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DOE STANDARD

DERIVED CONCENTRATION TECHNICAL STANDARD

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AREA ENVR

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TABLE OF CONTENTS

LIST OF TABLES

EXECUTIVE SUMMARY

Derived Concentration Standards (DCS) are quantities used in the design and conduct of radiological environmental protection programs at Department of Energy (DOE) facilities and sites. These quantities represent the concentration of a given radionuclide in either water or air that results in a member of the public receiving 1 millisievert (mSv) (100 millirem (mrem)) effective dose following continuous exposure for one year for each of the following pathways: ingestion of water, submersion in air, and inhalation. DCSs were last published by DOE in 1993 in DOE Order 5400.5, *Radiation Protection of the Public and the Environment*. Since that publication, the radiation protection framework on which DCSs are based has evolved with more sophisticated biokinetic and dosimetric information provided by the International Commission on Radiological Protection (ICRP), thus enabling consideration of age and gender. The purpose of this standard is to establish DCS values reflecting the current state of knowledge and practice in radiation protection. These DCSs are based on age-specific effective dose coefficients, revised gender-specific physiological parameters for the Reference Man (ICRP 2002), and the latest information on the energies and intensities of radiations emitted by radionuclides (ICRP 2008). This standard addresses some nuclides encountered at accelerator facilities that were not addressed in previous DOE directives and guidance.

1. INTRODUCTION

This standard supports the implementation of Department of Energy (DOE) Order 458.1, *Radiation Protection of the Public and the Environment*. Derived Concentration Standards (DCS) are radiological quantities used in the design and conduct of radiological environmental protection programs at DOE facilities and sites. These quantities provide reference values to control effluent releases from DOE facilities and may be used in implementing the as low as reasonably achievable (ALARA) process for environmental programs.

This standard establishes the numerical values of DCSs in a manner reflecting the current state of knowledge and practice in radiation protection. DCSs were last published by DOE in DOE Order 5400.5, *Radiation Protection of the Public and the Environment* (DOE 1993). Since that 1993 publication, radiation protection, as reflected in publications of the International Commission on Radiological Protection (ICRP), has evolved to include more sophisticated biokinetic and dosimetric models which account for the dependence of radiation effects on age and gender. The DCSs of this standard are based on age-specific effective dose coefficients computed in the manner of ICRP Publication 72 (ICRP 1996) and Federal Guidance Report 13 (EPA 1999), using revised gender-specific physiological parameters for members of the public set forth in ICRP Publication 89 (ICRP 2002), and the nuclear decay data of ICRP Publication 107 (ICRP 2008). This standard also addresses radionuclides encountered at accelerator facilities.

The previously labeled derived concentration guides were based on dose coefficients and physiological parameters for the adult worker, which represented the best available information in the early 1990s. In this standard, DCSs are derived using age-specific effective dose coefficients for Reference Persons of the public and age- and gender- dependent intake rates for ingestion of water and inhalation of air. The members of the public are represented by six age subgroups (Newborn, 1-year, 5-year, 10-year, 15-year, and Adult). The analysis weights the effective dose coefficients for each subgroup by their fractional representation in the U.S. population and their intake of the radionuclide through inhalation, ingestion, or air submersion. This procedure is described in greater detail in Chapter 2. The single-value nature of the resultant DCSs — with respect to each pathway and radionuclide — enables them to be effectively and consistently applied in radiological environmental protection programs at DOE facilities and sites. These DCS values are all based on the same annual effective dose [i.e., 1 mSv (100 mrem)].

The DCSs presented in this standard account for three discrete exposure pathways — ingested water or inhaled air or air submersion — and do not include other potentially significant pathways that might be present in the environs of a specific facility. A complete pathway analysis, such as described by Yu ***et al.*** (2001), is required for calculating public radiation doses.

Consistent with DOE Policy 441.1, *Department of Energy Radiological Health and Safety Policy*, this standard reflects, as appropriate, recommendations and guidance from various national and international standards and scientific organizations, including the ICRP, the National Council on Radiation Protection and Measurements, the American National Standards Institute, and others.

1.1. DOSE QUANTITIES

The dosimetric system of the ICRP Publication 60 (1991) involves three dosimetric quantities, which are briefly described below.

a. Absorbed dose. Absorbed dose, D, is the basic physical dose quantity defined as the quotient of mean energy imparted to a volume by the mass of the volume. The volume can be differential and thus the quantity can be defined at a point (see glossary). The quantity is applicable to all types of ionizing radiations and to any material. The SI unit is the gray (Gy)(J kg^{-1}). The conventional unit of absorbed dose is the rad (1 rad = 0.01 Gy).

b. Equivalent dose. Equivalent dose, H_T, is a radiation protection quantity specific to an organ or tissue of the body. Equivalent dose is based on the mean absorbed dose in the volume of an organ or tissue, T, due to radiation of type, R, modified by a radiation weighting factor for that radiation, w_R. The w_R-modified absorbed dose due to each radiation type is then summed (see glossary) and the resultant sum is called equivalent dose. The w_R-weighting attempts to put the various radiations, R, on a common scale without consideration of the particular organ or tissue being irradiated. The radiation weighting factors used in this standard are those of ICRP Publication 60 (ICRP 1991) and are given in Table 1. The SI unit of equivalent dose is the sievert (Sv)(J kg^{-1}). The conventional unit of equivalent dose is the rem (1 rem = 0.01 Sv).

Table 1: Radiation Weighting Factors, w_R (ICRP 1991)

Radiation type and energy	w_R
Photons, all energies	1
Electrons, all energies	1
Neutrons, energy < 10 keV	5
10 to 100 keV	10
100 keV to 2 MeV	20
2 MeV to 20 MeV	10
> 20 MeV	5
Alpha particles, fission fragments	20

c. Effective dose. The effective dose, E, introduced in ICRP Publication 60 (ICRP 1991), is the primary radiation protection quantity and is a weighted sum of the equivalent doses in the various organs and tissues of the body. The tissue weighting factors, w_T, reflect the relative radiosensitivities of the various organs and tissues of the body from stochastic effects (cancer and heritable effects). The weighting factors are normalized to one and thus the effective dose is equivalent to a hypothetical uniform irradiation of the body called whole body dose. The tissue weighting factors used in this standard are those of ICRP Publication 60 (ICRP 1991) and are given in Table 2. The SI unit of effective dose is the sievert (Sv) (J kg^{-1}). The conventional unit of effective dose is the rem (1 rem = 0.01 Sv).

Table 2: Tissue Weighting Factors, w_T (ICRP 1991)

Organ/Tissue	w_T
Gonads	0.20
Colon[a], lungs, red marrow, stomach	0.12
Bladder, breast, liver, esophagus, thyroid, remainder[b])	0.05
Bone surface, skin	0.01

a) Defined as the upper and lower large intestine.

b) The remainder includes adrenals, brain, extrathoric airways (added to list of remainder tissue in ICRP Publication 68) (ICRP 1994b), small intestine, kidney, muscle, pancreas, spleen, thymus and uterus. The dose to the remainder is computed as the mass weighted average dose to its members. If a member receives the highest dose then the dose to the remainder is computed as the arithmetic average of the dose to the highly irradiated tissue and the mass weighted average dose to the other members of the remainder.

The tissue weighting factors are based on nominal risk coefficients for radiation-induced cancer and genetic effects with consideration of life lost, lethality, and loss of quality of life. The factors are gender-averaged and are used for assessment of effective dose for workers and members of the public. Thus, the effective dose is not specific to any particular individual, but applies to a Reference Person.

1.2. REFERENCE INDIVIDUAL AND REFERENCE PERSON

The radiation protection quantities equivalent dose and effective dose are not measurable quantities, and their values must be derived by applying dosimetric coefficients to measured or predicted concentrations of radionuclides in the workplace or the environment. Such coefficients are established for Reference Individuals (e.g., Reference Male and Reference Female), based on detailed anatomical and physiological information. ICRP first tabulated such information for Standard Man in ICRP Publication 2 (ICRP 1960), extended that information to include children and both genders in the Reference Man concept of ICRP Publication 23 (ICRP 1975), and more recently updated and further expanded the information in ICRP Publication 89 (ICRP 2002). These ICRP publications detail, for radiation protection purposes, the attributes of male and female Reference Individuals of various ages upon which equivalent dose coefficients can be based. Since the effective dose quantity, as defined by ICRP Publication 60 (1991), involves application of gender-averaged tissue weighting factors, the quantity is not applicable to Reference Individuals, but rather to the gender composite referred to as a Reference Person (ICRP 2007). Note that the use of Reference Person dose coefficient factor values in this standard is not technically appropriate for performing occupational dose calculations.

2. METHODOLOGY

2.1. DERIVED CONCENTRATION STANDARDS FOR AIR AND WATER

The DCSs set forth in this standard for the public are derived using age-specific effective dose coefficients coupled with information on the age and gender structure of the U.S. population and age and gender specific intake of air and water. The age and gender structure of the U.S. population is based on the U.S. Census 2000. This information, along with age- and gender-dependent daily air intakes reported in ICRP Publication 89 (ICRP 2002), and the daily total intake of water (Roseberry and Burnmaster 1992) are listed in Table 3. The first column of Table 3 lists the reference age subgroups for which dose coefficients have been developed, and the second column defines by age range the population subgroup to which these coefficients apply (ICRP 1996). The third and fourth columns note the fraction of the U.S. population in each subgroup; the remaining columns list by age and gender the daily intakes of air and water.

The water intake data of Table 3 are based on the data of Roseberry and Burnmaster (1992) which have been interpreted[1] to correspond to the age ranges of column 2. These values are the total daily water intake (median value) and represent water drunk as a beverage, water added in preparation of food and beverage, and water intrinsic in food. The gender dependence in the intake introduced at ages 12 and higher assumes that the female intake is 75 percent of the male intake (ICRP 2002).

Table 3: U.S. Population and Usage Data

Reference Age Groups	Age x, (y)	Population fraction		Daily Intake			
				Air (m^3)		Water (L)	
		Male	Female	Male	Female	Male	Female
Newborn	0 ≤ x < 1	0.00693	0.00660	4.15	4.15	1.07	1.07
1-y	1 ≤ x < 3	0.01383	0.01321	5.89	5.89	1.12	1.12
5-y	3 ≤ x < 7	0.02864	0.02731	9.00	9.08	1.27	1.27
10-y	7 ≤ x < 12	0.03814	0.03632	15.2	15.0	1.50	1.50
15-y	12 ≤ x < 17	0.03672	0.03482	20.0	15.8	2.02	1.52
Adult	x ≥ 17	0.36630	0.39118	22.2	17.7	2.29	1.71

Age-specific effective dose coefficients were calculated using the DCAL System (Eckerman *et al*. 2006) , the nuclear decay data of ICRP Publication 107 (ICRP 2008), and the dosimetric and biokinetic models of the ICRP with the exceptions[2] noted in Federal Guidance Report 13 (EPA 1999). The effective dose coefficients for each age subgroup of the U.S. population are tabulated in Tables A-1, A-2, and A-3 of Appendix A. The DCAL System was used in the preparation of Federal Guidance Report 13 (EPA 1999) and several ICRP Publications (1989, 1993, 1995a, 1995b, 1996).

[1] This procedure involved fitting a polynomial to the cumulative intake of fluids as a function of age and then calculating the daily intake in the age ranges of column 2.

[2] The exception extends ICRP's generic model structure introduced in Publication 67 (ICRP 1993) to the actinide elements actinium and protactinium. Specifically, the biokinetic parameters of americium are assigned to actinium and those of thorium to protactinium.

2.2. CALCULATION OF DCS FOR WATER INGESTION

The DCS for water ingestion, DCS_{ing}, is computed as

$$DCS_{ing} = \frac{E}{t\sum_{i=1,6}(f_i^M U_{ing,i}^M + f_i^F U_{ing,i}^F) EC_{ing,i}} \quad (1)$$

where E is the constraint on the annual effective dose (0.001 Sv), $EC_{ing,i}$ is the effective dose coefficient for ingestion intakes of the radionuclide by Reference Person of subgroup i (Sv Bq^{-1} ingested activity), f_i^M and f_i^F are the fractions of the U.S. population in age subgroup i for males and female, respectively, and $U_{ing,i}^M$ and $U_{ing,i}^F$ are the daily intakes of water (L) by age subgroup i for males and females, respectively. The duration of the intake, t, is 365 days. The fractions of the U.S. population and daily water intakes in each subgroup are given in Table 3. The age-specific effective dose coefficients used in the calculation are given in Table A-1 of Appendix A.

The DCS_{ing} values are given in Table 5 for each chemical form, represented by the f_1 value, considered in Federal Guidance Report 13 (EPA 1999). The f_1 values shown in Table 5 apply to infants and may differ from values for other age groups. For radionuclides with multiple f_1 values, the chemical forms associated with the f_1 values are listed following the data for the radioisotopes of the element. If specific information on the chemical form (applicable f_1) is lacking, then the most restrictive DCS should be used.

2.3. CALCULATION OF DCS FOR INHALATION

The DCS for air inhalation, DCS_{inh}, is computed as

$$DCS_{inh} = \frac{E}{t\sum_{i=1,6}(f_i^M U_{inh,i}^M + f_i^F U_{inh,i}^F) EC_{inh,i}} \quad (2)$$

where E is the constraint on the annual effective dose (0.001 Sv), $EC_{inh,i}$ is the effective dose coefficient for inhalation intakes of the radionuclide by Reference Person of subgroup i (Sv Bq^{-1} inhaled activity), f_i^M and f_i^F are the fractions of the U.S. population in age subgroup i for males and female, respectively, and $U_{inh,i}^M$ and $U_{inh,i}^F$ are the daily intakes of air (m^3) by age subgroup i for males and females, respectively. The duration of the intake, t, is 365 days. The fractions of the U.S. population and daily air intakes in each subgroup are given in Table 3. The age-specific effective dose coefficients used in the calculation are given in Table A-2 of Appendix A.

The DCS_{inh} values are given in Table 5 for all absorption types (F, M, or S) defined by the ICRP (ICRP 1994a). Table 4 lists the classification of absorption types for particulate aerosols. For some radionuclides, inhalation of chemical forms other than particulates is considered (e.g., radioisotopes of H, C, etc.), which is also noted in Table 5. Federal Guidance Report 13 included tabulations for all absorption types albeit that ICRP Publication 72 (1996) did not address all absorption types. If specific information on the chemical form is lacking, the most restrictive DCS should be assumed. The effective dose coefficients for inhalation of radionuclides in particulate form are based on an assumed activity median aerodynamic diameter (AMAD) of 1 μm.

2.4. CALCULATION OF DCS FOR AIR SUBMERSION

The air submersion DCS, DCS_{sub}, for a given radionuclide is calculated as

$$DCS_{sub} = \frac{E}{t\ ERC} \tag{3}$$

where E is the constraint on the annual effective dose (0.001 Sv), ERC is the effective dose rate coefficient for a Reference Person (Sv m^3 Bq^{-1} s^{-1}), and the duration of the exposure, t, is 1 year or 3.16×10^7 seconds. The calculation assumes continuous, nonshielded exposure via submersion in a semi-infinite atmospheric cloud containing the radionuclide. The effective dose rate coefficients used to calculate the DCSs for air submersion were calculated in the manner of Federal Guidance Report 12 (EPA 1993) using the information in ICRP Publication 107 (ICRP 2008) on the energies and intensities of the radiations emitted by nuclides. The effective dose rate coefficients used in the calculation can be found in Table A-3 of Appendix A. The effective dose rate coefficients of Table A-3 are those for the adult in unshielded exposure geometry, and little variation (up to 20 percent) is expected with age (Yamaguchi 1994).

The DCS_{sub} values are given in Table 6. The radionuclides of Table 6 represent the following three classes:

- The first class of radionuclides includes noble gases and short-lived activation products that occur in gaseous form. For these radionuclides, inhalation doses are negligible compared to the external dose from submersion in an atmospheric cloud.

- The second class includes those radionuclides for which the DCS_{inh} has been calculated, but the DCS_{sub} for external exposure in the contaminated atmosphere is more restrictive than DCS_{inh} (i.e., $DCS_{sub} < DCS_{inh}$). These radionuclides generally have half-lives of a few hours or less, or are eliminated from the body following inhalation sufficiently rapidly to limit the inhalation dose.

- The third class includes radionuclides with half-lives less than 10 minutes; thus, their intake by inhalation is not considered. These radionuclides typically undergo energetic decay emitting high-energy photons.

A few noble gas radionuclides do not emit radiations of sufficient energy to penetrate the dead layer of the skin and thus their effective dose rate coefficient is determined by assuming the air within the lungs has equilibrated with the atmospheric concentration of the radionuclide. Further details regarding this calculation are given in Table A-3.

Table 4: Classification of Absorption Types for Particulates

Element	Lung absorption Type(s)[a]	Element	Lung absorption Type(s)[a]	Element	Lung absorption Type(s)[a]
Hydrogen	F, M[b], S	Zirconium	F, M[b], S	Lutetium[c]	F[d], M, S
Beryllium[c]	F[d], M, S	Niobium	F, M[b], S	Hafnium[c]	F, M, S[d]
Carbon	F, M[b], S	Molybdenum	F, M[b], S	Tantalum[c]	F[d], M, S
Fluorine[c]	F, M, S	Technetium	F, M[b], S	Tungsten[c]	F, M[d], S[d]
Sodium[c]	F, M[d], S[d]	Ruthenium	F, M[b], S	Rhenium[c]	F, M, S[d]
Magnesium[c]	F, M, S[d]	Rhodium[c]	F, M, S	Osmium[c]	F, M, S
Aluminum[c]	F, M. S[d]	Palladium[c]	F, M, S	Iridium[c]	F, M, S
Silicon[c]	F, M, S	Silver	F, M[b], S	Platinum[c]	F, M[d], S[d]
Phosphorus[c]	F, M, S[d]	Cadmium[c]	F, M, S	Gold[c]	F, M, S
Sulfur	F, M[b], S	Indium[c]	F, M, S[d]	Mercury[c]	F, M, S
Chlorine[c]	F, M, S[d]	Tin[c]	F, M, S[d]	Thallium[c]	F, M[d], S[d]
Potassium[c]	F, M[d], S[d]	Antimony	F, M[b], S	Lead	F, M[b], S
Calcium	F, M[b], S	Tellurium	F, M[b], S	Bismuth[c]	F, M, S[d]
Scandium[c]	F[d], M[d], S	Iodine	F[b], M, S	Polonium	F, M[b], S
Titanium[c]	F, M, S	Cesium	F[b], M, S	Astatine[c]	F, M, S[d]
Vanadium[c]	F, M, S[d]	Barium	F, M[b], S	Francium[c]	F, M[d], S[d]
Chromium[c]	F, M, S	Lanthanum[c]	F, M, S[d]	Radium	F, M[b], S
Manganese[c]	F, M, S[d]	Cerium	F, M[b], S	Actinium[c]	F, M, S
Iron	F, M[b], S	Praseodymium[c]	F[d], M, S	Thorium	F, M, S[b]
Cobalt	F, M[b], S	Neodymium[c]	F[d], M, S	Protactinium[c]	F[d], M, S
Nickel	F, M[b], S	Promethium[c]	F, M, S	Uranium	F, M[b], S
Copper[c]	F, M, S	Samarium[c]	F[d], M, S[d]	Neptunium	F, M[b], S
Zinc	F, M[b], S	Europium[c]	F[d], M, S[d]	Plutonium	F, M[b], S
Gallium[c]	F, M, S[d]	Gadolinium[c]	F, M, S[d]	Americium	F, M[b], S
Germanium[c]	F, M, S[d]	Terbium[c]	F[d], M, S[d]	Curium	F, M[b], S
Arsenic[c]	F[d], M, S[d]	Dysprosium[c]	F[d], M, S[d]	Berkelium[c]	F[d], M, S[d]
Selenium	F[b], M, S	Holmium[c]	F[d], M, S[d]	Californium[c]	F[d], M, S[d]
Bromine[c]	F, M, S[d]	Erbium[c]	F[d], M, S[d]	Einsteinium[c]	F[d], M, S[d]
Rubidium[c]	F, M[d], S[d]	Thulium[c]	F[d], M, S[d]	Fermium[c]	F[d], M, S[d]
Strontium	F, M[b], S	Ytterbium[c]	F[d], M, S		
Yttrium[c]	F[d], M, S				

[a] Absorption types defined in ICRP Publication 66 (1994a); F is fast, M is moderate, and S is slow absorption.
[b] Recommended default absorption type when no specific information is available (ICRP 1995b, 1996).
[c] Inhalation data for this element were not critically reviewed in the ICRP document on inhalation dose coefficients for members of the public (ICRP 1995b). The listed absorption types are based on lung clearance categories assigned in earlier ICRP documents on occupational exposure.
[d] Absorption type included in tabulation in the event that the absorption reflects the properties of the carrier particulates rather than the chemical nature of the element.

3. RESULTS

DCSs for water and air are presented in Table 5 and those for air submersion in Table 6. The DCSs are based on an annual effective dose of 1 mSv (100 mrem). Inhalation DCSs are tabulated for particulate aerosols classified in terms of absorption types F, M, and S (ICRP 1994a). Radionuclides associated with particulate matter of Type F undergo fast dissolution with a high level of absorption to blood; Type M represent an intermediate rate of dissolution and an intermediate level of absorption to blood; and Type S represent slow dissolution and a low level of absorption to blood. Ideally, the applicable DCS_{inh} would be based on information on the chemical form or absorption type of the material expected to be released to the environment. Guidance provided in ICRP Publication 72 (ICRP 1996) regarding a suitable default absorption type is provided in Table 4.

The DCS entries in Table 5 for water include a measure of the fractional absorption from the gut, the f_1 value. For radionuclides with multiple f_1 values, information on the chemical forms to be associated with the f_1 values is presented following the listing of all radioisotopes of the element. In instances of multiple f_1 values, ideally the applicable DCS would be based on the chemical form expected to be released to the environment. If such information is not available then the most restrictive DCS_{ing} for the radionuclide should be assumed.

The air submersion DCSs of Table 6 are based on an effective dose of 1 mSv (100 mrem) from an annual exposure. In addition to noble gases and short-lived particulate radionuclides, this table includes some radionuclides for which the submersion DCS was more limiting than the inhalation DCS for its most restrictive chemical form or absorption type.

Inhalation DCS are established only for radionuclides of half-life greater than 10 minutes and the DCS includes the contribution to dose of any decay product(s) formed within the body without regard to the physical half-life of the decay product(s). The numerical values of the DCSs in the tabulations are given to two significant figures. This level of precision is provided only to minimize numerical errors as the tabulated values are converted to different units or used in further calculations. The result of any numerical calculations involving DCSs should be rounded, at the end of the computations, to a single significant figure following conventional numerical rounding procedures.

Changes in the DCSs between this 2009 evaluation and the 1993 evaluation can be attributed to three modifications made in the methodology: incorporating age and gender dependence into the dose coefficients and physiological parameters; incorporating more sophisticated biokinetic and dosimetric models of the ICRP; and incorporating the latest publication of nuclear decay data also from the ICRP.

As expected, the introduction of the latest nuclear decay data had a minimal effect on the DCSs. However, the updated data did enable consideration of a larger number of radionuclides, particularly those radionuclides with half-lives between 1 and 10 minutes, some of which are associated with accelerator operations. It should be noted that in some instances the newer data result in a substantial revision of the physical half-life of long-lived radionuclides. For example, in ICRP Publication 107 (ICRP 2008) the half-life of Se-79 is listed as 2.95×10^5 years, while earlier 6.4×10^4 years was assumed (ICRP 1983).

While the introduction of age and gender dependence into the dose coefficients and physiological parameters allowed for a much better representation of the members of the public, it did not have a substantial effect on the DCSs. The reason for this is twofold; the higher dose coefficients at the younger ages are tempered by their lower daily intakes and the U.S. population distribution for which 74 percent of the population falls into the adult subgroup.

The most significant change in the DCSs resulted from the incorporation of the more sophisticated biokinetic and dosimetric models of the ICRP. For example, the latest biokinetic model for bone-surface-seeking radionuclides, such as the actinides, considers a movement of the radionuclide into the volume of the bone mineral not included in the previous biokinetic model, which leads to a decrease in the dose coefficient (Leggett and Eckerman 2003). Therefore, DCSs for the actinides have increased substantially. There was little change in DCSs for air submersion; however, many additional radionuclides were added to the tabulations due to the inclusion of radionuclides of half-lives between 1 and 10 minutes in ICRP Publication 107 (ICRP 2008). Some of these radionuclides are specific to accelerators at DOE facilities.

4. DISCUSSION

4.1. INTENDED USES OF DCSs

The DCSs are intended to provide guidance for the design and conduct of radiological environmental protection programs at DOE facilities and sites. A use of the DCSs for water, DCS_{ing}, is directed in DOE O 458.1, *Radiation Protection of the Public and the Environment* (DOE 2011), in establishing criteria for use of best available technology (BAT) for liquid effluent streams. The DCSs for inhalation of air, DCS_{inh}, and air submersion, DCS_{sub}, while not directed by the Order, are presented here for completeness and general guidance in ALARA considerations. The limitations of the DCSs are discussed in the next section. In summary, the intended applications are as follows:

- Defining criteria for applying BAT at point of discharge for liquid effluent streams (DOE Order 458.1);
- Relative ranking of the importance of radionuclides within a waste stream; and
- Relative ranking of multiple effluent streams to air or water.

4.2. APPLICATION TO MIXTURES OF RADIONUCLIDES

DCSs are given for individual radionuclides. For known mixtures of radionuclides, the sum of the ratios of the observed concentration of each radionuclide to its corresponding DCS must not exceed 1.0. Note that the result of the mixture calculation should be rounded to two significant figures.

4.3. LIMITATIONS

The DCSs are developed with consideration of only three exposure modes (ingestion of water, inhalation of air, and air submersion). While they provide relative guidance for the ranking of potential radionuclides in effluent streams released from facilities, they are not intended to be used to infer the dose to members of the public nor to demonstrate compliance with DOE radiation protection dose limits. The DCSs are derived at the point of discharge and do not account for attenuation along the pathway before reaching the receptor. Typically, more complex environmental pathways are involved; thus, a complete pathway analysis is required for calculating public radiation doses resulting from DOE activities. Often such pathway analysis, such as described by Yu *et al*. (2001), is required by the legally applicable rules and regulations of other Federal, State, and local agencies for which DOE activities also must demonstrate compliance.

5. CONCLUSIONS

This standard provides DCSs based on current radiation protection practices as guidelines for controlling exposure to members of the public. The guidelines are based on the effective dose used currently in radiation protection and defined for Reference Persons in the population. This approach enabled consideration of age and gender attributes for the population subgroups while still resulting in a single-valued quantity suitable for DOE's regulatory framework. This single-valued DCS quantity — with respect to each pathway and radionuclide — can be effectively and consistently applied to design and implementation of radiological environmental protection programs for DOE radiological activities throughout the DOE Complex.

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air

				Inhaled air, DCS					
	Ingested water, DCS			**Type F**		**Type M**		**Type S**	
	f_1	(Bq/L)	(μCi/mL)	(Bq/m^3)	(μCi/mL)	(Bq/m^3)	(μCi/mL)	(Bq/m^3)	(μCi/mL)
Hydrogen									
H-3	1.0E+00 [(a)]	7.0E+04	1.9E-03	2.3E+04	6.1E-07	2.8E+03	7.6E-08	5.2E+02	1.4E-08
	1.0E+00 [(b)]	3.2E+04	8.6E-04				Water Vapor	7.8E+03	2.1E-07
	(a) Tritiated Water						Elemental	7.8E+07	2.1E-03
	(b) Organic Bound Tritium						Organic	3.4E+03	9.3E-08
Beryllium									
Be-7	2.0E-02	4.2E+04	1.1E-03	3.4E+03	9.3E-08	2.6E+03	7.1E-08	2.4E+03	6.4E-08
Be-10	2.0E-02	9.4E+02	2.5E-05	2.0E+01	5.5E-10	1.4E+01	3.9E-10	4.1E+00	1.1E-10
Carbon									
C-11	1.0E+00	4.7E+04	1.3E-03	1.2E+04	3.1E-07	7.2E+03	1.9E-07	6.9E+03	1.9E-07
							Monoxide	1.1E+05	2.9E-06
							Dioxide	5.9E+04	1.6E-06
C-14	1.0E+00	2.3E+03	6.2E-05	6.9E+02	1.9E-08	6.8E+01	1.8E-09	2.5E+01	6.6E-10
							Monoxide	1.5E+05	4.1E-06
							Dioxide	2.2E+04	6.1E-07
Fluorine									
F-18	1.0E+00	2.3E+04	6.3E-04	4.6E+03	1.2E-07	2.4E+03	6.5E-08	2.3E+03	6.1E-08
Sodium									
Na-22	1.0E+00	3.8E+02	1.0E-05	1.0E+02	2.7E-09	1.4E+01	3.7E-10	4.8E+00	1.3E-10
Na-24	1.0E+00	2.7E+03	7.2E-05	4.4E+02	1.2E-08	2.7E+02	7.3E-09	2.6E+02	7.0E-09
Magnesium									
Mg-28	1.0E+00	5.2E+02	1.4E-05	2.0E+02	5.4E-09	1.1E+02	2.9E-09	1.0E+02	2.7E-09
Aluminum									
Al-26	2.0E-02	3.2E+02	8.6E-06	1.1E+01	3.1E-10	7.0E+00	1.9E-10	1.3E+00	3.6E-11

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Silicon									
Si-31	2.0E-02	6.9E+03	1.9E-04	4.4E+03	1.2E-07	1.7E+03	4.7E-08	1.6E+03	4.4E-08
Si-32	2.0E-02	1.8E+03	4.9E-05	3.9E+01	1.0E-09	8.2E+00	2.2E-10	1.3E+00	3.5E-11
Phosphorus									
P-32	1.0E+00	4.3E+02	1.2E-05	1.5E+02	4.0E-09	3.9E+01	1.1E-09	3.4E+01	9.3E-10
P-33	1.0E+00	4.3E+03	1.2E-04	1.3E+03	3.5E-08	9.2E+01	2.5E-09	7.7E+01	2.1E-09
Sulfur									
S-35	1.0E+00 [(c)]	8.4E+03	2.3E-04	2.4E+03	6.4E-08	9.6E+01	2.6E-09	7.4E+01	2.0E-09
	1.0E+00 [(d)]	1.4E+03	3.8E-05				Dioxide	1.2E+03	3.1E-08
							Carbon Disulfide	1.8E+02	4.7E-09
S-38	1.0E+00 [(c)]	3.4E+03	9.1E-05	9.2E+02	2.5E-08	4.5E+02	1.2E-08	4.3E+02	1.2E-08
	1.0E+00 [(d)]	4.2E+03	1.1E-04				Dioxide	6.7E+02	1.8E-08
	(c) Inorganic Sulfur						Carbon Disulfide	7.1E+02	1.9E-08
	(d) Organic Sulfur								
Chlorine									
Cl-34m	1.0E+00	1.1E+04	2.9E-04	4.6E+03	1.2E-07	2.9E+03	7.7E-08	2.7E+03	7.4E-08
Cl-36	1.0E+00	1.2E+03	3.2E-05	3.7E+02	9.9E-09	1.9E+01	5.1E-10	3.8E+00	1.0E-10
Cl-38	1.0E+00	9.4E+03	2.5E-04	4.8E+03	1.3E-07	2.8E+03	7.5E-08	2.6E+03	7.1E-08
Cl-39	1.0E+00	1.3E+04	3.5E-04	4.8E+03	1.3E-07	2.7E+03	7.4E-08	2.6E+03	7.0E-08
Potassium									
K-40	1.0E+00	1.8E+02	4.8E-06	5.8E+01	1.6E-09	9.7E+00	2.6E-10	1.7E+00	4.6E-11
K-42	1.0E+00	2.5E+03	6.7E-05	9.6E+02	2.6E-08	3.9E+02	1.1E-08	3.7E+02	1.0E-08
K-43	1.0E+00	4.6E+03	1.2E-04	8.8E+02	2.4E-08	3.7E+02	1.0E-08	3.5E+02	9.4E-09
K-44	1.0E+00	1.3E+04	3.6E-04	6.1E+03	1.6E-07	3.9E+03	1.1E-07	3.8E+03	1.0E-07
K-45	1.0E+00	2.3E+04	6.1E-04	9.1E+03	2.5E-07	6.0E+03	1.6E-07	5.7E+03	1.5E-07

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Calcium									
Ca-41	6.0E-01	4.9E+03	1.3E-04	6.6E+02	1.8E-08	1.2E+03	3.2E-08	6.5E+02	1.8E-08
Ca-45	6.0E-01	1.4E+03	3.8E-05	2.6E+02	7.0E-09	5.0E+01	1.4E-09	3.8E+01	1.0E-09
Ca-47	6.0E-01	7.1E+02	1.9E-05	2.3E+02	6.1E-09	7.0E+01	1.9E-09	6.3E+01	1.7E-09
Scandium									
Sc-43	1.0E-03	5.0E+03	1.4E-04	2.1E+03	5.6E-08	1.1E+03	2.9E-08	1.0E+03	2.7E-08
Sc-44	1.0E-03	3.1E+03	8.4E-05	1.2E+03	3.3E-08	7.1E+02	1.9E-08	6.8E+02	1.8E-08
Sc-44m	1.0E-03	4.5E+02	1.2E-05	1.7E+02	4.6E-09	8.9E+01	2.4E-09	9.1E+01	2.5E-09
Sc-46	1.0E-03	7.8E+02	2.1E-05	2.0E+01	5.4E-10	2.3E+01	6.2E-10	2.0E+01	5.5E-10
Sc-47	1.0E-03	2.0E+03	5.3E-05	7.6E+02	2.1E-08	2.0E+02	5.5E-09	1.9E+02	5.0E-09
Sc-48	1.0E-03	6.9E+02	1.9E-05	2.0E+02	5.5E-09	1.2E+02	3.3E-09	1.2E+02	3.1E-09
Sc-49	1.0E-03	1.3E+04	3.6E-04	7.3E+03	2.0E-07	3.4E+03	9.2E-08	3.2E+03	8.7E-08
Titanium									
Ti-44	2.0E-02	2.0E+02	5.3E-06	2.2E+00	5.9E-11	3.2E+00	8.7E-11	1.1E+00	3.1E-11
Ti-45	2.0E-02	7.3E+03	2.0E-04	2.9E+03	7.8E-08	1.4E+03	3.9E-08	1.4E+03	3.7E-08
Vanadium									
V-47	2.0E-02	1.7E+04	4.7E-04	7.1E+03	1.9E-07	4.3E+03	1.2E-07	4.1E+03	1.1E-07
V-48	2.0E-02	5.8E+02	1.6E-05	1.3E+02	3.5E-09	5.5E+01	1.5E-09	4.9E+01	1.3E-09
V-49	2.0E-02	5.8E+04	1.6E-03	5.8E+03	1.6E-07	3.8E+03	1.0E-07	1.9E+03	5.1E-08
V-50	2.0E-02	3.9E+02	1.1E-05	2.3E+00	6.1E-11	5.1E+00	1.4E-10	5.4E+00	1.5E-10
Chromium									
Cr-48	2.0E-01	5.9E+03	1.6E-04	1.3E+03	3.6E-08	6.8E+02	1.8E-08	6.2E+02	1.7E-08
Cr-49	2.0E-01	1.8E+04	4.9E-04	6.6E+03	1.8E-07	3.8E+03	1.0E-07	3.6E+03	9.8E-08
Cr-51	2.0E-01	2.9E+04	7.9E-04	6.2E+03	1.7E-07	3.9E+03	1.1E-07	3.5E+03	9.4E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Manganese									
Mn-51	2.0E-01	1.2E+04	3.2E-04	5.4E+03	1.5E-07	3.1E+03	8.3E-08	2.9E+03	7.9E-08
Mn-52	2.0E-01	6.5E+02	1.8E-05	1.3E+02	3.6E-09	9.5E+01	2.6E-09	9.1E+01	2.5E-09
Mn-52m	2.0E-01	1.6E+04	4.3E-04	6.6E+03	1.8E-07	4.4E+03	1.2E-07	4.2E+03	1.1E-07
Mn-53	2.0E-01	3.5E+04	9.5E-04	4.3E+03	1.2E-07	2.3E+03	6.3E-08	4.1E+02	1.1E-08
Mn-54	2.0E-01	1.6E+03	4.4E-05	1.5E+02	4.1E-09	8.5E+01	2.3E-09	4.2E+01	1.1E-09
Mn-56	2.0E-01	4.3E+03	1.2E-04	1.9E+03	5.1E-08	1.0E+03	2.8E-08	9.8E+02	2.6E-08
Iron									
Fe-52	6.0E-01	8.0E+02	2.2E-05	3.0E+02	8.1E-09	2.1E+02	5.6E-09	2.0E+02	5.3E-09
Fe-55	6.0E-01	2.7E+03	7.2E-05	1.7E+02	4.5E-09	3.4E+02	9.3E-09	7.2E+02	2.0E-08
Fe-59	6.0E-01	5.3E+02	1.4E-05	5.6E+01	1.5E-09	3.7E+01	9.9E-10	3.4E+01	9.2E-10
Fe-60	6.0E-01	9.9E+00	2.7E-07	5.1E-01	1.4E-11	1.0E+00	2.8E-11	2.8E+00	7.7E-11
Cobalt									
Co-55	6.0E-01	1.2E+03	3.1E-05	4.6E+02	1.3E-08	2.5E+02	6.8E-09	2.3E+02	6.3E-09
Co-56	6.0E-01	4.2E+02	1.1E-05	6.8E+01	1.8E-09	2.8E+01	7.5E-10	2.0E+01	5.5E-10
Co-57	6.0E-01	4.7E+03	1.3E-04	6.7E+02	1.8E-08	2.4E+02	6.6E-09	1.3E+02	3.6E-09
Co-58	6.0E-01	1.4E+03	3.9E-05	2.4E+02	6.4E-09	8.5E+01	2.3E-09	6.4E+01	1.7E-09
Co-58m	6.0E-01	4.7E+04	1.3E-03	2.4E+04	6.5E-07	9.6E+03	2.6E-07	7.8E+03	2.1E-07
Co-60	6.0E-01	2.7E+02	7.2E-06	2.5E+01	6.8E-10	1.3E+01	3.6E-10	4.6E+00	1.2E-10
Co-60m	6.0E-01	6.5E+05	1.7E-02	2.0E+05	5.4E-06	1.1E+05	3.0E-06	1.0E+05	2.7E-06
Co-61	6.0E-01	1.5E+04	3.9E-04	6.4E+03	1.7E-07	2.7E+03	7.3E-08	2.5E+03	6.8E-08
Co-62m	6.0E-01	2.3E+04	6.1E-04	8.8E+03	2.4E-07	6.2E+03	1.7E-07	6.0E+03	1.6E-07
Nickel									
Ni-56	1.0E-01	1.4E+03	3.7E-05	2.6E+02	7.0E-09	1.5E+02	4.0E-09	1.3E+02	3.4E-09
							Vapor	6.7E+02	1.8E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Ni-57	1.0E-01	1.2E+03	3.4E-05	4.7E+02	1.3E-08	2.5E+02	6.6E-09	2.3E+02	6.2E-09
							Vapor	6.7E+02	1.8E-08
Ni-59	1.0E-01	1.8E+04	5.0E-04	7.4E+02	2.0E-08	1.0E+03	2.8E-08	3.2E+02	8.5E-09
							Vapor	6.7E+02	1.8E-08
Ni-63	1.0E-01	7.4E+03	2.0E-04	3.0E+02	8.2E-09	2.8E+02	7.5E-09	1.1E+02	2.9E-09
							Vapor	6.7E+02	1.8E-08
Ni-65	1.0E-01	5.9E+03	1.6E-04	3.0E+03	8.1E-08	1.5E+03	4.0E-08	1.4E+03	3.8E-08
							Vapor	6.7E+02	1.8E-08
Ni-66	1.0E-01	3.5E+02	9.5E-06	2.8E+02	7.4E-09	7.8E+01	2.1E-09	7.0E+01	1.9E-09
							Vapor	6.7E+02	1.8E-08
Copper									
Cu-60	1.0E+00	1.6E+04	4.2E-04	5.3E+03	1.4E-07	3.7E+03	1.0E-07	3.6E+03	9.6E-08
Cu-61	1.0E+00	9.8E+03	2.7E-04	3.4E+03	9.1E-08	1.8E+03	4.8E-08	1.7E+03	4.5E-08
Cu-64	1.0E+00	9.2E+03	2.5E-04	3.4E+03	9.3E-08	1.2E+03	3.2E-08	1.1E+03	3.0E-08
Cu-67	1.0E+00	3.4E+03	9.1E-05	1.2E+03	3.3E-08	2.5E+02	6.8E-09	2.3E+02	6.2E-09
Zinc									
Zn-62	1.0E+00	1.2E+03	3.2E-05	5.9E+02	1.6E-08	2.5E+02	6.7E-09	2.3E+02	6.2E-09
Zn-63	1.0E+00	1.4E+04	3.7E-04	6.2E+03	1.7E-07	3.6E+03	9.6E-08	3.4E+03	9.2E-08
Zn-65	1.0E+00	3.1E+02	8.3E-06	5.9E+01	1.6E-09	8.4E+01	2.3E-09	6.8E+01	1.8E-09
Zn-69	1.0E+00	3.5E+04	9.5E-04	1.2E+04	3.1E-07	5.0E+03	1.3E-07	4.7E+03	1.3E-07
Zn-69m	1.0E+00	3.4E+03	9.1E-05	1.5E+03	4.0E-08	5.1E+02	1.4E-08	4.7E+02	1.3E-08
Zn-71m	1.0E+00	4.7E+03	1.3E-04	1.6E+03	4.4E-08	8.2E+02	2.2E-08	7.7E+02	2.1E-08
Zn-72	1.0E+00	8.0E+02	2.2E-05	2.5E+02	6.7E-09	1.1E+02	2.9E-09	9.7E+01	2.6E-09
Gallium									
Ga-65	1.0E-02	3.0E+04	8.1E-04	1.2E+04	3.1E-07	7.6E+03	2.1E-07	7.3E+03	2.0E-07

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Ga-66	1.0E-02	9.2E+02	2.5E-05	4.7E+02	1.3E-08	2.8E+02	7.5E-09	2.6E+02	7.1E-09
Ga-67	1.0E-02	5.6E+03	1.5E-04	1.9E+03	5.0E-08	5.5E+02	1.5E-08	5.0E+02	1.4E-08
Ga-68	1.0E-02	1.1E+04	2.9E-04	4.7E+03	1.3E-07	2.6E+03	7.0E-08	2.5E+03	6.6E-08
Ga-70	1.0E-02	3.5E+04	9.4E-04	1.4E+04	3.9E-07	8.1E+03	2.2E-07	7.7E+03	2.1E-07
Ga-72	1.0E-02	9.9E+02	2.7E-05	4.1E+02	1.1E-08	2.3E+02	6.4E-09	2.2E+02	6.1E-09
Ga-73	1.0E-02	4.1E+03	1.1E-04	2.2E+03	5.8E-08	8.8E+02	2.4E-08	8.2E+02	2.2E-08
Germanium									
Ge-66	1.0E+00	1.1E+04	3.1E-04	2.3E+03	6.2E-08	1.4E+03	3.9E-08	1.4E+03	3.7E-08
Ge-67	1.0E+00	1.9E+04	5.0E-04	8.3E+03	2.3E-07	5.3E+03	1.4E-07	5.1E+03	1.4E-07
Ge-68	1.0E+00	8.6E+02	2.3E-05	2.4E+02	6.4E-09	1.0E+01	2.7E-10	4.5E+00	1.2E-10
Ge-69	1.0E+00	5.6E+03	1.5E-04	9.7E+02	2.6E-08	5.4E+02	1.5E-08	5.1E+02	1.4E-08
Ge-71	1.0E+00	9.3E+04	2.5E-03	2.5E+04	6.7E-07	1.2E+04	3.2E-07	1.0E+04	2.8E-07
Ge-75	1.0E+00	2.4E+04	6.4E-04	8.4E+03	2.3E-07	3.6E+03	9.7E-08	3.4E+03	9.1E-08
Ge-77	1.0E+00	3.5E+03	9.4E-05	8.6E+02	2.3E-08	3.6E+02	9.7E-09	3.3E+02	9.1E-09
Ge-78	1.0E+00	9.9E+03	2.7E-04	2.8E+03	7.6E-08	1.4E+03	3.7E-08	1.3E+03	3.5E-08
Arsenic									
As-69	1.0E+00	2.0E+04	5.4E-04	9.2E+03	2.5E-07	6.1E+03	1.6E-07	5.9E+03	1.6E-07
As-70	1.0E+00	8.3E+03	2.2E-04	2.6E+03	7.1E-08	1.8E+03	4.9E-08	1.7E+03	4.7E-08
As-71	1.0E+00	2.5E+03	6.7E-05	7.3E+02	2.0E-08	3.3E+02	9.0E-09	3.4E+02	9.3E-09
As-72	1.0E+00	6.0E+02	1.6E-05	2.3E+02	6.3E-09	1.4E+02	3.7E-09	1.3E+02	3.6E-09
As-73	1.0E+00	4.2E+03	1.1E-04	1.5E+03	4.0E-08	1.3E+02	3.5E-09	9.9E+01	2.7E-09
As-74	1.0E+00	8.7E+02	2.4E-05	2.6E+02	7.0E-09	6.3E+01	1.7E-09	5.4E+01	1.5E-09
As-76	1.0E+00	6.9E+02	1.9E-05	3.5E+02	9.4E-09	1.7E+02	4.7E-09	1.7E+02	4.5E-09
As-77	1.0E+00	2.8E+03	7.5E-05	1.1E+03	3.0E-08	3.4E+02	9.2E-09	3.1E+02	8.4E-09
As-78	1.0E+00	5.6E+03	1.5E-04	2.6E+03	7.0E-08	1.5E+03	4.0E-08	1.4E+03	3.8E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Selenium									
Se-70	1.0E+00	1.2E+04	3.2E-04	3.2E+03	8.8E-08	1.9E+03	5.2E-08	1.9E+03	5.0E-08
Se-72	1.0E+00	1.8E+02	4.8E-06	5.3E+01	1.4E-09	3.9E+01	1.0E-09	3.6E+01	9.8E-10
Se-73	1.0E+00	5.3E+03	1.4E-04	1.4E+03	3.9E-08	6.4E+02	1.7E-08	6.0E+02	1.6E-08
Se-73m	1.0E+00	4.0E+04	1.1E-03	1.3E+04	3.4E-07	6.1E+03	1.7E-07	5.7E+03	1.6E-07
Se-75	1.0E+00	4.4E+02	1.2E-05	1.2E+02	3.3E-09	1.3E+02	3.4E-09	1.0E+02	2.8E-09
Se-79	1.0E+00	3.1E+02	8.5E-06	9.0E+01	2.4E-09	5.3E+01	1.4E-09	2.2E+01	6.0E-10
Se-81	1.0E+00	4.0E+04	1.1E-03	1.6E+04	4.2E-07	9.1E+03	2.5E-07	8.7E+03	2.4E-07
Se-81m	1.0E+00	2.0E+04	5.5E-04	7.4E+03	2.0E-07	2.7E+03	7.3E-08	2.5E+03	6.9E-08
Se-83	1.0E+00	2.5E+04	6.7E-04	6.8E+03	1.8E-07	4.0E+03	1.1E-07	3.8E+03	1.0E-07
Bromine									
Br-74	1.0E+00	1.4E+04	3.7E-04	4.7E+03	1.3E-07	3.3E+03	8.9E-08	3.2E+03	8.6E-08
Br-74m	1.0E+00	8.3E+03	2.2E-04	3.0E+03	8.0E-08	1.9E+03	5.2E-08	1.9E+03	5.1E-08
Br-75	1.0E+00	1.4E+04	3.8E-04	4.3E+03	1.1E-07	2.4E+03	6.5E-08	2.3E+03	6.1E-08
Br-76	1.0E+00	2.5E+03	6.7E-05	4.8E+02	1.3E-08	3.1E+02	8.3E-09	3.0E+02	8.0E-09
Br-77	1.0E+00	1.2E+04	3.3E-04	1.9E+03	5.2E-08	1.4E+03	3.9E-08	1.4E+03	3.8E-08
Br-80	1.0E+00	3.5E+04	9.5E-04	1.5E+04	4.1E-07	9.1E+03	2.5E-07	8.7E+03	2.4E-07
Br-80m	1.0E+00	9.4E+03	2.5E-04	3.4E+03	9.1E-08	1.3E+03	3.5E-08	1.2E+03	3.3E-08
Br-82	1.0E+00	2.2E+03	5.9E-05	3.6E+02	9.6E-09	2.1E+02	5.5E-09	2.0E+02	5.3E-09
Br-83	1.0E+00	2.4E+04	6.6E-04	7.7E+03	2.1E-07	2.7E+03	7.2E-08	2.5E+03	6.7E-08
Br-84	1.0E+00	1.2E+04	3.4E-04	5.7E+03	1.5E-07	3.4E+03	9.2E-08	3.3E+03	8.8E-08
Rubidium									
Rb-78	1.0E+00	1.6E+04	4.3E-04	6.3E+03	1.7E-07	4.4E+03	1.2E-07	4.2E+03	1.1E-07
Rb-79	1.0E+00	2.2E+04	6.0E-04	7.3E+03	2.0E-07	4.6E+03	1.2E-07	4.4E+03	1.2E-07
Rb-81	1.0E+00	2.3E+04	6.3E-04	3.7E+03	1.0E-07	1.9E+03	5.1E-08	1.8E+03	4.9E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Rb-81m	1.0E+00	1.2E+05	3.2E-03	1.8E+04	4.8E-07	8.3E+03	2.2E-07	7.9E+03	2.1E-07
Rb-82m	1.0E+00	9.0E+03	2.4E-04	1.1E+03	2.9E-08	8.6E+02	2.3E-08	8.4E+02	2.3E-08
Rb-83	1.0E+00	6.8E+02	1.8E-05	2.0E+02	5.3E-09	1.2E+02	3.2E-09	9.6E+01	2.6E-09
Rb-84	1.0E+00	4.2E+02	1.1E-05	1.2E+02	3.3E-09	5.4E+01	1.5E-09	4.7E+01	1.3E-09
Rb-84m	1.0E+00	1.6E+05	4.3E-03	2.7E+04	7.2E-07	1.6E+04	4.3E-07	1.5E+04	4.1E-07
Rb-86	1.0E+00	3.8E+02	1.0E-05	1.3E+02	3.5E-09	3.3E+01	9.0E-10	2.9E+01	7.7E-10
Rb-87	1.0E+00	7.1E+02	1.9E-05	2.3E+02	6.3E-09	2.8E+01	7.6E-10	9.0E+00	2.4E-10
Rb-88	1.0E+00	1.2E+04	3.2E-04	7.6E+03	2.1E-07	4.7E+03	1.3E-07	4.5E+03	1.2E-07
Rb-89	1.0E+00	2.5E+04	6.6E-04	9.1E+03	2.5E-07	6.0E+03	1.6E-07	5.7E+03	1.5E-07
Strontium									
Sr-80	6.0E-01	2.9E+03	7.9E-05	1.5E+03	4.0E-08	8.3E+02	2.2E-08	7.9E+02	2.1E-08
Sr-81	6.0E-01	1.7E+04	4.5E-04	6.6E+03	1.8E-07	4.0E+03	1.1E-07	3.9E+03	1.0E-07
Sr-82	6.0E-01	1.7E+02	4.7E-06	5.6E+01	1.5E-09	1.5E+01	4.0E-10	1.2E+01	3.3E-10
Sr-83	6.0E-01	2.3E+03	6.1E-05	7.3E+02	2.0E-08	3.8E+02	1.0E-08	3.5E+02	9.5E-09
Sr-85	6.0E-01	1.8E+03	5.0E-05	3.1E+02	8.3E-09	2.0E+02	5.5E-09	1.6E+02	4.4E-09
Sr-85m	6.0E-01	1.9E+05	5.2E-03	4.3E+04	1.1E-06	3.0E+04	8.2E-07	2.9E+04	7.8E-07
Sr-87m	6.0E-01	3.8E+04	1.0E-03	1.1E+04	2.9E-07	6.3E+03	1.7E-07	6.0E+03	1.6E-07
Sr-89	6.0E-01	4.0E+02	1.1E-05	1.2E+02	3.1E-09	2.2E+01	6.0E-10	1.7E+01	4.6E-10
Sr-90	6.0E-01	4.1E+01	1.1E-06	5.5E+00	1.5E-10	3.8E+00	1.0E-10	9.2E-01	2.5E-11
Sr-91	6.0E-01	1.7E+03	4.7E-05	7.8E+02	2.1E-08	3.4E+02	9.2E-09	3.1E+02	8.3E-09
Sr-92	6.0E-01	2.7E+03	7.3E-05	1.3E+03	3.5E-08	6.0E+02	1.6E-08	5.6E+02	1.5E-08
Yttrium									
Y-84m	1.0E-03	8.2E+03	2.2E-04	3.1E+03	8.4E-08	2.1E+03	5.6E-08	2.0E+03	5.4E-08
Y-85	1.0E-03	6.0E+03	1.6E-04	2.3E+03	6.1E-08	1.4E+03	3.7E-08	1.3E+03	3.5E-08
Y-85m	1.0E-03	3.0E+03	8.0E-05	1.3E+03	3.4E-08	7.7E+02	2.1E-08	7.4E+02	2.0E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Y-86	1.0E-03	1.2E+03	3.2E-05	3.7E+02	1.0E-08	2.7E+02	7.4E-09	2.6E+02	7.2E-09
Y-86m	1.0E-03	2.0E+04	5.5E-04	6.3E+03	1.7E-07	4.5E+03	1.2E-07	4.4E+03	1.2E-07
Y-87	1.0E-03	2.1E+03	5.6E-05	5.6E+02	1.5E-08	3.4E+02	9.2E-09	3.2E+02	8.8E-09
Y-87m	1.0E-03	5.1E+03	1.4E-04	1.7E+03	4.6E-08	9.6E+02	2.6E-08	9.1E+02	2.5E-08
Y-88	1.0E-03	9.1E+02	2.4E-05	2.2E+01	5.9E-10	3.2E+01	8.6E-10	3.0E+01	8.1E-10
Y-90	1.0E-03	4.0E+02	1.1E-05	2.2E+02	5.8E-09	9.1E+01	2.5E-09	8.5E+01	2.3E-09
Y-90m	1.0E-03	6.2E+03	1.7E-04	2.6E+03	7.0E-08	1.3E+03	3.6E-08	1.3E+03	3.4E-08
Y-91	1.0E-03	4.5E+02	1.2E-05	3.8E+01	1.0E-09	1.9E+01	5.1E-10	1.5E+01	4.1E-10
Y-91m	1.0E-03	1.0E+05	2.7E-03	1.9E+04	5.2E-07	1.3E+04	3.4E-07	1.1E+04	3.1E-07
Y-92	1.0E-03	2.2E+03	5.8E-05	1.4E+03	3.7E-08	7.4E+02	2.0E-08	7.0E+02	1.9E-08
Y-93	1.0E-03	9.1E+02	2.5E-05	6.3E+02	1.7E-08	3.1E+02	8.3E-09	2.9E+02	7.8E-09
Y-94	1.0E-03	1.3E+04	3.5E-04	7.6E+03	2.1E-07	4.8E+03	1.3E-07	4.6E+03	1.2E-07
Y-95	1.0E-03	2.6E+04	6.9E-04	1.2E+04	3.3E-07	8.7E+03	2.3E-07	8.3E+03	2.3E-07
Zirconium									
Zr-86	2.0E-02	1.3E+03	3.6E-05	4.4E+02	1.2E-08	3.0E+02	8.0E-09	2.9E+02	7.7E-09
Zr-87	2.0E-02	5.8E+03	1.6E-04	2.8E+03	7.5E-08	1.5E+03	4.0E-08	1.4E+03	3.8E-08
Zr-88	2.0E-02	2.7E+03	7.4E-05	4.1E+01	1.1E-09	5.3E+01	1.4E-09	3.8E+01	1.0E-09
Zr-89	2.0E-02	1.4E+03	3.9E-05	4.2E+02	1.1E-08	2.5E+02	6.6E-09	2.3E+02	6.3E-09
Zr-93	2.0E-02	1.5E+03	4.0E-05	6.9E+00	1.9E-10	1.7E+01	4.5E-10	4.6E+01	1.2E-09
Zr-95	2.0E-02	1.2E+03	3.1E-05	5.2E+01	1.4E-09	2.8E+01	7.7E-10	2.3E+01	6.3E-10
Zr-97	2.0E-02	5.2E+02	1.4E-05	3.0E+02	8.1E-09	1.4E+02	3.7E-09	1.3E+02	3.5E-09
Niobium									
Nb-88	2.0E-02	1.6E+04	4.2E-04	6.0E+03	1.6E-07	4.3E+03	1.2E-07	4.1E+03	1.1E-07
Nb-89	2.0E-02	4.0E+03	1.1E-04	2.0E+03	5.4E-08	1.1E+03	3.0E-08	1.0E+03	2.8E-08
Nb-89m	2.0E-02	8.1E+03	2.2E-04	3.1E+03	8.4E-08	1.9E+03	5.1E-08	1.8E+03	4.9E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Nb-90	2.0E-02	9.0E+02	2.4E-05	3.2E+02	8.5E-09	2.0E+02	5.3E-09	1.9E+02	5.1E-09
Nb-91	2.0E-02	2.4E+04	6.4E-04	1.1E+03	3.0E-08	5.0E+02	1.3E-08	7.7E+01	2.1E-09
Nb-91m	2.0E-02	2.6E+03	7.0E-05	4.2E+02	1.1E-08	4.1E+01	1.1E-09	3.3E+01	8.9E-10
Nb-92	2.0E-02	1.2E+03	3.1E-05	3.0E+01	8.1E-10	2.8E+01	7.5E-10	5.3E+00	1.4E-10
Nb-92m	2.0E-02	2.3E+03	6.3E-05	3.7E+02	9.9E-09	3.0E+02	8.1E-09	2.9E+02	7.8E-09
Nb-93m	2.0E-02	8.2E+03	2.2E-04	5.4E+02	1.5E-08	2.5E+02	6.7E-09	7.2E+01	2.0E-09
Nb-94	2.0E-02	6.6E+02	1.8E-05	2.3E+01	6.1E-10	1.3E+01	3.5E-10	2.9E+00	8.0E-11
Nb-95	2.0E-02	1.9E+03	5.3E-05	2.3E+02	6.2E-09	9.2E+01	2.5E-09	7.8E+01	2.1E-09
Nb-95m	2.0E-02	1.8E+03	4.7E-05	5.9E+02	1.6E-08	1.7E+02	4.5E-09	1.5E+02	4.1E-09
Nb-96	2.0E-02	1.0E+03	2.8E-05	3.6E+02	9.7E-09	2.0E+02	5.4E-09	1.9E+02	5.2E-09
Nb-97	2.0E-02	1.6E+04	4.3E-04	5.9E+03	1.6E-07	3.0E+03	8.1E-08	2.8E+03	7.6E-08
Nb-98m	2.0E-02	1.0E+04	2.8E-04	3.5E+03	9.6E-08	2.2E+03	6.0E-08	2.1E+03	5.8E-08
Molybdenum									
Mo-90	1.0E+00	5.3E+03	1.4E-04	8.0E+02	2.2E-08	3.8E+02	1.0E-08	3.5E+02	9.5E-09
Mo-91	1.0E+00	1.8E+04	4.9E-04	9.6E+03	2.6E-07	6.3E+03	1.7E-07	6.1E+03	1.6E-07
Mo-93	1.0E+00	4.7E+02	1.3E-05	1.5E+02	4.1E-09	2.5E+02	6.7E-09	6.4E+01	1.7E-09
Mo-93m	1.0E+00	9.9E+03	2.7E-04	1.2E+03	3.3E-08	7.4E+02	2.0E-08	7.0E+02	1.9E-08
Mo-99	1.0E+00	1.9E+03	5.1E-05	5.5E+02	1.5E-08	1.5E+02	4.0E-09	1.3E+02	3.6E-09
Mo-101	1.0E+00	2.7E+04	7.4E-04	8.6E+03	2.3E-07	5.1E+03	1.4E-07	4.9E+03	1.3E-07
Mo-102	1.0E+00	1.6E+04	4.2E-04	8.0E+03	2.1E-07	5.2E+03	1.4E-07	5.0E+03	1.4E-07
Technetium									
Tc-93	1.0E+00	1.7E+04	4.5E-04	3.0E+03	8.2E-08	2.7E+03	7.4E-08	2.7E+03	7.3E-08
Tc-93m	1.0E+00	3.6E+04	9.6E-04	7.1E+03	1.9E-07	6.1E+03	1.6E-07	6.0E+03	1.6E-07
Tc-94	1.0E+00	5.8E+03	1.6E-04	1.1E+03	3.0E-08	9.8E+02	2.7E-08	9.7E+02	2.6E-08
Tc-94m	1.0E+00	1.1E+04	2.9E-04	2.9E+03	7.7E-08	2.7E+03	7.3E-08	2.7E+03	7.3E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Tc-95	1.0E+00	6.5E+03	1.8E-04	1.3E+03	3.4E-08	1.2E+03	3.1E-08	1.1E+03	3.1E-08
Tc-95m	1.0E+00	2.0E+03	5.5E-05	4.2E+02	1.1E-08	1.5E+02	3.9E-09	1.1E+02	3.0E-09
Tc-96	1.0E+00	1.1E+03	2.9E-05	2.2E+02	5.9E-09	1.8E+02	4.9E-09	1.8E+02	4.8E-09
Tc-96m	1.0E+00	9.2E+04	2.5E-03	2.0E+04	5.4E-07	1.7E+04	4.6E-07	1.7E+04	4.5E-07
Tc-97	1.0E+00	1.5E+04	4.2E-04	2.7E+03	7.3E-08	6.0E+02	1.6E-08	7.9E+01	2.1E-09
Tc-97m	1.0E+00	1.9E+03	5.1E-05	4.5E+02	1.2E-08	4.2E+01	1.1E-09	3.3E+01	8.9E-10
Tc-98	1.0E+00	6.0E+02	1.6E-05	1.3E+02	3.6E-09	1.7E+01	4.7E-10	3.4E+00	9.1E-11
Tc-99	1.0E+00	1.6E+03	4.4E-05	4.2E+02	1.1E-08	3.4E+01	9.2E-10	1.1E+01	2.9E-10
Tc-99m	1.0E+00	5.0E+04	1.4E-03	1.1E+04	2.8E-07	6.7E+03	1.8E-07	6.5E+03	1.7E-07
Tc-101	1.0E+00	5.9E+04	1.6E-03	1.5E+04	4.1E-07	1.1E+04	2.9E-07	1.0E+04	2.8E-07
Tc-104	1.0E+00	1.3E+04	3.6E-04	5.2E+03	1.4E-07	4.3E+03	1.2E-07	4.2E+03	1.1E-07
Ruthenium									
Ru-94	1.0E-01	1.2E+04	3.2E-04	4.7E+03	1.3E-07	2.9E+03	7.8E-08	2.8E+03	7.5E-08
							Vapor	6.7E+02	1.8E-08
Ru-95	1.0E-01	1.9E+04	5.1E-04	4.7E+03	1.3E-07	3.5E+03	9.5E-08	3.4E+03	9.2E-08
							Vapor	6.7E+02	1.8E-08
Ru-97	1.0E-01	7.5E+03	2.0E-04	1.9E+03	5.2E-08	1.2E+03	3.3E-08	1.2E+03	3.1E-08
							Vapor	6.7E+02	1.8E-08
Ru-103	1.0E-01	1.6E+03	4.2E-05	2.6E+02	7.1E-09	5.8E+01	1.6E-09	4.8E+01	1.3E-09
							Vapor	6.7E+02	1.8E-08
Ru-105	1.0E-01	3.9E+03	1.1E-04	1.7E+03	4.6E-08	6.9E+02	1.9E-08	6.4E+02	1.7E-08
							Vapor	6.7E+02	1.8E-08
Ru-106	1.0E-01	1.5E+02	4.1E-06	1.6E+01	4.2E-10	4.9E+00	1.3E-10	2.1E+00	5.6E-11
							Vapor	6.7E+02	1.8E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Rhodium									
Rh-97	1.0E-01	2.4E+04	6.4E-04	8.5E+03	2.3E-07	5.5E+03	1.5E-07	5.3E+03	1.4E-07
Rh-97m	1.0E-01	2.4E+04	6.6E-04	6.6E+03	1.8E-07	4.7E+03	1.3E-07	4.6E+03	1.2E-07
Rh-99	1.0E-01	2.0E+03	5.4E-05	3.8E+02	1.0E-08	1.2E+02	3.3E-09	1.1E+02	2.9E-09
Rh-99m	1.0E-01	1.7E+04	4.7E-04	4.4E+03	1.2E-07	3.2E+03	8.5E-08	3.1E+03	8.3E-08
Rh-100	1.0E-01	1.7E+03	4.7E-05	4.7E+02	1.3E-08	3.7E+02	1.0E-08	3.6E+02	9.8E-09
Rh-101	1.0E-01	2.1E+03	5.7E-05	9.4E+01	2.6E-09	6.4E+01	1.7E-09	2.7E+01	7.3E-10
Rh-101m	1.0E-01	5.4E+03	1.5E-04	1.3E+03	3.6E-08	6.8E+02	1.8E-08	6.3E+02	1.7E-08
Rh-102	1.0E-01	9.2E+02	2.5E-05	8.6E+01	2.3E-09	3.2E+01	8.7E-10	1.9E+01	5.1E-10
Rh-102m	1.0E-01	4.4E+02	1.2E-05	1.7E+01	4.5E-10	1.8E+01	4.9E-10	7.1E+00	1.9E-10
Rh-103m	1.0E-01	2.9E+05	7.7E-03	1.5E+05	4.0E-06	5.2E+04	1.4E-06	4.9E+04	1.3E-06
Rh-105	1.0E-01	2.9E+03	7.9E-05	1.5E+03	4.0E-08	4.1E+02	1.1E-08	3.7E+02	1.0E-08
Rh-106m	1.0E-01	6.7E+03	1.8E-04	1.9E+03	5.1E-08	1.2E+03	3.2E-08	1.1E+03	3.1E-08
Rh-107	1.0E-01	4.6E+04	1.2E-03	1.4E+04	3.8E-07	8.1E+03	2.2E-07	7.7E+03	2.1E-07
Palladium									
Pd-98	5.0E-02	1.8E+04	4.8E-04	7.7E+03	2.1E-07	4.7E+03	1.3E-07	4.5E+03	1.2E-07
Pd-99	5.0E-02	3.2E+04	8.6E-04	1.0E+04	2.7E-07	6.8E+03	1.8E-07	6.6E+03	1.8E-07
Pd-100	5.0E-02	1.2E+03	3.4E-05	2.6E+02	7.1E-09	1.7E+02	4.6E-09	1.6E+02	4.3E-09
Pd-101	5.0E-02	1.2E+04	3.2E-04	3.1E+03	8.3E-08	2.1E+03	5.7E-08	2.0E+03	5.5E-08
Pd-103	5.0E-02	5.6E+03	1.5E-04	1.4E+03	3.7E-08	3.5E+02	9.4E-09	3.0E+02	8.2E-09
Pd-107	5.0E-02	2.8E+04	7.5E-04	4.7E+03	1.3E-07	1.4E+03	3.9E-08	2.3E+02	6.2E-09
Pd-109	5.0E-02	1.9E+03	5.1E-05	1.0E+03	2.7E-08	3.7E+02	1.0E-08	3.4E+02	9.3E-09
Pd-111	5.0E-02	2.2E+04	5.9E-04	1.0E+04	2.7E-07	5.1E+03	1.4E-07	4.8E+03	1.3E-07
Pd-112	5.0E-02	4.1E+02	1.1E-05	2.6E+02	7.0E-09	1.2E+02	3.3E-09	1.1E+02	3.1E-09

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Silver									
Ag-101	1.0E-01	3.4E+04	9.3E-04	1.3E+04	3.6E-07	9.4E+03	2.5E-07	9.1E+03	2.5E-07
Ag-102	1.0E-01	2.7E+04	7.4E-04	9.5E+03	2.6E-07	7.0E+03	1.9E-07	6.8E+03	1.8E-07
Ag-103	1.0E-01	2.9E+04	8.0E-04	8.6E+03	2.3E-07	5.1E+03	1.4E-07	4.9E+03	1.3E-07
Ag-104	1.0E-01	1.9E+04	5.2E-04	4.3E+03	1.2E-07	3.4E+03	9.1E-08	3.3E+03	8.9E-08
Ag-104m	1.0E-01	1.7E+04	4.5E-04	6.8E+03	1.8E-07	4.4E+03	1.2E-07	4.2E+03	1.1E-07
Ag-105	1.0E-01	2.5E+03	6.7E-05	2.4E+02	6.4E-09	1.8E+02	4.8E-09	1.6E+02	4.4E-09
Ag-106	1.0E-01	3.5E+04	9.4E-04	1.4E+04	3.7E-07	8.6E+03	2.3E-07	8.3E+03	2.2E-07
Ag-106m	1.0E-01	8.0E+02	2.2E-05	1.2E+02	3.2E-09	1.2E+02	3.1E-09	1.2E+02	3.1E-09
Ag-108m	1.0E-01	5.0E+02	1.3E-05	2.2E+01	5.8E-10	1.8E+01	4.9E-10	3.7E+00	1.0E-10
Ag-110m	1.0E-01	4.1E+02	1.1E-05	2.3E+01	6.3E-10	1.7E+01	4.7E-10	1.1E+01	3.0E-10
Ag-111	1.0E-01	8.5E+02	2.3E-05	3.0E+02	8.2E-09	8.6E+01	2.3E-09	7.8E+01	2.1E-09
Ag-112	1.0E-01	2.6E+03	6.9E-05	1.6E+03	4.2E-08	7.6E+02	2.1E-08	7.2E+02	1.9E-08
Ag-113	1.0E-01	2.7E+03	7.3E-05	1.8E+03	4.9E-08	8.2E+02	2.2E-08	7.6E+02	2.1E-08
Ag-115	1.0E-01	1.8E+04	4.8E-04	8.7E+03	2.3E-07	4.7E+03	1.3E-07	4.5E+03	1.2E-07
Cadmium									
Cd-104	1.0E-01	1.1E+04	2.9E-04	4.7E+03	1.3E-07	2.7E+03	7.3E-08	2.6E+03	6.9E-08
Cd-105	1.0E-01	2.7E+04	7.2E-04	8.0E+03	2.2E-07	5.5E+03	1.5E-07	5.3E+03	1.4E-07
Cd-107	1.0E-01	1.7E+04	4.6E-04	5.6E+03	1.5E-07	1.6E+03	4.3E-08	1.6E+03	4.5E-08
Cd-109	1.0E-01	5.8E+02	1.6E-05	1.6E+01	4.4E-10	2.1E+01	5.6E-10	2.2E+01	5.9E-10
Cd-111m	1.0E-01	8.1E+04	2.2E-03	1.3E+04	3.4E-07	6.0E+03	1.6E-07	5.7E+03	1.5E-07
Cd-113	1.0E-01	5.6E+01	1.5E-06	1.2E+00	3.3E-11	2.7E+00	7.2E-11	5.7E+00	1.5E-10
Cd-113m	1.0E-01	5.7E+01	1.5E-06	1.3E+00	3.5E-11	2.7E+00	7.4E-11	4.5E+00	1.2E-10
Cd-115	1.0E-01	7.7E+02	2.1E-05	3.4E+02	9.1E-09	1.3E+02	3.5E-09	1.2E+02	3.3E-09
Cd-115m	1.0E-01	3.4E+02	9.1E-06	2.4E+01	6.5E-10	2.2E+01	5.9E-10	1.8E+01	4.8E-10

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Cd-117	1.0E-01	3.9E+03	1.1E-04	1.8E+03	4.8E-08	7.9E+02	2.1E-08	7.5E+02	2.0E-08
Cd-117m	1.0E-01	3.9E+03	1.1E-04	1.3E+03	3.5E-08	6.5E+02	1.8E-08	6.2E+02	1.7E-08
Cd-118	1.0E-01	5.9E+03	1.6E-04	3.4E+03	9.3E-08	1.7E+03	4.5E-08	1.6E+03	4.2E-08
Indium									
In-107	4.0E-02	2.8E+04	7.5E-04	9.0E+03	2.4E-07	5.2E+03	1.4E-07	4.9E+03	1.3E-07
In-108	4.0E-02	1.5E+04	4.1E-04	3.5E+03	9.5E-08	2.7E+03	7.3E-08	2.6E+03	7.1E-08
In-108m	4.0E-02	1.4E+04	3.7E-04	5.1E+03	1.4E-07	3.4E+03	9.3E-08	3.3E+03	9.0E-08
In-109	4.0E-02	2.0E+04	5.3E-04	4.4E+03	1.2E-07	3.3E+03	9.0E-08	3.2E+03	8.7E-08
In-110	4.0E-02	4.8E+03	1.3E-04	1.1E+03	3.0E-08	9.4E+02	2.5E-08	9.2E+02	2.5E-08
In-110m	4.0E-02	1.1E+04	2.9E-04	4.2E+03	1.1E-07	2.6E+03	7.1E-08	2.5E+03	6.8E-08
In-111	4.0E-02	3.9E+03	1.0E-04	9.7E+02	2.6E-08	5.5E+02	1.5E-08	5.3E+02	1.4E-08
In-112	4.0E-02	1.0E+05	2.8E-03	2.6E+04	7.1E-07	1.7E+04	4.5E-07	1.6E+04	4.3E-07
In-112m	4.0E-02	6.4E+04	1.7E-03	1.2E+04	3.2E-07	6.1E+03	1.6E-07	5.8E+03	1.6E-07
In-113m	4.0E-02	3.7E+04	1.0E-03	1.2E+04	3.4E-07	6.3E+03	1.7E-07	6.0E+03	1.6E-07
In-114m	4.0E-02	2.5E+02	6.8E-06	1.3E+01	3.5E-10	1.1E+01	3.0E-10	1.0E+01	2.7E-10
In-115	4.0E-02	4.1E+01	1.1E-06	3.7E-01	9.9E-12	8.9E-01	2.4E-11	3.2E+00	8.7E-11
In-115m	4.0E-02	1.2E+04	3.3E-04	5.0E+03	1.4E-07	2.2E+03	5.8E-08	2.0E+03	5.5E-08
In-116m	4.0E-02	1.8E+04	4.8E-04	4.4E+03	1.2E-07	2.8E+03	7.5E-08	2.7E+03	7.2E-08
In-117	4.0E-02	3.6E+04	9.9E-04	8.5E+03	2.3E-07	4.5E+03	1.2E-07	4.3E+03	1.2E-07
In-117m	4.0E-02	8.7E+03	2.4E-04	4.2E+03	1.1E-07	1.8E+03	4.8E-08	1.7E+03	4.6E-08
In-119m	4.0E-02	2.4E+04	6.4E-04	1.2E+04	3.2E-07	7.2E+03	1.9E-07	6.9E+03	1.9E-07
Tin									
Sn-108	4.0E-02	5.1E+04	1.4E-03	1.6E+04	4.4E-07	1.1E+04	3.0E-07	1.1E+04	2.9E-07
Sn-109	4.0E-02	6.1E+04	1.7E-03	1.4E+04	3.7E-07	1.1E+04	2.9E-07	1.0E+04	2.8E-07
Sn-110	4.0E-02	3.0E+03	8.1E-05	1.2E+03	3.2E-08	7.7E+02	2.1E-08	7.4E+02	2.0E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Sn-111	4.0E-02	5.3E+04	1.4E-03	1.7E+04	4.6E-07	1.0E+04	2.8E-07	9.9E+03	2.7E-07
Sn-113	4.0E-02	1.4E+03	3.9E-05	2.3E+02	6.1E-09	5.0E+01	1.3E-09	3.4E+01	9.2E-10
Sn-113m	4.0E-02	3.3E+05	9.0E-03	6.5E+04	1.8E-06	3.1E+04	8.5E-07	2.9E+04	7.8E-07
Sn-117m	4.0E-02	1.5E+03	4.1E-05	4.2E+02	1.1E-08	5.6E+01	1.5E-09	4.9E+01	1.3E-09
Sn-119m	4.0E-02	3.0E+03	8.1E-05	4.1E+02	1.1E-08	6.2E+01	1.7E-09	4.0E+01	1.1E-09
Sn-121	4.0E-02	4.6E+03	1.2E-04	2.0E+03	5.3E-08	5.8E+02	1.6E-08	5.3E+02	1.4E-08
Sn-121m	4.0E-02	2.8E+03	7.5E-05	1.5E+02	4.2E-09	3.1E+01	8.3E-10	9.4E+00	2.6E-10
Sn-123	4.0E-02	5.0E+02	1.4E-05	1.0E+02	2.7E-09	1.7E+01	4.5E-10	1.1E+01	2.9E-10
Sn-123m	4.0E-02	2.8E+04	7.6E-04	9.5E+03	2.6E-07	4.8E+03	1.3E-07	4.5E+03	1.2E-07
Sn-125	4.0E-02	3.5E+02	9.4E-06	1.3E+02	3.6E-09	4.3E+01	1.2E-09	3.8E+01	1.0E-09
Sn-126	4.0E-02	2.3E+02	6.2E-06	1.1E+01	3.1E-10	4.8E+00	1.3E-10	9.1E-01	2.5E-11
Sn-127	4.0E-02	5.5E+03	1.5E-04	1.9E+03	5.1E-08	9.6E+02	2.6E-08	9.1E+02	2.4E-08
Sn-128	4.0E-02	7.2E+03	1.9E-04	2.5E+03	6.7E-08	1.4E+03	3.8E-08	1.3E+03	3.6E-08
Antimony									
Sb-115	2.0E-01	4.6E+04	1.3E-03	1.5E+04	3.9E-07	9.6E+03	2.6E-07	9.2E+03	2.5E-07
Sb-116	2.0E-01	3.7E+04	1.0E-03	1.2E+04	3.3E-07	8.8E+03	2.4E-07	8.6E+03	2.3E-07
Sb-116m	2.0E-01	1.8E+04	4.9E-04	3.9E+03	1.1E-07	2.8E+03	7.4E-08	2.7E+03	7.2E-08
Sb-117	2.0E-01	6.2E+04	1.7E-03	1.4E+04	3.8E-07	7.6E+03	2.0E-07	7.2E+03	1.9E-07
Sb-118m	2.0E-01	5.5E+03	1.5E-04	1.3E+03	3.5E-08	1.0E+03	2.8E-08	1.0E+03	2.7E-08
Sb-119	2.0E-01	1.3E+04	3.5E-04	4.8E+03	1.3E-07	3.3E+03	8.8E-08	3.2E+03	8.5E-08
Sb-120	2.0E-01	7.6E+04	2.1E-03	2.7E+04	7.3E-07	1.8E+04	4.9E-07	1.7E+04	4.7E-07
Sb-120m	2.0E-01	9.4E+02	2.5E-05	2.2E+02	6.1E-09	1.3E+02	3.4E-09	1.2E+02	3.2E-09
Sb-122	2.0E-01	6.3E+02	1.7E-05	3.3E+02	8.8E-09	1.2E+02	3.3E-09	1.1E+02	3.1E-09
Sb-124	2.0E-01	4.3E+02	1.2E-05	9.4E+01	2.5E-09	2.1E+01	5.7E-10	1.6E+01	4.3E-10
Sb-124n	2.0E-01	1.2E+05	3.1E-03	3.6E+04	9.7E-07	2.0E+04	5.4E-07	1.8E+04	5.0E-07

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Sb-125	2.0E-01	1.0E+03	2.7E-05	9.2E+01	2.5E-09	2.8E+01	7.6E-10	1.2E+01	3.1E-10
Sb-126	2.0E-01	4.2E+02	1.1E-05	1.2E+02	3.1E-09	4.3E+01	1.2E-09	3.8E+01	1.0E-09
Sb-126m	2.0E-01	2.9E+04	7.9E-04	1.0E+04	2.7E-07	6.5E+03	1.8E-07	6.3E+03	1.7E-07
Sb-127	2.0E-01	6.5E+02	1.7E-05	2.7E+02	7.4E-09	7.8E+01	2.1E-09	7.1E+01	1.9E-09
Sb-128	2.0E-01	1.4E+03	3.7E-05	5.0E+02	1.4E-08	3.0E+02	8.1E-09	2.9E+02	7.7E-09
Sb-128m	2.0E-01	3.3E+04	8.9E-04	1.2E+04	3.3E-07	8.8E+03	2.4E-07	8.5E+03	2.3E-07
Sb-129	2.0E-01	2.6E+03	6.9E-05	1.1E+03	3.0E-08	5.3E+02	1.4E-08	5.0E+02	1.4E-08
Sb-130	2.0E-01	1.2E+04	3.2E-04	3.8E+03	1.0E-07	2.4E+03	6.6E-08	2.3E+03	6.3E-08
Sb-131	2.0E-01	1.0E+04	2.7E-04	3.4E+03	9.1E-08	2.8E+03	7.6E-08	2.8E+03	7.6E-08
Tellurium									
Te-114	6.0E-01	1.7E+04	4.5E-04	6.7E+03	1.8E-07	4.5E+03	1.2E-07	4.4E+03	1.2E-07
							Vapor	6.7E+02	1.8E-08
Te-116	6.0E-01	5.7E+03	1.5E-04	1.9E+03	5.0E-08	1.1E+03	2.9E-08	1.0E+03	2.7E-08
							Vapor	6.7E+02	1.8E-08
Te-117	6.0E-01	2.2E+04	5.8E-04	6.0E+03	1.6E-07	4.0E+03	1.1E-07	3.9E+03	1.0E-07
							Vapor	6.7E+02	1.8E-08
Te-118	6.0E-01	3.5E+02	9.6E-06	1.3E+02	3.6E-09	5.6E+01	1.5E-09	5.1E+01	1.4E-09
							Vapor	6.7E+02	1.8E-08
Te-119	6.0E-01	6.5E+03	1.8E-04	1.6E+03	4.4E-08	1.2E+03	3.2E-08	1.1E+03	3.1E-08
							Vapor	6.7E+02	1.8E-08
Te-119m	6.0E-01	1.6E+03	4.4E-05	3.7E+02	1.0E-08	2.5E+02	6.6E-09	2.3E+02	6.3E-09
							Vapor	6.7E+02	1.8E-08
Te-121	6.0E-01	2.6E+03	7.0E-05	4.9E+02	1.3E-08	3.2E+02	8.5E-09	2.9E+02	7.9E-09
							Vapor	6.7E+02	1.8E-08
Te-121m	6.0E-01	4.8E+02	1.3E-05	6.9E+01	1.9E-09	3.2E+01	8.6E-10	2.4E+01	6.4E-10

