/23	2.0E-03 64/18/18
LLI WALL	1.1E-02	1.1E-02	1.7E-03 96/3/1	4.1E-03 67/10/23	4.8E-03 64/18/18
C.E.D.E.	1.1E-03	1.1E-03	6.3E-04	8.8E-04	1.1E-03

^{234}U

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	2.0E-03	5.0E-02	5.0E-02	2.0E-03
LUNGS			1.2E+00 3/2/95	5.9E+01 0/0/100	1.1E+03* 0/0/100
R MARROW	2.7E-01*	1.1E-02*	2.6E+00* 33/16/51		
BONE SURF	4.1E+00*	1.7E-01*	4.1E+01* 33/16/51		
KIDNEYS	1.7E+00*	7.0E-02*	1.7E+01* 33/16/51		
ULI WALL		5.9E-02			
LLI WALL		1.8E-01			
C.E.D.E.	2.6E-01*	2.5E-02*	2.7E+00*	7.1E+00	1.3E+02*

^{232}U

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	2.0E-03	5.0E-02	5.0E-02	2.0E-03
LUNGS				9.3E+01 0/0/100	5.6E+03* 0/0/100
R MARROW	1.6E+00*	6.3E-02*	1.5E+01* 33/16/51		
BONE SURF	2.4E+01*	1.0E+00*	2.4E+02* 33/16/51	7.0E+01* 30/29/41	
KIDNEYS	5.9E+00*	2.3E-01*	5.6E+01* 33/16/51		
ULI WALL		6.7E-02			
LLI WALL		2.1E-01			
C.E.D.E.	1.3E+00*	6.8E-02*	1.2E+01*	1.3E+01*	6.7E+02*

^{235}U

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	2.0E-03	5.0E-02	5.0E-02	2.0E-03
LUNGS			1.1E+00 3/2/95	5.6E+01 0/0/100	1.0E+03* 0/0/100
R MARROW	2.5E-01*	1.0E-02*	2.4E+00* 33/16/51		
BONE SURF	3.7E+00*	1.6E-01*	3.7E+01* 33/16/51		
KIDNEYS	1.6E+00*	6.3E-02*	1.6E+01* 33/16/51		
LLI WALL	2.0E-01	2.0E-01			
ULI WALL		6.3E-02			
C.E.D.E.	2.5E-01*	2.5E-02*	2.5E+00*	6.7E+00	1.2E+02*

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{236}U

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	2.0E-03	5.0E-02	5.0E-02	2.0E-03
LUNGS			1.1E+00	5.6E+01	1.0E+03*
			3/2/95	0/0/100	0/0/100
R MARROW	2.5E-01*	1.0E-02*	2.4E+00*		
			33/16/51		
BONE SURF	4.1E+00*	1.6E-01*	3.7E+01*		
			33/16/51		
KIDNEYS	1.6E+00*	6.7E-02*	1.6E+01*		
			33/16/51		
ULI WALL		5.6E-02			
LLI WALL		1.7E-01			
C.E.D.E.	2.5E-01*	2.4E-02*	2.5E+00*	6.7E+00	1.2E+02*

^{239}U

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	2.0E-03	5.0E-02	5.0E-02	2.0E-03
LUNGS			1.6E-04	2.1E-04	2.3E-04
			1/11/88	0/13/87	0/17/83
KIDNEYS			4.1E-05		
			38/19/43		
ST WALL	6.7E-04	6.7E-04	6.3E-05		
			98/1/1		
SI WALL	2.2E-04	2.2E-04			
ULI WALL	1.5E-04	1.5E-04			
LLI WALL	2.2E-04	2.3E-04	3.5E-05	7.4E-05	8.9E-05
			95/4/1	69/11/20	64/19/17
C.E.D.E.	7.5E-05	7.8E-05	2.7E-05	3.0E-05	3.3E-05

^{237}U

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	2.0E-03	5.0E-02	5.0E-02	2.0E-03
LUNGS			2.3E-03	1.6E-02	1.7E-02*
			2/2/96	0/1/99	0/1/99
R MARROW			1.5E-03*		
			35/16/49		
BONE SURF			1.5E-02*		
			34/16/50		
KIDNEYS			8.9E-03*		
			34/16/50		
ULI WALL	1.2E-02	1.3E-02	2.0E-03	4.8E-03	5.5E-03
			94/3/3	65/10/25	63/17/20
LLI WALL	3.1E-02	3.3E-02	4.8E-03	1.2E-02	1.4E-02
			96/3/1	65/10/25	64/17/19
C.E.D.E.	2.6E-03	2.7E-03	1.8E-03*	2.9E-03	3.3E-03*

^{240}U

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	2.0E-03	5.0E-02	5.0E-02	2.0E-03
LUNGS			4.8E-03	8.5E-03	8.9E-03
			1/2/97	0/5/95	0/8/92
KIDNEYS			3.3E-03		
			44/21/35		
SI WALL	7.0E-03	7.4E-03	1.2E-03		2.0E-03
			94/3/3		67/22/11
ULI WALL	2.5E-02	2.6E-02	3.7E-03	5.5E-03	6.7E-03
			97/2/1	73/14/13	67/22/11
LLI WALL	3.4E-02	3.5E-02	5.2E-03	7.4E-03	9.3E-03
			97/2/1	73/14/13	67/22/11
C.E.D.E.	3.9E-03	4.1E-03	1.4E-03	1.8E-03	2.1E-03

^{238}U

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-02	2.0E-03	5.0E-02	5.0E-02	2.0E-03
LUNGS			1.0E+00	5.2E+01	1.0E+03*
			3/2/95	0/0/100	0/0/100
R MARROW	2.5E-01*	1.0E-02*	2.4E+00*		
			33/16/51		
BONE SURF	3.7E+00*	1.5E-01*	3.6E+01*		
			33/16/51		
KIDNEYS	1.5E+00*	6.3E-02*	1.5E+01*		
			33/16/51		
ULI WALL		5.6E-02			
LLI WALL		1.7E-01			
C.E.D.E.	2.3E-01*	2.3E-02*	2.4E+00*	6.2E+00	1.2E+02*

NEPTUNIUM(1)

^{232}Np

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	3.1E-06*		2.6E-04*	
			26/32/42	
R MARROW	1.4E-05*		1.6E-03*	
			26/32/42	
BONE SURF	1.6E-04*		2.0E-02*	
			26/32/42	
LIVER	3.6E-05*		4.4E-03*	
			26/32/42	
ST WALL	2.4E-04			
C.E.D.E.	2.4E-05*		1.1E-03*	