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
							Vapor	6.7E+02	1.8E-08
Te-123	6.0E-01	9.8E+02	2.7E-05	1.2E+02	3.2E-09	2.6E+02	7.0E-09	5.4E+02	1.5E-08
							Vapor	6.7E+02	1.8E-08
Te-123m	6.0E-01	7.8E+02	2.1E-05	1.3E+02	3.5E-09	3.4E+01	9.3E-10	2.7E+01	7.3E-10
							Vapor	6.7E+02	1.8E-08
Te-125m	6.0E-01	1.2E+03	3.2E-05	2.3E+02	6.3E-09	4.1E+01	1.1E-09	3.3E+01	9.0E-10
							Vapor	6.7E+02	1.8E-08
Te-127	6.0E-01	6.4E+03	1.7E-04	3.1E+03	8.3E-08	1.0E+03	2.7E-08	9.1E+02	2.5E-08
							Vapor	6.7E+02	1.8E-08
Te-127m	6.0E-01	4.3E+02	1.2E-05	7.5E+01	2.0E-09	1.8E+01	4.9E-10	1.4E+01	3.8E-10
							Vapor	6.7E+02	1.8E-08
Te-129	6.0E-01	1.7E+04	4.6E-04	7.7E+03	2.1E-07	3.5E+03	9.4E-08	3.3E+03	8.8E-08
							Vapor	6.7E+02	1.8E-08
Te-129m	6.0E-01	3.4E+02	9.3E-06	8.6E+01	2.3E-09	2.1E+01	5.6E-10	1.7E+01	4.7E-10
							Vapor	6.7E+02	1.8E-08
Te-131	6.0E-01	1.2E+04	3.3E-04	5.1E+03	1.4E-07	4.5E+03	1.2E-07	4.6E+03	1.3E-07
							Vapor	6.7E+02	1.8E-08
Te-131m	6.0E-01	5.4E+02	1.5E-05	1.3E+02	3.6E-09	1.2E+02	3.3E-09	1.4E+02	3.8E-09
							Vapor	6.7E+02	1.8E-08
Te-132	6.0E-01	2.7E+02	7.4E-06	6.4E+01	1.7E-09	6.1E+01	1.6E-09	6.2E+01	1.7E-09
							Vapor	6.7E+02	1.8E-08
Te-133	6.0E-01	1.4E+04	3.9E-04	5.8E+03	1.6E-07	6.4E+03	1.7E-07	6.8E+03	1.8E-07
							Vapor	6.7E+02	1.8E-08
Te-133m	6.0E-01	4.0E+03	1.1E-04	1.4E+03	3.9E-08	1.6E+03	4.3E-08	1.7E+03	4.6E-08
							Vapor	6.7E+02	1.8E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Te-134	6.0E-01	1.1E+04	3.0E-04	2.7E+03	7.3E-08	2.0E+03	5.4E-08	1.9E+03	5.2E-08
							Vapor	6.7E+02	1.8E-08
Iodine									
I-118	1.0E+00	5.3E+03	1.4E-04	2.2E+03	5.9E-08	3.7E+03	1.0E-07	4.4E+03	1.2E-07
							Vapor	7.4E+02	2.0E-08
							Methyl Iodide	1.2E+03	3.2E-08
I-119	1.0E+00	2.5E+04	6.9E-04	8.1E+03	2.2E-07	8.0E+03	2.2E-07	8.0E+03	2.2E-07
							Vapor	2.7E+03	7.2E-08
							Methyl Iodide	7.3E+03	2.0E-07
I-120	1.0E+00	3.6E+03	9.6E-05	1.3E+03	3.6E-08	1.3E+03	3.6E-08	1.4E+03	3.7E-08
							Vapor	4.7E+02	1.3E-08
							Methyl Iodide	6.5E+02	1.8E-08
I-120m	1.0E+00	7.0E+03	1.9E-04	2.0E+03	5.4E-08	1.9E+03	5.2E-08	1.9E+03	5.2E-08
							Vapor	9.3E+02	2.5E-08
							Methyl Iodide	1.6E+03	4.3E-08
I-121	1.0E+00	1.5E+04	3.9E-04	4.8E+03	1.3E-07	5.3E+03	1.4E-07	5.8E+03	1.6E-07
							Vapor	1.6E+03	4.2E-08
							Methyl Iodide	2.3E+03	6.3E-08
I-123	1.0E+00	4.5E+03	1.2E-04	1.5E+03	3.9E-08	1.9E+03	5.2E-08	2.1E+03	5.6E-08
							Vapor	5.3E+02	1.4E-08
							Methyl Iodide	7.1E+02	1.9E-08
I-124	1.0E+00	7.7E+01	2.1E-06	2.5E+01	6.8E-10	1.0E+02	2.7E-09	1.6E+02	4.4E-09
							Vapor	9.6E+00	2.6E-10
							Methyl Iodide	1.2E+01	3.3E-10
I-125	1.0E+00	7.7E+01	2.1E-06	2.4E+01	6.5E-10	9.3E+01	2.5E-09	3.3E+02	8.9E-09

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(μCi/mL)	(Bq/m^3)	(μCi/mL)	(Bq/m^3)	(μCi/mL)	(Bq/m^3)	(μCi/mL)
							Vapor	9.1E+00	2.5E-10
							Methyl Iodide	1.2E+01	3.2E-10
I-126	1.0E+00	3.6E+01	9.7E-07	1.2E+01	3.1E-10	4.5E+01	1.2E-09	9.2E+01	2.5E-09
							Vapor	4.4E+00	1.2E-10
							Methyl Iodide	5.6E+00	1.5E-10
I-128	1.0E+00	2.3E+04	6.3E-04	9.3E+03	2.5E-07	6.8E+03	1.8E-07	6.6E+03	1.8E-07
							Vapor	2.1E+03	5.6E-08
							Methyl Iodide	8.9E+03	2.4E-07
I-129	1.0E+00	1.2E+01	3.3E-07	3.7E+00	1.0E-10	9.0E+00	2.4E-10	1.4E+01	3.8E-10
							Vapor	1.4E+00	3.8E-11
							Methyl Iodide	1.8E+00	4.8E-11
I-130	1.0E+00	5.3E+02	1.4E-05	1.7E+02	4.6E-09	2.8E+02	7.5E-09	3.1E+02	8.4E-09
							Vapor	6.4E+01	1.7E-09
							Methyl Iodide	8.4E+01	2.3E-09
I-131	1.0E+00	4.7E+01	1.3E-06	1.5E+01	4.1E-10	5.1E+01	1.4E-09	8.4E+01	2.3E-09
							Vapor	5.8E+00	1.6E-10
							Methyl Iodide	7.4E+00	2.0E-10
I-132	1.0E+00	3.6E+03	9.8E-05	1.2E+03	3.3E-08	1.1E+03	3.0E-08	1.1E+03	3.0E-08
							Vapor	3.9E+02	1.1E-08
							Methyl Iodide	5.9E+02	1.6E-08
I-132m	1.0E+00	5.1E+03	1.4E-04	1.7E+03	4.5E-08	1.4E+03	3.7E-08	1.4E+03	3.7E-08
							Vapor	5.1E+02	1.4E-08
							Methyl Iodide	8.6E+02	2.3E-08
I-133	1.0E+00	2.2E+02	6.0E-06	7.3E+01	2.0E-09	2.1E+02	5.8E-09	2.7E+02	7.2E-09
							Vapor	2.7E+01	7.4E-10

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
							Methyl Iodide	3.5E+01	9.6E-10
I-134	1.0E+00	1.1E+04	2.9E-04	2.7E+03	7.4E-08	2.3E+03	6.3E-08	2.3E+03	6.2E-08
							Vapor	9.3E+02	2.5E-08
							Methyl Iodide	2.5E+03	6.6E-08
I-135	1.0E+00	1.1E+03	3.0E-05	3.6E+02	9.7E-09	5.4E+02	1.4E-08	5.9E+02	1.6E-08
							Vapor	1.3E+02	3.5E-09
							Methyl Iodide	1.7E+02	4.7E-09
Cesium									
Cs-125	1.0E+00	3.2E+04	8.7E-04	1.1E+04	3.0E-07	6.4E+03	1.7E-07	6.1E+03	1.7E-07
Cs-127	1.0E+00	4.7E+04	1.3E-03	6.0E+03	1.6E-07	3.4E+03	9.1E-08	3.2E+03	8.6E-08
Cs-129	1.0E+00	2.0E+04	5.3E-04	2.9E+03	7.9E-08	1.7E+03	4.6E-08	1.6E+03	4.3E-08
Cs-130	1.0E+00	4.1E+04	1.1E-03	1.6E+04	4.4E-07	9.7E+03	2.6E-07	9.3E+03	2.5E-07
Cs-131	1.0E+00	2.0E+04	5.5E-04	4.6E+03	1.2E-07	2.8E+03	7.6E-08	2.6E+03	7.1E-08
Cs-132	1.0E+00	2.4E+03	6.6E-05	5.5E+02	1.5E-08	4.3E+02	1.1E-08	4.1E+02	1.1E-08
Cs-134	1.0E+00	7.8E+01	2.1E-06	2.3E+01	6.2E-10	1.5E+01	4.1E-10	6.8E+00	1.8E-10
Cs-134m	1.0E+00	5.6E+04	1.5E-03	8.9E+03	2.4E-07	2.5E+03	6.7E-08	2.2E+03	6.0E-08
Cs-135	1.0E+00	5.5E+02	1.5E-05	1.7E+02	4.5E-09	3.6E+01	9.7E-10	1.2E+01	3.3E-10
Cs-135m	1.0E+00	6.2E+04	1.7E-03	1.0E+04	2.8E-07	8.0E+03	2.2E-07	7.8E+03	2.1E-07
Cs-136	1.0E+00	4.2E+02	1.1E-05	1.1E+02	3.0E-09	5.4E+01	1.5E-09	5.0E+01	1.3E-09
Cs-137	1.0E+00	1.1E+02	3.0E-06	3.3E+01	8.8E-10	1.4E+01	3.9E-10	3.6E+00	9.8E-11
Cs-138	1.0E+00	1.1E+04	3.1E-04	4.8E+03	1.3E-07	2.9E+03	7.9E-08	2.8E+03	7.5E-08
Barium									
Ba-124	6.0E-01	1.6E+04	4.3E-04	7.8E+03	2.1E-07	5.7E+03	1.5E-07	5.6E+03	1.5E-07
Ba-126	6.0E-01	4.4E+03	1.2E-04	1.6E+03	4.4E-08	1.2E+03	3.2E-08	1.1E+03	3.1E-08
Ba-127	6.0E-01	4.5E+04	1.2E-03	1.6E+04	4.4E-07	1.2E+04	3.1E-07	1.1E+04	3.0E-07

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Ba-128	6.0E-01	4.1E+02	1.1E-05	1.6E+02	4.4E-09	9.7E+01	2.6E-09	9.1E+01	2.5E-09
Ba-129	6.0E-01	2.3E+04	6.3E-04	6.5E+03	1.8E-07	4.6E+03	1.2E-07	4.4E+03	1.2E-07
Ba-129m	6.0E-01	1.7E+04	4.5E-04	3.4E+03	9.2E-08	2.8E+03	7.5E-08	2.7E+03	7.3E-08
Ba-131	6.0E-01	2.4E+03	6.5E-05	5.5E+02	1.5E-08	1.8E+02	4.8E-09	1.6E+02	4.3E-09
Ba-131m	6.0E-01	2.2E+05	5.9E-03	3.2E+04	8.7E-07	1.8E+04	4.8E-07	1.7E+04	4.6E-07
Ba-133	6.0E-01	6.0E+02	1.6E-05	7.3E+01	2.0E-09	4.1E+01	1.1E-09	1.3E+01	3.6E-10
Ba-133m	6.0E-01	2.0E+03	5.5E-05	8.1E+02	2.2E-08	3.0E+02	8.2E-09	2.8E+02	7.5E-09
Ba-135m	6.0E-01	2.6E+03	7.0E-05	9.1E+02	2.4E-08	3.9E+02	1.1E-08	3.6E+02	9.8E-09
Ba-139	6.0E-01	8.9E+03	2.4E-04	3.7E+03	1.0E-07	2.2E+03	6.1E-08	2.2E+03	5.8E-08
Ba-140	6.0E-01	4.0E+02	1.1E-05	1.1E+02	3.1E-09	2.6E+01	7.1E-10	2.3E+01	6.2E-10
Ba-141	6.0E-01	1.5E+04	4.0E-04	5.9E+03	1.6E-07	3.8E+03	1.0E-07	3.6E+03	9.8E-08
Ba-142	6.0E-01	3.3E+04	8.9E-04	8.8E+03	2.4E-07	6.2E+03	1.7E-07	6.0E+03	1.6E-07
Lanthanum									
La-129	5.0E-03	4.1E+04	1.1E-03	1.6E+04	4.2E-07	1.1E+04	2.9E-07	1.0E+04	2.8E-07
La-131	5.0E-03	3.3E+04	9.0E-04	9.8E+03	2.7E-07	5.7E+03	1.5E-07	5.4E+03	1.5E-07
La-132	5.0E-03	2.7E+03	7.3E-05	1.1E+03	3.1E-08	7.2E+02	1.9E-08	6.9E+02	1.9E-08
La-132m	5.0E-03	3.0E+04	8.2E-04	1.0E+04	2.7E-07	6.3E+03	1.7E-07	6.0E+03	1.6E-07
La-133	5.0E-03	3.5E+04	9.4E-04	1.1E+04	2.9E-07	7.5E+03	2.0E-07	7.3E+03	2.0E-07
La-135	5.0E-03	3.6E+04	9.6E-04	1.1E+04	3.1E-07	8.4E+03	2.3E-07	8.2E+03	2.2E-07
La-137	5.0E-03	1.3E+04	3.6E-04	1.6E+01	4.3E-10	3.9E+01	1.1E-09	6.5E+01	1.8E-09
La-138	5.0E-03	1.1E+03	2.9E-05	9.3E-01	2.5E-11	2.3E+00	6.1E-11	4.5E+00	1.2E-10
La-140	5.0E-03	5.5E+02	1.5E-05	2.1E+02	5.8E-09	1.2E+02	3.2E-09	1.1E+02	3.0E-09
La-141	5.0E-03	2.9E+03	7.8E-05	1.8E+03	5.0E-08	8.4E+02	2.3E-08	7.8E+02	2.1E-08
La-142	5.0E-03	6.3E+03	1.7E-04	2.5E+03	6.8E-08	1.5E+03	4.0E-08	1.4E+03	3.8E-08
La-143	5.0E-03	1.9E+04	5.3E-04	1.0E+04	2.8E-07	5.9E+03	1.6E-07	5.6E+03	1.5E-07

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Cerium									
Ce-130	5.0E-03	1.6E+04	4.2E-04	6.1E+03	1.6E-07	3.7E+03	1.0E-07	3.5E+03	9.5E-08
Ce-131	5.0E-03	4.0E+04	1.1E-03	1.4E+04	3.7E-07	9.3E+03	2.5E-07	9.0E+03	2.4E-07
Ce-132	5.0E-03	3.3E+03	9.0E-05	1.5E+03	4.0E-08	9.1E+02	2.5E-08	8.8E+02	2.4E-08
Ce-133	5.0E-03	1.2E+04	3.3E-04	5.0E+03	1.3E-07	2.6E+03	6.9E-08	2.4E+03	6.6E-08
Ce-133m	5.0E-03	5.4E+03	1.5E-04	1.5E+03	4.2E-08	1.1E+03	3.0E-08	1.1E+03	2.9E-08
Ce-134	5.0E-03	4.0E+02	1.1E-05	1.9E+02	5.1E-09	9.4E+01	2.5E-09	8.8E+01	2.4E-09
Ce-135	5.0E-03	4.4E+03	1.2E-04	1.3E+03	3.5E-08	9.2E+02	2.5E-08	9.0E+02	2.4E-08
Ce-137	5.0E-03	4.1E+04	1.1E-03	1.6E+04	4.3E-07	1.1E+04	3.1E-07	1.1E+04	3.0E-07
Ce-137m	5.0E-03	1.9E+03	5.2E-05	9.3E+02	2.5E-08	3.1E+02	8.5E-09	2.9E+02	7.8E-09
Ce-139	5.0E-03	4.2E+03	1.1E-04	8.2E+01	2.2E-09	8.0E+01	2.1E-09	7.1E+01	1.9E-09
Ce-141	5.0E-03	1.5E+03	4.0E-05	1.3E+02	3.4E-09	4.3E+01	1.1E-09	3.7E+01	9.9E-10
Ce-143	5.0E-03	9.5E+02	2.6E-05	4.3E+02	1.2E-08	1.7E+02	4.6E-09	1.6E+02	4.2E-09
Ce-144	5.0E-03	2.0E+02	5.5E-06	3.1E+00	8.3E-11	3.7E+00	1.0E-10	2.6E+00	7.1E-11
Praseodymium									
Pr-134	5.0E-03	2.3E+04	6.1E-04	8.7E+03	2.4E-07	6.2E+03	1.7E-07	6.0E+03	1.6E-07
Pr-134m	5.0E-03	1.3E+04	3.5E-04	6.3E+03	1.7E-07	4.1E+03	1.1E-07	3.9E+03	1.1E-07
Pr-135	5.0E-03	2.6E+04	6.9E-04	1.0E+04	2.7E-07	6.4E+03	1.7E-07	6.2E+03	1.7E-07
Pr-136	5.0E-03	3.3E+04	8.9E-04	1.3E+04	3.4E-07	9.2E+03	2.5E-07	9.0E+03	2.4E-07
Pr-137	5.0E-03	3.0E+04	8.1E-04	1.2E+04	3.1E-07	6.9E+03	1.9E-07	6.6E+03	1.8E-07
Pr-138m	5.0E-03	8.7E+03	2.4E-04	2.4E+03	6.5E-08	1.7E+03	4.6E-08	1.7E+03	4.5E-08
Pr-139	5.0E-03	3.4E+04	9.1E-04	1.1E+04	2.9E-07	6.6E+03	1.8E-07	6.3E+03	1.7E-07
Pr-142	5.0E-03	8.0E+02	2.2E-05	5.6E+02	1.5E-08	2.4E+02	6.5E-09	2.3E+02	6.1E-09
Pr-142m	5.0E-03	6.3E+04	1.7E-03	4.4E+04	1.2E-06	1.9E+04	5.1E-07	1.8E+04	4.8E-07
Pr-143	5.0E-03	9.0E+02	2.4E-05	2.0E+02	5.5E-09	6.3E+01	1.7E-09	5.5E+01	1.5E-09

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Pr-144	5.0E-03	2.1E+04	5.8E-04	1.2E+04	3.2E-07	7.2E+03	1.9E-07	6.9E+03	1.9E-07
Pr-145	5.0E-03	2.7E+03	7.3E-05	1.8E+03	4.7E-08	8.0E+02	2.2E-08	7.5E+02	2.0E-08
Pr-146	5.0E-03	1.4E+04	3.8E-04	7.2E+03	2.0E-07	4.4E+03	1.2E-07	4.2E+03	1.1E-07
Pr-147	5.0E-03	3.2E+04	8.7E-04	1.2E+04	3.3E-07	7.4E+03	2.0E-07	7.1E+03	1.9E-07
Neodymium									
Nd-135	5.0E-03	1.9E+04	5.1E-04	7.7E+03	2.1E-07	4.9E+03	1.3E-07	4.7E+03	1.3E-07
Nd-136	5.0E-03	1.1E+04	3.0E-04	4.2E+03	1.1E-07	2.5E+03	6.7E-08	2.4E+03	6.4E-08
Nd-137	5.0E-03	2.1E+04	5.6E-04	7.4E+03	2.0E-07	4.6E+03	1.3E-07	4.4E+03	1.2E-07
Nd-138	5.0E-03	1.7E+03	4.5E-05	9.7E+02	2.6E-08	5.2E+02	1.4E-08	5.0E+02	1.3E-08
Nd-139	5.0E-03	5.3E+04	1.4E-03	1.9E+04	5.2E-07	1.2E+04	3.3E-07	1.2E+04	3.1E-07
Nd-139m	5.0E-03	4.7E+03	1.3E-04	1.4E+03	3.7E-08	8.7E+02	2.4E-08	8.3E+02	2.3E-08
Nd-140	5.0E-03	5.4E+02	1.5E-05	2.4E+02	6.5E-09	1.2E+02	3.3E-09	1.1E+02	3.1E-09
Nd-141	5.0E-03	1.3E+05	3.5E-03	3.7E+04	1.0E-06	2.4E+04	6.6E-07	2.4E+04	6.4E-07
Nd-144	5.0E-03	2.8E+01	7.5E-07	7.5E-03	2.0E-13	1.9E-02	5.0E-13	4.2E-02	1.1E-12
Nd-147	5.0E-03	9.9E+02	2.7E-05	2.0E+02	5.5E-09	6.3E+01	1.7E-09	5.6E+01	1.5E-09
Nd-149	5.0E-03	8.7E+03	2.3E-04	3.6E+03	9.8E-08	1.5E+03	4.1E-08	1.4E+03	3.8E-08
Nd-151	5.0E-03	3.8E+04	1.0E-03	1.3E+04	3.4E-07	7.7E+03	2.1E-07	7.3E+03	2.0E-07
Nd-152	5.0E-03	2.3E+04	6.1E-04	9.3E+03	2.5E-07	5.6E+03	1.5E-07	5.4E+03	1.5E-07
Promethium									
Pm-141	5.0E-03	3.1E+04	8.5E-04	1.4E+04	3.8E-07	9.0E+03	2.4E-07	8.7E+03	2.4E-07
Pm-143	5.0E-03	4.9E+03	1.3E-04	4.6E+01	1.2E-09	9.0E+01	2.4E-09	9.4E+01	2.5E-09
Pm-144	5.0E-03	1.2E+03	3.2E-05	7.9E+00	2.1E-10	1.6E+01	4.4E-10	1.8E+01	4.9E-10
Pm-145	5.0E-03	9.9E+03	2.7E-04	1.7E+01	4.7E-10	4.1E+01	1.1E-09	6.2E+01	1.7E-09
Pm-146	5.0E-03	1.2E+03	3.4E-05	3.2E+00	8.5E-11	6.9E+00	1.9E-10	8.2E+00	2.2E-10
Pm-147	5.0E-03	4.0E+03	1.1E-04	1.9E+01	5.1E-10	2.8E+01	7.5E-10	2.8E+01	7.7E-10

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Pm-148	5.0E-03	4.0E+02	1.1E-05	1.5E+02	4.0E-09	6.5E+01	1.8E-09	6.0E+01	1.6E-09
Pm-148m	5.0E-03	6.4E+02	1.7E-05	3.4E+01	9.1E-10	2.6E+01	7.2E-10	2.4E+01	6.5E-10
Pm-149	5.0E-03	1.1E+03	2.9E-05	6.0E+02	1.6E-08	1.9E+02	5.3E-09	1.8E+02	4.9E-09
Pm-150	5.0E-03	4.2E+03	1.1E-04	1.8E+03	5.0E-08	1.0E+03	2.7E-08	9.7E+02	2.6E-08
Pm-151	5.0E-03	1.5E+03	4.0E-05	7.0E+02	1.9E-08	2.9E+02	7.8E-09	2.7E+02	7.3E-09
Samarium									
Sm-140	5.0E-03	1.1E+04	3.1E-04	6.1E+03	1.7E-07	4.0E+03	1.1E-07	3.8E+03	1.0E-07
Sm-141	5.0E-03	2.8E+04	7.7E-04	1.2E+04	3.3E-07	8.2E+03	2.2E-07	7.9E+03	2.1E-07
Sm-141m	5.0E-03	1.8E+04	4.8E-04	6.4E+03	1.7E-07	4.0E+03	1.1E-07	3.9E+03	1.0E-07
Sm-142	5.0E-03	6.0E+03	1.6E-04	3.2E+03	8.8E-08	1.8E+03	4.8E-08	1.7E+03	4.6E-08
Sm-145	5.0E-03	5.1E+03	1.4E-04	4.6E+01	1.2E-09	8.3E+01	2.2E-09	8.7E+01	2.3E-09
Sm-146	5.0E-03	2.1E+01	5.6E-07	5.6E-03	1.5E-13	1.4E-02	3.7E-13	3.0E-02	8.0E-13
Sm-147	5.0E-03	2.3E+01	6.2E-07	6.2E-03	1.7E-13	1.5E-02	4.1E-13	3.3E-02	9.0E-13
Sm-148	5.0E-03	2.7E+01	7.2E-07	7.2E-03	1.9E-13	1.8E-02	4.8E-13	4.0E-02	1.1E-12
Sm-151	5.0E-03	1.1E+04	2.9E-04	1.5E+01	4.1E-10	3.6E+01	9.7E-10	7.1E+01	1.9E-09
Sm-153	5.0E-03	1.4E+03	3.9E-05	6.7E+02	1.8E-08	2.1E+02	5.6E-09	1.9E+02	5.2E-09
Sm-155	5.0E-03	3.7E+04	1.0E-03	1.3E+04	3.6E-07	7.5E+03	2.0E-07	7.2E+03	1.9E-07
Sm-156	5.0E-03	4.2E+03	1.1E-04	1.3E+03	3.6E-08	5.9E+02	1.6E-08	5.4E+02	1.5E-08
Europium									
Eu-145	5.0E-03	1.8E+03	4.7E-05	2.9E+02	7.7E-09	2.5E+02	6.9E-09	2.5E+02	6.7E-09
Eu-146	5.0E-03	9.7E+02	2.6E-05	1.9E+02	5.2E-09	1.7E+02	4.5E-09	1.6E+02	4.4E-09
Eu-147	5.0E-03	2.5E+03	6.9E-05	2.4E+02	6.6E-09	1.3E+02	3.5E-09	1.1E+02	3.1E-09
Eu-148	5.0E-03	9.0E+02	2.4E-05	3.6E+01	9.8E-10	4.9E+01	1.3E-09	4.8E+01	1.3E-09
Eu-149	5.0E-03	6.8E+03	1.8E-04	2.4E+02	6.4E-09	3.2E+02	8.8E-09	3.1E+02	8.3E-09
Eu-150	5.0E-03	9.3E+02	2.5E-05	1.1E+00	3.0E-11	2.7E+00	7.4E-11	4.4E+00	1.2E-10

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Eu-150m	5.0E-03	2.8E+03	7.5E-05	1.6E+03	4.3E-08	6.6E+02	1.8E-08	6.2E+02	1.7E-08
Eu-152	5.0E-03	8.4E+02	2.3E-05	1.5E+00	4.1E-11	3.4E+00	9.2E-11	4.4E+00	1.2E-10
Eu-152m	5.0E-03	2.1E+03	5.8E-05	1.2E+03	3.3E-08	5.8E+02	1.6E-08	6.0E+02	1.6E-08
Eu-152n	5.0E-03	8.3E+04	2.2E-03	2.8E+04	7.6E-07	1.5E+04	4.0E-07	1.6E+04	4.2E-07
Eu-154	5.0E-03	5.6E+02	1.5E-05	1.3E+00	3.5E-11	2.8E+00	7.5E-11	3.1E+00	8.4E-11
Eu-154m	5.0E-03	1.4E+05	3.7E-03	4.5E+04	1.2E-06	3.3E+04	8.8E-07	3.2E+04	8.5E-07
Eu-155	5.0E-03	3.2E+03	8.7E-05	1.1E+01	3.0E-10	2.0E+01	5.4E-10	2.3E+01	6.3E-10
Eu-156	5.0E-03	4.8E+02	1.3E-05	8.4E+01	2.3E-09	3.8E+01	1.0E-09	3.4E+01	9.2E-10
Eu-157	5.0E-03	1.7E+03	4.7E-05	9.3E+02	2.5E-08	4.2E+02	1.1E-08	4.0E+02	1.1E-08
Eu-158	5.0E-03	1.2E+04	3.3E-04	4.9E+03	1.3E-07	2.7E+03	7.3E-08	2.6E+03	7.0E-08
Eu-159	5.0E-03	2.2E+04	6.0E-04	1.0E+04	2.7E-07	5.5E+03	1.5E-07	5.3E+03	1.4E-07
Gadolinium									
Gd-145	5.0E-03	3.3E+04	9.0E-04	9.9E+03	2.7E-07	7.4E+03	2.0E-07	7.1E+03	1.9E-07
Gd-146	5.0E-03	1.2E+03	3.1E-05	3.0E+01	8.2E-10	2.2E+01	5.9E-10	1.9E+01	5.2E-10
Gd-147	5.0E-03	1.8E+03	4.9E-05	4.6E+02	1.2E-08	3.0E+02	8.2E-09	2.9E+02	7.8E-09
Gd-148	5.0E-03	2.0E+01	5.5E-07	5.6E-03	1.5E-13	1.3E-02	3.5E-13	2.3E-02	6.1E-13
Gd-149	5.0E-03	2.0E+03	5.5E-05	3.9E+02	1.0E-08	1.6E+02	4.3E-09	1.4E+02	3.9E-09
Gd-150	5.0E-03	2.2E+01	5.8E-07	5.9E-03	1.6E-13	1.4E-02	3.7E-13	2.7E-02	7.2E-13
Gd-151	5.0E-03	4.8E+03	1.3E-04	1.4E+02	3.7E-09	1.3E+02	3.5E-09	1.2E+02	3.1E-09
Gd-152	5.0E-03	2.7E+01	7.4E-07	7.5E-03	2.0E-13	1.8E-02	4.9E-13	3.7E-02	9.9E-13
Gd-153	5.0E-03	3.9E+03	1.1E-04	6.1E+01	1.6E-09	6.5E+01	1.7E-09	5.7E+01	1.5E-09
Gd-159	5.0E-03	2.1E+03	5.7E-05	1.2E+03	3.1E-08	4.6E+02	1.2E-08	4.3E+02	1.2E-08
Terbium									
Tb-147	5.0E-03	9.0E+03	2.4E-04	2.6E+03	7.0E-08	1.8E+03	4.8E-08	1.7E+03	4.6E-08
Tb-148	5.0E-03	9.0E+03	2.4E-04	2.2E+03	6.1E-08	1.8E+03	4.9E-08	1.9E+03	5.2E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Tb-149	5.0E-03	6.1E+03	1.6E-04	2.9E+02	7.7E-09	3.4E+01	9.2E-10	3.1E+01	8.4E-10
Tb-150	5.0E-03	5.2E+03	1.4E-04	1.7E+03	4.5E-08	1.2E+03	3.2E-08	1.2E+03	3.1E-08
Tb-151	5.0E-03	3.1E+03	8.5E-05	9.5E+02	2.6E-08	5.4E+02	1.4E-08	5.1E+02	1.4E-08
Tb-152	5.0E-03	1.6E+03	4.3E-05	6.3E+02	1.7E-08	4.1E+02	1.1E-08	3.9E+02	1.1E-08
Tb-153	5.0E-03	3.9E+03	1.0E-04	1.2E+03	3.3E-08	5.5E+02	1.5E-08	5.7E+02	1.5E-08
Tb-154	5.0E-03	1.8E+03	5.0E-05	5.2E+02	1.4E-08	3.6E+02	9.8E-09	3.5E+02	9.5E-09
Tb-155	5.0E-03	4.2E+03	1.1E-04	1.3E+03	3.6E-08	4.7E+02	1.3E-08	4.3E+02	1.2E-08
Tb-156	5.0E-03	9.9E+02	2.7E-05	2.0E+02	5.5E-09	1.1E+02	3.0E-09	1.0E+02	2.8E-09
Tb-156m	5.0E-03	6.9E+03	1.9E-04	1.3E+03	3.5E-08	6.9E+02	1.9E-08	6.5E+02	1.7E-08
Tb-156n	5.0E-03	1.3E+04	3.4E-04	3.2E+03	8.8E-08	1.3E+03	3.4E-08	1.2E+03	3.2E-08
Tb-157	5.0E-03	2.8E+04	7.5E-04	4.4E+01	1.2E-09	1.1E+02	2.9E-09	2.0E+02	5.3E-09
Tb-158	5.0E-03	1.0E+03	2.7E-05	1.4E+00	3.7E-11	3.1E+00	8.5E-11	4.4E+00	1.2E-10
Tb-160	5.0E-03	6.8E+02	1.8E-05	3.0E+01	8.2E-10	1.9E+01	5.2E-10	1.6E+01	4.4E-10
Tb-161	5.0E-03	1.4E+03	3.9E-05	4.2E+02	1.1E-08	1.1E+02	2.8E-09	9.5E+01	2.6E-09
Tb-163	5.0E-03	5.2E+04	1.4E-03	1.3E+04	3.4E-07	7.7E+03	2.1E-07	7.4E+03	2.0E-07
Dysprosium									
Dy-151	5.0E-03	5.8E+04	1.6E-03	2.5E+03	6.8E-08	1.1E+03	2.9E-08	1.0E+03	2.7E-08
Dy-152	5.0E-03	1.0E+04	2.8E-04	3.7E+03	9.9E-08	2.1E+03	5.7E-08	2.0E+03	5.5E-08
Dy-153	5.0E-03	6.3E+03	1.7E-04	1.9E+03	5.1E-08	1.1E+03	2.8E-08	1.0E+03	2.7E-08
Dy-154	5.0E-03	2.0E+01	5.4E-07	5.5E-03	1.5E-13	1.3E-02	3.5E-13	2.5E-02	6.7E-13
Dy-155	5.0E-03	7.9E+03	2.1E-04	2.2E+03	6.0E-08	1.4E+03	3.9E-08	1.4E+03	3.7E-08
Dy-157	5.0E-03	1.9E+04	5.1E-04	5.4E+03	1.5E-07	4.1E+03	1.1E-07	4.0E+03	1.1E-07
Dy-159	5.0E-03	1.0E+04	2.8E-04	2.8E+02	7.6E-09	3.4E+02	9.1E-09	2.9E+02	7.9E-09
Dy-165	5.0E-03	9.8E+03	2.7E-04	5.2E+03	1.4E-07	2.1E+03	5.8E-08	2.0E+03	5.4E-08
Dy-166	5.0E-03	6.4E+02	1.7E-05	2.4E+02	6.4E-09	6.9E+01	1.9E-09	6.3E+01	1.7E-09

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Holmium									
Ho-154	5.0E-03	2.7E+04	7.3E-04	1.2E+04	3.2E-07	8.6E+03	2.3E-07	8.3E+03	2.2E-07
Ho-155	5.0E-03	2.8E+04	7.7E-04	9.1E+03	2.5E-07	5.5E+03	1.5E-07	5.2E+03	1.4E-07
Ho-156	5.0E-03	1.1E+04	3.1E-04	4.0E+03	1.1E-07	2.4E+03	6.5E-08	2.3E+03	6.2E-08
Ho-157	5.0E-03	1.6E+05	4.2E-03	3.7E+04	1.0E-06	2.6E+04	7.1E-07	2.6E+04	6.9E-07
Ho-159	5.0E-03	1.3E+05	3.6E-03	3.2E+04	8.6E-07	2.0E+04	5.3E-07	1.9E+04	5.1E-07
Ho-160	5.0E-03	6.9E+04	1.9E-03	1.4E+04	3.7E-07	9.6E+03	2.6E-07	9.3E+03	2.5E-07
Ho-161	5.0E-03	8.5E+04	2.3E-03	3.1E+04	8.4E-07	1.8E+04	4.8E-07	1.7E+04	4.5E-07
Ho-162	5.0E-03	3.5E+05	9.3E-03	7.4E+04	2.0E-06	4.6E+04	1.2E-06	4.4E+04	1.2E-06
Ho-162m	5.0E-03	4.5E+04	1.2E-03	1.2E+04	3.2E-07	6.3E+03	1.7E-07	6.0E+03	1.6E-07
Ho-163	5.0E-03	3.7E+05	9.9E-03	5.3E+02	1.4E-08	1.3E+03	3.6E-08	2.8E+03	7.7E-08
Ho-164	5.0E-03	1.1E+05	3.1E-03	3.1E+04	8.3E-07	1.6E+04	4.2E-07	1.5E+04	4.0E-07
Ho-164m	5.0E-03	6.6E+04	1.8E-03	2.9E+04	8.0E-07	1.1E+04	2.9E-07	1.1E+04	3.0E-07
Ho-166	5.0E-03	7.6E+02	2.0E-05	4.2E+02	1.1E-08	1.9E+02	5.2E-09	1.8E+02	4.8E-09
Ho-166m	5.0E-03	5.7E+02	1.6E-05	5.1E-01	1.4E-11	1.2E+00	3.3E-11	2.5E+00	6.8E-11
Ho-167	5.0E-03	1.3E+04	3.4E-04	4.3E+03	1.2E-07	1.8E+03	4.8E-08	1.7E+03	4.5E-08
Erbium									
Er-156	5.0E-03	3.2E+04	8.7E-04	1.2E+04	3.2E-07	6.6E+03	1.8E-07	6.3E+03	1.7E-07
Er-159	5.0E-03	5.0E+04	1.4E-03	1.2E+04	3.2E-07	7.6E+03	2.0E-07	7.3E+03	2.0E-07
Er-161	5.0E-03	1.3E+04	3.6E-04	3.7E+03	9.9E-08	2.4E+03	6.6E-08	2.3E+03	6.3E-08
Er-163	5.0E-03	4.3E+05	1.2E-02	1.4E+05	3.8E-06	9.9E+04	2.7E-06	9.6E+04	2.6E-06
Er-165	5.0E-03	5.7E+04	1.5E-03	2.2E+04	5.9E-07	1.5E+04	4.0E-07	1.4E+04	3.9E-07
Er-169	5.0E-03	2.8E+03	7.7E-05	6.8E+02	1.8E-08	1.3E+02	3.6E-09	1.2E+02	3.2E-09
Er-171	5.0E-03	3.0E+03	8.2E-05	1.4E+03	3.9E-08	5.9E+02	1.6E-08	5.6E+02	1.5E-08
Er-172	5.0E-03	1.0E+03	2.8E-05	3.7E+02	1.0E-08	1.2E+02	3.2E-09	1.1E+02	2.9E-09

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Thulium									
Tm-161	5.0E-03	2.9E+04	7.8E-04	8.0E+03	2.2E-07	5.1E+03	1.4E-07	4.9E+03	1.3E-07
Tm-162	5.0E-03	2.8E+04	7.7E-04	9.8E+03	2.6E-07	6.5E+03	1.8E-07	6.3E+03	1.7E-07
Tm-163	5.0E-03	2.1E+04	5.7E-04	5.3E+03	1.4E-07	3.5E+03	9.3E-08	3.3E+03	9.0E-08
Tm-165	5.0E-03	3.1E+03	8.5E-05	1.1E+03	2.9E-08	5.8E+02	1.6E-08	5.5E+02	1.5E-08
Tm-166	5.0E-03	4.0E+03	1.1E-04	1.1E+03	3.1E-08	7.2E+02	1.9E-08	6.9E+02	1.9E-08
Tm-167	5.0E-03	1.8E+03	5.0E-05	4.4E+02	1.2E-08	1.1E+02	3.1E-09	1.0E+02	2.8E-09
Tm-168	5.0E-03	1.1E+03	3.0E-05	3.5E+01	9.4E-10	3.1E+01	8.3E-10	2.7E+01	7.3E-10
Tm-170	5.0E-03	8.1E+02	2.2E-05	3.3E+01	8.9E-10	2.0E+01	5.3E-10	1.5E+01	4.0E-10
Tm-171	5.0E-03	9.9E+03	2.7E-04	6.1E+01	1.6E-09	9.8E+01	2.7E-09	1.1E+02	2.9E-09
Tm-172	5.0E-03	6.3E+02	1.7E-05	2.9E+02	7.8E-09	1.1E+02	3.1E-09	1.1E+02	2.9E-09
Tm-173	5.0E-03	3.6E+03	9.7E-05	1.7E+03	4.5E-08	7.1E+02	1.9E-08	6.7E+02	1.8E-08
Tm-175	5.0E-03	4.3E+04	1.2E-03	1.1E+04	3.1E-07	7.0E+03	1.9E-07	6.7E+03	1.8E-07
Ytterbium									
Yb-162	5.0E-03	3.6E+04	9.8E-04	1.3E+04	3.4E-07	7.5E+03	2.0E-07	7.2E+03	1.9E-07
Yb-163	5.0E-03	7.1E+04	1.9E-03	2.2E+04	6.0E-07	1.5E+04	4.1E-07	1.5E+04	4.0E-07
Yb-164	5.0E-03	1.2E+04	3.2E-04	5.3E+03	1.4E-07	3.0E+03	8.0E-08	2.8E+03	7.7E-08
Yb-166	5.0E-03	1.2E+03	3.2E-05	3.5E+02	9.5E-09	1.8E+02	4.9E-09	1.7E+02	4.6E-09
Yb-167	5.0E-03	1.6E+05	4.4E-03	3.9E+04	1.0E-06	2.0E+04	5.3E-07	1.9E+04	5.0E-07
Yb-169	5.0E-03	1.3E+03	3.6E-05	1.5E+02	4.2E-09	4.7E+01	1.3E-09	4.0E+01	1.1E-09
Yb-175	5.0E-03	2.4E+03	6.6E-05	9.4E+02	2.5E-08	2.1E+02	5.6E-09	1.9E+02	5.0E-09
Yb-177	5.0E-03	1.2E+04	3.2E-04	4.8E+03	1.3E-07	1.9E+03	5.2E-08	1.8E+03	4.8E-08
Yb-178	5.0E-03	9.2E+03	2.5E-04	4.5E+03	1.2E-07	1.9E+03	5.0E-08	1.7E+03	4.7E-08
Lutetium									
Lu-165	5.0E-03	5.1E+04	1.4E-03	1.5E+04	4.1E-07	9.6E+03	2.6E-07	9.3E+03	2.5E-07

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Lu-167	5.0E-03	2.4E+04	6.4E-04	6.2E+03	1.7E-07	3.5E+03	9.4E-08	3.3E+03	8.9E-08
Lu-169	5.0E-03	2.2E+03	5.8E-05	5.4E+02	1.5E-08	3.1E+02	8.5E-09	2.9E+02	7.9E-09
Lu-170	5.0E-03	1.2E+03	3.3E-05	3.2E+02	8.7E-09	2.1E+02	5.6E-09	2.0E+02	5.4E-09
Lu-171	5.0E-03	1.6E+03	4.4E-05	4.2E+02	1.1E-08	1.5E+02	4.0E-09	1.4E+02	3.7E-09
Lu-172	5.0E-03	8.6E+02	2.3E-05	1.9E+02	5.0E-09	9.1E+01	2.5E-09	8.3E+01	2.3E-09
Lu-173	5.0E-03	3.0E+03	8.1E-05	2.9E+01	7.7E-10	4.3E+01	1.2E-09	3.8E+01	1.0E-09
Lu-174	5.0E-03	3.8E+03	1.0E-04	1.9E+01	5.0E-10	3.1E+01	8.3E-10	3.0E+01	8.2E-10
Lu-174m	5.0E-03	2.0E+03	5.3E-05	4.1E+01	1.1E-09	3.5E+01	9.5E-10	3.1E+01	8.4E-10
Lu-176	5.0E-03	6.0E+02	1.6E-05	9.4E-01	2.5E-11	2.0E+00	5.5E-11	2.5E+00	6.9E-11
Lu-176m	5.0E-03	6.5E+03	1.7E-04	3.1E+03	8.3E-08	1.2E+03	3.3E-08	1.1E+03	3.1E-08
Lu-177	5.0E-03	2.0E+03	5.4E-05	6.0E+02	1.6E-08	1.3E+02	3.5E-09	1.1E+02	3.1E-09
Lu-177m	5.0E-03	6.4E+02	1.7E-05	1.5E+01	4.0E-10	1.0E+01	2.8E-10	8.6E+00	2.3E-10
Lu-178	5.0E-03	2.3E+04	6.3E-04	9.9E+03	2.7E-07	5.4E+03	1.4E-07	5.1E+03	1.4E-07
Lu-178m	5.0E-03	3.3E+04	9.0E-04	7.4E+03	2.0E-07	4.3E+03	1.1E-07	4.1E+03	1.1E-07
Lu-179	5.0E-03	4.9E+03	1.3E-04	2.6E+03	7.0E-08	1.1E+03	3.1E-08	1.2E+03	3.1E-08
Hafnium									
Hf-170	2.0E-02	2.8E+03	7.5E-05	8.3E+02	2.3E-08	4.7E+02	1.3E-08	4.4E+02	1.2E-08
Hf-172	2.0E-02	1.0E+03	2.7E-05	4.1E+00	1.1E-10	6.6E+00	1.8E-10	5.5E+00	1.5E-10
Hf-173	2.0E-02	5.0E+03	1.4E-04	1.7E+03	4.5E-08	7.9E+02	2.1E-08	7.4E+02	2.0E-08
Hf-174	2.0E-02	4.6E+00	1.3E-07	4.7E-03	1.3E-13	1.2E-02	3.1E-13	2.8E-02	7.7E-13
Hf-175	2.0E-02	2.8E+03	7.5E-05	1.8E+02	4.9E-09	1.2E+02	3.2E-09	9.7E+01	2.6E-09
Hf-177m	2.0E-02	1.4E+04	3.7E-04	2.8E+03	7.6E-08	1.4E+03	3.9E-08	1.4E+03	3.7E-08
Hf-178m	2.0E-02	2.9E+02	8.0E-06	6.6E-01	1.8E-11	1.5E+00	4.0E-11	2.1E+00	5.7E-11
Hf-179m	2.0E-02	8.7E+02	2.3E-05	1.2E+02	3.1E-09	3.6E+01	9.6E-10	3.1E+01	8.3E-10
Hf-180m	2.0E-02	6.6E+03	1.8E-04	2.1E+03	5.6E-08	9.6E+02	2.6E-08	9.0E+02	2.4E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Hf-181	2.0E-02	9.8E+02	2.6E-05	8.7E+01	2.4E-09	2.7E+01	7.4E-10	2.3E+01	6.2E-10
Hf-182	2.0E-02	4.3E+02	1.2E-05	4.9E-01	1.3E-11	1.2E+00	3.3E-11	2.3E+00	6.1E-11
Hf-182m	2.0E-02	2.5E+04	6.7E-04	5.6E+03	1.5E-07	2.6E+03	7.1E-08	2.5E+03	6.7E-08
Hf-183	2.0E-02	1.5E+04	4.0E-04	5.0E+03	1.4E-07	2.2E+03	6.0E-08	2.1E+03	5.6E-08
Hf-184	2.0E-02	2.1E+03	5.6E-05	1.0E+03	2.7E-08	3.9E+02	1.1E-08	3.7E+02	1.0E-08
Tantalum									
Ta-172	1.0E-02	1.9E+04	5.2E-04	6.2E+03	1.7E-07	3.7E+03	1.0E-07	3.5E+03	9.5E-08
Ta-173	1.0E-02	1.0E+04	2.7E-04	3.8E+03	1.0E-07	1.7E+03	4.6E-08	1.6E+03	4.3E-08
Ta-174	1.0E-02	1.5E+04	4.2E-04	5.4E+03	1.5E-07	2.8E+03	7.5E-08	2.6E+03	7.1E-08
Ta-175	1.0E-02	4.8E+03	1.3E-04	1.5E+03	4.0E-08	8.9E+02	2.4E-08	8.4E+02	2.3E-08
Ta-176	1.0E-02	3.7E+03	9.9E-05	1.0E+03	2.8E-08	6.5E+02	1.8E-08	6.2E+02	1.7E-08
Ta-177	1.0E-02	1.0E+04	2.7E-04	3.8E+03	1.0E-07	1.3E+03	3.6E-08	1.2E+03	3.3E-08
Ta-178m	1.0E-02	1.3E+04	3.5E-04	3.5E+03	9.6E-08	1.8E+03	4.8E-08	1.7E+03	4.5E-08
Ta-179	1.0E-02	1.8E+04	5.0E-04	1.3E+03	3.4E-08	7.0E+02	1.9E-08	2.8E+02	7.5E-09
Ta-180	1.0E-02	1.9E+04	5.2E-04	8.9E+03	2.4E-07	2.9E+03	7.9E-08	3.0E+03	8.1E-08
Ta-182	1.0E-02	7.3E+02	2.0E-05	6.4E+01	1.7E-09	1.8E+01	4.9E-10	1.3E+01	3.6E-10
Ta-182m	1.0E-02	9.0E+04	2.4E-03	1.1E+04	2.8E-07	6.1E+03	1.7E-07	5.8E+03	1.6E-07
Ta-183	1.0E-02	7.9E+02	2.1E-05	3.2E+02	8.7E-09	6.7E+01	1.8E-09	6.0E+01	1.6E-09
Ta-184	1.0E-02	1.6E+03	4.4E-05	7.1E+02	1.9E-08	3.1E+02	8.5E-09	3.0E+02	8.0E-09
Ta-185	1.0E-02	1.6E+04	4.3E-04	6.2E+03	1.7E-07	2.8E+03	7.5E-08	2.6E+03	7.0E-08
Ta-186	1.0E-02	3.1E+04	8.5E-04	1.1E+04	2.8E-07	7.3E+03	2.0E-07	7.0E+03	1.9E-07
Tungsten									
W-177	6.0E-01	2.0E+04	5.5E-04	5.1E+03	1.4E-07	3.0E+03	8.2E-08	2.9E+03	7.8E-08
W-178	6.0E-01	4.5E+03	1.2E-04	1.5E+03	4.0E-08	1.9E+02	5.2E-09	1.6E+02	4.4E-09
W-179	6.0E-01	3.1E+05	8.4E-03	1.4E+05	3.7E-06	9.7E+04	2.6E-06	9.3E+04	2.5E-06

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
W-181	6.0E-01	1.3E+04	3.5E-04	4.1E+03	1.1E-07	7.3E+02	2.0E-08	4.6E+02	1.3E-08
W-185	6.0E-01	2.4E+03	6.5E-05	1.0E+03	2.8E-08	4.6E+01	1.3E-09	3.5E+01	9.6E-10
W-187	6.0E-01	1.8E+03	5.0E-05	6.6E+02	1.8E-08	3.3E+02	9.0E-09	3.1E+02	8.4E-09
W-188	6.0E-01	5.1E+02	1.4E-05	2.1E+02	5.6E-09	1.2E+01	3.3E-10	8.8E+00	2.4E-10
W-190	6.0E-01	1.3E+04	3.6E-04	3.5E+03	9.5E-08	1.9E+03	5.0E-08	1.8E+03	4.8E-08
Rhenium									
Re-178	1.0E+00	4.0E+04	1.1E-03	1.1E+04	3.0E-07	8.2E+03	2.2E-07	7.9E+03	2.1E-07
Re-179	1.0E+00	8.7E+04	2.4E-03	1.7E+04	4.5E-07	1.2E+04	3.2E-07	1.1E+04	3.1E-07
Re-181	1.0E+00	2.6E+03	7.0E-05	6.5E+02	1.7E-08	4.9E+02	1.3E-08	4.8E+02	1.3E-08
Re-182	1.0E+00	7.8E+02	2.1E-05	1.9E+02	5.2E-09	1.1E+02	2.9E-09	1.0E+02	2.7E-09
Re-182m	1.0E+00	3.9E+03	1.1E-04	8.4E+02	2.3E-08	6.1E+02	1.6E-08	5.9E+02	1.6E-08
Re-183	1.0E+00	1.1E+03	3.0E-05	3.5E+02	9.4E-09	4.9E+01	1.3E-09	3.8E+01	1.0E-09
Re-184	1.0E+00	1.1E+03	3.1E-05	2.8E+02	7.6E-09	7.1E+01	1.9E-09	5.9E+01	1.6E-09
Re-184m	1.0E+00	7.4E+02	2.0E-05	2.0E+02	5.5E-09	2.1E+01	5.6E-10	1.3E+01	3.6E-10
Re-186	1.0E+00	7.3E+02	2.0E-05	2.4E+02	6.4E-09	1.2E+02	3.3E-09	1.1E+02	3.1E-09
Re-186m	1.0E+00	4.8E+02	1.3E-05	1.4E+02	3.9E-09	1.1E+01	3.1E-10	2.3E+00	6.3E-11
Re-187	1.0E+00	2.2E+05	6.0E-03	6.9E+04	1.9E-06	2.1E+04	5.8E-07	3.5E+03	9.5E-08
Re-188	1.0E+00	7.6E+02	2.1E-05	2.5E+02	6.8E-09	2.3E+02	6.2E-09	2.3E+02	6.1E-09
Re-188m	1.0E+00	3.5E+04	9.5E-04	1.1E+04	3.1E-07	8.5E+03	2.3E-07	9.0E+03	2.4E-07
Re-189	1.0E+00	1.4E+03	3.8E-05	4.6E+02	1.2E-08	3.1E+02	8.3E-09	3.0E+02	8.0E-09
Re-190m	1.0E+00	2.9E+03	7.8E-05	7.8E+02	2.1E-08	6.3E+02	1.7E-08	6.2E+02	1.7E-08
Osmium									
Os-180	2.0E-02	6.1E+04	1.7E-03	1.5E+04	3.9E-07	8.9E+03	2.4E-07	8.5E+03	2.3E-07
Os-181	2.0E-02	1.2E+04	3.3E-04	3.6E+03	9.6E-08	2.1E+03	5.7E-08	2.0E+03	5.4E-08
Os-182	2.0E-02	2.0E+03	5.3E-05	6.7E+02	1.8E-08	3.4E+02	9.2E-09	3.2E+02	8.7E-09

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Os-183	2.0E-02	5.0E+03	1.3E-04	1.6E+03	4.3E-08	7.4E+02	2.0E-08	6.9E+02	1.9E-08
Os-183m	2.0E-02	5.5E+03	1.5E-04	1.5E+03	4.2E-08	9.2E+02	2.5E-08	8.6E+02	2.3E-08
Os-185	2.0E-02	2.3E+03	6.2E-05	1.2E+02	3.3E-09	1.1E+02	2.9E-09	8.7E+01	2.3E-09
Os-186	2.0E-02	3.4E+01	9.2E-07	1.7E-01	4.7E-12	1.1E-01	3.0E-12	3.3E-02	9.0E-13
Os-189m	2.0E-02	6.2E+04	1.7E-03	4.5E+04	1.2E-06	2.5E+04	6.7E-07	2.3E+04	6.3E-07
Os-191	2.0E-02	1.8E+03	5.0E-05	4.8E+02	1.3E-08	7.9E+01	2.1E-09	6.8E+01	1.8E-09
Os-191m	2.0E-02	1.1E+04	2.9E-04	4.8E+03	1.3E-07	9.2E+02	2.5E-08	8.2E+02	2.2E-08
Os-193	2.0E-02	1.3E+03	3.5E-05	7.7E+02	2.1E-08	2.6E+02	7.0E-09	2.4E+02	6.4E-09
Os-194	2.0E-02	4.3E+02	1.2E-05	1.1E+01	3.1E-10	6.3E+00	1.7E-10	1.7E+00	4.5E-11
Os-196	2.0E-02	9.9E+03	2.7E-04	4.6E+03	1.2E-07	2.4E+03	6.5E-08	2.3E+03	6.1E-08
Iridium									
Ir-182	2.0E-02	2.1E+04	5.7E-04	8.1E+03	2.2E-07	5.1E+03	1.4E-07	4.9E+03	1.3E-07
Ir-183	2.0E-02	2.1E+04	5.8E-04	5.7E+03	1.5E-07	3.4E+03	9.1E-08	3.2E+03	8.6E-08
Ir-184	2.0E-02	6.0E+03	1.6E-04	1.8E+03	4.9E-08	1.1E+03	2.9E-08	1.0E+03	2.7E-08
Ir-185	2.0E-02	3.4E+03	9.2E-05	1.1E+03	3.1E-08	5.8E+02	1.6E-08	5.5E+02	1.5E-08
Ir-186	2.0E-02	2.0E+03	5.4E-05	6.6E+02	1.8E-08	3.7E+02	1.0E-08	3.6E+02	9.7E-09
Ir-186m	2.0E-02	1.6E+04	4.2E-04	4.2E+03	1.1E-07	2.6E+03	7.1E-08	2.5E+03	6.8E-08
Ir-187	2.0E-02	9.7E+03	2.6E-04	3.5E+03	9.3E-08	1.7E+03	4.7E-08	1.7E+03	4.5E-08
Ir-188	2.0E-02	1.5E+03	4.1E-05	4.1E+02	1.1E-08	2.7E+02	7.4E-09	2.6E+02	7.1E-09
Ir-189	2.0E-02	4.5E+03	1.2E-04	1.1E+03	3.0E-08	2.7E+02	7.4E-09	2.4E+02	6.5E-09
Ir-190	2.0E-02	1.1E+03	2.9E-05	1.8E+02	4.9E-09	1.1E+02	2.9E-09	9.7E+01	2.6E-09
Ir-190m	2.0E-02	1.6E+05	4.3E-03	4.0E+04	1.1E-06	2.3E+04	6.3E-07	2.2E+04	5.8E-07
Ir-190n	2.0E-02	9.7E+03	2.6E-04	2.6E+03	7.1E-08	1.6E+03	4.3E-08	1.5E+03	4.1E-08
Ir-192	2.0E-02	8.0E+02	2.2E-05	7.1E+01	1.9E-09	2.6E+01	7.1E-10	2.1E+01	5.6E-10
Ir-192n	2.0E-02	1.2E+03	3.2E-05	1.9E+01	5.1E-10	1.1E+01	3.0E-10	2.5E+00	6.7E-11

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Ir-193m	2.0E-02	3.7E+03	9.9E-05	1.2E+03	3.3E-08	1.3E+02	3.5E-09	1.1E+02	3.0E-09
Ir-194	2.0E-02	8.0E+02	2.2E-05	5.6E+02	1.5E-08	2.4E+02	6.4E-09	2.2E+02	6.0E-09
Ir-194m	2.0E-02	5.6E+02	1.5E-05	2.4E+01	6.6E-10	1.6E+01	4.3E-10	1.1E+01	3.1E-10
Ir-195	2.0E-02	1.1E+04	2.9E-04	5.0E+03	1.3E-07	1.9E+03	5.2E-08	1.8E+03	4.9E-08
Ir-195m	2.0E-02	8.0E+03	2.2E-04	3.0E+03	8.1E-08	1.1E+03	3.0E-08	1.0E+03	2.8E-08
Ir-196m	2.0E-02	1.0E+04	2.8E-04	2.6E+03	7.0E-08	1.5E+03	4.0E-08	1.4E+03	3.8E-08
Platinum									
Pt-184	2.0E-02	3.8E+04	1.0E-03	8.8E+03	2.4E-07	5.2E+03	1.4E-07	4.9E+03	1.3E-07
Pt-186	2.0E-02	1.0E+04	2.8E-04	3.0E+03	8.1E-08	1.9E+03	5.0E-08	1.8E+03	4.8E-08
Pt-187	2.0E-02	1.3E+04	3.5E-04	4.0E+03	1.1E-07	1.9E+03	5.2E-08	1.8E+03	4.9E-08
Pt-188	2.0E-02	1.3E+03	3.6E-05	2.5E+02	6.9E-09	7.5E+01	2.0E-09	6.6E+01	1.8E-09
Pt-189	2.0E-02	5.6E+03	1.5E-04	2.0E+03	5.3E-08	7.8E+02	2.1E-08	7.3E+02	2.0E-08
Pt-190	2.0E-02	1.6E+02	4.2E-06	1.2E+00	3.2E-11	9.4E-02	2.6E-12	2.7E-02	7.3E-13
Pt-191	2.0E-02	3.0E+03	8.1E-05	1.1E+03	2.9E-08	3.9E+02	1.1E-08	3.6E+02	9.7E-09
Pt-193	2.0E-02	3.0E+04	8.0E-04	5.3E+03	1.4E-07	1.3E+03	3.6E-08	2.1E+02	5.6E-09
Pt-193m	2.0E-02	2.3E+03	6.3E-05	9.6E+02	2.6E-08	1.6E+02	4.2E-09	1.4E+02	3.8E-09
Pt-195m	2.0E-02	1.7E+03	4.5E-05	6.7E+02	1.8E-08	1.3E+02	3.5E-09	1.2E+02	3.2E-09
Pt-197	2.0E-02	2.5E+03	6.6E-05	1.3E+03	3.5E-08	3.8E+02	1.0E-08	3.5E+02	9.5E-09
Pt-197m	2.0E-02	1.3E+04	3.4E-04	5.1E+03	1.4E-07	1.8E+03	4.8E-08	1.6E+03	4.4E-08
Pt-199	2.0E-02	2.7E+04	7.4E-04	1.0E+04	2.7E-07	4.7E+03	1.3E-07	4.5E+03	1.2E-07
Pt-200	2.0E-02	9.1E+02	2.5E-05	5.5E+02	1.5E-08	2.3E+02	6.1E-09	2.1E+02	5.7E-09
Pt-202	2.0E-02	2.4E+02	6.5E-06	1.5E+02	4.1E-09	6.2E+01	1.7E-09	5.8E+01	1.6E-09
Gold									
Au-186	2.0E-01	2.5E+04	6.7E-04	9.4E+03	2.5E-07	6.4E+03	1.7E-07	6.2E+03	1.7E-07
Au-190	2.0E-01	2.7E+04	7.3E-04	7.3E+03	2.0E-07	5.4E+03	1.4E-07	5.2E+03	1.4E-07

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Au-191	2.0E-01	1.5E+04	4.2E-04	4.6E+03	1.2E-07	2.1E+03	5.7E-08	2.0E+03	5.4E-08
Au-192	2.0E-01	6.7E+03	1.8E-04	1.8E+03	5.0E-08	1.3E+03	3.6E-08	1.3E+03	3.5E-08
Au-193	2.0E-01	8.5E+03	2.3E-04	3.5E+03	9.4E-08	1.3E+03	3.6E-08	1.2E+03	3.3E-08
Au-194	2.0E-01	2.8E+03	7.7E-05	8.9E+02	2.4E-08	5.6E+02	1.5E-08	5.4E+02	1.5E-08
Au-195	2.0E-01	4.1E+03	1.1E-04	1.8E+03	4.8E-08	1.2E+02	3.3E-09	7.5E+01	2.0E-09
Au-196	2.0E-01	3.2E+03	8.7E-05	1.1E+03	2.9E-08	4.0E+02	1.1E-08	4.0E+02	1.1E-08
Au-196m	2.0E-01	2.8E+03	7.5E-05	1.1E+03	3.0E-08	3.3E+02	8.9E-09	3.0E+02	8.1E-09
Au-198	2.0E-01	1.0E+03	2.8E-05	5.7E+02	1.5E-08	1.7E+02	4.5E-09	1.5E+02	4.1E-09
Au-198m	2.0E-01	9.1E+02	2.4E-05	4.1E+02	1.1E-08	8.2E+01	2.2E-09	7.4E+01	2.0E-09
Au-199	2.0E-01	2.4E+03	6.5E-05	1.2E+03	3.2E-08	1.9E+02	5.1E-09	1.7E+02	4.5E-09
Au-200	2.0E-01	1.6E+04	4.4E-04	7.5E+03	2.0E-07	3.8E+03	1.0E-07	3.6E+03	9.8E-08
Au-200m	2.0E-01	1.1E+03	3.0E-05	4.4E+02	1.2E-08	2.0E+02	5.4E-09	1.9E+02	5.1E-09
Au-201	2.0E-01	4.5E+04	1.2E-03	1.4E+04	3.9E-07	7.8E+03	2.1E-07	7.4E+03	2.0E-07
Mercury									
Hg-190	4.0E-02 [e]	5.3E+04	1.4E-03	1.4E+04	3.8E-07	9.5E+03	2.6E-07	9.1E+03	2.5E-07
	1.0E+00 [f]	7.1E+04	1.9E-03	1.4E+04	3.8E-07	9.5E+03	2.6E-07	9.2E+03	2.5E-07
	8.0E-01 [g]	5.5E+04	1.5E-03				Vapor	1.8E+03	4.9E-08
Hg-191m	4.0E-02 [e]	2.1E+04	5.7E-04	5.5E+03	1.5E-07	3.1E+03	8.5E-08	3.0E+03	8.1E-08
	1.0E+00 [f]	3.4E+04	9.3E-04	5.6E+03	1.5E-07	3.2E+03	8.7E-08	3.1E+03	8.3E-08
	8.0E-01 [g]	2.4E+04	6.4E-04				Vapor	4.3E+02	1.2E-08
Hg-192	4.0E-02 [e]	5.0E+03	1.4E-04	1.7E+03	4.5E-08	1.1E+03	2.9E-08	1.0E+03	2.7E-08
	1.0E+00 [f]	1.7E+04	4.5E-04	1.8E+03	5.0E-08	1.2E+03	3.1E-08	1.1E+03	3.0E-08
	8.0E-01 [g]	6.8E+03	1.8E-04				Vapor	1.4E+02	3.8E-09
Hg-193	4.0E-02 [e]	1.1E+04	2.8E-04	3.3E+03	8.9E-08	1.7E+03	4.7E-08	1.7E+03	4.5E-08
	1.0E+00 [f]	2.9E+04	7.7E-04	3.5E+03	9.5E-08	1.9E+03	5.0E-08	1.8E+03	4.8E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

				Inhaled air, DCS					
	Ingested water, DCS			Type F		Type M		Type S	
	f_1	(Bq/L)	(μCi/mL)	(Bq/m^3)	(μCi/mL)	(Bq/m^3)	(μCi/mL)	(Bq/m^3)	(μCi/mL)
	8.0E-01 [g]	1.3E+04	3.6E-04				Vapor	1.6E+02	4.3E-09
Hg-193m	4.0E-02 [e]	2.6E+03	7.0E-05	9.4E+02	2.5E-08	4.9E+02	1.3E-08	4.6E+02	1.2E-08
	1.0E+00 [f]	8.3E+03	2.2E-04	1.0E+03	2.8E-08	5.3E+02	1.4E-08	5.1E+02	1.4E-08
	8.0E-01 [g]	3.6E+03	9.6E-05				Vapor	4.6E+01	1.3E-09
Hg-194	4.0E-02 [e]	9.4E+02	2.5E-05	1.1E+01	2.9E-10	1.7E+01	4.7E-10	6.1E+00	1.7E-10
	1.0E+00 [f]	2.6E+01	7.1E-07	9.8E+00	2.6E-10	1.1E+01	3.0E-10	5.0E+00	1.3E-10
	8.0E-01 [g]	6.4E+01	1.7E-06				Vapor	3.5E+00	9.6E-11
Hg-195	4.0E-02 [e]	1.1E+04	2.9E-04	4.5E+03	1.2E-07	1.7E+03	4.5E-08	1.5E+03	4.2E-08
	1.0E+00 [f]	3.1E+04	8.5E-04	5.0E+03	1.4E-07	1.8E+03	4.9E-08	1.7E+03	4.5E-08
	8.0E-01 [g]	1.4E+04	3.8E-04				Vapor	9.2E+01	2.5E-09
Hg-195m	4.0E-02 [e]	2.0E+03	5.3E-05	8.7E+02	2.4E-08	2.5E+02	6.8E-09	2.3E+02	6.2E-09
	1.0E+00 [f]	5.1E+03	1.4E-04	1.0E+03	2.8E-08	2.7E+02	7.2E-09	2.4E+02	6.6E-09
	8.0E-01 [g]	2.7E+03	7.4E-05				Vapor	1.7E+01	4.6E-10
Hg-197	4.0E-02 [e]	4.3E+03	1.2E-04	2.0E+03	5.3E-08	4.2E+02	1.1E-08	3.8E+02	1.0E-08
	1.0E+00 [f]	1.0E+04	2.8E-04	2.3E+03	6.3E-08	4.4E+02	1.2E-08	3.9E+02	1.1E-08
	8.0E-01 [g]	5.9E+03	1.6E-04				Vapor	3.0E+01	8.0E-10
Hg-197m	4.0E-02 [e]	2.2E+03	6.0E-05	1.0E+03	2.8E-08	2.5E+02	6.6E-09	2.2E+02	6.0E-09
	1.0E+00 [f]	7.3E+03	2.0E-04	1.2E+03	3.3E-08	2.6E+02	7.1E-09	2.4E+02	6.4E-09
	8.0E-01 [g]	3.2E+03	8.6E-05				Vapor	2.4E+01	6.4E-10
Hg-199m	4.0E-02 [e]	3.6E+04	9.6E-04	8.7E+03	2.3E-07	4.1E+03	1.1E-07	3.9E+03	1.1E-07
	1.0E+00 [f]	3.9E+04	1.1E-03	8.7E+03	2.4E-07	4.1E+03	1.1E-07	3.9E+03	1.1E-07
	8.0E-01 [g]	3.6E+04	9.7E-04				Vapor	7.9E+02	2.1E-08
Hg-203	4.0E-02 [e]	2.0E+03	5.5E-05	2.7E+02	7.3E-09	5.7E+01	1.5E-09	4.7E+01	1.3E-09
	1.0E+00 [f]	6.0E+02	1.6E-05	2.2E+02	6.0E-09	5.5E+01	1.5E-09	4.5E+01	1.2E-09
	8.0E-01 [g]	1.0E+03	2.8E-05				Vapor	2.0E+01	5.3E-10

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
	(e) Inorganic Mercury								
	(f) Methyl Mercury								
	(g) Organic Mercury								
Thallium									
Tl-194	1.0E+00	2.4E+04	6.5E-04	1.1E+04	2.9E-07	6.8E+03	1.8E-07	6.5E+03	1.8E-07
Tl-194m	1.0E+00	3.0E+04	8.0E-04	6.6E+03	1.8E-07	4.4E+03	1.2E-07	4.3E+03	1.1E-07
Tl-195	1.0E+00	4.7E+04	1.3E-03	8.4E+03	2.3E-07	5.3E+03	1.4E-07	5.1E+03	1.4E-07
Tl-196	1.0E+00	2.3E+04	6.2E-04	4.4E+03	1.2E-07	3.3E+03	8.9E-08	3.2E+03	8.7E-08
Tl-197	1.0E+00	5.0E+04	1.3E-03	8.3E+03	2.3E-07	3.6E+03	9.7E-08	3.3E+03	9.1E-08
Tl-198	1.0E+00	1.6E+04	4.4E-04	2.0E+03	5.4E-08	1.7E+03	4.5E-08	1.6E+03	4.5E-08
Tl-198m	1.0E+00	2.1E+04	5.6E-04	3.3E+03	8.8E-08	1.9E+03	5.3E-08	1.9E+03	5.0E-08
Tl-199	1.0E+00	4.2E+04	1.1E-03	6.2E+03	1.7E-07	2.8E+03	7.5E-08	2.6E+03	7.0E-08
Tl-200	1.0E+00	5.9E+03	1.6E-04	9.1E+02	2.5E-08	7.2E+02	1.9E-08	7.0E+02	1.9E-08
Tl-201	1.0E+00	1.1E+04	3.1E-04	2.6E+03	7.1E-08	7.5E+02	2.0E-08	6.8E+02	1.8E-08
Tl-202	1.0E+00	2.6E+03	7.1E-05	6.5E+02	1.8E-08	3.6E+02	9.6E-09	3.3E+02	8.9E-09
Tl-204	1.0E+00	9.1E+02	2.5E-05	3.0E+02	8.2E-09	2.1E+01	5.8E-10	7.3E+00	2.0E-10
Lead									
Pb-194	6.0E-01	5.5E+04	1.5E-03	1.5E+04	4.1E-07	1.0E+04	2.7E-07	9.6E+03	2.6E-07
Pb-195m	6.0E-01	4.6E+04	1.2E-03	8.8E+03	2.4E-07	5.7E+03	1.6E-07	5.5E+03	1.5E-07
Pb-196	6.0E-01	4.2E+04	1.1E-03	7.9E+03	2.1E-07	5.2E+03	1.4E-07	5.0E+03	1.4E-07
Pb-197m	6.0E-01	2.6E+04	6.9E-04	5.2E+03	1.4E-07	2.9E+03	7.7E-08	2.7E+03	7.3E-08
Pb-198	6.0E-01	1.5E+04	4.1E-04	3.0E+03	8.0E-08	2.0E+03	5.5E-08	2.0E+03	5.3E-08
Pb-199	6.0E-01	3.0E+04	8.1E-04	6.7E+03	1.8E-07	4.3E+03	1.2E-07	4.2E+03	1.1E-07
Pb-200	6.0E-01	3.1E+03	8.3E-05	8.9E+02	2.4E-08	4.0E+02	1.1E-08	3.7E+02	1.0E-08
Pb-201	6.0E-01	7.4E+03	2.0E-04	2.0E+03	5.5E-08	1.1E+03	3.1E-08	1.1E+03	2.9E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Pb-202	6.0E-01	7.0E+01	1.9E-06	6.9E+00	1.9E-10	7.7E+00	2.1E-10	2.8E+00	7.7E-11
Pb-202m	6.0E-01	8.1E+03	2.2E-04	2.0E+03	5.3E-08	1.3E+03	3.5E-08	1.2E+03	3.3E-08
Pb-203	6.0E-01	4.8E+03	1.3E-04	1.4E+03	3.9E-08	6.3E+02	1.7E-08	5.8E+02	1.6E-08
Pb-204m	6.0E-01	2.4E+04	6.6E-04	5.7E+03	1.5E-07	4.4E+03	1.2E-07	4.3E+03	1.2E-07
Pb-205	6.0E-01	4.2E+03	1.1E-04	4.4E+02	1.2E-08	5.8E+02	1.6E-08	1.7E+02	4.6E-09
Pb-209	6.0E-01	2.0E+04	5.3E-04	7.2E+03	1.9E-07	2.3E+03	6.3E-08	2.2E+03	5.8E-08
Pb-210	6.0E-01	1.4E+00	3.9E-08	1.5E-01	4.0E-12	1.2E-01	3.4E-12	2.5E-02	6.8E-13
Pb-211	6.0E-01	5.6E+03	1.5E-04	3.4E+01	9.3E-10	1.2E+01	3.2E-10	1.1E+01	3.0E-10
Pb-212	6.0E-01	1.4E+02	3.8E-06	6.9E+00	1.9E-10	8.1E-01	2.2E-11	7.3E-01	2.0E-11
Pb-214	6.0E-01	7.4E+03	2.0E-04	4.5E+01	1.2E-09	1.0E+01	2.8E-10	9.4E+00	2.5E-10
Bismuth									
Bi-200	1.0E-01	2.0E+04	5.5E-04	5.2E+03	1.4E-07	3.6E+03	9.6E-08	3.4E+03	9.3E-08
Bi-201	1.0E-01	9.8E+03	2.6E-04	2.5E+03	6.8E-08	1.7E+03	4.7E-08	1.7E+03	4.5E-08
Bi-202	1.0E-01	1.2E+04	3.1E-04	2.6E+03	7.1E-08	2.0E+03	5.5E-08	2.0E+03	5.4E-08
Bi-203	1.0E-01	2.3E+03	6.3E-05	6.3E+02	1.7E-08	4.5E+02	1.2E-08	4.4E+02	1.2E-08
Bi-204	1.0E-01	2.0E+03	5.5E-05	5.3E+02	1.4E-08	4.1E+02	1.1E-08	4.0E+02	1.1E-08
Bi-205	1.0E-01	1.3E+03	3.4E-05	3.2E+02	8.7E-09	1.4E+02	3.7E-09	1.2E+02	3.3E-09
Bi-206	1.0E-01	5.9E+02	1.6E-05	1.6E+02	4.4E-09	7.6E+01	2.0E-09	7.0E+01	1.9E-09
Bi-207	1.0E-01	8.9E+02	2.4E-05	2.5E+02	6.7E-09	2.4E+01	6.5E-10	3.7E+00	1.0E-10
Bi-208	1.0E-01	1.0E+03	2.8E-05	2.3E+02	6.3E-09	3.0E+01	8.2E-10	3.9E+00	1.1E-10
Bi-210	1.0E-01	8.1E+02	2.2E-05	1.2E+02	3.2E-09	1.5E+00	4.0E-11	1.0E+00	2.8E-11
Bi-210m	1.0E-01	7.3E+01	2.0E-06	2.8E+00	7.5E-11	4.0E-02	1.1E-12	1.4E-02	3.8E-13
Bi-212	1.0E-01	4.2E+03	1.1E-04	1.5E+01	3.9E-10	4.4E+00	1.2E-10	4.1E+00	1.1E-10
Bi-213	1.0E-01	5.4E+03	1.5E-04	1.3E+01	3.4E-10	4.5E+00	1.2E-10	4.2E+00	1.1E-10
Bi-214	1.0E-01	9.8E+03	2.6E-04	1.8E+01	4.9E-10	9.2E+00	2.5E-10	8.7E+00	2.4E-10

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Polonium									
Po-203	1.0E+00	2.5E+04	6.7E-04	4.9E+03	1.3E-07	2.9E+03	7.9E-08	2.8E+03	7.5E-08
	2.0E-01	2.2E+04	5.8E-04						
Po-204	1.0E+00	4.8E+03	1.3E-04	9.4E+02	2.5E-08	3.6E+02	9.6E-09	3.3E+02	8.8E-09
	2.0E-01	3.9E+03	1.0E-04						
Po-205	1.0E+00	2.1E+04	5.8E-04	4.3E+03	1.2E-07	2.9E+03	7.8E-08	2.8E+03	7.5E-08
	2.0E-01	2.1E+04	5.6E-04						
Po-206	1.0E+00	6.1E+01	1.7E-06	1.5E+01	4.0E-10	2.4E+00	6.5E-11	2.1E+00	5.7E-11
	2.0E-01	2.3E+02	6.1E-06						
Po-207	1.0E+00	1.1E+04	2.9E-04	2.1E+03	5.7E-08	1.4E+03	3.9E-08	1.4E+03	3.7E-08
	2.0E-01	8.4E+03	2.3E-04						
Po-208	1.0E+00	6.7E-01	1.8E-08	1.6E-01	4.3E-12	3.6E-02	9.8E-13	2.0E-02	5.5E-13
	2.0E-01	3.3E+00	8.9E-08						
Po-209	1.0E+00	6.7E-01	1.8E-08	1.6E-01	4.3E-12	3.7E-02	1.0E-12	1.5E-02	4.0E-13
	2.0E-01	3.3E+00	9.0E-08						
Po-210	1.0E+00	8.3E-01	2.3E-08	2.0E-01	5.3E-12	4.2E-02	1.1E-12	3.2E-02	8.7E-13
	2.0E-01	4.1E+00	1.1E-07						
Astatine									
At-205	1.0E+00	1.9E+04	5.0E-04	6.0E+02	1.6E-08	2.1E+02	5.6E-09	1.9E+02	5.2E-09
At-206	1.0E+00	1.7E+04	4.5E-04	2.9E+03	7.8E-08	6.5E+02	1.7E-08	5.8E+02	1.6E-08
At-207	1.0E+00	4.8E+03	1.3E-04	3.9E+02	1.0E-08	6.8E+01	1.9E-09	6.3E+01	1.7E-09
At-208	1.0E+00	1.2E+04	3.3E-04	1.9E+03	5.0E-08	3.6E+02	9.7E-09	2.3E+02	6.2E-09
At-209	1.0E+00	2.9E+03	7.9E-05	4.2E+02	1.1E-08	5.5E+01	1.5E-09	5.0E+01	1.3E-09
At-210	1.0E+00	1.2E+03	3.4E-05	3.2E+02	8.5E-09	1.7E+01	4.7E-10	1.3E+01	3.5E-10
At-211	1.0E+00	9.9E+01	2.7E-06	8.1E+00	2.2E-10	1.3E+00	3.5E-11	1.2E+00	3.1E-11

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Francium									
Fr-212	1.0E+00	1.7E+03	4.5E-05	6.5E+01	1.8E-09	2.3E+01	6.3E-10	2.2E+01	5.8E-10
Fr-222	1.0E+00	1.6E+03	4.4E-05	9.8E+00	2.6E-10	5.2E+00	1.4E-10	4.9E+00	1.3E-10
Fr-223	1.0E+00	4.5E+02	1.2E-05	1.3E+02	3.6E-09	1.3E+01	3.5E-10	1.1E+01	3.1E-10
Radium									
Ra-223	6.0E-01	6.7E+00	1.8E-07	8.2E-01	2.2E-11	1.9E-02	5.1E-13	1.6E-02	4.3E-13
Ra-224	6.0E-01	1.2E+01	3.1E-07	1.4E+00	3.8E-11	4.7E-02	1.3E-12	4.1E-02	1.1E-12
Ra-225	6.0E-01	6.1E+00	1.7E-07	7.5E-01	2.0E-11	2.2E-02	6.0E-13	1.8E-02	4.8E-13
Ra-226	6.0E-01	3.2E+00	8.7E-08	3.2E-01	8.7E-12	3.9E-02	1.1E-12	1.5E-02	4.0E-13
Ra-227	6.0E-01	1.3E+04	3.6E-04	3.1E+02	8.3E-09	5.2E+02	1.4E-08	6.2E+02	1.7E-08
Ra-228	6.0E-01	9.1E-01	2.5E-08	1.0E-01	2.8E-12	4.9E-02	1.3E-12	8.8E-03	2.4E-13
Ra-230	6.0E-01	6.1E+03	1.6E-04	2.1E+03	5.6E-08	1.2E+03	3.2E-08	1.1E+03	3.0E-08
Actinium									
Ac-224	5.0E-03	5.3E+02	1.4E-05	1.7E+01	4.6E-10	1.4E+00	3.7E-11	1.2E+00	3.3E-11
Ac-225	5.0E-03	2.8E+01	7.6E-07	1.5E-01	4.0E-12	1.9E-02	5.1E-13	1.6E-02	4.4E-13
Ac-226	5.0E-03	1.0E+02	2.7E-06	1.1E+00	2.9E-11	1.2E-01	3.2E-12	1.1E-01	2.9E-12
Ac-227	5.0E-03	3.7E+00	1.0E-07	9.3E-04	2.5E-14	2.0E-03	5.4E-14	2.5E-03	6.9E-14
Ac-228	5.0E-03	2.8E+03	7.7E-05	1.1E+01	3.0E-10	1.1E+01	3.1E-10	9.4E+00	2.5E-10
Thorium									
Th-226	5.0E-03	3.1E+03	8.3E-05	6.2E+00	1.7E-10	2.4E+00	6.5E-11	2.2E+00	6.0E-11
Th-227	5.0E-03	1.0E+02	2.7E-06	1.7E-01	4.7E-12	1.6E-02	4.5E-13	1.3E-02	3.6E-13
Th-228	5.0E-03	1.3E+01	3.4E-07	4.4E-03	1.2E-13	4.3E-03	1.2E-13	3.5E-03	9.4E-14
Th-229	5.0E-03	2.4E+00	6.5E-08	6.0E-04	1.6E-14	1.3E-03	3.6E-14	2.0E-03	5.4E-14
Th-230	5.0E-03	5.8E+00	1.6E-07	1.4E-03	3.9E-14	3.5E-03	9.4E-14	1.0E-02	2.8E-13
Th-231	5.0E-03	3.2E+03	8.6E-05	1.5E+03	4.1E-08	4.2E+02	1.1E-08	4.0E+02	1.1E-08

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Th-232	5.0E-03	5.3E+00	1.4E-07	1.3E-03	3.5E-14	3.2E-03	8.7E-14	5.9E-03	1.6E-13
Th-233	5.0E-03	5.0E+04	1.3E-03	1.4E+04	3.9E-07	7.5E+03	2.0E-07	7.1E+03	1.9E-07
Th-234	5.0E-03	3.1E+02	8.4E-06	4.5E+01	1.2E-09	2.0E+01	5.4E-10	1.8E+01	4.7E-10
Th-236	5.0E-03	1.3E+04	3.4E-04	4.9E+03	1.3E-07	2.4E+03	6.4E-08	2.2E+03	6.1E-08
Protactinium									
Pa-227	5.0E-03	2.4E+03	6.4E-05	6.1E+00	1.6E-10	1.9E+00	5.1E-11	1.8E+00	4.8E-11
Pa-228	5.0E-03	1.4E+03	3.6E-05	3.3E+00	9.0E-11	2.3E+00	6.3E-11	1.9E+00	5.2E-11
Pa-229	5.0E-03	1.3E+04	3.5E-04	1.4E+02	3.7E-09	2.2E+01	6.0E-10	1.9E+01	5.2E-10
Pa-230	5.0E-03	1.2E+03	3.3E-05	2.1E+00	5.6E-11	2.6E-01	7.1E-12	2.1E-01	5.5E-12
Pa-231	5.0E-03	2.6E+00	7.1E-08	6.4E-04	1.7E-14	1.6E-03	4.3E-14	5.0E-03	1.4E-13
Pa-232	5.0E-03	1.6E+03	4.5E-05	1.3E+02	3.4E-09	1.4E+02	3.8E-09	5.8E+01	1.6E-09
Pa-233	5.0E-03	1.1E+03	3.0E-05	1.1E+02	2.9E-09	3.8E+01	1.0E-09	3.3E+01	8.9E-10
Pa-234	5.0E-03	2.6E+03	7.1E-05	9.3E+02	2.5E-08	4.0E+02	1.1E-08	3.8E+02	1.0E-08
Pa-235	5.0E-03	4.1E+04	1.1E-03	1.5E+04	4.0E-07	8.0E+03	2.2E-07	7.6E+03	2.1E-07
Uranium									
U-230	4.0E-02	2.0E+01	5.5E-07	3.5E-01	9.6E-12	1.0E-02	2.8E-13	8.6E-03	2.3E-13
U-231	4.0E-02	3.2E+03	8.5E-05	1.5E+03	4.1E-08	2.8E+02	7.7E-09	2.6E+02	7.0E-09
U-232	4.0E-02	3.6E+00	9.8E-08	3.3E-02	8.8E-13	1.7E-02	4.7E-13	3.9E-03	1.0E-13
U-233	4.0E-02	2.4E+01	6.6E-07	2.4E-01	6.4E-12	3.9E-02	1.0E-12	1.5E-02	3.9E-13
U-234	4.0E-02	2.5E+01	6.8E-07	2.5E-01	6.6E-12	4.0E-02	1.1E-12	1.5E-02	4.0E-13
U-235	4.0E-02	2.7E+01	7.2E-07	2.6E-01	7.1E-12	4.5E-02	1.2E-12	1.7E-02	4.5E-13
U-235m	4.0E-02	2.5E+08	6.8E+00	2.0E+08	5.4E-03	1.7E+08	4.5E-03	1.6E+08	4.4E-03
U-236	4.0E-02	2.7E+01	7.2E-07	2.6E-01	7.0E-12	4.3E-02	1.2E-12	1.6E-02	4.4E-13
U-237	4.0E-02	1.4E+03	3.7E-05	6.6E+02	1.8E-08	8.2E+01	2.2E-09	7.2E+01	1.9E-09
U-238	4.0E-02	2.8E+01	7.5E-07	2.7E-01	7.4E-12	4.8E-02	1.3E-12	1.7E-02	4.7E-13

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
U-239	4.0E-02	3.9E+04	1.1E-03	1.2E+04	3.2E-07	5.7E+03	1.6E-07	5.4E+03	1.5E-07
U-240	4.0E-02	9.8E+02	2.6E-05	6.0E+02	1.6E-08	2.4E+02	6.6E-09	2.3E+02	6.2E-09
U-242	4.0E-02	2.1E+04	5.6E-04	7.6E+03	2.1E-07	4.7E+03	1.3E-07	4.5E+03	1.2E-07
Neptunium									
Np-232	5.0E-03	1.2E+05	3.2E-03	1.3E+03	3.4E-08	2.9E+03	7.8E-08	5.5E+03	1.5E-07
Np-233	5.0E-03	5.0E+05	1.3E-02	9.9E+04	2.7E-06	6.9E+04	1.9E-06	6.6E+04	1.8E-06
Np-234	5.0E-03	1.8E+03	4.8E-05	4.4E+02	1.2E-08	3.0E+02	8.0E-09	2.8E+02	7.6E-09
Np-235	5.0E-03	1.8E+04	5.0E-04	1.8E+02	4.8E-09	2.8E+02	7.5E-09	2.4E+02	6.5E-09
Np-236	5.0E-03	5.4E+01	1.5E-06	1.3E-02	3.6E-13	3.3E-02	9.0E-13	1.0E-01	2.7E-12
Np-236m	5.0E-03	5.5E+03	1.5E-04	1.6E+01	4.2E-10	2.7E+01	7.2E-10	3.3E+01	8.8E-10
Np-237	5.0E-03	1.2E+01	3.2E-07	3.0E-03	8.1E-14	6.6E-03	1.8E-13	1.2E-02	3.2E-13
Np-238	5.0E-03	1.2E+03	3.3E-05	4.2E+01	1.1E-09	6.7E+01	1.8E-09	9.1E+01	2.4E-09
Np-239	5.0E-03	1.3E+03	3.6E-05	6.7E+02	1.8E-08	1.4E+02	3.8E-09	1.3E+02	3.5E-09
Np-240	5.0E-03	1.5E+04	4.1E-04	3.8E+03	1.0E-07	1.9E+03	5.1E-08	1.8E+03	4.8E-08
Np-241	5.0E-03	7.0E+04	1.9E-03	1.5E+04	4.2E-07	1.1E+04	2.9E-07	1.1E+04	2.9E-07
Plutonium									
Pu-232	5.0E-03	8.0E+03	2.2E-04	2.1E+01	5.8E-10	6.2E+00	1.7E-10	5.8E+00	1.6E-10
Pu-234	5.0E-03	7.0E+03	1.9E-04	4.1E+01	1.1E-09	6.7E+00	1.8E-10	5.9E+00	1.6E-10
Pu-235	5.0E-03	5.0E+05	1.3E-02	1.1E+05	3.0E-06	8.0E+04	2.2E-06	7.7E+04	2.1E-06
Pu-236	5.0E-03	1.3E+01	3.6E-07	3.6E-03	9.7E-14	7.3E-03	2.0E-13	1.3E-02	3.6E-13
Pu-237	5.0E-03	9.7E+03	2.6E-04	4.6E+02	1.2E-08	3.8E+02	1.0E-08	3.5E+02	9.3E-09
Pu-238	5.0E-03	5.6E+00	1.5E-07	1.4E-03	3.7E-14	3.2E-03	8.8E-14	8.9E-03	2.4E-13
Pu-239	5.0E-03	5.1E+00	1.4E-07	1.2E-03	3.4E-14	3.0E-03	8.1E-14	9.0E-03	2.4E-13
Pu-240	5.0E-03	5.1E+00	1.4E-07	1.2E-03	3.4E-14	3.0E-03	8.1E-14	8.9E-03	2.4E-13
Pu-241	5.0E-03	2.8E+02	7.6E-06	6.5E-02	1.8E-12	1.7E-01	4.6E-12	8.6E-01	2.3E-11

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Pu-242	5.0E-03	5.3E+00	1.4E-07	1.3E-03	3.5E-14	3.1E-03	8.5E-14	9.5E-03	2.6E-13
Pu-243	5.0E-03	1.2E+04	3.4E-04	4.0E+03	1.1E-07	1.6E+03	4.3E-08	1.5E+03	4.1E-08
Pu-244	5.0E-03	5.4E+00	1.4E-07	1.3E-03	3.6E-14	3.2E-03	8.7E-14	9.9E-03	2.7E-13
Pu-245	5.0E-03	1.6E+03	4.2E-05	7.8E+02	2.1E-08	3.2E+02	8.6E-09	3.0E+02	8.1E-09
Pu-246	5.0E-03	3.9E+02	1.0E-05	5.8E+01	1.6E-09	3.1E+01	8.3E-10	2.9E+01	7.9E-10
Americium									
Am-237	5.0E-03	6.1E+04	1.7E-03	1.1E+04	3.0E-07	5.2E+03	1.4E-07	4.9E+03	1.3E-07
Am-238	5.0E-03	3.6E+04	9.8E-04	7.8E+02	2.1E-08	1.6E+03	4.4E-08	2.5E+03	6.8E-08
Am-239	5.0E-03	4.4E+03	1.2E-04	1.6E+03	4.2E-08	5.7E+02	1.6E-08	5.4E+02	1.5E-08
Am-240	5.0E-03	1.9E+03	5.2E-05	5.0E+02	1.3E-08	3.0E+02	8.0E-09	2.9E+02	8.0E-09
Am-241	5.0E-03	6.2E+00	1.7E-07	1.5E-03	4.1E-14	3.6E-03	9.7E-14	8.9E-03	2.4E-13
Am-242	5.0E-03	3.5E+03	9.4E-05	1.1E+01	3.0E-10	7.9E+00	2.1E-10	7.0E+00	1.9E-10
Am-242m	5.0E-03	6.8E+00	1.8E-07	1.6E-03	4.4E-14	4.1E-03	1.1E-13	1.3E-02	3.5E-13
Am-243	5.0E-03	6.2E+00	1.7E-07	1.5E-03	4.2E-14	3.6E-03	9.8E-14	9.2E-03	2.5E-13
Am-244	5.0E-03	2.4E+03	6.4E-05	3.9E+01	1.1E-09	7.2E+01	1.9E-09	1.1E+02	3.1E-09
Am-244m	5.0E-03	3.6E+04	9.9E-04	9.0E+02	2.4E-08	1.7E+03	4.7E-08	2.4E+03	6.4E-08
Am-245	5.0E-03	1.7E+04	4.7E-04	5.9E+03	1.6E-07	2.5E+03	6.7E-08	2.3E+03	6.3E-08
Am-246	5.0E-03	1.7E+04	4.6E-04	3.5E+03	9.4E-08	1.8E+03	4.8E-08	1.7E+03	4.6E-08
Am-246m	5.0E-03	3.2E+04	8.6E-04	8.9E+03	2.4E-07	5.6E+03	1.5E-07	5.5E+03	1.5E-07
Am-247	5.0E-03	3.6E+04	9.7E-04	9.0E+03	2.4E-07	5.0E+03	1.3E-07	4.8E+03	1.3E-07
Curium									
Cm-238	5.0E-03	1.8E+04	4.8E-04	2.9E+02	7.8E-09	7.7E+01	2.1E-09	7.3E+01	2.0E-09
Cm-239	5.0E-03	1.3E+04	3.6E-04	4.7E+03	1.3E-07	2.0E+03	5.4E-08	1.9E+03	5.1E-08
Cm-240	5.0E-03	1.3E+02	3.5E-06	9.9E-02	2.7E-12	4.4E-02	1.2E-12	4.0E-02	1.1E-12
Cm-241	5.0E-03	1.2E+03	3.2E-05	5.3E+00	1.4E-10	3.8E+00	1.0E-10	3.7E+00	1.0E-10

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Cm-242	5.0E-03	7.6E+01	2.1E-06	3.8E-02	1.0E-12	2.6E-02	7.1E-13	2.3E-02	6.3E-13
Cm-243	5.0E-03	8.1E+00	2.2E-07	2.1E-03	5.7E-14	4.7E-03	1.3E-13	9.7E-03	2.6E-13
Cm-244	5.0E-03	9.7E+00	2.6E-07	2.6E-03	6.9E-14	5.5E-03	1.5E-13	1.0E-02	2.8E-13
Cm-245	5.0E-03	6.0E+00	1.6E-07	1.5E-03	4.1E-14	3.5E-03	9.5E-14	9.0E-03	2.4E-13
Cm-246	5.0E-03	6.1E+00	1.6E-07	1.5E-03	4.1E-14	3.5E-03	9.5E-14	9.0E-03	2.4E-13
Cm-247	5.0E-03	6.6E+00	1.8E-07	1.6E-03	4.4E-14	3.9E-03	1.0E-13	1.0E-02	2.7E-13
Cm-248	5.0E-03	1.6E+00	4.4E-08	4.1E-04	1.1E-14	1.0E-03	2.7E-14	3.0E-03	8.0E-14
Cm-249	5.0E-03	3.5E+04	9.4E-04	3.6E+03	9.7E-08	4.0E+03	1.1E-07	4.0E+03	1.1E-07
Cm-250	5.0E-03	2.4E-01	6.4E-09	6.0E-05	1.6E-15	1.5E-04	4.0E-15	4.6E-04	1.2E-14
Cm-251	5.0E-03	3.8E+04	1.0E-03	9.1E+03	2.5E-07	5.5E+03	1.5E-07	5.4E+03	1.5E-07
Berkelium									
Bk-245	5.0E-03	1.9E+03	5.0E-05	2.1E+02	5.7E-09	6.5E+01	1.8E-09	6.1E+01	1.6E-09
Bk-246	5.0E-03	2.5E+03	6.8E-05	4.7E+02	1.3E-08	4.7E+02	1.3E-08	4.5E+02	1.2E-08
Bk-247	5.0E-03	3.3E+00	8.9E-08	8.5E-04	2.3E-14	2.1E-03	5.6E-14	7.2E-03	1.9E-13
Bk-248m	5.0E-03	2.4E+03	6.5E-05	5.4E+00	1.5E-10	7.5E+00	2.0E-10	8.6E+00	2.3E-10
Bk-249	5.0E-03	1.2E+03	3.2E-05	3.4E-01	9.3E-12	8.8E-01	2.4E-11	3.8E+00	1.0E-10
Bk-250	5.0E-03	8.0E+03	2.2E-04	6.5E+01	1.7E-09	1.4E+02	3.7E-09	2.9E+02	7.8E-09
Bk-251	5.0E-03	2.9E+04	7.7E-04	4.8E+03	1.3E-07	3.0E+03	8.0E-08	3.2E+03	8.6E-08
Californium									
Cf-244	5.0E-03	1.5E+04	4.1E-04	2.0E+01	5.3E-10	1.0E+01	2.7E-10	9.5E+00	2.6E-10
Cf-246	5.0E-03	3.2E+02	8.5E-06	1.6E+00	4.3E-11	3.1E-01	8.3E-12	2.8E-01	7.5E-12
Cf-247	5.0E-03	5.1E+04	1.4E-03	2.9E+03	7.8E-08	3.3E+03	8.8E-08	3.6E+03	9.8E-08
Cf-248	5.0E-03	3.1E+01	8.4E-07	1.1E-02	3.0E-13	1.5E-02	4.2E-13	1.8E-02	4.7E-13
Cf-249	5.0E-03	3.3E+00	8.9E-08	8.5E-04	2.3E-14	2.1E-03	5.6E-14	7.0E-03	1.9E-13
Cf-250	5.0E-03	6.6E+00	1.8E-07	1.8E-03	5.0E-14	4.2E-03	1.1E-13	9.7E-03	2.6E-13

Table 5: Derived Concentration Standards for Members of the Public from Ingested Water and Inhaled Air (cont'd)

	Ingested water, DCS			Inhaled air, DCS					
				Type F		Type M		Type S	
	f_1	(Bq/L)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)	(Bq/m^3)	(µCi/mL)
Cf-251	5.0E-03	3.2E+00	8.7E-08	8.3E-04	2.2E-14	2.0E-03	5.5E-14	6.9E-03	1.9E-13
Cf-252	5.0E-03	9.7E+00	2.6E-07	3.4E-03	9.2E-14	6.7E-03	1.8E-13	9.9E-03	2.7E-13
Cf-253	5.0E-03	5.3E+02	1.4E-05	2.7E-01	7.2E-12	1.0E-01	2.8E-12	8.6E-02	2.3E-12
Cf-254	5.0E-03	2.4E+00	6.6E-08	2.9E-03	7.8E-14	3.2E-03	8.7E-14	3.1E-03	8.5E-14
Cf-255	5.0E-03	2.7E+04	7.2E-04	7.8E+01	2.1E-09	2.4E+01	6.5E-10	2.0E+01	5.5E-10
Einsteinium									
Es-249	5.0E-03	5.4E+04	1.4E-03	1.1E+03	3.1E-08	6.0E+02	1.6E-08	6.3E+02	1.7E-08
Es-250	5.0E-03	2.4E+03	6.4E-05	2.4E+01	6.6E-10	5.1E+01	1.4E-09	1.0E+02	2.8E-09
Es-250m	5.0E-03	3.7E+04	1.0E-03	9.4E+01	2.6E-09	2.1E+02	5.7E-09	4.8E+02	1.3E-08
Es-251	5.0E-03	6.0E+03	1.6E-04	1.5E+02	4.1E-09	6.5E+01	1.8E-09	6.5E+01	1.8E-09
Es-253	5.0E-03	1.6E+02	4.3E-06	2.3E-01	6.2E-12	5.1E-02	1.4E-12	4.4E-02	1.2E-12
Es-254	5.0E-03	3.2E+01	8.6E-07	1.2E-02	3.3E-13	1.6E-02	4.3E-13	1.7E-02	4.7E-13
Es-254m	5.0E-03	2.4E+02	6.6E-06	1.8E+00	5.0E-11	2.9E-01	7.9E-12	2.7E-01	7.2E-12
Es-255	5.0E-03	1.5E+02	4.0E-06	1.2E-01	3.1E-12	3.6E-02	9.7E-13	3.0E-02	8.2E-13
Es-256	5.0E-03	3.8E+02	1.0E-05	1.5E+01	4.1E-10	3.6E+00	9.7E-11	3.3E+00	8.9E-11
Fermium									
Fm-251	5.0E-03	1.5E+04	4.0E-04	4.1E+02	1.1E-08	7.5E+01	2.0E-09	7.0E+01	1.9E-09
Fm-252	5.0E-03	3.6E+02	9.9E-06	1.9E+00	5.2E-11	3.9E-01	1.1E-11	3.6E-01	9.8E-12
Fm-253	5.0E-03	8.4E+02	2.3E-05	1.6E+00	4.2E-11	3.5E-01	9.5E-12	3.0E-01	8.2E-12
Fm-254	5.0E-03	2.3E+03	6.3E-05	8.3E+00	2.2E-10	2.2E+00	5.9E-11	2.0E+00	5.5E-11
Fm-255	5.0E-03	4.1E+02	1.1E-05	3.2E+00	8.7E-11	5.2E-01	1.4E-11	4.7E-01	1.3E-11
Fm-256	5.0E-03	5.9E+01	1.6E-06	2.1E+00	5.8E-11	5.7E-01	1.5E-11	5.3E-01	1.4E-11
Fm-257	5.0E-03	5.0E+01	1.3E-06	2.4E-02	6.5E-13	1.9E-02	5.0E-13	1.6E-02	4.4E-13

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(μCi/mL)
Carbon				
C-10	19.255	s	4.0E+02	1.1E-08
C-11	20.39	m	6.9E+02	1.9E-08
Nitrogen				
N-13	9.965	m	6.9E+02	1.9E-08
N-16	7.13	s	1.2E+02	3.3E-09
Oxygen				
O-14	70.606	s	1.9E+02	5.3E-09
O-15	122.24	s	6.9E+02	1.9E-08
O-19	26.464	s	6.9E+02	1.9E-08
Fluorine				
F-17	64.49	s	6.9E+02	1.9E-08
F-18	109.77	m	7.2E+02	1.9E-08
Neon				
Ne-19	17.22	s	6.8E+02	1.8E-08
Ne-24	3.38	m	1.3E+03	3.5E-08
Sodium				
Na-24	14.959	h	1.5E+02	4.1E-09
Magnesium				
Mg-27	9.458	m	7.6E+02	2.1E-08
Aluminum				
Al-28	2.2414	m	3.6E+02	9.6E-09
Al-29	6.56	m	4.7E+02	1.3E-08
Phosphorus				
P-30	2.498	m	6.8E+02	1.8E-08
Sulphur				
S-37	5.05	m	2.1E+02	5.6E-09
S-38	170.3	m	3.7E+02	1.0E-08
Chlorine				
Cl-34	1.5264	s	6.6E+02	1.8E-08
Cl-34m	32	m	3.1E+02	8.3E-09
Cl-38	37.24	m	4.3E+02	1.2E-08
Cl-39	55.6	m	4.5E+02	1.2E-08
Cl-40	1.35	m	1.5E+02	4.1E-09
Argon				
Ar-37	35.04	d	1.2E+08	3.1E-03
Ar-39	269	y	2.8E+05	7.4E-06
Ar-41	109.61	m	5.2E+02	1.4E-08
Ar-42	32.9	y	2.5E+05	6.8E-06
Ar-43	5.37	m	4.2E+02	1.1E-08
Ar-44	11.87	m	3.3E+02	9.1E-09

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(μCi/mL)
Potassium				
K-38	7.636	m	2.0E+02	5.5E-09
K-44	22.13	m	2.7E+02	7.2E-09
K-45	17.3	m	3.5E+02	9.5E-09
K-46	105	s	2.2E+02	5.8E-09
Calcium				
Ca-49	8.718	m	1.9E+02	5.1E-09
Scandium				
Sc-42m	62	s	1.6E+02	4.3E-09
Sc-43	3.891	h	7.2E+02	1.9E-08
Sc-44	3.97	h	3.2E+02	8.7E-09
Sc-50	1.03E+02	s	2.1E+02	5.6E-09
Titanium				
Ti-45	184.8	m	8.1E+02	2.2E-08
Ti-51	5.76	m	1.9E+03	5.0E-08
Ti-52	1.7	m	5.5E+03	1.5E-07
Vanadium				
V-47	32.6	m	7.0E+02	1.9E-08
V-52	3.743	m	4.5E+02	1.2E-08
V-53	1.61	m	6.4E+02	1.7E-08
Chromium				
Cr-49	42.3	m	6.8E+02	1.8E-08
Cr-55	3.497	m	3.2E+04	8.6E-07
Cr-56	5.94	m	9.1E+03	2.5E-07
Manganese				
Mn-50m	1.75	m	1.5E+02	3.9E-09
Mn-51	46.2	m	7.0E+02	1.9E-08
Mn-52m	21.1	m	2.8E+02	7.6E-09
Mn-56	2.5789	h	3.9E+02	1.0E-08
Mn-57	85.4	s	6.0E+03	1.6E-07
Mn-58m	65.2	s	2.8E+02	7.4E-09
Iron				
Fe-53	8.51	m	5.9E+02	1.6E-08
Fe-53m	2.526	m	2.2E+02	5.9E-09
Fe-61	5.98	m	4.7E+02	1.3E-08
Fe-62	68	s	1.4E+03	3.7E-08
Cobalt				
Co-54m	1.48	m	1.7E+02	4.6E-09
Co-62	1.5	m	4.0E+02	1.1E-08
Co-62m	13.91	m	2.4E+02	6.6E-09
Copper				
Cu-57	0.1963	s	5.6E+02	1.5E-08
Cu-59	81.5	s	4.7E+02	1.3E-08

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(µCi/mL)
Cu-60	23.7	m	1.7E+02	4.6E-09
Cu-61	3.333	h	8.6E+02	2.3E-08
Cu-62	9.673	m	6.9E+02	1.9E-08
Cu-66	5.12	m	5.8E+03	1.6E-07
Cu-69	2.85	m	1.3E+03	3.4E-08
Zinc				
Zn-60	2.38	m	4.6E+02	1.2E-08
Zn-61	89.1	s	4.4E+02	1.2E-08
Zn-63	38.47	m	6.4E+02	1.7E-08
Zn-71m	3.96	h	4.5E+02	1.2E-08
Zn-71	2.45	m	2.1E+03	5.6E-08
Gallium				
Ga-64	2.627	m	1.9E+02	5.2E-09
Ga-65	15.2	m	6.1E+02	1.6E-08
Ga-66	9.49	h	2.6E+02	6.9E-09
Ga-68	67.71	m	7.4E+02	2.0E-08
Ga-74	8.12	m	2.0E+02	5.5E-09
Germanium				
Ge-66	2.26	h	1.1E+03	2.9E-08
Ge-67	18.9	m	4.8E+02	1.3E-08
Arsenic				
As-68	151.6	s	1.8E+02	4.9E-09
As-69	15.23	m	6.0E+02	1.6E-08
As-70	52.6	m	1.6E+02	4.3E-09
As-78	90.7	m	5.1E+02	1.4E-08
As-79	9.01	m	1.4E+04	3.8E-07
Selenium				
Se-70	41.1	m	1.0E+03	2.7E-08
Se-71	4.74	m	4.3E+02	1.2E-08
Se-73m	39.8	m	2.7E+03	7.3E-08
Se-77m	17.36	s	8.6E+03	2.3E-07
Se-79m	3.92	m	8.8E+04	2.4E-06
Se-83	22.3	m	2.6E+02	6.9E-09
Se-83m	70.1	s	6.6E+02	1.8E-08
Se-84	3.1	m	1.7E+03	4.5E-08
Bromine				
Br-72	78.6	s	2.2E+02	6.1E-09
Br-73	3.4	m	4.9E+02	1.3E-08
Br-74	25.4	m	1.4E+02	3.7E-09
Br-74m	46	m	1.6E+02	4.3E-09
Br-75	96.7	m	5.9E+02	1.6E-08
Br-76	16.2	h	2.4E+02	6.4E-09
Br-76m	1.31	s	3.3E+04	8.9E-07

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(μCi/mL)
Br-77m	4.28	m	5.3E+04	1.4E-06
Br-78	6.46	m	6.8E+02	1.8E-08
Br-80	17.68	m	8.0E+03	2.2E-07
Br-82m	6.13	m	2.0E+05	5.4E-06
Br-84	31.8	m	3.6E+02	9.6E-09
Br-84m	6	m	2.4E+02	6.5E-09
Br-85	2.9	m	8.0E+03	2.2E-07
Krypton				
Kr-74	11.5	m	6.7E+02	1.8E-08
Kr-75	4.29	m	5.4E+02	1.5E-08
Kr-76	14.8	h	1.7E+03	4.7E-08
Kr-77	74.4	m	6.8E+02	1.8E-08
Kr-79	35.04	h	2.9E+03	7.7E-08
Kr-81	2.29E+05	y	8.3E+05	2.2E-05
Kr-81m	13.1	s	5.7E+03	1.5E-07
Kr-83m	1.83	h	2.9E+07	7.8E-04
Kr-85	10.756	y	1.3E+05	3.6E-06
Kr-85m	4.48	h	4.6E+03	1.3E-07
Kr-87	76.3	m	8.0E+02	2.2E-08
Kr-88	2.84	h	3.3E+02	8.8E-09
Kr-89	3.15	m	3.3E+02	9.0E-09
Rubidium				
Rb-77	3.77	m	4.5E+02	1.2E-08
Rb-78	17.66	m	1.6E+02	4.2E-09
Rb-78m	5.74	m	2.1E+02	5.6E-09
Rb-79	22.9	m	4.9E+02	1.3E-08
Rb-80	33.4	s	5.7E+02	1.5E-08
Rb-81	4.576	h	1.4E+03	3.8E-08
Rb-82	1.273	m	6.2E+02	1.7E-08
Rb-82m	6.472	h	2.4E+02	6.4E-09
Rb-84m	20.26	m	1.9E+03	5.1E-08
Rb-86m	1.017	m	1.3E+03	3.5E-08
Rb-88	17.78	m	9.4E+02	2.5E-08
Rb-89	15.15	m	2.9E+02	7.9E-09
Rb-90	158	s	2.9E+02	7.9E-09
Rb-90m	258	s	1.9E+02	5.3E-09
Strontium				
Sr-79	2.25	m	5.9E+02	1.6E-08
Sr-81	22.3	m	5.1E+02	1.4E-08
Sr-85m	67.63	m	3.4E+03	9.1E-08
Sr-87m	2.815	h	2.2E+03	6.1E-08
Sr-92	2.66	h	4.9E+02	1.3E-08
Sr-93	7.423	m	3.0E+02	8.0E-09

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(µCi/mL)
Sr-94	75.3	s	4.6E+02	1.2E-08
Yttrium				
Y-81	70.4	s	5.9E+02	1.6E-08
Y-83	7.08	m	5.1E+02	1.4E-08
Y-83m	2.85	m	8.4E+02	2.3E-08
Y-84m	39.5	m	1.7E+02	4.7E-09
Y-85	2.68	h	6.5E+02	1.8E-08
Y-85m	4.86	h	5.1E+02	1.4E-08
Y-86	14.74	h	1.9E+02	5.1E-09
Y-86m	48	m	3.3E+03	8.9E-08
Y-89m	15.663	s	7.6E+02	2.1E-08
Y-90m	3.19	h	1.1E+03	3.1E-08
Y-91m	49.71	m	1.3E+03	3.6E-08
Y-94	18.7	m	8.3E+02	2.2E-08
Y-95	10.3	m	5.5E+02	1.5E-08
Zirconium				
Zr-85	7.86	m	4.7E+02	1.3E-08
Zr-87	1.68	h	7.5E+02	2.0E-08
Zr-89m	4.161	m	1.1E+03	3.0E-08
Niobium				
Nb-87	3.75	m	5.7E+02	1.5E-08
Nb-88	14.5	m	1.6E+02	4.4E-09
Nb-88m	7.78	m	1.7E+02	4.5E-09
Nb-89	2.03	h	4.9E+02	1.3E-08
Nb-89m	66	m	5.4E+02	1.5E-08
Nb-90	14.6	h	1.5E+02	4.2E-09
Nb-94m	6.263	m	1.5E+05	4.0E-06
Nb-97	72.1	m	1.0E+03	2.8E-08
Nb-98m	51.3	m	2.4E+02	6.5E-09
Nb-99	15	s	3.8E+03	1.0E-07
Nb-99m	2.6	m	8.2E+02	2.2E-08
Molybdenum				
Mo-89	2.11	m	5.6E+02	1.5E-08
Mo-91	15.49	m	7.0E+02	1.9E-08
Mo-91m	64.6	s	4.9E+02	1.3E-08
Mo-93m	6.85	h	2.9E+02	7.9E-09
Mo-101	14.61	m	4.5E+02	1.2E-08
Technetium				
Tc-91	3.14	m	2.6E+02	7.1E-09
Tc-91m	3.3	m	4.8E+02	1.3E-08
Tc-92	4.25	m	1.8E+02	4.8E-09
Tc-93	2.75	h	4.2E+02	1.1E-08
Tc-93m	43.5	m	6.8E+02	1.8E-08

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(μCi/mL)
Tc-94	293	m	2.6E+02	7.1E-09
Tc-94m	52	m	3.5E+02	9.4E-09
Tc-95	20	h	8.8E+02	2.4E-08
Tc-96m	51.5	m	1.6E+04	4.4E-07
Tc-99m	6.015	h	6.0E+03	1.6E-07
Tc-101	14.2	m	2.1E+03	5.6E-08
Tc-102	5.28	s	5.4E+03	1.5E-07
Tc-102m	4.35	m	2.7E+02	7.3E-09
Tc-104	18.3	m	2.9E+02	7.8E-09
Tc-105	7.6	m	8.4E+02	2.3E-08
Ruthenium				
Ru-92	3.65	m	3.4E+02	9.1E-09
Ru-94	51.8	m	1.4E+03	3.8E-08
Ru-95	1.643	h	5.6E+02	1.5E-08
Ru-107	3.75	m	1.9E+03	5.1E-08
Ru-108	4.55	m	1.1E+04	2.9E-07
Rhodium				
Rh-94	70.6	s	1.8E+02	4.7E-09
Rh-95	5.02	m	2.6E+02	7.1E-09
Rh-95m	1.96	m	7.4E+02	2.0E-08
Rh-96	9.9	m	1.8E+02	4.7E-09
Rh-96m	1.51	m	5.3E+02	1.4E-08
Rh-97	30.7	m	4.8E+02	1.3E-08
Rh-97m	46.2	m	3.0E+02	8.1E-09
Rh-98	8.7	m	3.8E+02	1.0E-08
Rh-99m	4.7	h	1.1E+03	3.0E-08
Rh-100	20.8	h	2.4E+02	6.5E-09
Rh-100m	4.6	m	1.6E+04	4.2E-07
Rh-104	42.3	s	2.3E+04	6.1E-07
Rh-104m	4.34	m	3.5E+04	9.4E-07
Rh-106	29.8	s	3.0E+03	8.0E-08
Rh-106m	131	m	2.4E+02	6.5E-09
Rh-107	21.7	m	2.2E+03	6.1E-08
Rh-108	16.8	s	2.0E+03	5.3E-08
Rh-109	80	s	2.3E+03	6.2E-08
Palladium				
Pd-96	122	s	4.9E+02	1.3E-08
Pd-97	3.1	m	2.8E+02	7.6E-09
Pd-98	17.7	m	1.8E+03	4.9E-08
Pd-99	21.4	m	5.4E+02	1.5E-08
Pd-109m	4.69	m	6.9E+03	1.9E-07
Pd-114	2.42	m	2.1E+04	5.7E-07
Silver				

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(µCi/mL)
Ag-99	124	s	2.9E+02	7.9E-09
Ag-100m	2.24	m	2.4E+02	6.4E-09
Ag-101	11.1	m	4.4E+02	1.2E-08
Ag-102	12.9	m	2.0E+02	5.4E-09
Ag-102m	7.7	m	3.3E+02	8.8E-09
Ag-103	65.7	m	8.4E+02	2.3E-08
Ag-104	69.2	m	2.6E+02	6.9E-09
Ag-104m	33.5	m	3.8E+02	1.0E-08
Ag-105m	7.23	m	7.2E+05	1.9E-05
Ag-106	23.96	m	1.0E+03	2.7E-08
Ag-108	2.37	m	2.5E+04	6.7E-07
Ag-109m	39.6	s	2.0E+05	5.4E-06
Ag-110	24.6	s	1.3E+04	3.5E-07
Ag-111m	64.8	s	1.9E+05	5.1E-06
Ag-113m	68.7	s	3.3E+03	9.0E-08
Ag-114	4.6	s	2.2E+03	5.9E-08
Ag-115	20	m	1.3E+03	3.6E-08
Ag-116	2.68	m	3.0E+02	8.0E-09
Ag-117	73.6	s	4.9E+02	1.3E-08
Cadmium				
Cd-101	1.36	m	2.7E+02	7.3E-09
Cd-102	5.5	m	8.5E+02	2.3E-08
Cd-103	7.3	m	3.2E+02	8.6E-09
Cd-105	55.5	m	5.2E+02	1.4E-08
Cd-111m	48.5	m	2.6E+03	7.1E-08
Cd-117	2.49	h	6.2E+02	1.7E-08
Cd-117m	3.36	h	3.2E+02	8.7E-09
Cd-119	2.69	m	4.0E+02	1.1E-08
Cd-119m	2.2	m	2.9E+02	7.7E-09
Indium				
In-103	60	s	2.4E+02	6.6E-09
In-105	5.07	m	3.5E+02	9.5E-09
In-106m	5.2	m	2.3E+02	6.3E-09
In-106	6.2	m	1.9E+02	5.3E-09
In-107	32.4	m	4.4E+02	1.2E-08
In-108m	39.6	m	2.3E+02	6.3E-09
In-108	58	m	1.8E+02	4.7E-09
In-109m	1.34	m	1.2E+03	3.1E-08
In-109	4.2	h	1.1E+03	3.0E-08
In-110m	69.1	m	4.4E+02	1.2E-08
In-110	4.9	h	2.2E+02	6.1E-09
In-111m	7.7	m	1.5E+03	4.1E-08
In-112	14.97	m	2.7E+03	7.2E-08

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(µCi/mL)
In-113m	1.6579	h	2.8E+03	7.6E-08
In-114	71.9	s	4.4E+04	1.2E-06
In-116m	54.41	m	2.7E+02	7.3E-09
In-117	43.2	m	1.0E+03	2.8E-08
In-118m	4.364	m	2.4E+02	6.5E-09
In-118	5	s	5.5E+03	1.5E-07
In-119	2.4	m	9.0E+02	2.4E-08
In-121m	3.88	m	8.1E+03	2.2E-07
In-121	23.1	s	7.3E+02	2.0E-08
Tin				
Sn-106	1.92	m	5.9E+02	1.6E-08
Sn-108	10.3	m	1.1E+03	2.9E-08
Sn-109	18	m	3.0E+02	8.2E-09
Sn-111	35.3	m	1.4E+03	3.9E-08
Sn-125m	9.52	m	2.0E+03	5.4E-08
Sn-127m	4.13	m	1.2E+03	3.2E-08
Sn-127	2.1	h	3.5E+02	9.5E-09
Sn-128	59.07	m	1.3E+03	3.4E-08
Sn-129	2.23	m	6.7E+02	1.8E-08
Sn-130m	1.7	m	7.5E+02	2.0E-08
Sn-130	3.72	m	7.6E+02	2.1E-08
Antimony				
Sb-111	75	s	4.7E+02	1.3E-08
Sb-113	6.67	m	5.5E+02	1.5E-08
Sb-114	3.49	m	2.5E+02	6.7E-09
Sb-115	32.1	m	8.0E+02	2.2E-08
Sb-116	15.8	m	2.9E+02	7.9E-09
Sb-116m	60.3	m	2.2E+02	6.0E-09
Sb-117	2.8	h	4.4E+03	1.2E-07
Sb-118	3.6	m	8.7E+02	2.3E-08
Sb-118m	5	h	2.6E+02	7.1E-09
Sb-120	15.89	m	1.6E+03	4.3E-08
Sb-122m	4.191	m	1.8E+04	4.8E-07
Sb-124m	93	s	1.6E+03	4.3E-08
Sb-126m	19.15	m	4.5E+02	1.2E-08
Sb-128	9.01	h	2.2E+02	6.1E-09
Sb-128m	10.4	m	3.6E+02	9.8E-09
Sb-129	4.4	h	4.6E+02	1.3E-08
Sb-130	39.5	m	2.1E+02	5.7E-09
Sb-130m	6.3	m	2.5E+02	6.8E-09
Sb-131	23.03	m	3.2E+02	8.7E-09
Sb-133	2.5	m	2.4E+02	6.4E-09
Tellurium				

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(µCi/mL)
Te-113	1.7	m	3.0E+02	8.2E-09
Te-114	15.2	m	5.4E+02	1.4E-08
Te-115	5.8	m	3.0E+02	8.2E-09
Te-115m	6.7	m	2.6E+02	7.0E-09
Te-117	62	m	4.4E+02	1.2E-08
Te-119	16.05	h	9.2E+02	2.5E-08
Te-131	25	m	1.7E+03	4.5E-08
Te-133	12.5	m	5.6E+02	1.5E-08
Te-133m	55.4	m	3.7E+02	9.9E-09
Te-134	41.8	m	8.2E+02	2.2E-08
Iodine				
I-118	13.7	m	3.4E+02	9.1E-09
I-118m	8.5	m	1.9E+02	5.0E-09
I-119	19.1	m	7.8E+02	2.1E-08
I-120	81.6	m	2.5E+02	6.7E-09
I-120m	53	m	1.9E+02	5.3E-09
I-122	3.63	m	7.2E+02	2.0E-08
I-130m	8.84	m	6.5E+03	1.8E-07
I-132	2.295	h	3.0E+02	8.2E-09
I-134	52.5	m	2.6E+02	7.1E-09
I-134m	3.6	m	2.7E+03	7.2E-08
Xenon				
Xe-120	40	m	1.9E+03	5.2E-08
Xe-121	40.1	m	4.6E+02	1.2E-08
Xe-122	20.1	h	1.4E+04	3.9E-07
Xe-123	2.08	h	1.1E+03	3.0E-08
Xe-125	16.9	h	2.9E+03	7.9E-08
Xe-127	36.4	d	2.8E+03	7.6E-08
Xe-127m	69.2	s	4.8E+03	1.3E-07
Xe-129m	8.88	d	3.5E+04	9.3E-07
Xe-131m	11.84	d	8.9E+04	2.4E-06
Xe-133	5.243	d	2.3E+04	6.3E-07
Xe-133m	2.19	d	2.5E+04	6.6E-07
Xe-135	9.14	h	2.9E+03	7.8E-08
Xe-135m	15.29	m	1.7E+03	4.5E-08
Xe-137	3.818	m	3.0E+03	8.2E-08
Xe-138	14.08	m	5.8E+02	1.6E-08
Cesium				
Cs-121	155	s	5.9E+02	1.6E-08
Cs-121m	122	s	5.9E+02	1.6E-08
Cs-123	5.88	m	6.5E+02	1.8E-08
Cs-124	30.8	s	5.8E+02	1.6E-08
Cs-125	45	m	9.4E+02	2.5E-08

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(µCi/mL)
Cs-126	1.64	m	6.0E+02	1.6E-08
Cs-127	6.25	h	1.7E+03	4.7E-08
Cs-128	3.64	m	7.8E+02	2.1E-08
Cs-130	29.21	m	1.4E+03	3.8E-08
Cs-130m	3.46	m	1.6E+04	4.3E-07
Cs-135m	53	m	4.3E+02	1.2E-08
Cs-138	33.41	m	2.8E+02	7.4E-09
Cs-138m	2.91	m	1.7E+03	4.5E-08
Cs-139	9.27	m	1.9E+03	5.2E-08
Cs-140	63.7	s	3.6E+02	9.6E-09
Barium				
Ba-124	11	m	1.3E+03	3.4E-08
Ba-127	12.7	m	9.7E+02	2.6E-08
Ba-129	2.23	h	2.2E+03	5.9E-08
Ba-129m	2.16	h	4.4E+02	1.2E-08
Ba-131m	14.6	m	1.2E+04	3.2E-07
Ba-137m	2.552	m	1.2E+03	3.2E-08
Ba-141	18.27	m	7.3E+02	2.0E-08
Ba-142	10.6	m	6.5E+02	1.8E-08
Lanthanum				
La-128	5.18	m	2.4E+02	6.6E-09
La-129	11.6	m	7.7E+02	2.1E-08
La-130	8.7	m	3.1E+02	8.3E-09
La-131	59	m	1.1E+03	3.0E-08
La-132	4.8	h	3.4E+02	9.2E-09
La-132m	24.3	m	1.1E+03	2.9E-08
La-133	3.912	h	5.0E+03	1.3E-07
La-134	6.45	m	9.7E+02	2.6E-08
La-136	9.87	m	1.8E+03	4.8E-08
La-142	91.1	m	2.7E+02	7.2E-09
La-143	14.2	m	2.3E+03	6.2E-08
Cerium				
Ce-130	22.9	m	1.5E+03	4.0E-08
Ce-131	10.2	m	4.3E+02	1.2E-08
Ce-133	97	m	1.4E+03	3.8E-08
Ce-133m	4.9	h	4.0E+02	1.1E-08
Ce-135	17.7	h	8.8E+02	2.4E-08
Ce-145	3.01	m	8.7E+02	2.4E-08
Praseodymium				
Pr-134	11	m	2.2E+02	5.9E-09
Pr-134m	17	m	2.9E+02	7.9E-09
Pr-135	24	m	8.1E+02	2.2E-08
Pr-136	13.1	m	3.2E+02	8.6E-09

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(µCi/mL)
Pr-137	1.28	h	2.0E+03	5.3E-08
Pr-138	1.45	m	8.5E+02	2.3E-08
Pr-138m	2.12	h	2.8E+02	7.6E-09
Pr-140	3.39	m	1.3E+03	3.5E-08
Pr-144m	7.2	m	1.3E+05	3.4E-06
Pr-146	24.15	m	6.4E+02	1.7E-08
Pr-147	13.4	m	1.5E+03	3.9E-08
Pr-148	2.29	m	6.6E+02	1.8E-08
Pr-148m	2.01	m	7.3E+02	2.0E-08
Neodymium				
Nd-134	8.5	m	1.4E+03	3.7E-08
Nd-135	12.4	m	5.6E+02	1.5E-08
Nd-137	38.5	m	5.9E+02	1.6E-08
Nd-139	29.7	m	1.6E+03	4.4E-08
Nd-139m	5.5	h	4.4E+02	1.2E-08
Nd-141	2.49	h	1.2E+04	3.2E-07
Nd-141m	62	s	1.0E+03	2.7E-08
Nd-151	12.44	m	8.1E+02	2.2E-08
Nd-152	11.4	m	4.3E+03	1.2E-07
Promethium				
Pm-136	107	s	2.5E+02	6.9E-09
Pm-137m	2.4	m	4.0E+02	1.1E-08
Pm-139	4.15	m	7.4E+02	2.0E-08
Pm-140	9.2	s	6.4E+02	1.7E-08
Pm-140m	5.95	m	2.3E+02	6.2E-09
Pm-141	20.9	m	9.5E+02	2.6E-08
Pm-142	40.5	s	8.0E+02	2.2E-08
Pm-150	2.68	h	4.5E+02	1.2E-08
Pm-152	4.12	m	2.2E+03	5.9E-08
Pm-152m	7.52	m	4.5E+02	1.2E-08
Pm-153	5.25	m	9.3E+03	2.5E-07
Pm-154	1.73	m	3.6E+02	9.8E-09
Pm-154m	2.68	m	3.7E+02	1.0E-08
Samarium				
Sm-139	2.57	m	4.8E+02	1.3E-08
Sm-140	14.82	m	1.3E+03	3.4E-08
Sm-141	10.2	m	4.9E+02	1.3E-08
Sm-141m	22.6	m	3.6E+02	9.6E-09
Sm-143	8.75	m	1.3E+03	3.6E-08
Sm-143m	66	s	1.0E+03	2.8E-08
Sm-157	8.03	m	1.7E+03	4.5E-08
Europium				
Eu-142	2.34	s	5.5E+02	1.5E-08

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(µCi/mL)
Eu-142m	1.223	m	2.0E+02	5.4E-09
Eu-143	2.59	m	6.0E+02	1.6E-08
Eu-144	10.2	s	6.1E+02	1.7E-08
Eu-152n	96	m	1.2E+04	3.3E-07
Eu-154m	46	m	1.5E+04	4.0E-07
Eu-158	45.9	m	5.2E+02	1.4E-08
Eu-159	18.1	m	2.4E+03	6.5E-08
Gadolinium				
Gd-142	70.2	s	6.6E+02	1.8E-08
Gd-143m	110	s	3.2E+02	8.8E-09
Gd-144	4.47	m	7.5E+02	2.0E-08
Gd-145	23	m	2.7E+02	7.3E-09
Gd-145m	85	s	1.0E+03	2.8E-08
Gd-162	8.4	m	1.7E+03	4.6E-08
Terbium				
Tb-146	23	s	1.8E+02	4.9E-09
Tb-147	1.64	h	3.1E+02	8.4E-09
Tb-147m	1.87	m	3.5E+02	9.4E-09
Tb-148	60	m	2.9E+02	7.7E-09
Tb-148m	2.2	m	2.2E+02	6.0E-09
Tb-149m	4.16	m	5.1E+02	1.4E-08
Tb-150	3.48	h	2.7E+02	7.3E-09
Tb-150m	5.8	m	2.8E+02	7.6E-09
Tb-151m	25	s	9.9E+03	2.7E-07
Tb-152m	4.2	m	9.7E+02	2.6E-08
Tb-154	21.5	h	2.9E+02	7.7E-09
Tb-162	7.6	m	6.3E+02	1.7E-08
Tb-163	19.5	m	9.0E+02	2.4E-08
Tb-164	3	m	2.8E+02	7.5E-09
Tb-165	2.11	m	7.8E+02	2.1E-08
Dysprosium				
Dy-148	3.3	m	1.0E+03	2.7E-08
Dy-149	4.2	m	4.2E+02	1.1E-08
Dy-150	7.17	m	2.7E+03	7.3E-08
Dy-151	17.9	m	5.0E+02	1.4E-08
Dy-153	6.4	h	8.3E+02	2.2E-08
Dy-155	9.9	h	1.1E+03	2.9E-08
Dy-157	8.14	h	2.2E+03	5.9E-08
Dy-165m	1.257	m	4.5E+04	1.2E-06
Dy-167	6.2	m	1.3E+03	3.6E-08
Dy-168	8.7	m	1.8E+03	5.0E-08
Holmium				
Ho-150	76.8	s	3.6E+02	9.8E-09

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(µCi/mL)
Ho-153	2.01	m	6.9E+02	1.9E-08
Ho-153m	9.3	m	6.7E+02	1.8E-08
Ho-154	11.76	m	3.7E+02	9.9E-09
Ho-154m	3.1	m	2.9E+02	7.9E-09
Ho-155	48	m	1.2E+03	3.2E-08
Ho-156	56	m	3.2E+02	8.8E-09
Ho-157	12.6	m	1.3E+03	3.5E-08
Ho-159	33.05	m	2.1E+03	5.6E-08
Ho-160	25.6	m	4.1E+02	1.1E-08
Ho-162	15	m	4.8E+03	1.3E-07
Ho-162m	67	m	1.3E+03	3.5E-08
Ho-168	2.99	m	7.8E+02	2.1E-08
Ho-168m	132	s	2.1E+05	5.7E-06
Ho-170	2.76	m	4.0E+02	1.1E-08
Erbium				
Er-154	3.73	m	1.4E+04	3.8E-07
Er-159	36	m	7.3E+02	2.0E-08
Er-161	3.21	h	7.1E+02	1.9E-08
Er-163	75	m	3.2E+04	8.7E-07
Er-167m	2.269	s	7.9E+03	2.1E-07
Er-173	1.434	m	8.5E+02	2.3E-08
Thulium				
Tm-161	30.2	m	5.4E+02	1.5E-08
Tm-162	21.7	m	3.5E+02	9.4E-09
Tm-163	1.81	h	5.3E+02	1.4E-08
Tm-164	2	m	8.9E+02	2.4E-08
Tm-166	7.7	h	3.4E+02	9.2E-09
Tm-174	5.4	m	3.9E+02	1.1E-08
Tm-175	15.2	m	6.4E+02	1.7E-08
Tm-176	1.85	m	3.4E+02	9.1E-09
Ytterbium				
Yb-162	18.87	m	3.2E+03	8.6E-08
Yb-163	11.05	m	9.6E+02	2.6E-08
Yb-165	9.9	m	2.3E+03	6.3E-08
Yb-167	17.5	m	3.3E+03	9.0E-08
Yb-179	8	m	7.2E+02	1.9E-08
Lutetium				
Lu-165	10.74	m	6.3E+02	1.7E-08
Lu-167	51.5	m	4.0E+02	1.1E-08
Lu-169m	160	s	1.3E+09	3.4E-02
Lu-171m	79	s	3.2E+06	8.7E-05
Lu-172m	3.7	m	8.1E+08	2.2E-02
Lu-178	28.4	m	4.9E+03	1.3E-07

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(µCi/mL)
Lu-178m	23.1	m	7.0E+02	1.9E-08
Lu-180	5.7	m	4.5E+02	1.2E-08
Lu-181	3.5	m	1.2E+03	3.3E-08
Hafnium				
Hf-167	2.05	m	1.2E+03	3.1E-08
Hf-169	3.24	m	1.1E+03	3.1E-08
Hf-177m	51.4	m	3.2E+02	8.7E-09
Hf-180m	5.5	h	7.4E+02	2.0E-08
Hf-182m	61.5	m	7.9E+02	2.1E-08
Hf-183	1.067	h	9.1E+02	2.4E-08
Tantalum				
Ta-170	6.76	m	6.5E+02	1.8E-08
Ta-172	36.8	m	4.1E+02	1.1E-08
Ta-173	3.14	h	1.2E+03	3.3E-08
Ta-174	1.14	h	7.1E+02	1.9E-08
Ta-175	10.5	h	6.2E+02	1.7E-08
Ta-176	8.09	h	3.0E+02	8.0E-09
Ta-178	9.31	m	6.7E+03	1.8E-07
Ta-178m	2.36	h	6.5E+02	1.7E-08
Ta-182m	15.84	m	3.0E+03	8.2E-08
Ta-186	10.5	m	4.9E+02	1.3E-08
Tungsten				
W-177	132	m	7.9E+02	2.1E-08
W-179	37.05	m	2.2E+04	5.9E-07
W-179m	6.4	m	1.6E+04	4.3E-07
W-185m	1.597	m	3.4E+04	9.2E-07
Rhenium				
Re-178	13.2	m	3.9E+02	1.0E-08
Re-179	19.5	m	6.5E+02	1.7E-08
Re-180	2.44	m	5.8E+02	1.6E-08
Re-182m	12.7	h	5.7E+02	1.5E-08
Re-190	3.1	m	5.2E+02	1.4E-08
Osmium				
Os-180	21.5	m	6.8E+03	1.8E-07
Os-181	105	m	5.0E+02	1.4E-08
Os-183m	9.9	h	6.8E+02	1.8E-08
Os-190m	9.9	m	4.5E+02	1.2E-08
Iridium				
Ir-180	1.5	m	4.4E+02	1.2E-08
Ir-182	15	m	4.9E+02	1.3E-08
Ir-183	58	m	5.8E+02	1.6E-08
Ir-184	3.09	h	3.5E+02	9.5E-09
Ir-186m	1.92	h	5.5E+02	1.5E-08

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(µCi/mL)
Ir-191m	4.94	s	1.2E+04	3.2E-07
Ir-192m	1.45	m	1.2E+07	3.2E-04
Ir-196	52	s	2.7E+03	7.4E-08
Ir-196m	1.4	h	2.9E+02	7.8E-09
Platinum				
Pt-184	17.3	m	1.0E+03	2.8E-08
Pt-186	2.08	h	1.1E+03	2.9E-08
Pt-187	2.35	h	1.2E+03	3.2E-08
Pt-199	30.8	m	3.4E+03	9.3E-08
Gold				
Au-186	10.7	m	4.6E+02	1.2E-08
Au-187	8.4	m	6.4E+02	1.7E-08
Au-190	42.8	m	2.7E+02	7.4E-09
Au-191	3.18	h	1.2E+03	3.4E-08
Au-192	4.94	h	3.4E+02	9.2E-09
Au-193m	3.9	s	3.8E+03	1.0E-07
Au-195m	30.5	s	3.7E+03	1.0E-07
Au-200	48.4	m	2.4E+03	6.4E-08
Au-202	28.8	s	3.6E+03	9.6E-08
Mercury				
Hg-205	5.2	m	5.1E+04	1.4E-06
Hg-206	8.15	m	5.7E+03	1.5E-07
Hg-207	2.9	m	2.5E+02	6.7E-09
Thallium				
Tl-190	2.6	m	5.3E+02	1.4E-08
Tl-190m	3.7	m	2.9E+02	7.7E-09
Tl-194	33	m	7.7E+02	2.1E-08
Tl-194m	32.8	m	2.8E+02	7.6E-09
Tl-195	1.16	h	5.5E+02	1.5E-08
Tl-196	1.84	h	3.6E+02	9.7E-09
Tl-197	2.84	h	1.6E+03	4.2E-08
Tl-198	5.3	h	3.3E+02	9.0E-09
Tl-198m	1.87	h	5.9E+02	1.6E-08
Tl-200	26.1	h	5.3E+02	1.4E-08
Tl-206	4.2	m	8.0E+04	2.2E-06
Tl-206m	3.74	m	2.9E+02	7.9E-09
Tl-207	4.77	m	6.9E+04	1.9E-06
Tl-208	3.053	m	1.9E+02	5.1E-09
Tl-209	2.161	m	3.1E+02	8.4E-09
Tl-210	1.3	m	2.4E+02	6.5E-09
Lead				
Pb-194	12	m	6.4E+02	1.7E-08
Pb-195m	15	m	4.3E+02	1.2E-08

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(µCi/mL)
Pb-196	37	m	1.5E+03	4.1E-08
Pb-197	8	m	4.4E+02	1.2E-08
Pb-197m	43	m	6.1E+02	1.6E-08
Pb-198	2.4	h	1.7E+03	4.6E-08
Pb-199	90	m	6.6E+02	1.8E-08
Pb-201	9.33	h	9.5E+02	2.6E-08
Pb-201m	61	s	1.9E+03	5.3E-08
Pb-202m	3.53	h	3.5E+02	9.5E-09
Pb-204m	67.2	m	3.4E+02	9.1E-09
Bismuth				
Bi-197	9.3	m	4.0E+02	1.1E-08
Bi-200	36.4	m	2.9E+02	7.8E-09
Bi-201	108	m	3.9E+02	1.1E-08
Bi-202	1.72	h	2.5E+02	6.8E-09
Bi-203	11.76	h	2.8E+02	7.6E-09
Bi-204	11.22	h	2.3E+02	6.3E-09
Bi-211	2.14	m	1.5E+04	4.1E-07
Bi-212n	7	m	8.1E+04	2.2E-06
Bi-215	7.6	m	2.7E+03	7.3E-08
Bi-216	2.17	m	9.3E+02	2.5E-08
Polonium				
Po-203	36.7	m	4.2E+02	1.1E-08
Po-205	1.66	h	4.3E+02	1.2E-08
Po-207	5.8	h	5.4E+02	1.5E-08
Po-211	0.516	s	8.5E+04	2.3E-06
Po-212	2.99E-07	s	-	-
Po-212m	45.1	s	7.9E+03	2.1E-07
Po-213	4.20E-06	s	1.9E+07	5.0E-04
Po-214 1	6.43E-05	s	8.3E+06	2.3E-04
Po-215 1	7.81E-04	s	4.1E+06	1.1E-04
Po-216	0.145	s	4.5E+07	1.2E-03
Po-218	3.1	m	1.2E+10	3.3E-01
Astatine				
At-204	9.2	m	3.0E+02	8.2E-09
At-206	30.6	m	2.8E+02	7.6E-09
At-208	1.63	h	2.3E+02	6.1E-09
At-215	1.00E-04	s	4.2E+06	1.1E-04
At-216	3.00E-04	s	3.3E+05	9.0E-06
At-217	3.23E-02	s	3.0E+06	8.1E-05
At-218	1.5	s	3.2E+07	8.7E-04
At-219	56	s	-	-
At-220	3.71	m	1.5E+03	4.1E-08
Radon				

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(µCi/mL)
Rn-207	9.25	m	7.2E+02	1.9E-08
Rn-209	28.5	m	5.8E+02	1.6E-08
Rn-210	2.4	h	2.5E+03	6.7E-08
Rn-211	14.6	h	3.7E+02	9.9E-09
Rn-212	23.9	m	2.3E+03	6.2E-08
Rn-215	2.3	us	1.7E+03	4.5E-08
Rn-216	4.50E-05	s	1.8E+03	4.8E-08
Rn-217	5.40E-04	s	1.9E+03	5.0E-08
Rn-218	3.50E-02	s	2.0E+03	5.5E-08
Rn-219	3.96	s	2.1E+03	5.8E-08
Rn-220	55.6	s	2.3E+03	6.2E-08
Rn-222	3.8235	d	2.3E+03	7.1E-08
Rn-223	24.3	m	2.0E+03	5.5E-08
Francium				
Fr-219	2.00E-02	s	2.0E+05	5.5E-06
Fr-220	27.4	s	9.0E+04	2.4E-06
Fr-221	4.9	m	2.5E+04	6.9E-07
Fr-224	3.33	m	1.2E+03	3.3E-08
Fr-227	2.47	m	1.6E+03	4.3E-08
Radium				
Ra-219	10	ms	4.3E+03	1.2E-07
Ra-220	1.79E-02	s	1.5E+05	4.1E-06
Ra-221	28	s	2.2E+04	5.8E-07
Ra-222	38	s	7.8E+04	2.1E-06
Actinium				
Ac-223	2.1	m	4.4E+04	1.2E-06
Ac-230	122	s	1.2E+03	3.2E-08
Ac-231	7.5	m	1.7E+03	4.7E-08
Ac-232	119	s	5.6E+02	1.5E-08
Ac-233	145	s	1.4E+03	3.7E-08
Thorium				
Th-223	0.6	s	1.1E+04	3.1E-07
Th-224	1.05	s	3.3E+04	8.8E-07
Th-235	7.1	m	1.1E+04	2.9E-07
Protactinium				
Pa-234m	1.17	m	2.2E+04	6.0E-07
Pa-236	9.1	m	7.3E+02	2.0E-08
Pa-237	8.7	m	1.1E+03	3.0E-08
Uranium				
U-227	1.1	m	6.5E+03	1.8E-07
U-228	9.1	m	2.0E+05	5.4E-06
Neptunium				
Np-232	14.7	m	5.9E+02	1.6E-08

Table 6: Derived Concentration Standards for Members of the Public from External Exposure during Submersion in a Contaminated Atmospheric Cloud (cont'd)

			Air immersion, DCS	
Nuclide	**Half-life**		(Bq/m^3)	(μCi/mL)
Np-233	36.2	m	9.4E+03	2.5E-07
Np-240	61.9	m	6.7E+02	1.8E-08
Np-240m	7.22	m	2.1E+03	5.7E-08
Np-242	2.2	m	2.4E+03	6.4E-08
Np-242m	5.5	m	7.6E+02	2.1E-08
Plutonium				
Pu-235	25.3	m	9.2E+03	2.5E-07
Americium				
Am-237	73	m	2.0E+03	5.5E-08
Am-238	98	m	7.7E+02	2.1E-08
Am-246	39	m	9.7E+02	2.6E-08
Am-246m	25	m	6.9E+02	1.9E-08

APPENDIX A:
EFFECTIVE DOSE COEFFICIENTS FOR INGESTION, INHALATION, AND SUBMERSION

This appendix tabulates the age-specific effective dose coefficients used in the derivation of the Derived Concentration Standards (DCS) for ingestion of water, inhalation of air, and submersion exposure to airborne activity. The coefficients were derived using the Dose and Risk Calculation (DCAL) System (Eckerman *et al*. 2006) using the nuclear decay data of International Commission on Radiological Protection (ICRP) Publication 107 (ICRP 2008). DCAL has been one of four software packages used in the production of ICRP publications of dose coefficients for inhaled and ingested radionuclides during the past twenty years. DCAL was also used in the production of Federal Guidance Reports 12 and 13 and is the only software package used in the production of ICRP publications freely available to the public. During the preparation of ICRP publications considerable efforts were devoted to verification of the calculated values. Thus DCAL and its input data files have been subject to extensive verification.

The nuclear-decay data used in deriving the quantities of this document are those of ICRP Publication 107 (ICRP 2008). These data are based on an updated version of the EDISTR code that was used to produce ICRP Publication 38 (ICRP 1983). Quality assurance and validation issues for the updated version of EDISTR are discussed in reports available through Oak Ridge National Laboratory (ORNL).

The values presented in these tables were developed by ORNL and peer reviewed by Argonne National Laboratory.

The last column of Table A-1 and A-2 lists the committed effective dose coefficient for the intake of the radionuclides by a U.S. Reference Person. The dose coefficient for this hypothetical person, e_{Ref}, as an aggregate of individuals in the U.S. population and is derived as

$$e_{Ref} = \frac{1}{\sum_i (f_i^M\, U_i^M + f_i^F\, U_i^F)} \sum_i (f_i^M\, U_i^M + f_i^F\, U_i^F)\, e_i \qquad \text{(A.1)}$$

where f_i^M, f_i^F, U_i^M and U_i^F are as given in Table 3 and e_i is the committed effective dose coefficient for the ith reference age group tabulated in Tables A-1 and A-2. The usage *U* refers to ingested water in Table A-1 and ingested air in Table A-2.

Table A-1 contains the effective dose coefficient for ingestion intakes for chemical forms of the radionuclide as considered in Federal Guidance Report 13 (EPA 1999). The f_1 values shown in the tabulation are the values applicable to the infant.

Table A-2 contains the effective dose coefficient for inhalation intakes of particulate aerosols characterized by absorption types F, M, and S, as defined by the ICRP (1994a), and an activity median aerodynamic diameter (AMAD) of 1 micron. For some radionuclides chemical forms other than particulate matter are considered (e.g., vapors and gases) as in Federal Guidance Report 13 (EPA 1999).

Table A-3 contains the effective dose rate coefficients for submersion in a semi-infinite cloud. These coefficients are based on the methods of Federal Guidance Report 12 (EPA 1993). However, a few noble gas radionuclides do not emit radiation of sufficient energy to penetrate the body, and their dose rate coefficient is derived assuming that the air within the lungs has equilibrated with the atmospheric concentration. For these radionuclides the effective dose rate coefficients, e_{sub}, is given by

$$e_{sub} = w_{Lung}\, 0.5\, (TLC_{male} / M_{male} + TLC_{female} / M_{female}) \sum\ w_R\, E_R$$

where w_{lung} and w_R are the tissue weighting factor for the lung (0.12) (ICRP 1991) and the radiation weighting factor, respectively, TLC_{male} and TLC_{female} are the total lung capacity for the adult male (0.007 m^3) and adult female (0.005 m^3), respectively (ICRP 2002), M_{male} and M_{female} are the mass of the lung for the adult male (1.2 kg) and adult female (0.95 kg), respectively (ICRP 2002), and E_R [J $(Bq\ s)^{-1}$] is the energy of radiation R emitted by the radionuclide (ICRP 2008). The coefficients for the following radionuclides in Table A-3 were derived in this manner: Ar-37, and Rn-209, 210, 212, 215, 216, 217, 218, 219, and 220. These coefficients were used to derive the DCSs of Table 6.

Table A-3 contains the effective dose rate coefficients for submersion in a semi-infinite cloud. These coefficients are based on the methods of Federal Guidance Report 12 (EPA 1993). However, a few noble gas radionuclides do not emit radiation of sufficient energy to penetrate the body, and their dose rate coefficient is derived assuming that the air within the lungs has equilibrated with the atmospheric concentration. For these radionuclides the effective dose rate coefficients, e_{sub}, is given by

$$e_{sub} = w_{Lung}\, 0.5\, (TLC_{male} / M_{male} + TLC_{female} / M_{female}) \sum\ w_R\, E_R \qquad (A.2)$$

where w_{lung} and w_R are the tissue weighting factor for the lung (0.12) (ICRP 1991) and the radiation weighting factor, respectively, TLC_{male} and TLC_{female} are the total lung capacity for the adult male (0.007 m^3) and adult female (0.005 m^3), respectively (ICRP 2002), M_{male} and M_{female} are the mass of the lung for the adult male (1.2 kg) and adult female (0.95 kg), respectively (ICRP 2002), and E_R [J $(Bq\ s)^{-1}$] is the energy of radiation R emitted by the radionuclide (ICRP 2008). The coefficients for the following radionuclides in Table A-3 were derived in this manner: Ar-37, and Rn-209, 210, 212, 215, 216, 217, 218, 219, and 220. These coefficients were used to derive the DCSs of Table 6.

Verification of DCS Computations

The dosimetric calculations undertaken in this document were carried out using the Dose and Risk Calculation (DCAL) software (Eckerman *et al*., 2006). DCAL was one of four software packages used in the production of ICRP publications of dose coefficients for inhaled and ingested radionuclides during the past 20 years. DCAL was also used in the production of Federal Guidance Reports 12 and 13 (EPA 1993, 1999) and is the only software package used in the production of ICRP publications that has been released freely to the community. The four software packages used in ICRP activities had some common elements:

- nuclear-decay data of ICRP Publication 38;
- ORNL's photon specific absorbed fraction data; and

- some packages used DCAL's SEECAL module.

Each software packages had a distinct software module (two used the same numerical method but different implementations) to solve the system of coupled differential equations describing the distribution of the radionuclide and its radioactive daughters, if any, in the body. During the preparation of ICRP publications considerable efforts were devoted to verification of the calculated values. DCAL uses a unique solver for the system of coupled differential equations which has been published (Leggett *et al.*, 1993) with validation and verification information. A validation and verification document, as it relates to calculations for Federal Guidance Report 13, is available from ORNL. It was necessary to make minor changes in some of DCAL's modules to accommodate the file structure of ICRP Publication 107. DCAL is a mature software package with extensive libraries of physical, anatomical and physiological data that has been assembled over a number of years and intended for use by those familiar with the basic elements of computational radiation dosimetry. An independent set of calculations of the DCS values, starting with the effective dose coefficients, was undertaken as part of the QA process for this document.

Table A-1: Effective Dose Coefficients for Ingested Water

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Hydrogen								
H-3	1.0E+00[(a)]	7.53E-11	5.51E-11	3.38E-11	2.45E-11	1.91E-11	1.91E-11	2.10E-11
	1.0E+00[(b)]	1.19E-10	1.18E-10	7.26E-11	5.69E-11	4.17E-11	4.19E-11	4.58E-11
	(a) Tritiated Water							
	(b) Organic Bound Tritium							
Beryllium								
Be-7	2.0E-02	1.78E-10	1.30E-10	7.81E-11	5.34E-11	3.58E-11	2.80E-11	3.48E-11
Be-10	2.0E-02	1.42E-08	8.05E-09	4.07E-09	2.41E-09	1.39E-09	1.14E-09	1.56E-09
Carbon								
C-11	1.0E+00	2.61E-10	1.48E-10	7.36E-11	4.32E-11	2.99E-11	2.36E-11	3.10E-11
C-14	1.0E+00	1.43E-09	1.61E-09	9.95E-10	8.00E-10	5.76E-10	5.81E-10	6.33E-10
Fluorine								
F-18	1.0E+00	4.99E-10	2.91E-10	1.48E-10	8.83E-11	6.05E-11	4.78E-11	6.24E-11
Sodium								
Na-22	1.0E+00	2.05E-08	1.47E-08	8.45E-09	5.51E-09	3.75E-09	3.17E-09	3.88E-09
Na-24	1.0E+00	3.54E-09	2.29E-09	1.24E-09	7.83E-10	5.26E-10	4.34E-10	5.46E-10
Magnesium								
Mg-28	1.0E+00	1.16E-08	1.45E-08	7.44E-09	4.51E-09	2.70E-09	2.16E-09	2.82E-09
Aluminum								
Al-26	2.0E-02	3.39E-08	2.12E-08	1.13E-08	7.09E-09	4.34E-09	3.49E-09	4.59E-09
Silicon								
Si-31	2.0E-02	1.93E-09	1.05E-09	5.15E-10	2.99E-10	2.01E-10	1.60E-10	2.13E-10
Si-32	2.0E-02	7.44E-09	4.19E-09	2.11E-09	1.25E-09	7.15E-10	5.79E-10	7.99E-10

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Phosphorus								
P-32	1.0E+00	3.11E-08	1.93E-08	9.45E-09	5.33E-09	3.13E-09	2.40E-09	3.39E-09
P-33	1.0E+00	2.71E-09	1.83E-09	9.12E-10	5.27E-10	3.10E-10	2.45E-10	3.37E-10
Sulfur								
S-35	1.0E+00[(c)]	1.27E-09	8.65E-10	4.43E-10	2.68E-10	1.62E-10	1.31E-10	1.74E-10
	1.0E+00[(d)]	7.60E-09	5.34E-09	2.69E-09	1.60E-09	9.48E-10	7.74E-10	1.04E-09
S-38	1.0E+00[(c)]	3.12E-09	1.87E-09	9.92E-10	6.21E-10	4.33E-10	3.40E-10	4.34E-10
	1.0E+00[(d)]	2.93E-09	1.71E-09	8.57E-10	5.04E-10	3.33E-10	2.66E-10	3.52E-10
	(c) Inorganic Sulfur							
	(d) Organic Sulfur							
Chlorine								
Cl-34m	1.0E+00	1.19E-09	6.70E-10	3.31E-10	1.92E-10	1.32E-10	1.04E-10	1.37E-10
Cl-36	1.0E+00	9.71E-09	6.30E-09	3.15E-09	1.91E-09	1.15E-09	9.28E-10	1.24E-09
Cl-38	1.0E+00	1.41E-09	7.83E-10	3.82E-10	2.19E-10	1.49E-10	1.17E-10	1.56E-10
Cl-39	1.0E+00	9.77E-10	5.50E-10	2.72E-10	1.58E-10	1.08E-10	8.51E-11	1.13E-10
Potassium								
K-40	1.0E+00	6.12E-08	4.19E-08	2.11E-08	1.27E-08	7.54E-09	6.15E-09	8.22E-09
K-42	1.0E+00	5.12E-09	3.04E-09	1.49E-09	8.73E-10	5.47E-10	4.37E-10	5.89E-10
K-43	1.0E+00	2.25E-09	1.44E-09	7.55E-10	4.67E-10	3.02E-10	2.49E-10	3.20E-10
K-44	1.0E+00	9.82E-10	5.47E-10	2.69E-10	1.55E-10	1.06E-10	8.36E-11	1.11E-10
K-45	1.0E+00	5.69E-10	3.17E-10	1.57E-10	9.04E-11	6.22E-11	4.89E-11	6.48E-11
Calcium								
Ca-41	6.0E-01	1.45E-09	6.11E-10	4.64E-10	5.56E-10	5.84E-10	2.27E-10	2.96E-10
Ca-45	6.0E-01	1.12E-08	4.89E-09	2.57E-09	1.82E-09	1.31E-09	7.09E-10	1.04E-09
Ca-47	6.0E-01	1.29E-08	9.49E-09	4.95E-09	3.05E-09	1.86E-09	1.60E-09	2.05E-09

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Scandium								
Sc-43	1.0E-03	2.25E-09	1.43E-09	7.34E-10	4.45E-10	2.73E-10	2.18E-10	2.91E-10
Sc-44	1.0E-03	3.51E-09	2.25E-09	1.17E-09	7.21E-10	4.48E-10	3.58E-10	4.72E-10
Sc-44m	1.0E-03	2.38E-08	1.59E-08	8.31E-09	5.14E-09	3.07E-09	2.45E-09	3.26E-09
Sc-46	1.0E-03	1.15E-08	7.97E-09	4.43E-09	2.89E-09	1.85E-09	1.47E-09	1.88E-09
Sc-47	1.0E-03	6.05E-09	3.91E-09	1.97E-09	1.18E-09	6.81E-10	5.46E-10	7.46E-10
Sc-48	1.0E-03	1.32E-08	9.17E-09	5.05E-09	3.28E-09	2.09E-09	1.67E-09	2.14E-09
Sc-49	1.0E-03	1.01E-09	5.71E-10	2.77E-10	1.58E-10	1.03E-10	8.10E-11	1.10E-10
Titanium								
Ti-44	2.0E-02	5.50E-08	3.12E-08	1.73E-08	1.08E-08	6.90E-09	5.80E-09	7.41E-09
Ti-45	2.0E-02	1.56E-09	9.83E-10	5.05E-10	3.05E-10	1.90E-10	1.51E-10	2.01E-10
Vanadium								
V-47	2.0E-02	7.29E-10	4.12E-10	2.04E-10	1.18E-10	8.00E-11	6.30E-11	8.37E-11
V-48	2.0E-02	1.52E-08	1.07E-08	5.97E-09	3.90E-09	2.50E-09	1.99E-09	2.54E-09
V-49	2.0E-02	2.15E-10	1.36E-10	6.80E-11	4.02E-11	2.28E-11	1.84E-11	2.53E-11
V-50	2.0E-02	1.43E-08	8.01E-09	5.74E-09	4.53E-09	3.76E-09	3.41E-09	3.75E-09
Chromium								
Cr-48	2.0E-01	1.35E-09	9.72E-10	5.63E-10	3.75E-10	2.47E-10	1.97E-10	2.47E-10
Cr-49	2.0E-01	6.83E-10	3.93E-10	1.97E-10	1.16E-10	7.79E-11	6.15E-11	8.13E-11
Cr-51	2.0E-01	3.44E-10	2.29E-10	1.23E-10	7.81E-11	4.83E-11	3.86E-11	5.03E-11
Manganese								
Mn-51	2.0E-01	1.07E-09	6.13E-10	3.03E-10	1.76E-10	1.18E-10	9.26E-11	1.23E-10
Mn-52	2.0E-01	1.23E-08	8.87E-09	5.11E-09	3.42E-09	2.26E-09	1.81E-09	2.26E-09
Mn-52m	2.0E-01	7.81E-10	4.42E-10	2.20E-10	1.29E-10	8.83E-11	6.95E-11	9.17E-11
Mn-53	2.0E-01	4.08E-10	2.16E-10	1.10E-10	6.42E-11	3.69E-11	2.98E-11	4.14E-11

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Mn-54	2.0E-01	5.52E-09	3.20E-09	1.91E-09	1.30E-09	8.86E-10	7.21E-10	8.90E-10
Mn-56	2.0E-01	2.67E-09	1.69E-09	8.56E-10	5.14E-10	3.22E-10	2.56E-10	3.41E-10
Iron								
Fe-52	6.0E-01	1.30E-08	9.13E-09	4.63E-09	2.80E-09	1.67E-09	1.38E-09	1.83E-09
Fe-55	6.0E-01	7.46E-09	2.35E-09	1.74E-09	1.12E-09	7.71E-10	3.31E-10	5.51E-10
Fe-59	6.0E-01	3.93E-08	1.29E-08	7.50E-09	4.73E-09	3.07E-09	1.79E-09	2.74E-09
Fe-60	6.0E-01	8.14E-07	2.86E-07	2.85E-07	2.57E-07	2.43E-07	1.16E-07	1.48E-07
Cobalt								
Co-55	6.0E-01	6.09E-09	5.52E-09	2.92E-09	1.82E-09	1.11E-09	1.03E-09	1.27E-09
Co-56	6.0E-01	2.55E-08	1.53E-08	8.84E-09	5.82E-09	3.87E-09	2.53E-09	3.44E-09
Co-57	6.0E-01	2.86E-09	1.58E-09	8.93E-10	5.79E-10	3.74E-10	2.11E-10	3.13E-10
Co-58	6.0E-01	7.34E-09	4.45E-09	2.58E-09	1.69E-09	1.13E-09	7.48E-10	1.01E-09
Co-58m	6.0E-01	1.95E-10	1.54E-10	7.79E-11	4.68E-11	2.78E-11	2.39E-11	3.10E-11
Co-60	6.0E-01	5.43E-08	2.68E-08	1.69E-08	1.12E-08	7.94E-09	3.42E-09	5.49E-09
Co-60m	6.0E-01	2.12E-11	1.16E-11	5.61E-12	3.18E-12	2.17E-12	1.68E-12	2.27E-12
Co-61	6.0E-01	8.28E-10	5.13E-10	2.52E-10	1.46E-10	9.29E-11	7.51E-11	1.00E-10
Co-62m	6.0E-01	5.53E-10	3.12E-10	1.55E-10	9.08E-11	6.26E-11	4.92E-11	6.48E-11
Nickel								
Ni-56	1.0E-01	5.46E-09	4.05E-09	2.40E-09	1.63E-09	1.10E-09	8.71E-10	1.08E-09
Ni-57	1.0E-01	7.21E-09	5.16E-09	2.82E-09	1.82E-09	1.14E-09	9.13E-10	1.17E-09
Ni-59	1.0E-01	6.28E-10	3.39E-10	1.86E-10	1.12E-10	7.19E-11	6.23E-11	7.96E-11
Ni-63	1.0E-01	1.57E-09	8.50E-10	4.64E-10	2.81E-10	1.79E-10	1.55E-10	1.98E-10
Ni-65	1.0E-01	2.05E-09	1.26E-09	6.32E-10	3.74E-10	2.29E-10	1.82E-10	2.46E-10
Ni-66	1.0E-01	3.35E-08	2.24E-08	1.12E-08	6.63E-09	3.77E-09	3.03E-09	4.15E-09
Copper								