^{233}Np

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			1.3E-05	
			0/16/84	
GONADS	3.4E-07			
ST WALL	5.2E-05			
SI WALL	2.4E-05			
ULI WALL	1.6E-05			
REMAINDER	6.7E-07			
WT	0.06			
C.E.D.E.	5.6E-06		1.5E-06	

^{234}Np

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			5.9E-03	
			1/2/97	
GONADS	3.1E-04		1.3E-03	
			63/13/24	
BREAST			4.8E-04	
			28/13/59	
R MARROW			7.8E-04	
			37/23/40	
LIVER			1.9E-03	
			34/37/29	
SI WALL	4.1E-03		1.6E-03	
			63/12/25	
ULI WALL	7.8E-03		3.1E-03	
			64/12/24	
LLI WALL	1.6E-02		5.9E-03	
			66/11/23	
C.E.D.E.	1.7E-03		1.9E-03	

^{235}Np

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			8.5E-03	
			0/0/100	
GONADS	8.9E-06*		5.5E-04*	
			29/33/38	
R MARROW	3.4E-05*		4.1E-03*	
			28/34/38	
BONE SURF	3.3E-04*		4.1E-02*	
			28/34/38	
LIVER	1.3E-04*		1.5E-02*	
			28/34/38	
ULI WALL	8.1E-04			
LLI WALL	2.3E-03			
C.E.D.E.	2.1E-04*		3.8E-03*	

^{236}Np (1E5Y)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	1.9E-01*		2.4E+01*	
			26/32/42	
R MARROW	1.1E+00*		1.4E+02*	
			26/32/42	
BONE SURF	1.4E+01*		1.8E+03*	
			26/32/42	
LIVER	2.9E+00*		3.6E+02*	
			26/32/42	
C.E.D.E.	7.9E-01*		9.9E+01*	

^{236}Np (22H)

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	1.4E-04*		1.6E-02*	
			26/32/42	
R MARROW	8.1E-04*		1.0E-01*	
			26/33/41	
BONE SURF	1.0E-02*		1.3E+00*	
			26/33/41	
LIVER	2.3E-03*		2.8E-01*	
			26/33/41	
LLI WALL	6.3E-03			
C.E.D.E.	9.5E-04*		7.1E-02*	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{237}Np

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	9.3E-01*		1.1E+02*	
			26/32/42	
R MARROW	5.6E+00*		7.0E+02*	
			26/32/42	
BONE SURF	7.0E+01*		8.9E+03*	
			26/32/42	
LIVER	1.5E+01*		1.9E+03*	
			26/32/42	
C.E.D.E.	3.9E+00*		4.9E+02*	

^{238}Np

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	1.9E-04*		7.8E-03*	
			29/31/40	
R MARROW	4.1E-04*		4.4E-02*	
			26/32/42	
BONE SURF	4.4E-03*		5.6E-01*	
			26/32/42	
LIVER	1.0E-03*		1.2E-01*	
			26/32/42	
SI WALL	4.1E-03			
ULI WALL	1.6E-02			
LLI WALL	3.3E-02			
C.E.D.E.	3.4E-03*		3.1E-02*	

^{239}Np

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			8.9E-03	
			0/2/98	
BONE SURF			5.2E-03*	
			34/43/23	
SI WALL	3.2E-03			
ULI WALL	1.4E-02		4.8E-03	
			69/11/20	
LLI WALL	3.2E-02		1.1E-02	
			69/11/20	
C.E.D.E.	2.9E-03		2.2E-03*	

^{240}Np

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			4.8E-04	
			0/14/86	
BONE SURF			1.9E-04*	
			26/33/41	
GONADS	9.3E-06*			
ST WALL	1.4E-03			
SI WALL	1.0E-03			
ULI WALL	7.4E-04			
LLI WALL	1.6E-04			
C.E.D.E.	2.0E-04*		6.3E-05*	

PLUTONIUM(1)

^{234}Pu

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-05		1.0E-03	1.0E-05
LUNGS				1.7E-01 0/2/98	2.2E-01 0/3/97
GONADS	2.7E-03	2.7E-04			
BONE SURF				1.1E-01 36/47/17	
SI WALL	9.6E-04	9.6E-04			
ULI WALL	2.7E-03	2.7E-03			
LLI WALL	4.4E-03	4.4E-03			
C.E.D.E.	1.2E-03	5.5E-04		2.4E-02	2.7E-02

^{235}Pu

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-05		1.0E-03	1.0E-05
LUNGS				1.4E-05 0/17/83	1.7E-05* 0/20/80
GONADS	2.0E-05*	2.0E-06*			
ST WALL	5.6E-05	5.6E-05			
SI WALL	1.9E-05	1.9E-05			
ULI WALL	1.0E-05	1.0E-05			
REMAINDER	5.6E-05*	5.6E-06*			
WT	0.06	0.06			
C.E.D.E.	1.4E-05*	5.9E-06*		1.7E-06	2.0E-06*

^{236}Pu

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-05		1.0E-03	1.0E-05
LUNGS					7.0E+02* 0/0/100
GONADS	2.9E-01*			3.4E+01* 25/34/41	
R MARROW	1.9E+00*	1.9E-02*		2.2E+02* 25/34/41	7.4E+01* 7/2/91
BONE SURF	2.3E+01*	2.3E-01*		2.8E+03* 25/34/41	9.6E+02* 7/2/91
LIVER	5.2E+00*	5.2E-02*		6.3E+02* 25/34/41	2.1E+02* 7/2/91
ULI WALL		7.0E-02			
LLI WALL	2.2E-01	2.2E-01			
C.E.D.E.	1.3E+00*	3.0E-02*		1.6E+02*	1.3E+02*

^{237}Pu

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-05		1.0E-03	1.0E-05
LUNGS				8.1E-03 0/1/99	1.4E-02 0/0/100
GONADS	2.7E-03	2.7E-04			
R MARROW				9.3E-04 30/37/33	
BONE SURF				6.7E-03 32/43/25	
LIVER				3.0E-03 31/42/27	
SI WALL	4.4E-04	4.4E-04			
ULI WALL	1.5E-03	1.5E-03			
LLI WALL	3.7E-03	3.7E-03		1.7E-03 59/9/32	
C.E.D.E.	1.0E-03	4.0E-04		1.6E-03	1.6E-03