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Cu-60	1.0E+00	7.14E-10	4.32E-10	2.20E-10	1.32E-10	9.09E-11	7.19E-11	9.33E-11
Cu-61	1.0E+00	7.06E-10	7.36E-10	3.78E-10	2.29E-10	1.45E-10	1.16E-10	1.49E-10
Cu-64	1.0E+00	5.27E-10	8.38E-10	4.26E-10	2.56E-10	1.53E-10	1.23E-10	1.59E-10
Cu-67	1.0E+00	2.03E-09	2.32E-09	1.17E-09	7.01E-10	4.11E-10	3.30E-10	4.35E-10
Zinc								
Zn-62	1.0E+00	4.24E-09	6.51E-09	3.29E-09	1.97E-09	1.17E-09	9.36E-10	1.22E-09
Zn-63	1.0E+00	8.74E-10	5.25E-10	2.59E-10	1.51E-10	1.01E-10	7.99E-11	1.06E-10
Zn-65	1.0E+00	3.62E-08	1.56E-08	9.72E-09	6.42E-09	4.51E-09	3.92E-09	4.77E-09
Zn-69	1.0E+00	3.52E-10	2.16E-10	1.05E-10	5.97E-11	3.93E-11	3.08E-11	4.14E-11
Zn-69m	1.0E+00	1.29E-09	2.31E-09	1.17E-09	7.08E-10	4.16E-10	3.33E-10	4.33E-10
Zn-71m	1.0E+00	1.38E-09	1.53E-09	7.89E-10	4.80E-10	3.01E-10	2.41E-10	3.10E-10
Zn-72	1.0E+00	8.75E-09	8.70E-09	4.59E-09	2.85E-09	1.75E-09	1.42E-09	1.82E-09
Gallium								
Ga-65	1.0E-02	4.26E-10	2.38E-10	1.18E-10	6.80E-11	4.67E-11	3.67E-11	4.86E-11
Ga-66	1.0E-02	1.22E-08	7.95E-09	4.08E-09	2.48E-09	1.48E-09	1.18E-09	1.59E-09
Ga-67	1.0E-02	1.86E-09	1.24E-09	6.55E-10	4.07E-10	2.45E-10	1.96E-10	2.60E-10
Ga-68	1.0E-02	1.15E-09	6.71E-10	3.35E-10	1.97E-10	1.29E-10	1.02E-10	1.36E-10
Ga-70	1.0E-02	3.96E-10	2.17E-10	1.05E-10	5.93E-11	4.01E-11	3.13E-11	4.22E-11
Ga-72	1.0E-02	1.04E-08	6.97E-09	3.67E-09	2.29E-09	1.39E-09	1.12E-09	1.47E-09
Ga-73	1.0E-02	2.98E-09	1.87E-09	9.37E-10	5.57E-10	3.31E-10	2.64E-10	3.59E-10
Germanium								
Ge-66	1.0E+00	8.16E-10	5.23E-10	2.91E-10	1.87E-10	1.27E-10	1.02E-10	1.28E-10
Ge-67	1.0E+00	7.02E-10	3.90E-10	1.92E-10	1.10E-10	7.58E-11	5.95E-11	7.91E-11
Ge-68	1.0E+00	1.23E-08	8.04E-09	4.23E-09	2.63E-09	1.61E-09	1.28E-09	1.69E-09
Ge-69	1.0E+00	1.56E-09	1.05E-09	5.95E-10	3.85E-10	2.57E-10	2.08E-10	2.61E-10

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Ge-71	1.0E+00	1.24E-10	7.88E-11	4.03E-11	2.45E-11	1.49E-11	1.18E-11	1.58E-11
Ge-75	1.0E+00	5.56E-10	3.10E-10	1.51E-10	8.74E-11	5.93E-11	4.63E-11	6.19E-11
Ge-77	1.0E+00	2.98E-09	1.85E-09	9.90E-10	6.20E-10	4.12E-10	3.27E-10	4.21E-10
Ge-78	1.0E+00	1.13E-09	6.66E-10	3.44E-10	2.10E-10	1.44E-10	1.14E-10	1.47E-10
Arsenic								
As-69	1.0E+00	6.30E-10	3.60E-10	1.77E-10	1.02E-10	6.96E-11	5.46E-11	7.26E-11
As-70	1.0E+00	1.19E-09	8.06E-10	4.18E-10	2.54E-10	1.72E-10	1.37E-10	1.76E-10
As-71	1.0E+00	2.76E-09	2.78E-09	1.48E-09	9.25E-10	5.68E-10	4.56E-10	5.86E-10
As-72	1.0E+00	1.09E-08	1.25E-08	6.39E-09	3.88E-09	2.31E-09	1.85E-09	2.42E-09
As-73	1.0E+00	2.56E-09	1.87E-09	9.35E-10	5.59E-10	3.22E-10	2.59E-10	3.51E-10
As-74	1.0E+00	1.04E-08	8.16E-09	4.26E-09	2.63E-09	1.59E-09	1.28E-09	1.68E-09
As-76	1.0E+00	9.92E-09	1.14E-08	5.71E-09	3.41E-09	1.98E-09	1.59E-09	2.11E-09
As-77	1.0E+00	2.64E-09	2.89E-09	1.44E-09	8.56E-10	4.93E-10	3.95E-10	5.27E-10
As-78	1.0E+00	1.87E-09	1.32E-09	6.56E-10	3.85E-10	2.49E-10	1.97E-10	2.61E-10
Selenium								
Se-70	1.0E+00	8.11E-10	5.77E-10	2.99E-10	1.82E-10	1.21E-10	9.69E-11	1.25E-10
Se-72	1.0E+00	6.79E-08	4.45E-08	2.77E-08	2.09E-08	7.03E-09	5.16E-09	8.23E-09
Se-73	1.0E+00	1.57E-09	1.39E-09	7.53E-10	4.90E-10	2.59E-10	2.07E-10	2.78E-10
Se-73m	1.0E+00	2.50E-10	1.82E-10	9.52E-11	5.93E-11	3.45E-11	2.74E-11	3.67E-11
Se-75	1.0E+00	1.96E-08	1.30E-08	8.30E-09	6.00E-09	3.13E-09	2.58E-09	3.35E-09
Se-79	1.0E+00	3.85E-08	2.64E-08	1.79E-08	1.29E-08	3.81E-09	2.74E-09	4.68E-09
Se-81	1.0E+00	3.38E-10	1.86E-10	8.96E-11	5.07E-11	3.43E-11	2.68E-11	3.61E-11
Se-81m	1.0E+00	6.01E-10	3.76E-10	1.84E-10	1.06E-10	6.76E-11	5.29E-11	7.16E-11
Se-83	1.0E+00	4.31E-10	2.73E-10	1.39E-10	8.36E-11	5.70E-11	4.53E-11	5.87E-11
Bromine								

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Br-74	1.0E+00	8.73E-10	5.00E-10	2.51E-10	1.49E-10	1.03E-10	8.18E-11	1.07E-10
Br-74m	1.0E+00	1.46E-09	8.34E-10	4.18E-10	2.47E-10	1.70E-10	1.35E-10	1.76E-10
Br-75	1.0E+00	8.52E-10	4.90E-10	2.45E-10	1.45E-10	9.85E-11	7.85E-11	1.03E-10
Br-76	1.0E+00	4.12E-09	2.63E-09	1.39E-09	8.61E-10	5.62E-10	4.63E-10	5.92E-10
Br-77	1.0E+00	6.37E-10	4.50E-10	2.60E-10	1.71E-10	1.16E-10	9.78E-11	1.20E-10
Br-80	1.0E+00	3.91E-10	2.14E-10	1.03E-10	5.85E-11	3.98E-11	3.11E-11	4.18E-11
Br-80m	1.0E+00	1.39E-09	8.01E-10	3.91E-10	2.26E-10	1.45E-10	1.15E-10	1.55E-10
Br-82	1.0E+00	3.75E-09	2.60E-09	1.49E-09	9.63E-10	6.50E-10	5.49E-10	6.75E-10
Br-83	1.0E+00	5.51E-10	3.08E-10	1.49E-10	8.53E-11	5.64E-11	4.43E-11	5.98E-11
Br-84	1.0E+00	1.05E-09	5.83E-10	2.86E-10	1.65E-10	1.12E-10	8.84E-11	1.18E-10
Rubidium								
Rb-78	1.0E+00	7.86E-10	4.44E-10	2.21E-10	1.29E-10	8.94E-11	7.07E-11	9.29E-11
Rb-79	1.0E+00	5.71E-10	3.20E-10	1.58E-10	9.18E-11	6.32E-11	4.98E-11	6.58E-11
Rb-81	1.0E+00	4.77E-10	2.87E-10	1.48E-10	8.98E-11	6.04E-11	4.89E-11	6.31E-11
Rb-81m	1.0E+00	1.05E-10	6.04E-11	3.01E-11	1.77E-11	1.19E-11	9.45E-12	1.25E-11
Rb-82m	1.0E+00	9.06E-10	6.12E-10	3.51E-10	2.28E-10	1.60E-10	1.34E-10	1.63E-10
Rb-83	1.0E+00	1.05E-08	7.82E-09	4.56E-09	3.02E-09	2.06E-09	1.77E-09	2.14E-09
Rb-84	1.0E+00	2.06E-08	1.46E-08	8.03E-09	5.09E-09	3.34E-09	2.81E-09	3.52E-09
Rb-84m	1.0E+00	6.93E-11	4.12E-11	2.12E-11	1.28E-11	8.86E-12	7.12E-12	9.16E-12
Rb-86	1.0E+00	3.04E-08	1.98E-08	9.90E-09	5.86E-09	3.50E-09	2.82E-09	3.81E-09
Rb-87	1.0E+00	1.54E-08	1.07E-08	5.37E-09	3.17E-09	1.89E-09	1.53E-09	2.05E-09
Rb-88	1.0E+00	1.13E-09	6.20E-10	3.00E-10	1.70E-10	1.16E-10	9.07E-11	1.22E-10
Rb-89	1.0E+00	5.13E-10	2.88E-10	1.43E-10	8.32E-11	5.73E-11	4.51E-11	5.95E-11
Strontium								
Sr-80	6.0E-01	4.02E-09	2.51E-09	1.25E-09	7.30E-10	4.65E-10	3.78E-10	5.01E-10

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Sr-81	6.0E-01	7.38E-10	4.29E-10	2.14E-10	1.25E-10	8.42E-11	6.71E-11	8.84E-11
Sr-82	6.0E-01	7.20E-08	4.10E-08	2.07E-08	1.34E-08	8.76E-09	6.19E-09	8.43E-09
Sr-83	6.0E-01	3.53E-09	2.87E-09	1.52E-09	9.57E-10	5.97E-10	5.14E-10	6.46E-10
Sr-85	6.0E-01	7.46E-09	3.05E-09	1.69E-09	1.45E-09	1.31E-09	5.50E-10	7.94E-10
Sr-85m	6.0E-01	4.48E-11	2.97E-11	1.66E-11	1.09E-11	7.74E-12	6.04E-12	7.53E-12
Sr-87m	6.0E-01	2.42E-10	1.72E-10	9.10E-11	5.62E-11	3.62E-11	3.04E-11	3.86E-11
Sr-89	6.0E-01	3.60E-08	1.79E-08	8.90E-09	5.85E-09	3.98E-09	2.57E-09	3.61E-09
Sr-90	6.0E-01	2.27E-07	7.23E-08	4.67E-08	5.96E-08	7.86E-08	2.76E-08	3.60E-08
Sr-91	6.0E-01	5.25E-09	4.09E-09	2.09E-09	1.26E-09	7.53E-10	6.58E-10	8.47E-10
Sr-92	6.0E-01	3.41E-09	2.69E-09	1.36E-09	8.15E-10	4.78E-10	4.20E-10	5.44E-10
Yttrium								
Y-84m	1.0E-03	1.43E-09	8.37E-10	4.27E-10	2.55E-10	1.73E-10	1.37E-10	1.79E-10
Y-85	1.0E-03	1.87E-09	1.17E-09	6.04E-10	3.66E-10	2.30E-10	1.83E-10	2.43E-10
Y-85m	1.0E-03	3.84E-09	2.45E-09	1.26E-09	7.63E-10	4.63E-10	3.70E-10	4.94E-10
Y-86	1.0E-03	7.50E-09	5.21E-09	2.88E-09	1.88E-09	1.19E-09	9.56E-10	1.22E-09
Y-86m	1.0E-03	4.43E-10	3.06E-10	1.69E-10	1.10E-10	7.01E-11	5.61E-11	7.17E-11
Y-87	1.0E-03	4.63E-09	3.20E-09	1.75E-09	1.12E-09	6.93E-10	5.47E-10	7.12E-10
Y-87m	1.0E-03	2.04E-09	1.37E-09	7.25E-10	4.53E-10	2.76E-10	2.19E-10	2.89E-10
Y-88	1.0E-03	8.27E-09	6.08E-09	3.57E-09	2.45E-09	1.64E-09	1.30E-09	1.61E-09
Y-90	1.0E-03	3.12E-08	2.00E-08	9.96E-09	5.89E-09	3.34E-09	2.68E-09	3.70E-09
Y-90m	1.0E-03	1.83E-09	1.20E-09	6.12E-10	3.70E-10	2.17E-10	1.74E-10	2.35E-10
Y-91	1.0E-03	2.76E-08	1.76E-08	8.79E-09	5.21E-09	2.95E-09	2.37E-09	3.27E-09
Y-91m	1.0E-03	9.37E-11	6.11E-11	3.35E-11	2.13E-11	1.43E-11	1.16E-11	1.46E-11
Y-92	1.0E-03	5.90E-09	3.60E-09	1.78E-09	1.04E-09	6.24E-10	4.95E-10	6.79E-10
Y-93	1.0E-03	1.36E-08	8.62E-09	4.28E-09	2.53E-09	1.45E-09	1.16E-09	1.60E-09

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Y-94	1.0E-03	1.04E-09	5.74E-10	2.79E-10	1.59E-10	1.08E-10	8.45E-11	1.13E-10
Y-95	1.0E-03	5.21E-10	2.87E-10	1.40E-10	7.99E-11	5.46E-11	4.27E-11	5.71E-11
Zirconium								
Zr-86	2.0E-02	6.89E-09	4.82E-09	2.65E-09	1.71E-09	1.08E-09	8.57E-10	1.10E-09
Zr-87	2.0E-02	2.00E-09	1.34E-09	6.75E-10	4.02E-10	2.30E-10	1.82E-10	2.51E-10
Zr-88	2.0E-02	2.78E-09	1.93E-09	1.14E-09	7.88E-10	5.32E-10	4.41E-10	5.37E-10
Zr-89	2.0E-02	6.57E-09	4.54E-09	2.48E-09	1.58E-09	9.94E-10	7.91E-10	1.02E-09
Zr-93	2.0E-02	1.14E-09	7.48E-10	5.00E-10	5.71E-10	8.53E-10	1.07E-09	1.00E-09
Zr-95	2.0E-02	8.63E-09	5.72E-09	3.09E-09	1.94E-09	1.20E-09	9.67E-10	1.26E-09
Zr-97	2.0E-02	2.23E-08	1.45E-08	7.35E-09	4.43E-09	2.58E-09	2.06E-09	2.80E-09
Niobium								
Nb-88	2.0E-02	7.85E-10	4.46E-10	2.24E-10	1.32E-10	9.13E-11	7.20E-11	9.43E-11
Nb-89	2.0E-02	2.93E-09	1.97E-09	9.92E-10	5.91E-10	3.68E-10	2.67E-10	3.69E-10
Nb-89m	2.0E-02	1.43E-09	8.57E-10	4.37E-10	2.62E-10	1.72E-10	1.37E-10	1.80E-10
Nb-90	2.0E-02	1.06E-08	7.26E-09	3.92E-09	2.51E-09	1.56E-09	1.25E-09	1.62E-09
Nb-91	2.0E-02	5.65E-10	3.51E-10	1.73E-10	1.02E-10	5.73E-11	4.39E-11	6.22E-11
Nb-91m	2.0E-02	4.74E-09	3.03E-09	1.52E-09	9.01E-10	5.13E-10	4.10E-10	5.65E-10
Nb-92	2.0E-02	6.97E-09	4.71E-09	2.80E-09	1.90E-09	1.28E-09	1.02E-09	1.27E-09
Nb-92m	2.0E-02	3.32E-09	2.42E-09	1.41E-09	9.50E-10	6.35E-10	5.02E-10	6.26E-10
Nb-93m	2.0E-02	1.51E-09	9.50E-10	4.75E-10	2.82E-10	1.61E-10	1.29E-10	1.78E-10
Nb-94	2.0E-02	1.50E-08	9.73E-09	5.33E-09	3.42E-09	2.15E-09	1.73E-09	2.23E-09
Nb-95	2.0E-02	4.57E-09	3.18E-09	1.78E-09	1.16E-09	7.40E-10	5.87E-10	7.50E-10
Nb-95m	2.0E-02	6.86E-09	4.43E-09	2.23E-09	1.33E-09	7.59E-10	6.08E-10	8.34E-10
Nb-96	2.0E-02	9.25E-09	6.36E-09	3.45E-09	2.20E-09	1.38E-09	1.10E-09	1.42E-09
Nb-97	2.0E-02	7.72E-10	4.53E-10	2.27E-10	1.34E-10	8.73E-11	6.90E-11	9.18E-11

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Nb-98m	2.0E-02	1.11E-09	6.58E-10	3.38E-10	2.04E-10	1.37E-10	1.09E-10	1.42E-10
Molybdenum								
Mo-90	1.0E+00	1.75E-09	1.15E-09	6.31E-10	4.02E-10	2.68E-10	2.20E-10	2.77E-10
Mo-91	1.0E+00	7.31E-10	4.03E-10	1.96E-10	1.12E-10	7.66E-11	6.00E-11	8.03E-11
Mo-93	1.0E+00	7.46E-09	6.48E-09	4.67E-09	3.68E-09	3.16E-09	2.89E-09	3.12E-09
Mo-93m	1.0E+00	8.44E-10	5.67E-10	3.22E-10	2.08E-10	1.44E-10	1.20E-10	1.47E-10
Mo-99	1.0E+00	5.47E-09	3.50E-09	1.77E-09	1.08E-09	7.60E-10	6.05E-10	7.73E-10
Mo-101	1.0E+00	4.65E-10	2.60E-10	1.28E-10	7.45E-11	5.13E-11	4.03E-11	5.33E-11
Mo-102	1.0E+00	8.74E-10	4.77E-10	2.30E-10	1.30E-10	8.86E-11	6.92E-11	9.32E-11
Technetium								
Tc-93	1.0E+00	4.76E-10	3.58E-10	2.02E-10	1.30E-10	8.85E-11	7.08E-11	8.84E-11
Tc-93m	1.0E+00	2.76E-10	1.76E-10	9.53E-11	5.96E-11	4.05E-11	3.23E-11	4.11E-11
Tc-94	1.0E+00	1.17E-09	1.00E-09	5.78E-10	3.76E-10	2.56E-10	2.05E-10	2.53E-10
Tc-94m	1.0E+00	1.32E-09	6.53E-10	3.30E-10	1.93E-10	1.29E-10	1.01E-10	1.36E-10
Tc-95	1.0E+00	1.01E-09	8.85E-10	5.15E-10	3.37E-10	2.30E-10	1.83E-10	2.26E-10
Tc-95m	1.0E+00	4.80E-09	2.86E-09	1.62E-09	1.05E-09	7.13E-10	5.70E-10	7.19E-10
Tc-96	1.0E+00	6.76E-09	5.15E-09	3.05E-09	2.04E-09	1.40E-09	1.13E-09	1.38E-09
Tc-96m	1.0E+00	1.03E-10	6.49E-11	3.62E-11	2.31E-11	1.57E-11	1.25E-11	1.58E-11
Tc-97	1.0E+00	9.99E-10	4.93E-10	2.43E-10	1.41E-10	8.88E-11	6.81E-11	9.47E-11
Tc-97m	1.0E+00	8.64E-09	4.09E-09	1.98E-09	1.13E-09	7.06E-10	5.49E-10	7.70E-10
Tc-98	1.0E+00	2.09E-08	1.09E-08	5.75E-09	3.53E-09	2.34E-09	1.86E-09	2.43E-09
Tc-99	1.0E+00	1.03E-08	4.77E-09	2.30E-09	1.31E-09	8.24E-10	6.42E-10	9.00E-10
Tc-99m	1.0E+00	2.04E-10	1.34E-10	7.19E-11	4.34E-11	2.85E-11	2.23E-11	2.91E-11
Tc-101	1.0E+00	2.38E-10	1.25E-10	6.09E-11	3.48E-11	2.38E-11	1.86E-11	2.50E-11
Tc-104	1.0E+00	1.04E-09	5.37E-10	2.64E-10	1.52E-10	1.04E-10	8.16E-11	1.09E-10

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Ruthenium								
Ru-94	1.0E-01	9.39E-10	5.95E-10	3.09E-10	1.89E-10	1.19E-10	9.52E-11	1.25E-10
Ru-95	1.0E-01	4.61E-10	3.16E-10	1.77E-10	1.15E-10	7.68E-11	6.15E-11	7.75E-11
Ru-97	1.0E-01	1.19E-09	8.48E-10	4.69E-10	3.04E-10	1.92E-10	1.50E-10	1.94E-10
Ru-103	1.0E-01	6.77E-09	4.43E-09	2.35E-09	1.47E-09	8.93E-10	7.14E-10	9.41E-10
Ru-105	1.0E-01	2.93E-09	1.90E-09	9.68E-10	5.82E-10	3.50E-10	2.79E-10	3.76E-10
Ru-106	1.0E-01	8.39E-08	4.97E-08	2.52E-08	1.50E-08	8.65E-09	7.02E-09	9.59E-09
Rhodium								
Rh-97	1.0E-01	5.04E-10	2.92E-10	1.48E-10	8.77E-11	5.98E-11	4.72E-11	6.19E-11
Rh-97m	1.0E-01	4.11E-10	2.58E-10	1.38E-10	8.65E-11	5.88E-11	4.70E-11	5.99E-11
Rh-99	1.0E-01	4.96E-09	3.36E-09	1.82E-09	1.15E-09	7.14E-10	5.66E-10	7.39E-10
Rh-99m	1.0E-01	5.06E-10	3.55E-10	1.98E-10	1.28E-10	8.33E-11	6.66E-11	8.46E-11
Rh-100	1.0E-01	4.52E-09	3.36E-09	1.93E-09	1.29E-09	8.48E-10	6.78E-10	8.48E-10
Rh-101	1.0E-01	4.74E-09	2.67E-09	1.54E-09	1.00E-09	6.61E-10	5.50E-10	6.90E-10
Rh-101m	1.0E-01	1.70E-09	1.20E-09	6.62E-10	4.26E-10	2.67E-10	2.10E-10	2.72E-10
Rh-102	1.0E-01	1.25E-08	7.56E-09	3.98E-09	2.45E-09	1.48E-09	1.19E-09	1.59E-09
Rh-102m	1.0E-01	1.97E-08	1.09E-08	6.83E-09	4.59E-09	3.24E-09	2.76E-09	3.32E-09
Rh-103m	1.0E-01	4.71E-11	2.66E-11	1.29E-11	7.36E-12	4.82E-12	3.77E-12	5.11E-12
Rh-105	1.0E-01	4.00E-09	2.66E-09	1.34E-09	7.97E-10	4.58E-10	3.67E-10	5.02E-10
Rh-106m	1.0E-01	1.43E-09	1.02E-09	5.48E-10	3.20E-10	2.09E-10	1.68E-10	2.18E-10
Rh-107	1.0E-01	2.88E-10	1.60E-10	7.83E-11	4.49E-11	3.05E-11	2.39E-11	3.20E-11
Palladium								
Pd-98	5.0E-02	7.09E-10	4.01E-10	1.99E-10	1.16E-10	7.92E-11	6.23E-11	8.25E-11
Pd-99	5.0E-02	3.66E-10	2.14E-10	1.09E-10	6.53E-11	4.45E-11	3.52E-11	4.59E-11
Pd-100	5.0E-02	7.15E-09	5.05E-09	2.81E-09	1.83E-09	1.16E-09	9.19E-10	1.18E-09

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Pd-101	5.0E-02	8.03E-10	5.56E-10	3.01E-10	1.91E-10	1.19E-10	9.35E-11	1.22E-10
Pd-103	5.0E-02	2.20E-09	1.43E-09	7.16E-10	4.25E-10	2.40E-10	1.90E-10	2.63E-10
Pd-107	5.0E-02	4.51E-10	2.85E-10	1.42E-10	8.42E-11	4.77E-11	3.84E-11	5.29E-11
Pd-109	5.0E-02	6.40E-09	4.16E-09	2.07E-09	1.22E-09	6.97E-10	5.58E-10	7.69E-10
Pd-111	5.0E-02	6.26E-10	3.47E-10	1.68E-10	9.56E-11	6.39E-11	5.00E-11	6.75E-11
Pd-112	5.0E-02	2.84E-08	1.89E-08	9.48E-09	5.66E-09	3.22E-09	2.58E-09	3.54E-09
Silver								
Ag-101	1.0E-01	3.64E-10	2.06E-10	1.03E-10	6.01E-11	4.11E-11	3.23E-11	4.27E-11
Ag-102	1.0E-01	4.34E-10	2.49E-10	1.26E-10	7.49E-11	5.20E-11	4.11E-11	5.36E-11
Ag-103	1.0E-01	3.74E-10	2.28E-10	1.18E-10	7.20E-11	4.79E-11	3.81E-11	4.96E-11
Ag-104	1.0E-01	4.40E-10	2.98E-10	1.70E-10	1.11E-10	7.61E-11	6.14E-11	7.63E-11
Ag-104m	1.0E-01	7.26E-10	4.18E-10	2.10E-10	1.24E-10	8.40E-11	6.64E-11	8.74E-11
Ag-105	1.0E-01	3.90E-09	2.44E-09	1.38E-09	9.05E-10	5.83E-10	4.62E-10	5.91E-10
Ag-106	1.0E-01	3.66E-10	2.06E-10	1.02E-10	5.92E-11	4.03E-11	3.17E-11	4.21E-11
Ag-106m	1.0E-01	9.74E-09	6.94E-09	4.09E-09	2.77E-09	1.85E-09	1.47E-09	1.83E-09
Ag-108m	1.0E-01	2.06E-08	1.11E-08	6.51E-09	4.29E-09	2.85E-09	2.35E-09	2.95E-09
Ag-110m	1.0E-01	2.44E-08	1.39E-08	7.99E-09	5.27E-09	3.47E-09	2.82E-09	3.55E-09
Ag-111	1.0E-01	1.43E-08	9.26E-09	4.62E-09	2.75E-09	1.56E-09	1.25E-09	1.73E-09
Ag-112	1.0E-01	4.85E-09	3.00E-09	1.49E-09	8.76E-10	5.31E-10	4.22E-10	5.73E-10
Ag-113	1.0E-01	4.56E-09	2.89E-09	1.43E-09	8.42E-10	4.93E-10	3.93E-10	5.40E-10
Ag-115	1.0E-01	7.48E-10	4.23E-10	2.07E-10	1.19E-10	7.87E-11	6.17E-11	8.30E-11
Cadmium								
Cd-104	1.0E-01	1.04E-09	6.47E-10	3.32E-10	2.01E-10	1.27E-10	1.01E-10	1.34E-10
Cd-105	1.0E-01	4.07E-10	2.47E-10	1.29E-10	7.90E-11	5.31E-11	4.23E-11	5.47E-11
Cd-107	1.0E-01	7.15E-10	4.61E-10	2.30E-10	1.36E-10	7.90E-11	6.25E-11	8.59E-11

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Cd-109	1.0E-01	2.05E-08	9.46E-09	5.51E-09	3.54E-09	2.37E-09	2.00E-09	2.52E-09
Cd-111m	1.0E-01	1.44E-10	8.52E-11	4.34E-11	2.59E-11	1.74E-11	1.38E-11	1.81E-11
Cd-113	1.0E-01	1.00E-07	4.73E-08	3.65E-08	2.97E-08	2.61E-08	2.45E-08	2.63E-08
Cd-113m	1.0E-01	1.22E-07	5.66E-08	3.96E-08	2.95E-08	2.47E-08	2.34E-08	2.57E-08
Cd-115	1.0E-01	1.49E-08	1.00E-08	5.04E-09	3.02E-09	1.74E-09	1.39E-09	1.90E-09
Cd-115m	1.0E-01	4.05E-08	1.94E-08	9.67E-09	6.88E-09	4.09E-09	3.29E-09	4.35E-09
Cd-117	1.0E-01	2.93E-09	1.88E-09	9.56E-10	5.76E-10	3.48E-10	2.78E-10	3.73E-10
Cd-117m	1.0E-01	2.56E-09	1.71E-09	9.06E-10	5.67E-10	3.54E-10	2.84E-10	3.71E-10
Cd-118	1.0E-01	2.30E-09	1.29E-09	6.27E-10	3.57E-10	2.35E-10	1.84E-10	2.50E-10
Indium								
In-107	4.0E-02	4.15E-10	2.48E-10	1.27E-10	7.63E-11	5.10E-11	4.05E-11	5.29E-11
In-108	4.0E-02	5.77E-10	3.83E-10	2.16E-10	1.41E-10	9.68E-11	7.80E-11	9.72E-11
In-108m	4.0E-02	8.39E-10	4.93E-10	2.52E-10	1.51E-10	1.02E-10	8.10E-11	1.06E-10
In-109	4.0E-02	4.49E-10	3.11E-10	1.74E-10	1.13E-10	7.35E-11	5.88E-11	7.46E-11
In-110	4.0E-02	1.53E-09	1.13E-09	6.70E-10	4.55E-10	3.05E-10	2.45E-10	3.03E-10
In-110m	4.0E-02	1.08E-09	6.43E-10	3.27E-10	1.95E-10	1.29E-10	1.02E-10	1.34E-10
In-111	4.0E-02	2.41E-09	1.67E-09	9.18E-10	5.92E-10	3.71E-10	2.92E-10	3.79E-10
In-112	4.0E-02	1.25E-10	6.94E-11	3.41E-11	1.96E-11	1.34E-11	1.05E-11	1.40E-11
In-112m	4.0E-02	2.03E-10	1.14E-10	5.59E-11	3.22E-11	2.17E-11	1.70E-11	2.28E-11
In-113m	4.0E-02	3.10E-10	1.87E-10	1.05E-10	6.28E-11	3.65E-11	2.89E-11	3.92E-11
In-114m	4.0E-02	5.68E-08	3.15E-08	1.56E-08	9.15E-09	5.23E-09	4.14E-09	5.81E-09
In-115	4.0E-02	1.35E-07	6.40E-08	4.81E-08	4.31E-08	3.66E-08	3.27E-08	3.55E-08
In-115m	4.0E-02	9.75E-10	6.14E-10	3.09E-10	1.84E-10	1.10E-10	8.78E-11	1.19E-10
In-116m	4.0E-02	5.82E-10	3.59E-10	1.91E-10	1.19E-10	8.07E-11	6.44E-11	8.24E-11
In-117	4.0E-02	3.25E-10	1.90E-10	9.63E-11	5.72E-11	3.87E-11	3.06E-11	4.01E-11

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
In-117m	4.0E-02	1.42E-09	8.63E-10	4.30E-10	2.54E-10	1.56E-10	1.24E-10	1.68E-10
In-119m	4.0E-02	5.79E-10	3.17E-10	1.53E-10	8.69E-11	5.89E-11	4.60E-11	6.20E-11
Tin								
Sn-108	4.0E-02	2.15E-10	1.30E-10	6.71E-11	4.08E-11	2.76E-11	2.20E-11	2.85E-11
Sn-109	4.0E-02	1.42E-10	9.36E-11	5.26E-11	3.42E-11	2.38E-11	1.91E-11	2.38E-11
Sn-110	4.0E-02	3.64E-09	2.41E-09	1.25E-09	7.67E-10	4.60E-10	3.68E-10	4.91E-10
Sn-111	4.0E-02	2.23E-10	1.31E-10	6.68E-11	3.99E-11	2.68E-11	2.12E-11	2.78E-11
Sn-113	4.0E-02	7.90E-09	5.12E-09	2.63E-09	1.60E-09	9.39E-10	7.48E-10	1.01E-09
Sn-113m	4.0E-02	4.03E-11	2.24E-11	1.09E-11	6.20E-12	4.18E-12	3.26E-12	4.39E-12
Sn-117m	4.0E-02	7.78E-09	5.04E-09	2.56E-09	1.54E-09	8.90E-10	7.13E-10	9.70E-10
Sn-119m	4.0E-02	4.15E-09	2.61E-09	1.31E-09	7.75E-10	4.42E-10	3.53E-10	4.87E-10
Sn-121	4.0E-02	2.66E-09	1.71E-09	8.52E-10	5.04E-10	2.86E-10	2.30E-10	3.17E-10
Sn-121m	4.0E-02	4.62E-09	2.78E-09	1.41E-09	8.31E-10	4.77E-10	3.86E-10	5.30E-10
Sn-123	4.0E-02	2.48E-08	1.57E-08	7.84E-09	4.64E-09	2.63E-09	2.11E-09	2.92E-09
Sn-123m	4.0E-02	4.72E-10	2.64E-10	1.29E-10	7.35E-11	4.91E-11	3.85E-11	5.18E-11
Sn-125	4.0E-02	3.46E-08	2.23E-08	1.12E-08	6.66E-09	3.80E-09	3.05E-09	4.19E-09
Sn-126	4.0E-02	5.00E-08	3.07E-08	1.61E-08	9.87E-09	5.93E-09	4.80E-09	6.39E-09
Sn-127	4.0E-02	2.00E-09	1.26E-09	6.53E-10	3.99E-10	2.50E-10	2.00E-10	2.64E-10
Sn-128	4.0E-02	1.63E-09	9.77E-10	4.98E-10	2.98E-10	1.95E-10	1.54E-10	2.04E-10
Antimony								
Sb-115	2.0E-01	2.48E-10	1.45E-10	7.44E-11	4.46E-11	3.05E-11	2.42E-11	3.15E-11
Sb-116	2.0E-01	3.16E-10	1.82E-10	9.30E-11	5.55E-11	3.85E-11	3.04E-11	3.96E-11
Sb-116m	2.0E-01	4.86E-10	3.23E-10	1.82E-10	1.18E-10	8.10E-11	6.52E-11	8.13E-11
Sb-117	2.0E-01	1.61E-10	1.08E-10	5.76E-11	3.59E-11	2.31E-11	1.83E-11	2.37E-11
Sb-118m	2.0E-01	1.36E-09	1.02E-09	5.92E-10	3.99E-10	2.66E-10	2.14E-10	2.65E-10

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Sb-119	2.0E-01	8.59E-10	5.97E-10	3.03E-10	1.81E-10	1.04E-10	8.18E-11	1.12E-10
Sb-120	2.0E-01	1.68E-10	9.40E-11	4.64E-11	2.69E-11	1.84E-11	1.45E-11	1.92E-11
Sb-120m	2.0E-01	8.14E-09	6.10E-09	3.53E-09	2.37E-09	1.57E-09	1.25E-09	1.56E-09
Sb-122	2.0E-01	1.76E-08	1.22E-08	6.14E-09	3.68E-09	2.12E-09	1.70E-09	2.31E-09
Sb-124	2.0E-01	2.45E-08	1.59E-08	8.41E-09	5.22E-09	3.18E-09	2.55E-09	3.37E-09
Sb-124n	2.0E-01	1.03E-10	5.94E-11	3.01E-11	1.79E-11	1.22E-11	9.70E-12	1.27E-11
Sb-125	2.0E-01	1.09E-08	6.16E-09	3.44E-09	2.14E-09	1.37E-09	1.15E-09	1.47E-09
Sb-126	2.0E-01	2.26E-08	1.58E-08	8.53E-09	5.41E-09	3.36E-09	2.68E-09	3.48E-09
Sb-126m	2.0E-01	4.18E-10	2.38E-10	1.20E-10	7.03E-11	4.83E-11	3.81E-11	5.00E-11
Sb-127	2.0E-01	1.68E-08	1.16E-08	5.93E-09	3.59E-09	2.09E-09	1.68E-09	2.26E-09
Sb-128	2.0E-01	6.90E-09	4.89E-09	2.61E-09	1.64E-09	1.02E-09	8.14E-10	1.06E-09
Sb-128m	2.0E-01	3.82E-10	2.15E-10	1.07E-10	6.22E-11	4.28E-11	3.37E-11	4.44E-11
Sb-129	2.0E-01	4.30E-09	2.88E-09	1.47E-09	8.91E-10	5.34E-10	4.27E-10	5.72E-10
Sb-130	2.0E-01	9.37E-10	5.56E-10	2.87E-10	1.74E-10	1.18E-10	9.39E-11	1.22E-10
Sb-131	2.0E-01	1.10E-09	7.52E-10	4.00E-10	2.21E-10	1.48E-10	1.08E-10	1.47E-10
Tellurium								
Te-114	6.0E-01	7.23E-10	4.13E-10	2.07E-10	1.22E-10	8.43E-11	6.64E-11	8.71E-11
Te-116	6.0E-01	1.65E-09	1.22E-09	6.36E-10	3.92E-10	2.48E-10	1.98E-10	2.58E-10
Te-117	6.0E-01	4.54E-10	3.00E-10	1.59E-10	9.89E-11	6.62E-11	5.28E-11	6.77E-11
Te-118	6.0E-01	2.96E-08	2.20E-08	1.12E-08	6.58E-09	3.85E-09	3.04E-09	4.13E-09
Te-119	6.0E-01	1.01E-09	9.33E-10	5.29E-10	3.46E-10	2.24E-10	1.79E-10	2.24E-10
Te-119m	6.0E-01	4.41E-09	3.52E-09	2.04E-09	1.35E-09	8.99E-10	7.22E-10	8.96E-10
Te-121	6.0E-01	3.28E-09	2.15E-09	1.26E-09	8.40E-10	5.64E-10	4.54E-10	5.65E-10
Te-121m	6.0E-01	2.69E-08	1.20E-08	7.00E-09	4.29E-09	2.81E-09	2.36E-09	3.03E-09
Te-123	6.0E-01	6.40E-09	2.97E-09	2.18E-09	1.67E-09	1.46E-09	1.36E-09	1.49E-09

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Te-123m	6.0E-01	1.91E-08	8.80E-09	4.86E-09	2.76E-09	1.68E-09	1.37E-09	1.87E-09
Te-125m	6.0E-01	1.28E-08	6.32E-09	3.33E-09	1.86E-09	1.09E-09	8.70E-10	1.22E-09
Te-127	6.0E-01	1.52E-09	1.25E-09	6.22E-10	3.67E-10	2.13E-10	1.70E-10	2.30E-10
Te-127m	6.0E-01	4.11E-08	1.85E-08	9.53E-09	5.19E-09	3.04E-09	2.35E-09	3.40E-09
Te-129	6.0E-01	7.53E-10	4.42E-10	2.15E-10	1.23E-10	8.02E-11	6.30E-11	8.51E-11
Te-129m	6.0E-01	4.37E-08	2.36E-08	1.19E-08	6.64E-09	3.86E-09	2.98E-09	4.25E-09
Te-131	6.0E-01	8.94E-10	6.54E-10	3.53E-10	1.88E-10	1.25E-10	8.71E-11	1.21E-10
Te-131m	6.0E-01	2.01E-08	1.39E-08	7.74E-09	4.30E-09	2.71E-09	1.93E-09	2.69E-09
Te-132	6.0E-01	4.78E-08	2.95E-08	1.56E-08	8.29E-09	5.24E-09	3.78E-09	5.36E-09
Te-133	6.0E-01	8.04E-10	6.14E-10	3.19E-10	1.55E-10	1.02E-10	6.97E-11	1.01E-10
Te-133m	6.0E-01	2.78E-09	2.22E-09	1.17E-09	5.67E-10	3.70E-10	2.50E-10	3.64E-10
Te-134	6.0E-01	9.89E-10	6.82E-10	3.56E-10	1.96E-10	1.31E-10	9.82E-11	1.33E-10
Iodine								
I-118	1.0E+00	2.02E-09	1.56E-09	8.40E-10	4.32E-10	2.85E-10	1.95E-10	2.76E-10
I-119	1.0E+00	4.50E-10	2.97E-10	1.55E-10	8.38E-11	5.74E-11	4.24E-11	5.75E-11
I-120	1.0E+00	3.26E-09	2.35E-09	1.21E-09	6.13E-10	4.10E-10	2.91E-10	4.10E-10
I-120m	1.0E+00	1.64E-09	1.09E-09	5.63E-10	3.05E-10	2.08E-10	1.55E-10	2.10E-10
I-121	1.0E+00	5.38E-10	4.60E-10	2.72E-10	1.55E-10	1.08E-10	7.59E-11	1.00E-10
I-123	1.0E+00	2.27E-09	2.00E-09	1.08E-09	5.10E-10	3.39E-10	2.21E-10	3.24E-10
I-124	1.0E+00	1.20E-07	1.13E-07	6.36E-08	3.10E-08	2.04E-08	1.31E-08	1.90E-08
I-125	1.0E+00	5.30E-08	5.85E-08	4.22E-08	3.19E-08	2.24E-08	1.55E-08	1.89E-08
I-126	1.0E+00	2.11E-07	2.11E-07	1.28E-07	6.91E-08	4.56E-08	2.93E-08	4.09E-08
I-128	1.0E+00	5.69E-10	3.31E-10	1.62E-10	8.87E-11	5.99E-11	4.57E-11	6.23E-11
I-129	1.0E+00	1.88E-07	2.20E-07	1.76E-07	1.92E-07	1.43E-07	1.08E-07	1.21E-07
I-130	1.0E+00	1.95E-08	1.72E-08	9.30E-09	4.34E-09	2.88E-09	1.87E-09	2.76E-09

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
I-131	1.0E+00	1.84E-07	1.79E-07	1.03E-07	5.23E-08	3.42E-08	2.17E-08	3.13E-08
I-132	1.0E+00	3.00E-09	2.37E-09	1.25E-09	6.17E-10	4.13E-10	2.84E-10	4.05E-10
I-132m	1.0E+00	2.16E-09	1.78E-09	9.52E-10	4.50E-10	2.96E-10	1.98E-10	2.89E-10
I-133	1.0E+00	4.98E-08	4.44E-08	2.35E-08	1.06E-08	6.85E-09	4.32E-09	6.60E-09
I-134	1.0E+00	1.05E-09	7.01E-10	3.63E-10	1.98E-10	1.36E-10	1.01E-10	1.37E-10
I-135	1.0E+00	9.75E-09	8.41E-09	4.46E-09	2.07E-09	1.36E-09	8.83E-10	1.31E-09
Cesium								
Cs-125	1.0E+00	3.87E-10	2.19E-10	1.09E-10	6.38E-11	4.38E-11	3.46E-11	4.56E-11
Cs-127	1.0E+00	1.88E-10	1.24E-10	6.83E-11	4.37E-11	3.00E-11	2.49E-11	3.09E-11
Cs-129	1.0E+00	4.36E-10	2.98E-10	1.67E-10	1.08E-10	7.20E-11	6.06E-11	7.50E-11
Cs-130	1.0E+00	3.14E-10	1.75E-10	8.62E-11	4.98E-11	3.41E-11	2.68E-11	3.56E-11
Cs-131	1.0E+00	4.56E-10	2.90E-10	1.58E-10	1.02E-10	6.99E-11	5.81E-11	7.22E-11
Cs-132	1.0E+00	2.74E-09	1.88E-09	1.16E-09	7.89E-10	5.84E-10	5.14E-10	6.00E-10
Cs-134	1.0E+00	2.58E-08	1.57E-08	1.32E-08	1.41E-08	1.90E-08	1.93E-08	1.87E-08
Cs-134m	1.0E+00	2.12E-10	1.20E-10	5.94E-11	3.52E-11	2.48E-11	2.02E-11	2.61E-11
Cs-135	1.0E+00	5.40E-09	3.08E-09	2.23E-09	2.21E-09	2.70E-09	2.65E-09	2.64E-09
Cs-135m	1.0E+00	1.34E-10	8.75E-11	5.01E-11	3.28E-11	2.38E-11	1.94E-11	2.37E-11
Cs-136	1.0E+00	1.45E-08	9.58E-09	6.09E-09	4.35E-09	3.44E-09	3.03E-09	3.45E-09
Cs-137	1.0E+00	2.11E-08	1.24E-08	9.71E-09	1.02E-08	1.34E-08	1.36E-08	1.33E-08
Cs-138	1.0E+00	1.11E-09	6.24E-10	3.09E-10	1.79E-10	1.23E-10	9.66E-11	1.28E-10
Barium								
Ba-124	6.0E-01	8.34E-10	4.61E-10	2.25E-10	1.29E-10	8.82E-11	6.91E-11	9.23E-11
Ba-126	6.0E-01	2.60E-09	1.66E-09	8.38E-10	4.91E-10	3.12E-10	2.54E-10	3.36E-10
Ba-127	6.0E-01	2.80E-10	1.60E-10	7.93E-11	4.60E-11	3.14E-11	2.48E-11	3.28E-11
Ba-128	6.0E-01	2.09E-08	1.80E-08	9.22E-09	5.39E-09	3.03E-09	2.74E-09	3.56E-09

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Ba-129	6.0E-01	4.06E-10	2.92E-10	1.53E-10	9.23E-11	5.79E-11	4.87E-11	6.26E-11
Ba-129m	6.0E-01	4.23E-10	3.42E-10	1.96E-10	1.28E-10	8.50E-11	7.20E-11	8.81E-11
Ba-131	6.0E-01	4.24E-09	2.67E-09	1.46E-09	9.61E-10	6.36E-10	4.63E-10	6.08E-10
Ba-131m	6.0E-01	5.86E-11	3.28E-11	1.62E-11	9.41E-12	6.42E-12	4.99E-12	6.65E-12
Ba-133	6.0E-01	2.16E-08	6.31E-09	3.92E-09	4.70E-09	7.23E-09	1.54E-09	2.44E-09
Ba-133m	6.0E-01	4.26E-09	3.72E-09	1.89E-09	1.09E-09	6.05E-10	5.52E-10	7.19E-10
Ba-135m	6.0E-01	3.31E-09	2.93E-09	1.48E-09	8.54E-10	4.74E-10	4.35E-10	5.66E-10
Ba-139	6.0E-01	1.42E-09	8.54E-10	4.17E-10	2.38E-10	1.51E-10	1.22E-10	1.64E-10
Ba-140	6.0E-01	3.20E-08	1.81E-08	9.26E-09	5.87E-09	3.74E-09	2.62E-09	3.63E-09
Ba-141	6.0E-01	8.10E-10	5.01E-10	2.47E-10	1.42E-10	9.11E-11	7.40E-11	9.85E-11
Ba-142	6.0E-01	3.49E-10	2.14E-10	1.08E-10	6.40E-11	4.22E-11	3.40E-11	4.46E-11
Lanthanum								
La-129	5.0E-03	3.00E-10	1.71E-10	8.53E-11	5.00E-11	3.39E-11	2.67E-11	3.53E-11
La-131	5.0E-03	3.37E-10	2.03E-10	1.05E-10	6.36E-11	4.24E-11	3.36E-11	4.39E-11
La-132	5.0E-03	4.03E-09	2.61E-09	1.35E-09	8.32E-10	5.11E-10	4.09E-10	5.41E-10
La-132m	5.0E-03	3.58E-10	2.28E-10	1.19E-10	7.30E-11	4.61E-11	3.68E-11	4.83E-11
La-133	5.0E-03	3.15E-10	2.03E-10	1.06E-10	6.46E-11	4.00E-11	3.18E-11	4.21E-11
La-135	5.0E-03	2.90E-10	1.96E-10	1.05E-10	6.54E-11	3.96E-11	3.10E-11	4.12E-11
La-137	5.0E-03	1.12E-09	4.69E-10	2.57E-10	1.63E-10	1.03E-10	8.40E-11	1.11E-10
La-138	5.0E-03	1.28E-08	4.64E-09	2.75E-09	1.88E-09	1.30E-09	1.09E-09	1.37E-09
La-140	5.0E-03	1.94E-08	1.29E-08	6.75E-09	4.18E-09	2.51E-09	2.01E-09	2.67E-09
La-141	5.0E-03	4.45E-09	2.73E-09	1.35E-09	7.88E-10	4.66E-10	3.71E-10	5.10E-10
La-142	5.0E-03	1.85E-09	1.12E-09	5.67E-10	3.41E-10	2.20E-10	1.75E-10	2.31E-10
La-143	5.0E-03	6.87E-10	3.85E-10	1.87E-10	1.07E-10	7.11E-11	5.57E-11	7.51E-11
Cerium								

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Ce-130	5.0E-03	7.78E-10	4.47E-10	2.25E-10	1.33E-10	9.03E-11	7.13E-11	9.37E-11
Ce-131	5.0E-03	3.00E-10	1.72E-10	8.65E-11	5.11E-11	3.50E-11	2.76E-11	3.62E-11
Ce-132	5.0E-03	3.21E-09	2.14E-09	1.12E-09	6.94E-10	4.15E-10	3.32E-10	4.42E-10
Ce-133	5.0E-03	9.56E-10	6.41E-10	3.25E-10	1.94E-10	1.12E-10	8.83E-11	1.21E-10
Ce-133m	5.0E-03	1.65E-09	1.14E-09	6.35E-10	4.12E-10	2.63E-10	2.11E-10	2.69E-10
Ce-134	5.0E-03	2.91E-08	1.89E-08	9.58E-09	5.76E-09	3.32E-09	2.66E-09	3.63E-09
Ce-135	5.0E-03	1.95E-09	1.39E-09	7.88E-10	5.17E-10	3.33E-10	2.64E-10	3.35E-10
Ce-137	5.0E-03	2.70E-10	1.77E-10	9.22E-11	5.62E-11	3.36E-11	2.65E-11	3.57E-11
Ce-137m	5.0E-03	6.23E-09	4.02E-09	2.02E-09	1.21E-09	6.92E-10	5.54E-10	7.59E-10
Ce-139	5.0E-03	2.62E-09	1.65E-09	8.78E-10	5.49E-10	3.32E-10	2.64E-10	3.50E-10
Ce-141	5.0E-03	8.15E-09	5.17E-09	2.60E-09	1.55E-09	8.88E-10	7.14E-10	9.78E-10
Ce-143	5.0E-03	1.26E-08	8.13E-09	4.09E-09	2.45E-09	1.41E-09	1.13E-09	1.54E-09
Ce-144	5.0E-03	6.62E-08	3.88E-08	1.94E-08	1.15E-08	6.50E-09	5.23E-09	7.25E-09
Praseodymium								
Pr-134	5.0E-03	5.36E-10	3.10E-10	1.56E-10	9.19E-11	6.20E-11	4.91E-11	6.46E-11
Pr-134m	5.0E-03	9.75E-10	5.56E-10	2.75E-10	1.60E-10	1.07E-10	8.45E-11	1.12E-10
Pr-135	5.0E-03	4.74E-10	2.74E-10	1.38E-10	8.17E-11	5.53E-11	4.35E-11	5.73E-11
Pr-136	5.0E-03	3.74E-10	2.12E-10	1.06E-10	6.24E-11	4.32E-11	3.41E-11	4.47E-11
Pr-137	5.0E-03	3.95E-10	2.38E-10	1.21E-10	7.18E-11	4.64E-11	3.67E-11	4.87E-11
Pr-138m	5.0E-03	1.05E-09	7.49E-10	4.11E-10	2.63E-10	1.61E-10	1.29E-10	1.67E-10
Pr-139	5.0E-03	3.28E-10	2.11E-10	1.10E-10	6.69E-11	4.10E-11	3.26E-11	4.34E-11
Pr-142	5.0E-03	1.54E-08	9.84E-09	4.89E-09	2.90E-09	1.65E-09	1.32E-09	1.82E-09
Pr-142m	5.0E-03	1.96E-10	1.25E-10	6.23E-11	3.69E-11	2.09E-11	1.68E-11	2.32E-11
Pr-143	5.0E-03	1.36E-08	8.73E-09	4.35E-09	2.57E-09	1.46E-09	1.17E-09	1.62E-09
Pr-144	5.0E-03	6.40E-10	3.50E-10	1.69E-10	9.56E-11	6.48E-11	5.06E-11	6.82E-11

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Pr-145	5.0E-03	4.69E-09	2.93E-09	1.45E-09	8.51E-10	4.95E-10	3.95E-10	5.44E-10
Pr-146	5.0E-03	9.37E-10	5.21E-10	2.55E-10	1.46E-10	9.91E-11	7.77E-11	1.04E-10
Pr-147	5.0E-03	4.11E-10	2.28E-10	1.11E-10	6.35E-11	4.31E-11	3.37E-11	4.52E-11
Neodymium								
Nd-135	5.0E-03	6.69E-10	3.79E-10	1.88E-10	1.10E-10	7.46E-11	5.86E-11	7.77E-11
Nd-136	5.0E-03	1.03E-09	6.14E-10	3.15E-10	1.89E-10	1.25E-10	9.95E-11	1.30E-10
Nd-137	5.0E-03	5.53E-10	3.32E-10	1.70E-10	1.02E-10	6.76E-11	5.36E-11	7.03E-11
Nd-138	5.0E-03	7.22E-09	4.54E-09	2.28E-09	1.35E-09	8.03E-10	6.40E-10	8.71E-10
Nd-139	5.0E-03	2.25E-10	1.32E-10	6.65E-11	3.93E-11	2.62E-11	2.07E-11	2.73E-11
Nd-139m	5.0E-03	1.97E-09	1.35E-09	7.41E-10	4.76E-10	3.02E-10	2.42E-10	3.10E-10
Nd-140	5.0E-03	2.16E-08	1.41E-08	7.14E-09	4.29E-09	2.48E-09	1.99E-09	2.71E-09
Nd-141	5.0E-03	8.16E-11	5.25E-11	2.78E-11	1.71E-11	1.09E-11	8.61E-12	1.13E-11
Nd-144	5.0E-03	1.15E-06	1.13E-07	7.52E-08	5.26E-08	4.31E-08	4.08E-08	5.28E-08
Nd-147	5.0E-03	1.21E-08	7.80E-09	3.93E-09	2.35E-09	1.34E-09	1.08E-09	1.48E-09
Nd-149	5.0E-03	1.44E-09	8.72E-10	4.34E-10	2.55E-10	1.57E-10	1.25E-10	1.69E-10
Nd-151	5.0E-03	3.31E-10	1.90E-10	9.40E-11	5.48E-11	3.64E-11	2.86E-11	3.82E-11
Nd-152	5.0E-03	6.02E-10	3.30E-10	1.60E-10	9.09E-11	6.19E-11	4.83E-11	6.50E-11
Promethium								
Pm-141	5.0E-03	4.08E-10	2.30E-10	1.13E-10	6.57E-11	4.47E-11	3.51E-11	4.66E-11
Pm-143	5.0E-03	1.93E-09	1.22E-09	6.96E-10	4.59E-10	2.98E-10	2.35E-10	3.00E-10
Pm-144	5.0E-03	7.73E-09	4.77E-09	2.80E-09	1.89E-09	1.25E-09	9.86E-10	1.24E-09
Pm-145	5.0E-03	1.46E-09	6.66E-10	3.57E-10	2.22E-10	1.36E-10	1.11E-10	1.48E-10
Pm-146	5.0E-03	1.02E-08	5.09E-09	2.78E-09	1.77E-09	1.11E-09	8.96E-10	1.18E-09
Pm-147	5.0E-03	3.62E-09	1.90E-09	9.55E-10	5.66E-10	3.23E-10	2.61E-10	3.63E-10
Pm-148	5.0E-03	2.99E-08	1.94E-08	9.76E-09	5.84E-09	3.36E-09	2.69E-09	3.68E-09

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Pm-148m	5.0E-03	1.49E-08	1.01E-08	5.51E-09	3.54E-09	2.22E-09	1.76E-09	2.28E-09
Pm-149	5.0E-03	1.15E-08	7.39E-09	3.68E-09	2.18E-09	1.24E-09	9.93E-10	1.37E-09
Pm-150	5.0E-03	2.81E-09	1.73E-09	8.79E-10	5.28E-10	3.28E-10	2.61E-10	3.49E-10
Pm-151	5.0E-03	7.96E-09	5.17E-09	2.62E-09	1.58E-09	9.16E-10	7.34E-10	9.97E-10
Samarium								
Sm-140	5.0E-03	1.16E-09	6.48E-10	3.18E-10	1.82E-10	1.23E-10	9.66E-11	1.29E-10
Sm-141	5.0E-03	4.45E-10	2.50E-10	1.24E-10	7.22E-11	4.94E-11	3.89E-11	5.14E-11
Sm-141m	5.0E-03	6.65E-10	3.86E-10	1.96E-10	1.16E-10	7.90E-11	6.25E-11	8.18E-11
Sm-142	5.0E-03	2.12E-09	1.23E-09	6.09E-10	3.54E-10	2.30E-10	1.81E-10	2.43E-10
Sm-145	5.0E-03	2.39E-09	1.40E-09	7.32E-10	4.49E-10	2.66E-10	2.12E-10	2.86E-10
Sm-146	5.0E-03	1.53E-06	1.50E-07	9.98E-08	6.99E-08	5.72E-08	5.42E-08	7.01E-08
Sm-147	5.0E-03	1.40E-06	1.37E-07	9.12E-08	6.38E-08	5.23E-08	4.95E-08	6.40E-08
Sm-148	5.0E-03	1.20E-06	1.18E-07	7.84E-08	5.49E-08	4.49E-08	4.26E-08	5.50E-08
Sm-151	5.0E-03	1.50E-09	6.45E-10	3.30E-10	1.99E-10	1.19E-10	9.89E-11	1.35E-10
Sm-153	5.0E-03	8.35E-09	5.38E-09	2.70E-09	1.60E-09	9.16E-10	7.35E-10	1.01E-09
Sm-155	5.0E-03	3.67E-10	2.02E-10	9.79E-11	5.57E-11	3.77E-11	2.95E-11	3.96E-11
Sm-156	5.0E-03	2.84E-09	1.82E-09	9.16E-10	5.48E-10	3.20E-10	2.56E-10	3.48E-10
Europium								
Eu-145	5.0E-03	4.59E-09	3.32E-09	1.91E-09	1.28E-09	8.37E-10	6.66E-10	8.36E-10
Eu-146	5.0E-03	8.22E-09	5.99E-09	3.46E-09	2.32E-09	1.52E-09	1.21E-09	1.51E-09
Eu-147	5.0E-03	3.72E-09	2.54E-09	1.39E-09	8.92E-10	5.58E-10	4.44E-10	5.74E-10
Eu-148	5.0E-03	8.76E-09	6.27E-09	3.68E-09	2.48E-09	1.65E-09	1.30E-09	1.62E-09
Eu-149	5.0E-03	1.65E-09	1.06E-09	5.53E-10	3.40E-10	2.02E-10	1.61E-10	2.15E-10
Eu-150	5.0E-03	1.28E-08	5.47E-09	3.27E-09	2.24E-09	1.53E-09	1.25E-09	1.57E-09
Eu-150m	5.0E-03	4.44E-09	2.83E-09	1.41E-09	8.34E-10	4.78E-10	3.83E-10	5.27E-10

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Eu-152	5.0E-03	1.54E-08	7.23E-09	3.99E-09	2.57E-09	1.64E-09	1.34E-09	1.74E-09
Eu-152m	5.0E-03	5.65E-09	3.60E-09	1.80E-09	1.07E-09	6.24E-10	4.99E-10	6.82E-10
Eu-152n	5.0E-03	1.44E-10	8.60E-11	4.82E-11	2.57E-11	1.65E-11	1.30E-11	1.76E-11
Eu-154	5.0E-03	2.40E-08	1.17E-08	6.26E-09	3.92E-09	2.42E-09	1.97E-09	2.61E-09
Eu-154m	5.0E-03	9.13E-11	5.23E-11	2.60E-11	1.52E-11	1.02E-11	7.97E-12	1.06E-11
Eu-155	5.0E-03	4.38E-09	2.24E-09	1.15E-09	6.96E-10	4.09E-10	3.32E-10	4.52E-10
Eu-156	5.0E-03	2.35E-08	1.54E-08	7.91E-09	4.83E-09	2.85E-09	2.29E-09	3.07E-09
Eu-157	5.0E-03	6.82E-09	4.39E-09	2.21E-09	1.32E-09	7.67E-10	6.14E-10	8.37E-10
Eu-158	5.0E-03	1.04E-09	5.97E-10	2.97E-10	1.74E-10	1.16E-10	9.13E-11	1.21E-10
Eu-159	5.0E-03	5.95E-10	3.36E-10	1.64E-10	9.43E-11	6.21E-11	4.88E-11	6.57E-11
Gadolinium								
Gd-145	5.0E-03	3.27E-10	1.95E-10	1.02E-10	6.23E-11	4.31E-11	3.43E-11	4.40E-11
Gd-146	5.0E-03	9.25E-09	5.94E-09	3.16E-09	1.97E-09	1.20E-09	9.54E-10	1.26E-09
Gd-147	5.0E-03	4.76E-09	3.38E-09	1.91E-09	1.25E-09	8.08E-10	6.42E-10	8.15E-10
Gd-148	5.0E-03	1.64E-06	1.62E-07	1.06E-07	7.20E-08	5.79E-08	5.47E-08	7.19E-08
Gd-149	5.0E-03	4.77E-09	3.25E-09	1.76E-09	1.12E-09	6.90E-10	5.48E-10	7.15E-10
Gd-150	5.0E-03	1.49E-06	1.47E-07	9.76E-08	6.76E-08	5.52E-08	5.23E-08	6.78E-08
Gd-151	5.0E-03	2.45E-09	1.54E-09	7.94E-10	4.84E-10	2.84E-10	2.27E-10	3.07E-10
Gd-152	5.0E-03	1.17E-06	1.16E-07	7.66E-08	5.31E-08	4.33E-08	4.10E-08	5.32E-08
Gd-153	5.0E-03	2.98E-09	1.82E-09	9.55E-10	5.87E-10	3.49E-10	2.79E-10	3.74E-10
Gd-159	5.0E-03	5.84E-09	3.73E-09	1.86E-09	1.10E-09	6.30E-10	5.05E-10	6.95E-10
Terbium								
Tb-147	5.0E-03	1.08E-09	7.03E-10	3.81E-10	2.42E-10	1.59E-10	1.27E-10	1.62E-10
Tb-148	5.0E-03	1.31E-09	7.75E-10	3.94E-10	2.36E-10	1.57E-10	1.24E-10	1.63E-10
Tb-149	5.0E-03	1.68E-09	1.09E-09	5.83E-10	3.66E-10	2.31E-10	1.85E-10	2.40E-10

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Tb-150	5.0E-03	1.89E-09	1.25E-09	6.73E-10	4.26E-10	2.72E-10	2.18E-10	2.81E-10
Tb-151	5.0E-03	2.91E-09	2.02E-09	1.12E-09	7.20E-10	4.55E-10	3.62E-10	4.66E-10
Tb-152	5.0E-03	6.39E-09	4.30E-09	2.28E-09	1.43E-09	8.74E-10	6.99E-10	9.18E-10
Tb-153	5.0E-03	2.54E-09	1.73E-09	9.33E-10	5.90E-10	3.63E-10	2.89E-10	3.78E-10
Tb-154	5.0E-03	4.50E-09	3.22E-09	1.82E-09	1.21E-09	7.84E-10	6.28E-10	7.92E-10
Tb-155	5.0E-03	2.47E-09	1.66E-09	8.84E-10	5.52E-10	3.33E-10	2.66E-10	3.51E-10
Tb-156	5.0E-03	8.69E-09	6.16E-09	3.46E-09	2.28E-09	1.47E-09	1.17E-09	1.48E-09
Tb-156m	5.0E-03	1.35E-09	9.36E-10	5.14E-10	3.30E-10	2.07E-10	1.65E-10	2.13E-10
Tb-156n	5.0E-03	8.54E-10	5.59E-10	2.91E-10	1.80E-10	1.10E-10	8.73E-11	1.16E-10
Tb-157	5.0E-03	5.50E-10	2.47E-10	1.28E-10	7.85E-11	4.74E-11	3.90E-11	5.27E-11
Tb-158	5.0E-03	1.34E-08	5.92E-09	3.26E-09	2.10E-09	1.36E-09	1.12E-09	1.45E-09
Tb-160	5.0E-03	1.60E-08	1.03E-08	5.41E-09	3.36E-09	2.02E-09	1.62E-09	2.15E-09
Tb-161	5.0E-03	8.52E-09	5.48E-09	2.74E-09	1.63E-09	9.28E-10	7.45E-10	1.02E-09
Tb-163	5.0E-03	2.37E-10	1.35E-10	6.72E-11	3.94E-11	2.71E-11	2.14E-11	2.81E-11
Dysprosium								
Dy-151	5.0E-03	1.72E-10	1.08E-10	5.81E-11	3.65E-11	2.48E-11	1.97E-11	2.52E-11
Dy-152	5.0E-03	9.65E-10	6.55E-10	3.51E-10	2.21E-10	1.36E-10	1.09E-10	1.42E-10
Dy-153	5.0E-03	1.51E-09	1.02E-09	5.58E-10	3.56E-10	2.24E-10	1.79E-10	2.32E-10
Dy-154	5.0E-03	1.64E-06	1.61E-07	1.06E-07	7.19E-08	5.86E-08	5.57E-08	7.27E-08
Dy-155	5.0E-03	1.09E-09	7.65E-10	4.31E-10	2.82E-10	1.81E-10	1.45E-10	1.84E-10
Dy-157	5.0E-03	4.42E-10	3.14E-10	1.80E-10	1.19E-10	7.72E-11	6.15E-11	7.76E-11
Dy-159	5.0E-03	1.05E-09	6.71E-10	3.58E-10	2.22E-10	1.33E-10	1.06E-10	1.41E-10
Dy-165	5.0E-03	1.31E-09	7.88E-10	3.87E-10	2.26E-10	1.37E-10	1.09E-10	1.49E-10
Dy-166	5.0E-03	1.90E-08	1.23E-08	6.14E-09	3.65E-09	2.07E-09	1.66E-09	2.29E-09
Holmium								

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Ho-154	5.0E-03	4.70E-10	2.63E-10	1.30E-10	7.55E-11	5.19E-11	4.08E-11	5.40E-11
Ho-155	5.0E-03	3.80E-10	2.34E-10	1.22E-10	7.51E-11	4.98E-11	3.95E-11	5.13E-11
Ho-156	5.0E-03	1.01E-09	5.98E-10	3.06E-10	1.83E-10	1.23E-10	9.73E-11	1.27E-10
Ho-157	5.0E-03	6.62E-11	4.04E-11	2.15E-11	1.33E-11	9.17E-12	7.29E-12	9.32E-12
Ho-159	5.0E-03	7.78E-11	4.75E-11	2.52E-11	1.56E-11	1.08E-11	8.57E-12	1.09E-11
Ho-160	5.0E-03	1.29E-10	8.31E-11	4.66E-11	3.02E-11	2.13E-11	1.71E-11	2.13E-11
Ho-161	5.0E-03	1.44E-10	9.03E-11	4.22E-11	2.79E-11	1.59E-11	1.26E-11	1.71E-11
Ho-162	5.0E-03	3.49E-11	1.99E-11	1.01E-11	5.94E-12	4.11E-12	3.24E-12	4.24E-12
Ho-162m	5.0E-03	2.33E-10	1.45E-10	7.69E-11	4.78E-11	3.19E-11	2.54E-11	3.27E-11
Ho-163	5.0E-03	5.24E-11	1.88E-11	9.62E-12	5.81E-12	3.47E-12	2.88E-12	4.00E-12
Ho-164	5.0E-03	1.17E-10	6.48E-11	3.15E-11	1.80E-11	1.21E-11	9.47E-12	1.27E-11
Ho-164m	5.0E-03	1.99E-10	1.13E-10	5.57E-11	3.21E-11	2.11E-11	1.66E-11	2.23E-11
Ho-166	5.0E-03	1.63E-08	1.04E-08	5.19E-09	3.07E-09	1.75E-09	1.40E-09	1.93E-09
Ho-166m	5.0E-03	2.70E-08	9.60E-09	5.45E-09	3.59E-09	2.38E-09	1.97E-09	2.55E-09
Ho-167	5.0E-03	9.33E-10	5.81E-10	2.96E-10	1.77E-10	1.10E-10	8.72E-11	1.17E-10
Erbium								
Er-156	5.0E-03	3.56E-10	2.14E-10	1.09E-10	6.59E-11	4.34E-11	3.44E-11	4.52E-11
Er-159	5.0E-03	1.94E-10	1.23E-10	6.67E-11	4.21E-11	2.89E-11	2.31E-11	2.92E-11
Er-161	5.0E-03	6.83E-10	4.64E-10	2.56E-10	1.65E-10	1.06E-10	8.49E-11	1.08E-10
Er-163	5.0E-03	2.39E-11	1.51E-11	8.06E-12	5.00E-12	3.33E-12	2.63E-12	3.39E-12
Er-165	5.0E-03	1.76E-10	1.19E-10	6.37E-11	4.00E-11	2.45E-11	1.96E-11	2.57E-11
Er-169	5.0E-03	4.35E-09	2.78E-09	1.39E-09	8.21E-10	4.65E-10	3.74E-10	5.16E-10
Er-171	5.0E-03	3.94E-09	2.51E-09	1.27E-09	7.59E-10	4.47E-10	3.57E-10	4.85E-10
Er-172	5.0E-03	1.07E-08	7.05E-09	3.63E-09	2.21E-09	1.30E-09	1.04E-09	1.40E-09
Thulium								

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Tm-161	5.0E-03	3.59E-10	2.24E-10	1.19E-10	7.36E-11	4.93E-11	3.92E-11	5.05E-11
Tm-162	5.0E-03	4.23E-10	2.43E-10	1.23E-10	7.27E-11	5.00E-11	3.95E-11	5.17E-11
Tm-163	5.0E-03	4.17E-10	3.00E-10	1.68E-10	1.09E-10	6.77E-11	5.44E-11	6.97E-11
Tm-165	5.0E-03	3.04E-09	2.09E-09	1.13E-09	7.23E-10	4.49E-10	3.58E-10	4.65E-10
Tm-166	5.0E-03	2.13E-09	1.49E-09	8.38E-10	5.52E-10	3.57E-10	2.87E-10	3.62E-10
Tm-167	5.0E-03	6.26E-09	4.07E-09	2.07E-09	1.25E-09	7.27E-10	5.83E-10	7.91E-10
Tm-168	5.0E-03	8.57E-09	5.75E-09	3.19E-09	2.07E-09	1.31E-09	1.04E-09	1.34E-09
Tm-170	5.0E-03	1.58E-08	9.74E-09	4.86E-09	2.88E-09	1.63E-09	1.31E-09	1.81E-09
Tm-171	5.0E-03	1.45E-09	7.82E-10	3.92E-10	2.32E-10	1.32E-10	1.06E-10	1.48E-10
Tm-172	5.0E-03	1.88E-08	1.22E-08	6.14E-09	3.68E-09	2.12E-09	1.70E-09	2.32E-09
Tm-173	5.0E-03	3.26E-09	2.09E-09	1.06E-09	6.37E-10	3.76E-10	3.01E-10	4.07E-10
Tm-175	5.0E-03	2.92E-10	1.65E-10	8.24E-11	4.82E-11	3.29E-11	2.59E-11	3.42E-11
Ytterbium								
Yb-162	5.0E-03	3.19E-10	1.88E-10	9.62E-11	5.78E-11	3.92E-11	3.11E-11	4.05E-11
Yb-163	5.0E-03	1.58E-10	9.41E-11	4.87E-11	2.96E-11	2.02E-11	1.60E-11	2.07E-11
Yb-164	5.0E-03	1.02E-09	6.04E-10	3.02E-10	1.78E-10	1.16E-10	9.16E-11	1.22E-10
Yb-166	5.0E-03	7.65E-09	5.35E-09	2.94E-09	1.90E-09	1.20E-09	9.57E-10	1.23E-09
Yb-167	5.0E-03	7.26E-11	4.24E-11	2.15E-11	1.28E-11	8.72E-12	6.88E-12	9.01E-12
Yb-169	5.0E-03	8.27E-09	5.41E-09	2.81E-09	1.73E-09	1.02E-09	8.20E-10	1.10E-09
Yb-175	5.0E-03	4.99E-09	3.22E-09	1.61E-09	9.58E-10	5.47E-10	4.39E-10	6.03E-10
Yb-177	5.0E-03	1.06E-09	7.00E-10	3.46E-10	2.03E-10	1.13E-10	8.97E-11	1.25E-10
Yb-178	5.0E-03	1.40E-09	8.31E-10	4.09E-10	2.38E-10	1.47E-10	1.16E-10	1.58E-10
Lutetium								
Lu-165	5.0E-03	2.32E-10	1.34E-10	6.79E-11	4.03E-11	2.76E-11	2.18E-11	2.85E-11
Lu-167	5.0E-03	4.17E-10	2.64E-10	1.42E-10	8.94E-11	6.03E-11	4.82E-11	6.14E-11

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Lu-169	5.0E-03	3.93E-09	2.79E-09	1.57E-09	1.04E-09	6.69E-10	5.35E-10	6.77E-10
Lu-170	5.0E-03	6.74E-09	4.86E-09	2.77E-09	1.85E-09	1.21E-09	9.69E-10	1.22E-09
Lu-171	5.0E-03	6.16E-09	4.18E-09	2.24E-09	1.41E-09	8.67E-10	6.91E-10	9.05E-10
Lu-172	5.0E-03	1.03E-08	7.21E-09	4.01E-09	2.61E-09	1.66E-09	1.33E-09	1.69E-09
Lu-173	5.0E-03	3.88E-09	2.30E-09	1.22E-09	7.57E-10	4.55E-10	3.66E-10	4.87E-10
Lu-174	5.0E-03	3.39E-09	1.84E-09	9.64E-10	5.90E-10	3.52E-10	2.85E-10	3.83E-10
Lu-174m	5.0E-03	6.40E-09	3.90E-09	1.97E-09	1.18E-09	6.77E-10	5.45E-10	7.47E-10
Lu-176	5.0E-03	2.46E-08	1.11E-08	5.81E-09	3.58E-09	2.19E-09	1.81E-09	2.42E-09
Lu-176m	5.0E-03	1.98E-09	1.21E-09	5.97E-10	3.49E-10	2.08E-10	1.65E-10	2.27E-10
Lu-177	5.0E-03	6.08E-09	3.91E-09	1.96E-09	1.16E-09	6.63E-10	5.33E-10	7.32E-10
Lu-177m	5.0E-03	1.73E-08	1.09E-08	5.74E-09	3.56E-09	2.14E-09	1.71E-09	2.27E-09
Lu-178	5.0E-03	5.79E-10	3.20E-10	1.55E-10	8.81E-11	5.93E-11	4.64E-11	6.25E-11
Lu-178m	5.0E-03	3.68E-10	2.10E-10	1.05E-10	6.17E-11	4.23E-11	3.34E-11	4.39E-11
Lu-179	5.0E-03	2.57E-09	1.59E-09	7.86E-10	4.61E-10	2.72E-10	2.16E-10	2.97E-10
Hafnium								
Hf-170	2.0E-02	3.25E-09	2.28E-09	1.26E-09	8.17E-10	5.18E-10	4.14E-10	5.30E-10
Hf-172	2.0E-02	1.99E-08	6.31E-09	3.40E-09	2.09E-09	1.29E-09	1.06E-09	1.46E-09
Hf-173	2.0E-02	1.88E-09	1.30E-09	7.06E-10	4.50E-10	2.80E-10	2.24E-10	2.90E-10
Hf-174	2.0E-02	6.08E-06	5.67E-07	4.11E-07	3.10E-07	2.70E-07	2.55E-07	3.15E-07
Hf-175	2.0E-02	3.74E-09	2.37E-09	1.29E-09	8.21E-10	5.07E-10	4.04E-10	5.28E-10
Hf-177m	2.0E-02	8.00E-10	4.84E-10	2.53E-10	1.54E-10	1.05E-10	8.33E-11	1.08E-10
Hf-178m	2.0E-02	5.61E-08	1.58E-08	9.43E-09	6.47E-09	4.61E-09	3.97E-09	4.97E-09
Hf-179m	2.0E-02	1.22E-08	7.94E-09	4.22E-09	2.64E-09	1.60E-09	1.27E-09	1.68E-09
Hf-180m	2.0E-02	1.47E-09	9.90E-10	5.35E-10	3.38E-10	2.13E-10	1.71E-10	2.21E-10
Hf-181	2.0E-02	1.19E-08	7.43E-09	3.85E-09	2.36E-09	1.40E-09	1.11E-09	1.50E-09

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Hf-182	2.0E-02	5.24E-08	7.12E-09	4.90E-09	3.71E-09	3.07E-09	2.83E-09	3.43E-09
Hf-182m	2.0E-02	4.55E-10	2.74E-10	1.42E-10	8.59E-11	5.73E-11	4.56E-11	5.94E-11
Hf-183	2.0E-02	8.15E-10	4.86E-10	2.45E-10	1.45E-10	9.36E-11	7.42E-11	9.87E-11
Hf-184	2.0E-02	5.50E-09	3.58E-09	1.83E-09	1.11E-09	6.56E-10	5.24E-10	7.06E-10
Tantalum								
Ta-172	1.0E-02	6.09E-10	3.54E-10	1.80E-10	1.07E-10	7.29E-11	5.77E-11	7.55E-11
Ta-173	1.0E-02	1.04E-09	6.73E-10	3.55E-10	2.20E-10	1.37E-10	1.10E-10	1.44E-10
Ta-174	1.0E-02	7.77E-10	4.59E-10	2.32E-10	1.38E-10	9.09E-11	7.20E-11	9.51E-11
Ta-175	1.0E-02	1.84E-09	1.28E-09	7.14E-10	4.66E-10	2.98E-10	2.39E-10	3.04E-10
Ta-176	1.0E-02	2.31E-09	1.63E-09	9.19E-10	6.09E-10	3.94E-10	3.17E-10	4.00E-10
Ta-177	1.0E-02	1.06E-09	7.08E-10	3.72E-10	2.30E-10	1.37E-10	1.10E-10	1.46E-10
Ta-178m	1.0E-02	7.90E-10	4.77E-10	2.80E-10	1.77E-10	1.06E-10	8.52E-11	1.11E-10
Ta-179	1.0E-02	5.92E-10	3.83E-10	2.02E-10	1.25E-10	7.45E-11	6.00E-11	7.97E-11
Ta-180	1.0E-02	6.05E-10	3.88E-10	1.97E-10	1.19E-10	6.97E-11	5.58E-11	7.56E-11
Ta-182	1.0E-02	1.41E-08	9.31E-09	4.94E-09	3.10E-09	1.89E-09	1.52E-09	1.99E-09
Ta-182m	1.0E-02	1.44E-10	8.07E-11	3.97E-11	2.29E-11	1.57E-11	1.23E-11	1.63E-11
Ta-183	1.0E-02	1.48E-08	9.60E-09	4.86E-09	2.92E-09	1.69E-09	1.35E-09	1.84E-09
Ta-184	1.0E-02	6.70E-09	4.38E-09	2.27E-09	1.39E-09	8.40E-10	6.72E-10	8.95E-10
Ta-185	1.0E-02	8.48E-10	4.77E-10	2.32E-10	1.33E-10	8.79E-11	6.89E-11	9.30E-11
Ta-186	1.0E-02	4.12E-10	2.29E-10	1.13E-10	6.51E-11	4.47E-11	3.51E-11	4.66E-11
Tungsten								
W-177	6.0E-01	4.30E-10	3.10E-10	1.69E-10	1.08E-10	7.06E-11	5.65E-11	7.19E-11
W-178	6.0E-01	2.06E-09	1.61E-09	8.41E-10	5.19E-10	3.10E-10	2.49E-10	3.28E-10
W-179	6.0E-01	3.88E-11	2.26E-11	1.14E-11	6.73E-12	4.57E-12	3.59E-12	4.72E-12
W-181	6.0E-01	7.24E-10	5.44E-10	2.88E-10	1.79E-10	1.07E-10	8.64E-11	1.13E-10

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
W-185	6.0E-01	4.41E-09	3.28E-09	1.64E-09	9.71E-10	5.53E-10	4.44E-10	6.06E-10
W-187	6.0E-01	5.27E-09	4.09E-09	2.09E-09	1.27E-09	7.47E-10	5.97E-10	7.98E-10
W-188	6.0E-01	2.08E-08	1.54E-08	7.70E-09	4.57E-09	2.59E-09	2.09E-09	2.85E-09
W-190	6.0E-01	9.62E-10	5.46E-10	2.70E-10	1.57E-10	1.06E-10	8.37E-11	1.11E-10
Rhenium								
Re-178	1.0E+00	3.21E-10	1.77E-10	8.81E-11	5.14E-11	3.55E-11	2.79E-11	3.68E-11
Re-179	1.0E+00	1.26E-10	7.37E-11	3.88E-11	2.36E-11	1.65E-11	1.31E-11	1.68E-11
Re-181	1.0E+00	4.25E-09	2.85E-09	1.47E-09	8.38E-10	5.55E-10	4.25E-10	5.68E-10
Re-182	1.0E+00	1.36E-08	8.87E-09	4.63E-09	2.74E-09	1.83E-09	1.43E-09	1.87E-09
Re-182m	1.0E+00	2.51E-09	1.76E-09	9.37E-10	5.51E-10	3.72E-10	2.89E-10	3.76E-10
Re-183	1.0E+00	1.17E-08	6.77E-09	3.31E-09	1.90E-09	1.24E-09	9.64E-10	1.31E-09
Re-184	1.0E+00	8.94E-09	5.64E-09	3.02E-09	1.86E-09	1.27E-09	1.01E-09	1.29E-09
Re-184m	1.0E+00	1.70E-08	9.88E-09	4.91E-09	2.86E-09	1.89E-09	1.48E-09	1.98E-09
Re-186	1.0E+00	1.84E-08	1.10E-08	5.35E-09	2.94E-09	1.89E-09	1.43E-09	1.99E-09
Re-186m	1.0E+00	2.96E-08	1.61E-08	7.63E-09	4.35E-09	2.86E-09	2.23E-09	3.04E-09
Re-187	1.0E+00	6.30E-11	3.56E-11	1.70E-11	9.54E-12	6.20E-12	4.79E-12	6.59E-12
Re-188	1.0E+00	1.73E-08	1.10E-08	5.36E-09	2.85E-09	1.84E-09	1.36E-09	1.92E-09
Re-188m	1.0E+00	3.78E-10	2.33E-10	1.14E-10	6.14E-11	3.98E-11	2.98E-11	4.16E-11
Re-189	1.0E+00	9.34E-09	5.89E-09	2.88E-09	1.55E-09	9.95E-10	7.44E-10	1.04E-09
Re-190m	1.0E+00	4.49E-09	2.72E-09	1.36E-09	7.38E-10	4.87E-10	3.65E-10	5.04E-10
Osmium								
Os-180	2.0E-02	1.77E-10	1.05E-10	5.51E-11	3.37E-11	2.34E-11	1.86E-11	2.39E-11
Os-181	2.0E-02	7.63E-10	5.13E-10	2.80E-10	1.79E-10	1.15E-10	9.21E-11	1.18E-10
Os-182	2.0E-02	4.81E-09	3.33E-09	1.82E-09	1.16E-09	7.26E-10	5.80E-10	7.50E-10
Os-183	2.0E-02	1.94E-09	1.33E-09	7.19E-10	4.57E-10	2.85E-10	2.27E-10	2.95E-10