^{238}Pu

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-05		1.0E-03	1.0E-05
LUNGS					1.2E+03* 0/0/100
GONADS	8.5E-01*	8.5E-03*		1.0E+02* 25/33/42	
R MARROW	5.6E+00*	5.6E-02*		6.7E+02* 25/33/42	2.4E+02* 7/2/91
BONE SURF	6.7E+01*	6.7E-01*		8.1E+03* 25/33/42	3.1E+03* 7/2/91
LIVER	1.5E+01*	1.5E-01*		1.8E+03* 25/33/42	6.7E+02* 7/2/91
ULI WALL		6.7E-02			
LLI WALL		2.1E-01			
C.E.D.E.	3.8E+00*	5.4E-02*		4.6E+02*	3.0E+02*

^{239}Pu

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-05		1.0E-03	1.0E-05
LUNGS					1.2E+03* 0/0/100
GONADS	9.6E-01*	9.6E-03*		1.2E+02* 25/33/42	
R MARROW	5.9E+00*	5.9E-02*		7.4E+02* 25/33/42	2.8E+02* 7/2/91
BONE SURF	7.8E+01*	7.8E-01*		9.3E+03* 25/33/42	3.5E+03* 7/2/91
LIVER	1.6E+01*	1.6E-01*		2.0E+03* 25/33/42	7.8E+02* 6/2/92
ULI WALL		6.3E-02			
LLI WALL		2.0E-01			
C.E.D.E.	4.3E+00*	5.8E-02*		5.1E+02*	3.3E+02*

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{240}Pu

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-05		1.0E-03	1.0E-05
LUNGS					1.2E+03*
					0/0/100
GONADS	9.6E-01*	9.6E-03*		1.2E+02*	
				25/33/42	
R MARROW	5.9E+00*	5.9E-02*		7.4E+02*	2.8E+02*
				25/33/42	7/2/91
BONE SURF	7.8E+01*	7.8E-01*		9.3E+03*	3.5E+03*
				25/33/42	7/2/91
LIVER	1.6E+01*	1.6E-01*		2.0E+03*	7.8E+02*
				25/33/42	6/2/92
ULI WALL		6.3E-02			
LLI WALL		2.0E-01			
C.E.D.E.	4.3E+00*	5.8E-02*		5.1E+02*	3.3E+02*

^{243}Pu

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-05		1.0E-03	1.0E-05
LUNGS				7.0E-04	8.5E-04
				0/8/92	0/12/88
BONE SURF				8.1E-04*	
				27/36/37	
LIVER				1.8E-04	
				27/37/37	
ST WALL	6.7E-04	6.7E-04			
SI WALL	1.1E-03	1.1E-03			
ULI WALL	2.2E-03	2.2E-03		2.7E-04	3.3E-04
				76/17/7	67/27/6
LLI WALL	1.5E-03	1.5E-03		1.8E-04	2.3E-04
				76/17/7	67/27/6
C.E.D.E.	3.3E-04	3.3E-04		1.5E-04*	1.4E-04

^{241}Pu

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-05		1.0E-03	1.0E-05
LUNGS					1.2E+01*
					0/0/100
GONADS	2.1E-02*	2.1E-04*		2.5E+00*	1.0E+00*
				25/33/42	6/2/92
R MARROW	1.3E-01*	1.3E-03*		1.5E+01*	6.3E+00*
				25/33/42	6/2/92
BONE SURF	1.6E+00*	1.6E-02*		1.9E+02*	7.8E+01*
				25/33/42	6/2/92
LIVER	3.2E-01*	3.2E-03*		3.7E+01*	1.6E+01*
				25/33/42	6/2/92
LLI WALL		1.0E-03			
C.E.D.E.	8.6E-02*	9.2E-04*		1.0E+01*	5.7E+00*

^{244}Pu

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-05		1.0E-03	1.0E-05
LUNGS					1.1E+03*
					0/0/100
GONADS	9.3E-01*	1.1E-02*		1.1E+02*	
				25/33/42	
R MARROW	5.9E+00*	5.9E-02*		7.0E+02*	2.7E+02*
				25/33/42	7/2/91
BONE SURF	7.0E+01*	7.0E-01*		8.5E+03*	3.3E+03*
				25/33/42	7/2/91
LIVER	1.6E+01*	1.6E-01*		1.9E+03*	7.4E+02*
				25/33/42	6/2/92
ULI WALL		8.9E-02			
LLI WALL		3.1E-01			
C.E.D.E.	4.0E+00*	6.4E-02*		4.8E+02*	3.1E+02*

^{242}Pu

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-05		1.0E-03	1.0E-05
LUNGS					1.1E+03
					0/0/100
GONADS	9.3E-01*	9.3E-03*		1.1E+02*	
				25/33/42	
R MARROW	5.9E+00*	5.9E-02*		7.0E+02*	2.7E+02*
				25/33/42	7/2/91
BONE SURF	7.4E+01*	7.4E-01*		8.5E+03*	3.3E+03*
				25/33/42	7/2/91
LIVER	1.6E+01*	1.6E-01*		1.9E+03*	7.4E+02*
				25/33/42	6/2/92
ULI WALL		5.9E-02			
LLI WALL		1.9E-01			
C.E.D.E.	4.1E+00*	5.6E-02*		4.8E+02*	3.1E+02*

^{245}Pu

CLASS	Ingestion		Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03	1.0E-05		1.0E-03	1.0E-05
LUNGS				4.8E-03	5.2E-03
				0/5/95	0/8/92
SI WALL	4.8E-03	4.8E-03		1.0E-03	1.3E-03
				74/14/12	67/23/10
ULI WALL	1.6E-02	1.6E-02		3.3E-03	4.1E-03
				74/14/12	68/23/9
LLI WALL	2.0E-02	2.0E-02		3.7E-03	4.4E-03
				75/14/11	67/24/9
C.E.D.E.	2.4E-03	2.4E-03		1.1E-03	1.2E-03

AMERICIUM(1)

^{237}Am

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			1.5E-04 0/13/87	
GONADS	7.0E-05			
ST WALL	3.3E-04			
SI WALL	2.6E-04			
ULI WALL	2.2E-04			
LLI WALL	5.6E-05			
REMAINDER	7.4E-05			
WT	0.06			
C.E.D.E.	7.4E-05		1.8E-05	

^{238}Am

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	2.1E-04*		2.3E-04* 26/33/41	
BREAST	4.4E-05*			
R MARROW	7.4E-05*		1.4E-03* 25/33/42	
BONE SURF			1.7E-02* 25/33/42	
LIVER			3.7E-03* 25/33/42	
ST WALL	4.4E-04			
SI WALL	4.1E-04			
ULI WALL	4.4E-04			
LLI WALL	1.3E-04			
REMAINDER	1.8E-04*			
WT	0.06			
C.E.D.E.	1.7E-04*		9.6E-04*	

^{239}Am

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			1.7E-03 0/5/95	
GONADS	6.7E-04			
BONE SURF			7.8E-04 31/40/29	
ST WALL	8.5E-04			
SI WALL	1.9E-03		3.7E-04 74/14/12	
ULI WALL	5.5E-03		1.1E-03 74/14/12	
LLI WALL	6.3E-03		1.3E-03 74/14/12	
C.E.D.E.	1.0E-03		4.0E-04	

^{240}Am

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			4.1E-03 1/3/96	
GONADS	5.2E-03		1.0E-03 62/15/23	
R MARROW			1.1E-03 32/28/40	
BONE SURF			8.9E-03 26/35/39	
LIVER			2.7E-03 28/35/37	
SI WALL	3.7E-03		1.3E-03 67/12/21	
ULI WALL	8.1E-03		2.8E-03 67/12/21	
LLI WALL	1.4E-02		4.8E-03 69/11/20	
C.E.D.E.	2.9E-03		1.8E-03	

^{241}Am

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	1.0E+00*		1.2E+02* 25/33/42	
R MARROW	6.3E+00*		7.4E+02* 25/33/42	
BONE SURF	8.1E+01*		9.3E+03* 25/33/42	
LIVER	1.7E+01*		2.0E+03* 25/33/42	
C.E.D.E.	4.5E+00*		5.2E+02*	

^{242M}Am

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	9.6E-01*		1.2E+02* 25/33/42	
R MARROW	6.3E+00*		7.4E+02* 25/33/42	
BONE SURF	7.4E+01*		9.3E+03* 25/33/42	
LIVER	1.6E+01*		2.0E+03* 25/33/42	
C.E.D.E.	4.2E+00*		5.1E+02*	

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{242}Am

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			2.0E-01	
			0/0/100	
BONE SURF	6.3E-03*		6.7E-01*	
			28/36/36	
R MARROW			5.2E-02*	
			28/36/36	
LIVER			1.7E-01*	
			28/37/35	
SI WALL	1.6E-03			
ULI WALL	6.3E-03			
LLI WALL	9.6E-03			
C.E.D.E.	1.2E-03*		6.1E-02*	

^{243}Am

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	1.0E+00*		1.2E+02*	
			25/33/42	
R MARROW	6.3E+00*		7.4E+02*	
			25/33/42	
BONE SURF	8.1E+01*		9.3E+03*	
			25/33/42	
LIVER	1.7E+01*		2.0E+03*	
			25/33/42	
C.E.D.E.	4.5E+00*		5.2E+02*	

^{244M}Am

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			4.1E-04	
			0/9/91	
GONADS			1.6E-04	
			25/33/42	
R MARROW			1.0E-03*	
			25/33/42	
BONE SURF			1.3E-02*	
			25/33/42	
LIVER			3.0E-03*	
			25/33/42	
ST WALL	8.5E-04			
SI WALL	2.8E-04			
C.E.D.E.	6.8E-05		8.0E-04*	

^{244}Am

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	1.6E-03*		4.1E-03*	
			27/33/40	
R MARROW			2.5E-02*	
			25/33/42	
BONE SURF			3.1E-01*	
			25/33/42	
LIVER			7.0E-02*	
			25/33/42	
ST WALL	1.9E-03			
SI WALL	4.1E-03			
ULI WALL	1.0E-02			
LLI WALL	1.1E-02			
C.E.D.E.	2.0E-03		1.7E-02*	

^{245}Am

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			4.8E-04	
			0/11/89	
BONE SURF			2.7E-04	
			26/34/40	
ST WALL	8.5E-04			
SI WALL	8.9E-04			
ULI WALL	9.6E-04			
LLI WALL	3.2E-04			
C.E.D.E.	1.8E-04		6.6E-05	

^{246M}Am

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			2.1E-04	
			0/17/83	
BONE SURF			1.0E-04	
			25/33/42	
ST WALL	9.6E-04			
SI WALL	3.1E-04			
ULI WALL	1.2E-04			
C.E.D.E.	8.4E-05		2.9E-05	

^{248}Am

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			4.1E-04	
			0/16/84	
ST WALL	1.5E-03			
SI WALL	7.0E-04			
ULI WALL	3.3E-04			
C.E.D.E.	1.5E-04		4.9E-05	

CURIUM(1)

^{238}Cm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			3.2E-02 0/9/91	
GONADS	4.1E-04*			
BONE SURF			2.8E-02* 28/36/36	
T WALL	6.7E-04			
WALL	1.1E-03			
I WALL	1.7E-03			
WALL	7.8E-04			
.D.E.	3.6E-04*		4.7E-03*	

^{240}Cm

	Ingestion	Inhalation D	Inhalation W	Inhalation Y
ORP	1.0E-03		1.0E-03	
			2.8E+01 0/0/100	
W	6.7E-02*		7.4E+00* 27/37/37	
F	8.1E-01*		9.3E+01* 27/37/37	
	2.0E-01*		2.2E+01* 28/36/36	
WALL	7.8E-02			
LI WALL	2.3E-01			
C.E.D.E.	6.3E-02*		8.3E+00*	

^{241}Cm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			3.3E-01 0/0/100	
GONADS	4.8E-03*		2.9E-02* 27/34/39	
R MARROW			1.8E-01* 26/35/39	
BONE SURF	1.9E-02*		2.2E+00* 26/35/39	
LIVER			4.8E-01* 26/35/39	
SI WALL	3.7E-03			
ULI WALL	1.2E-02			
LLI WALL	3.1E-02			
C.E.D.E.	4.6E-03*		1.6E-01*	

^{242}Cm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			5.6E+01 0/0/100	
R MARROW	1.3E-01*		1.5E+01* 28/36/36	
BONE SURF	1.7E+00*		1.9E+02* 28/36/36	
LIVER	4.4E-01*		4.8E+01* 28/37/35	
ULI WALL	7.4E-02			
LLI WALL	2.3E-01			
C.E.D.E.	1.1E-01*		1.7E+01*	