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Os-183m	2.0E-02	1.56E-09	1.10E-09	6.14E-10	4.03E-10	2.60E-10	2.08E-10	2.64E-10
Os-185	2.0E-02	3.69E-09	2.54E-09	1.46E-09	9.69E-10	6.34E-10	5.03E-10	6.35E-10
Os-186	2.0E-02	4.65E-07	1.86E-07	1.02E-07	6.26E-08	3.89E-08	3.20E-08	4.29E-08
Os-189m	2.0E-02	2.04E-10	1.27E-10	6.28E-11	3.69E-11	2.14E-11	1.71E-11	2.36E-11
Os-191	2.0E-02	6.44E-09	4.17E-09	2.10E-09	1.26E-09	7.24E-10	5.82E-10	7.94E-10
Os-191m	2.0E-02	1.14E-09	7.28E-10	3.63E-10	2.15E-10	1.23E-10	9.87E-11	1.36E-10
Os-193	2.0E-02	9.46E-09	6.09E-09	3.04E-09	1.81E-09	1.03E-09	8.26E-10	1.14E-09
Os-194	2.0E-02	2.95E-08	1.77E-08	8.96E-09	5.35E-09	3.07E-09	2.48E-09	3.40E-09
Os-196	2.0E-02	1.36E-09	7.57E-10	3.68E-10	2.10E-10	1.40E-10	1.10E-10	1.48E-10
Iridium								
Ir-182	2.0E-02	5.91E-10	3.37E-10	1.68E-10	9.85E-11	6.68E-11	5.25E-11	6.95E-11
Ir-183	2.0E-02	4.54E-10	2.94E-10	1.59E-10	1.01E-10	6.66E-11	5.33E-11	6.81E-11
Ir-184	2.0E-02	1.70E-09	1.10E-09	5.89E-10	3.69E-10	2.36E-10	1.88E-10	2.44E-10
Ir-185	2.0E-02	2.92E-09	1.97E-09	1.05E-09	6.64E-10	4.08E-10	3.28E-10	4.28E-10
Ir-186	2.0E-02	4.61E-09	3.19E-09	1.75E-09	1.12E-09	7.06E-10	5.64E-10	7.27E-10
Ir-186m	2.0E-02	6.02E-10	4.01E-10	2.19E-10	1.41E-10	9.17E-11	7.35E-11	9.38E-11
Ir-187	2.0E-02	1.04E-09	7.01E-10	3.74E-10	2.35E-10	1.45E-10	1.16E-10	1.52E-10
Ir-188	2.0E-02	5.34E-09	3.86E-09	2.20E-09	1.47E-09	9.57E-10	7.66E-10	9.62E-10
Ir-189	2.0E-02	2.52E-09	1.65E-09	8.49E-10	5.16E-10	3.02E-10	2.43E-10	3.27E-10
Ir-190	2.0E-02	8.06E-09	5.70E-09	3.21E-09	2.10E-09	1.35E-09	1.07E-09	1.36E-09
Ir-190m	2.0E-02	6.74E-11	4.26E-11	2.24E-11	1.38E-11	8.89E-12	7.00E-12	9.18E-12
Ir-190n	2.0E-02	9.47E-10	6.43E-10	3.56E-10	2.28E-10	1.48E-10	1.18E-10	1.51E-10
Ir-192	2.0E-02	1.34E-08	8.75E-09	4.59E-09	2.85E-09	1.71E-09	1.37E-09	1.82E-09
Ir-192n	2.0E-02	1.07E-08	6.18E-09	3.18E-09	1.92E-09	1.12E-09	9.15E-10	1.24E-09
Ir-193m	2.0E-02	3.36E-09	2.16E-09	1.07E-09	6.37E-10	3.61E-10	2.90E-10	4.00E-10

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Ir-194	2.0E-02	1.54E-08	9.89E-09	4.92E-09	2.92E-09	1.66E-09	1.33E-09	1.84E-09
Ir-194m	2.0E-02	1.66E-08	1.10E-08	6.20E-09	4.04E-09	2.59E-09	2.06E-09	2.63E-09
Ir-195	2.0E-02	1.21E-09	7.31E-10	3.60E-10	2.11E-10	1.28E-10	1.01E-10	1.38E-10
Ir-195m	2.0E-02	1.47E-09	9.30E-10	4.71E-10	2.83E-10	1.71E-10	1.36E-10	1.83E-10
Ir-196m	2.0E-02	9.97E-10	6.28E-10	3.35E-10	2.08E-10	1.39E-10	1.11E-10	1.43E-10
Platinum								
Pt-184	2.0E-02	2.85E-10	1.78E-10	9.29E-11	5.72E-11	3.76E-11	2.99E-11	3.89E-11
Pt-186	2.0E-02	8.71E-10	5.98E-10	3.30E-10	2.13E-10	1.36E-10	1.09E-10	1.40E-10
Pt-187	2.0E-02	8.03E-10	5.20E-10	2.74E-10	1.70E-10	1.07E-10	8.55E-11	1.12E-10
Pt-188	2.0E-02	7.27E-09	4.97E-09	2.69E-09	1.71E-09	1.06E-09	8.47E-10	1.10E-09
Pt-189	2.0E-02	1.82E-09	1.22E-09	6.46E-10	4.03E-10	2.46E-10	1.97E-10	2.59E-10
Pt-190	2.0E-02	9.91E-08	4.36E-08	2.27E-08	1.39E-08	8.54E-09	6.94E-09	9.38E-09
Pt-191	2.0E-02	3.48E-09	2.34E-09	1.23E-09	7.66E-10	4.61E-10	3.69E-10	4.88E-10
Pt-193	2.0E-02	4.21E-10	2.69E-10	1.33E-10	7.87E-11	4.44E-11	3.56E-11	4.93E-11
Pt-193m	2.0E-02	5.26E-09	3.39E-09	1.69E-09	1.00E-09	5.69E-10	4.58E-10	6.30E-10
Pt-195m	2.0E-02	7.22E-09	4.68E-09	2.35E-09	1.40E-09	8.03E-10	6.45E-10	8.83E-10
Pt-197	2.0E-02	5.00E-09	3.20E-09	1.59E-09	9.44E-10	5.38E-10	4.32E-10	5.95E-10
Pt-197m	2.0E-02	1.00E-09	6.10E-10	3.01E-10	1.76E-10	1.07E-10	8.48E-11	1.16E-10
Pt-199	2.0E-02	4.85E-10	2.72E-10	1.33E-10	7.64E-11	5.07E-11	3.98E-11	5.35E-11
Pt-200	2.0E-02	1.34E-08	8.60E-09	4.30E-09	2.56E-09	1.46E-09	1.17E-09	1.61E-09
Pt-202	2.0E-02	5.07E-08	3.27E-08	1.63E-08	9.65E-09	5.48E-09	4.41E-09	6.07E-09
Gold								
Au-186	2.0E-01	4.88E-10	2.83E-10	1.42E-10	8.40E-11	5.69E-11	4.49E-11	5.91E-11
Au-190	2.0E-01	3.68E-10	2.31E-10	1.24E-10	7.75E-11	5.32E-11	4.27E-11	5.41E-11
Au-191	2.0E-01	6.20E-10	4.28E-10	2.30E-10	1.44E-10	9.14E-11	7.31E-11	9.47E-11

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Au-192	2.0E-01	1.24E-09	8.99E-10	5.04E-10	3.32E-10	2.16E-10	1.74E-10	2.19E-10
Au-193	2.0E-01	1.17E-09	8.35E-10	4.36E-10	2.69E-10	1.62E-10	1.29E-10	1.71E-10
Au-194	2.0E-01	2.79E-09	2.13E-09	1.20E-09	7.93E-10	5.11E-10	4.09E-10	5.16E-10
Au-195	2.0E-01	2.53E-09	1.80E-09	9.25E-10	5.63E-10	3.30E-10	2.65E-10	3.55E-10
Au-196	2.0E-01	2.62E-09	1.96E-09	1.09E-09	7.06E-10	4.47E-10	3.55E-10	4.54E-10
Au-196m	2.0E-01	4.03E-09	2.75E-09	1.39E-09	8.32E-10	4.88E-10	3.90E-10	5.28E-10
Au-198	2.0E-01	1.02E-08	7.21E-09	3.67E-09	2.21E-09	1.29E-09	1.03E-09	1.39E-09
Au-198m	2.0E-01	1.15E-08	8.18E-09	4.20E-09	2.56E-09	1.50E-09	1.21E-09	1.61E-09
Au-199	2.0E-01	4.54E-09	3.20E-09	1.61E-09	9.69E-10	5.59E-10	4.49E-10	6.08E-10
Au-200	2.0E-01	8.21E-10	4.63E-10	2.26E-10	1.30E-10	8.59E-11	6.74E-11	9.08E-11
Au-200m	2.0E-01	8.56E-09	6.21E-09	3.30E-09	2.07E-09	1.27E-09	1.01E-09	1.32E-09
Au-201	2.0E-01	3.05E-10	1.68E-10	8.13E-11	4.61E-11	3.11E-11	2.43E-11	3.27E-11
Mercury								
Hg-190	4.0E-02[e]	1.90E-10	1.20E-10	6.42E-11	4.03E-11	2.73E-11	2.18E-11	2.78E-11
	1.0E+00[f]	1.49E-10	8.97E-11	4.71E-11	2.88E-11	2.02E-11	1.62E-11	2.06E-11
	8.0E-01[g]	1.69E-10	1.16E-10	6.18E-11	3.87E-11	2.63E-11	2.11E-11	2.67E-11
Hg-191m	4.0E-02[e]	4.59E-10	2.98E-10	1.61E-10	1.02E-10	6.72E-11	5.38E-11	6.88E-11
	1.0E+00[f]	2.93E-10	1.80E-10	9.58E-11	5.95E-11	4.15E-11	3.35E-11	4.24E-11
	8.0E-01[g]	3.50E-10	2.69E-10	1.45E-10	9.16E-11	6.11E-11	4.90E-11	6.20E-11
Hg-192	4.0E-02[e]	1.79E-09	1.25E-09	6.89E-10	4.48E-10	2.83E-10	2.27E-10	2.91E-10
	1.0E+00[f]	5.16E-10	3.42E-10	1.98E-10	1.26E-10	8.55E-11	7.10E-11	8.81E-11
	8.0E-01[g]	8.15E-10	9.42E-10	5.19E-10	3.36E-10	2.14E-10	1.72E-10	2.16E-10
Hg-193	4.0E-02[e]	9.19E-10	6.21E-10	3.35E-10	2.13E-10	1.34E-10	1.08E-10	1.39E-10
	1.0E+00[f]	3.42E-10	2.17E-10	1.17E-10	7.29E-11	4.96E-11	4.05E-11	5.12E-11
	8.0E-01[g]	4.93E-10	4.95E-10	2.67E-10	1.70E-10	1.08E-10	8.68E-11	1.10E-10

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Hg-193m	4.0E-02[e]	3.71E-09	2.55E-09	1.37E-09	8.72E-10	5.41E-10	4.33E-10	5.62E-10
	1.0E+00[f]	1.13E-09	7.40E-10	4.02E-10	2.55E-10	1.71E-10	1.41E-10	1.77E-10
	8.0E-01[g]	1.65E-09	1.88E-09	1.02E-09	6.45E-10	4.04E-10	3.25E-10	4.11E-10
Hg-194	4.0E-02[e]	7.25E-09	3.67E-09	2.60E-09	1.95E-09	1.55E-09	1.39E-09	1.56E-09
	1.0E+00[f]	1.32E-07	1.15E-07	8.40E-08	6.56E-08	5.54E-08	5.13E-08	5.53E-08
	8.0E-01[g]	1.07E-07	4.76E-08	3.45E-08	2.69E-08	2.26E-08	2.09E-08	2.30E-08
Hg-195	4.0E-02[e]	1.01E-09	6.70E-10	3.48E-10	2.14E-10	1.29E-10	1.03E-10	1.37E-10
	1.0E+00[f]	3.12E-10	2.14E-10	1.11E-10	6.81E-11	4.47E-11	3.62E-11	4.65E-11
	8.0E-01[g]	4.79E-10	5.10E-10	2.65E-10	1.63E-10	9.89E-11	7.92E-11	1.03E-10
Hg-195m	4.0E-02[e]	5.77E-09	3.81E-09	1.95E-09	1.18E-09	6.90E-10	5.53E-10	7.47E-10
	1.0E+00[f]	2.05E-09	1.32E-09	6.82E-10	4.22E-10	2.69E-10	2.19E-10	2.84E-10
	8.0E-01[g]	2.58E-09	2.79E-09	1.42E-09	8.63E-10	5.09E-10	4.09E-10	5.37E-10
Hg-197	4.0E-02[e]	2.66E-09	1.75E-09	8.90E-10	5.37E-10	3.11E-10	2.50E-10	3.39E-10
	1.0E+00[f]	1.05E-09	6.76E-10	3.43E-10	2.11E-10	1.33E-10	1.07E-10	1.41E-10
	8.0E-01[g]	1.39E-09	1.30E-09	6.58E-10	3.97E-10	2.32E-10	1.87E-10	2.48E-10
Hg-197m	4.0E-02[e]	5.34E-09	3.48E-09	1.75E-09	1.04E-09	6.00E-10	4.82E-10	6.58E-10
	1.0E+00[f]	1.58E-09	9.81E-10	4.91E-10	2.97E-10	1.87E-10	1.50E-10	1.99E-10
	8.0E-01[g]	2.23E-09	2.51E-09	1.26E-09	7.49E-10	4.34E-10	3.48E-10	4.62E-10
Hg-199m	4.0E-02[e]	3.69E-10	2.08E-10	1.02E-10	5.86E-11	3.91E-11	3.07E-11	4.11E-11
	1.0E+00[f]	3.41E-10	1.89E-10	9.21E-11	5.27E-11	3.58E-11	2.80E-11	3.76E-11
	8.0E-01[g]	3.56E-10	2.05E-10	1.01E-10	5.78E-11	3.87E-11	3.03E-11	4.06E-11
Hg-203	4.0E-02[e]	5.53E-09	3.58E-09	1.85E-09	1.14E-09	6.73E-10	5.39E-10	7.23E-10
	1.0E+00[f]	1.52E-08	1.07E-08	5.70E-09	3.60E-09	2.32E-09	1.91E-09	2.43E-09
	8.0E-01[g]	1.33E-08	6.40E-09	3.37E-09	2.11E-09	1.32E-09	1.08E-09	1.43E-09

(e) Inorganic Mercury

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	(f) Methyl Mercury							
	(g) Organic Mercury							
Thallium								
Tl-194	1.0E+00	5.28E-10	2.96E-10	1.46E-10	8.46E-11	5.80E-11	4.57E-11	6.05E-11
Tl-194m	1.0E+00	3.60E-10	2.14E-10	1.12E-10	6.88E-11	4.86E-11	3.89E-11	4.95E-11
Tl-195	1.0E+00	2.05E-10	1.28E-10	6.94E-11	4.35E-11	3.05E-11	2.47E-11	3.10E-11
Tl-196	1.0E+00	4.40E-10	2.71E-10	1.45E-10	8.99E-11	6.28E-11	5.09E-11	6.42E-11
Tl-197	1.0E+00	2.07E-10	1.30E-10	6.85E-11	4.25E-11	2.86E-11	2.31E-11	2.96E-11
Tl-198	1.0E+00	4.87E-10	3.33E-10	1.93E-10	1.27E-10	8.89E-11	7.41E-11	9.03E-11
Tl-198m	1.0E+00	4.88E-10	3.00E-10	1.59E-10	9.84E-11	6.79E-11	5.53E-11	7.00E-11
Tl-199	1.0E+00	2.48E-10	1.55E-10	8.13E-11	5.03E-11	3.34E-11	2.71E-11	3.48E-11
Tl-200	1.0E+00	1.28E-09	8.99E-10	5.36E-10	3.52E-10	2.41E-10	2.02E-10	2.47E-10
Tl-201	1.0E+00	8.74E-10	5.77E-10	3.00E-10	1.86E-10	1.23E-10	9.90E-11	1.27E-10
Tl-202	1.0E+00	2.95E-09	2.11E-09	1.21E-09	7.96E-10	5.48E-10	4.58E-10	5.60E-10
Tl-204	1.0E+00	1.30E-08	8.47E-09	4.22E-09	2.52E-09	1.47E-09	1.19E-09	1.61E-09
Lead								
Pb-194	6.0E-01	2.15E-10	1.24E-10	6.27E-11	3.73E-11	2.57E-11	2.04E-11	2.66E-11
Pb-195m	6.0E-01	2.40E-10	1.42E-10	7.39E-11	4.49E-11	3.12E-11	2.49E-11	3.20E-11
Pb-196	6.0E-01	2.37E-10	1.49E-10	7.92E-11	4.90E-11	3.34E-11	2.72E-11	3.45E-11
Pb-197m	6.0E-01	4.11E-10	2.54E-10	1.33E-10	8.15E-11	5.53E-11	4.47E-11	5.73E-11
Pb-198	6.0E-01	5.16E-10	3.85E-10	2.14E-10	1.38E-10	9.13E-11	7.92E-11	9.71E-11
Pb-199	6.0E-01	2.80E-10	1.98E-10	1.09E-10	7.01E-11	4.68E-11	3.95E-11	4.89E-11
Pb-200	6.0E-01	2.47E-09	1.99E-09	1.07E-09	6.80E-10	4.26E-10	3.87E-10	4.76E-10
Pb-201	6.0E-01	9.54E-10	7.82E-10	4.31E-10	2.77E-10	1.77E-10	1.63E-10	1.97E-10
Pb-202	6.0E-01	1.05E-07	5.10E-08	3.42E-08	3.80E-08	4.46E-08	1.56E-08	2.09E-08

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Pb-202m	6.0E-01	9.14E-10	7.04E-10	3.93E-10	2.54E-10	1.67E-10	1.48E-10	1.80E-10
Pb-203	6.0E-01	1.59E-09	1.29E-09	6.94E-10	4.39E-10	2.73E-10	2.50E-10	3.07E-10
Pb-204m	6.0E-01	3.40E-10	2.34E-10	1.32E-10	8.54E-11	5.86E-11	4.87E-11	6.01E-11
Pb-205	6.0E-01	1.99E-09	9.61E-10	6.01E-10	5.97E-10	6.34E-10	2.71E-10	3.52E-10
Pb-209	6.0E-01	5.71E-10	3.80E-10	1.87E-10	1.09E-10	6.65E-11	5.67E-11	7.47E-11
Pb-210	6.0E-01	8.33E-06	3.64E-06	2.18E-06	1.95E-06	1.92E-06	6.96E-07	1.02E-06
Pb-211	6.0E-01	3.14E-09	1.45E-09	7.12E-10	4.15E-10	2.72E-10	1.78E-10	2.62E-10
Pb-212	6.0E-01	1.43E-07	6.36E-08	3.30E-08	2.04E-08	1.25E-08	6.00E-09	1.03E-08
Pb-214	6.0E-01	2.18E-09	1.05E-09	5.22E-10	3.07E-10	2.03E-10	1.39E-10	1.99E-10
Bismuth								
Bi-200	1.0E-01	4.83E-10	3.08E-10	1.66E-10	1.04E-10	7.02E-11	5.61E-11	7.16E-11
Bi-201	1.0E-01	9.59E-10	6.43E-10	3.51E-10	2.24E-10	1.46E-10	1.17E-10	1.49E-10
Bi-202	1.0E-01	7.57E-10	5.11E-10	2.87E-10	1.87E-10	1.25E-10	1.01E-10	1.26E-10
Bi-203	1.0E-01	3.56E-09	2.57E-09	1.45E-09	9.57E-10	6.18E-10	4.96E-10	6.26E-10
Bi-204	1.0E-01	3.94E-09	2.88E-09	1.65E-09	1.10E-09	7.19E-10	5.76E-10	7.22E-10
Bi-205	1.0E-01	6.19E-09	4.56E-09	2.62E-09	1.75E-09	1.15E-09	9.16E-10	1.15E-09
Bi-206	1.0E-01	1.41E-08	1.02E-08	5.77E-09	3.80E-09	2.45E-09	1.95E-09	2.47E-09
Bi-207	1.0E-01	1.02E-08	7.22E-09	3.97E-09	2.56E-09	1.61E-09	1.28E-09	1.65E-09
Bi-208	1.0E-01	7.25E-09	5.47E-09	3.20E-09	2.18E-09	1.45E-09	1.16E-09	1.44E-09
Bi-210	1.0E-01	1.50E-08	9.72E-09	4.84E-09	2.87E-09	1.63E-09	1.31E-09	1.80E-09
Bi-210m	1.0E-01	2.12E-07	9.12E-08	4.72E-08	2.96E-08	1.86E-08	1.50E-08	2.01E-08
Bi-212	1.0E-01	3.23E-09	1.80E-09	8.81E-10	5.09E-10	3.32E-10	2.61E-10	3.52E-10
Bi-213	1.0E-01	2.51E-09	1.39E-09	6.75E-10	3.86E-10	2.52E-10	1.98E-10	2.68E-10
Bi-214	1.0E-01	1.37E-09	7.52E-10	3.67E-10	2.10E-10	1.42E-10	1.12E-10	1.49E-10
Polonium								

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Po-203	1.0E+00[h]	3.03E-10	2.51E-10	1.37E-10	8.74E-11	5.90E-11	4.73E-11	5.92E-11
	2.0E-01[i]	4.25E-10	2.85E-10	1.56E-10	1.00E-10	6.70E-11	5.36E-11	6.79E-11
Po-204	1.0E+00[h]	1.49E-09	1.32E-09	7.21E-10	4.63E-10	3.00E-10	2.41E-10	3.04E-10
	2.0E-01[i]	2.26E-09	1.61E-09	8.89E-10	5.75E-10	3.71E-10	2.96E-10	3.77E-10
Po-205	1.0E+00[h]	3.26E-10	2.70E-10	1.53E-10	1.01E-10	6.82E-11	5.52E-11	6.82E-11
	2.0E-01[i]	4.10E-10	2.80E-10	1.59E-10	1.04E-10	7.02E-11	5.65E-11	7.06E-11
Po-206	1.0E+00[h]	3.48E-07	1.16E-07	5.81E-08	3.50E-08	2.15E-08	1.67E-08	2.39E-08
	2.0E-01[i]	8.15E-08	3.12E-08	1.59E-08	9.68E-09	5.94E-09	4.65E-09	6.50E-09
Po-207	1.0E+00[h]	4.51E-10	5.58E-10	3.16E-10	2.08E-10	1.38E-10	1.11E-10	1.37E-10
	2.0E-01[i]	9.58E-10	7.04E-10	4.00E-10	2.64E-10	1.73E-10	1.39E-10	1.74E-10
Po-208	1.0E+00[h]	3.18E-05	1.10E-05	5.48E-06	3.24E-06	1.97E-06	1.52E-06	2.19E-06
	2.0E-01[i]	6.47E-06	2.21E-06	1.11E-06	6.55E-07	3.98E-07	3.07E-07	4.43E-07
Po-209	1.0E+00[h]	3.15E-05	1.09E-05	5.44E-06	3.22E-06	1.96E-06	1.51E-06	2.18E-06
	2.0E-01[i]	6.39E-06	2.19E-06	1.10E-06	6.50E-07	3.95E-07	3.05E-07	4.40E-07
Po-210	1.0E+00[h]	2.61E-05	8.81E-06	4.38E-06	2.59E-06	1.57E-06	1.21E-06	1.75E-06
	2.0E-01[i]	5.30E-06	1.79E-06	8.88E-07	5.25E-07	3.19E-07	2.45E-07	3.56E-07
	(h) Organic Polonium							
	(i) Inorganic Polonium							
Astatine								
At-205	1.0E+00	6.31E-10	3.80E-10	1.91E-10	1.14E-10	7.41E-11	5.96E-11	7.85E-11
At-206	1.0E+00	6.59E-10	4.06E-10	2.08E-10	1.26E-10	8.29E-11	6.69E-11	8.70E-11
At-207	1.0E+00	2.38E-09	1.49E-09	7.52E-10	4.54E-10	2.80E-10	2.27E-10	3.02E-10
At-208	1.0E+00	8.17E-10	5.21E-10	2.75E-10	1.71E-10	1.14E-10	9.28E-11	1.18E-10
At-209	1.0E+00	3.91E-09	2.48E-09	1.25E-09	7.61E-10	4.65E-10	3.80E-10	5.04E-10
At-210	1.0E+00	9.01E-09	5.89E-09	2.96E-09	1.79E-09	1.08E-09	8.78E-10	1.17E-09

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
At-211	1.0E+00	1.25E-07	7.84E-08	3.84E-08	2.29E-08	1.34E-08	1.09E-08	1.48E-08
Francium								
Fr-212	1.0E+00	5.38E-09	3.78E-09	2.06E-09	1.24E-09	8.15E-10	7.05E-10	8.82E-10
Fr-222	1.0E+00	6.12E-09	3.82E-09	1.99E-09	1.24E-09	8.43E-10	7.12E-10	8.94E-10
Fr-223	1.0E+00	2.61E-08	1.70E-08	8.38E-09	5.00E-09	2.93E-09	2.38E-09	3.23E-09
Radium								
Ra-223	6.0E-01	5.26E-06	1.10E-06	5.74E-07	4.54E-07	3.77E-07	1.03E-07	2.17E-07
Ra-224	6.0E-01	2.71E-06	6.52E-07	3.45E-07	2.56E-07	1.95E-07	6.46E-08	1.26E-07
Ra-225	6.0E-01	7.01E-06	1.20E-06	6.17E-07	5.03E-07	4.37E-07	9.96E-08	2.38E-07
Ra-226	6.0E-01	4.65E-06	9.54E-07	6.16E-07	8.02E-07	1.52E-06	2.80E-07	4.53E-07
Ra-227	6.0E-01	1.11E-09	4.36E-10	2.50E-10	1.70E-10	1.36E-10	8.19E-11	1.11E-10
Ra-228	6.0E-01	2.94E-05	5.66E-06	3.43E-06	3.92E-06	5.13E-06	6.96E-07	1.60E-06
Ra-230	6.0E-01	1.99E-09	1.23E-09	6.10E-10	3.52E-10	2.22E-10	1.80E-10	2.41E-10
Actinium								
Ac-224	5.0E-03	5.23E-08	1.45E-08	7.54E-09	5.37E-09	3.92E-09	1.56E-09	2.78E-09
Ac-225	5.0E-03	5.51E-07	2.43E-07	1.20E-07	8.17E-08	4.82E-08	3.86E-08	5.23E-08
Ac-226	5.0E-03	1.37E-07	7.76E-08	3.86E-08	2.29E-08	1.30E-08	1.04E-08	1.45E-08
Ac-227	5.0E-03	7.27E-06	6.68E-07	5.00E-07	3.74E-07	3.22E-07	3.22E-07	3.92E-07
Ac-228	5.0E-03	5.02E-09	2.50E-09	1.29E-09	7.81E-10	4.72E-10	3.78E-10	5.14E-10
Thorium								
Th-226	5.0E-03	4.50E-09	2.45E-09	1.19E-09	6.74E-10	4.53E-10	3.52E-10	4.76E-10
Th-227	5.0E-03	3.02E-07	7.13E-08	3.64E-08	2.31E-08	1.49E-08	9.11E-09	1.47E-08
Th-228	5.0E-03	3.70E-06	3.70E-07	2.19E-07	1.37E-07	9.36E-08	7.20E-08	1.16E-07
Th-229	5.0E-03	1.09E-05	1.04E-06	7.89E-07	6.25E-07	5.40E-07	4.99E-07	6.09E-07
Th-230	5.0E-03	4.14E-06	4.10E-07	3.09E-07	2.46E-07	2.19E-07	2.14E-07	2.53E-07

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Th-231	5.0E-03	3.89E-09	2.49E-09	1.24E-09	7.34E-10	4.17E-10	3.34E-10	4.61E-10
Th-232	5.0E-03	4.63E-06	4.57E-07	3.58E-07	2.89E-07	2.53E-07	2.31E-07	2.78E-07
Th-233	5.0E-03	2.73E-10	1.50E-10	7.28E-11	4.13E-11	2.78E-11	2.18E-11	2.93E-11
Th-234	5.0E-03	3.98E-08	2.52E-08	1.26E-08	7.46E-09	4.22E-09	3.39E-09	4.68E-09
Th-236	5.0E-03	1.04E-09	5.87E-10	2.89E-10	1.67E-10	1.11E-10	8.73E-11	1.17E-10
Protactinium								
Pa-227	5.0E-03	5.79E-09	3.19E-09	1.54E-09	8.77E-10	5.83E-10	4.55E-10	6.17E-10
Pa-228	5.0E-03	1.18E-08	4.80E-09	2.59E-09	1.64E-09	1.04E-09	7.97E-10	1.08E-09
Pa-229	5.0E-03	9.96E-10	5.53E-10	2.87E-10	1.76E-10	1.04E-10	8.32E-11	1.13E-10
Pa-230	5.0E-03	2.17E-08	5.20E-09	2.78E-09	1.73E-09	1.08E-09	8.30E-10	1.21E-09
Pa-231	5.0E-03	8.25E-06	8.18E-07	6.71E-07	5.65E-07	5.07E-07	4.79E-07	5.59E-07
Pa-232	5.0E-03	6.27E-09	4.19E-09	2.21E-09	1.38E-09	8.44E-10	6.73E-10	8.87E-10
Pa-233	5.0E-03	1.07E-08	6.86E-09	3.48E-09	2.09E-09	1.21E-09	9.66E-10	1.32E-09
Pa-234	5.0E-03	4.10E-09	2.68E-09	1.40E-09	8.60E-10	5.25E-10	4.19E-10	5.56E-10
Pa-235	5.0E-03	3.34E-10	1.84E-10	8.86E-11	5.02E-11	3.38E-11	2.64E-11	3.57E-11
Uranium								
U-230	4.0E-02	7.76E-07	2.96E-07	1.51E-07	9.89E-08	6.51E-08	5.57E-08	7.21E-08
U-231	4.0E-02	3.72E-09	2.44E-09	1.23E-09	7.38E-10	4.27E-10	3.38E-10	4.63E-10
U-232	4.0E-02	2.53E-06	8.21E-07	5.86E-07	5.73E-07	6.42E-07	3.34E-07	4.04E-07
U-233	4.0E-02	3.80E-07	1.38E-07	9.17E-08	7.80E-08	7.80E-08	5.12E-08	6.02E-08
U-234	4.0E-02	3.69E-07	1.34E-07	8.84E-08	7.45E-08	7.45E-08	4.95E-08	5.81E-08
U-235	4.0E-02	3.52E-07	1.29E-07	8.50E-08	7.13E-08	7.02E-08	4.67E-08	5.49E-08
U-235m	4.0E-02	5.45E-14	3.00E-14	1.45E-14	8.19E-15	5.52E-15	4.31E-15	5.82E-15
U-236	4.0E-02	3.48E-07	1.26E-07	8.32E-08	7.01E-08	7.02E-08	4.66E-08	5.47E-08
U-237	4.0E-02	8.53E-09	5.58E-09	2.82E-09	1.69E-09	9.73E-10	7.77E-10	1.06E-09

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
U-238	4.0E-02	3.35E-07	1.21E-07	8.02E-08	6.77E-08	6.72E-08	4.46E-08	5.24E-08
U-239	4.0E-02	3.37E-10	1.92E-10	9.36E-11	5.38E-11	3.51E-11	2.76E-11	3.73E-11
U-240	4.0E-02	1.23E-08	7.97E-09	3.99E-09	2.37E-09	1.36E-09	1.09E-09	1.50E-09
U-242	4.0E-02	6.56E-10	3.60E-10	1.75E-10	9.92E-11	6.73E-11	5.26E-11	7.07E-11
Neptunium								
Np-232	5.0E-03	8.89E-11	5.18E-11	2.77E-11	1.73E-11	1.23E-11	9.86E-12	1.24E-11
Np-233	5.0E-03	2.19E-11	1.32E-11	6.87E-12	4.17E-12	2.88E-12	2.27E-12	2.94E-12
Np-234	5.0E-03	5.05E-09	3.53E-09	1.95E-09	1.27E-09	8.08E-10	6.46E-10	8.26E-10
Np-235	5.0E-03	7.56E-10	4.34E-10	2.16E-10	1.27E-10	7.18E-11	5.66E-11	7.96E-11
Np-236	5.0E-03	2.72E-07	3.37E-08	2.59E-08	2.52E-08	2.59E-08	2.48E-08	2.70E-08
Np-236m	5.0E-03	2.55E-09	1.33E-09	6.77E-10	4.07E-10	2.41E-10	1.96E-10	2.67E-10
Np-237	5.0E-03	2.00E-06	2.12E-07	1.43E-07	1.15E-07	1.08E-07	1.07E-07	1.25E-07
Np-238	5.0E-03	9.31E-09	6.03E-09	3.10E-09	1.89E-09	1.11E-09	8.94E-10	1.20E-09
Np-239	5.0E-03	9.05E-09	5.86E-09	2.95E-09	1.77E-09	1.02E-09	8.14E-10	1.11E-09
Np-240	5.0E-03	7.90E-10	4.64E-10	2.34E-10	1.39E-10	9.17E-11	7.25E-11	9.59E-11
Np-241	5.0E-03	1.96E-10	1.07E-10	5.18E-11	2.93E-11	1.99E-11	1.56E-11	2.09E-11
Plutonium								
Pu-232	5.0E-03	1.67E-09	9.27E-10	4.54E-10	2.61E-10	1.74E-10	1.37E-10	1.84E-10
Pu-234	5.0E-03	2.05E-09	1.02E-09	5.25E-10	3.19E-10	1.90E-10	1.52E-10	2.08E-10
Pu-235	5.0E-03	2.37E-11	1.38E-11	7.02E-12	4.17E-12	2.88E-12	2.26E-12	2.95E-12
Pu-236	5.0E-03	2.12E-06	2.18E-07	1.47E-07	1.06E-07	8.75E-08	8.89E-08	1.10E-07
Pu-237	5.0E-03	1.19E-09	7.60E-10	3.92E-10	2.39E-10	1.41E-10	1.12E-10	1.51E-10
Pu-238	5.0E-03	3.98E-06	4.00E-07	3.06E-07	2.44E-07	2.20E-07	2.28E-07	2.63E-07
Pu-239	5.0E-03	4.19E-06	4.22E-07	3.33E-07	2.71E-07	2.46E-07	2.51E-07	2.88E-07
Pu-240	5.0E-03	4.19E-06	4.22E-07	3.33E-07	2.71E-07	2.46E-07	2.51E-07	2.88E-07

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Pu-241	5.0E-03	5.62E-08	5.79E-09	5.48E-09	5.05E-09	4.79E-09	4.74E-09	5.21E-09
Pu-242	5.0E-03	3.98E-06	4.01E-07	3.16E-07	2.58E-07	2.34E-07	2.39E-07	2.74E-07
Pu-243	5.0E-03	1.01E-09	6.26E-10	3.10E-10	1.83E-10	1.07E-10	8.55E-11	1.17E-10
Pu-244	5.0E-03	3.96E-06	4.13E-07	3.21E-07	2.60E-07	2.33E-07	2.38E-07	2.73E-07
Pu-245	5.0E-03	7.62E-09	4.91E-09	2.47E-09	1.48E-09	8.54E-10	6.84E-10	9.34E-10
Pu-246	5.0E-03	2.97E-08	1.94E-08	9.89E-09	6.00E-09	3.50E-09	2.81E-09	3.80E-09
Americium								
Am-237	5.0E-03	1.77E-10	1.08E-10	5.67E-11	3.46E-11	2.31E-11	1.83E-11	2.38E-11
Am-238	5.0E-03	2.52E-10	1.64E-10	9.15E-11	5.95E-11	4.00E-11	3.22E-11	4.05E-11
Am-239	5.0E-03	2.64E-09	1.71E-09	8.68E-10	5.23E-10	3.08E-10	2.45E-10	3.32E-10
Am-240	5.0E-03	4.84E-09	3.34E-09	1.83E-09	1.18E-09	7.44E-10	5.93E-10	7.63E-10
Am-241	5.0E-03	3.72E-06	3.75E-07	2.74E-07	2.22E-07	2.04E-07	2.04E-07	2.38E-07
Am-242	5.0E-03	5.00E-09	2.18E-09	1.09E-09	6.47E-10	3.73E-10	2.99E-10	4.22E-10
Am-242m	5.0E-03	3.09E-06	3.00E-07	2.34E-07	1.99E-07	1.89E-07	1.90E-07	2.16E-07
Am-243	5.0E-03	3.66E-06	3.70E-07	2.72E-07	2.21E-07	2.03E-07	2.03E-07	2.36E-07
Am-244	5.0E-03	4.84E-09	3.05E-09	1.57E-09	9.55E-10	5.72E-10	4.58E-10	6.14E-10
Am-244m	5.0E-03	3.79E-10	2.05E-10	9.92E-11	5.63E-11	3.80E-11	2.98E-11	4.01E-11
Am-245	5.0E-03	6.78E-10	4.49E-10	2.20E-10	1.28E-10	7.87E-11	6.23E-11	8.45E-11
Am-246	5.0E-03	7.48E-10	4.23E-10	2.09E-10	1.21E-10	8.12E-11	6.38E-11	8.51E-11
Am-246m	5.0E-03	3.92E-10	2.22E-10	1.11E-10	6.47E-11	4.41E-11	3.47E-11	4.58E-11
Am-247	5.0E-03	3.78E-10	2.09E-10	1.01E-10	5.75E-11	3.89E-11	3.04E-11	4.09E-11
Curium								
Cm-238	5.0E-03	5.61E-10	3.61E-10	1.95E-10	1.24E-10	7.89E-11	6.32E-11	8.17E-11
Cm-239	5.0E-03	8.24E-10	5.42E-10	2.80E-10	1.72E-10	1.02E-10	8.18E-11	1.09E-10
Cm-240	5.0E-03	2.19E-07	4.83E-08	2.47E-08	1.50E-08	9.23E-09	7.65E-09	1.12E-08

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Cm-241	5.0E-03	1.08E-08	5.91E-09	3.09E-09	1.91E-09	1.15E-09	9.25E-10	1.24E-09
Cm-242	5.0E-03	5.85E-07	7.60E-08	3.93E-08	2.36E-08	1.46E-08	1.17E-08	1.92E-08
Cm-243	5.0E-03	3.23E-06	3.27E-07	2.21E-07	1.67E-07	1.48E-07	1.50E-07	1.80E-07
Cm-244	5.0E-03	2.93E-06	2.93E-07	1.93E-07	1.40E-07	1.21E-07	1.23E-07	1.51E-07
Cm-245	5.0E-03	3.74E-06	3.78E-07	2.79E-07	2.28E-07	2.09E-07	2.08E-07	2.42E-07
Cm-246	5.0E-03	3.75E-06	3.76E-07	2.77E-07	2.26E-07	2.08E-07	2.07E-07	2.41E-07
Cm-247	5.0E-03	3.44E-06	3.50E-07	2.57E-07	2.09E-07	1.92E-07	1.91E-07	2.22E-07
Cm-248	5.0E-03	1.39E-05	1.44E-06	1.05E-06	8.54E-07	7.81E-07	7.75E-07	9.03E-07
Cm-249	5.0E-03	3.88E-10	2.19E-10	1.07E-10	6.11E-11	3.97E-11	3.12E-11	4.23E-11
Cm-250	5.0E-03	9.46E-05	1.00E-05	7.26E-06	5.87E-06	5.35E-06	5.30E-06	6.18E-06
Cm-251	5.0E-03	3.55E-10	1.98E-10	9.64E-11	5.51E-11	3.67E-11	2.87E-11	3.87E-11
Berkelium								
Bk-245	5.0E-03	6.14E-09	3.99E-09	2.04E-09	1.24E-09	7.24E-10	5.79E-10	7.83E-10
Bk-246	5.0E-03	3.65E-09	2.54E-09	1.40E-09	8.99E-10	5.69E-10	4.52E-10	5.82E-10
Bk-247	5.0E-03	8.88E-06	8.54E-07	6.29E-07	4.62E-07	3.80E-07	3.50E-07	4.43E-07
Bk-248m	5.0E-03	7.35E-09	3.05E-09	1.56E-09	9.31E-10	5.30E-10	4.28E-10	6.05E-10
Bk-249	5.0E-03	2.20E-08	2.89E-09	1.94E-09	1.37E-09	1.09E-09	9.93E-10	1.25E-09
Bk-250	5.0E-03	1.51E-09	8.67E-10	4.50E-10	2.75E-10	1.72E-10	1.38E-10	1.83E-10
Bk-251	5.0E-03	4.65E-10	2.63E-10	1.28E-10	7.34E-11	4.82E-11	3.78E-11	5.11E-11
Californium								
Cf-244	5.0E-03	9.78E-10	4.84E-10	2.35E-10	1.34E-10	8.97E-11	7.03E-11	9.55E-11
Cf-246	5.0E-03	5.01E-08	2.45E-08	1.23E-08	7.28E-09	4.09E-09	3.29E-09	4.63E-09
Cf-247	5.0E-03	2.33E-10	1.45E-10	7.36E-11	4.42E-11	2.73E-11	2.16E-11	2.90E-11
Cf-248	5.0E-03	1.51E-06	1.60E-07	9.83E-08	5.99E-08	3.30E-08	2.83E-08	4.68E-08
Cf-249	5.0E-03	9.00E-06	8.65E-07	6.35E-07	4.64E-07	3.81E-07	3.51E-07	4.46E-07

Table A-1: Effective Dose Coefficients for Ingested Water (continued)

Nuclide	f_1	Dose Coefficient (Sv/Bq)						
		Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Cf-250	5.0E-03	5.66E-06	5.43E-07	3.64E-07	2.32E-07	1.71E-07	1.61E-07	2.22E-07
Cf-251	5.0E-03	9.12E-06	8.79E-07	6.46E-07	4.74E-07	3.89E-07	3.58E-07	4.55E-07
Cf-252	5.0E-03	4.96E-06	5.16E-07	3.25E-07	1.86E-07	1.04E-07	9.05E-08	1.51E-07
Cf-253	5.0E-03	1.01E-07	1.14E-08	6.27E-09	3.87E-09	1.87E-09	1.48E-09	2.76E-09
Cf-254	5.0E-03	1.15E-05	2.66E-06	1.44E-06	8.98E-07	5.04E-07	4.02E-07	6.02E-07
Cf-255	5.0E-03	7.55E-10	2.76E-10	1.37E-10	8.01E-11	4.83E-11	3.82E-11	5.46E-11
Einsteinium								
Es-249	5.0E-03	1.89E-10	1.19E-10	6.40E-11	4.02E-11	2.66E-11	2.13E-11	2.73E-11
Es-250	5.0E-03	4.88E-09	2.97E-09	1.55E-09	9.57E-10	5.82E-10	4.66E-10	6.20E-10
Es-250m	5.0E-03	3.27E-10	1.56E-10	8.77E-11	5.67E-11	3.78E-11	3.07E-11	3.93E-11
Es-251	5.0E-03	1.98E-09	1.25E-09	6.39E-10	3.86E-10	2.26E-10	1.80E-10	2.45E-10
Es-253	5.0E-03	1.70E-07	4.55E-08	2.34E-08	1.40E-08	7.56E-09	6.06E-09	9.21E-09
Es-254	5.0E-03	1.42E-06	1.63E-07	9.79E-08	5.96E-08	3.30E-08	2.81E-08	4.59E-08
Es-254m	5.0E-03	5.82E-08	3.14E-08	1.58E-08	9.43E-09	5.36E-09	4.32E-09	5.99E-09
Es-255	5.0E-03	2.64E-07	4.53E-08	2.40E-08	1.46E-08	7.46E-09	5.96E-09	9.91E-09
Es-256	5.0E-03	2.84E-08	1.81E-08	9.53E-09	5.93E-09	3.69E-09	2.95E-09	3.87E-09
Fermium								
Fm-251	5.0E-03	7.74E-10	4.91E-10	2.53E-10	1.54E-10	9.18E-11	7.31E-11	9.83E-11
Fm-252	5.0E-03	4.16E-08	2.12E-08	1.06E-08	6.30E-09	3.56E-09	2.86E-09	4.01E-09
Fm-253	5.0E-03	2.81E-08	8.74E-09	4.46E-09	2.67E-09	1.47E-09	1.18E-09	1.74E-09
Fm-254	5.0E-03	5.80E-09	3.32E-09	1.64E-09	9.59E-10	5.76E-10	4.58E-10	6.29E-10
Fm-255	5.0E-03	3.32E-08	1.91E-08	9.49E-09	5.62E-09	3.18E-09	2.55E-09	3.55E-09
Fm-256	5.0E-03	1.85E-07	1.16E-07	6.10E-08	3.77E-08	2.39E-08	1.91E-08	2.50E-08
Fm-257	5.0E-03	1.01E-06	1.21E-07	6.82E-08	4.18E-08	2.03E-08	1.63E-08	2.94E-08

Table A-2: Effective Dose Coefficients from Inhaled Air

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Hydrogen									
H-3	F	1.0E+00	2.63E-11	2.02E-11	1.11E-11	8.22E-12	5.94E-12	6.25E-12	6.67E-12
	M	2.0E-01	3.38E-10	2.65E-10	1.39E-10	8.17E-11	5.22E-11	4.51E-11	5.33E-11
	S	2.0E-02	1.14E-09	1.03E-09	6.27E-10	3.73E-10	2.78E-10	2.62E-10	2.89E-10
	V	1.0E+00	6.34E-11	4.85E-11	3.07E-11	2.27E-11	1.80E-11	1.83E-11	1.93E-11
	G[(a)]	1.0E+00	6.34E-15	4.85E-15	3.07E-15	2.27E-15	1.80E-15	1.83E-15	1.93E-15
	G[(b)]	1.0E+00	1.07E-10	1.12E-10	6.99E-11	5.55E-11	4.08E-11	4.13E-11	4.38E-11
	(a) Elemental								
	(b) Organic								
Beryllium									
Be-7	F	2.0E-02	2.25E-10	1.84E-10	9.91E-11	6.71E-11	4.44E-11	3.80E-11	4.38E-11
	M	2.0E-02	2.49E-10	2.10E-10	1.25E-10	8.34E-11	6.23E-11	5.08E-11	5.77E-11
	S	2.0E-02	2.81E-10	2.40E-10	1.45E-10	9.73E-11	6.83E-11	5.58E-11	6.40E-11
Be-10	F	2.0E-02	3.69E-08	3.14E-08	1.71E-08	1.01E-08	7.04E-09	6.57E-09	7.43E-09
	M	2.0E-02	4.10E-08	3.41E-08	2.03E-08	1.34E-08	1.11E-08	9.60E-09	1.05E-08
	S	2.0E-02	9.76E-08	9.04E-08	6.05E-08	4.12E-08	3.62E-08	3.47E-08	3.66E-08
Carbon									
C-11	F	1.0E+00	1.01E-10	7.05E-11	3.25E-11	2.07E-11	1.28E-11	1.08E-11	1.30E-11
	M	2.0E-01	1.52E-10	1.05E-10	4.93E-11	3.22E-11	2.12E-11	1.77E-11	2.09E-11
	S	2.0E-02	1.58E-10	1.09E-10	5.11E-11	3.35E-11	2.21E-11	1.85E-11	2.18E-11
	G[(c)]	1.0E+00	1.01E-11	6.71E-12	3.56E-12	2.22E-12	1.40E-12	1.18E-12	1.40E-12
	G[(d)]	1.0E+00	1.85E-11	1.22E-11	6.50E-12	4.06E-12	2.55E-12	2.16E-12	2.56E-12

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
C-14	F	1.0E+00	6.04E-10	6.77E-10	3.65E-10	2.94E-10	1.94E-10	2.03E-10	2.18E-10
	M	2.0E-01	8.21E-09	6.50E-09	3.98E-09	2.82E-09	2.48E-09	2.03E-09	2.22E-09
	S	2.0E-02	1.90E-08	1.67E-08	1.08E-08	7.29E-09	6.33E-09	5.73E-09	6.15E-09
	G[(c)]	1.0E+00	9.18E-12	5.78E-12	2.83E-12	1.69E-12	9.88E-13	8.01E-13	9.96E-13
	G[(d)]	1.0E+00	1.88E-11	1.91E-11	1.14E-11	8.90E-12	6.28E-12	6.24E-12	6.70E-12
	(c) Monoxide								
	(d) Dioxide								
Fluorine									
F-18	F	1.0E+00	2.56E-10	1.86E-10	8.85E-11	5.45E-11	3.28E-11	2.69E-11	3.28E-11
	M	1.0E+00	3.96E-10	2.85E-10	1.43E-10	9.41E-11	6.69E-11	5.41E-11	6.30E-11
	S	1.0E+00	4.11E-10	2.96E-10	1.49E-10	9.85E-11	7.06E-11	5.71E-11	6.64E-11
Sodium									
Na-22	F	1.0E+00	9.63E-09	7.33E-09	3.77E-09	2.41E-09	1.48E-09	1.28E-09	1.51E-09
	M	1.0E+00	4.08E-08	3.40E-08	2.08E-08	1.43E-08	1.19E-08	9.88E-09	1.09E-08
	S	1.0E+00	9.66E-08	8.83E-08	5.84E-08	3.95E-08	3.28E-08	2.91E-08	3.15E-08
Na-24	F	1.0E+00	2.36E-09	1.88E-09	9.56E-10	5.81E-10	3.42E-10	2.79E-10	3.42E-10
	M	1.0E+00	3.24E-09	2.53E-09	1.34E-09	8.60E-10	5.87E-10	4.76E-10	5.58E-10
	S	1.0E+00	3.33E-09	2.60E-09	1.39E-09	8.91E-10	6.15E-10	4.99E-10	5.83E-10
Magnesium									
Mg-28	F	1.0E+00	5.32E-09	4.75E-09	2.21E-09	1.34E-09	7.32E-10	6.02E-10	7.52E-10
	M	1.0E+00	7.27E-09	7.20E-09	3.52E-09	2.26E-09	1.45E-09	1.20E-09	1.42E-09
	S	1.0E+00	7.49E-09	7.47E-09	3.67E-09	2.36E-09	1.54E-09	1.27E-09	1.50E-09
Aluminum									
Al-26	F	2.0E-02	8.01E-08	6.19E-08	3.20E-08	2.00E-08	1.29E-08	1.12E-08	1.31E-08
	M	2.0E-02	8.70E-08	7.31E-08	4.36E-08	2.86E-08	2.24E-08	1.95E-08	2.16E-08
	S	2.0E-02	2.66E-07	2.56E-07	1.80E-07	1.26E-07	1.12E-07	1.09E-07	1.14E-07

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Silicon									
Si-31	F	2.0E-02	3.63E-10	2.28E-10	9.55E-11	5.91E-11	3.20E-11	2.74E-11	3.44E-11
	M	2.0E-02	6.87E-10	4.45E-10	2.04E-10	1.33E-10	8.85E-11	7.36E-11	8.72E-11
	S	2.0E-02	7.22E-10	4.69E-10	2.16E-10	1.41E-10	9.47E-11	7.88E-11	9.30E-11
Si-32	F	2.0E-02	3.01E-08	2.29E-08	1.09E-08	6.46E-09	3.76E-09	3.20E-09	3.91E-09
	M	2.0E-02	7.09E-08	6.03E-08	3.60E-08	2.37E-08	1.88E-08	1.67E-08	1.84E-08
	S	2.0E-02	2.78E-07	2.69E-07	1.86E-07	1.27E-07	1.12E-07	1.11E-07	1.16E-07
Phosphorus									
P-32	F	1.0E+00	1.18E-08	7.51E-09	3.24E-09	1.82E-09	9.87E-10	7.78E-10	1.02E-09
	M	1.0E+00	2.14E-08	1.53E-08	8.02E-09	5.30E-09	4.05E-09	3.38E-09	3.83E-09
	S	1.0E+00	2.33E-08	1.68E-08	8.97E-09	5.99E-09	4.64E-09	3.89E-09	4.38E-09
P-33	F	1.0E+00	1.16E-09	7.82E-10	3.04E-10	2.02E-10	1.11E-10	9.26E-11	1.16E-10
	M	1.0E+00	5.99E-09	4.56E-09	2.78E-09	2.05E-09	1.90E-09	1.50E-09	1.64E-09
	S	1.0E+00	7.05E-09	5.40E-09	3.31E-09	2.45E-09	2.28E-09	1.80E-09	1.96E-09
Sulfur									
S-35	F	1.0E+00	5.42E-10	3.94E-10	1.76E-10	1.09E-10	6.01E-11	5.14E-11	6.35E-11
	M	2.0E-01	5.85E-09	4.48E-09	2.74E-09	1.97E-09	1.78E-09	1.43E-09	1.56E-09
	S	2.0E-02	7.62E-09	5.88E-09	3.60E-09	2.57E-09	2.31E-09	1.86E-09	2.04E-09
	V[(e)]	1.0E+00	9.38E-10	6.60E-10	3.42E-10	2.09E-10	1.28E-10	1.09E-10	1.30E-10
	V[(f)]	1.0E+00	6.89E-09	4.77E-09	2.41E-09	1.44E-09	8.54E-10	6.99E-10	8.58E-10
S-38	F	1.0E+00	1.13E-09	9.05E-10	4.40E-10	2.79E-10	1.66E-10	1.35E-10	1.65E-10
	M	2.0E-01	2.57E-09	1.80E-09	8.50E-10	5.40E-10	3.33E-10	2.76E-10	3.33E-10
	S	2.0E-02	2.79E-09	1.91E-09	8.99E-10	5.72E-10	3.53E-10	2.92E-10	3.53E-10
	V[(e)]	1.0E+00	1.35E-09	9.94E-10	5.80E-10	3.38E-10	2.37E-10	1.89E-10	2.23E-10
	V[(f)]	1.0E+00	1.40E-09	1.02E-09	5.47E-10	3.36E-10	2.19E-10	1.80E-10	2.13E-10

(e) Dioxoide

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	(f) Carbon Disulfide								
Chlorine									
Cl-34m	F	1.0E+00	2.87E-10	1.94E-10	8.94E-11	5.46E-11	3.24E-11	2.68E-11	3.30E-11
	M	1.0E+00	4.34E-10	2.88E-10	1.34E-10	8.37E-11	5.28E-11	4.39E-11	5.28E-11
	S	1.0E+00	4.50E-10	2.99E-10	1.39E-10	8.68E-11	5.50E-11	4.58E-11	5.50E-11
Cl-36	F	1.0E+00	3.90E-09	2.60E-09	1.15E-09	7.05E-10	3.91E-10	3.31E-10	4.12E-10
	M	1.0E+00	3.11E-08	2.55E-08	1.51E-08	1.04E-08	8.69E-09	7.31E-09	8.05E-09
	S	1.0E+00	1.03E-07	9.69E-08	6.54E-08	4.46E-08	3.92E-08	3.79E-08	3.99E-08
Cl-38	F	1.0E+00	2.97E-10	1.90E-10	8.47E-11	5.16E-11	3.03E-11	2.54E-11	3.13E-11
	M	1.0E+00	4.71E-10	3.00E-10	1.36E-10	8.50E-11	5.39E-11	4.53E-11	5.44E-11
	S	1.0E+00	4.90E-10	3.12E-10	1.42E-10	8.87E-11	5.65E-11	4.75E-11	5.70E-11
Cl-39	F	1.0E+00	2.69E-10	1.83E-10	8.47E-11	5.17E-11	3.07E-11	2.55E-11	3.13E-11
	M	1.0E+00	4.26E-10	2.86E-10	1.35E-10	8.55E-11	5.61E-11	4.64E-11	5.53E-11
	S	1.0E+00	4.44E-10	2.97E-10	1.41E-10	8.92E-11	5.89E-11	4.87E-11	5.79E-11
Potassium									
K-40	F	1.0E+00	2.37E-08	1.66E-08	7.39E-09	4.46E-09	2.44E-09	2.07E-09	2.58E-09
	M	1.0E+00	6.98E-08	5.65E-08	3.18E-08	2.08E-08	1.57E-08	1.39E-08	1.55E-08
	S	1.0E+00	2.25E-07	2.12E-07	1.43E-07	9.80E-08	8.56E-08	8.46E-08	8.87E-08
K-42	F	1.0E+00	1.58E-09	1.01E-09	4.44E-10	2.68E-10	1.48E-10	1.25E-10	1.57E-10
	M	1.0E+00	2.71E-09	1.83E-09	8.30E-10	5.41E-10	3.86E-10	3.30E-10	3.82E-10
	S	1.0E+00	2.60E-09	1.75E-09	8.82E-10	5.77E-10	4.16E-10	3.56E-10	4.08E-10
K-43	F	1.0E+00	1.29E-09	9.64E-10	4.70E-10	2.88E-10	1.68E-10	1.40E-10	1.71E-10
	M	1.0E+00	2.13E-09	1.59E-09	8.58E-10	5.79E-10	4.39E-10	3.54E-10	4.05E-10
	S	1.0E+00	2.22E-09	1.67E-09	9.03E-10	6.13E-10	4.71E-10	3.79E-10	4.32E-10
K-44	F	1.0E+00	2.18E-10	1.45E-10	6.64E-11	4.07E-11	2.43E-11	2.03E-11	2.48E-11
	M	1.0E+00	3.22E-10	2.12E-10	9.75E-11	6.08E-11	3.81E-11	3.19E-11	3.84E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	1.0E+00	3.34E-10	2.19E-10	1.01E-10	6.31E-11	3.97E-11	3.32E-11	3.99E-11
K-45	F	1.0E+00	1.40E-10	9.45E-11	4.34E-11	2.69E-11	1.63E-11	1.37E-11	1.66E-11
	M	1.0E+00	2.03E-10	1.36E-10	6.28E-11	3.97E-11	2.52E-11	2.11E-11	2.53E-11
	S	1.0E+00	2.11E-10	1.41E-10	6.50E-11	4.12E-11	2.62E-11	2.20E-11	2.63E-11
Calcium									
Ca-41	F	6.0E-01	7.79E-10	4.43E-10	3.11E-10	3.84E-10	3.88E-10	1.97E-10	2.29E-10
	M	2.0E-01	4.86E-10	3.07E-10	2.01E-10	1.94E-10	1.88E-10	1.11E-10	1.27E-10
	S	2.0E-02	7.74E-10	7.03E-10	4.46E-10	2.82E-10	2.26E-10	2.12E-10	2.30E-10
Ca-45	F	6.0E-01	5.61E-09	2.94E-09	1.41E-09	1.05E-09	7.51E-10	4.65E-10	5.85E-10
	M	2.0E-01	1.19E-08	8.72E-09	5.25E-09	3.83E-09	3.45E-09	2.71E-09	2.99E-09
	S	2.0E-02	1.46E-08	1.16E-08	7.10E-09	5.06E-09	4.51E-09	3.64E-09	3.99E-09
Ca-47	F	6.0E-01	4.91E-09	3.61E-09	1.72E-09	1.06E-09	6.15E-10	5.60E-10	6.68E-10
	M	2.0E-01	1.04E-08	7.72E-09	4.19E-09	2.94E-09	2.36E-09	1.90E-09	2.14E-09
	S	2.0E-02	1.17E-08	8.51E-09	4.65E-09	3.27E-09	2.65E-09	2.12E-09	2.38E-09
Scandium									
Sc-43	F	1.0E-03	6.22E-10	4.44E-10	2.06E-10	1.27E-10	7.07E-11	5.81E-11	7.25E-11
	M	1.0E-03	1.02E-09	7.19E-10	3.48E-10	2.24E-10	1.45E-10	1.18E-10	1.41E-10
	S	1.0E-03	1.06E-09	7.49E-10	3.63E-10	2.35E-10	1.53E-10	1.25E-10	1.49E-10
Sc-44	F	1.0E-03	1.01E-09	7.46E-10	3.56E-10	2.17E-10	1.22E-10	9.92E-11	1.24E-10
	M	1.0E-03	1.56E-09	1.13E-09	5.49E-10	3.49E-10	2.17E-10	1.77E-10	2.13E-10
	S	1.0E-03	1.62E-09	1.17E-09	5.70E-10	3.63E-10	2.28E-10	1.85E-10	2.23E-10
Sc-44m	F	1.0E-03	7.68E-09	5.38E-09	2.52E-09	1.55E-09	8.71E-10	7.11E-10	8.88E-10
	M	1.0E-03	1.12E-08	8.10E-09	4.06E-09	2.65E-09	1.76E-09	1.43E-09	1.69E-09
	S	1.0E-03	1.05E-08	8.44E-09	4.25E-09	2.79E-09	1.68E-09	1.37E-09	1.65E-09
Sc-46	F	1.0E-03	4.22E-08	3.35E-08	1.78E-08	1.17E-08	7.77E-09	6.52E-09	7.60E-09
	M	1.0E-03	2.61E-08	2.12E-08	1.27E-08	8.82E-09	7.31E-09	5.96E-09	6.62E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	1.0E-03	2.75E-08	2.25E-08	1.39E-08	9.76E-09	8.36E-09	6.75E-09	7.46E-09
Sc-47	F	1.0E-03	2.02E-09	1.31E-09	5.82E-10	3.54E-10	1.96E-10	1.54E-10	1.97E-10
	M	1.0E-03	3.67E-09	2.61E-09	1.42E-09	1.01E-09	8.29E-10	6.54E-10	7.36E-10
	S	1.0E-03	3.93E-09	2.81E-09	1.54E-09	1.10E-09	9.18E-10	7.24E-10	8.12E-10
Sc-48	F	1.0E-03	5.23E-09	4.05E-09	2.03E-09	1.27E-09	7.38E-10	6.03E-10	7.38E-10
	M	1.0E-03	7.45E-09	5.70E-09	2.98E-09	1.96E-09	1.32E-09	1.05E-09	1.24E-09
	S	1.0E-03	7.71E-09	5.90E-09	3.09E-09	2.04E-09	1.39E-09	1.11E-09	1.30E-09
Sc-49	F	1.0E-03	2.13E-10	1.30E-10	5.47E-11	3.40E-11	1.97E-11	1.68E-11	2.08E-11
	M	1.0E-03	3.71E-10	2.32E-10	1.04E-10	6.69E-11	4.41E-11	3.72E-11	4.41E-11
	S	1.0E-03	3.88E-10	2.43E-10	1.09E-10	7.05E-11	4.68E-11	3.94E-11	4.67E-11
Titanium									
Ti-44	F	2.0E-02	3.07E-07	2.65E-07	1.52E-07	9.57E-08	6.64E-08	6.15E-08	6.90E-08
	M	2.0E-02	1.71E-07	1.50E-07	9.24E-08	5.93E-08	4.64E-08	4.27E-08	4.67E-08
	S	2.0E-02	3.24E-07	3.08E-07	2.14E-07	1.48E-07	1.29E-07	1.27E-07	1.33E-07
Ti-45	F	2.0E-02	4.42E-10	3.17E-10	1.48E-10	9.08E-11	5.12E-11	4.23E-11	5.25E-11
	M	2.0E-02	7.42E-10	5.24E-10	2.54E-10	1.65E-10	1.08E-10	8.83E-11	1.05E-10
	S	2.0E-02	7.76E-10	5.47E-10	2.66E-10	1.73E-10	1.15E-10	9.34E-11	1.11E-10
Vanadium									
V-47	F	2.0E-02	1.85E-10	1.23E-10	5.60E-11	3.48E-11	2.09E-11	1.74E-11	2.13E-11
	M	2.0E-02	2.82E-10	1.86E-10	8.58E-11	5.47E-11	3.52E-11	2.94E-11	3.51E-11
	S	2.0E-02	2.93E-10	1.93E-10	8.90E-11	5.68E-11	3.68E-11	3.07E-11	3.66E-11
V-48	F	2.0E-02	7.64E-09	5.93E-09	3.02E-09	1.92E-09	1.16E-09	9.59E-10	1.15E-09
	M	2.0E-02	1.42E-08	1.12E-08	6.29E-09	4.25E-09	2.91E-09	2.35E-09	2.73E-09
	S	2.0E-02	1.55E-08	1.22E-08	6.96E-09	4.73E-09	3.33E-09	2.68E-09	3.09E-09
V-49	F	2.0E-02	2.02E-10	1.55E-10	7.63E-11	4.27E-11	2.48E-11	2.09E-11	2.58E-11
	M	2.0E-02	2.75E-10	2.09E-10	1.08E-10	6.23E-11	3.92E-11	3.34E-11	4.00E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	4.56E-10	3.72E-10	2.04E-10	1.19E-10	7.82E-11	6.82E-11	7.97E-11
V-50	F	2.0E-02	1.22E-07	1.18E-07	8.89E-08	7.53E-08	6.67E-08	6.49E-08	6.69E-08
	M	2.0E-02	5.12E-08	4.93E-08	3.84E-08	3.10E-08	2.95E-08	2.89E-08	2.96E-08
	S	2.0E-02	5.90E-08	5.70E-08	4.23E-08	3.11E-08	2.82E-08	2.69E-08	2.81E-08
Chromium									
Cr-48	F	2.0E-01	7.28E-10	5.75E-10	2.99E-10	1.89E-10	1.15E-10	9.56E-11	1.15E-10
	M	2.0E-01	1.10E-09	8.79E-10	4.90E-10	3.28E-10	2.40E-10	1.92E-10	2.21E-10
	S	2.0E-01	1.18E-09	9.40E-10	5.28E-10	3.56E-10	2.64E-10	2.12E-10	2.43E-10
Cr-49	F	2.0E-01	1.92E-10	1.32E-10	6.06E-11	3.77E-11	2.25E-11	1.88E-11	2.29E-11
	M	2.0E-01	3.03E-10	2.05E-10	9.62E-11	6.19E-11	4.05E-11	3.36E-11	3.99E-11
	S	2.0E-01	3.15E-10	2.13E-10	1.00E-10	6.46E-11	4.25E-11	3.52E-11	4.18E-11
Cr-51	F	2.0E-01	1.72E-10	1.27E-10	6.29E-11	3.99E-11	2.39E-11	2.01E-11	2.42E-11
	M	2.0E-01	2.54E-10	1.90E-10	1.01E-10	6.39E-11	3.92E-11	3.24E-11	3.88E-11
	S	2.0E-01	2.59E-10	2.10E-10	1.02E-10	6.56E-11	4.51E-11	3.71E-11	4.34E-11
Manganese									
Mn-51	F	2.0E-01	2.52E-10	1.67E-10	7.52E-11	4.62E-11	2.71E-11	2.26E-11	2.78E-11
	M	2.0E-01	4.03E-10	2.65E-10	1.22E-10	7.73E-11	4.95E-11	4.12E-11	4.93E-11
	S	2.0E-01	4.20E-10	2.76E-10	1.27E-10	8.07E-11	5.19E-11	4.32E-11	5.17E-11
Mn-52	F	2.0E-01	7.00E-09	5.56E-09	2.91E-09	1.86E-09	1.14E-09	9.48E-10	1.13E-09
	M	2.0E-01	8.61E-09	6.85E-09	3.74E-09	2.46E-09	1.71E-09	1.36E-09	1.59E-09
	S	2.0E-01	8.85E-09	7.04E-09	3.86E-09	2.55E-09	1.79E-09	1.42E-09	1.66E-09
Mn-52m	F	2.0E-01	1.90E-10	1.31E-10	6.11E-11	3.75E-11	2.24E-11	1.86E-11	2.27E-11
	M	2.0E-01	2.76E-10	1.87E-10	8.73E-11	5.46E-11	3.42E-11	2.84E-11	3.42E-11
	S	2.0E-01	2.86E-10	1.93E-10	9.02E-11	5.65E-11	3.55E-11	2.95E-11	3.55E-11
Mn-53	F	2.0E-01	3.18E-10	2.18E-10	1.05E-10	5.94E-11	3.36E-11	2.84E-11	3.54E-11
	M	2.0E-01	4.50E-10	3.30E-10	1.72E-10	9.95E-11	6.27E-11	5.38E-11	6.42E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-01	1.29E-09	1.16E-09	7.23E-10	4.45E-10	3.50E-10	3.37E-10	3.65E-10
Mn-54	F	2.0E-01	5.29E-09	4.15E-09	2.26E-09	1.51E-09	1.00E-09	8.67E-10	9.98E-10
	M	2.0E-01	7.64E-09	6.30E-09	3.86E-09	2.40E-09	1.88E-09	1.57E-09	1.77E-09
	S	2.0E-01	1.21E-08	1.06E-08	7.04E-09	4.77E-09	3.86E-09	3.27E-09	3.60E-09
Mn-56	F	2.0E-01	6.96E-10	4.94E-10	2.29E-10	1.39E-10	7.81E-11	6.42E-11	8.02E-11
	M	2.0E-01	1.12E-09	7.83E-10	3.73E-10	2.36E-10	1.48E-10	1.22E-10	1.47E-10
	S	2.0E-01	1.16E-09	8.14E-10	3.88E-10	2.47E-10	1.56E-10	1.28E-10	1.54E-10
Iron									
Fe-52	F	6.0E-01	5.20E-09	3.56E-09	1.54E-09	8.94E-10	4.89E-10	3.88E-10	5.01E-10
	M	2.0E-01	5.82E-09	4.11E-09	1.94E-09	1.22E-09	7.34E-10	6.01E-10	7.33E-10
	S	2.0E-02	6.00E-09	4.23E-09	2.01E-09	1.28E-09	7.71E-10	6.34E-10	7.70E-10
Fe-55	F	6.0E-01	4.11E-09	3.19E-09	2.19E-09	1.41E-09	9.43E-10	7.82E-10	9.03E-10
	M	2.0E-01	1.90E-09	1.44E-09	9.87E-10	6.22E-10	4.39E-10	3.88E-10	4.37E-10
	S	2.0E-02	9.85E-10	8.36E-10	4.96E-10	2.91E-10	2.02E-10	1.83E-10	2.08E-10
Fe-59	F	6.0E-01	2.04E-08	1.31E-08	7.10E-09	4.43E-09	2.65E-09	2.23E-09	2.68E-09
	M	2.0E-01	1.84E-08	1.33E-08	7.87E-09	5.50E-09	4.58E-09	3.70E-09	4.12E-09
	S	2.0E-02	1.71E-08	1.34E-08	8.10E-09	5.79E-09	5.04E-09	4.03E-09	4.45E-09
Fe-60	F	6.0E-01	4.52E-07	4.07E-07	3.70E-07	3.34E-07	3.05E-07	2.90E-07	2.97E-07
	M	2.0E-01	2.07E-07	1.81E-07	1.66E-07	1.47E-07	1.44E-07	1.44E-07	1.45E-07
	S	2.0E-02	9.99E-08	9.41E-08	7.18E-08	5.50E-08	5.24E-08	5.18E-08	5.31E-08
Cobalt									
Co-55	F	6.0E-01	2.17E-09	1.85E-09	9.01E-10	5.54E-10	3.12E-10	2.67E-10	3.25E-10
	M	2.0E-01	4.10E-09	3.12E-09	1.53E-09	9.83E-10	6.14E-10	4.98E-10	5.99E-10
	S	2.0E-02	4.61E-09	3.36E-09	1.65E-09	1.06E-09	6.61E-10	5.36E-10	6.45E-10
Co-56	F	6.0E-01	1.38E-08	1.05E-08	5.57E-09	3.57E-09	2.24E-09	1.86E-09	2.21E-09
	M	2.0E-01	2.52E-08	2.06E-08	1.09E-08	7.37E-09	5.75E-09	4.81E-09	5.40E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	2.88E-08	2.42E-08	1.47E-08	9.97E-09	7.93E-09	6.64E-09	7.38E-09
Co-57	F	6.0E-01	1.45E-09	1.09E-09	5.66E-10	3.69E-10	2.30E-10	1.88E-10	2.24E-10
	M	2.0E-01	2.75E-09	2.17E-09	1.27E-09	8.51E-10	6.68E-10	5.50E-10	6.18E-10
	S	2.0E-02	4.35E-09	3.71E-09	2.27E-09	1.51E-09	1.19E-09	1.00E-09	1.12E-09
Co-58	F	6.0E-01	3.99E-09	3.04E-09	1.60E-09	1.03E-09	6.41E-10	5.35E-10	6.35E-10
	M	2.0E-01	7.26E-09	6.49E-09	3.48E-09	2.40E-09	1.95E-09	1.59E-09	1.78E-09
	S	2.0E-02	9.00E-09	7.44E-09	4.55E-09	3.15E-09	2.60E-09	2.11E-09	2.34E-09
Co-58m	F	6.0E-01	4.75E-11	3.63E-11	1.67E-11	1.05E-11	5.89E-12	5.17E-12	6.27E-12
	M	2.0E-01	1.06E-10	7.57E-11	3.75E-11	2.42E-11	1.61E-11	1.32E-11	1.56E-11
	S	2.0E-02	1.25E-10	8.88E-11	4.51E-11	2.93E-11	2.01E-11	1.64E-11	1.93E-11
Co-60	F	6.0E-01	3.01E-08	2.34E-08	1.36E-08	8.89E-09	6.09E-09	5.27E-09	6.02E-09
	M	2.0E-01	4.16E-08	3.39E-08	2.13E-08	1.46E-08	1.21E-08	1.02E-08	1.12E-08
	S	2.0E-02	9.16E-08	8.58E-08	5.89E-08	4.03E-08	3.42E-08	3.08E-08	3.30E-08
Co-60m	F	6.0E-01	4.33E-12	2.78E-12	1.52E-12	1.01E-12	8.14E-13	6.76E-13	7.60E-13
	M	2.0E-01	6.99E-12	4.57E-12	2.61E-12	1.76E-12	1.47E-12	1.22E-12	1.36E-12
	S	2.0E-02	7.47E-12	4.96E-12	2.87E-12	1.93E-12	1.62E-12	1.36E-12	1.50E-12
Co-61	F	6.0E-01	2.14E-10	1.41E-10	6.12E-11	3.87E-11	2.26E-11	1.95E-11	2.37E-11
	M	2.0E-01	4.07E-10	2.68E-10	1.25E-10	8.30E-11	5.75E-11	4.77E-11	5.58E-11
	S	2.0E-02	4.33E-10	2.83E-10	1.33E-10	8.82E-11	6.15E-11	5.10E-11	5.95E-11
Co-62m	F	6.0E-01	1.39E-10	9.69E-11	4.55E-11	2.81E-11	1.70E-11	1.41E-11	1.72E-11
	M	2.0E-01	1.93E-10	1.32E-10	6.20E-11	3.89E-11	2.43E-11	2.03E-11	2.44E-11
	S	2.0E-02	1.99E-10	1.36E-10	6.39E-11	4.00E-11	2.51E-11	2.10E-11	2.52E-11
Nickel									
Ni-56	F	1.0E-01	3.38E-09	2.78E-09	1.49E-09	9.44E-10	5.84E-10	4.92E-10	5.83E-10
	M	1.0E-01	4.96E-09	4.10E-09	2.33E-09	1.53E-09	1.08E-09	8.80E-10	1.01E-09
	S	2.0E-02	5.58E-09	4.66E-09	2.69E-09	1.78E-09	1.29E-09	1.05E-09	1.20E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	V	1.0E-01	6.97E-09	5.37E-09	3.26E-09	2.14E-09	1.49E-09	1.28E-09	1.46E-09
Ni-57	F	1.0E-01	2.29E-09	1.82E-09	9.18E-10	5.69E-10	3.23E-10	2.63E-10	3.24E-10
	M	1.0E-01	3.80E-09	2.95E-09	1.52E-09	9.88E-10	6.43E-10	5.16E-10	6.13E-10
	S	2.0E-02	4.11E-09	3.13E-09	1.61E-09	1.05E-09	6.89E-10	5.53E-10	6.57E-10
	V	1.0E-01	3.38E-09	2.48E-09	1.47E-09	9.85E-10	7.00E-10	6.06E-10	6.85E-10
Ni-59	F	1.0E-01	9.44E-10	7.98E-10	4.44E-10	2.74E-10	1.91E-10	1.81E-10	2.02E-10
	M	1.0E-01	7.71E-10	6.04E-10	3.38E-10	2.02E-10	1.42E-10	1.31E-10	1.48E-10
	S	2.0E-02	1.63E-09	1.49E-09	9.34E-10	5.77E-10	4.56E-10	4.40E-10	4.76E-10
	V	1.0E-01	3.90E-09	3.25E-09	1.98E-09	1.24E-09	8.91E-10	8.19E-10	9.13E-10
Ni-63	F	1.0E-01	2.34E-09	1.98E-09	1.10E-09	6.76E-10	4.68E-10	4.43E-10	4.97E-10
	M	1.0E-01	2.54E-09	1.96E-09	1.15E-09	7.15E-10	5.41E-10	4.87E-10	5.43E-10
	S	2.0E-02	4.86E-09	4.29E-09	2.71E-09	1.70E-09	1.36E-09	1.29E-09	1.40E-09
	V	1.0E-01	9.61E-09	8.01E-09	4.86E-09	3.05E-09	2.18E-09	2.00E-09	2.23E-09
Ni-65	F	1.0E-01	4.41E-10	2.98E-10	1.35E-10	8.52E-11	4.92E-11	4.08E-11	5.03E-11
	M	1.0E-01	7.68E-10	5.17E-10	2.43E-10	1.57E-10	1.02E-10	8.47E-11	1.01E-10
	S	2.0E-02	8.12E-10	5.44E-10	2.56E-10	1.65E-10	1.08E-10	8.97E-11	1.07E-10
	V	1.0E-01	2.01E-09	1.45E-09	8.13E-10	5.60E-10	4.00E-10	3.64E-10	4.05E-10
Ni-66	F	1.0E-01	5.76E-09	3.87E-09	1.65E-09	1.02E-09	5.10E-10	4.24E-10	5.47E-10
	M	1.0E-01	1.36E-08	9.49E-09	4.57E-09	2.98E-09	1.98E-09	1.65E-09	1.94E-09
	S	2.0E-02	1.51E-08	1.04E-08	5.01E-09	3.27E-09	2.18E-09	1.82E-09	2.14E-09
	V	1.0E-01	1.04E-08	7.23E-09	4.00E-09	2.70E-09	1.86E-09	1.63E-09	1.86E-09
Copper									
Cu-60	F	1.0E+00	2.17E-10	1.60E-10	7.72E-11	4.72E-11	2.82E-11	2.31E-11	2.82E-11
	M	1.0E+00	3.05E-10	2.20E-10	1.06E-10	6.61E-11	4.13E-11	3.38E-11	4.09E-11
	S	1.0E+00	3.14E-10	2.27E-10	1.09E-10	6.82E-11	4.27E-11	3.50E-11	4.22E-11
Cu-61	F	1.0E+00	3.07E-10	2.69E-10	1.27E-10	7.77E-11	4.43E-11	3.64E-11	4.49E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	1.0E+00	4.80E-10	4.27E-10	2.09E-10	1.35E-10	8.91E-11	7.25E-11	8.57E-11
	S	1.0E+00	4.99E-10	4.44E-10	2.18E-10	1.41E-10	9.41E-11	7.65E-11	9.02E-11
Cu-64	F	1.0E+00	2.86E-10	2.74E-10	1.24E-10	7.65E-11	4.19E-11	3.54E-11	4.37E-11
	M	1.0E+00	5.61E-10	5.44E-10	2.76E-10	1.88E-10	1.38E-10	1.12E-10	1.28E-10
	S	1.0E+00	5.92E-10	5.74E-10	2.93E-10	2.00E-10	1.29E-10	1.20E-10	1.36E-10
Cu-67	F	1.0E+00	9.21E-10	7.82E-10	3.42E-10	2.12E-10	1.15E-10	9.85E-11	1.22E-10
	M	1.0E+00	2.21E-09	1.94E-09	1.09E-09	7.91E-10	6.82E-10	5.38E-10	5.97E-10
	S	1.0E+00	2.41E-09	2.11E-09	1.20E-09	8.70E-10	7.58E-10	5.97E-10	6.61E-10
Zinc									
Zn-62	F	1.0E+00	1.66E-09	1.70E-09	7.68E-10	4.63E-10	2.47E-10	2.03E-10	2.56E-10
	M	2.0E-01	4.43E-09	3.51E-09	1.62E-09	1.02E-09	6.00E-10	4.99E-10	6.08E-10
	S	2.0E-02	5.10E-09	3.40E-09	1.76E-09	1.11E-09	6.51E-10	5.42E-10	6.58E-10
Zn-63	F	1.0E+00	2.13E-10	1.45E-10	6.58E-11	4.05E-11	2.39E-11	1.99E-11	2.45E-11
	M	2.0E-01	3.47E-10	2.28E-10	1.05E-10	6.64E-11	4.24E-11	3.53E-11	4.23E-11
	S	2.0E-02	3.61E-10	2.37E-10	1.09E-10	6.93E-11	4.44E-11	3.70E-11	4.43E-11
Zn-65	F	1.0E+00	1.46E-08	1.02E-08	5.72E-09	3.76E-09	2.49E-09	2.24E-09	2.56E-09
	M	2.0E-01	8.49E-09	6.44E-09	3.68E-09	2.45E-09	1.87E-09	1.61E-09	1.80E-09
	S	2.0E-02	7.61E-09	6.73E-09	4.37E-09	2.94E-09	2.37E-09	2.00E-09	2.21E-09
Zn-69	F	1.0E+00	1.13E-10	7.41E-11	3.17E-11	2.05E-11	1.24E-11	1.08E-11	1.30E-11
	M	2.0E-01	2.16E-10	1.41E-10	6.50E-11	4.40E-11	3.13E-11	2.61E-11	3.03E-11
	S	2.0E-02	2.27E-10	1.48E-10	6.87E-11	4.66E-11	3.34E-11	2.78E-11	3.22E-11
Zn-69m	F	1.0E+00	6.63E-10	6.73E-10	3.03E-10	1.85E-10	9.87E-11	8.25E-11	1.03E-10
	M	2.0E-01	2.13E-09	1.55E-09	7.53E-10	4.96E-10	2.99E-10	2.42E-10	2.93E-10
	S	2.0E-02	2.18E-09	1.69E-09	8.22E-10	5.43E-10	3.31E-10	2.67E-10	3.23E-10
Zn-71m	F	1.0E+00	6.20E-10	5.55E-10	2.64E-10	1.61E-10	9.14E-11	7.50E-11	9.26E-11
	M	2.0E-01	1.31E-09	9.53E-10	4.63E-10	2.97E-10	1.89E-10	1.54E-10	1.84E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	1.41E-09	1.01E-09	4.90E-10	3.15E-10	2.01E-10	1.64E-10	1.96E-10
Zn-72	F	1.0E+00	4.32E-09	3.52E-09	1.69E-09	1.04E-09	5.95E-10	5.00E-10	6.11E-10
	M	2.0E-01	8.82E-09	6.61E-09	3.41E-09	2.28E-09	1.47E-09	1.20E-09	1.42E-09
	S	2.0E-02	9.77E-09	7.12E-09	3.68E-09	2.47E-09	1.62E-09	1.31E-09	1.55E-09
Gallium									
Ga-65	F	1.0E-02	1.08E-10	7.29E-11	3.33E-11	2.09E-11	1.28E-11	1.08E-11	1.31E-11
	M	1.0E-02	1.56E-10	1.05E-10	4.82E-11	3.08E-11	1.98E-11	1.66E-11	1.98E-11
	S	1.0E-02	1.62E-10	1.08E-10	4.99E-11	3.20E-11	2.06E-11	1.73E-11	2.06E-11
Ga-66	F	1.0E-02	2.87E-09	2.03E-09	9.35E-10	5.72E-10	3.06E-10	2.51E-10	3.17E-10
	M	1.0E-02	4.51E-09	3.16E-09	1.48E-09	9.28E-10	5.34E-10	4.43E-10	5.45E-10
	S	1.0E-02	4.69E-09	3.29E-09	1.54E-09	9.68E-10	5.59E-10	4.64E-10	5.70E-10
Ga-67	F	1.0E-02	6.56E-10	4.69E-10	2.22E-10	1.39E-10	7.82E-11	6.58E-11	8.09E-11
	M	1.0E-02	1.42E-09	1.04E-09	5.14E-10	3.69E-10	3.08E-10	2.44E-10	2.74E-10
	S	1.0E-02	1.35E-09	1.11E-09	5.59E-10	4.03E-10	3.41E-10	2.69E-10	3.01E-10
Ga-68	F	1.0E-02	2.85E-10	1.92E-10	8.74E-11	5.36E-11	3.10E-11	2.58E-11	3.18E-11
	M	1.0E-02	4.63E-10	3.09E-10	1.44E-10	9.17E-11	5.91E-11	4.89E-11	5.85E-11
	S	1.0E-02	4.82E-10	3.22E-10	1.50E-10	9.59E-11	6.21E-11	5.14E-11	6.14E-11
Ga-70	F	1.0E-02	9.54E-11	5.97E-11	2.56E-11	1.64E-11	1.01E-11	8.75E-12	1.05E-11
	M	1.0E-02	1.52E-10	9.63E-11	4.26E-11	2.80E-11	1.84E-11	1.58E-11	1.86E-11
	S	1.0E-02	1.58E-10	1.00E-10	4.44E-11	2.92E-11	1.93E-11	1.65E-11	1.95E-11
Ga-72	F	1.0E-02	2.98E-09	2.21E-09	1.06E-09	6.52E-10	3.61E-10	2.95E-10	3.68E-10
	M	1.0E-02	4.59E-09	3.35E-09	1.64E-09	1.05E-09	6.54E-10	5.32E-10	6.41E-10
	S	1.0E-02	4.77E-09	3.48E-09	1.71E-09	1.10E-09	6.87E-10	5.59E-10	6.72E-10
Ga-73	F	1.0E-02	6.81E-10	4.55E-10	2.00E-10	1.23E-10	6.59E-11	5.53E-11	6.96E-11
	M	1.0E-02	1.26E-09	8.51E-10	4.06E-10	2.65E-10	1.76E-10	1.45E-10	1.72E-10
	S	1.0E-02	1.32E-09	8.95E-10	4.29E-10	2.81E-10	1.88E-10	1.55E-10	1.83E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Germanium									
Ge-66	F	1.0E+00	4.51E-10	3.48E-10	1.78E-10	1.11E-10	6.66E-11	5.37E-11	6.54E-11
	M	1.0E+00	6.32E-10	4.81E-10	2.53E-10	1.63E-10	1.09E-10	9.00E-11	1.05E-10
	S	1.0E+00	6.52E-10	4.95E-10	2.61E-10	1.68E-10	1.14E-10	9.41E-11	1.10E-10
Ge-67	F	1.0E+00	1.57E-10	1.04E-10	4.74E-11	2.93E-11	1.77E-11	1.48E-11	1.80E-11
	M	1.0E+00	2.33E-10	1.54E-10	7.05E-11	4.45E-11	2.84E-11	2.38E-11	2.85E-11
	S	1.0E+00	2.42E-10	1.59E-10	7.30E-11	4.62E-11	2.96E-11	2.48E-11	2.97E-11
Ge-68	F	1.0E+00	5.39E-09	3.80E-09	1.80E-09	1.11E-09	6.28E-10	5.15E-10	6.40E-10
	M	1.0E+00	5.83E-08	4.87E-08	2.90E-08	1.94E-08	1.54E-08	1.36E-08	1.50E-08
	S	1.0E+00	1.17E-07	1.03E-07	6.42E-08	4.23E-08	3.37E-08	3.07E-08	3.35E-08
Ge-69	F	1.0E+00	1.05E-09	8.40E-10	4.36E-10	2.66E-10	1.58E-10	1.27E-10	1.56E-10
	M	1.0E+00	1.51E-09	1.19E-09	6.50E-10	4.21E-10	2.98E-10	2.39E-10	2.78E-10
	S	1.0E+00	1.57E-09	1.23E-09	6.75E-10	4.40E-10	3.14E-10	2.52E-10	2.93E-10
Ge-71	F	1.0E+00	5.86E-11	4.20E-11	1.91E-11	1.09E-11	5.92E-12	4.67E-12	6.03E-12
	M	1.0E+00	1.17E-10	8.29E-11	4.00E-11	2.03E-11	1.25E-11	1.03E-11	1.29E-11
	S	1.0E+00	1.13E-10	9.06E-11	4.39E-11	2.26E-11	1.41E-11	1.16E-11	1.44E-11
Ge-75	F	1.0E+00	1.59E-10	1.01E-10	4.36E-11	2.82E-11	1.73E-11	1.48E-11	1.78E-11
	M	1.0E+00	2.94E-10	1.91E-10	8.99E-11	6.07E-11	4.39E-11	3.64E-11	4.21E-11
	S	1.0E+00	3.09E-10	2.01E-10	9.50E-11	6.43E-11	4.68E-11	3.88E-11	4.48E-11
Ge-77	F	1.0E+00	1.32E-09	9.56E-10	4.69E-10	2.94E-10	1.74E-10	1.43E-10	1.74E-10
	M	1.0E+00	2.28E-09	1.67E-09	8.90E-10	6.02E-10	4.53E-10	3.69E-10	4.21E-10
	S	1.0E+00	2.40E-09	1.75E-09	9.39E-10	6.38E-10	4.86E-10	3.95E-10	4.50E-10
Ge-78	F	1.0E+00	4.16E-10	2.90E-10	1.39E-10	8.81E-11	5.38E-11	4.43E-11	5.36E-11
	M	1.0E+00	7.08E-10	4.89E-10	2.44E-10	1.61E-10	1.13E-10	9.37E-11	1.09E-10
	S	1.0E+00	7.40E-10	5.11E-10	2.56E-10	1.69E-10	1.20E-10	9.92E-11	1.15E-10
Arsenic									