^{243}Cm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	6.3E-01*		7.8E+01* 25/33/42	
R MARROW	4.1E+00*		4.8E+02* 25/33/42	
BONE SURF	5.2E+01*		6.3E+03* 25/33/42	
LIVER	1.2E+01*		1.4E+03* 25/33/42	
C.E.D.E.	2.9E+00*		3.5E+02*	

^{244}Cm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	4.8E-01*		5.9E+01* 25/33/42	
R MARROW	3.3E+00*		3.7E+02* 25/33/42	
BONE SURF	4.1E+01*		4.8E+03* 25/33/42	
LIVER	9.6E+00*		1.1E+03* 25/33/42	
C.E.D.E.	2.3E+00*		2.7E+02*	

^{245}Cm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	1.0E+00*		1.3E+02* 25/33/42	
R MARROW	6.3E+00*		7.8E+02* 25/33/42	
BONE SURF	8.1E+01*		9.6E+03* 25/33/42	
LIVER	1.7E+01*		2.1E+03* 25/33/42	
C.E.D.E.	4.5E+00*		5.4E+02*	

^{246}Cm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	1.0E+00*		1.2E+02*	
			25/33/42	
R MARROW	6.3E+00*		7.8E+02*	
			25/33/42	
BONE SURF	8.1E+01*		9.6E+03*	
			25/33/42	
LIVER	1.7E+01*		2.1E+03*	
			25/33/42	
C.E.D.E.	4.5E+00*		5.4E+02*	

^{247}Cm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	9.6E-01*		1.1E+02*	
			25/33/42	
R MARROW	5.9E+00*		7.0E+02*	
			25/33/42	
BONE SURF	7.4E+01*		8.9E+03*	
			25/33/42	
LIVER	1.6E+01*		1.9E+03*	
			25/33/42	
C.E.D.E.	4.1E+00*		4.9E+02*	

^{248}Cm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
GONADS	3.7E+00*		4.4E+02*	
			25/33/42	
R MARROW	2.4E+01*		2.8E+03*	
			25/33/42	
BONE SURF	2.9E+02*		3.5E+04*	
			25/33/42	
LIVER	6.3E+01*		7.4E+03*	
			25/33/42	
C.E.D.E.	1.6E+01*		1.9E+03*	

^{249}Cm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	
LUNGS			2.8E-04	
			0/14/86	
GONADS			4.4E-05*	
			25/34/41	
R MARROW			2.7E-04*	
			25/33/42	
BONE SURF			3.4E-03*	
			25/33/42	
LIVER			7.4E-04*	
			25/33/42	
ST WALL	7.4E-04			
SI WALL	5.2E-04			
ULI WALL	3.3E-04			
C.E.D.E.	9.5E-05		2.2E-04*	

BERKELIUM

^{245}Bk

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
LUNGS			1.8E-02	
			0/1/99	
GONADS	9.6E-04			
R MARROW			2.0E-03	
			31/37/32	
BONE SURF			2.1E-02	
			30/39/31	
LIVER			5.5E-03	
			31/40/29	
SI WALL	2.4E-03			
ULI WALL	9.3E-03			
LLI WALL	2.3E-02		8.5E-03	
			66/10/24	
C.E.D.E.	2.3E-03		3.8E-03	

^{246}Bk

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
LUNGS			2.9E-03	
			1/3/96	
GONADS	2.4E-03		9.3E-04	
			61/16/23	
BREAST			2.3E-04	
			33/12/55	
R MARROW			1.2E-03	
			30/29/41	
BONE SURF			1.1E-02	
			26/34/40	
LIVER			2.9E-03	
			27/34/39	
SI WALL	3.3E-03		1.1E-03	
			67/12/21	
ULI WALL	6.7E-03		2.2E-03	
			68/12/20	
LLI WALL	1.1E-02		3.5E-03	
			70/11/19	
C.E.D.E.	1.9E-03		1.7E-03	

^{247}Bk

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
GONADS	5.2E-01*		1.3E+02*	
			25/33/42	
R MARROW	3.3E+00*		7.8E+02*	
			25/33/42	
BONE SURF	4.1E+01*		1.0E+04*	
			25/33/42	
LIVER	8.9E+00*		2.1E+03*	
			25/33/42	
C.E.D.E.	2.3E+00*		5.5E+02*	

^{249}Bk

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
GONADS	1.3E-03*		3.1E-01*	
			25/33/42	
R MARROW	8.1E-03*		1.9E+00*	
			25/33/42	
BONE SURF	1.0E-01*		2.4E+01*	
			25/33/42	
LIVER	2.1E-02*		5.2E+00*	
			25/33/42	
LLI WALL	6.3E-03			
C.E.D.E.	6.0E-03*		1.3E+00*	

^{250}Bk

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
LUNGS			3.0E-03	
			0/3/97	
GONADS	2.4E-04*		1.4E-03*	
			26/33/41	
R MARROW			9.3E-03*	
			25/33/42	
BONE SURF			1.1E-01*	
			25/33/42	
LIVER			2.7E-02*	
			25/33/42	
ST WALL	1.4E-03			
SI WALL	1.9E-03			
ULI WALL	2.8E-03			
LLI WALL	1.3E-03			
C.E.D.E.	5.0E-04*		6.9E-03*	

CALIFORNIUM(1)

^{244}Cf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			5.9E-02 0/14/86	7.4E-02* 0/15/85
BONE SURF			4.8E-02* 28/37/35	
ST WALL	2.0E-03			
SI WALL	5.2E-04			
C.E.D.E.	1.5E-04		8.5E-03*	8.9E-03*

^{246}Cf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			3.5E+00 0/2/98	4.8E+00* 0/3/97
BONE SURF			2.6E+00* 33/43/24	
SI WALL	1.3E-02			
ULI WALL	5.9E-02			
LLI WALL	1.3E-01			
C.E.D.E.	1.2E-02		4.9E-01*	5.8E-01*

^{248}Cf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			6.7E+01 0/0/100	3.6E+02* 0/0/100
R MARROW	4.1E-01*		4.4E+01* 26/35/39	
BONE SURF	4.8E+00*		5.6E+02* 26/35/39	
LIVER	1.2E+00*		1.4E+02* 26/35/39	
LLI WALL	2.4E-01			
C.E.D.E.	2.8E-01*		3.8E+01*	4.3E+01*

^{249}Cf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS				1.3E+03* 0/0/100
GONADS	1.0E+00*		1.3E+02* 25/33/42	
R MARROW	6.7E+00*		7.8E+02* 25/33/42	3.1E+02* 7/2/91
BONE SURF	8.1E+01*		1.0E+04* 25/33/42	3.7E+03* 7/2/91
LIVER	1.8E+01*		2.1E+03* 25/33/42	8.5E+02* 7/2/91
C.E.D.E.	4.8E+00*		5.5E+02*	3.8E+02*

^{250}Cf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS				1.0E+03* 0/0/100
GONADS	4.1E-01*			
R MARROW	2.7E+00*		3.3E+02* 25/33/42	1.1E+02* 8/2/90
BONE SURF	3.4E+01*		4.1E+03* 25/33/42	1.4E+03* 8/2/90
LIVER	8.1E+00*		9.6E+02* 25/33/42	3.3E+02* 8/2/90
C.E.D.E.	1.9E+00*		2.2E+02*	1.9E+02*

^{251}Cf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS				1.3E+03* 0/0/100
GONADS	1.1E+00*		1.3E+02* 25/33/42	
R MARROW	6.7E+00*		8.1E+02* 25/33/42	3.1E+02* 7/2/91
BONE SURF	8.1E+01*		1.0E+04* 25/33/42	4.1E+03* 7/2/91
LIVER	1.8E+01*		2.2E+03* 25/33/42	8.5E+02* 7/2/91
C.E.D.E.	4.6E+00*		5.6E+02*	3.7E+02*

^{252}Cf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			1.4E+02 0/0/100	1.1E+03* 0/0/100
GONADS	1.9E-01*			
R MARROW	1.3E+00*		1.4E+02* 26/34/40	
BONE SURF	1.6E+01*		1.8E+03* 26/34/40	
LIVER	4.1E+00*		4.8E+02* 26/34/40	
LLI WALL	5.6E-01			
C.E.D.E.	9.4E-01*		1.2E+02*	1.3E+02*

50-Year Committed Dose Equivalent Factors--rem/μCi Intake (Continued)

^{253}Cf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	1.0E-03		1.0E-03	1.0E-03
LUNGS			1.4E+01	2.5E+01*
			0/0/100	0/0/100
R MARROW	1.4E-02*			
BONE SURF	1.7E-01*		1.6E+01*	
			33/43/24	
LIVER	4.8E-03*		4.4E+00*	
			33/43/24	
ULI WALL	7.0E-03			
LLI WALL	2.8E-02			
C.E.D.E.	9.2E-03*		2.5E+00*	3.0E+00*

^{254}Cf

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	5.0E-04
LUNGS			1.3E+03	2.4E+03
			0/0/100	0/0/100
GONADS	2.1E+00			
R MARROW	1.6E+00			
BONE SURF	1.6E+01		1.5E+03	
			32/42/26	
LIVER	4.8E+00		4.1E+02	
			32/42/26	
SI WALL	1.6E+00			
ULI WALL	4.1E+00			
LLI WALL	1.1E+01			
C.E.D.E.	2.5E+00		2.2E+02	2.8E+02

EINSTEINIUM

^{250}Es

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
GONADS	7.4E-05*		9.3E-04*	
			25/33/42	
R MARROW	4.4E-05*		5.9E-03*	
			25/33/42	
BONE SURF	3.2E-04*		7.4E-02*	
			25/33/42	
LIVER	9.2E-05*		1.8E-02*	
			25/33/42	
ST WALL	2.4E-04			
SI WALL	2.7E-04			
ULI WALL	3.2E-04			
LLI WALL	1.1E-04			
C.E.D.E.	9.5E-05*		4.2E-03*	

^{251}Es

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
LUNGS			1.5E-02	
			0/3/97	
GONADS	2.8E-04			
R MARROW			3.7E-03	
			27/35/38	
BONE SURF			4.8E-02	
			27/35/38	
LIVER			1.0E-02	
			27/36/37	
SI WALL	9.3E-04			
ULI WALL	3.2E-03			
LLI WALL	5.9E-03			
C.E.D.E.	6.7E-04		4.3E-03	

^{253}Es

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
LUNGS			2.3E+01	
			0/0/100	
BONE SURF	1.0E-01		1.7E+01	
			36/47/17	
LIVER	2.6E-02			
ULI WALL	8.1E-02			
LLI WALL	2.4E-01			
C.E.D.E.	2.4E-02		3.3E+00	

^{254M}Es

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
LUNGS			3.3E+00	
			0/1/99	
BONE SURF			2.4E+00*	
			33/43/24	
ULI WALL	7.4E-02			
LLI WALL	1.8E-01			
C.E.D.E.	1.5E-02		4.7E-01*	

^{254}Es

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
LUNGS			6.7E+01	
			0/0/100	
GONADS	2.8E-02*			
R MARROW	1.8E-01*		4.1E+01*	
			26/35/39	
BONE SURF	2.2E+00*		5.2E+02*	
			26/35/39	
LIVER	5.6E-01*		1.3E+02*	
			26/35/39	
LLI WALL	3.2E-01			
C.E.D.E.	1.5E-01*		3.6E+01*	

FERMIUM

^{252}Fm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
LUNGS			2.3E+00 0/3/97	
BONE SURF			2.1E+00* 30/40/30	
LIVER			5.6E-01* 30/41/29	
SI WALL	1.3E-02			
ULI WALL	5.6E-02			
LLI WALL	9.6E-02			
C.E.D.E.	9.9E-03		3.8E-01*	

^{253}Fm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
LUNGS			3.4E+00 0/0/100	
BONE SURF	1.4E-02		2.5E+00* 36/47/17	
LIVER	4.1E-03*			
ULI WALL	1.2E-02			
LLI WALL	3.5E-02			
C.E.D.E.	3.5E-03*		4.8E-01*	

^{254}Fm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
LUNGS			4.1E-01 0/10/90	
ST WALL	5.2E-03			
SI WALL	6.7E-03			
ULI WALL	1.0E-02			
LLI WALL	5.2E-03			
C.E.D.E.	1.6E-03		4.9E-02	

^{255}Fm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
LUNGS			1.9E+00 0/4/96	
SI WALL	1.4E-02			
ULI WALL	5.6E-02			
LLI WALL	9.3E-02			
C.E.D.E.	9.7E-03		2.3E-01	

^{257}Fm

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
LUNGS			8.1E+01* 0/0/100	
R MARROW	7.4E-02		1.6E+01 29/38/33	
BONE SURF	9.3E-01*		2.0E+02* 29/38/33	
LIVER	2.5E-01*		5.2E+01* 29/38/33	
ULI WALL	8.9E-02			
LLI WALL	2.7E-01			
C.E.D.E.	7.3E-02*		2.1E+01*	