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
As-69	F	1.0E+00	1.40E-10	9.42E-11	4.27E-11	2.66E-11	1.60E-11	1.35E-11	1.64E-11
	M	1.0E+00	2.01E-10	1.34E-10	6.14E-11	3.88E-11	2.45E-11	2.07E-11	2.47E-11
	S	1.0E+00	2.07E-10	1.38E-10	6.34E-11	4.02E-11	2.55E-11	2.15E-11	2.57E-11
As-70	F	1.0E+00	4.18E-10	3.25E-10	1.59E-10	9.68E-11	5.71E-11	4.63E-11	5.70E-11
	M	1.0E+00	5.85E-10	4.47E-10	2.19E-10	1.36E-10	8.50E-11	6.91E-11	8.34E-11
	S	1.0E+00	6.04E-10	4.60E-10	2.25E-10	1.40E-10	8.81E-11	7.16E-11	8.64E-11
As-71	F	1.0E+00	1.43E-09	1.19E-09	5.75E-10	3.57E-10	2.02E-10	1.67E-10	2.05E-10
	M	1.0E+00	2.21E-09	1.92E-09	1.01E-09	6.77E-10	4.92E-10	3.94E-10	4.54E-10
	S	1.0E+00	2.30E-09	2.01E-09	1.06E-09	7.18E-10	4.64E-10	3.71E-10	4.39E-10
As-72	F	1.0E+00	4.66E-09	4.06E-09	1.88E-09	1.15E-09	6.28E-10	5.17E-10	6.46E-10
	M	1.0E+00	5.90E-09	5.74E-09	2.77E-09	1.76E-09	1.10E-09	9.12E-10	1.09E-09
	S	1.0E+00	6.05E-09	5.93E-09	2.87E-09	1.83E-09	1.15E-09	9.58E-10	1.14E-09
As-73	F	1.0E+00	9.65E-10	6.72E-10	2.97E-10	1.80E-10	9.60E-11	8.01E-11	1.01E-10
	M	1.0E+00	5.35E-09	3.98E-09	2.34E-09	1.53E-09	1.22E-09	1.04E-09	1.16E-09
	S	1.0E+00	6.93E-09	5.23E-09	3.08E-09	2.01E-09	1.60E-09	1.36E-09	1.52E-09
As-74	F	1.0E+00	4.59E-09	3.45E-09	1.63E-09	1.01E-09	5.67E-10	4.72E-10	5.83E-10
	M	1.0E+00	1.06E-08	8.33E-09	4.66E-09	3.23E-09	2.61E-09	2.13E-09	2.38E-09
	S	1.0E+00	1.19E-08	9.48E-09	5.36E-09	3.74E-09	3.05E-09	2.49E-09	2.78E-09
As-76	F	1.0E+00	3.41E-09	2.93E-09	1.29E-09	7.84E-10	4.10E-10	3.42E-10	4.32E-10
	M	1.0E+00	4.60E-09	4.53E-09	2.13E-09	1.37E-09	8.66E-10	7.29E-10	8.62E-10
	S	1.0E+00	4.74E-09	4.71E-09	2.23E-09	1.44E-09	9.19E-10	7.73E-10	9.12E-10
As-77	F	1.0E+00	1.12E-09	9.06E-10	3.40E-10	2.42E-10	1.28E-10	1.09E-10	1.35E-10
	M	1.0E+00	2.14E-09	1.69E-09	8.87E-10	6.20E-10	4.94E-10	3.92E-10	4.44E-10
	S	1.0E+00	2.02E-09	1.79E-09	9.52E-10	6.69E-10	5.40E-10	4.29E-10	4.83E-10
As-78	F	1.0E+00	4.89E-10	3.58E-10	1.63E-10	9.93E-11	5.69E-11	4.71E-11	5.83E-11
	M	1.0E+00	7.59E-10	5.59E-10	2.60E-10	1.63E-10	1.03E-10	8.59E-11	1.03E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	1.0E+00	7.89E-10	5.82E-10	2.70E-10	1.71E-10	1.08E-10	9.02E-11	1.08E-10
Selenium									
Se-70	F	1.0E+00	3.45E-10	2.72E-10	1.34E-10	8.11E-11	4.64E-11	3.75E-11	4.65E-11
	M	2.0E-01	5.67E-10	4.13E-10	2.03E-10	1.27E-10	7.96E-11	6.45E-11	7.79E-11
	S	2.0E-02	5.92E-10	4.29E-10	2.10E-10	1.32E-10	8.32E-11	6.75E-11	8.13E-11
Se-72	F	1.0E+00	2.65E-08	1.96E-08	1.09E-08	8.35E-09	2.54E-09	1.92E-09	2.84E-09
	M	2.0E-01	2.24E-08	1.61E-08	8.80E-09	6.03E-09	3.95E-09	3.35E-09	3.88E-09
	S	2.0E-02	2.17E-08	1.60E-08	8.67E-09	5.78E-09	4.30E-09	3.68E-09	4.16E-09
Se-73	F	1.0E+00	7.85E-10	6.60E-10	3.33E-10	2.16E-10	1.02E-10	8.16E-11	1.06E-10
	M	2.0E-01	1.65E-09	1.22E-09	5.95E-10	3.81E-10	2.40E-10	1.95E-10	2.34E-10
	S	2.0E-02	1.82E-09	1.30E-09	6.35E-10	4.07E-10	2.58E-10	2.10E-10	2.52E-10
Se-73m	F	1.0E+00	9.45E-11	7.41E-11	3.62E-11	2.31E-11	1.16E-11	9.42E-12	1.20E-11
	M	2.0E-01	1.80E-10	1.29E-10	6.21E-11	3.96E-11	2.51E-11	2.05E-11	2.46E-11
	S	2.0E-02	1.95E-10	1.37E-10	6.58E-11	4.20E-11	2.68E-11	2.19E-11	2.63E-11
Se-75	F	1.0E+00	7.65E-09	5.94E-09	3.37E-09	2.45E-09	1.18E-09	1.01E-09	1.24E-09
	M	2.0E-01	5.43E-09	4.56E-09	2.50E-09	1.75E-09	1.27E-09	1.04E-09	1.18E-09
	S	2.0E-02	5.55E-09	4.66E-09	2.88E-09	1.97E-09	1.61E-09	1.31E-09	1.46E-09
Se-79	F	1.0E+00	1.50E-08	1.21E-08	7.30E-09	5.29E-09	1.44E-09	1.08E-09	1.68E-09
	M	2.0E-01	1.33E-08	1.02E-08	6.45E-09	4.54E-09	3.08E-09	2.46E-09	2.85E-09
	S	2.0E-02	2.10E-08	1.85E-08	1.20E-08	8.08E-09	6.99E-09	6.31E-09	6.78E-09
Se-81	F	1.0E+00	8.54E-11	5.39E-11	2.32E-11	1.50E-11	9.22E-12	8.02E-12	9.61E-12
	M	2.0E-01	1.34E-10	8.51E-11	3.76E-11	2.48E-11	1.63E-11	1.40E-11	1.65E-11
	S	2.0E-02	1.39E-10	8.85E-11	3.92E-11	2.59E-11	1.71E-11	1.47E-11	1.72E-11
Se-81m	F	1.0E+00	1.86E-10	1.24E-10	5.44E-11	3.48E-11	1.95E-11	1.65E-11	2.03E-11
	M	2.0E-01	3.88E-10	2.54E-10	1.21E-10	8.06E-11	5.82E-11	4.79E-11	5.55E-11
	S	2.0E-02	4.10E-10	2.69E-10	1.28E-10	8.57E-11	6.25E-11	5.13E-11	5.94E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Se-83	F	1.0E+00	1.67E-10	1.24E-10	5.92E-11	3.71E-11	2.19E-11	1.81E-11	2.21E-11
	M	2.0E-01	2.69E-10	1.91E-10	9.24E-11	5.95E-11	3.92E-11	3.22E-11	3.81E-11
	S	2.0E-02	2.81E-10	1.99E-10	9.62E-11	6.20E-11	4.11E-11	3.37E-11	3.99E-11
Bromine									
Br-74	F	1.0E+00	2.51E-10	1.82E-10	8.66E-11	5.32E-11	3.16E-11	2.59E-11	3.17E-11
	M	1.0E+00	3.55E-10	2.50E-10	1.19E-10	7.44E-11	4.63E-11	3.80E-11	4.60E-11
	S	1.0E+00	3.66E-10	2.58E-10	1.23E-10	7.68E-11	4.80E-11	3.94E-11	4.75E-11
Br-74m	F	1.0E+00	4.15E-10	2.97E-10	1.42E-10	8.58E-11	5.06E-11	4.12E-11	5.08E-11
	M	1.0E+00	6.07E-10	4.21E-10	2.02E-10	1.25E-10	7.83E-11	6.42E-11	7.76E-11
	S	1.0E+00	6.28E-10	4.35E-10	2.08E-10	1.29E-10	8.14E-11	6.68E-11	8.06E-11
Br-75	F	1.0E+00	2.89E-10	2.07E-10	9.79E-11	5.94E-11	3.51E-11	2.88E-11	3.54E-11
	M	1.0E+00	4.50E-10	3.15E-10	1.53E-10	9.73E-11	6.50E-11	5.32E-11	6.30E-11
	S	1.0E+00	4.68E-10	3.27E-10	1.60E-10	1.02E-10	6.85E-11	5.61E-11	6.63E-11
Br-76	F	1.0E+00	2.28E-09	1.76E-09	8.81E-10	5.31E-10	3.09E-10	2.52E-10	3.11E-10
	M	1.0E+00	3.03E-09	2.32E-09	1.21E-09	7.61E-10	5.03E-10	4.14E-10	4.89E-10
	S	1.0E+00	3.12E-09	2.38E-09	1.24E-09	7.87E-10	5.26E-10	4.33E-10	5.09E-10
Br-77	F	1.0E+00	5.45E-10	4.51E-10	2.28E-10	1.34E-10	7.91E-11	6.36E-11	7.85E-11
	M	1.0E+00	6.44E-10	5.28E-10	2.76E-10	1.68E-10	1.10E-10	8.64E-11	1.04E-10
	S	1.0E+00	6.57E-10	5.38E-10	2.82E-10	1.73E-10	1.13E-10	8.93E-11	1.07E-10
Br-80	F	1.0E+00	8.95E-11	5.63E-11	2.42E-11	1.55E-11	9.48E-12	8.21E-12	9.87E-12
	M	1.0E+00	1.38E-10	8.74E-11	3.86E-11	2.51E-11	1.63E-11	1.40E-11	1.66E-11
	S	1.0E+00	1.43E-10	9.09E-11	4.02E-11	2.62E-11	1.71E-11	1.46E-11	1.73E-11
Br-80m	F	1.0E+00	4.53E-10	3.00E-10	1.31E-10	7.70E-11	4.26E-11	3.51E-11	4.45E-11
	M	1.0E+00	8.43E-10	5.71E-10	2.84E-10	1.84E-10	1.17E-10	9.72E-11	1.16E-10
	S	1.0E+00	8.86E-10	6.01E-10	3.01E-10	1.96E-10	1.27E-10	1.05E-10	1.25E-10
Br-82	F	1.0E+00	2.77E-09	2.24E-09	1.16E-09	7.08E-10	4.24E-10	3.50E-10	4.24E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	1.0E+00	3.82E-09	3.05E-09	1.68E-09	1.10E-09	7.94E-10	6.35E-10	7.35E-10
	S	1.0E+00	3.95E-09	3.15E-09	1.74E-09	1.14E-09	8.38E-10	6.69E-10	7.72E-10
Br-83	F	1.0E+00	1.82E-10	1.17E-10	4.99E-11	3.15E-11	1.86E-11	1.61E-11	1.96E-11
	M	1.0E+00	3.58E-10	2.38E-10	1.16E-10	7.91E-11	5.98E-11	4.92E-11	5.63E-11
	S	1.0E+00	3.77E-10	2.51E-10	1.23E-10	8.44E-11	6.44E-11	5.29E-11	6.04E-11
Br-84	F	1.0E+00	2.39E-10	1.57E-10	7.12E-11	4.37E-11	2.60E-11	2.17E-11	2.66E-11
	M	1.0E+00	3.69E-10	2.41E-10	1.10E-10	6.94E-11	4.41E-11	3.69E-11	4.43E-11
	S	1.0E+00	3.84E-10	2.50E-10	1.15E-10	7.22E-11	4.61E-11	3.85E-11	4.62E-11
Rubidium									
Rb-78	F	1.0E+00	1.96E-10	1.38E-10	6.50E-11	4.00E-11	2.39E-11	1.97E-11	2.41E-11
	M	1.0E+00	2.74E-10	1.89E-10	8.89E-11	5.54E-11	3.43E-11	2.84E-11	3.43E-11
	S	1.0E+00	2.83E-10	1.95E-10	9.15E-11	5.71E-11	3.55E-11	2.94E-11	3.55E-11
Rb-79	F	1.0E+00	1.69E-10	1.17E-10	5.36E-11	3.34E-11	2.03E-11	1.70E-11	2.06E-11
	M	1.0E+00	2.54E-10	1.72E-10	8.00E-11	5.11E-11	3.31E-11	2.76E-11	3.29E-11
	S	1.0E+00	2.63E-10	1.79E-10	8.29E-11	5.31E-11	3.45E-11	2.88E-11	3.42E-11
Rb-81	F	1.0E+00	3.10E-10	2.39E-10	1.16E-10	6.89E-11	4.03E-11	3.28E-11	4.05E-11
	M	1.0E+00	4.76E-10	3.59E-10	1.84E-10	1.19E-10	8.46E-11	6.78E-11	7.92E-11
	S	1.0E+00	4.95E-10	3.72E-10	1.91E-10	1.24E-10	8.95E-11	7.17E-11	8.35E-11
Rb-81m	F	1.0E+00	6.27E-11	4.61E-11	2.20E-11	1.36E-11	8.54E-12	7.02E-12	8.46E-12
	M	1.0E+00	1.05E-10	7.59E-11	3.89E-11	2.59E-11	1.95E-11	1.58E-11	1.81E-11
	S	1.0E+00	1.09E-10	7.92E-11	4.08E-11	2.73E-11	2.07E-11	1.67E-11	1.92E-11
Rb-82m	F	1.0E+00	9.13E-10	7.78E-10	4.09E-10	2.42E-10	1.44E-10	1.14E-10	1.41E-10
	M	1.0E+00	1.06E-09	8.90E-10	4.74E-10	2.88E-10	1.83E-10	1.44E-10	1.75E-10
	S	1.0E+00	1.08E-09	9.03E-10	4.82E-10	2.93E-10	1.87E-10	1.48E-10	1.78E-10
Rb-83	F	1.0E+00	4.63E-09	3.62E-09	1.87E-09	1.21E-09	7.52E-10	6.59E-10	7.71E-10
	M	1.0E+00	6.72E-09	5.39E-09	2.97E-09	1.95E-09	1.27E-09	1.08E-09	1.25E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	1.0E+00	7.88E-09	6.44E-09	3.36E-09	2.24E-09	1.63E-09	1.37E-09	1.56E-09
Rb-84	F	1.0E+00	8.79E-09	6.50E-09	3.19E-09	2.01E-09	1.21E-09	1.04E-09	1.25E-09
	M	1.0E+00	1.38E-08	1.05E-08	5.76E-09	3.89E-09	2.92E-09	2.45E-09	2.77E-09
	S	1.0E+00	1.55E-08	1.19E-08	6.62E-09	4.49E-09	3.43E-09	2.88E-09	3.24E-09
Rb-84m	F	1.0E+00	4.19E-11	3.02E-11	1.40E-11	9.01E-12	5.57E-12	4.74E-12	5.66E-12
	M	1.0E+00	6.36E-11	4.56E-11	2.17E-11	1.44E-11	9.67E-12	8.13E-12	9.50E-12
	S	1.0E+00	6.65E-11	4.77E-11	2.28E-11	1.51E-11	1.03E-11	8.62E-12	1.01E-11
Rb-86	F	1.0E+00	1.15E-08	7.73E-09	3.41E-09	2.03E-09	1.11E-09	9.33E-10	1.18E-09
	M	1.0E+00	2.35E-08	1.73E-08	9.26E-09	6.21E-09	4.78E-09	4.03E-09	4.54E-09
	S	1.0E+00	2.61E-08	1.94E-08	1.06E-08	7.13E-09	5.56E-09	4.70E-09	5.27E-09
Rb-87	F	1.0E+00	6.20E-09	4.23E-09	1.88E-09	1.12E-09	6.14E-10	5.15E-10	6.47E-10
	M	1.0E+00	2.20E-08	1.73E-08	1.01E-08	7.04E-09	6.01E-09	4.86E-09	5.38E-09
	S	1.0E+00	4.98E-08	4.45E-08	2.88E-08	1.96E-08	1.71E-08	1.57E-08	1.68E-08
Rb-88	F	1.0E+00	1.95E-10	1.20E-10	5.20E-11	3.20E-11	1.90E-11	1.62E-11	1.99E-11
	M	1.0E+00	2.94E-10	1.81E-10	7.98E-11	4.98E-11	3.10E-11	2.65E-11	3.20E-11
	S	1.0E+00	3.05E-10	1.88E-10	8.29E-11	5.18E-11	3.24E-11	2.77E-11	3.33E-11
Rb-89	F	1.0E+00	1.35E-10	9.35E-11	4.35E-11	2.69E-11	1.63E-11	1.36E-11	1.65E-11
	M	1.0E+00	1.94E-10	1.33E-10	6.23E-11	3.94E-11	2.52E-11	2.11E-11	2.52E-11
	S	1.0E+00	2.02E-10	1.38E-10	6.50E-11	4.12E-11	2.65E-11	2.22E-11	2.64E-11
Strontium									
Sr-80	F	6.0E-01	8.88E-10	6.20E-10	2.81E-10	1.68E-10	9.27E-11	8.32E-11	1.02E-10
	M	2.0E-01	1.55E-09	1.03E-09	4.72E-10	2.93E-10	1.78E-10	1.49E-10	1.81E-10
	S	2.0E-02	1.65E-09	1.08E-09	4.96E-10	3.08E-10	1.88E-10	1.57E-10	1.91E-10
Sr-81	F	6.0E-01	1.89E-10	1.32E-10	6.08E-11	3.74E-11	2.21E-11	1.89E-11	2.29E-11
	M	2.0E-01	2.91E-10	1.98E-10	9.23E-11	5.85E-11	3.74E-11	3.11E-11	3.72E-11
	S	2.0E-02	3.04E-10	2.05E-10	9.60E-11	6.10E-11	3.92E-11	3.25E-11	3.88E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Sr-82	F	6.0E-01	2.83E-08	1.50E-08	6.71E-09	4.71E-09	3.23E-09	2.12E-09	2.68E-09
	M	2.0E-01	5.49E-08	3.99E-08	2.14E-08	1.42E-08	1.04E-08	9.00E-09	1.02E-08
	S	2.0E-02	6.18E-08	4.66E-08	2.54E-08	1.67E-08	1.23E-08	1.08E-08	1.22E-08
Sr-83	F	6.0E-01	1.45E-09	1.18E-09	5.76E-10	3.52E-10	2.05E-10	1.69E-10	2.07E-10
	M	2.0E-01	2.61E-09	2.00E-09	9.99E-10	6.37E-10	4.08E-10	3.28E-10	3.93E-10
	S	2.0E-02	2.91E-09	2.16E-09	1.08E-09	6.89E-10	4.42E-10	3.56E-10	4.27E-10
Sr-85	F	6.0E-01	4.26E-09	2.23E-09	1.10E-09	9.41E-10	8.16E-10	3.73E-10	4.88E-10
	M	2.0E-01	4.24E-09	3.07E-09	1.75E-09	1.21E-09	8.67E-10	6.28E-10	7.45E-10
	S	2.0E-02	4.34E-09	3.64E-09	2.15E-09	1.27E-09	1.00E-09	8.07E-10	9.22E-10
Sr-85m	F	6.0E-01	2.43E-11	1.92E-11	9.71E-12	6.04E-12	3.74E-12	2.89E-12	3.54E-12
	M	2.0E-01	3.22E-11	2.52E-11	1.29E-11	8.10E-12	5.21E-12	4.13E-12	4.96E-12
	S	2.0E-02	3.32E-11	2.62E-11	1.34E-11	8.45E-12	5.46E-12	4.36E-12	5.22E-12
Sr-87m	F	6.0E-01	9.80E-11	7.82E-11	3.82E-11	2.32E-11	1.33E-11	1.15E-11	1.39E-11
	M	2.0E-01	1.61E-10	1.20E-10	5.96E-11	3.83E-11	2.49E-11	2.01E-11	2.40E-11
	S	2.0E-02	1.71E-10	1.26E-10	6.24E-11	4.02E-11	2.63E-11	2.12E-11	2.53E-11
Sr-89	F	6.0E-01	1.53E-08	7.30E-09	3.21E-09	2.33E-09	1.67E-09	1.01E-09	1.30E-09
	M	2.0E-01	3.28E-08	2.41E-08	1.34E-08	9.15E-09	7.30E-09	6.12E-09	6.83E-09
	S	2.0E-02	3.89E-08	3.03E-08	1.72E-08	1.16E-08	9.28E-09	7.96E-09	8.83E-09
Sr-90	F	6.0E-01	1.23E-07	5.16E-08	3.07E-08	4.08E-08	5.23E-08	2.38E-08	2.76E-08
	M	2.0E-01	1.48E-07	1.06E-07	6.47E-08	5.10E-08	4.93E-08	3.55E-08	3.92E-08
	S	2.0E-02	4.13E-07	3.93E-07	2.68E-07	1.82E-07	1.59E-07	1.56E-07	1.64E-07
Sr-91	F	6.0E-01	1.47E-09	1.14E-09	5.26E-10	3.20E-10	1.75E-10	1.59E-10	1.93E-10
	M	2.0E-01	3.15E-09	2.29E-09	1.10E-09	7.06E-10	4.49E-10	3.73E-10	4.44E-10
	S	2.0E-02	3.58E-09	2.52E-09	1.21E-09	7.81E-10	4.99E-10	4.14E-10	4.93E-10
Sr-92	F	6.0E-01	8.90E-10	7.04E-10	3.24E-10	1.94E-10	1.03E-10	9.70E-11	1.18E-10
	M	2.0E-01	1.92E-09	1.37E-09	6.41E-10	4.08E-10	2.48E-10	2.08E-10	2.50E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	2.15E-09	1.48E-09	6.89E-10	4.40E-10	2.68E-10	2.23E-10	2.70E-10
Yttrium									
Y-84m	F	1.0E-03	3.94E-10	2.83E-10	1.36E-10	8.22E-11	4.85E-11	3.95E-11	4.87E-11
	M	1.0E-03	5.67E-10	3.96E-10	1.90E-10	1.18E-10	7.30E-11	5.97E-11	7.24E-11
	S	1.0E-03	5.86E-10	4.09E-10	1.96E-10	1.22E-10	7.57E-11	6.20E-11	7.50E-11
Y-85	F	1.0E-03	5.52E-10	3.99E-10	1.89E-10	1.15E-10	6.56E-11	5.35E-11	6.65E-11
	M	1.0E-03	8.27E-10	5.87E-10	2.83E-10	1.79E-10	1.13E-10	9.20E-11	1.11E-10
	S	1.0E-03	8.58E-10	6.08E-10	2.94E-10	1.87E-10	1.18E-10	9.64E-11	1.16E-10
Y-85m	F	1.0E-03	1.03E-09	7.37E-10	3.45E-10	2.10E-10	1.16E-10	9.48E-11	1.19E-10
	M	1.0E-03	1.54E-09	1.08E-09	5.14E-10	3.24E-10	1.95E-10	1.60E-10	1.95E-10
	S	1.0E-03	1.59E-09	1.12E-09	5.34E-10	3.37E-10	2.04E-10	1.68E-10	2.04E-10
Y-86	F	1.0E-03	2.85E-09	2.27E-09	1.15E-09	7.06E-10	4.07E-10	3.28E-10	4.04E-10
	M	1.0E-03	3.76E-09	2.93E-09	1.49E-09	9.39E-10	5.66E-10	4.54E-10	5.52E-10
	S	1.0E-03	3.87E-09	3.00E-09	1.52E-09	9.65E-10	5.84E-10	4.68E-10	5.69E-10
Y-86m	F	1.0E-03	1.69E-10	1.34E-10	6.75E-11	4.16E-11	2.40E-11	1.94E-11	2.39E-11
	M	1.0E-03	2.26E-10	1.75E-10	8.83E-11	5.60E-11	3.40E-11	2.73E-11	3.32E-11
	S	1.0E-03	2.32E-10	1.79E-10	9.07E-11	5.76E-11	3.51E-11	2.82E-11	3.42E-11
Y-87	F	1.0E-03	2.00E-09	1.53E-09	7.53E-10	4.66E-10	2.71E-10	2.20E-10	2.70E-10
	M	1.0E-03	2.72E-09	2.08E-09	1.08E-09	6.99E-10	4.69E-10	3.72E-10	4.41E-10
	S	1.0E-03	2.81E-09	2.15E-09	1.12E-09	7.30E-10	4.95E-10	3.92E-10	4.64E-10
Y-87m	F	1.0E-03	7.04E-10	5.19E-10	2.49E-10	1.54E-10	8.76E-11	7.15E-11	8.86E-11
	M	1.0E-03	1.03E-09	7.60E-10	3.82E-10	2.49E-10	1.65E-10	1.33E-10	1.57E-10
	S	1.0E-03	1.07E-09	7.89E-10	3.98E-10	2.61E-10	1.75E-10	1.40E-10	1.66E-10
Y-88	F	1.0E-03	2.93E-08	2.60E-08	1.41E-08	9.89E-09	6.95E-09	6.13E-09	6.89E-09
	M	1.0E-03	1.93E-08	1.67E-08	1.01E-08	6.80E-09	4.92E-09	4.17E-09	4.71E-09
	S	1.0E-03	2.02E-08	1.78E-08	1.00E-08	6.76E-09	5.44E-09	4.50E-09	5.02E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Y-90	F	1.0E-03	8.02E-09	5.12E-09	2.19E-09	1.29E-09	6.60E-10	5.35E-10	7.00E-10
	M	1.0E-03	1.25E-08	8.43E-09	4.00E-09	2.57E-09	1.65E-09	1.39E-09	1.65E-09
	S	1.0E-03	1.30E-08	8.83E-09	4.22E-09	2.73E-09	1.78E-09	1.50E-09	1.77E-09
Y-90m	F	1.0E-03	5.55E-10	3.83E-10	1.74E-10	1.04E-10	5.61E-11	4.54E-11	5.79E-11
	M	1.0E-03	8.21E-10	5.81E-10	2.82E-10	1.81E-10	1.15E-10	9.55E-11	1.14E-10
	S	1.0E-03	7.56E-10	6.05E-10	2.95E-10	1.90E-10	1.22E-10	1.02E-10	1.20E-10
Y-91	F	1.0E-03	3.97E-08	2.75E-08	1.24E-08	6.97E-09	4.00E-09	3.12E-09	4.01E-09
	M	1.0E-03	3.90E-08	2.98E-08	1.64E-08	1.08E-08	8.37E-09	7.10E-09	7.98E-09
	S	1.0E-03	4.32E-08	3.40E-08	1.93E-08	1.30E-08	1.04E-08	8.94E-09	9.91E-09
Y-91m	F	1.0E-03	6.09E-11	4.69E-11	2.30E-11	1.36E-11	8.01E-12	6.34E-12	7.90E-12
	M	1.0E-03	7.14E-11	5.62E-11	2.94E-11	1.86E-11	1.24E-11	1.02E-11	1.20E-11
	S	1.0E-03	7.51E-11	5.95E-11	3.16E-11	2.02E-11	1.38E-11	1.14E-11	1.33E-11
Y-92	F	1.0E-03	1.11E-09	6.93E-10	3.28E-10	1.99E-10	1.05E-10	8.73E-11	1.11E-10
	M	1.0E-03	1.84E-09	1.18E-09	5.29E-10	3.32E-10	1.99E-10	1.67E-10	2.03E-10
	S	1.0E-03	1.92E-09	1.23E-09	5.55E-10	3.49E-10	2.11E-10	1.77E-10	2.15E-10
Y-93	F	1.0E-03	2.71E-09	1.73E-09	7.32E-10	4.39E-10	2.21E-10	1.82E-10	2.38E-10
	M	1.0E-03	4.43E-09	2.90E-09	1.30E-09	8.18E-10	4.77E-10	4.01E-10	4.91E-10
	S	1.0E-03	4.62E-09	3.03E-09	1.36E-09	8.60E-10	5.06E-10	4.25E-10	5.20E-10
Y-94	F	1.0E-03	1.91E-10	1.19E-10	5.22E-11	3.21E-11	1.91E-11	1.62E-11	1.99E-11
	M	1.0E-03	2.85E-10	1.78E-10	7.90E-11	4.94E-11	3.08E-11	2.62E-11	3.16E-11
	S	1.0E-03	2.96E-10	1.85E-10	8.20E-11	5.13E-11	3.21E-11	2.73E-11	3.29E-11
Y-95	F	1.0E-03	1.05E-10	6.87E-11	3.08E-11	1.94E-11	1.18E-11	1.01E-11	1.22E-11
	M	1.0E-03	1.44E-10	9.37E-11	4.23E-11	2.70E-11	1.71E-11	1.46E-11	1.74E-11
	S	1.0E-03	1.49E-10	9.67E-11	4.38E-11	2.79E-11	1.78E-11	1.52E-11	1.81E-11
Zirconium									
Zr-86	F	2.0E-02	2.47E-09	1.93E-09	9.66E-10	5.94E-10	3.42E-10	2.77E-10	3.42E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	2.0E-02	3.43E-09	2.65E-09	1.34E-09	8.50E-10	5.22E-10	4.18E-10	5.07E-10
	S	2.0E-02	3.54E-09	2.73E-09	1.38E-09	8.80E-10	5.43E-10	4.34E-10	5.26E-10
Zr-87	F	2.0E-02	4.93E-10	3.37E-10	1.54E-10	9.38E-11	5.29E-11	4.36E-11	5.44E-11
	M	2.0E-02	7.99E-10	5.44E-10	2.57E-10	1.63E-10	1.04E-10	8.53E-11	1.02E-10
	S	2.0E-02	8.33E-10	5.67E-10	2.68E-10	1.71E-10	1.09E-10	9.00E-11	1.08E-10
Zr-88	F	2.0E-02	6.94E-09	8.25E-09	5.65E-09	4.65E-09	3.58E-09	3.48E-09	3.67E-09
	M	2.0E-02	8.44E-09	7.80E-09	5.11E-09	3.65E-09	3.00E-09	2.64E-09	2.86E-09
	S	2.0E-02	1.33E-08	1.20E-08	7.80E-09	5.27E-09	4.32E-09	3.62E-09	3.99E-09
Zr-89	F	2.0E-02	2.62E-09	2.00E-09	9.97E-10	6.17E-10	3.62E-10	2.96E-10	3.62E-10
	M	2.0E-02	3.75E-09	2.87E-09	1.49E-09	9.69E-10	6.50E-10	5.20E-10	6.15E-10
	S	2.0E-02	3.89E-09	2.98E-09	1.55E-09	1.01E-09	6.88E-10	5.49E-10	6.47E-10
Zr-93	F	2.0E-02	3.43E-09	4.68E-09	5.18E-09	9.59E-09	1.77E-08	2.41E-08	2.20E-08
	M	2.0E-02	3.20E-09	3.01E-09	2.77E-09	4.03E-09	7.48E-09	9.82E-09	9.02E-09
	S	2.0E-02	6.72E-09	6.13E-09	4.29E-09	3.19E-09	3.17E-09	3.21E-09	3.28E-09
Zr-95	F	2.0E-02	1.21E-08	1.13E-08	6.47E-09	4.27E-09	2.82E-09	2.56E-09	2.90E-09
	M	2.0E-02	1.97E-08	1.60E-08	9.74E-09	6.88E-09	5.90E-09	4.80E-09	5.29E-09
	S	2.0E-02	2.40E-08	1.93E-08	1.18E-08	8.38E-09	7.30E-09	5.89E-09	6.48E-09
Zr-97	F	2.0E-02	5.00E-09	3.41E-09	1.52E-09	9.18E-10	4.79E-10	3.95E-10	5.05E-10
	M	2.0E-02	7.79E-09	5.28E-09	2.81E-09	1.81E-09	1.12E-09	9.22E-10	1.10E-09
	S	2.0E-02	8.18E-09	5.56E-09	2.95E-09	1.90E-09	1.19E-09	9.82E-10	1.17E-09
Niobium									
Nb-88	F	2.0E-02	1.99E-10	1.42E-10	6.82E-11	4.17E-11	2.53E-11	2.08E-11	2.53E-11
	M	2.0E-02	2.72E-10	1.91E-10	9.15E-11	5.67E-11	3.57E-11	2.94E-11	3.54E-11
	S	2.0E-02	2.81E-10	1.97E-10	9.44E-11	5.86E-11	3.70E-11	3.05E-11	3.67E-11
Nb-89	F	2.0E-02	6.97E-10	4.77E-10	2.18E-10	1.32E-10	7.38E-11	6.07E-11	7.60E-11
	M	2.0E-02	1.11E-09	7.52E-10	3.53E-10	2.22E-10	1.37E-10	1.13E-10	1.37E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	1.15E-09	7.82E-10	3.68E-10	2.32E-10	1.44E-10	1.19E-10	1.44E-10
Nb-89m	F	2.0E-02	4.01E-10	2.85E-10	1.35E-10	8.21E-11	4.77E-11	3.90E-11	4.82E-11
	M	2.0E-02	6.10E-10	4.25E-10	2.04E-10	1.29E-10	8.16E-11	6.68E-11	8.03E-11
	S	2.0E-02	6.33E-10	4.41E-10	2.12E-10	1.34E-10	8.54E-11	6.99E-11	8.39E-11
Nb-90	F	2.0E-02	3.56E-09	2.75E-09	1.36E-09	8.36E-10	4.73E-10	3.85E-10	4.76E-10
	M	2.0E-02	5.18E-09	3.92E-09	1.97E-09	1.26E-09	7.85E-10	6.33E-10	7.63E-10
	S	2.0E-02	5.36E-09	4.06E-09	2.04E-09	1.31E-09	8.20E-10	6.61E-10	7.95E-10
Nb-91	F	2.0E-02	9.73E-10	8.16E-10	4.00E-10	2.15E-10	1.32E-10	1.12E-10	1.36E-10
	M	2.0E-02	1.46E-09	1.22E-09	6.88E-10	4.40E-10	3.31E-10	2.63E-10	3.03E-10
	S	2.0E-02	5.32E-09	5.08E-09	3.45E-09	2.35E-09	1.99E-09	1.84E-09	1.97E-09
Nb-91m	F	2.0E-02	2.95E-09	2.16E-09	9.84E-10	6.17E-10	3.11E-10	2.94E-10	3.59E-10
	M	2.0E-02	1.30E-08	1.01E-08	6.17E-09	4.58E-09	4.26E-09	3.34E-09	3.65E-09
	S	2.0E-02	1.61E-08	1.25E-08	7.72E-09	5.72E-09	5.33E-09	4.19E-09	4.57E-09
Nb-92	F	2.0E-02	2.22E-08	1.95E-08	1.06E-08	7.35E-09	5.01E-09	4.48E-09	5.05E-09
	M	2.0E-02	1.90E-08	1.69E-08	1.08E-08	7.30E-09	5.76E-09	4.95E-09	5.46E-09
	S	2.0E-02	6.09E-08	6.02E-08	4.45E-08	3.20E-08	2.85E-08	2.71E-08	2.84E-08
Nb-92m	F	2.0E-02	2.37E-09	1.94E-09	1.03E-09	6.64E-10	4.15E-10	3.46E-10	4.10E-10
	M	2.0E-02	2.73E-09	2.23E-09	1.23E-09	7.87E-10	5.34E-10	4.24E-10	5.00E-10
	S	2.0E-02	2.81E-09	2.29E-09	1.27E-09	8.14E-10	5.58E-10	4.41E-10	5.19E-10
Nb-93m	F	2.0E-02	1.83E-09	1.49E-09	7.28E-10	4.59E-10	2.75E-10	2.31E-10	2.78E-10
	M	2.0E-02	3.21E-09	2.49E-09	1.40E-09	8.66E-10	6.20E-10	5.35E-10	6.11E-10
	S	2.0E-02	7.77E-09	6.86E-09	4.28E-09	2.63E-09	2.04E-09	1.90E-09	2.09E-09
Nb-94	F	2.0E-02	3.13E-08	2.69E-08	1.47E-08	9.98E-09	6.61E-09	5.83E-09	6.65E-09
	M	2.0E-02	4.30E-08	3.65E-08	2.25E-08	1.54E-08	1.27E-08	1.07E-08	1.18E-08
	S	2.0E-02	1.22E-07	1.17E-07	8.23E-08	5.78E-08	5.13E-08	4.86E-08	5.11E-08
Nb-95	F	2.0E-02	3.83E-09	3.07E-09	1.59E-09	1.05E-09	6.64E-10	5.64E-10	6.62E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	2.0E-02	6.63E-09	5.14E-09	3.09E-09	2.17E-09	1.83E-09	1.48E-09	1.64E-09
	S	2.0E-02	7.60E-09	5.92E-09	3.61E-09	2.54E-09	2.17E-09	1.75E-09	1.93E-09
Nb-95m	F	2.0E-02	2.43E-09	1.62E-09	7.30E-10	4.39E-10	2.43E-10	2.04E-10	2.55E-10
	M	2.0E-02	4.43E-09	3.19E-09	1.73E-09	1.23E-09	1.01E-09	7.97E-10	8.97E-10
	S	2.0E-02	4.79E-09	3.47E-09	1.91E-09	1.36E-09	1.13E-09	8.95E-10	1.00E-09
Nb-96	F	2.0E-02	3.14E-09	2.40E-09	1.19E-09	7.33E-10	4.19E-10	3.41E-10	4.21E-10
	M	2.0E-02	4.77E-09	3.60E-09	1.84E-09	1.20E-09	7.87E-10	6.30E-10	7.48E-10
	S	2.0E-02	4.95E-09	3.74E-09	1.91E-09	1.25E-09	8.29E-10	6.63E-10	7.86E-10
Nb-97	F	2.0E-02	2.22E-10	1.50E-10	6.84E-11	4.25E-11	2.50E-11	2.09E-11	2.56E-11
	M	2.0E-02	3.70E-10	2.51E-10	1.19E-10	7.73E-11	5.20E-11	4.29E-11	5.06E-11
	S	2.0E-02	3.87E-10	2.61E-10	1.24E-10	8.11E-11	5.50E-11	4.53E-11	5.33E-11
Nb-98m	F	2.0E-02	3.39E-10	2.45E-10	1.18E-10	7.19E-11	4.24E-11	3.47E-11	4.26E-11
	M	2.0E-02	5.05E-10	3.57E-10	1.72E-10	1.09E-10	6.90E-11	5.64E-11	6.78E-11
	S	2.0E-02	5.23E-10	3.69E-10	1.79E-10	1.13E-10	7.19E-11	5.88E-11	7.06E-11
Molybdenum									
Mo-90	F	1.0E+00	1.24E-09	1.06E-09	5.32E-10	3.25E-10	1.89E-10	1.55E-10	1.89E-10
	M	2.0E-01	2.57E-09	1.99E-09	9.96E-10	6.45E-10	4.15E-10	3.35E-10	4.00E-10
	S	2.0E-02	2.85E-09	2.12E-09	1.06E-09	6.90E-10	4.45E-10	3.59E-10	4.28E-10
Mo-91	F	1.0E+00	1.42E-10	9.18E-11	4.08E-11	2.52E-11	1.52E-11	1.28E-11	1.56E-11
	M	2.0E-01	2.08E-10	1.33E-10	5.97E-11	3.75E-11	2.34E-11	1.99E-11	2.39E-11
	S	2.0E-02	2.15E-10	1.38E-10	6.18E-11	3.89E-11	2.43E-11	2.07E-11	2.48E-11
Mo-93	F	1.0E+00	2.91E-09	2.43E-09	1.55E-09	1.23E-09	9.78E-10	9.29E-10	9.87E-10
	M	2.0E-01	2.19E-09	1.73E-09	1.08E-09	7.60E-10	6.30E-10	5.59E-10	6.06E-10
	S	2.0E-02	5.89E-09	5.67E-09	3.93E-09	2.72E-09	2.36E-09	2.23E-09	2.36E-09
Mo-93m	F	1.0E+00	7.79E-10	6.83E-10	3.55E-10	2.14E-10	1.26E-10	1.02E-10	1.25E-10
	M	2.0E-01	1.27E-09	1.03E-09	5.33E-10	3.39E-10	2.14E-10	1.70E-10	2.05E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	1.36E-09	1.07E-09	5.56E-10	3.56E-10	2.25E-10	1.79E-10	2.15E-10
Mo-99	F	1.0E+00	2.30E-09	1.72E-09	7.68E-10	4.75E-10	2.65E-10	2.22E-10	2.75E-10
	M	2.0E-01	6.03E-09	4.36E-09	2.21E-09	1.50E-09	1.11E-09	8.94E-10	1.03E-09
	S	2.0E-02	6.86E-09	4.80E-09	2.43E-09	1.66E-09	1.23E-09	9.91E-10	1.14E-09
Mo-101	F	1.0E+00	1.43E-10	9.76E-11	4.46E-11	2.81E-11	1.72E-11	1.45E-11	1.75E-11
	M	2.0E-01	2.24E-10	1.51E-10	7.00E-11	4.54E-11	2.98E-11	2.50E-11	2.96E-11
	S	2.0E-02	2.33E-10	1.57E-10	7.28E-11	4.73E-11	3.12E-11	2.61E-11	3.09E-11
Mo-102	F	1.0E+00	1.72E-10	1.08E-10	4.63E-11	2.96E-11	1.81E-11	1.58E-11	1.89E-11
	M	2.0E-01	2.49E-10	1.56E-10	6.83E-11	4.41E-11	2.81E-11	2.44E-11	2.89E-11
	S	2.0E-02	2.57E-10	1.61E-10	7.07E-11	4.57E-11	2.92E-11	2.53E-11	3.00E-11
Technetium									
Tc-93	F	1.0E+00	3.38E-10	2.81E-10	1.45E-10	8.42E-11	5.10E-11	4.01E-11	4.96E-11
	M	2.0E-01	3.61E-10	2.94E-10	1.53E-10	9.40E-11	5.72E-11	4.52E-11	5.53E-11
	S	2.0E-02	3.65E-10	2.96E-10	1.54E-10	9.52E-11	5.79E-11	4.58E-11	5.59E-11
Tc-93m	F	1.0E+00	1.57E-10	1.24E-10	6.16E-11	3.59E-11	2.18E-11	1.72E-11	2.13E-11
	M	2.0E-01	1.68E-10	1.30E-10	6.57E-11	4.11E-11	2.55E-11	2.05E-11	2.48E-11
	S	2.0E-02	1.70E-10	1.31E-10	6.62E-11	4.17E-11	2.60E-11	2.08E-11	2.52E-11
Tc-94	F	1.0E+00	8.91E-10	7.57E-10	3.94E-10	2.32E-10	1.42E-10	1.12E-10	1.37E-10
	M	2.0E-01	9.84E-10	8.15E-10	4.25E-10	2.63E-10	1.59E-10	1.26E-10	1.53E-10
	S	2.0E-02	1.00E-09	8.24E-10	4.30E-10	2.68E-10	1.61E-10	1.27E-10	1.56E-10
Tc-94m	F	1.0E+00	4.88E-10	3.42E-10	1.58E-10	8.77E-11	5.35E-11	4.16E-11	5.26E-11
	M	2.0E-01	4.44E-10	3.06E-10	1.45E-10	8.98E-11	5.64E-11	4.60E-11	5.58E-11
	S	2.0E-02	4.39E-10	3.02E-10	1.44E-10	9.01E-11	5.67E-11	4.65E-11	5.61E-11
Tc-95	F	1.0E+00	7.65E-10	6.46E-10	3.37E-10	2.01E-10	1.23E-10	9.74E-11	1.19E-10
	M	2.0E-01	8.50E-10	7.06E-10	3.67E-10	2.27E-10	1.36E-10	1.07E-10	1.31E-10
	S	2.0E-02	8.72E-10	7.16E-10	3.72E-10	2.31E-10	1.38E-10	1.08E-10	1.33E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Tc-95m	F	1.0E+00	2.49E-09	1.89E-09	9.55E-10	5.90E-10	3.68E-10	3.00E-10	3.62E-10
	M	2.0E-01	5.00E-09	4.08E-09	2.38E-09	1.58E-09	1.11E-09	8.99E-10	1.04E-09
	S	2.0E-02	6.10E-09	5.11E-09	2.73E-09	1.86E-09	1.49E-09	1.21E-09	1.36E-09
Tc-96	F	1.0E+00	4.22E-09	3.46E-09	1.83E-09	1.13E-09	7.07E-10	5.73E-10	6.89E-10
	M	2.0E-01	4.80E-09	3.94E-09	2.13E-09	1.36E-09	8.75E-10	6.94E-10	8.29E-10
	S	2.0E-02	4.89E-09	4.01E-09	2.17E-09	1.39E-09	8.99E-10	7.11E-10	8.49E-10
Tc-96m	F	1.0E+00	5.31E-11	4.16E-11	2.11E-11	1.26E-11	7.78E-12	6.20E-12	7.58E-12
	M	2.0E-01	5.64E-11	4.43E-11	2.33E-11	1.45E-11	9.30E-12	7.39E-12	8.89E-12
	S	2.0E-02	5.70E-11	4.47E-11	2.36E-11	1.48E-11	9.52E-12	7.56E-12	9.07E-12
Tc-97	F	1.0E+00	5.26E-10	3.73E-10	1.70E-10	9.55E-11	5.65E-11	4.39E-11	5.59E-11
	M	2.0E-01	1.26E-09	1.02E-09	5.76E-10	3.66E-10	2.78E-10	2.19E-10	2.52E-10
	S	2.0E-02	5.05E-09	4.83E-09	3.31E-09	2.26E-09	1.92E-09	1.78E-09	1.90E-09
Tc-97m	F	1.0E+00	3.34E-09	2.30E-09	9.82E-10	5.57E-10	3.03E-10	2.70E-10	3.37E-10
	M	2.0E-01	1.31E-08	9.98E-09	6.09E-09	4.46E-09	4.11E-09	3.24E-09	3.55E-09
	S	2.0E-02	1.63E-08	1.27E-08	7.85E-09	5.73E-09	5.26E-09	4.17E-09	4.56E-09
Tc-98	F	1.0E+00	9.31E-09	6.42E-09	3.02E-09	1.82E-09	1.13E-09	9.24E-10	1.13E-09
	M	2.0E-01	3.26E-08	2.68E-08	1.64E-08	1.14E-08	9.62E-09	7.89E-09	8.70E-09
	S	2.0E-02	1.07E-07	1.02E-07	7.20E-08	5.07E-08	4.51E-08	4.25E-08	4.47E-08
Tc-99	F	1.0E+00	3.99E-09	2.48E-09	1.05E-09	5.88E-10	3.59E-10	2.86E-10	3.62E-10
	M	2.0E-01	1.68E-08	1.32E-08	7.94E-09	5.63E-09	5.00E-09	4.03E-09	4.42E-09
	S	2.0E-02	4.05E-08	3.65E-08	2.41E-08	1.64E-08	1.45E-08	1.33E-08	1.42E-08
Tc-99m	F	1.0E+00	1.15E-10	8.70E-11	4.13E-11	2.38E-11	1.46E-11	1.16E-11	1.43E-11
	M	2.0E-01	1.33E-10	9.90E-11	5.10E-11	3.39E-11	2.40E-11	1.92E-11	2.24E-11
	S	2.0E-02	1.34E-10	1.00E-10	5.20E-11	3.51E-11	2.50E-11	2.01E-11	2.33E-11
Tc-101	F	1.0E+00	8.45E-11	5.64E-11	2.50E-11	1.56E-11	9.76E-12	8.25E-12	9.93E-12
	M	2.0E-01	1.08E-10	7.14E-11	3.21E-11	2.12E-11	1.39E-11	1.19E-11	1.40E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	1.10E-10	7.30E-11	3.29E-11	2.18E-11	1.44E-11	1.23E-11	1.44E-11
Tc-104	F	1.0E+00	2.73E-10	1.83E-10	8.29E-11	4.79E-11	2.91E-11	2.35E-11	2.92E-11
	M	2.0E-01	2.97E-10	1.95E-10	8.92E-11	5.54E-11	3.45E-11	2.89E-11	3.49E-11
	S	2.0E-02	3.00E-10	1.96E-10	9.00E-11	5.62E-11	3.51E-11	2.95E-11	3.55E-11
Ruthenium									
Ru-94	F	1.0E-01	2.57E-10	1.92E-10	9.30E-11	5.60E-11	3.18E-11	2.56E-11	3.20E-11
	M	1.0E-01	3.91E-10	2.82E-10	1.38E-10	8.56E-11	5.30E-11	4.29E-11	5.21E-11
	S	2.0E-02	4.07E-10	2.93E-10	1.43E-10	8.91E-11	5.54E-11	4.49E-11	5.44E-11
	V	1.0E-01	5.51E-10	3.50E-10	1.83E-10	1.12E-10	7.14E-11	5.74E-11	6.93E-11
Ru-95	F	1.0E-01	2.19E-10	1.80E-10	9.23E-11	5.56E-11	3.25E-11	2.60E-11	3.21E-11
	M	1.0E-01	2.86E-10	2.28E-10	1.17E-10	7.25E-11	4.43E-11	3.52E-11	4.29E-11
	S	2.0E-02	2.96E-10	2.35E-10	1.20E-10	7.47E-11	4.58E-11	3.63E-11	4.42E-11
	V	1.0E-01	3.21E-10	2.26E-10	1.28E-10	8.24E-11	5.57E-11	4.51E-11	5.29E-11
Ru-97	F	1.0E-01	5.54E-10	4.45E-10	2.22E-10	1.35E-10	7.80E-11	6.28E-11	7.77E-11
	M	1.0E-01	7.73E-10	6.12E-10	3.17E-10	2.02E-10	1.32E-10	1.04E-10	1.24E-10
	S	2.0E-02	8.14E-10	6.37E-10	3.31E-10	2.12E-10	1.40E-10	1.09E-10	1.31E-10
	V	1.0E-01	8.69E-10	6.18E-10	3.45E-10	2.25E-10	1.45E-10	1.16E-10	1.38E-10
Ru-103	F	1.0E-01	4.08E-09	2.99E-09	1.47E-09	9.25E-10	5.56E-10	4.78E-10	5.72E-10
	M	1.0E-01	1.07E-08	8.08E-09	4.84E-09	3.40E-09	2.91E-09	2.36E-09	2.61E-09
	S	2.0E-02	1.25E-08	9.56E-09	5.80E-09	4.08E-09	3.53E-09	2.86E-09	3.15E-09
	V	1.0E-01	8.68E-09	5.99E-09	3.26E-09	2.06E-09	1.30E-09	1.08E-09	1.29E-09
Ru-105	F	1.0E-01	7.73E-10	5.45E-10	2.48E-10	1.53E-10	8.42E-11	7.04E-11	8.77E-11
	M	1.0E-01	1.43E-09	1.01E-09	4.99E-10	3.31E-10	2.29E-10	1.86E-10	2.18E-10
	S	2.0E-02	1.54E-09	1.08E-09	5.31E-10	3.54E-10	2.47E-10	2.00E-10	2.34E-10
	V	1.0E-01	1.69E-09	1.10E-09	5.61E-10	3.87E-10	2.38E-10	1.94E-10	2.32E-10
Ru-106	F	1.0E-01	7.18E-08	5.38E-08	2.63E-08	1.57E-08	9.23E-09	8.00E-09	9.68E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	1.0E-01	1.38E-07	1.11E-07	6.35E-08	4.11E-08	3.07E-08	2.79E-08	3.10E-08
	S	2.0E-02	2.54E-07	2.25E-07	1.39E-07	9.06E-08	7.07E-08	6.65E-08	7.23E-08
	V	1.0E-01	1.62E-07	1.15E-07	6.17E-08	3.69E-08	2.24E-08	1.87E-08	2.26E-08
Rhodium									
Rh-97	F	1.0E-01	1.43E-10	1.02E-10	4.82E-11	2.95E-11	1.76E-11	1.44E-11	1.77E-11
	M	1.0E-01	2.10E-10	1.46E-10	6.95E-11	4.37E-11	2.76E-11	2.27E-11	2.73E-11
	S	1.0E-01	2.18E-10	1.51E-10	7.19E-11	4.53E-11	2.88E-11	2.36E-11	2.84E-11
Rh-97m	F	1.0E-01	1.65E-10	1.29E-10	6.48E-11	3.93E-11	2.31E-11	1.86E-11	2.29E-11
	M	1.0E-01	2.24E-10	1.70E-10	8.54E-11	5.30E-11	3.28E-11	2.64E-11	3.20E-11
	S	1.0E-01	2.30E-10	1.75E-10	8.77E-11	5.46E-11	3.39E-11	2.72E-11	3.30E-11
Rh-99	F	1.0E-01	2.83E-09	2.13E-09	1.06E-09	6.61E-10	3.94E-10	3.30E-10	3.99E-10
	M	1.0E-01	5.28E-09	4.55E-09	2.32E-09	1.65E-09	1.38E-09	1.11E-09	1.24E-09
	S	1.0E-01	5.88E-09	4.43E-09	2.63E-09	1.87E-09	1.59E-09	1.27E-09	1.41E-09
Rh-99m	F	1.0E-01	2.38E-10	1.96E-10	9.95E-11	5.99E-11	3.46E-11	2.76E-11	3.42E-11
	M	1.0E-01	3.15E-10	2.52E-10	1.29E-10	8.04E-11	4.94E-11	3.91E-11	4.76E-11
	S	1.0E-01	3.23E-10	2.58E-10	1.32E-10	8.27E-11	5.11E-11	4.04E-11	4.91E-11
Rh-100	F	1.0E-01	2.09E-09	1.74E-09	9.02E-10	5.56E-10	3.23E-10	2.61E-10	3.20E-10
	M	1.0E-01	2.59E-09	2.13E-09	1.10E-09	6.97E-10	4.17E-10	3.32E-10	4.05E-10
	S	1.0E-01	2.65E-09	2.17E-09	1.13E-09	7.13E-10	4.27E-10	3.41E-10	4.15E-10
Rh-101	F	1.0E-01	7.36E-09	6.12E-09	3.49E-09	2.29E-09	1.56E-09	1.41E-09	1.60E-09
	M	1.0E-01	8.92E-09	7.30E-09	4.51E-09	3.10E-09	2.57E-09	2.15E-09	2.37E-09
	S	1.0E-01	1.72E-08	1.55E-08	1.03E-08	7.01E-09	5.85E-09	5.12E-09	5.56E-09
Rh-101m	F	1.0E-01	8.16E-10	6.39E-10	3.18E-10	1.97E-10	1.14E-10	9.34E-11	1.14E-10
	M	1.0E-01	1.23E-09	9.60E-10	5.12E-10	3.40E-10	2.43E-10	1.91E-10	2.23E-10
	S	1.0E-01	1.29E-09	1.00E-09	5.40E-10	3.60E-10	2.61E-10	2.05E-10	2.38E-10
Rh-102	F	1.0E-01	1.16E-08	8.80E-09	4.44E-09	2.76E-09	1.69E-09	1.48E-09	1.75E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	1.0E-01	2.01E-08	1.60E-08	9.32E-09	6.25E-09	4.95E-09	4.21E-09	4.69E-09
	S	1.0E-01	3.06E-08	2.57E-08	1.56E-08	1.04E-08	8.35E-09	7.27E-09	8.01E-09
Rh-102m	F	1.0E-01	3.62E-08	3.10E-08	1.86E-08	1.23E-08	8.76E-09	8.18E-09	9.05E-09
	M	1.0E-01	3.14E-08	2.66E-08	1.60E-08	1.07E-08	8.53E-09	7.52E-09	8.27E-09
	S	1.0E-01	5.98E-08	5.56E-08	3.88E-08	2.66E-08	2.21E-08	1.98E-08	2.13E-08
Rh-103m	F	1.0E-01	8.55E-12	5.84E-12	2.70E-12	1.63E-12	1.02E-12	8.49E-13	1.03E-12
	M	1.0E-01	1.89E-11	1.18E-11	6.23E-12	3.97E-12	2.95E-12	2.53E-12	2.88E-12
	S	1.0E-01	2.00E-11	1.26E-11	6.66E-12	4.25E-12	3.18E-12	2.72E-12	3.10E-12
Rh-105	F	1.0E-01	1.01E-09	6.85E-10	2.97E-10	1.84E-10	9.55E-11	8.16E-11	1.03E-10
	M	1.0E-01	2.23E-09	1.58E-09	7.40E-10	5.16E-10	4.05E-10	3.21E-10	3.68E-10
	S	1.0E-01	2.37E-09	1.69E-09	7.99E-10	5.59E-10	4.44E-10	3.52E-10	4.02E-10
Rh-106m	F	1.0E-01	5.77E-10	4.49E-10	2.24E-10	1.37E-10	7.99E-11	6.48E-11	7.97E-11
	M	1.0E-01	8.38E-10	6.35E-10	3.21E-10	2.05E-10	1.32E-10	1.06E-10	1.27E-10
	S	1.0E-01	8.67E-10	6.55E-10	3.31E-10	2.12E-10	1.38E-10	1.11E-10	1.32E-10
Rh-107	F	1.0E-01	8.98E-11	5.91E-11	2.61E-11	1.69E-11	1.05E-11	9.02E-12	1.08E-11
	M	1.0E-01	1.41E-10	9.33E-11	4.23E-11	2.80E-11	1.87E-11	1.59E-11	1.86E-11
	S	1.0E-01	1.47E-10	9.71E-11	4.41E-11	2.93E-11	1.96E-11	1.66E-11	1.95E-11
Palladium									
Pd-98	F	5.0E-02	1.73E-10	1.16E-10	5.33E-11	3.24E-11	1.92E-11	1.58E-11	1.95E-11
	M	5.0E-02	2.69E-10	1.77E-10	8.20E-11	5.11E-11	3.22E-11	2.66E-11	3.21E-11
	S	5.0E-02	2.80E-10	1.84E-10	8.51E-11	5.31E-11	3.36E-11	2.78E-11	3.35E-11
Pd-99	F	5.0E-02	1.16E-10	8.38E-11	4.00E-11	2.47E-11	1.48E-11	1.22E-11	1.49E-11
	M	5.0E-02	1.64E-10	1.17E-10	5.57E-11	3.52E-11	2.23E-11	1.83E-11	2.20E-11
	S	5.0E-02	1.70E-10	1.20E-10	5.75E-11	3.64E-11	2.31E-11	1.90E-11	2.28E-11
Pd-100	F	5.0E-02	3.80E-09	2.97E-09	1.52E-09	9.67E-10	5.76E-10	4.71E-10	5.70E-10
	M	5.0E-02	4.98E-09	3.86E-09	2.09E-09	1.37E-09	9.50E-10	7.66E-10	8.93E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	5.0E-02	5.14E-09	3.98E-09	2.17E-09	1.42E-09	1.00E-09	8.07E-10	9.38E-10
Pd-101	F	5.0E-02	3.64E-10	2.92E-10	1.45E-10	8.75E-11	4.98E-11	3.94E-11	4.93E-11
	M	5.0E-02	4.79E-10	3.76E-10	1.90E-10	1.19E-10	7.43E-11	5.84E-11	7.10E-11
	S	5.0E-02	4.93E-10	3.87E-10	1.96E-10	1.23E-10	7.73E-11	6.07E-11	7.37E-11
Pd-103	F	5.0E-02	9.63E-10	6.48E-10	2.95E-10	1.86E-10	1.08E-10	8.84E-11	1.09E-10
	M	5.0E-02	2.24E-09	1.58E-09	9.02E-10	5.88E-10	4.51E-10	3.84E-10	4.32E-10
	S	5.0E-02	2.53E-09	1.79E-09	1.03E-09	6.74E-10	5.24E-10	4.45E-10	5.00E-10
Pd-107	F	5.0E-02	2.71E-10	1.83E-10	8.43E-11	5.35E-11	3.19E-11	2.63E-11	3.21E-11
	M	5.0E-02	6.69E-10	5.12E-10	2.70E-10	1.60E-10	1.04E-10	8.94E-11	1.05E-10
	S	5.0E-02	2.26E-09	2.07E-09	1.30E-09	8.01E-10	6.33E-10	6.09E-10	6.59E-10
Pd-109	F	5.0E-02	1.52E-09	1.01E-09	4.33E-10	2.68E-10	1.39E-10	1.18E-10	1.50E-10
	M	5.0E-02	2.63E-09	1.81E-09	8.95E-10	6.02E-10	4.36E-10	3.51E-10	4.08E-10
	S	5.0E-02	2.78E-09	1.91E-09	9.54E-10	6.44E-10	4.72E-10	3.80E-10	4.40E-10
Pd-111	F	5.0E-02	1.40E-10	8.74E-11	3.78E-11	2.39E-11	1.46E-11	1.25E-11	1.51E-11
	M	5.0E-02	2.30E-10	1.47E-10	6.72E-11	4.39E-11	3.00E-11	2.53E-11	2.96E-11
	S	5.0E-02	2.41E-10	1.53E-10	7.06E-11	4.63E-11	3.18E-11	2.68E-11	3.14E-11
Pd-112	F	5.0E-02	6.07E-09	4.06E-09	1.75E-09	1.08E-09	5.47E-10	4.54E-10	5.84E-10
	M	5.0E-02	1.01E-08	6.89E-09	3.18E-09	2.03E-09	1.23E-09	1.03E-09	1.24E-09
	S	5.0E-02	1.05E-08	7.21E-09	3.34E-09	2.14E-09	1.30E-09	1.09E-09	1.32E-09
Silver									
Ag-101	F	1.0E-01	9.20E-11	6.45E-11	3.02E-11	1.87E-11	1.13E-11	9.42E-12	1.14E-11
	M	1.0E-01	1.25E-10	8.66E-11	4.06E-11	2.55E-11	1.60E-11	1.33E-11	1.60E-11
	S	2.0E-02	1.29E-10	8.91E-11	4.17E-11	2.63E-11	1.65E-11	1.38E-11	1.65E-11
Ag-102	F	1.0E-01	1.22E-10	8.91E-11	4.30E-11	2.63E-11	1.59E-11	1.30E-11	1.59E-11
	M	1.0E-01	1.63E-10	1.17E-10	5.61E-11	3.48E-11	2.16E-11	1.78E-11	2.15E-11
	S	2.0E-02	1.67E-10	1.20E-10	5.75E-11	3.58E-11	2.22E-11	1.83E-11	2.21E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Ag-103	F	1.0E-01	1.35E-10	1.00E-10	4.83E-11	2.95E-11	1.74E-11	1.42E-11	1.75E-11
	M	1.0E-01	2.04E-10	1.48E-10	7.28E-11	4.63E-11	3.02E-11	2.46E-11	2.93E-11
	S	2.0E-02	2.13E-10	1.53E-10	7.57E-11	4.83E-11	3.18E-11	2.58E-11	3.07E-11
Ag-104	F	1.0E-01	2.32E-10	1.93E-10	1.00E-10	6.02E-11	3.55E-11	2.82E-11	3.48E-11
	M	1.0E-01	2.92E-10	2.37E-10	1.23E-10	7.56E-11	4.61E-11	3.65E-11	4.45E-11
	S	2.0E-02	2.99E-10	2.42E-10	1.26E-10	7.74E-11	4.74E-11	3.74E-11	4.57E-11
Ag-104m	F	1.0E-01	1.86E-10	1.30E-10	6.11E-11	3.73E-11	2.20E-11	1.81E-11	2.23E-11
	M	1.0E-01	2.76E-10	1.89E-10	8.90E-11	5.55E-11	3.47E-11	2.86E-11	3.46E-11
	S	2.0E-02	2.86E-10	1.95E-10	9.21E-11	5.75E-11	3.61E-11	2.98E-11	3.59E-11
Ag-105	F	1.0E-01	3.85E-09	3.35E-09	1.73E-09	9.94E-10	6.30E-10	5.37E-10	6.40E-10
	M	1.0E-01	4.44E-09	3.45E-09	1.97E-09	1.31E-09	8.94E-10	7.33E-10	8.50E-10
	S	2.0E-02	4.49E-09	3.62E-09	2.12E-09	1.27E-09	1.00E-09	8.15E-10	9.29E-10
Ag-106	F	1.0E-01	9.31E-11	6.29E-11	2.87E-11	1.78E-11	1.07E-11	8.96E-12	1.09E-11
	M	1.0E-01	1.40E-10	9.37E-11	4.32E-11	2.74E-11	1.75E-11	1.46E-11	1.75E-11
	S	2.0E-02	1.46E-10	9.71E-11	4.48E-11	2.85E-11	1.83E-11	1.53E-11	1.82E-11
Ag-106m	F	1.0E-01	7.62E-09	6.11E-09	3.22E-09	2.06E-09	1.27E-09	1.06E-09	1.26E-09
	M	1.0E-01	7.20E-09	5.78E-09	3.18E-09	2.06E-09	1.38E-09	1.11E-09	1.30E-09
	S	2.0E-02	6.98E-09	5.70E-09	3.16E-09	2.06E-09	1.40E-09	1.11E-09	1.30E-09
Ag-108m	F	1.0E-01	3.45E-08	2.82E-08	1.56E-08	1.03E-08	6.88E-09	6.14E-09	6.99E-09
	M	1.0E-01	3.26E-08	2.71E-08	1.67E-08	1.11E-08	8.62E-09	7.49E-09	8.30E-09
	S	2.0E-02	8.97E-08	8.78E-08	6.37E-08	4.52E-08	4.01E-08	3.85E-08	4.03E-08
Ag-110m	F	1.0E-01	3.54E-08	2.80E-08	1.50E-08	9.87E-09	6.41E-09	5.58E-09	6.46E-09
	M	1.0E-01	3.58E-08	2.88E-08	1.75E-08	1.18E-08	9.28E-09	7.79E-09	8.68E-09
	S	2.0E-02	4.71E-08	4.14E-08	2.67E-08	1.81E-08	1.48E-08	1.25E-08	1.38E-08
Ag-111	F	1.0E-01	4.80E-09	3.23E-09	1.41E-09	8.76E-10	4.78E-10	3.95E-10	4.98E-10
	M	1.0E-01	9.13E-09	6.56E-09	3.49E-09	2.42E-09	1.91E-09	1.54E-09	1.75E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	9.85E-09	7.09E-09	3.81E-09	2.66E-09	2.14E-09	1.72E-09	1.94E-09
Ag-112	F	1.0E-01	9.75E-10	6.43E-10	2.79E-10	1.70E-10	9.08E-11	7.57E-11	9.60E-11
	M	1.0E-01	1.69E-09	1.12E-09	5.09E-10	3.20E-10	1.94E-10	1.63E-10	1.97E-10
	S	2.0E-02	1.80E-09	1.18E-09	5.38E-10	3.39E-10	2.06E-10	1.73E-10	2.10E-10
Ag-113	F	1.0E-01	8.90E-10	5.81E-10	2.44E-10	1.50E-10	7.75E-11	6.55E-11	8.36E-11
	M	1.0E-01	1.51E-09	9.99E-10	4.57E-10	2.93E-10	1.84E-10	1.52E-10	1.83E-10
	S	2.0E-02	1.63E-09	1.07E-09	4.90E-10	3.14E-10	1.99E-10	1.64E-10	1.97E-10
Ag-115	F	1.0E-01	1.62E-10	1.04E-10	4.53E-11	2.83E-11	1.68E-11	1.43E-11	1.74E-11
	M	1.0E-01	2.56E-10	1.66E-10	7.56E-11	4.89E-11	3.21E-11	2.70E-11	3.20E-11
	S	2.0E-02	2.68E-10	1.73E-10	7.92E-11	5.13E-11	3.40E-11	2.85E-11	3.37E-11
Cadmium									
Cd-104	F	1.0E-01	2.68E-10	1.95E-10	9.33E-11	5.62E-11	3.19E-11	2.58E-11	3.22E-11
	M	1.0E-01	4.23E-10	2.99E-10	1.45E-10	9.07E-11	5.70E-11	4.64E-11	5.60E-11
	S	1.0E-01	4.40E-10	3.10E-10	1.51E-10	9.45E-11	5.98E-11	4.87E-11	5.86E-11
Cd-105	F	1.0E-01	1.42E-10	1.07E-10	5.28E-11	3.21E-11	1.89E-11	1.53E-11	1.88E-11
	M	1.0E-01	2.00E-10	1.47E-10	7.22E-11	4.51E-11	2.82E-11	2.29E-11	2.76E-11
	S	1.0E-01	2.07E-10	1.51E-10	7.45E-11	4.65E-11	2.93E-11	2.37E-11	2.86E-11
Cd-107	F	1.0E-01	2.38E-10	1.70E-10	7.66E-11	4.68E-11	2.59E-11	2.16E-11	2.70E-11
	M	1.0E-01	5.27E-10	3.79E-10	1.99E-10	1.35E-10	8.92E-11	8.43E-11	9.49E-11
	S	1.0E-01	5.59E-10	4.02E-10	2.12E-10	1.45E-10	9.77E-11	7.78E-11	9.14E-11
Cd-109	F	1.0E-01	4.48E-08	3.68E-08	2.06E-08	1.35E-08	9.19E-09	8.13E-09	9.25E-09
	M	1.0E-01	3.01E-08	2.31E-08	1.40E-08	9.55E-09	7.82E-09	6.62E-09	7.31E-09
	S	1.0E-01	2.68E-08	2.12E-08	1.30E-08	8.92E-09	7.58E-09	6.26E-09	6.90E-09
Cd-111m	F	1.0E-01	9.07E-11	6.37E-11	2.90E-11	1.89E-11	1.17E-11	1.01E-11	1.20E-11
	M	1.0E-01	1.59E-10	1.11E-10	5.35E-11	3.66E-11	2.62E-11	2.18E-11	2.51E-11
	S	1.0E-01	1.66E-10	1.17E-10	5.62E-11	3.86E-11	2.78E-11	2.31E-11	2.66E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Cd-113	F	1.0E-01	2.57E-07	2.39E-07	1.72E-07	1.41E-07	1.22E-07	1.19E-07	1.24E-07
	M	1.0E-01	1.17E-07	9.99E-08	7.51E-08	6.01E-08	5.61E-08	5.49E-08	5.65E-08
	S	1.0E-01	7.72E-08	5.75E-08	4.00E-08	3.01E-08	2.67E-08	2.54E-08	2.66E-08
Cd-113m	F	1.0E-01	3.05E-07	2.75E-07	1.81E-07	1.37E-07	1.14E-07	1.12E-07	1.17E-07
	M	1.0E-01	1.43E-07	1.18E-07	8.14E-08	6.02E-08	5.39E-08	5.32E-08	5.53E-08
	S	1.0E-01	1.09E-07	8.32E-08	5.48E-08	3.85E-08	3.29E-08	3.14E-08	3.33E-08
Cd-115	F	1.0E-01	4.03E-09	2.70E-09	1.21E-09	7.69E-10	4.34E-10	3.62E-10	4.47E-10
	M	1.0E-01	6.86E-09	4.87E-09	2.46E-09	1.68E-09	1.24E-09	9.95E-10	1.15E-09
	S	1.0E-01	7.31E-09	5.21E-09	2.65E-09	1.82E-09	1.36E-09	1.09E-09	1.25E-09
Cd-115m	F	1.0E-01	4.52E-08	3.17E-08	1.53E-08	9.93E-09	6.36E-09	5.29E-09	6.29E-09
	M	1.0E-01	3.99E-08	2.54E-08	1.39E-08	9.37E-09	7.28E-09	6.19E-09	6.95E-09
	S	1.0E-01	3.89E-08	2.97E-08	1.67E-08	1.13E-08	8.92E-09	7.64E-09	8.50E-09
Cd-117	F	1.0E-01	7.46E-10	5.27E-10	2.40E-10	1.48E-10	8.09E-11	6.73E-11	8.42E-11
	M	1.0E-01	1.33E-09	9.36E-10	4.54E-10	2.96E-10	1.97E-10	1.61E-10	1.90E-10
	S	1.0E-01	1.40E-09	9.81E-10	4.77E-10	3.12E-10	2.09E-10	1.71E-10	2.02E-10
Cd-117m	F	1.0E-01	8.91E-10	6.80E-10	3.30E-10	2.03E-10	1.15E-10	9.45E-11	1.17E-10
	M	1.0E-01	1.46E-09	1.09E-09	5.52E-10	3.61E-10	2.44E-10	1.96E-10	2.32E-10
	S	1.0E-01	1.53E-09	1.13E-09	5.77E-10	3.79E-10	2.58E-10	2.08E-10	2.44E-10
Cd-118	F	1.0E-01	4.53E-10	2.76E-10	1.17E-10	7.20E-11	4.17E-11	3.56E-11	4.39E-11
	M	1.0E-01	7.87E-10	4.88E-10	2.17E-10	1.39E-10	9.01E-11	7.62E-11	9.08E-11
	S	1.0E-01	8.23E-10	5.11E-10	2.29E-10	1.46E-10	9.54E-11	8.07E-11	9.60E-11
Indium									
In-107	F	4.0E-02	1.34E-10	9.79E-11	4.68E-11	2.84E-11	1.66E-11	1.36E-11	1.68E-11
	M	4.0E-02	2.03E-10	1.46E-10	7.18E-11	4.57E-11	3.02E-11	2.45E-11	2.92E-11
	S	4.0E-02	2.11E-10	1.51E-10	7.46E-11	4.76E-11	3.17E-11	2.58E-11	3.06E-11
In-108	F	4.0E-02	2.89E-10	2.38E-10	1.23E-10	7.42E-11	4.39E-11	3.50E-11	4.30E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	4.0E-02	3.68E-10	2.95E-10	1.53E-10	9.41E-11	5.76E-11	4.57E-11	5.57E-11
	S	4.0E-02	3.77E-10	3.02E-10	1.56E-10	9.63E-11	5.91E-11	4.69E-11	5.71E-11
In-108m	F	4.0E-02	2.38E-10	1.72E-10	8.21E-11	5.00E-11	2.93E-11	2.38E-11	2.94E-11
	M	4.0E-02	3.40E-10	2.39E-10	1.15E-10	7.13E-11	4.40E-11	3.60E-11	4.37E-11
	S	4.0E-02	3.51E-10	2.47E-10	1.18E-10	7.36E-11	4.56E-11	3.74E-11	4.53E-11
In-109	F	4.0E-02	2.38E-10	1.93E-10	9.80E-11	5.88E-11	3.43E-11	2.75E-11	3.40E-11
	M	4.0E-02	2.93E-10	2.33E-10	1.20E-10	7.54E-11	4.72E-11	3.76E-11	4.54E-11
	S	4.0E-02	2.99E-10	2.37E-10	1.23E-10	7.73E-11	4.89E-11	3.89E-11	4.69E-11
In-110	F	4.0E-02	8.50E-10	7.27E-10	3.84E-10	2.33E-10	1.37E-10	1.09E-10	1.34E-10
	M	4.0E-02	1.02E-09	8.58E-10	4.52E-10	2.80E-10	1.66E-10	1.31E-10	1.61E-10
	S	4.0E-02	1.04E-09	8.72E-10	4.59E-10	2.85E-10	1.69E-10	1.33E-10	1.64E-10
In-110m	F	4.0E-02	3.01E-10	2.13E-10	1.00E-10	6.07E-11	3.52E-11	2.87E-11	3.56E-11
	M	4.0E-02	4.49E-10	3.11E-10	1.48E-10	9.30E-11	5.83E-11	4.78E-11	5.77E-11
	S	4.0E-02	4.65E-10	3.22E-10	1.54E-10	9.66E-11	6.08E-11	4.99E-11	6.01E-11
In-111	F	4.0E-02	1.17E-09	8.72E-10	4.28E-10	2.66E-10	1.56E-10	1.27E-10	1.56E-10
	M	4.0E-02	1.55E-09	1.18E-09	6.24E-10	4.17E-10	2.95E-10	2.33E-10	2.72E-10
	S	4.0E-02	1.60E-09	1.22E-09	6.49E-10	4.36E-10	3.12E-10	2.46E-10	2.87E-10
In-112	F	4.0E-02	4.55E-11	3.08E-11	1.38E-11	8.96E-12	5.59E-12	4.81E-12	5.72E-12
	M	4.0E-02	6.76E-11	4.56E-11	2.08E-11	1.37E-11	9.04E-12	7.70E-12	9.05E-12
	S	4.0E-02	7.00E-11	4.73E-11	2.15E-11	1.43E-11	9.42E-12	8.02E-12	9.42E-12
In-112m	F	4.0E-02	1.02E-10	6.87E-11	3.04E-11	1.99E-11	1.24E-11	1.08E-11	1.28E-11
	M	4.0E-02	1.73E-10	1.17E-10	5.39E-11	3.65E-11	2.51E-11	2.13E-11	2.47E-11
	S	4.0E-02	1.81E-10	1.22E-10	5.64E-11	3.83E-11	2.66E-11	2.24E-11	2.60E-11
In-113m	F	4.0E-02	1.02E-10	7.17E-11	3.30E-11	2.04E-11	1.19E-11	9.86E-12	1.21E-11
	M	4.0E-02	1.66E-10	1.16E-10	5.56E-11	3.64E-11	2.47E-11	2.02E-11	2.38E-11
	S	4.0E-02	1.73E-10	1.20E-10	5.81E-11	3.82E-11	2.61E-11	2.13E-11	2.50E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
In-114m	F	4.0E-02	1.17E-07	7.85E-08	3.44E-08	1.90E-08	1.09E-08	9.45E-09	1.18E-08
	M	4.0E-02	7.21E-08	5.24E-08	2.81E-08	1.84E-08	1.42E-08	1.18E-08	1.34E-08
	S	4.0E-02	6.83E-08	5.11E-08	2.90E-08	1.98E-08	1.60E-08	1.35E-08	1.50E-08
In-115	F	4.0E-02	8.31E-07	7.83E-07	5.53E-07	5.01E-07	4.22E-07	3.91E-07	4.09E-07
	M	4.0E-02	3.05E-07	2.83E-07	2.40E-07	1.88E-07	1.73E-07	1.64E-07	1.69E-07
	S	4.0E-02	1.26E-07	1.01E-07	7.15E-08	5.32E-08	4.72E-08	4.44E-08	4.67E-08
In-115m	F	4.0E-02	2.85E-10	1.93E-10	8.53E-11	5.22E-11	2.88E-11	2.40E-11	3.01E-11
	M	4.0E-02	4.81E-10	3.32E-10	1.60E-10	1.06E-10	7.30E-11	5.93E-11	6.97E-11
	S	4.0E-02	5.02E-10	3.47E-10	1.68E-10	1.12E-10	7.79E-11	6.33E-11	7.41E-11
In-116m	F	4.0E-02	2.49E-10	1.88E-10	9.29E-11	5.71E-11	3.41E-11	2.79E-11	3.41E-11
	M	4.0E-02	3.65E-10	2.69E-10	1.34E-10	8.59E-11	5.62E-11	4.56E-11	5.43E-11
	S	4.0E-02	3.77E-10	2.78E-10	1.39E-10	8.90E-11	5.86E-11	4.76E-11	5.65E-11
In-117	F	4.0E-02	1.38E-10	9.66E-11	4.45E-11	2.84E-11	1.74E-11	1.48E-11	1.77E-11
	M	4.0E-02	2.26E-10	1.57E-10	7.52E-11	5.02E-11	3.47E-11	2.88E-11	3.35E-11
	S	4.0E-02	2.36E-10	1.64E-10	7.86E-11	5.26E-11	3.66E-11	3.03E-11	3.53E-11
In-117m	F	4.0E-02	3.46E-10	2.29E-10	1.01E-10	6.18E-11	3.48E-11	2.92E-11	3.63E-11
	M	4.0E-02	5.98E-10	4.02E-10	1.92E-10	1.27E-10	8.75E-11	7.18E-11	8.41E-11
	S	4.0E-02	6.26E-10	4.22E-10	2.02E-10	1.34E-10	9.33E-11	7.65E-11	8.94E-11
In-119m	F	4.0E-02	1.19E-10	7.36E-11	3.16E-11	1.99E-11	1.20E-11	1.04E-11	1.26E-11
	M	4.0E-02	1.82E-10	1.13E-10	4.99E-11	3.21E-11	2.05E-11	1.76E-11	2.09E-11
	S	4.0E-02	1.89E-10	1.18E-10	5.19E-11	3.34E-11	2.15E-11	1.84E-11	2.19E-11
Tin									
Sn-108	F	4.0E-02	7.20E-11	5.34E-11	2.59E-11	1.58E-11	9.29E-12	7.50E-12	9.26E-12
	M	4.0E-02	1.03E-10	7.37E-11	3.58E-11	2.22E-11	1.38E-11	1.12E-11	1.36E-11
	S	4.0E-02	1.06E-10	7.60E-11	3.68E-11	2.29E-11	1.43E-11	1.16E-11	1.40E-11
Sn-109	F	4.0E-02	7.40E-11	6.13E-11	3.18E-11	1.91E-11	1.14E-11	9.01E-12	1.11E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	4.0E-02	9.20E-11	7.49E-11	3.88E-11	2.37E-11	1.45E-11	1.15E-11	1.40E-11
	S	4.0E-02	9.42E-11	7.66E-11	3.97E-11	2.43E-11	1.49E-11	1.18E-11	1.44E-11
Sn-110	F	4.0E-02	1.08E-09	7.92E-10	3.77E-10	2.30E-10	1.27E-10	1.03E-10	1.29E-10
	M	4.0E-02	1.51E-09	1.10E-09	5.26E-10	3.31E-10	1.97E-10	1.61E-10	1.97E-10
	S	4.0E-02	1.56E-09	1.13E-09	5.43E-10	3.42E-10	2.05E-10	1.67E-10	2.04E-10
Sn-111	F	4.0E-02	7.14E-11	5.11E-11	2.42E-11	1.49E-11	8.88E-12	7.30E-12	8.94E-12
	M	4.0E-02	1.06E-10	7.48E-11	3.60E-11	2.30E-11	1.50E-11	1.23E-11	1.46E-11
	S	4.0E-02	1.10E-10	7.74E-11	3.73E-11	2.39E-11	1.57E-11	1.28E-11	1.53E-11
Sn-113	F	4.0E-02	5.14E-09	3.72E-09	1.79E-09	1.09E-09	6.50E-10	5.48E-10	6.65E-10
	M	4.0E-02	1.30E-08	1.03E-08	5.92E-09	4.03E-09	3.28E-09	2.71E-09	3.02E-09
	S	4.0E-02	1.80E-08	1.47E-08	8.65E-09	5.87E-09	4.78E-09	4.01E-09	4.44E-09
Sn-113m	F	4.0E-02	1.59E-11	1.09E-11	5.29E-12	3.43E-12	2.38E-12	1.98E-12	2.31E-12
	M	4.0E-02	2.72E-11	1.88E-11	9.79E-12	6.61E-12	5.12E-12	4.22E-12	4.79E-12
	S	4.0E-02	2.89E-11	2.01E-11	1.06E-11	7.14E-12	5.56E-12	4.59E-12	5.19E-12
Sn-117m	F	4.0E-02	3.36E-09	2.25E-09	1.06E-09	6.17E-10	3.40E-10	2.87E-10	3.60E-10
	M	4.0E-02	1.03E-08	7.75E-09	4.60E-09	3.43E-09	3.13E-09	2.44E-09	2.68E-09
	S	4.0E-02	1.15E-08	8.75E-09	5.24E-09	3.93E-09	3.64E-09	2.83E-09	3.10E-09
Sn-119m	F	4.0E-02	3.12E-09	2.28E-09	1.08E-09	6.19E-10	3.53E-10	2.93E-10	3.65E-10
	M	4.0E-02	1.05E-08	7.99E-09	4.76E-09	3.21E-09	2.67E-09	2.20E-09	2.45E-09
	S	4.0E-02	1.56E-08	1.25E-08	7.55E-09	4.99E-09	4.08E-09	3.41E-09	3.79E-09
Sn-121	F	4.0E-02	7.72E-10	5.09E-10	2.21E-10	1.35E-10	7.05E-11	6.07E-11	7.66E-11
	M	4.0E-02	1.55E-09	1.08E-09	5.13E-10	3.59E-10	2.89E-10	2.29E-10	2.61E-10
	S	4.0E-02	1.64E-09	1.15E-09	5.51E-10	3.88E-10	3.16E-10	2.50E-10	2.84E-10
Sn-121m	F	4.0E-02	6.93E-09	5.45E-09	2.76E-09	1.57E-09	9.42E-10	8.09E-10	9.79E-10
	M	4.0E-02	1.89E-08	1.52E-08	9.17E-09	6.34E-09	5.48E-09	4.47E-09	4.93E-09
	S	4.0E-02	4.63E-08	4.20E-08	2.76E-08	1.86E-08	1.62E-08	1.50E-08	1.59E-08