MENDELEVIUM

^{257}Md

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
LUNGS			2.4E-01 0/2/98	
GONADS	8.9E-05*			
R MARROW	1.8E-04*		3.3E-02* 29/39/32	
BONE SURF	2.0E-03*		4.1E-01* 29/39/32	
LIVER	5.2E-04*		1.1E-01* 29/39/32	
ST WALL	7.0E-04			
SI WALL	1.1E-03			
ULI WALL	2.6E-03			
LLI WALL	2.4E-03			
C.E.D.E.	5.4E-04*		5.2E-02*	

^{258}Md

CLASS	Ingestion	Inhalation D	Inhalation W	Inhalation Y
GI ABSORP	5.0E-04		5.0E-04	
LUNGS			5.2E+01* 0/0/100	
R MARROW	5.8E-02*		1.2E+01* 28/37/35	
BONE SURF	7.0E-01*		1.6E+02* 28/37/35	
LIVER	1.9E-01*		4.1E+01* 28/37/35	
ULI WALL	9.3E-02			
LLI WALL	2.8E-01			
C.E.D.E.	6.1E-02*		1.5E+01*	

Endnotes

* Indicates that less than 90% of the total 50-year committed dose equivalent is received in the year following intake.

(1) Includes new f_1 values as reported in ICRP Publication 48. For ingestion, it is assumed that individual organ doses, except for the gastrointestinal tract, change in proportion to f_1 for all organs, including the "Remainder." Gastrointestinal doses are unchanged because very little material is absorbed in the upper portions of the tract. For inhalation, it is assumed that the effective dose equivalents are unchanged even though the f_1 values have changed. This is because the contribution to organ dose from inhalation is mainly dependent on transfer from lung to blood when f_1 values are small. Also, the gastrointestinal tract dose would be unchanged because the fraction of activity passing through the tract is $1.0 - f_1$.

2.4 ALTERNATIVE ABSORPTION FACTORS AND LUNG RETENTION CLASSES FOR SPECIFIC COMPOUNDS

Element/ Symbol	Atomic Number	Compound	f_1	Lung Retention Class
Actinium (Ac)	89	Oxides, hydroxides	1E-3	Y
		Halides, nitrates	1E-3	W
		All others	1E-3	D
Aluminum (Al)	13	Oxides, hydroxides, carbides, halides, nitrates, elemental form	1E-2	W
		All others	1E-2	D
Americium (Am)	95	All forms	1E-3	W
Antimony (Sb)	51	Oxides, hydroxides, halides, sulphides, sulphates, nitrates	1E-1	D
		All others	1E-2	W
Arsenic (As)	33	All forms	5E-1	W
Astatine (At)	85	All (as a halide)	1E+0	W or D; dependent upon associated element
Barium (Ba)	56	All forms	1E-1	D
Berkelium (Bk)	97	All forms	5E-4	W
Beryllium (Be)	4	Oxides, halides, nitrates	5E-3	Y
		All others	5E-3	W
Bismuth (Bi)	83	All except nitrates	5E-2	W
		Nitrates	5E-2	D
Bromine (Br)	35	Bromides	1E+0	W or D; dependent upon associated element

Element/ Symbol	Atomic Number	Compound	f_1	Lung Retention Class
Cadmium (Cd)	48	Oxides, hydroxides	5E-2	Y
		Sulphates, halides	5E-2	W
		All others	5E-2	D
Calcium (Ca)	20	All forms	3E-1	W
Californium (Cf)	98	Oxides, hydroxides	1E-3	Y
		All others	1E-3	W
Carbon (C)	6	Oxides	--(a)	D
		Organic (^{11}C)	1E-2	W
		Organic (^{14}C)	7E-5	W
Cerium (Ce)	58	Oxides, hydroxides, fluorides	3E-4	Y
		All others	3E-4	W
Cesium (Cs)	55	All forms	1E+0	D
Chlorine (Cl)	17	Chloride	1E+0	W or D; dependent upon associated element
Chromium (Cr)	24	Oxides, hydroxides	1E-1	Y
		Halides, nitrates	1E-1	W
		All others	1E-1	D
		Ingestion(b)		
		Trivalent	1E-2	--
		Hexavalent	1E-1	--
Cobalt (Co)	27	Oxides, hydroxides, halides, nitrates	5E-2	Y
		All others	5E-2	W
		Ingestion only	3E-1	--
Copper (Cu)	29	Oxides, hydroxides	5E-1	Y
		Sulphites, halides, nitrates	5E-1	W
		All others	5E-1	D
Curium (Cm)	96	All forms	1E-3	W
Dysprosium (Dy)	66	All forms	3E-4	W
Einsteinium (Es)	99	All forms	5E-4	W

Element/ Symbol	Atomic Number	Compound	f_1	Lung Retention Class
Erbium (Er)	68	All forms	3E-4	W
Europium (Eu)	63	All forms	1E-3	W
Fermium (Fm)	100	All forms	5E-4	W
Fluorine (F)	9	Fluoride	1E+0	Y, W, or D; dependent upon associated element
Francium (Fr)	87	All forms	1E+0	D
Gadolinium (Gd)	64	Oxides, hydroxides, fluorides	3E-4	W
		All others	3E-4	D
Gallium (Ga)	31	Oxides, hydroxides, carbides, halides, nitrates	1E-3	D
		All others	1E-3	D
Germanium (Ge)	32	Oxides, sulphides, halides	1E+0	W
		All others	1E+0	D
Gold (Au)	79	Oxides, hydroxides	1E-1	Y
		Halides, nitrates	1E-1	W
		All others	1E-1	D
Hafnium (Hf)	72	Oxides, hydroxides halides, carbides, nitrates	2E-3	W
		All others	2E-3	D
Holmium (Ho)	67	All forms	3E-4	W
Hydrogen (H)	1	Water (^3H)	1E+0	--
Indium (In)	49	Oxides, hydroxides, halides	2E-2	W
		All others	2E-2	D
Iodine (I)	53	All forms	1E+0	D

Element/ Symbol	Atomic Number	Compound	f_1	Lung Retention Class
Iridium (Ir)	77	Oxides, hydroxides	1E-2	Y
		Halides, nitrates, metallic form	1E-2	W
		All others	1E-2	D
Iron (Fe)	26	Oxides, hydroxides, halides	1E-1	W
		All others	1E-1	D
Lanthanum (La)	57	Oxides, hydroxides	1E-3	W
		All others	1E-3	D
Lead (Pb)	82	All forms	2E-1	D
Lutetium (Lu)	71	Oxides, hydroxides, fluorides	3E-4	Y
		All others	3E-4	W
Magnesium (Mg)	12	Oxides, hydroxides, carbides, halides, nitrates	5E-1	W
		All others	5E-1	D
Manganese (Mn)	25	Oxides, hydroxides, halides, nitrates	1E-1	W
		All others	1E-1	D
Mendelevium (Md)	101	All forms	5E-4	W
Mercury (Hg)	80	Oxides, hydroxides, halides, nitrates, sulphites	2E-2	W
		Sulphates, elemental form	2E-2	D
		Organic forms	1E+0	D
		Vapor	--	D
Molybdenum (Mo)	42	Oxides, hydroxides, MoS_2	5E-2	Y
		All others	8E-1	D
		Ingestion[b]		
		MoS_2	5E-2	--
		All others	8E-1	--
Neodymium (Nd)	60	Oxides, hydroxides, carbides, fluorides	3E-4	Y
		All others	3E-4	W

Element/ Symbol	Atomic Number	Compound	f_1	Lung Retention Class
Neptunium (Np)	93	All forms	1E-3	W
Nickel (Ni)	28	Oxides, hydroxides	5E-2	W
		All others (vapor)	--	D
Niobium (Nb)	41	Oxides, hydroxides	1E-2	Y
		All others	1E-2	W
Osmium (Os)	76	Oxides, hydroxides	1E-2	Y
		Halides, nitrates	1E-2	W
		All others	1E-2	D
Palladium (Pd)	46	Oxides, hydroxides	5E-3	Y
		Nitrates	5E-3	W
		All others	5E-3	D
Phosphorus (P)	15	Phosphates	8E-1	W or D; dependent upon associated element
Platinum (Pt)	78	All forms	1E-2	D
Plutonium (Pu)	94	Oxides, hydroxides	1E-5	Y
		Nitrates	1E-4	W
		All other [Note: Use same values for ingestion]	1E-3	W
Polonium (Po)	84	Oxides, hydroxides, nitrates	1E-1	W
		All others	1E-1	D
Potassium (K)	19	All forms	1E+0	D
Praesodymium (Pr)	59	Oxides, hydroxides, carbides, fluorides	3E-4	Y
		All others	3E-4	W
Promethium (Pm)	61	Oxides, hydroxides, carbides, fluorides	3E-4	Y
		All others	3E-4	W
Protactinium (Pa)	91	Oxides, hydroxides	1E-3	Y
		All others	1E-3	W
Radium (Ra)	88	All forms	2E-1	W

Element/ Symbol	Atomic Number	Compound	f1	Lung Retention Class
Rhenium (Re)	75	Oxides, hydroxides, halides, nitrates	8E-1	W
		All others	8E-1	D
Rhodium (Rh)	45	Oxides, hydroxides	5E-2	Y
		Halides	5E-2	W
		All others	5E-2	D
Rubidium (Rb)	37	All forms	1E+0	D
Ruthenium (Ru)	44	Oxides, hydroxides	5E-2	Y
		Halides	5E-2	W
		All others	5E-2	D
Samarium (Sm)	62	All forms	3E-4	W
Scandium (Sc)	21	All forms	1E-4	Y
Selenium (Se)	34	Oxides, hydroxides, carbides	8E-1	W
		All others	8E-1	D
		Ingestion only	5E-2	--
Silicon (Si)	14	Ceramic forms	1E-2	Y
		Oxides, hydroxides, carbides, nitrates	1E-2	W
		All others	1E-2	D
Silver (Ag)	47	Oxides, hydroxides	5E-2	Y
		Nitrates, sulphides	5E-2	W
		All others, elemental form	5E-2	D
Sodium (Sc)	11	All forms	1E+0	D
Strontium (Sr)	38	$SrTiO_3$	1E-2	Y
		All others (soluble)	3E-1	D
Sulfur (S)	16	Sulphates, sulphides	1E-1	W or D; dependent upon associated element
		All Inorganic	8E-1	--
		Elemental Form	1E-1	W
		Gases	1E+0	D

Element/ Symbol	Atomic Number	Compound	f_1	Lung Retention Class
Tantalum (Ta)	73	Oxides, hydroxides, halides, carbides, nitrates, nitrides	1E-3	Y
		All others	1E-3Y	W
Technetium (Tc)	43	Oxides, hydroxides, halides, nitrates	8E-1	W
		All others	8E-1	D
Tellurium (Te)	52	Oxides, hydroxides, nitrates	2E-1	W
		All others	2E-1	D
Terbium (Tb)	65	All forms	3E-4	W
Thallium (Tl)	81	All forms	1E+0	D
Thorium (Th)	90	Oxides, hydroxides	2E-4	Y
		All others	2E-4	W
Thulium (Tm)	69	All forms	3E-4	W
Tin (Sn)	50	Oxides, hydroxides, halides, nitrates, sulphides, $Sn_3(PO_4)_4$	2E-2	W
		All others	2E-2	D
Titanium (Ti)	22	$SrTiO_3$	1E-2	Y
		Oxides, hydroxides, carbides, halides, nitrates	1E-2	W
		All others	1E-2	D
Tungsten (W)	74	Ingestion[b]		
		Tungstic acid	1E-2	--
		All others	3E-1	--
Uranium (U)	92	UO_2, U_3O_8	2E-3	Y
		UO_3, tetravalent compounds	5E-2	W
		UF_6, uranyl compounds	5E-2	D
Vanadium (V)	23	Oxides, hydroxides, carbides, halides	1E-2	W
		All others	1E-2	D

Element/ Symbol	Atomic Number	Compound	f1	Lung Retention Class
Ytterbium (Yb)	70	Oxides, hydroxides, fluorides	3E-4	Y
		All others	3E-4	W
Yttrium (Y)	39	Oxides, hydroxides	1E-4	Y
		All others	1E-4	W
Zinc (Zn)	30	All forms	5E-1	Y
Zirconium (Zr)	40	Carbides	2E-3	Y
		Oxides, hydroxides, halides, nitrates	2E-3	W
		All others	2E-3	D

(a) Dash (--) indicates no data for the value shown.
(b) For ingestion, no lung retention classes are listed.

2.5 REFERENCES

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