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Sn-123	F	4.0E-02	1.41E-08	9.89E-09	4.52E-09	2.60E-09	1.44E-09	1.18E-09	1.50E-09
	M	4.0E-02	3.98E-08	3.14E-08	1.79E-08	1.20E-08	9.49E-09	8.16E-09	9.06E-09
	S	4.0E-02	5.74E-08	4.72E-08	2.76E-08	1.85E-08	1.47E-08	1.29E-08	1.42E-08
Sn-123m	F	4.0E-02	1.40E-10	8.99E-11	3.91E-11	2.52E-11	1.54E-11	1.32E-11	1.59E-11
	M	4.0E-02	2.36E-10	1.53E-10	7.01E-11	4.68E-11	3.21E-11	2.70E-11	3.15E-11
	S	4.0E-02	2.46E-10	1.60E-10	7.35E-11	4.91E-11	3.40E-11	2.85E-11	3.33E-11
Sn-125	F	4.0E-02	1.22E-08	7.92E-09	3.48E-09	2.04E-09	1.09E-09	8.86E-10	1.14E-09
	M	4.0E-02	2.05E-08	1.47E-08	7.58E-09	5.01E-09	3.63E-09	3.07E-09	3.51E-09
	S	4.0E-02	2.21E-08	1.60E-08	8.39E-09	5.59E-09	4.12E-09	3.50E-09	3.97E-09
Sn-126	F	4.0E-02	7.32E-08	5.94E-08	3.21E-08	1.99E-08	1.30E-08	1.15E-08	1.33E-08
	M	4.0E-02	1.24E-07	1.03E-07	6.22E-08	4.11E-08	3.26E-08	2.85E-08	3.15E-08
	S	4.0E-02	3.99E-07	3.81E-07	2.65E-07	1.83E-07	1.62E-07	1.59E-07	1.66E-07
Sn-127	F	4.0E-02	6.61E-10	4.76E-10	2.26E-10	1.39E-10	7.94E-11	6.50E-11	8.05E-11
	M	4.0E-02	1.03E-09	7.42E-10	3.70E-10	2.42E-10	1.64E-10	1.33E-10	1.57E-10
	S	4.0E-02	1.08E-09	7.74E-10	3.88E-10	2.54E-10	1.75E-10	1.42E-10	1.66E-10
Sn-128	F	4.0E-02	5.04E-10	3.55E-10	1.67E-10	1.02E-10	6.01E-11	4.94E-11	6.08E-11
	M	4.0E-02	7.95E-10	5.49E-10	2.64E-10	1.69E-10	1.11E-10	9.11E-11	1.08E-10
	S	4.0E-02	8.27E-10	5.71E-10	2.75E-10	1.77E-10	1.17E-10	9.57E-11	1.14E-10
Antimony									
Sb-115	F	2.0E-01	8.06E-11	5.90E-11	2.82E-11	1.74E-11	1.04E-11	8.49E-12	1.04E-11
	M	2.0E-02	1.17E-10	8.33E-11	4.00E-11	2.52E-11	1.60E-11	1.31E-11	1.57E-11
	S	2.0E-02	1.21E-10	8.60E-11	4.13E-11	2.61E-11	1.67E-11	1.36E-11	1.63E-11
Sb-116	F	2.0E-01	9.46E-11	6.93E-11	3.35E-11	2.05E-11	1.24E-11	1.01E-11	1.24E-11
	M	2.0E-02	1.28E-10	9.22E-11	4.44E-11	2.76E-11	1.72E-11	1.41E-11	1.70E-11
	S	2.0E-02	1.32E-10	9.47E-11	4.56E-11	2.84E-11	1.77E-11	1.46E-11	1.76E-11
Sb-116m	F	2.0E-01	2.57E-10	2.09E-10	1.08E-10	6.55E-11	3.92E-11	3.14E-11	3.84E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	2.0E-02	3.47E-10	2.74E-10	1.42E-10	8.93E-11	5.72E-11	4.56E-11	5.47E-11
	S	2.0E-02	3.57E-10	2.81E-10	1.46E-10	9.19E-11	5.92E-11	4.71E-11	5.65E-11
Sb-117	F	2.0E-01	8.03E-11	6.24E-11	3.04E-11	1.86E-11	1.08E-11	8.82E-12	1.09E-11
	M	2.0E-02	1.26E-10	9.45E-11	4.77E-11	3.10E-11	2.11E-11	1.69E-11	1.99E-11
	S	2.0E-02	1.31E-10	9.81E-11	4.96E-11	3.24E-11	2.22E-11	1.78E-11	2.09E-11
Sb-118m	F	2.0E-01	7.45E-10	6.35E-10	3.34E-10	2.02E-10	1.19E-10	9.46E-11	1.16E-10
	M	2.0E-02	9.46E-10	7.79E-10	4.08E-10	2.53E-10	1.52E-10	1.20E-10	1.47E-10
	S	2.0E-02	9.66E-10	7.94E-10	4.16E-10	2.59E-10	1.55E-10	1.23E-10	1.50E-10
Sb-119	F	2.0E-01	2.80E-10	2.11E-10	9.90E-11	5.77E-11	3.08E-11	2.45E-11	3.15E-11
	M	2.0E-02	4.16E-10	2.98E-10	1.39E-10	8.30E-11	4.56E-11	3.62E-11	4.61E-11
	S	2.0E-02	4.30E-10	3.07E-10	1.43E-10	8.58E-11	4.73E-11	3.75E-11	4.77E-11
Sb-120	F	2.0E-01	4.58E-11	3.13E-11	1.43E-11	8.97E-12	5.47E-12	4.60E-12	5.56E-12
	M	2.0E-02	6.61E-11	4.47E-11	2.05E-11	1.31E-11	8.37E-12	7.03E-12	8.39E-12
	S	2.0E-02	6.83E-11	4.61E-11	2.12E-11	1.36E-11	8.69E-12	7.30E-12	8.70E-12
Sb-120m	F	2.0E-01	4.15E-09	3.38E-09	1.78E-09	1.12E-09	6.78E-10	5.58E-10	6.71E-10
	M	2.0E-02	6.36E-09	5.07E-09	2.79E-09	1.84E-09	1.29E-09	1.03E-09	1.20E-09
	S	2.0E-02	6.65E-09	5.31E-09	2.94E-09	1.94E-09	1.38E-09	1.10E-09	1.27E-09
Sb-122	F	2.0E-01	4.15E-09	2.79E-09	1.39E-09	8.42E-10	4.44E-10	3.66E-10	4.63E-10
	M	2.0E-02	8.31E-09	5.74E-09	2.81E-09	1.85E-09	1.27E-09	1.04E-09	1.22E-09
	S	2.0E-02	8.78E-09	6.08E-09	3.00E-09	1.99E-09	1.38E-09	1.13E-09	1.32E-09
Sb-124	F	2.0E-01	1.23E-08	8.81E-09	4.30E-09	2.65E-09	1.57E-09	1.32E-09	1.60E-09
	M	2.0E-02	3.09E-08	2.42E-08	1.39E-08	9.55E-09	7.71E-09	6.43E-09	7.15E-09
	S	2.0E-02	3.90E-08	3.12E-08	1.83E-08	1.25E-08	1.02E-08	8.57E-09	9.49E-09
Sb-124n	F	2.0E-01	3.30E-11	2.34E-11	1.10E-11	6.87E-12	4.17E-12	3.45E-12	4.19E-12
	M	2.0E-02	5.20E-11	3.67E-11	1.78E-11	1.15E-11	7.67E-12	6.34E-12	7.48E-12
	S	2.0E-02	5.52E-11	3.91E-11	1.91E-11	1.24E-11	8.38E-12	6.94E-12	8.14E-12

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Sb-125	F	2.0E-01	8.75E-09	6.89E-09	3.78E-09	2.35E-09	1.57E-09	1.43E-09	1.63E-09
	M	2.0E-02	2.02E-08	1.66E-08	1.01E-08	6.92E-09	5.83E-09	4.84E-09	5.33E-09
	S	2.0E-02	4.27E-08	3.81E-08	2.46E-08	1.64E-08	1.36E-08	1.20E-08	1.30E-08
Sb-126	F	2.0E-01	9.54E-09	7.11E-09	3.52E-09	2.20E-09	1.29E-09	1.07E-09	1.30E-09
	M	2.0E-02	1.91E-08	1.46E-08	8.05E-09	4.88E-09	3.81E-09	3.09E-09	3.54E-09
	S	2.0E-02	2.07E-08	1.59E-08	7.86E-09	5.46E-09	4.32E-09	3.50E-09	3.97E-09
Sb-126m	F	2.0E-01	1.21E-10	8.45E-11	3.95E-11	2.46E-11	1.50E-11	1.24E-11	1.51E-11
	M	2.0E-02	1.76E-10	1.21E-10	5.69E-11	3.62E-11	2.32E-11	1.93E-11	2.30E-11
	S	2.0E-02	1.82E-10	1.25E-10	5.88E-11	3.76E-11	2.41E-11	2.01E-11	2.39E-11
Sb-127	F	2.0E-01	5.08E-09	3.55E-09	1.60E-09	9.74E-10	5.28E-10	4.36E-10	5.49E-10
	M	2.0E-02	1.03E-08	7.38E-09	3.90E-09	2.71E-09	2.11E-09	1.69E-09	1.92E-09
	S	2.0E-02	1.11E-08	7.99E-09	4.26E-09	2.98E-09	2.35E-09	1.88E-09	2.13E-09
Sb-128	F	2.0E-01	2.25E-09	1.76E-09	8.62E-10	5.28E-10	2.99E-10	2.43E-10	3.01E-10
	M	2.0E-02	3.54E-09	2.64E-09	1.31E-09	8.35E-10	5.17E-10	4.18E-10	5.04E-10
	S	2.0E-02	3.67E-09	2.73E-09	1.35E-09	8.68E-10	5.41E-10	4.37E-10	5.27E-10
Sb-128m	F	2.0E-01	9.87E-11	6.87E-11	3.19E-11	2.00E-11	1.22E-11	1.02E-11	1.24E-11
	M	2.0E-02	1.34E-10	9.21E-11	4.29E-11	2.72E-11	1.71E-11	1.43E-11	1.72E-11
	S	2.0E-02	1.38E-10	9.47E-11	4.41E-11	2.80E-11	1.76E-11	1.48E-11	1.77E-11
Sb-129	F	2.0E-01	1.15E-09	8.32E-10	3.85E-10	2.35E-10	1.29E-10	1.07E-10	1.34E-10
	M	2.0E-02	2.04E-09	1.43E-09	6.92E-10	4.48E-10	2.90E-10	2.37E-10	2.83E-10
	S	2.0E-02	2.14E-09	1.50E-09	7.28E-10	4.73E-10	3.09E-10	2.53E-10	3.00E-10
Sb-130	F	2.0E-01	3.09E-10	2.26E-10	1.09E-10	6.71E-11	4.01E-11	3.29E-11	4.02E-11
	M	2.0E-02	4.54E-10	3.23E-10	1.57E-10	9.91E-11	6.33E-11	5.18E-11	6.20E-11
	S	2.0E-02	4.69E-10	3.34E-10	1.62E-10	1.03E-10	6.58E-11	5.38E-11	6.44E-11
Sb-131	F	2.0E-01	3.61E-10	2.88E-10	1.04E-10	7.92E-11	4.77E-11	3.61E-11	4.46E-11
	M	2.0E-02	4.05E-10	2.76E-10	1.32E-10	8.35E-11	5.54E-11	4.51E-11	5.38E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	3.95E-10	2.68E-10	1.28E-10	8.24E-11	5.53E-11	4.55E-11	5.38E-11
Tellurium									
Te-114	F	6.0E-01	1.86E-10	1.30E-10	6.19E-11	3.76E-11	2.25E-11	1.84E-11	2.26E-11
	M	2.0E-01	2.67E-10	1.84E-10	8.71E-11	5.39E-11	3.35E-11	2.76E-11	3.34E-11
	S	2.0E-02	2.76E-10	1.90E-10	8.99E-11	5.57E-11	3.48E-11	2.86E-11	3.46E-11
	V	6.0E-01	2.20E-10	1.54E-10	8.78E-11	5.63E-11	3.97E-11	3.32E-11	3.82E-11
Te-116	F	6.0E-01	5.99E-10	4.76E-10	2.33E-10	1.41E-10	8.09E-11	6.55E-11	8.12E-11
	M	2.0E-01	9.87E-10	7.30E-10	3.63E-10	2.30E-10	1.47E-10	1.19E-10	1.43E-10
	S	2.0E-02	1.05E-09	7.64E-10	3.80E-10	2.42E-10	1.55E-10	1.26E-10	1.50E-10
	V	6.0E-01	6.79E-10	5.03E-10	2.88E-10	1.80E-10	1.23E-10	9.95E-11	1.17E-10
Te-117	F	6.0E-01	1.80E-10	1.42E-10	7.07E-11	4.28E-11	2.51E-11	2.02E-11	2.49E-11
	M	2.0E-01	2.61E-10	1.96E-10	9.81E-11	6.15E-11	3.88E-11	3.12E-11	3.76E-11
	S	2.0E-02	2.71E-10	2.03E-10	1.01E-10	6.37E-11	4.04E-11	3.25E-11	3.91E-11
	V	6.0E-01	1.86E-10	1.39E-10	8.11E-11	5.10E-11	3.58E-11	2.89E-11	3.37E-11
Te-118	F	6.0E-01	9.87E-09	7.75E-09	3.50E-09	2.00E-09	1.10E-09	8.72E-10	1.12E-09
	M	2.0E-01	1.73E-08	1.24E-08	6.19E-09	4.01E-09	2.71E-09	2.30E-09	2.68E-09
	S	2.0E-02	1.89E-08	1.33E-08	6.71E-09	4.38E-09	2.99E-09	2.55E-09	2.95E-09
	V	6.0E-01	2.13E-08	1.48E-08	7.53E-09	4.19E-09	2.57E-09	1.94E-09	2.45E-09
Te-119	F	6.0E-01	5.93E-10	5.23E-10	2.70E-10	1.63E-10	9.49E-11	7.56E-11	9.33E-11
	M	2.0E-01	8.25E-10	6.80E-10	3.49E-10	2.18E-10	1.30E-10	1.03E-10	1.26E-10
	S	2.0E-02	8.93E-10	7.12E-10	3.65E-10	2.29E-10	1.37E-10	1.08E-10	1.32E-10
	V	6.0E-01	6.55E-10	5.21E-10	3.11E-10	1.93E-10	1.33E-10	1.05E-10	1.23E-10
Te-119m	F	6.0E-01	2.53E-09	2.09E-09	1.10E-09	6.80E-10	4.11E-10	3.36E-10	4.06E-10
	M	2.0E-01	3.48E-09	2.81E-09	1.51E-09	9.77E-10	6.49E-10	5.18E-10	6.12E-10
	S	2.0E-02	3.68E-09	2.93E-09	1.58E-09	1.03E-09	6.86E-10	5.46E-10	6.45E-10
	V	6.0E-01	3.87E-09	2.94E-09	1.76E-09	1.12E-09	7.77E-10	6.30E-10	7.32E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Te-121	F	6.0E-01	1.86E-09	1.46E-09	7.71E-10	4.96E-10	3.12E-10	2.61E-10	3.09E-10
	M	2.0E-01	2.47E-09	1.98E-09	1.11E-09	7.26E-10	5.12E-10	4.12E-10	4.78E-10
	S	2.0E-02	2.58E-09	2.10E-09	1.19E-09	7.78E-10	5.58E-10	4.46E-10	5.16E-10
	V	6.0E-01	3.29E-09	2.42E-09	1.45E-09	9.72E-10	7.34E-10	5.67E-10	6.53E-10
Te-121m	F	6.0E-01	1.41E-08	1.01E-08	5.44E-09	3.33E-09	2.12E-09	1.85E-09	2.17E-09
	M	2.0E-01	1.94E-08	1.48E-08	8.98E-09	6.19E-09	5.22E-09	4.28E-09	4.73E-09
	S	2.0E-02	2.30E-08	1.89E-08	1.18E-08	8.21E-09	7.06E-09	5.78E-09	6.35E-09
	V	6.0E-01	3.59E-08	2.73E-08	1.63E-08	9.97E-09	6.65E-09	5.63E-09	6.55E-09
Te-123	F	6.0E-01	3.54E-09	2.92E-09	1.95E-09	1.50E-09	1.26E-09	1.22E-09	1.28E-09
	M	2.0E-01	1.63E-09	1.25E-09	8.59E-10	6.41E-10	5.69E-10	5.60E-10	5.83E-10
	S	2.0E-02	8.61E-10	7.70E-10	5.00E-10	3.25E-10	2.68E-10	2.60E-10	2.78E-10
	V	6.0E-01	9.08E-09	8.02E-09	5.93E-09	4.56E-09	3.99E-09	3.75E-09	3.93E-09
Te-123m	F	6.0E-01	9.72E-09	6.76E-09	3.44E-09	1.91E-09	1.12E-09	9.57E-10	1.17E-09
	M	2.0E-01	1.76E-08	1.32E-08	7.99E-09	5.64E-09	4.98E-09	3.99E-09	4.39E-09
	S	2.0E-02	2.02E-08	1.59E-08	9.83E-09	7.04E-09	6.31E-09	5.07E-09	5.55E-09
	V	6.0E-01	2.45E-08	1.80E-08	1.02E-08	5.66E-09	3.49E-09	2.88E-09	3.50E-09
Te-125m	F	6.0E-01	6.17E-09	4.17E-09	2.02E-09	1.09E-09	6.11E-10	5.08E-10	6.43E-10
	M	2.0E-01	1.44E-08	1.08E-08	6.52E-09	4.71E-09	4.26E-09	3.36E-09	3.70E-09
	S	2.0E-02	1.64E-08	1.27E-08	7.76E-09	5.69E-09	5.23E-09	4.12E-09	4.51E-09
	V	6.0E-01	1.53E-08	1.08E-08	5.87E-09	3.15E-09	1.87E-09	1.51E-09	1.88E-09
Te-127	F	6.0E-01	4.32E-10	3.24E-10	1.38E-10	8.58E-11	4.59E-11	3.93E-11	4.91E-11
	M	2.0E-01	1.05E-09	7.35E-10	3.58E-10	2.43E-10	1.59E-10	1.27E-10	1.51E-10
	S	2.0E-02	1.18E-09	7.99E-10	3.90E-10	2.65E-10	1.75E-10	1.40E-10	1.66E-10
	V	6.0E-01	6.19E-10	4.44E-10	2.33E-10	1.45E-10	9.29E-11	7.72E-11	9.18E-11
Te-127m	F	6.0E-01	2.09E-08	1.40E-08	6.57E-09	3.48E-09	1.96E-09	1.55E-09	2.01E-09
	M	2.0E-01	3.52E-08	2.63E-08	1.54E-08	1.07E-08	9.21E-09	7.43E-09	8.23E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	4.09E-08	3.25E-08	1.96E-08	1.38E-08	1.20E-08	9.82E-09	1.08E-08
	V	6.0E-01	5.27E-08	3.71E-08	1.94E-08	1.02E-08	6.08E-09	4.62E-09	5.92E-09
Te-129	F	6.0E-01	1.85E-10	1.19E-10	5.08E-11	3.20E-11	1.88E-11	1.61E-11	1.96E-11
	M	2.0E-01	3.36E-10	2.16E-10	9.90E-11	6.50E-11	4.43E-11	3.70E-11	4.35E-11
	S	2.0E-02	3.54E-10	2.27E-10	1.05E-10	6.88E-11	4.72E-11	3.93E-11	4.62E-11
	V	6.0E-01	2.55E-10	1.73E-10	9.42E-11	6.19E-11	4.27E-11	3.72E-11	4.25E-11
Te-129m	F	6.0E-01	1.96E-08	1.29E-08	5.80E-09	3.10E-09	1.73E-09	1.33E-09	1.75E-09
	M	2.0E-01	3.44E-08	2.54E-08	1.42E-08	9.68E-09	7.90E-09	6.50E-09	7.26E-09
	S	2.0E-02	3.78E-08	2.88E-08	1.65E-08	1.14E-08	9.50E-09	7.88E-09	8.73E-09
	V	6.0E-01	4.75E-08	3.22E-08	1.62E-08	8.53E-09	5.10E-09	3.76E-09	4.88E-09
Te-131	F	6.0E-01	2.32E-10	1.99E-10	9.88E-11	5.27E-11	3.26E-11	2.28E-11	2.97E-11
	M	2.0E-01	2.64E-10	1.74E-10	8.13E-11	5.18E-11	3.47E-11	2.85E-11	3.38E-11
	S	2.0E-02	2.44E-10	1.60E-10	7.39E-11	4.87E-11	3.32E-11	2.78E-11	3.26E-11
	V	6.0E-01	5.08E-10	4.51E-10	2.61E-10	1.42E-10	9.55E-11	6.79E-11	8.45E-11
Te-131m	F	6.0E-01	8.67E-09	7.61E-09	3.87E-09	2.04E-09	1.24E-09	8.56E-10	1.12E-09
	M	2.0E-01	7.86E-09	5.81E-09	3.02E-09	1.92E-09	1.35E-09	1.06E-09	1.25E-09
	S	2.0E-02	6.92E-09	5.05E-09	2.63E-09	1.77E-09	1.13E-09	9.08E-10	1.08E-09
	V	6.0E-01	2.07E-08	1.88E-08	1.08E-08	5.62E-09	3.66E-09	2.42E-09	3.14E-09
Te-132	F	6.0E-01	2.19E-08	1.76E-08	8.42E-09	4.12E-09	2.52E-09	1.77E-09	2.35E-09
	M	2.0E-01	1.60E-08	1.27E-08	6.46E-09	4.07E-09	2.60E-09	2.06E-09	2.48E-09
	S	2.0E-02	1.53E-08	1.12E-08	5.81E-09	3.88E-09	2.54E-09	2.06E-09	2.43E-09
	V	6.0E-01	5.32E-08	4.46E-08	2.38E-08	1.14E-08	7.50E-09	5.02E-09	6.61E-09
Te-133	F	6.0E-01	2.39E-10	2.06E-10	9.60E-11	4.58E-11	2.80E-11	1.91E-11	2.58E-11
	M	2.0E-01	1.94E-10	1.31E-10	6.10E-11	3.74E-11	2.38E-11	1.94E-11	2.35E-11
	S	2.0E-02	1.70E-10	1.15E-10	5.35E-11	3.46E-11	2.23E-11	1.86E-11	2.22E-11
	V	6.0E-01	5.46E-10	4.72E-10	2.54E-10	1.23E-10	8.15E-11	5.59E-11	7.26E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Te-133m	F	6.0E-01	9.81E-10	8.54E-10	3.99E-10	1.89E-10	1.14E-10	7.71E-11	1.05E-10
	M	2.0E-01	7.33E-10	5.10E-10	2.46E-10	1.50E-10	9.73E-11	7.73E-11	9.37E-11
	S	2.0E-02	6.23E-10	4.38E-10	2.14E-10	1.38E-10	9.10E-11	7.41E-11	8.80E-11
	V	6.0E-01	2.23E-09	1.95E-09	1.04E-09	4.90E-10	3.20E-10	2.12E-10	2.81E-10
Te-134	F	6.0E-01	4.44E-10	3.53E-10	1.70E-10	9.49E-11	5.75E-11	4.45E-11	5.59E-11
	M	2.0E-01	5.17E-10	3.73E-10	1.84E-10	1.18E-10	7.85E-11	6.37E-11	7.56E-11
	S	2.0E-02	5.25E-10	3.76E-10	1.86E-10	1.21E-10	8.09E-11	6.59E-11	7.78E-11
	V	6.0E-01	6.37E-10	5.15E-10	2.83E-10	1.54E-10	1.05E-10	7.94E-11	9.70E-11
Iodine									
I-118	F	1.0E+00	5.67E-10	5.05E-10	2.47E-10	1.25E-10	7.52E-11	5.13E-11	6.86E-11
	M	2.0E-01	3.63E-10	2.40E-10	1.13E-10	6.63E-11	4.11E-11	3.30E-11	4.07E-11
	S	2.0E-02	2.90E-10	1.90E-10	8.76E-11	5.45E-11	3.42E-11	2.87E-11	3.46E-11
	V[(g)]	1.0E+00	1.33E-09	1.18E-09	6.67E-10	3.46E-10	2.31E-10	1.60E-10	2.03E-10
	V[(h)]	1.0E+00	9.11E-10	8.47E-10	4.72E-10	2.32E-10	1.50E-10	9.61E-11	1.28E-10
I-119	F	1.0E+00	1.49E-10	1.17E-10	5.62E-11	3.12E-11	1.92E-11	1.47E-11	1.85E-11
	M	2.0E-01	1.49E-10	1.03E-10	4.85E-11	3.02E-11	1.90E-11	1.56E-11	1.88E-11
	S	2.0E-02	1.46E-10	1.00E-10	4.72E-11	2.99E-11	1.89E-11	1.56E-11	1.88E-11
	V[(g)]	1.0E+00	3.01E-10	2.41E-10	1.40E-10	8.36E-11	5.98E-11	4.86E-11	5.66E-11
	V[(h)]	1.0E+00	1.50E-10	1.29E-10	7.08E-11	3.51E-11	2.35E-11	1.59E-11	2.06E-11
I-120	F	1.0E+00	1.07E-09	8.80E-10	4.07E-10	1.98E-10	1.20E-10	8.47E-11	1.13E-10
	M	2.0E-01	9.25E-10	6.42E-10	3.04E-10	1.84E-10	1.12E-10	9.13E-11	1.12E-10
	S	2.0E-02	8.86E-10	6.06E-10	2.86E-10	1.78E-10	1.09E-10	9.01E-11	1.09E-10
	V[(g)]	1.0E+00	2.49E-09	2.04E-09	1.09E-09	5.38E-10	3.61E-10	2.52E-10	3.24E-10
	V[(h)]	1.0E+00	1.90E-09	1.64E-09	8.61E-10	4.02E-10	2.64E-10	1.73E-10	2.31E-10
I-120m	F	1.0E+00	6.23E-10	5.02E-10	2.41E-10	1.30E-10	7.86E-11	5.90E-11	7.55E-11
	M	2.0E-01	6.00E-10	4.30E-10	2.08E-10	1.28E-10	7.90E-11	6.39E-11	7.78E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	5.98E-10	4.25E-10	2.06E-10	1.28E-10	7.92E-11	6.45E-11	7.82E-11
	V[(g)]	1.0E+00	1.10E-09	8.67E-10	4.72E-10	2.55E-10	1.76E-10	1.33E-10	1.62E-10
	V[(h)]	1.0E+00	7.44E-10	6.32E-10	3.36E-10	1.63E-10	1.08E-10	7.27E-11	9.51E-11
I-121	F	1.0E+00	2.02E-10	1.84E-10	9.67E-11	5.45E-11	3.51E-11	2.52E-11	3.16E-11
	M	2.0E-01	1.87E-10	1.41E-10	7.22E-11	4.55E-11	2.99E-11	2.36E-11	2.83E-11
	S	2.0E-02	1.71E-10	1.28E-10	6.48E-11	4.16E-11	2.74E-11	2.20E-11	2.62E-11
	V[(g)]	1.0E+00	5.00E-10	4.49E-10	2.70E-10	1.56E-10	1.10E-10	7.93E-11	9.60E-11
	V[(h)]	1.0E+00	3.60E-10	3.32E-10	1.97E-10	1.09E-10	7.54E-11	5.15E-11	6.42E-11
I-123	F	1.0E+00	9.00E-10	8.16E-10	3.90E-10	1.84E-10	1.13E-10	7.62E-11	1.03E-10
	M	2.0E-01	5.48E-10	4.00E-10	2.02E-10	1.24E-10	8.40E-11	6.52E-11	7.84E-11
	S	2.0E-02	4.47E-10	3.31E-10	1.70E-10	1.12E-10	7.75E-11	6.17E-11	7.24E-11
	V[(g)]	1.0E+00	2.13E-09	1.89E-09	1.03E-09	4.89E-10	3.27E-10	2.17E-10	2.85E-10
	V[(h)]	1.0E+00	1.64E-09	1.46E-09	7.91E-10	3.70E-10	2.45E-10	1.59E-10	2.12E-10
I-124	F	1.0E+00	4.71E-08	4.53E-08	2.25E-08	1.10E-08	6.69E-09	4.45E-09	6.00E-09
	M	2.0E-01	1.38E-08	9.34E-09	4.67E-09	2.56E-09	1.63E-09	1.19E-09	1.51E-09
	S	2.0E-02	6.21E-09	4.45E-09	2.27E-09	1.45E-09	9.57E-10	7.77E-10	9.22E-10
	V[(g)]	1.0E+00	1.09E-07	1.03E-07	5.79E-08	2.82E-08	1.86E-08	1.19E-08	1.57E-08
	V[(h)]	1.0E+00	8.53E-08	8.02E-08	4.52E-08	2.20E-08	1.45E-08	9.27E-09	1.23E-08
I-125	F	1.0E+00	2.07E-08	2.34E-08	1.49E-08	1.13E-08	7.32E-09	5.25E-09	6.25E-09
	M	2.0E-01	7.08E-09	5.73E-09	3.69E-09	2.70E-09	1.88E-09	1.39E-09	1.62E-09
	S	2.0E-02	2.44E-09	1.82E-09	1.04E-09	6.84E-10	4.93E-10	3.96E-10	4.57E-10
	V[(g)]	1.0E+00	4.80E-08	5.30E-08	3.83E-08	2.90E-08	2.03E-08	1.40E-08	1.65E-08
	V[(h)]	1.0E+00	3.75E-08	4.13E-08	2.99E-08	2.26E-08	1.58E-08	1.09E-08	1.29E-08
I-126	F	1.0E+00	8.25E-08	8.45E-08	4.52E-08	2.45E-08	1.49E-08	9.95E-09	1.31E-08
	M	2.0E-01	2.45E-08	1.76E-08	9.60E-09	5.60E-09	3.82E-09	2.74E-09	3.38E-09
	S	2.0E-02	8.41E-09	6.00E-09	3.32E-09	2.27E-09	1.81E-09	1.44E-09	1.63E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	V[(g)]	1.0E+00	1.91E-07	1.92E-07	1.16E-07	6.28E-08	4.15E-08	2.66E-08	3.44E-08
	V[(h)]	1.0E+00	1.49E-07	1.50E-07	9.06E-08	4.89E-08	3.23E-08	2.07E-08	2.68E-08
I-128	F	1.0E+00	1.52E-10	1.06E-10	4.64E-11	2.65E-11	1.62E-11	1.30E-11	1.62E-11
	M	2.0E-01	1.88E-10	1.19E-10	5.27E-11	3.38E-11	2.21E-11	1.87E-11	2.22E-11
	S	2.0E-02	1.92E-10	1.21E-10	5.35E-11	3.47E-11	2.27E-11	1.94E-11	2.29E-11
	V[(g)]	1.0E+00	4.19E-10	2.77E-10	1.60E-10	1.02E-10	7.39E-11	6.39E-11	7.26E-11
	V[(h)]	1.0E+00	1.47E-10	1.22E-10	6.25E-11	2.97E-11	1.92E-11	1.27E-11	1.70E-11
I-129	F	1.0E+00	7.36E-08	8.80E-08	6.23E-08	6.82E-08	4.66E-08	3.67E-08	4.06E-08
	M	2.0E-01	3.73E-08	3.32E-08	2.47E-08	2.44E-08	1.90E-08	1.54E-08	1.67E-08
	S	2.0E-02	2.97E-08	2.66E-08	1.81E-08	1.28E-08	1.10E-08	1.01E-08	1.08E-08
	V[(g)]	1.0E+00	1.71E-07	2.00E-07	1.60E-07	1.74E-07	1.29E-07	9.81E-08	1.08E-07
	V[(h)]	1.0E+00	1.33E-07	1.56E-07	1.25E-07	1.36E-07	1.01E-07	7.64E-08	8.41E-08
I-130	F	1.0E+00	7.74E-09	7.02E-09	3.35E-09	1.57E-09	9.58E-10	6.44E-10	8.76E-10
	M	2.0E-01	4.12E-09	3.01E-09	1.50E-09	8.99E-10	5.74E-10	4.45E-10	5.45E-10
	S	2.0E-02	3.23E-09	2.40E-09	1.21E-09	7.83E-10	5.07E-10	4.06E-10	4.85E-10
	V[(g)]	1.0E+00	1.81E-08	1.61E-08	8.71E-09	4.09E-09	2.72E-09	1.78E-09	2.36E-09
	V[(h)]	1.0E+00	1.41E-08	1.26E-08	6.80E-09	3.15E-09	2.09E-09	1.35E-09	1.80E-09
I-131	F	1.0E+00	7.20E-08	7.15E-08	3.66E-08	1.86E-08	1.12E-08	7.38E-09	9.91E-09
	M	2.0E-01	2.21E-08	1.54E-08	8.17E-09	4.73E-09	3.36E-09	2.43E-09	2.97E-09
	S	2.0E-02	8.74E-09	6.20E-09	3.47E-09	2.43E-09	2.03E-09	1.60E-09	1.79E-09
	V[(g)]	1.0E+00	1.67E-07	1.63E-07	9.41E-08	4.76E-08	3.11E-08	1.98E-08	2.61E-08
	V[(h)]	1.0E+00	1.30E-07	1.27E-07	7.33E-08	3.71E-08	2.42E-08	1.54E-08	2.03E-08
I-132	F	1.0E+00	1.12E-09	9.57E-10	4.51E-10	2.18E-10	1.34E-10	9.31E-11	1.24E-10
	M	2.0E-01	9.91E-10	7.27E-10	3.58E-10	2.22E-10	1.42E-10	1.13E-10	1.37E-10
	S	2.0E-02	9.35E-10	6.80E-10	3.36E-10	2.15E-10	1.39E-10	1.12E-10	1.34E-10
	V[(g)]	1.0E+00	2.74E-09	2.32E-09	1.26E-09	6.35E-10	4.30E-10	3.06E-10	3.87E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	V[h]	1.0E+00	2.03E-09	1.77E-09	9.42E-10	4.42E-10	2.92E-10	1.92E-10	2.54E-10
I-132m	F	1.0E+00	8.14E-10	7.09E-10	3.39E-10	1.60E-10	9.72E-11	6.65E-11	9.00E-11
	M	2.0E-01	7.86E-10	6.16E-10	3.01E-10	1.75E-10	1.16E-10	8.96E-11	1.09E-10
	S	2.0E-02	7.52E-10	5.89E-10	2.89E-10	1.72E-10	1.15E-10	9.00E-11	1.09E-10
	V[g]	1.0E+00	2.05E-09	1.76E-09	9.74E-10	4.86E-10	3.27E-10	2.34E-10	2.96E-10
	V[h]	1.0E+00	1.42E-09	1.24E-09	6.74E-10	3.10E-10	2.02E-10	1.31E-10	1.76E-10
I-133	F	1.0E+00	1.96E-08	1.79E-08	8.38E-09	3.80E-09	2.27E-09	1.48E-09	2.07E-09
	M	2.0E-01	6.65E-09	4.42E-09	2.09E-09	1.17E-09	7.43E-10	5.58E-10	7.04E-10
	S	2.0E-02	3.81E-09	2.91E-09	1.40E-09	9.06E-10	5.32E-10	4.81E-10	5.68E-10
	V[g]	1.0E+00	4.57E-08	4.09E-08	2.17E-08	9.81E-09	6.35E-09	4.02E-09	5.48E-09
	V[h]	1.0E+00	3.58E-08	3.21E-08	1.70E-08	7.65E-09	4.95E-09	3.10E-09	4.26E-09
I-134	F	1.0E+00	4.43E-10	3.54E-10	1.70E-10	9.37E-11	5.71E-11	4.36E-11	5.51E-11
	M	2.0E-01	4.65E-10	3.35E-10	1.64E-10	1.03E-10	6.60E-11	5.35E-11	6.43E-11
	S	2.0E-02	4.68E-10	3.34E-10	1.63E-10	1.04E-10	6.71E-11	5.47E-11	6.54E-11
	V[g]	1.0E+00	8.33E-10	6.61E-10	3.74E-10	2.18E-10	1.54E-10	1.44E-10	1.62E-10
	V[h]	1.0E+00	4.74E-10	4.02E-10	2.15E-10	1.05E-10	6.94E-11	4.71E-11	6.14E-11
I-135	F	1.0E+00	3.86E-09	3.46E-09	1.62E-09	7.52E-10	4.56E-10	3.05E-10	4.19E-10
	M	2.0E-01	2.16E-09	1.55E-09	7.60E-10	4.58E-10	2.93E-10	2.30E-10	2.81E-10
	S	2.0E-02	1.77E-09	1.28E-09	6.34E-10	4.10E-10	2.66E-10	2.15E-10	2.56E-10
	V[g]	1.0E+00	9.13E-09	8.01E-09	4.29E-09	2.00E-09	1.32E-09	8.74E-10	1.16E-09
	V[h]	1.0E+00	7.10E-09	6.28E-09	3.34E-09	1.53E-09	1.00E-09	6.42E-10	8.66E-10
	(g) Vapor								
	(h) Methyl Iodide								
Cesium									
Cs-125	F	1.0E+00	1.12E-10	7.84E-11	3.67E-11	2.25E-11	1.34E-11	1.11E-11	1.35E-11
	M	2.0E-01	1.81E-10	1.24E-10	5.88E-11	3.72E-11	2.39E-11	1.97E-11	2.36E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	1.89E-10	1.29E-10	6.11E-11	3.88E-11	2.50E-11	2.06E-11	2.46E-11
Cs-127	F	1.0E+00	1.66E-10	1.38E-10	7.10E-11	4.26E-11	2.53E-11	2.03E-11	2.49E-11
	M	2.0E-01	2.84E-10	2.27E-10	1.17E-10	7.43E-11	4.66E-11	3.72E-11	4.48E-11
	S	2.0E-02	3.05E-10	2.38E-10	1.22E-10	7.81E-11	4.92E-11	3.92E-11	4.72E-11
Cs-129	F	1.0E+00	3.42E-10	2.80E-10	1.44E-10	8.74E-11	5.19E-11	4.22E-11	5.16E-11
	M	2.0E-01	5.76E-10	4.62E-10	2.37E-10	1.50E-10	9.14E-11	7.29E-11	8.85E-11
	S	2.0E-02	6.29E-10	4.88E-10	2.50E-10	1.58E-10	9.68E-11	7.71E-11	9.36E-11
Cs-130	F	1.0E+00	7.97E-11	5.35E-11	2.43E-11	1.50E-11	9.03E-12	7.55E-12	9.21E-12
	M	2.0E-01	1.25E-10	8.31E-11	3.83E-11	2.43E-11	1.56E-11	1.30E-11	1.55E-11
	S	2.0E-02	1.30E-10	8.63E-11	3.98E-11	2.53E-11	1.63E-11	1.36E-11	1.62E-11
Cs-131	F	1.0E+00	2.41E-10	1.73E-10	8.59E-11	5.37E-11	3.29E-11	2.74E-11	3.30E-11
	M	2.0E-01	3.56E-10	2.67E-10	1.37E-10	8.62E-11	5.55E-11	4.47E-11	5.35E-11
	S	2.0E-02	3.79E-10	2.83E-10	1.46E-10	9.19E-11	5.94E-11	4.77E-11	5.71E-11
Cs-132	F	1.0E+00	1.57E-09	1.22E-09	6.57E-10	4.22E-10	2.72E-10	2.36E-10	2.74E-10
	M	2.0E-01	1.97E-09	1.58E-09	8.58E-10	5.58E-10	3.75E-10	3.01E-10	3.54E-10
	S	2.0E-02	2.04E-09	1.63E-09	8.89E-10	5.79E-10	3.91E-10	3.11E-10	3.66E-10
Cs-134	F	1.0E+00	1.13E-08	7.38E-09	5.24E-09	5.35E-09	6.37E-09	6.69E-09	6.56E-09
	M	2.0E-01	3.18E-08	2.58E-08	1.62E-08	1.17E-08	1.05E-08	9.18E-09	9.84E-09
	S	2.0E-02	6.97E-08	6.31E-08	4.15E-08	2.80E-08	2.32E-08	2.04E-08	2.22E-08
Cs-134m	F	1.0E+00	1.30E-10	8.71E-11	3.85E-11	2.56E-11	1.61E-11	1.44E-11	1.69E-11
	M	2.0E-01	3.33E-10	2.33E-10	1.19E-10	8.39E-11	6.63E-11	5.41E-11	6.10E-11
	S	2.0E-02	3.64E-10	2.55E-10	1.32E-10	9.29E-11	7.38E-11	6.03E-11	6.79E-11
Cs-135	F	1.0E+00	2.24E-09	1.32E-09	8.23E-10	8.12E-10	8.97E-10	9.15E-10	9.13E-10
	M	2.0E-01	1.47E-08	1.16E-08	7.14E-09	5.18E-09	4.73E-09	3.88E-09	4.21E-09
	S	2.0E-02	3.58E-08	3.22E-08	2.12E-08	1.45E-08	1.28E-08	1.17E-08	1.25E-08
Cs-135m	F	1.0E+00	9.33E-11	7.92E-11	4.18E-11	2.48E-11	1.49E-11	1.17E-11	1.45E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	2.0E-01	1.22E-10	1.01E-10	5.29E-11	3.23E-11	1.96E-11	1.54E-11	1.89E-11
	S	2.0E-02	1.25E-10	1.03E-10	5.39E-11	3.30E-11	2.00E-11	1.58E-11	1.93E-11
Cs-136	F	1.0E+00	7.21E-09	5.21E-09	2.89E-09	1.97E-09	1.36E-09	1.22E-09	1.38E-09
	M	2.0E-01	1.33E-08	1.02E-08	5.89E-09	3.66E-09	3.07E-09	2.46E-09	2.77E-09
	S	2.0E-02	1.43E-08	1.11E-08	5.66E-09	4.05E-09	3.43E-09	2.72E-09	3.04E-09
Cs-137	F	1.0E+00	8.79E-09	5.43E-09	3.67E-09	3.76E-09	4.47E-09	4.68E-09	4.60E-09
	M	2.0E-01	3.60E-08	2.92E-08	1.78E-08	1.27E-08	1.12E-08	9.72E-09	1.05E-08
	S	2.0E-02	1.10E-07	1.03E-07	6.98E-08	4.76E-08	4.14E-08	3.94E-08	4.17E-08
Cs-138	F	1.0E+00	2.72E-10	1.84E-10	8.52E-11	5.19E-11	3.08E-11	2.55E-11	3.13E-11
	M	2.0E-01	4.25E-10	2.83E-10	1.32E-10	8.25E-11	5.18E-11	4.30E-11	5.18E-11
	S	2.0E-02	4.42E-10	2.94E-10	1.37E-10	8.57E-11	5.40E-11	4.49E-11	5.40E-11
Barium									
Ba-124	F	6.0E-01	1.64E-10	1.10E-10	4.99E-11	3.04E-11	1.80E-11	1.60E-11	1.92E-11
	M	2.0E-01	2.24E-10	1.46E-10	6.59E-11	4.13E-11	2.57E-11	2.19E-11	2.63E-11
	S	2.0E-02	2.31E-10	1.50E-10	6.77E-11	4.25E-11	2.66E-11	2.25E-11	2.71E-11
Ba-126	F	6.0E-01	6.83E-10	5.46E-10	2.57E-10	1.44E-10	7.51E-11	7.85E-11	9.32E-11
	M	2.0E-01	1.05E-09	7.17E-10	3.35E-10	2.07E-10	1.27E-10	1.07E-10	1.29E-10
	S	2.0E-02	1.10E-09	7.38E-10	3.44E-10	2.15E-10	1.33E-10	1.10E-10	1.33E-10
Ba-127	F	6.0E-01	7.21E-11	5.15E-11	2.39E-11	1.47E-11	8.78E-12	7.81E-12	9.34E-12
	M	2.0E-01	1.01E-10	6.86E-11	3.19E-11	2.03E-11	1.29E-11	1.09E-11	1.30E-11
	S	2.0E-02	1.04E-10	7.05E-11	3.28E-11	2.10E-11	1.34E-11	1.12E-11	1.34E-11
Ba-128	F	6.0E-01	6.02E-09	5.54E-09	2.56E-09	1.40E-09	7.53E-10	7.83E-10	9.26E-10
	M	2.0E-01	1.10E-08	8.06E-09	3.84E-09	2.44E-09	1.51E-09	1.31E-09	1.56E-09
	S	2.0E-02	1.24E-08	8.53E-09	4.06E-09	2.62E-09	1.64E-09	1.39E-09	1.65E-09
Ba-129	F	6.0E-01	1.50E-10	1.28E-10	6.27E-11	3.64E-11	1.97E-11	1.94E-11	2.30E-11
	M	2.0E-01	2.30E-10	1.69E-10	8.31E-11	5.29E-11	3.36E-11	2.77E-11	3.31E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	2.43E-10	1.75E-10	8.59E-11	5.50E-11	3.54E-11	2.87E-11	3.44E-11
Ba-129m	F	6.0E-01	2.59E-10	2.33E-10	1.22E-10	7.25E-11	4.13E-11	3.70E-11	4.43E-11
	M	2.0E-01	3.40E-10	2.79E-10	1.45E-10	9.07E-11	5.60E-11	4.50E-11	5.44E-11
	S	2.0E-02	3.54E-10	2.85E-10	1.49E-10	9.33E-11	5.80E-11	4.61E-11	5.57E-11
Ba-131	F	6.0E-01	2.16E-09	1.47E-09	7.26E-10	4.81E-10	3.11E-10	2.20E-10	2.74E-10
	M	2.0E-01	4.15E-09	3.14E-09	1.58E-09	1.14E-09	9.60E-10	7.54E-10	8.46E-10
	S	2.0E-02	3.98E-09	3.01E-09	1.77E-09	1.27E-09	1.08E-09	8.56E-10	9.52E-10
Ba-131m	F	6.0E-01	3.06E-11	2.11E-11	1.01E-11	6.81E-12	4.76E-12	4.05E-12	4.67E-12
	M	2.0E-01	4.86E-11	3.37E-11	1.70E-11	1.18E-11	9.04E-12	7.48E-12	8.48E-12
	S	2.0E-02	5.07E-11	3.52E-11	1.78E-11	1.24E-11	9.55E-12	7.89E-12	8.94E-12
Ba-133	F	6.0E-01	1.13E-08	4.53E-09	2.66E-09	3.70E-09	5.95E-09	1.52E-09	2.06E-09
	M	2.0E-01	1.49E-08	1.05E-08	6.53E-09	5.19E-09	5.47E-09	3.20E-09	3.68E-09
	S	2.0E-02	3.24E-08	2.97E-08	2.01E-08	1.36E-08	1.15E-08	1.04E-08	1.12E-08
Ba-133m	F	6.0E-01	1.41E-09	1.09E-09	5.02E-10	3.22E-10	1.51E-10	1.53E-10	1.85E-10
	M	2.0E-01	3.09E-09	2.26E-09	1.04E-09	7.08E-10	5.37E-10	4.33E-10	4.98E-10
	S	2.0E-02	3.14E-09	2.43E-09	1.12E-09	7.76E-10	5.95E-10	4.72E-10	5.43E-10
Ba-135m	F	6.0E-01	1.09E-09	1.00E-09	4.58E-10	2.51E-10	1.16E-10	1.42E-10	1.66E-10
	M	2.0E-01	2.43E-09	1.78E-09	8.89E-10	5.45E-10	4.12E-10	3.33E-10	3.86E-10
	S	2.0E-02	2.72E-09	1.90E-09	8.59E-10	5.94E-10	4.55E-10	3.60E-10	4.16E-10
Ba-139	F	6.0E-01	3.30E-10	2.41E-10	1.07E-10	6.04E-11	3.13E-11	3.41E-11	4.03E-11
	M	2.0E-01	5.50E-10	3.52E-10	1.59E-10	1.02E-10	6.63E-11	5.66E-11	6.70E-11
	S	2.0E-02	5.77E-10	3.65E-10	1.65E-10	1.07E-10	7.03E-11	5.90E-11	7.00E-11
Ba-140	F	6.0E-01	1.35E-08	7.88E-09	3.59E-09	2.43E-09	1.59E-09	1.04E-09	1.33E-09
	M	2.0E-01	2.69E-08	1.97E-08	1.10E-08	7.70E-09	6.29E-09	5.09E-09	5.70E-09
	S	2.0E-02	2.91E-08	2.19E-08	1.25E-08	8.69E-09	7.17E-09	5.86E-09	6.52E-09
Ba-141	F	6.0E-01	2.00E-10	1.49E-10	6.72E-11	3.93E-11	2.15E-11	2.16E-11	2.57E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	2.0E-01	3.18E-10	2.12E-10	9.68E-11	6.18E-11	3.93E-11	3.35E-11	3.98E-11
	S	2.0E-02	3.36E-10	2.20E-10	1.01E-10	6.47E-11	4.15E-11	3.50E-11	4.17E-11
Ba-142	F	6.0E-01	1.24E-10	9.41E-11	4.44E-11	2.69E-11	1.55E-11	1.45E-11	1.72E-11
	M	2.0E-01	1.81E-10	1.26E-10	5.96E-11	3.83E-11	2.44E-11	2.06E-11	2.45E-11
	S	2.0E-02	1.88E-10	1.30E-10	6.13E-11	3.96E-11	2.54E-11	2.13E-11	2.53E-11
Lanthanum									
La-129	F	5.0E-03	7.78E-11	5.41E-11	2.51E-11	1.57E-11	9.50E-12	7.95E-12	9.64E-12
	M	5.0E-03	1.10E-10	7.52E-11	3.52E-11	2.25E-11	1.43E-11	1.19E-11	1.42E-11
	S	5.0E-03	1.13E-10	7.76E-11	3.63E-11	2.32E-11	1.48E-11	1.24E-11	1.48E-11
La-131	F	5.0E-03	1.18E-10	8.60E-11	4.13E-11	2.56E-11	1.53E-11	1.25E-11	1.53E-11
	M	5.0E-03	1.79E-10	1.28E-10	6.35E-11	4.11E-11	2.78E-11	2.26E-11	2.67E-11
	S	5.0E-03	1.86E-10	1.33E-10	6.61E-11	4.29E-11	2.94E-11	2.38E-11	2.80E-11
La-132	F	5.0E-03	1.09E-09	8.00E-10	3.81E-10	2.33E-10	1.29E-10	1.05E-10	1.31E-10
	M	5.0E-03	1.64E-09	1.18E-09	5.65E-10	3.55E-10	2.10E-10	1.72E-10	2.10E-10
	S	5.0E-03	1.70E-09	1.22E-09	5.86E-10	3.68E-10	2.19E-10	1.79E-10	2.19E-10
La-132m	F	5.0E-03	1.15E-10	8.51E-11	4.09E-11	2.53E-11	1.48E-11	1.21E-11	1.49E-11
	M	5.0E-03	1.74E-10	1.26E-10	6.12E-11	3.90E-11	2.45E-11	2.01E-11	2.41E-11
	S	5.0E-03	1.80E-10	1.30E-10	6.34E-11	4.05E-11	2.55E-11	2.09E-11	2.51E-11
La-133	F	5.0E-03	1.03E-10	7.77E-11	3.80E-11	2.34E-11	1.37E-11	1.14E-11	1.39E-11
	M	5.0E-03	1.47E-10	1.07E-10	5.25E-11	3.31E-11	2.06E-11	1.68E-11	2.02E-11
	S	5.0E-03	1.52E-10	1.10E-10	5.39E-11	3.41E-11	2.12E-11	1.72E-11	2.08E-11
La-135	F	5.0E-03	1.04E-10	7.98E-11	3.90E-11	2.36E-11	1.32E-11	1.05E-11	1.32E-11
	M	5.0E-03	1.38E-10	1.04E-10	5.09E-11	3.14E-11	1.80E-11	1.43E-11	1.78E-11
	S	5.0E-03	1.42E-10	1.06E-10	5.23E-11	3.23E-11	1.86E-11	1.48E-11	1.84E-11
La-137	F	5.0E-03	2.52E-08	2.33E-08	1.51E-08	1.10E-08	9.09E-09	8.94E-09	9.43E-09
	M	5.0E-03	8.79E-09	8.35E-09	5.79E-09	4.13E-09	3.72E-09	3.72E-09	3.86E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	5.0E-03	5.57E-09	5.26E-09	3.72E-09	2.61E-09	2.30E-09	2.22E-09	2.32E-09
La-138	F	5.0E-03	3.69E-07	3.49E-07	2.40E-07	1.85E-07	1.57E-07	1.56E-07	1.62E-07
	M	5.0E-03	1.27E-07	1.24E-07	9.11E-08	6.85E-08	6.42E-08	6.46E-08	6.63E-08
	S	5.0E-03	6.95E-08	6.65E-08	4.92E-08	3.61E-08	3.32E-08	3.21E-08	3.33E-08
La-140	F	5.0E-03	5.76E-09	4.19E-09	1.99E-09	1.23E-09	6.91E-10	5.67E-10	7.05E-10
	M	5.0E-03	8.77E-09	6.34E-09	3.14E-09	2.04E-09	1.32E-09	1.07E-09	1.28E-09
	S	5.0E-03	9.12E-09	6.59E-09	3.27E-09	2.13E-09	1.39E-09	1.13E-09	1.35E-09
La-141	F	5.0E-03	8.07E-10	5.64E-10	2.38E-10	1.45E-10	7.62E-11	6.42E-11	8.15E-11
	M	5.0E-03	1.47E-09	9.58E-10	4.41E-10	2.82E-10	1.81E-10	1.49E-10	1.79E-10
	S	5.0E-03	1.55E-09	1.01E-09	4.68E-10	3.01E-10	1.95E-10	1.61E-10	1.93E-10
La-142	F	5.0E-03	5.03E-10	3.56E-10	1.67E-10	1.02E-10	5.85E-11	4.82E-11	5.97E-11
	M	5.0E-03	7.85E-10	5.44E-10	2.59E-10	1.64E-10	1.04E-10	8.52E-11	1.02E-10
	S	5.0E-03	8.16E-10	5.64E-10	2.70E-10	1.71E-10	1.08E-10	8.93E-11	1.07E-10
La-143	F	5.0E-03	1.38E-10	8.72E-11	3.78E-11	2.37E-11	1.40E-11	1.20E-11	1.46E-11
	M	5.0E-03	2.10E-10	1.35E-10	6.09E-11	3.93E-11	2.56E-11	2.17E-11	2.57E-11
	S	5.0E-03	2.18E-10	1.40E-10	6.36E-11	4.11E-11	2.70E-11	2.29E-11	2.71E-11
Cerium									
Ce-130	F	5.0E-03	2.10E-10	1.45E-10	6.75E-11	4.12E-11	2.45E-11	2.01E-11	2.47E-11
	M	5.0E-03	3.27E-10	2.20E-10	1.04E-10	6.49E-11	4.12E-11	3.40E-11	4.09E-11
	S	5.0E-03	3.39E-10	2.28E-10	1.07E-10	6.75E-11	4.31E-11	3.55E-11	4.27E-11
Ce-131	F	5.0E-03	8.58E-11	6.13E-11	2.90E-11	1.80E-11	1.09E-11	9.09E-12	1.10E-11
	M	5.0E-03	1.19E-10	8.40E-11	4.02E-11	2.55E-11	1.64E-11	1.36E-11	1.62E-11
	S	5.0E-03	1.23E-10	8.66E-11	4.15E-11	2.64E-11	1.70E-11	1.41E-11	1.68E-11
Ce-132	F	5.0E-03	8.46E-10	6.24E-10	2.96E-10	1.81E-10	9.90E-11	8.08E-11	1.01E-10
	M	5.0E-03	1.29E-09	9.33E-10	4.47E-10	2.82E-10	1.64E-10	1.35E-10	1.65E-10
	S	5.0E-03	1.33E-09	9.67E-10	4.64E-10	2.93E-10	1.72E-10	1.41E-10	1.72E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Ce-133	F	5.0E-03	2.57E-10	1.80E-10	8.41E-11	5.16E-11	2.98E-11	2.47E-11	3.04E-11
	M	5.0E-03	4.25E-10	2.93E-10	1.43E-10	9.16E-11	6.06E-11	4.98E-11	5.90E-11
	S	5.0E-03	4.44E-10	3.06E-10	1.49E-10	9.60E-11	6.39E-11	5.25E-11	6.21E-11
Ce-133m	F	5.0E-03	6.68E-10	5.42E-10	2.76E-10	1.69E-10	9.80E-11	7.93E-11	9.76E-11
	M	5.0E-03	9.09E-10	7.13E-10	3.66E-10	2.31E-10	1.42E-10	1.14E-10	1.38E-10
	S	5.0E-03	9.36E-10	7.32E-10	3.76E-10	2.38E-10	1.47E-10	1.17E-10	1.42E-10
Ce-134	F	5.0E-03	8.08E-09	5.66E-09	2.51E-09	1.52E-09	8.25E-10	6.11E-10	8.03E-10
	M	5.0E-03	1.19E-08	8.14E-09	3.90E-09	2.51E-09	1.60E-09	1.35E-09	1.60E-09
	S	5.0E-03	1.23E-08	8.51E-09	4.11E-09	2.66E-09	1.71E-09	1.45E-09	1.71E-09
Ce-135	F	5.0E-03	7.82E-10	6.40E-10	3.27E-10	2.04E-10	1.18E-10	9.59E-11	1.17E-10
	M	5.0E-03	1.05E-09	8.33E-10	4.30E-10	2.75E-10	1.69E-10	1.35E-10	1.63E-10
	S	5.0E-03	1.09E-09	8.55E-10	4.42E-10	2.83E-10	1.75E-10	1.39E-10	1.68E-10
Ce-137	F	5.0E-03	8.02E-11	5.97E-11	2.85E-11	1.71E-11	9.32E-12	7.48E-12	9.47E-12
	M	5.0E-03	1.12E-10	8.11E-11	3.84E-11	2.35E-11	1.30E-11	1.04E-11	1.31E-11
	S	5.0E-03	1.15E-10	8.34E-11	3.95E-11	2.42E-11	1.34E-11	1.08E-11	1.35E-11
Ce-137m	F	5.0E-03	1.67E-09	1.09E-09	4.74E-10	2.89E-10	1.52E-10	1.28E-10	1.63E-10
	M	5.0E-03	3.18E-09	2.22E-09	1.11E-09	6.87E-10	5.23E-10	4.14E-10	4.82E-10
	S	5.0E-03	3.36E-09	2.35E-09	1.07E-09	7.41E-10	5.71E-10	4.51E-10	5.20E-10
Ce-139	F	5.0E-03	1.08E-08	8.57E-09	4.56E-09	2.84E-09	1.81E-09	1.56E-09	1.83E-09
	M	5.0E-03	7.57E-09	6.10E-09	3.65E-09	2.51E-09	2.10E-09	1.71E-09	1.89E-09
	S	5.0E-03	7.79E-09	6.35E-09	3.90E-09	2.76E-09	2.40E-09	1.93E-09	2.13E-09
Ce-141	F	5.0E-03	1.13E-08	7.28E-09	3.54E-09	1.98E-09	1.16E-09	9.42E-10	1.18E-09
	M	5.0E-03	1.44E-08	1.08E-08	6.35E-09	4.57E-09	4.06E-09	3.21E-09	3.54E-09
	S	5.0E-03	1.56E-08	1.19E-08	7.13E-09	5.24E-09	4.76E-09	3.76E-09	4.12E-09
Ce-143	F	5.0E-03	3.66E-09	2.37E-09	1.04E-09	6.24E-10	3.33E-10	2.77E-10	3.52E-10
	M	5.0E-03	5.64E-09	3.90E-09	1.94E-09	1.31E-09	9.38E-10	7.62E-10	8.83E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	5.0E-03	5.95E-09	4.14E-09	2.09E-09	1.41E-09	1.03E-09	8.35E-10	9.64E-10
Ce-144	F	5.0E-03	3.58E-07	2.69E-07	1.35E-07	7.81E-08	4.79E-08	4.06E-08	4.90E-08
	M	5.0E-03	1.92E-07	1.56E-07	8.81E-08	5.49E-08	4.07E-08	3.60E-08	4.05E-08
	S	5.0E-03	2.13E-07	1.82E-07	1.11E-07	7.30E-08	5.73E-08	5.27E-08	5.76E-08
Praseodymium									
Pr-134	F	5.0E-03	1.39E-10	9.85E-11	4.65E-11	2.86E-11	1.71E-11	1.41E-11	1.72E-11
	M	5.0E-03	1.87E-10	1.32E-10	6.27E-11	3.92E-11	2.44E-11	2.03E-11	2.44E-11
	S	5.0E-03	1.93E-10	1.35E-10	6.45E-11	4.04E-11	2.52E-11	2.10E-11	2.52E-11
Pr-134m	F	5.0E-03	2.12E-10	1.43E-10	6.54E-11	4.00E-11	2.36E-11	1.96E-11	2.41E-11
	M	5.0E-03	3.04E-10	2.03E-10	9.42E-11	5.88E-11	3.65E-11	3.06E-11	3.69E-11
	S	5.0E-03	3.15E-10	2.10E-10	9.75E-11	6.09E-11	3.80E-11	3.18E-11	3.83E-11
Pr-135	F	5.0E-03	1.24E-10	8.61E-11	4.03E-11	2.50E-11	1.50E-11	1.24E-11	1.51E-11
	M	5.0E-03	1.82E-10	1.24E-10	5.88E-11	3.73E-11	2.37E-11	1.97E-11	2.35E-11
	S	5.0E-03	1.88E-10	1.29E-10	6.09E-11	3.86E-11	2.47E-11	2.05E-11	2.45E-11
Pr-136	F	5.0E-03	9.42E-11	6.70E-11	3.18E-11	1.95E-11	1.18E-11	9.71E-12	1.18E-11
	M	5.0E-03	1.28E-10	8.92E-11	4.22E-11	2.63E-11	1.63E-11	1.35E-11	1.63E-11
	S	5.0E-03	1.31E-10	9.16E-11	4.34E-11	2.70E-11	1.68E-11	1.39E-11	1.68E-11
Pr-137	F	5.0E-03	1.10E-10	7.77E-11	3.63E-11	2.22E-11	1.28E-11	1.05E-11	1.30E-11
	M	5.0E-03	1.70E-10	1.17E-10	5.57E-11	3.52E-11	2.23E-11	1.83E-11	2.20E-11
	S	5.0E-03	1.77E-10	1.22E-10	5.79E-11	3.67E-11	2.33E-11	1.91E-11	2.30E-11
Pr-138m	F	5.0E-03	4.39E-10	3.50E-10	1.78E-10	1.08E-10	6.31E-11	5.07E-11	6.24E-11
	M	5.0E-03	5.94E-10	4.59E-10	2.34E-10	1.46E-10	9.07E-11	7.27E-11	8.80E-11
	S	5.0E-03	6.11E-10	4.71E-10	2.40E-10	1.50E-10	9.38E-11	7.51E-11	9.08E-11
Pr-139	F	5.0E-03	1.12E-10	8.32E-11	4.01E-11	2.46E-11	1.40E-11	1.15E-11	1.42E-11
	M	5.0E-03	1.59E-10	1.16E-10	5.71E-11	3.65E-11	2.35E-11	1.90E-11	2.28E-11
	S	5.0E-03	1.66E-10	1.20E-10	5.96E-11	3.83E-11	2.49E-11	2.02E-11	2.41E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Pr-142	F	5.0E-03	3.02E-09	1.95E-09	8.24E-10	5.01E-10	2.53E-10	2.09E-10	2.71E-10
	M	5.0E-03	5.28E-09	3.50E-09	1.60E-09	1.02E-09	6.21E-10	5.17E-10	6.26E-10
	S	5.0E-03	5.53E-09	3.68E-09	1.69E-09	1.08E-09	6.63E-10	5.52E-10	6.67E-10
Pr-142m	F	5.0E-03	3.84E-11	2.48E-11	1.05E-11	6.38E-12	3.21E-12	2.64E-12	3.44E-12
	M	5.0E-03	6.73E-11	4.47E-11	2.04E-11	1.30E-11	7.90E-12	6.58E-12	7.98E-12
	S	5.0E-03	7.05E-11	4.69E-11	2.15E-11	1.38E-11	8.43E-12	7.03E-12	8.49E-12
Pr-143	F	5.0E-03	7.03E-09	4.72E-09	2.09E-09	1.28E-09	7.30E-10	5.85E-10	7.36E-10
	M	5.0E-03	1.15E-08	8.44E-09	4.63E-09	3.24E-09	2.67E-09	2.15E-09	2.41E-09
	S	5.0E-03	1.25E-08	9.18E-09	5.12E-09	3.62E-09	3.03E-09	2.44E-09	2.72E-09
Pr-144	F	5.0E-03	1.22E-10	7.47E-11	3.18E-11	2.00E-11	1.21E-11	1.05E-11	1.27E-11
	M	5.0E-03	1.86E-10	1.15E-10	5.01E-11	3.20E-11	2.04E-11	1.75E-11	2.09E-11
	S	5.0E-03	1.93E-10	1.19E-10	5.22E-11	3.34E-11	2.13E-11	1.83E-11	2.18E-11
Pr-145	F	5.0E-03	8.52E-10	5.42E-10	2.29E-10	1.57E-10	8.12E-11	6.84E-11	8.58E-11
	M	5.0E-03	1.56E-09	1.02E-09	4.68E-10	3.00E-10	1.90E-10	1.57E-10	1.88E-10
	S	5.0E-03	1.64E-09	1.07E-09	4.95E-10	3.18E-10	2.03E-10	1.67E-10	2.01E-10
Pr-146	F	5.0E-03	1.94E-10	1.24E-10	5.50E-11	3.40E-11	2.02E-11	1.70E-11	2.09E-11
	M	5.0E-03	2.97E-10	1.89E-10	8.52E-11	5.36E-11	3.38E-11	2.86E-11	3.43E-11
	S	5.0E-03	3.08E-10	1.96E-10	8.85E-11	5.58E-11	3.53E-11	2.98E-11	3.58E-11
Pr-147	F	5.0E-03	1.04E-10	6.81E-11	3.04E-11	1.94E-11	1.20E-11	1.03E-11	1.23E-11
	M	5.0E-03	1.54E-10	1.01E-10	4.65E-11	3.04E-11	2.03E-11	1.72E-11	2.02E-11
	S	5.0E-03	1.60E-10	1.05E-10	4.84E-11	3.17E-11	2.13E-11	1.81E-11	2.12E-11
Neodymium									
Nd-135	F	5.0E-03	1.64E-10	1.11E-10	5.12E-11	3.19E-11	1.93E-11	1.61E-11	1.96E-11
	M	5.0E-03	2.41E-10	1.61E-10	7.53E-11	4.78E-11	3.06E-11	2.56E-11	3.06E-11
	S	5.0E-03	2.49E-10	1.67E-10	7.79E-11	4.96E-11	3.19E-11	2.66E-11	3.18E-11
Nd-136	F	5.0E-03	2.98E-10	2.13E-10	1.02E-10	6.17E-11	3.60E-11	2.92E-11	3.61E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	5.0E-03	4.63E-10	3.21E-10	1.56E-10	9.77E-11	6.22E-11	5.08E-11	6.11E-11
	S	5.0E-03	4.81E-10	3.33E-10	1.62E-10	1.02E-10	6.51E-11	5.32E-11	6.38E-11
Nd-137	F	5.0E-03	1.63E-10	1.18E-10	5.64E-11	3.44E-11	2.01E-11	1.64E-11	2.02E-11
	M	5.0E-03	2.44E-10	1.72E-10	8.32E-11	5.23E-11	3.32E-11	2.71E-11	3.26E-11
	S	5.0E-03	2.53E-10	1.78E-10	8.62E-11	5.43E-11	3.46E-11	2.82E-11	3.39E-11
Nd-138	F	5.0E-03	1.55E-09	1.04E-09	4.60E-10	2.79E-10	1.48E-10	1.21E-10	1.55E-10
	M	5.0E-03	2.29E-09	1.69E-09	7.72E-10	4.83E-10	2.82E-10	2.36E-10	2.88E-10
	S	5.0E-03	2.40E-09	1.76E-09	8.06E-10	5.05E-10	2.97E-10	2.48E-10	3.03E-10
Nd-139	F	5.0E-03	6.44E-11	4.55E-11	2.13E-11	1.31E-11	7.78E-12	6.42E-12	7.87E-12
	M	5.0E-03	9.54E-11	6.59E-11	3.13E-11	1.99E-11	1.27E-11	1.05E-11	1.25E-11
	S	5.0E-03	9.89E-11	6.83E-11	3.25E-11	2.06E-11	1.33E-11	1.09E-11	1.31E-11
Nd-139m	F	5.0E-03	7.87E-10	6.24E-10	3.14E-10	1.93E-10	1.11E-10	8.96E-11	1.11E-10
	M	5.0E-03	1.11E-09	8.56E-10	4.40E-10	2.82E-10	1.81E-10	1.45E-10	1.73E-10
	S	5.0E-03	1.15E-09	8.83E-10	4.55E-10	2.93E-10	1.89E-10	1.51E-10	1.81E-10
Nd-140	F	5.0E-03	6.16E-09	4.47E-09	2.00E-09	1.21E-09	5.88E-10	4.79E-10	6.27E-10
	M	5.0E-03	9.02E-09	6.21E-09	3.00E-09	1.94E-09	1.25E-09	1.05E-09	1.25E-09
	S	5.0E-03	9.37E-09	6.48E-09	3.16E-09	2.05E-09	1.34E-09	1.13E-09	1.33E-09
Nd-141	F	5.0E-03	3.11E-11	2.39E-11	1.17E-11	7.10E-12	4.07E-12	3.28E-12	4.07E-12
	M	5.0E-03	4.38E-11	3.27E-11	1.62E-11	1.02E-11	6.32E-12	5.08E-12	6.15E-12
	S	5.0E-03	4.52E-11	3.37E-11	1.68E-11	1.05E-11	6.57E-12	5.28E-12	6.38E-12
Nd-144	F	5.0E-03	5.75E-05	5.29E-05	3.33E-05	2.35E-05	1.93E-05	1.90E-05	2.01E-05
	M	5.0E-03	1.96E-05	1.86E-05	1.25E-05	8.62E-06	7.75E-06	7.81E-06	8.12E-06
	S	5.0E-03	1.05E-05	9.53E-06	6.28E-06	4.06E-06	3.43E-06	3.37E-06	3.57E-06
Nd-147	F	5.0E-03	6.65E-09	4.53E-09	2.09E-09	1.25E-09	7.21E-10	5.93E-10	7.37E-10
	M	5.0E-03	1.10E-08	8.03E-09	4.52E-09	3.17E-09	2.66E-09	2.14E-09	2.38E-09
	S	5.0E-03	1.18E-08	8.67E-09	4.95E-09	3.52E-09	3.00E-09	2.41E-09	2.67E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Nd-149	F	5.0E-03	3.89E-10	2.57E-10	1.13E-10	7.01E-11	3.97E-11	3.34E-11	4.13E-11
	M	5.0E-03	6.89E-10	4.65E-10	2.23E-10	1.49E-10	1.04E-10	8.53E-11	9.96E-11
	S	5.0E-03	7.23E-10	4.88E-10	2.36E-10	1.57E-10	1.11E-10	9.13E-11	1.06E-10
Nd-151	F	5.0E-03	9.80E-11	6.64E-11	3.00E-11	1.91E-11	1.17E-11	9.93E-12	1.19E-11
	M	5.0E-03	1.46E-10	9.87E-11	4.59E-11	3.01E-11	1.98E-11	1.67E-11	1.97E-11
	S	5.0E-03	1.51E-10	1.02E-10	4.76E-11	3.13E-11	2.07E-11	1.74E-11	2.05E-11
Nd-152	F	5.0E-03	1.46E-10	9.24E-11	4.01E-11	2.56E-11	1.57E-11	1.35E-11	1.63E-11
	M	5.0E-03	2.24E-10	1.42E-10	6.31E-11	4.09E-11	2.65E-11	2.27E-11	2.69E-11
	S	5.0E-03	2.32E-10	1.48E-10	6.56E-11	4.26E-11	2.76E-11	2.37E-11	2.80E-11
Promethium									
Pm-141	F	5.0E-03	9.34E-11	6.25E-11	2.85E-11	1.76E-11	1.05E-11	8.75E-12	1.07E-11
	M	5.0E-03	1.38E-10	9.12E-11	4.19E-11	2.63E-11	1.66E-11	1.38E-11	1.67E-11
	S	5.0E-03	1.43E-10	9.43E-11	4.34E-11	2.73E-11	1.72E-11	1.44E-11	1.73E-11
Pm-143	F	5.0E-03	1.47E-08	1.26E-08	7.21E-09	4.81E-09	3.26E-09	2.88E-09	3.27E-09
	M	5.0E-03	6.34E-09	5.52E-09	3.42E-09	2.26E-09	1.72E-09	1.50E-09	1.67E-09
	S	5.0E-03	5.62E-09	4.96E-09	3.20E-09	2.14E-09	1.71E-09	1.45E-09	1.60E-09
Pm-144	F	5.0E-03	7.70E-08	6.73E-08	3.98E-08	2.73E-08	1.90E-08	1.71E-08	1.91E-08
	M	5.0E-03	3.12E-08	2.79E-08	1.79E-08	1.21E-08	9.39E-09	8.36E-09	9.17E-09
	S	5.0E-03	2.67E-08	2.42E-08	1.61E-08	1.10E-08	8.91E-09	7.63E-09	8.37E-09
Pm-145	F	5.0E-03	2.75E-08	2.50E-08	1.54E-08	1.05E-08	8.24E-09	8.04E-09	8.62E-09
	M	5.0E-03	1.01E-08	9.39E-09	6.19E-09	4.14E-09	3.57E-09	3.51E-09	3.70E-09
	S	5.0E-03	6.94E-09	6.33E-09	4.26E-09	2.85E-09	2.41E-09	2.27E-09	2.42E-09
Pm-146	F	5.0E-03	1.63E-07	1.47E-07	9.02E-08	6.14E-08	4.62E-08	4.40E-08	4.78E-08
	M	5.0E-03	6.35E-08	5.83E-08	3.83E-08	2.58E-08	2.15E-08	2.04E-08	2.18E-08
	S	5.0E-03	5.22E-08	4.82E-08	3.26E-08	2.20E-08	1.86E-08	1.72E-08	1.84E-08
Pm-147	F	5.0E-03	3.95E-08	3.42E-08	1.92E-08	1.14E-08	7.58E-09	6.98E-09	7.97E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	5.0E-03	2.07E-08	1.76E-08	1.08E-08	6.91E-09	5.66E-09	4.94E-09	5.44E-09
	S	5.0E-03	1.89E-08	1.59E-08	9.94E-09	6.68E-09	5.69E-09	4.86E-09	5.31E-09
Pm-148	F	5.0E-03	1.02E-08	6.71E-09	2.96E-09	1.79E-09	9.85E-10	7.97E-10	1.01E-09
	M	5.0E-03	1.48E-08	1.03E-08	5.19E-09	3.43E-09	2.40E-09	2.00E-09	2.32E-09
	S	5.0E-03	1.54E-08	1.09E-08	5.51E-09	3.66E-09	2.61E-09	2.18E-09	2.51E-09
Pm-148m	F	5.0E-03	2.72E-08	2.09E-08	1.07E-08	6.97E-09	4.48E-09	3.81E-09	4.47E-09
	M	5.0E-03	2.38E-08	1.87E-08	1.10E-08	7.64E-09	6.29E-09	5.11E-09	5.69E-09
	S	5.0E-03	2.48E-08	1.96E-08	1.18E-08	8.30E-09	7.04E-09	5.69E-09	6.29E-09
Pm-149	F	5.0E-03	2.78E-09	1.79E-09	7.66E-10	4.59E-10	2.38E-10	1.93E-10	2.51E-10
	M	5.0E-03	5.02E-09	3.45E-09	1.71E-09	1.15E-09	8.25E-10	6.67E-10	7.74E-10
	S	5.0E-03	5.28E-09	3.65E-09	1.82E-09	1.23E-09	8.97E-10	7.25E-10	8.38E-10
Pm-150	F	5.0E-03	7.22E-10	5.03E-10	2.32E-10	1.42E-10	7.94E-11	6.53E-11	8.16E-11
	M	5.0E-03	1.15E-09	7.91E-10	3.75E-10	2.39E-10	1.50E-10	1.24E-10	1.49E-10
	S	5.0E-03	1.20E-09	8.23E-10	3.91E-10	2.50E-10	1.58E-10	1.30E-10	1.56E-10
Pm-151	F	5.0E-03	2.06E-09	1.40E-09	6.21E-10	3.81E-10	2.04E-10	1.69E-10	2.14E-10
	M	5.0E-03	3.30E-09	2.56E-09	1.27E-09	8.46E-10	5.44E-10	4.38E-10	5.21E-10
	S	5.0E-03	3.48E-09	2.69E-09	1.34E-09	8.13E-10	5.88E-10	4.73E-10	5.55E-10
Samarium									
Sm-140	F	5.0E-03	2.25E-10	1.46E-10	6.52E-11	4.01E-11	2.38E-11	2.00E-11	2.45E-11
	M	5.0E-03	3.24E-10	2.09E-10	9.49E-11	5.94E-11	3.71E-11	3.14E-11	3.77E-11
	S	5.0E-03	3.35E-10	2.16E-10	9.83E-11	6.15E-11	3.86E-11	3.26E-11	3.92E-11
Sm-141	F	5.0E-03	1.04E-10	7.06E-11	3.26E-11	2.00E-11	1.20E-11	9.96E-12	1.22E-11
	M	5.0E-03	1.50E-10	1.00E-10	4.66E-11	2.91E-11	1.83E-11	1.52E-11	1.83E-11
	S	5.0E-03	1.55E-10	1.04E-10	4.81E-11	3.01E-11	1.89E-11	1.58E-11	1.90E-11
Sm-141m	F	5.0E-03	1.93E-10	1.36E-10	6.42E-11	3.93E-11	2.33E-11	1.91E-11	2.35E-11
	M	5.0E-03	2.90E-10	2.00E-10	9.50E-11	5.96E-11	3.77E-11	3.10E-11	3.73E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	5.0E-03	3.01E-10	2.07E-10	9.84E-11	6.19E-11	3.93E-11	3.23E-11	3.89E-11
Sm-142	F	5.0E-03	4.54E-10	2.95E-10	1.31E-10	7.93E-11	4.49E-11	3.71E-11	4.64E-11
	M	5.0E-03	7.35E-10	4.74E-10	2.16E-10	1.35E-10	8.36E-11	6.99E-11	8.45E-11
	S	5.0E-03	7.66E-10	4.94E-10	2.26E-10	1.41E-10	8.78E-11	7.35E-11	8.87E-11
Sm-145	F	5.0E-03	1.75E-08	1.47E-08	8.11E-09	4.95E-09	3.22E-09	2.85E-09	3.30E-09
	M	5.0E-03	8.00E-09	6.71E-09	4.00E-09	2.49E-09	1.85E-09	1.63E-09	1.83E-09
	S	5.0E-03	7.11E-09	5.95E-09	3.64E-09	2.35E-09	1.81E-09	1.56E-09	1.74E-09
Sm-146	F	5.0E-03	7.64E-05	7.02E-05	4.42E-05	3.12E-05	2.56E-05	2.53E-05	2.67E-05
	M	5.0E-03	2.70E-05	2.53E-05	1.71E-05	1.18E-05	1.06E-05	1.06E-05	1.10E-05
	S	5.0E-03	1.52E-05	1.36E-05	8.95E-06	5.81E-06	4.92E-06	4.80E-06	5.09E-06
Sm-147	F	5.0E-03	6.98E-05	6.42E-05	4.04E-05	2.85E-05	2.34E-05	2.31E-05	2.44E-05
	M	5.0E-03	2.44E-05	2.29E-05	1.55E-05	1.06E-05	9.56E-06	9.62E-06	1.00E-05
	S	5.0E-03	1.34E-05	1.21E-05	7.97E-06	5.16E-06	4.37E-06	4.27E-06	4.53E-06
Sm-148	F	5.0E-03	6.00E-05	5.52E-05	3.47E-05	2.45E-05	2.01E-05	1.98E-05	2.10E-05
	M	5.0E-03	2.06E-05	1.94E-05	1.31E-05	9.02E-06	8.11E-06	8.17E-06	8.49E-06
	S	5.0E-03	1.10E-05	1.00E-05	6.60E-06	4.27E-06	3.61E-06	3.54E-06	3.76E-06
Sm-151	F	5.0E-03	2.93E-08	2.68E-08	1.67E-08	1.16E-08	9.40E-09	9.27E-09	9.84E-09
	M	5.0E-03	1.09E-08	1.01E-08	6.68E-09	4.54E-09	4.03E-09	4.01E-09	4.20E-09
	S	5.0E-03	6.60E-09	5.79E-09	3.76E-09	2.45E-09	2.06E-09	1.98E-09	2.11E-09
Sm-153	F	5.0E-03	2.28E-09	1.50E-09	6.57E-10	3.98E-10	2.10E-10	1.76E-10	2.24E-10
	M	5.0E-03	4.15E-09	2.88E-09	1.50E-09	1.03E-09	7.92E-10	6.35E-10	7.25E-10
	S	5.0E-03	4.40E-09	3.07E-09	1.61E-09	1.11E-09	8.66E-10	6.94E-10	7.90E-10
Sm-155	F	5.0E-03	9.83E-11	6.28E-11	2.73E-11	1.76E-11	1.10E-11	9.48E-12	1.13E-11
	M	5.0E-03	1.57E-10	1.01E-10	4.54E-11	3.00E-11	2.01E-11	1.71E-11	2.01E-11
	S	5.0E-03	1.63E-10	1.05E-10	4.74E-11	3.14E-11	2.11E-11	1.80E-11	2.10E-11
Sm-156	F	5.0E-03	1.01E-09	6.87E-10	3.11E-10	1.92E-10	1.08E-10	9.04E-11	1.12E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	5.0E-03	1.64E-09	1.16E-09	5.91E-10	3.59E-10	2.73E-10	2.21E-10	2.56E-10
	S	5.0E-03	1.73E-09	1.22E-09	5.65E-10	3.88E-10	3.00E-10	2.43E-10	2.78E-10
Europium									
Eu-145	F	5.0E-03	3.18E-09	2.55E-09	1.34E-09	8.59E-10	5.31E-10	4.43E-10	5.26E-10
	M	5.0E-03	3.28E-09	2.63E-09	1.43E-09	9.30E-10	6.26E-10	5.06E-10	5.93E-10
	S	5.0E-03	3.32E-09	2.66E-09	1.46E-09	9.50E-10	6.47E-10	5.20E-10	6.09E-10
Eu-146	F	5.0E-03	4.79E-09	3.85E-09	2.01E-09	1.29E-09	7.89E-10	6.49E-10	7.77E-10
	M	5.0E-03	5.27E-09	4.23E-09	2.27E-09	1.47E-09	9.58E-10	7.68E-10	9.11E-10
	S	5.0E-03	5.34E-09	4.28E-09	2.31E-09	1.50E-09	9.83E-10	7.86E-10	9.31E-10
Eu-147	F	5.0E-03	3.99E-09	2.99E-09	1.53E-09	9.82E-10	6.18E-10	5.25E-10	6.20E-10
	M	5.0E-03	4.92E-09	3.76E-09	2.22E-09	1.57E-09	1.32E-09	1.06E-09	1.17E-09
	S	5.0E-03	5.25E-09	4.03E-09	2.42E-09	1.73E-09	1.49E-09	1.19E-09	1.31E-09
Eu-148	F	5.0E-03	2.08E-08	1.69E-08	9.12E-09	6.26E-09	4.18E-09	3.62E-09	4.14E-09
	M	5.0E-03	1.43E-08	1.20E-08	7.05E-09	4.70E-09	3.25E-09	2.70E-09	3.10E-09
	S	5.0E-03	1.41E-08	1.19E-08	7.15E-09	4.30E-09	3.39E-09	2.78E-09	3.15E-09
Eu-149	F	5.0E-03	4.30E-09	3.32E-09	1.69E-09	1.03E-09	6.33E-10	5.34E-10	6.40E-10
	M	5.0E-03	2.53E-09	1.96E-09	1.08E-09	6.78E-10	4.81E-10	4.03E-10	4.64E-10
	S	5.0E-03	2.48E-09	1.94E-09	1.09E-09	6.99E-10	5.13E-10	4.27E-10	4.88E-10
Eu-150	F	5.0E-03	3.14E-07	2.96E-07	2.02E-07	1.54E-07	1.30E-07	1.28E-07	1.34E-07
	M	5.0E-03	1.10E-07	1.07E-07	7.81E-08	5.81E-08	5.35E-08	5.37E-08	5.53E-08
	S	5.0E-03	7.37E-08	7.12E-08	5.25E-08	3.78E-08	3.40E-08	3.27E-08	3.41E-08
Eu-150m	F	5.0E-03	9.97E-10	6.51E-10	2.77E-10	1.70E-10	8.76E-11	7.37E-11	9.42E-11
	M	5.0E-03	1.64E-09	1.10E-09	5.27E-10	3.49E-10	2.38E-10	1.93E-10	2.27E-10
	S	5.0E-03	1.73E-09	1.17E-09	5.60E-10	3.72E-10	2.57E-10	2.08E-10	2.44E-10
Eu-152	F	5.0E-03	2.86E-07	2.63E-07	1.68E-07	1.20E-07	9.56E-08	9.33E-08	9.93E-08
	M	5.0E-03	1.10E-07	1.03E-07	7.02E-08	4.90E-08	4.31E-08	4.21E-08	4.41E-08

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	5.0E-03	8.84E-08	8.25E-08	5.71E-08	3.94E-08	3.44E-08	3.25E-08	3.44E-08
Eu-152m	F	5.0E-03	1.24E-09	8.28E-10	3.61E-10	2.20E-10	1.15E-10	9.56E-11	1.22E-10
	M	5.0E-03	1.91E-09	1.27E-09	6.59E-10	4.23E-10	2.37E-10	2.17E-10	2.58E-10
	S	5.0E-03	2.00E-09	1.34E-09	6.20E-10	4.01E-10	2.53E-10	2.09E-10	2.51E-10
Eu-152n	F	5.0E-03	3.84E-11	2.69E-11	1.32E-11	8.31E-12	5.24E-12	4.51E-12	5.34E-12
	M	5.0E-03	6.58E-11	4.44E-11	2.29E-11	1.47E-11	1.03E-11	8.72E-12	1.01E-11
	S	5.0E-03	6.88E-11	4.64E-11	2.40E-11	1.54E-11	9.56E-12	8.07E-12	9.60E-12
Eu-154	F	5.0E-03	3.81E-07	3.46E-07	2.13E-07	1.44E-07	1.11E-07	1.07E-07	1.15E-07
	M	5.0E-03	1.56E-07	1.43E-07	9.35E-08	6.29E-08	5.37E-08	5.13E-08	5.45E-08
	S	5.0E-03	1.35E-07	1.24E-07	8.35E-08	5.66E-08	4.86E-08	4.53E-08	4.83E-08
Eu-154m	F	5.0E-03	2.34E-11	1.65E-11	8.18E-12	5.12E-12	3.31E-12	2.87E-12	3.37E-12
	M	5.0E-03	3.34E-11	2.22E-11	1.10E-11	6.90E-12	4.68E-12	3.93E-12	4.61E-12
	S	5.0E-03	3.46E-11	2.29E-11	1.14E-11	7.13E-12	4.85E-12	4.06E-12	4.76E-12
Eu-155	F	5.0E-03	5.68E-08	5.04E-08	2.94E-08	1.83E-08	1.31E-08	1.24E-08	1.38E-08
	M	5.0E-03	2.63E-08	2.30E-08	1.45E-08	9.27E-09	7.63E-09	6.99E-09	7.59E-09
	S	5.0E-03	2.25E-08	1.93E-08	1.23E-08	8.10E-09	6.77E-09	5.98E-09	6.51E-09
Eu-156	F	5.0E-03	1.49E-08	1.03E-08	4.84E-09	2.99E-09	1.78E-09	1.46E-09	1.79E-09
	M	5.0E-03	1.96E-08	1.44E-08	7.93E-09	5.43E-09	4.27E-09	3.51E-09	3.95E-09
	S	5.0E-03	2.07E-08	1.54E-08	8.62E-09	5.95E-09	4.78E-09	3.94E-09	4.41E-09
Eu-157	F	5.0E-03	1.61E-09	1.08E-09	4.75E-10	2.91E-10	1.53E-10	1.27E-10	1.62E-10
	M	5.0E-03	2.52E-09	1.93E-09	9.20E-10	6.03E-10	3.60E-10	2.92E-10	3.55E-10
	S	5.0E-03	2.65E-09	2.02E-09	9.70E-10	6.38E-10	3.87E-10	3.14E-10	3.80E-10
Eu-158	F	5.0E-03	2.69E-10	1.80E-10	8.26E-11	5.11E-11	3.04E-11	2.53E-11	3.10E-11
	M	5.0E-03	4.29E-10	2.86E-10	1.34E-10	8.59E-11	5.65E-11	4.69E-11	5.57E-11
	S	5.0E-03	4.47E-10	2.97E-10	1.40E-10	8.98E-11	5.94E-11	4.92E-11	5.84E-11
Eu-159	F	5.0E-03	1.37E-10	8.75E-11	3.82E-11	2.41E-11	1.44E-11	1.23E-11	1.50E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	5.0E-03	2.16E-10	1.40E-10	6.35E-11	4.13E-11	2.72E-11	2.30E-11	2.71E-11
	S	5.0E-03	2.24E-10	1.45E-10	6.63E-11	4.32E-11	2.86E-11	2.42E-11	2.85E-11
Gadolinium									
Gd-145	F	5.0E-03	1.11E-10	8.42E-11	4.18E-11	2.56E-11	1.53E-11	1.24E-11	1.52E-11
	M	5.0E-03	1.48E-10	1.09E-10	5.41E-11	3.36E-11	2.08E-11	1.69E-11	2.05E-11
	S	5.0E-03	1.52E-10	1.12E-10	5.55E-11	3.45E-11	2.15E-11	1.74E-11	2.11E-11
Gd-146	F	5.0E-03	2.82E-08	2.20E-08	1.16E-08	7.57E-09	4.95E-09	4.25E-09	4.94E-09
	M	5.0E-03	2.69E-08	2.13E-08	1.29E-08	9.00E-09	7.62E-09	6.21E-09	6.86E-09
	S	5.0E-03	2.90E-08	2.31E-08	1.43E-08	1.01E-08	8.76E-09	7.08E-09	7.79E-09
Gd-147	F	5.0E-03	2.19E-09	1.73E-09	8.84E-10	5.55E-10	3.29E-10	2.69E-10	3.27E-10
	M	5.0E-03	2.88E-09	2.25E-09	1.19E-09	7.83E-10	5.26E-10	4.19E-10	4.94E-10
	S	5.0E-03	2.97E-09	2.32E-09	1.24E-09	8.16E-10	5.55E-10	4.42E-10	5.20E-10
Gd-148	F	5.0E-03	8.13E-05	7.44E-05	4.60E-05	3.16E-05	2.56E-05	2.53E-05	2.68E-05
	M	5.0E-03	3.13E-05	2.87E-05	1.90E-05	1.28E-05	1.13E-05	1.13E-05	1.18E-05
	S	5.0E-03	2.09E-05	1.83E-05	1.20E-05	7.72E-06	6.48E-06	6.20E-06	6.63E-06
Gd-149	F	5.0E-03	2.78E-09	2.41E-09	9.95E-10	6.31E-10	3.83E-10	3.22E-10	3.90E-10
	M	5.0E-03	4.72E-09	3.59E-09	1.80E-09	1.28E-09	1.07E-09	8.46E-10	9.52E-10
	S	5.0E-03	4.48E-09	3.37E-09	1.95E-09	1.40E-09	1.19E-09	9.39E-10	1.05E-09
Gd-150	F	5.0E-03	7.43E-05	6.82E-05	4.28E-05	2.99E-05	2.45E-05	2.42E-05	2.56E-05
	M	5.0E-03	2.74E-05	2.54E-05	1.71E-05	1.16E-05	1.04E-05	1.04E-05	1.09E-05
	S	5.0E-03	1.72E-05	1.53E-05	1.01E-05	6.53E-06	5.51E-06	5.33E-06	5.68E-06
Gd-151	F	5.0E-03	7.49E-09	5.83E-09	3.02E-09	1.79E-09	1.09E-09	9.29E-10	1.11E-09
	M	5.0E-03	5.27E-09	4.15E-09	2.39E-09	1.58E-09	1.25E-09	1.02E-09	1.15E-09
	S	5.0E-03	5.49E-09	4.36E-09	2.57E-09	1.75E-09	1.44E-09	1.17E-09	1.31E-09
Gd-152	F	5.0E-03	5.83E-05	5.36E-05	3.36E-05	2.35E-05	1.92E-05	1.90E-05	2.01E-05
	M	5.0E-03	2.06E-05	1.93E-05	1.29E-05	8.83E-06	7.91E-06	7.96E-06	8.29E-06

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	5.0E-03	1.24E-05	1.12E-05	7.32E-06	4.71E-06	3.96E-06	3.87E-06	4.11E-06
Gd-153	F	5.0E-03	1.47E-08	1.20E-08	6.48E-09	3.88E-09	2.44E-09	2.11E-09	2.49E-09
	M	5.0E-03	9.91E-09	7.97E-09	4.79E-09	3.12E-09	2.48E-09	2.09E-09	2.33E-09
	S	5.0E-03	1.04E-08	8.39E-09	5.17E-09	3.48E-09	2.87E-09	2.40E-09	2.65E-09
Gd-159	F	5.0E-03	1.22E-09	9.05E-10	3.88E-10	2.36E-10	1.22E-10	1.02E-10	1.31E-10
	M	5.0E-03	2.26E-09	1.53E-09	7.41E-10	4.94E-10	3.45E-10	2.78E-10	3.26E-10
	S	5.0E-03	2.38E-09	1.61E-09	7.88E-10	5.27E-10	3.73E-10	3.00E-10	3.51E-10
Terbium									
Tb-147	F	5.0E-03	4.16E-10	3.24E-10	1.63E-10	1.00E-10	5.86E-11	4.74E-11	5.82E-11
	M	5.0E-03	5.69E-10	4.32E-10	2.20E-10	1.39E-10	8.79E-11	7.07E-11	8.50E-11
	S	5.0E-03	5.87E-10	4.45E-10	2.27E-10	1.44E-10	9.15E-11	7.35E-11	8.82E-11
Tb-148	F	5.0E-03	4.76E-10	3.65E-10	1.36E-10	8.93E-11	6.31E-11	5.88E-11	6.71E-11
	M	5.0E-03	5.61E-10	4.00E-10	1.99E-10	1.25E-10	8.23E-11	7.07E-11	8.28E-11
	S	5.0E-03	5.65E-10	3.97E-10	1.94E-10	1.21E-10	7.76E-11	6.52E-11	7.76E-11
Tb-149	F	5.0E-03	3.67E-09	2.46E-09	1.27E-09	7.80E-10	5.31E-10	4.49E-10	5.26E-10
	M	5.0E-03	1.72E-08	1.22E-08	8.00E-09	5.46E-09	4.77E-09	4.08E-09	4.44E-09
	S	5.0E-03	1.87E-08	1.33E-08	8.75E-09	5.98E-09	5.24E-09	4.49E-09	4.87E-09
Tb-150	F	5.0E-03	6.65E-10	5.19E-10	2.59E-10	1.58E-10	9.05E-11	7.28E-11	9.03E-11
	M	5.0E-03	9.01E-10	6.84E-10	3.40E-10	2.13E-10	1.27E-10	1.03E-10	1.25E-10
	S	5.0E-03	9.27E-10	7.02E-10	3.49E-10	2.19E-10	1.31E-10	1.06E-10	1.29E-10
Tb-151	F	5.0E-03	1.13E-09	8.83E-10	4.42E-10	2.74E-10	1.58E-10	1.29E-10	1.58E-10
	M	5.0E-03	1.68E-09	1.29E-09	6.73E-10	4.41E-10	2.97E-10	2.39E-10	2.81E-10
	S	5.0E-03	1.75E-09	1.33E-09	7.01E-10	4.62E-10	3.14E-10	2.52E-10	2.96E-10
Tb-152	F	5.0E-03	1.92E-09	1.43E-09	6.91E-10	4.26E-10	2.38E-10	1.93E-10	2.41E-10
	M	5.0E-03	2.72E-09	2.00E-09	9.77E-10	6.20E-10	3.71E-10	3.02E-10	3.68E-10
	S	5.0E-03	2.81E-09	2.06E-09	1.01E-09	6.42E-10	3.86E-10	3.14E-10	3.82E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Tb-153	F	5.0E-03	1.07E-09	8.06E-10	4.03E-10	2.48E-10	1.44E-10	9.21E-11	1.23E-10
	M	5.0E-03	1.56E-09	1.16E-09	6.19E-10	4.08E-10	2.87E-10	2.34E-10	2.72E-10
	S	5.0E-03	1.63E-09	1.21E-09	6.53E-10	4.33E-10	2.71E-10	2.22E-10	2.64E-10
Tb-154	F	5.0E-03	1.92E-09	1.54E-09	7.94E-10	4.97E-10	2.89E-10	2.35E-10	2.87E-10
	M	5.0E-03	2.56E-09	2.02E-09	1.06E-09	6.84E-10	4.33E-10	3.47E-10	4.16E-10
	S	5.0E-03	2.64E-09	2.08E-09	1.09E-09	7.06E-10	4.50E-10	3.60E-10	4.30E-10
Tb-155	F	5.0E-03	9.30E-10	6.42E-10	3.08E-10	1.91E-10	1.09E-10	9.18E-11	1.13E-10
	M	5.0E-03	1.80E-09	1.32E-09	7.24E-10	4.45E-10	3.50E-10	2.82E-10	3.23E-10
	S	5.0E-03	1.90E-09	1.40E-09	6.88E-10	4.81E-10	3.85E-10	3.09E-10	3.50E-10
Tb-156	F	5.0E-03	4.77E-09	3.71E-09	1.91E-09	1.22E-09	7.40E-10	6.14E-10	7.37E-10
	M	5.0E-03	6.80E-09	5.28E-09	2.93E-09	1.98E-09	1.47E-09	1.17E-09	1.35E-09
	S	5.0E-03	7.10E-09	5.50E-09	3.08E-09	2.09E-09	1.58E-09	1.26E-09	1.44E-09
Tb-156m	F	5.0E-03	7.65E-10	5.77E-10	2.95E-10	1.90E-10	1.17E-10	9.79E-11	1.17E-10
	M	5.0E-03	1.13E-09	8.58E-10	4.84E-10	2.97E-10	2.36E-10	1.90E-10	2.17E-10
	S	5.0E-03	1.19E-09	9.02E-10	4.54E-10	3.18E-10	2.57E-10	2.06E-10	2.33E-10
Tb-156n	F	5.0E-03	3.50E-10	2.50E-10	1.20E-10	7.65E-11	4.54E-11	3.86E-11	4.65E-11
	M	5.0E-03	6.61E-10	4.79E-10	2.60E-10	1.81E-10	1.28E-10	1.02E-10	1.18E-10
	S	5.0E-03	6.99E-10	5.06E-10	2.77E-10	1.94E-10	1.40E-10	1.11E-10	1.28E-10
Tb-157	F	5.0E-03	1.02E-08	9.36E-09	5.82E-09	4.02E-09	3.26E-09	3.22E-09	3.42E-09
	M	5.0E-03	3.59E-09	3.36E-09	2.22E-09	1.50E-09	1.33E-09	1.33E-09	1.39E-09
	S	5.0E-03	2.23E-09	2.04E-09	1.34E-09	8.79E-10	7.38E-10	7.17E-10	7.62E-10
Tb-158	F	5.0E-03	2.76E-07	2.57E-07	1.70E-07	1.27E-07	1.06E-07	1.05E-07	1.10E-07
	M	5.0E-03	1.06E-07	9.97E-08	7.01E-08	5.10E-08	4.69E-08	4.65E-08	4.81E-08
	S	5.0E-03	8.08E-08	7.54E-08	5.33E-08	3.77E-08	3.39E-08	3.24E-08	3.39E-08
Tb-160	F	5.0E-03	3.33E-08	2.52E-08	1.28E-08	7.87E-09	4.93E-09	4.19E-09	4.98E-09
	M	5.0E-03	3.23E-08	2.53E-08	1.49E-08	1.03E-08	8.65E-09	7.03E-09	7.80E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	5.0E-03	3.53E-08	2.80E-08	1.69E-08	1.19E-08	1.03E-08	8.32E-09	9.17E-09
Tb-161	F	5.0E-03	3.50E-09	2.33E-09	1.08E-09	6.24E-10	3.40E-10	2.85E-10	3.60E-10
	M	5.0E-03	6.75E-09	4.85E-09	2.71E-09	1.91E-09	1.60E-09	1.28E-09	1.43E-09
	S	5.0E-03	7.25E-09	5.23E-09	2.96E-09	2.11E-09	1.79E-09	1.43E-09	1.59E-09
Tb-163	F	5.0E-03	9.22E-11	6.38E-11	2.93E-11	1.89E-11	1.18E-11	1.00E-11	1.19E-11
	M	5.0E-03	1.40E-10	9.60E-11	4.47E-11	2.96E-11	1.97E-11	1.66E-11	1.95E-11
	S	5.0E-03	1.45E-10	9.96E-11	4.64E-11	3.07E-11	2.06E-11	1.73E-11	2.03E-11
Dysprosium									
Dy-151	F	5.0E-03	2.63E-10	1.83E-10	1.13E-10	7.62E-11	6.39E-11	5.43E-11	5.98E-11
	M	5.0E-03	5.55E-10	3.93E-10	2.56E-10	1.75E-10	1.54E-10	1.31E-10	1.42E-10
	S	5.0E-03	5.87E-10	4.17E-10	2.71E-10	1.86E-10	1.63E-10	1.39E-10	1.51E-10
Dy-152	F	5.0E-03	3.17E-10	2.38E-10	1.16E-10	7.18E-11	4.08E-11	3.32E-11	4.11E-11
	M	5.0E-03	4.74E-10	3.51E-10	1.79E-10	1.14E-10	7.27E-11	5.98E-11	7.13E-11
	S	5.0E-03	4.91E-10	3.63E-10	1.86E-10	1.19E-10	7.63E-11	6.28E-11	7.46E-11
Dy-153	F	5.0E-03	5.84E-10	4.51E-10	2.26E-10	1.39E-10	8.00E-11	6.53E-11	8.04E-11
	M	5.0E-03	8.76E-10	6.61E-10	3.46E-10	2.24E-10	1.50E-10	1.22E-10	1.43E-10
	S	5.0E-03	9.11E-10	6.86E-10	3.60E-10	2.35E-10	1.59E-10	1.29E-10	1.51E-10
Dy-154	F	5.0E-03	8.16E-05	7.49E-05	4.64E-05	3.18E-05	2.61E-05	2.58E-05	2.74E-05
	M	5.0E-03	3.01E-05	2.79E-05	1.86E-05	1.25E-05	1.12E-05	1.12E-05	1.17E-05
	S	5.0E-03	1.86E-05	1.65E-05	1.08E-05	7.01E-06	5.93E-06	5.74E-06	6.10E-06
Dy-155	F	5.0E-03	4.65E-10	3.70E-10	1.89E-10	1.17E-10	6.77E-11	5.49E-11	6.74E-11
	M	5.0E-03	6.38E-10	4.98E-10	2.61E-10	1.69E-10	1.10E-10	8.78E-11	1.04E-10
	S	5.0E-03	6.59E-10	5.13E-10	2.70E-10	1.75E-10	1.15E-10	9.20E-11	1.09E-10
Dy-157	F	5.0E-03	1.85E-10	1.51E-10	7.79E-11	4.83E-11	2.82E-11	2.26E-11	2.78E-11
	M	5.0E-03	2.40E-10	1.91E-10	9.87E-11	6.25E-11	3.78E-11	3.02E-11	3.67E-11
	S	5.0E-03	2.46E-10	1.95E-10	1.01E-10	6.41E-11	3.89E-11	3.11E-11	3.77E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Dy-159	F	5.0E-03	3.50E-09	2.76E-09	1.46E-09	8.54E-10	5.23E-10	4.50E-10	5.38E-10
	M	5.0E-03	2.20E-09	1.74E-09	1.01E-09	6.33E-10	4.66E-10	3.95E-10	4.49E-10
	S	5.0E-03	2.28E-09	1.83E-09	1.08E-09	7.08E-10	5.42E-10	4.56E-10	5.13E-10
Dy-165	F	5.0E-03	2.92E-10	1.85E-10	7.90E-11	4.93E-11	2.76E-11	2.36E-11	2.92E-11
	M	5.0E-03	5.21E-10	3.41E-10	1.59E-10	1.05E-10	7.28E-11	6.03E-11	7.06E-11
	S	5.0E-03	5.47E-10	3.58E-10	1.68E-10	1.12E-10	7.78E-11	6.43E-11	7.52E-11
Dy-166	F	5.0E-03	7.06E-09	4.52E-09	1.99E-09	1.14E-09	6.04E-10	4.88E-10	6.34E-10
	M	5.0E-03	1.19E-08	8.40E-09	4.45E-09	3.04E-09	2.36E-09	1.93E-09	2.18E-09
	S	5.0E-03	1.25E-08	8.93E-09	4.79E-09	3.30E-09	2.61E-09	2.12E-09	2.40E-09
Holmium									
Ho-154	F	5.0E-03	1.04E-10	7.12E-11	3.31E-11	2.05E-11	1.24E-11	1.04E-11	1.26E-11
	M	5.0E-03	1.42E-10	9.61E-11	4.48E-11	2.80E-11	1.75E-11	1.46E-11	1.76E-11
	S	5.0E-03	1.46E-10	9.88E-11	4.60E-11	2.88E-11	1.80E-11	1.51E-11	1.82E-11
Ho-155	F	5.0E-03	1.26E-10	9.27E-11	4.50E-11	2.78E-11	1.65E-11	1.35E-11	1.65E-11
	M	5.0E-03	1.89E-10	1.35E-10	6.73E-11	4.32E-11	2.84E-11	2.31E-11	2.75E-11
	S	5.0E-03	1.96E-10	1.40E-10	6.99E-11	4.50E-11	2.97E-11	2.43E-11	2.87E-11
Ho-156	F	5.0E-03	3.04E-10	2.18E-10	1.04E-10	6.37E-11	3.77E-11	3.10E-11	3.80E-11
	M	5.0E-03	4.63E-10	3.24E-10	1.56E-10	9.93E-11	6.42E-11	5.27E-11	6.29E-11
	S	5.0E-03	4.80E-10	3.35E-10	1.62E-10	1.03E-10	6.71E-11	5.50E-11	6.56E-11
Ho-157	F	5.0E-03	2.85E-11	2.16E-11	1.06E-11	6.66E-12	4.12E-12	3.39E-12	4.08E-12
	M	5.0E-03	3.86E-11	2.86E-11	1.41E-11	9.04E-12	5.82E-12	4.79E-12	5.70E-12
	S	5.0E-03	3.97E-11	2.94E-11	1.45E-11	9.31E-12	6.01E-12	4.94E-12	5.87E-12
Ho-159	F	5.0E-03	3.32E-11	2.49E-11	1.23E-11	7.70E-12	4.77E-12	3.92E-12	4.72E-12
	M	5.0E-03	4.90E-11	3.59E-11	1.81E-11	1.17E-11	7.93E-12	6.49E-12	7.62E-12
	S	5.0E-03	5.08E-11	3.71E-11	1.88E-11	1.22E-11	8.29E-12	6.78E-12	7.95E-12
Ho-160	F	5.0E-03	7.29E-11	5.86E-11	3.01E-11	1.85E-11	1.14E-11	9.14E-12	1.11E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	5.0E-03	9.82E-11	7.71E-11	3.99E-11	2.52E-11	1.65E-11	1.32E-11	1.58E-11
	S	5.0E-03	1.01E-10	7.92E-11	4.10E-11	2.59E-11	1.71E-11	1.37E-11	1.63E-11
Ho-161	F	5.0E-03	4.02E-11	2.94E-11	1.40E-11	8.45E-12	4.80E-12	3.87E-12	4.84E-12
	M	5.0E-03	6.21E-11	4.42E-11	2.18E-11	1.37E-11	8.82E-12	7.14E-12	8.57E-12
	S	5.0E-03	6.46E-11	4.58E-11	2.27E-11	1.43E-11	9.26E-12	7.50E-12	8.98E-12
Ho-162	F	5.0E-03	1.41E-11	1.00E-11	4.82E-12	3.13E-12	2.08E-12	1.73E-12	2.04E-12
	M	5.0E-03	2.10E-11	1.47E-11	7.27E-12	4.84E-12	3.44E-12	2.84E-12	3.29E-12
	S	5.0E-03	2.17E-11	1.53E-11	7.54E-12	5.03E-12	3.59E-12	2.96E-12	3.43E-12
Ho-162m	F	5.0E-03	9.23E-11	6.95E-11	3.43E-11	2.11E-11	1.27E-11	1.04E-11	1.26E-11
	M	5.0E-03	1.48E-10	1.08E-10	5.58E-11	3.63E-11	2.52E-11	2.04E-11	2.39E-11
	S	5.0E-03	1.54E-10	1.13E-10	5.82E-11	3.80E-11	2.66E-11	2.15E-11	2.51E-11
Ho-163	F	5.0E-03	1.29E-09	7.40E-10	4.65E-10	3.28E-10	2.68E-10	2.65E-10	2.82E-10
	M	5.0E-03	2.79E-10	2.62E-10	1.75E-10	1.20E-10	1.07E-10	1.08E-10	1.13E-10
	S	5.0E-03	1.61E-10	1.46E-10	9.45E-11	6.09E-11	5.09E-11	5.00E-11	5.31E-11
Ho-164	F	5.0E-03	4.03E-11	2.62E-11	1.15E-11	7.58E-12	4.80E-12	4.15E-12	4.92E-12
	M	5.0E-03	6.82E-11	4.50E-11	2.09E-11	1.41E-11	9.98E-12	8.40E-12	9.72E-12
	S	5.0E-03	7.13E-11	4.70E-11	2.19E-11	1.49E-11	1.06E-11	8.86E-12	1.02E-11
Ho-164m	F	5.0E-03	4.65E-11	2.97E-11	1.33E-11	8.26E-12	5.00E-12	4.20E-12	5.11E-12
	M	5.0E-03	9.28E-11	6.05E-11	3.02E-11	1.99E-11	1.30E-11	1.22E-11	1.39E-11
	S	5.0E-03	9.79E-11	6.39E-11	3.21E-11	2.12E-11	1.40E-11	1.13E-11	1.35E-11
Ho-166	F	5.0E-03	4.15E-09	2.60E-09	1.09E-09	6.87E-10	3.42E-10	2.72E-10	3.58E-10
	M	5.0E-03	6.01E-09	4.04E-09	1.90E-09	1.23E-09	8.00E-10	6.60E-10	7.86E-10
	S	5.0E-03	6.30E-09	4.25E-09	2.01E-09	1.31E-09	8.60E-10	7.09E-10	8.42E-10
Ho-166m	F	5.0E-03	7.43E-07	6.92E-07	4.64E-07	3.48E-07	2.86E-07	2.82E-07	2.96E-07
	M	5.0E-03	2.60E-07	2.48E-07	1.79E-07	1.31E-07	1.19E-07	1.19E-07	1.23E-07
	S	5.0E-03	1.36E-07	1.28E-07	9.19E-08	6.61E-08	6.01E-08	5.76E-08	6.01E-08

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Ho-167	F	5.0E-03	2.97E-10	2.06E-10	9.36E-11	5.88E-11	3.37E-11	2.85E-11	3.49E-11
	M	5.0E-03	5.41E-10	3.77E-10	1.87E-10	1.26E-10	9.06E-11	7.39E-11	8.56E-11
	S	5.0E-03	5.68E-10	3.96E-10	1.97E-10	1.34E-10	9.69E-11	7.89E-11	9.12E-11
Erbium									
Er-156	F	5.0E-03	1.03E-10	7.33E-11	3.52E-11	2.15E-11	1.26E-11	1.03E-11	1.27E-11
	M	5.0E-03	1.63E-10	1.13E-10	5.58E-11	3.55E-11	2.34E-11	1.91E-11	2.27E-11
	S	5.0E-03	1.70E-10	1.18E-10	5.81E-11	3.70E-11	2.46E-11	2.01E-11	2.38E-11
Er-159	F	5.0E-03	8.90E-11	6.91E-11	3.45E-11	2.13E-11	1.27E-11	1.04E-11	1.26E-11
	M	5.0E-03	1.29E-10	9.73E-11	4.93E-11	3.15E-11	2.07E-11	1.68E-11	1.99E-11
	S	5.0E-03	1.34E-10	1.00E-10	5.10E-11	3.27E-11	2.16E-11	1.75E-11	2.07E-11
Er-161	F	5.0E-03	2.90E-10	2.31E-10	1.17E-10	7.13E-11	4.13E-11	3.33E-11	4.11E-11
	M	5.0E-03	4.04E-10	3.12E-10	1.60E-10	1.02E-10	6.43E-11	5.16E-11	6.20E-11
	S	5.0E-03	4.17E-10	3.21E-10	1.65E-10	1.05E-10	6.69E-11	5.36E-11	6.43E-11
Er-163	F	5.0E-03	8.00E-12	6.11E-12	3.03E-12	1.85E-12	1.08E-12	8.71E-13	1.07E-12
	M	5.0E-03	1.10E-11	8.09E-12	4.06E-12	2.52E-12	1.54E-12	1.25E-12	1.51E-12
	S	5.0E-03	1.13E-11	8.31E-12	4.17E-12	2.59E-12	1.59E-12	1.29E-12	1.56E-12
Er-165	F	5.0E-03	5.44E-11	4.08E-11	1.99E-11	1.22E-11	6.83E-12	5.57E-12	6.93E-12
	M	5.0E-03	7.56E-11	5.55E-11	2.73E-11	1.72E-11	1.01E-11	8.22E-12	1.01E-11
	S	5.0E-03	7.80E-11	5.71E-11	2.81E-11	1.78E-11	1.04E-11	8.51E-12	1.04E-11
Er-169	F	5.0E-03	2.19E-09	1.45E-09	6.84E-10	3.83E-10	2.08E-10	1.76E-10	2.23E-10
	M	5.0E-03	4.71E-09	3.46E-09	2.01E-09	1.47E-09	1.30E-09	1.03E-09	1.13E-09
	S	5.0E-03	5.13E-09	3.80E-09	2.23E-09	1.64E-09	1.48E-09	1.17E-09	1.28E-09
Er-171	F	5.0E-03	1.01E-09	6.79E-10	3.02E-10	1.85E-10	1.00E-10	8.38E-11	1.05E-10
	M	5.0E-03	1.77E-09	1.21E-09	5.89E-10	3.90E-10	2.66E-10	2.18E-10	2.56E-10
	S	5.0E-03	1.85E-09	1.27E-09	6.21E-10	4.13E-10	2.52E-10	2.33E-10	2.70E-10
Er-172	F	5.0E-03	4.31E-09	2.91E-09	1.34E-09	7.96E-10	4.41E-10	3.04E-10	4.08E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	5.0E-03	6.66E-09	4.77E-09	2.57E-09	1.77E-09	1.39E-09	1.12E-09	1.27E-09
	S	5.0E-03	7.04E-09	5.07E-09	2.76E-09	1.92E-09	1.53E-09	1.23E-09	1.39E-09
Thulium									
Tm-161	F	5.0E-03	1.35E-10	1.03E-10	5.09E-11	3.14E-11	1.88E-11	1.54E-11	1.87E-11
	M	5.0E-03	1.96E-10	1.45E-10	7.29E-11	4.65E-11	3.04E-11	2.47E-11	2.94E-11
	S	5.0E-03	2.03E-10	1.50E-10	7.54E-11	4.82E-11	3.17E-11	2.57E-11	3.06E-11
Tm-162	F	5.0E-03	1.21E-10	8.61E-11	4.10E-11	2.53E-11	1.54E-11	1.27E-11	1.54E-11
	M	5.0E-03	1.74E-10	1.21E-10	5.80E-11	3.66E-11	2.34E-11	1.93E-11	2.31E-11
	S	5.0E-03	1.80E-10	1.25E-10	5.99E-11	3.79E-11	2.43E-11	2.01E-11	2.40E-11
Tm-163	F	5.0E-03	1.94E-10	1.56E-10	8.03E-11	4.90E-11	2.89E-11	2.33E-11	2.86E-11
	M	5.0E-03	2.72E-10	2.12E-10	1.11E-10	7.03E-11	4.54E-11	3.66E-11	4.36E-11
	S	5.0E-03	2.80E-10	2.18E-10	1.14E-10	7.27E-11	4.73E-11	3.80E-11	4.53E-11
Tm-165	F	5.0E-03	1.05E-09	7.89E-10	3.90E-10	2.41E-10	1.38E-10	1.13E-10	1.39E-10
	M	5.0E-03	1.61E-09	1.20E-09	6.22E-10	4.08E-10	2.73E-10	2.21E-10	2.60E-10
	S	5.0E-03	1.67E-09	1.25E-09	6.49E-10	4.27E-10	2.89E-10	2.34E-10	2.74E-10
Tm-166	F	5.0E-03	9.05E-10	7.30E-10	3.74E-10	2.31E-10	1.34E-10	1.08E-10	1.33E-10
	M	5.0E-03	1.28E-09	1.01E-09	5.27E-10	3.40E-10	2.19E-10	1.76E-10	2.10E-10
	S	5.0E-03	1.32E-09	1.04E-09	5.44E-10	3.52E-10	2.29E-10	1.84E-10	2.18E-10
Tm-167	F	5.0E-03	3.16E-09	2.11E-09	1.00E-09	5.76E-10	3.21E-10	2.71E-10	3.39E-10
	M	5.0E-03	5.78E-09	4.23E-09	2.42E-09	1.73E-09	1.49E-09	1.18E-09	1.31E-09
	S	5.0E-03	6.22E-09	4.59E-09	2.65E-09	1.93E-09	1.69E-09	1.33E-09	1.47E-09
Tm-168	F	5.0E-03	2.31E-08	1.83E-08	9.97E-09	6.46E-09	4.30E-09	3.78E-09	4.34E-09
	M	5.0E-03	1.94E-08	1.56E-08	9.43E-09	6.50E-09	5.37E-09	4.43E-09	4.90E-09
	S	5.0E-03	2.10E-08	1.70E-08	1.05E-08	7.34E-09	6.24E-09	5.07E-09	5.60E-09
Tm-170	F	5.0E-03	4.27E-08	3.11E-08	1.45E-08	7.88E-09	4.55E-09	3.56E-09	4.56E-09
	M	5.0E-03	3.53E-08	2.77E-08	1.56E-08	1.03E-08	8.31E-09	6.85E-09	7.68E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	5.0E-03	3.99E-08	3.23E-08	1.91E-08	1.30E-08	1.08E-08	9.14E-09	1.01E-08
Tm-171	F	5.0E-03	1.39E-08	1.18E-08	6.55E-09	3.62E-09	2.31E-09	2.12E-09	2.48E-09
	M	5.0E-03	6.75E-09	5.65E-09	3.40E-09	2.01E-09	1.53E-09	1.37E-09	1.53E-09
	S	5.0E-03	5.80E-09	4.73E-09	2.88E-09	1.83E-09	1.44E-09	1.25E-09	1.39E-09
Tm-172	F	5.0E-03	5.03E-09	3.24E-09	1.59E-09	9.43E-10	4.99E-10	4.10E-10	5.21E-10
	M	5.0E-03	8.45E-09	5.84E-09	2.92E-09	1.95E-09	1.38E-09	1.13E-09	1.31E-09
	S	5.0E-03	8.87E-09	6.15E-09	3.10E-09	2.09E-09	1.50E-09	1.23E-09	1.42E-09
Tm-173	F	5.0E-03	8.53E-10	5.81E-10	2.60E-10	1.60E-10	8.62E-11	7.19E-11	9.04E-11
	M	5.0E-03	1.47E-09	1.02E-09	4.92E-10	3.26E-10	2.20E-10	1.79E-10	2.11E-10
	S	5.0E-03	1.54E-09	1.06E-09	5.18E-10	3.44E-10	2.35E-10	1.91E-10	2.25E-10
Tm-175	F	5.0E-03	1.05E-10	7.20E-11	3.30E-11	2.11E-11	1.30E-11	1.11E-11	1.33E-11
	M	5.0E-03	1.55E-10	1.06E-10	4.98E-11	3.28E-11	2.19E-11	1.84E-11	2.16E-11
	S	5.0E-03	1.60E-10	1.10E-10	5.17E-11	3.41E-11	2.29E-11	1.92E-11	2.26E-11
Ytterbium									
Yb-162	F	5.0E-03	9.57E-11	6.83E-11	3.28E-11	2.00E-11	1.19E-11	9.72E-12	1.19E-11
	M	5.0E-03	1.48E-10	1.03E-10	5.00E-11	3.16E-11	2.05E-11	1.68E-11	2.00E-11
	S	5.0E-03	1.54E-10	1.07E-10	5.19E-11	3.28E-11	2.15E-11	1.75E-11	2.09E-11
Yb-163	F	5.0E-03	5.04E-11	3.76E-11	1.84E-11	1.14E-11	6.85E-12	5.62E-12	6.84E-12
	M	5.0E-03	6.90E-11	5.03E-11	2.49E-11	1.57E-11	1.01E-11	8.24E-12	9.85E-12
	S	5.0E-03	7.10E-11	5.17E-11	2.56E-11	1.62E-11	1.04E-11	8.53E-12	1.02E-11
Yb-164	F	5.0E-03	2.56E-10	1.73E-10	7.95E-11	4.85E-11	2.80E-11	2.30E-11	2.86E-11
	M	5.0E-03	4.04E-10	2.69E-10	1.27E-10	8.00E-11	5.11E-11	4.22E-11	5.06E-11
	S	5.0E-03	4.20E-10	2.80E-10	1.32E-10	8.34E-11	5.36E-11	4.44E-11	5.31E-11
Yb-166	F	5.0E-03	3.03E-09	2.30E-09	1.16E-09	7.27E-10	4.25E-10	3.50E-10	4.27E-10
	M	5.0E-03	4.66E-09	3.53E-09	1.90E-09	1.27E-09	8.99E-10	7.23E-10	8.38E-10
	S	5.0E-03	4.87E-09	3.68E-09	1.99E-09	1.34E-09	9.59E-10	7.70E-10	8.90E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Yb-167	F	5.0E-03	2.83E-11	1.98E-11	9.52E-12	6.07E-12	3.93E-12	3.30E-12	3.91E-12
	M	5.0E-03	4.52E-11	3.18E-11	1.62E-11	1.09E-11	8.06E-12	6.64E-12	7.61E-12
	S	5.0E-03	4.73E-11	3.33E-11	1.71E-11	1.15E-11	8.60E-12	7.08E-12	8.09E-12
Yb-169	F	5.0E-03	7.86E-09	5.56E-09	2.77E-09	1.60E-09	9.41E-10	8.03E-10	9.81E-10
	M	5.0E-03	1.34E-08	1.00E-08	5.95E-09	4.19E-09	3.60E-09	2.91E-09	3.21E-09
	S	5.0E-03	1.49E-08	1.13E-08	6.79E-09	4.84E-09	4.24E-09	3.41E-09	3.76E-09
Yb-175	F	5.0E-03	1.62E-09	1.06E-09	4.86E-10	2.82E-10	1.49E-10	1.26E-10	1.60E-10
	M	5.0E-03	3.47E-09	2.49E-09	1.38E-09	9.83E-10	8.30E-10	6.55E-10	7.33E-10
	S	5.0E-03	3.72E-09	2.68E-09	1.50E-09	1.08E-09	9.23E-10	7.28E-10	8.11E-10
Yb-177	F	5.0E-03	2.96E-10	1.93E-10	8.54E-11	5.30E-11	3.04E-11	2.57E-11	3.17E-11
	M	5.0E-03	5.26E-10	3.53E-10	1.71E-10	1.15E-10	8.31E-11	6.81E-11	7.88E-11
	S	5.0E-03	5.53E-10	3.72E-10	1.81E-10	1.22E-10	8.94E-11	7.32E-11	8.45E-11
Yb-178	F	5.0E-03	3.24E-10	2.06E-10	8.90E-11	5.56E-11	3.18E-11	2.70E-11	3.33E-11
	M	5.0E-03	5.87E-10	3.83E-10	1.80E-10	1.20E-10	8.40E-11	6.95E-11	8.10E-11
	S	5.0E-03	6.16E-10	4.03E-10	1.90E-10	1.27E-10	8.98E-11	7.41E-11	8.63E-11
Lutetium									
Lu-165	F	5.0E-03	7.43E-11	5.26E-11	2.51E-11	1.59E-11	9.96E-12	8.30E-12	9.94E-12
	M	5.0E-03	1.08E-10	7.55E-11	3.68E-11	2.38E-11	1.60E-11	1.33E-11	1.56E-11
	S	5.0E-03	1.12E-10	7.80E-11	3.80E-11	2.47E-11	1.67E-11	1.38E-11	1.63E-11
Lu-167	F	5.0E-03	1.75E-10	1.35E-10	6.77E-11	4.13E-11	2.46E-11	1.99E-11	2.44E-11
	M	5.0E-03	2.66E-10	1.99E-10	1.04E-10	6.68E-11	4.57E-11	3.69E-11	4.33E-11
	S	5.0E-03	2.77E-10	2.07E-10	1.08E-10	6.98E-11	4.83E-11	3.89E-11	4.56E-11
Lu-169	F	5.0E-03	1.92E-09	1.50E-09	7.70E-10	4.74E-10	2.79E-10	2.29E-10	2.79E-10
	M	5.0E-03	2.65E-09	2.06E-09	1.11E-09	7.35E-10	5.11E-10	4.11E-10	4.79E-10
	S	5.0E-03	2.78E-09	2.16E-09	1.18E-09	7.81E-10	5.53E-10	4.45E-10	5.16E-10
Lu-170	F	5.0E-03	3.02E-09	2.42E-09	1.26E-09	7.95E-10	4.71E-10	3.86E-10	4.68E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	5.0E-03	4.17E-09	3.30E-09	1.76E-09	1.16E-09	7.67E-10	6.15E-10	7.26E-10
	S	5.0E-03	4.30E-09	3.40E-09	1.82E-09	1.20E-09	8.03E-10	6.43E-10	7.57E-10
Lu-171	F	5.0E-03	2.76E-09	1.92E-09	9.44E-10	5.85E-10	3.45E-10	2.95E-10	3.56E-10
	M	5.0E-03	4.83E-09	3.99E-09	1.99E-09	1.38E-09	1.10E-09	8.94E-10	1.01E-09
	S	5.0E-03	5.17E-09	4.26E-09	2.16E-09	1.51E-09	1.22E-09	9.90E-10	1.11E-09
Lu-172	F	5.0E-03	5.40E-09	4.11E-09	2.11E-09	1.33E-09	8.07E-10	6.74E-10	8.09E-10
	M	5.0E-03	8.77E-09	6.73E-09	3.78E-09	2.58E-09	1.77E-09	1.42E-09	1.65E-09
	S	5.0E-03	9.28E-09	7.13E-09	4.04E-09	2.78E-09	1.95E-09	1.56E-09	1.80E-09
Lu-173	F	5.0E-03	2.72E-08	2.30E-08	1.31E-08	7.70E-09	5.05E-09	4.57E-09	5.27E-09
	M	5.0E-03	1.45E-08	1.22E-08	7.43E-09	4.66E-09	3.62E-09	3.16E-09	3.52E-09
	S	5.0E-03	1.47E-08	1.25E-08	7.83E-09	5.17E-09	4.15E-09	3.55E-09	3.93E-09
Lu-174	F	5.0E-03	3.63E-08	3.19E-08	1.84E-08	1.10E-08	7.66E-09	7.22E-09	8.10E-09
	M	5.0E-03	1.81E-08	1.57E-08	9.76E-09	6.14E-09	5.00E-09	4.50E-09	4.93E-09
	S	5.0E-03	1.72E-08	1.48E-08	9.43E-09	6.25E-09	5.19E-09	4.52E-09	4.94E-09
Lu-174m	F	5.0E-03	2.39E-08	1.90E-08	1.01E-08	5.66E-09	3.47E-09	3.09E-09	3.67E-09
	M	5.0E-03	1.91E-08	1.48E-08	8.86E-09	5.65E-09	4.49E-09	3.84E-09	4.28E-09
	S	5.0E-03	2.03E-08	1.57E-08	9.56E-09	6.34E-09	5.19E-09	4.39E-09	4.86E-09
Lu-176	F	5.0E-03	4.53E-07	4.17E-07	2.63E-07	1.85E-07	1.54E-07	1.52E-07	1.61E-07
	M	5.0E-03	1.83E-07	1.69E-07	1.14E-07	7.92E-08	7.22E-08	7.09E-08	7.39E-08
	S	5.0E-03	1.51E-07	1.38E-07	9.45E-08	6.60E-08	5.92E-08	5.62E-08	5.91E-08
Lu-176m	F	5.0E-03	4.94E-10	3.16E-10	1.35E-10	8.40E-11	4.60E-11	3.91E-11	4.89E-11
	M	5.0E-03	8.84E-10	5.86E-10	2.78E-10	1.86E-10	1.15E-10	1.07E-10	1.24E-10
	S	5.0E-03	9.27E-10	6.16E-10	2.94E-10	1.97E-10	1.24E-10	1.15E-10	1.32E-10
Lu-177	F	5.0E-03	2.50E-09	1.65E-09	7.72E-10	4.38E-10	2.36E-10	1.99E-10	2.52E-10
	M	5.0E-03	5.22E-09	3.79E-09	2.15E-09	1.55E-09	1.35E-09	1.06E-09	1.18E-09
	S	5.0E-03	5.63E-09	4.11E-09	2.36E-09	1.72E-09	1.51E-09	1.19E-09	1.32E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Lu-177m	F	5.0E-03	6.29E-08	4.96E-08	2.67E-08	1.56E-08	9.75E-09	8.53E-09	1.01E-08
	M	5.0E-03	5.70E-08	4.55E-08	2.76E-08	1.89E-08	1.60E-08	1.31E-08	1.45E-08
	S	5.0E-03	6.42E-08	5.20E-08	3.21E-08	2.26E-08	1.97E-08	1.60E-08	1.76E-08
Lu-178	F	5.0E-03	1.39E-10	8.75E-11	3.78E-11	2.41E-11	1.47E-11	1.26E-11	1.52E-11
	M	5.0E-03	2.26E-10	1.43E-10	6.45E-11	4.22E-11	2.82E-11	2.39E-11	2.81E-11
	S	5.0E-03	2.36E-10	1.50E-10	6.74E-11	4.42E-11	2.97E-11	2.51E-11	2.95E-11
Lu-178m	F	5.0E-03	1.56E-10	1.08E-10	4.93E-11	3.21E-11	2.03E-11	1.72E-11	2.05E-11
	M	5.0E-03	2.44E-10	1.68E-10	7.90E-11	5.29E-11	3.62E-11	3.04E-11	3.54E-11
	S	5.0E-03	2.54E-10	1.75E-10	8.23E-11	5.51E-11	3.80E-11	3.18E-11	3.71E-11
Lu-179	F	5.0E-03	6.05E-10	3.88E-10	1.65E-10	1.02E-10	5.43E-11	4.58E-11	5.79E-11
	M	5.0E-03	1.03E-09	6.78E-10	3.14E-10	2.06E-10	1.22E-10	1.13E-10	1.32E-10
	S	5.0E-03	1.07E-09	7.10E-10	3.31E-10	2.17E-10	1.31E-10	1.06E-10	1.30E-10
Hafnium									
Hf-170	F	2.0E-02	1.24E-09	9.59E-10	4.85E-10	3.06E-10	1.80E-10	1.49E-10	1.81E-10
	M	2.0E-02	1.88E-09	1.43E-09	7.60E-10	5.01E-10	3.42E-10	2.76E-10	3.24E-10
	S	2.0E-02	1.95E-09	1.49E-09	7.93E-10	5.24E-10	3.62E-10	2.92E-10	3.41E-10
Hf-172	F	2.0E-02	1.55E-07	1.35E-07	7.99E-08	5.04E-08	3.56E-08	3.32E-08	3.70E-08
	M	2.0E-02	8.26E-08	7.00E-08	4.44E-08	2.87E-08	2.32E-08	2.08E-08	2.27E-08
	S	2.0E-02	9.31E-08	8.02E-08	5.24E-08	3.48E-08	2.85E-08	2.49E-08	2.72E-08
Hf-173	F	2.0E-02	6.62E-10	5.04E-10	2.50E-10	1.55E-10	8.94E-11	7.46E-11	9.10E-11
	M	2.0E-02	1.09E-09	8.13E-10	4.30E-10	2.87E-10	2.03E-10	1.64E-10	1.90E-10
	S	2.0E-02	1.14E-09	8.53E-10	4.53E-10	3.05E-10	2.18E-10	1.76E-10	2.03E-10
Hf-174	F	2.0E-02	7.73E-05	7.20E-05	4.82E-05	3.64E-05	3.13E-05	3.06E-05	3.20E-05
	M	2.0E-02	2.86E-05	2.61E-05	1.86E-05	1.36E-05	1.27E-05	1.27E-05	1.31E-05
	S	2.0E-02	1.66E-05	1.37E-05	9.14E-06	6.03E-06	5.15E-06	4.99E-06	5.30E-06
Hf-175	F	2.0E-02	5.31E-09	3.93E-09	2.03E-09	1.28E-09	8.22E-10	7.01E-10	8.25E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	2.0E-02	5.64E-09	4.39E-09	2.56E-09	1.75E-09	1.40E-09	1.15E-09	1.29E-09
	S	2.0E-02	6.38E-09	5.06E-09	3.02E-09	2.08E-09	1.71E-09	1.40E-09	1.55E-09
Hf-177m	F	2.0E-02	3.95E-10	2.85E-10	1.34E-10	8.60E-11	5.30E-11	4.47E-11	5.36E-11
	M	2.0E-02	6.62E-10	4.72E-10	2.32E-10	1.56E-10	1.10E-10	9.07E-11	1.05E-10
	S	2.0E-02	6.91E-10	4.92E-10	2.43E-10	1.64E-10	1.16E-10	9.58E-11	1.11E-10
Hf-178m	F	2.0E-02	4.97E-07	4.66E-07	3.26E-07	2.57E-07	2.24E-07	2.21E-07	2.30E-07
	M	2.0E-02	2.05E-07	1.88E-07	1.37E-07	1.05E-07	9.90E-08	9.80E-08	1.01E-07
	S	2.0E-02	1.79E-07	1.61E-07	1.14E-07	8.06E-08	7.18E-08	6.79E-08	7.14E-08
Hf-179m	F	2.0E-02	9.75E-09	6.86E-09	3.44E-09	2.09E-09	1.27E-09	1.09E-09	1.30E-09
	M	2.0E-02	1.72E-08	1.30E-08	7.72E-09	5.53E-09	4.81E-09	3.83E-09	4.24E-09
	S	2.0E-02	1.91E-08	1.45E-08	8.75E-09	6.33E-09	5.60E-09	4.45E-09	4.90E-09
Hf-180m	F	2.0E-02	5.41E-10	4.13E-10	2.01E-10	1.25E-10	7.19E-11	5.92E-11	7.27E-11
	M	2.0E-02	9.24E-10	6.90E-10	3.59E-10	2.38E-10	1.67E-10	1.35E-10	1.57E-10
	S	2.0E-02	9.67E-10	7.21E-10	3.76E-10	2.51E-10	1.78E-10	1.43E-10	1.67E-10
Hf-181	F	2.0E-02	1.34E-08	9.55E-09	4.80E-09	2.79E-09	1.66E-09	1.43E-09	1.73E-09
	M	2.0E-02	2.17E-08	1.65E-08	9.86E-09	7.08E-09	6.26E-09	4.98E-09	5.49E-09
	S	2.0E-02	2.45E-08	1.88E-08	1.14E-08	8.31E-09	7.48E-09	5.94E-09	6.52E-09
Hf-182	F	2.0E-02	6.20E-07	5.91E-07	4.23E-07	3.41E-07	3.00E-07	2.94E-07	3.04E-07
	M	2.0E-02	2.25E-07	2.12E-07	1.61E-07	1.26E-07	1.22E-07	1.21E-07	1.24E-07
	S	2.0E-02	1.52E-07	1.37E-07	1.00E-07	7.18E-08	6.56E-08	6.40E-08	6.65E-08
Hf-182m	F	2.0E-02	2.03E-10	1.46E-10	6.91E-11	4.37E-11	2.69E-11	2.26E-11	2.71E-11
	M	2.0E-02	3.49E-10	2.48E-10	1.25E-10	8.38E-11	6.08E-11	4.98E-11	5.74E-11
	S	2.0E-02	3.66E-10	2.60E-10	1.31E-10	8.87E-11	6.50E-11	5.31E-11	6.11E-11
Hf-183	F	2.0E-02	2.57E-10	1.76E-10	8.07E-11	4.98E-11	2.90E-11	2.44E-11	2.99E-11
	M	2.0E-02	4.44E-10	3.06E-10	1.51E-10	1.01E-10	7.21E-11	5.89E-11	6.83E-11
	S	2.0E-02	4.66E-10	3.22E-10	1.60E-10	1.07E-10	7.74E-11	6.31E-11	7.30E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Hf-184	F	2.0E-02	1.38E-09	9.54E-10	4.31E-10	2.65E-10	1.43E-10	1.20E-10	1.50E-10
	M	2.0E-02	2.56E-09	1.79E-09	8.83E-10	5.84E-10	3.99E-10	3.26E-10	3.82E-10
	S	2.0E-02	2.69E-09	1.88E-09	9.33E-10	6.19E-10	4.28E-10	3.49E-10	4.08E-10
Tantalum									
Ta-172	F	1.0E-02	1.90E-10	1.35E-10	6.40E-11	3.96E-11	2.40E-11	1.98E-11	2.41E-11
	M	1.0E-02	2.91E-10	2.03E-10	9.82E-11	6.30E-11	4.17E-11	3.43E-11	4.07E-11
	S	1.0E-02	3.04E-10	2.12E-10	1.03E-10	6.63E-11	4.42E-11	3.64E-11	4.30E-11
Ta-173	F	1.0E-02	3.17E-10	2.34E-10	1.12E-10	6.93E-11	3.96E-11	3.25E-11	4.02E-11
	M	1.0E-02	5.50E-10	3.98E-10	2.04E-10	1.34E-10	9.25E-11	7.51E-11	8.79E-11
	S	1.0E-02	5.77E-10	4.18E-10	2.15E-10	1.42E-10	9.89E-11	8.03E-11	9.37E-11
Ta-174	F	1.0E-02	2.29E-10	1.59E-10	7.40E-11	4.59E-11	2.72E-11	2.27E-11	2.77E-11
	M	1.0E-02	3.80E-10	2.61E-10	1.27E-10	8.24E-11	5.61E-11	4.61E-11	5.42E-11
	S	1.0E-02	3.96E-10	2.72E-10	1.33E-10	8.64E-11	5.93E-11	4.87E-11	5.71E-11
Ta-175	F	1.0E-02	7.11E-10	5.66E-10	2.87E-10	1.77E-10	1.02E-10	8.30E-11	1.02E-10
	M	1.0E-02	1.05E-09	8.12E-10	4.23E-10	2.73E-10	1.77E-10	1.42E-10	1.69E-10
	S	1.0E-02	1.09E-09	8.44E-10	4.41E-10	2.86E-10	1.87E-10	1.51E-10	1.79E-10
Ta-176	F	1.0E-02	9.86E-10	8.00E-10	4.10E-10	2.52E-10	1.46E-10	1.18E-10	1.45E-10
	M	1.0E-02	1.41E-09	1.11E-09	5.83E-10	3.76E-10	2.42E-10	1.94E-10	2.31E-10
	S	1.0E-02	1.46E-09	1.15E-09	6.02E-10	3.90E-10	2.53E-10	2.03E-10	2.41E-10
Ta-177	F	1.0E-02	3.37E-10	2.40E-10	1.12E-10	6.90E-11	3.81E-11	3.19E-11	3.96E-11
	M	1.0E-02	6.59E-10	4.77E-10	2.54E-10	1.55E-10	1.21E-10	9.71E-11	1.12E-10
	S	1.0E-02	6.98E-10	5.06E-10	2.72E-10	1.68E-10	1.33E-10	1.06E-10	1.22E-10
Ta-178m	F	1.0E-02	3.09E-10	2.35E-10	1.15E-10	7.17E-11	4.24E-11	3.49E-11	4.26E-11
	M	1.0E-02	5.07E-10	3.77E-10	1.94E-10	1.29E-10	9.03E-11	7.29E-11	8.50E-11
	S	1.0E-02	5.28E-10	3.92E-10	2.03E-10	1.35E-10	9.56E-11	7.71E-11	8.96E-11
Ta-179	F	1.0E-02	8.08E-10	6.15E-10	3.05E-10	1.92E-10	1.20E-10	1.00E-10	1.20E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	1.0E-02	1.08E-09	8.62E-10	4.87E-10	3.09E-10	2.24E-10	1.89E-10	2.16E-10
	S	1.0E-02	2.15E-09	1.88E-09	1.17E-09	7.40E-10	5.57E-10	4.90E-10	5.46E-10
Ta-180	F	1.0E-02	1.58E-10	1.08E-10	4.77E-11	2.96E-11	1.60E-11	1.36E-11	1.70E-11
	M	1.0E-02	3.21E-10	2.23E-10	1.12E-10	7.64E-11	4.90E-11	4.53E-11	5.18E-11
	S	1.0E-02	3.39E-10	2.36E-10	1.20E-10	8.16E-11	5.33E-11	4.26E-11	5.05E-11
Ta-182	F	1.0E-02	1.50E-08	1.13E-08	5.72E-09	3.64E-09	2.32E-09	2.00E-09	2.35E-09
	M	1.0E-02	3.22E-08	2.54E-08	1.54E-08	1.09E-08	9.45E-09	7.62E-09	8.39E-09
	S	1.0E-02	4.19E-08	3.39E-08	2.08E-08	1.47E-08	1.27E-08	1.03E-08	1.14E-08
Ta-182m	F	1.0E-02	1.05E-10	7.17E-11	3.21E-11	2.16E-11	1.40E-11	1.22E-11	1.43E-11
	M	1.0E-02	1.65E-10	1.13E-10	5.22E-11	3.60E-11	2.50E-11	2.14E-11	2.47E-11
	S	1.0E-02	1.72E-10	1.18E-10	5.48E-11	3.78E-11	2.65E-11	2.26E-11	2.60E-11
Ta-183	F	1.0E-02	4.54E-09	3.02E-09	1.37E-09	8.15E-10	4.38E-10	3.69E-10	4.65E-10
	M	1.0E-02	1.07E-08	7.65E-09	4.27E-09	3.02E-09	2.52E-09	2.01E-09	2.25E-09
	S	1.0E-02	1.15E-08	8.30E-09	4.67E-09	3.33E-09	2.81E-09	2.24E-09	2.50E-09
Ta-184	F	1.0E-02	1.82E-09	1.31E-09	6.09E-10	3.74E-10	2.06E-10	1.71E-10	2.13E-10
	M	1.0E-02	3.20E-09	2.29E-09	1.14E-09	7.46E-10	5.01E-10	4.07E-10	4.80E-10
	S	1.0E-02	3.36E-09	2.40E-09	1.19E-09	7.88E-10	5.35E-10	4.34E-10	5.10E-10
Ta-185	F	1.0E-02	2.22E-10	1.41E-10	6.11E-11	3.88E-11	2.35E-11	2.02E-11	2.44E-11
	M	1.0E-02	3.96E-10	2.57E-10	1.20E-10	7.97E-11	5.60E-11	4.68E-11	5.45E-11
	S	1.0E-02	4.17E-10	2.71E-10	1.27E-10	8.46E-11	5.99E-11	5.00E-11	5.80E-11
Ta-186	F	1.0E-02	1.15E-10	7.78E-11	3.54E-11	2.26E-11	1.40E-11	1.20E-11	1.43E-11
	M	1.0E-02	1.60E-10	1.08E-10	4.92E-11	3.19E-11	2.05E-11	1.75E-11	2.07E-11
	S	1.0E-02	1.65E-10	1.11E-10	5.08E-11	3.29E-11	2.12E-11	1.81E-11	2.14E-11
Tungsten									
W-177	F	6.0E-01	2.02E-10	1.62E-10	8.16E-11	5.04E-11	2.99E-11	2.43E-11	2.96E-11
	M	6.0E-01	2.93E-10	2.29E-10	1.20E-10	7.74E-11	5.27E-11	4.24E-11	4.99E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	6.0E-01	3.03E-10	2.37E-10	1.24E-10	8.05E-11	5.52E-11	4.45E-11	5.22E-11
W-178	F	6.0E-01	8.22E-10	6.18E-10	2.90E-10	1.79E-10	9.88E-11	8.20E-11	1.02E-10
	M	6.0E-01	3.12E-09	2.42E-09	1.42E-09	1.02E-09	8.89E-10	7.07E-10	7.82E-10
	S	6.0E-01	3.63E-09	2.82E-09	1.68E-09	1.21E-09	1.06E-09	8.42E-10	9.29E-10
W-179	F	6.0E-01	9.37E-12	6.57E-12	3.11E-12	1.87E-12	1.10E-12	8.86E-13	1.10E-12
	M	6.0E-01	1.31E-11	8.89E-12	4.22E-12	2.56E-12	1.57E-12	1.27E-12	1.56E-12
	S	6.0E-01	1.36E-11	9.19E-12	4.37E-12	2.65E-12	1.63E-12	1.32E-12	1.62E-12
W-181	F	6.0E-01	2.86E-10	2.15E-10	1.03E-10	6.36E-11	3.56E-11	2.94E-11	3.64E-11
	M	6.0E-01	1.05E-09	8.24E-10	4.59E-10	2.96E-10	2.16E-10	1.80E-10	2.06E-10
	S	6.0E-01	1.54E-09	1.25E-09	7.19E-10	4.61E-10	3.40E-10	2.86E-10	3.25E-10
W-185	F	6.0E-01	1.43E-09	1.01E-09	4.44E-10	2.67E-10	1.40E-10	1.16E-10	1.48E-10
	M	6.0E-01	1.19E-08	9.39E-09	5.64E-09	4.11E-09	3.72E-09	2.96E-09	3.24E-09
	S	6.0E-01	1.54E-08	1.23E-08	7.44E-09	5.38E-09	4.84E-09	3.87E-09	4.24E-09
W-187	F	6.0E-01	1.92E-09	1.43E-09	6.54E-10	4.03E-10	2.20E-10	1.82E-10	2.28E-10
	M	6.0E-01	2.87E-09	2.22E-09	1.11E-09	7.44E-10	4.71E-10	3.79E-10	4.53E-10
	S	6.0E-01	2.98E-09	2.31E-09	1.16E-09	7.83E-10	5.06E-10	4.07E-10	4.83E-10
W-188	F	6.0E-01	7.09E-09	4.97E-09	2.19E-09	1.31E-09	6.83E-10	5.67E-10	7.25E-10
	M	6.0E-01	4.96E-08	3.99E-08	2.31E-08	1.59E-08	1.31E-08	1.11E-08	1.22E-08
	S	6.0E-01	6.74E-08	5.51E-08	3.24E-08	2.21E-08	1.82E-08	1.56E-08	1.72E-08
W-190	F	6.0E-01	3.47E-10	2.34E-10	1.06E-10	6.80E-11	4.24E-11	3.60E-11	4.31E-11
	M	6.0E-01	5.72E-10	3.85E-10	1.81E-10	1.20E-10	8.35E-11	6.96E-11	8.12E-11
	S	6.0E-01	5.97E-10	4.02E-10	1.89E-10	1.26E-10	8.80E-11	7.33E-11	8.54E-11
Rhenium									
Re-178	F	1.0E+00	1.10E-10	7.71E-11	3.58E-11	2.19E-11	1.37E-11	1.13E-11	1.37E-11
	M	1.0E+00	1.38E-10	9.46E-11	4.45E-11	2.86E-11	1.86E-11	1.56E-11	1.85E-11
	S	1.0E+00	1.41E-10	9.66E-11	4.55E-11	2.94E-11	1.92E-11	1.61E-11	1.90E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Re-179	F	1.0E+00	6.71E-11	5.02E-11	2.43E-11	1.47E-11	9.16E-12	7.41E-12	9.01E-12
	M	1.0E+00	8.68E-11	6.30E-11	3.10E-11	1.99E-11	1.32E-11	1.08E-11	1.28E-11
	S	1.0E+00	8.90E-11	6.45E-11	3.17E-11	2.05E-11	1.36E-11	1.12E-11	1.32E-11
Re-181	F	1.0E+00	2.00E-09	1.47E-09	6.85E-10	3.89E-10	2.37E-10	1.87E-10	2.33E-10
	M	1.0E+00	2.10E-09	1.53E-09	7.58E-10	4.73E-10	3.22E-10	2.56E-10	3.05E-10
	S	1.0E+00	2.11E-09	1.54E-09	7.67E-10	4.83E-10	3.32E-10	2.64E-10	3.14E-10
Re-182	F	1.0E+00	6.46E-09	4.65E-09	2.20E-09	1.29E-09	7.89E-10	6.34E-10	7.82E-10
	M	1.0E+00	8.54E-09	6.22E-09	3.30E-09	2.20E-09	1.48E-09	1.18E-09	1.39E-09
	S	1.0E+00	8.80E-09	6.42E-09	3.44E-09	2.31E-09	1.60E-09	1.27E-09	1.48E-09
Re-182m	F	1.0E+00	1.38E-09	1.06E-09	5.19E-10	3.00E-10	1.83E-10	1.45E-10	1.80E-10
	M	1.0E+00	1.53E-09	1.17E-09	6.06E-10	3.83E-10	2.65E-10	2.10E-10	2.48E-10
	S	1.0E+00	1.55E-09	1.19E-09	6.16E-10	3.92E-10	2.74E-10	2.18E-10	2.56E-10
Re-183	F	1.0E+00	4.52E-09	2.86E-09	1.23E-09	7.07E-10	4.33E-10	3.47E-10	4.35E-10
	M	1.0E+00	1.39E-08	1.01E-08	5.83E-09	4.04E-09	3.47E-09	2.80E-09	3.11E-09
	S	1.0E+00	1.69E-08	1.25E-08	7.35E-09	5.10E-09	4.40E-09	3.56E-09	3.94E-09
Re-184	F	1.0E+00	4.17E-09	2.98E-09	1.44E-09	8.74E-10	5.43E-10	4.44E-10	5.39E-10
	M	1.0E+00	9.09E-09	6.82E-09	3.99E-09	2.80E-09	2.38E-09	1.90E-09	2.11E-09
	S	1.0E+00	1.06E-08	8.08E-09	4.81E-09	3.39E-09	2.90E-09	2.32E-09	2.57E-09
Re-184m	F	1.0E+00	6.59E-09	4.61E-09	2.04E-09	1.19E-09	7.33E-10	5.95E-10	7.36E-10
	M	1.0E+00	2.92E-08	2.23E-08	1.34E-08	9.32E-09	8.10E-09	6.54E-09	7.22E-09
	S	1.0E+00	4.26E-08	3.42E-08	2.10E-08	1.45E-08	1.24E-08	1.02E-08	1.12E-08
Re-186	F	1.0E+00	7.04E-09	4.54E-09	1.94E-09	1.06E-09	6.40E-10	5.00E-10	6.41E-10
	M	1.0E+00	8.32E-09	5.52E-09	2.71E-09	1.76E-09	1.34E-09	1.06E-09	1.23E-09
	S	1.0E+00	8.49E-09	5.65E-09	2.81E-09	1.85E-09	1.44E-09	1.14E-09	1.31E-09
Re-186m	F	1.0E+00	1.15E-08	6.97E-09	2.93E-09	1.67E-09	1.03E-09	8.31E-10	1.04E-09
	M	1.0E+00	5.81E-08	4.51E-08	2.63E-08	1.74E-08	1.41E-08	1.20E-08	1.33E-08

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	1.0E+00	1.76E-07	1.62E-07	1.08E-07	7.26E-08	6.30E-08	6.09E-08	6.43E-08
Re-187	F	1.0E+00	2.43E-11	1.51E-11	6.36E-12	3.57E-12	2.17E-12	1.73E-12	2.19E-12
	M	1.0E+00	5.28E-11	3.78E-11	1.89E-11	1.09E-11	6.99E-12	5.89E-12	7.06E-12
	S	1.0E+00	1.55E-10	1.37E-10	8.47E-11	5.20E-11	4.09E-11	3.93E-11	4.26E-11
Re-188	F	1.0E+00	6.55E-09	4.43E-09	1.91E-09	1.00E-09	6.08E-10	4.61E-10	5.99E-10
	M	1.0E+00	6.04E-09	3.98E-09	1.78E-09	1.04E-09	6.79E-10	5.38E-10	6.61E-10
	S	1.0E+00	5.98E-09	3.93E-09	1.76E-09	1.05E-09	6.87E-10	5.47E-10	6.68E-10
Re-188m	F	1.0E+00	1.36E-10	9.17E-11	4.01E-11	2.15E-11	1.35E-11	1.03E-11	1.31E-11
	M	1.0E+00	1.48E-10	9.82E-11	4.50E-11	2.74E-11	1.67E-11	1.48E-11	1.77E-11
	S	1.0E+00	1.48E-10	9.79E-11	4.51E-11	2.77E-11	1.70E-11	1.36E-11	1.68E-11
Re-189	F	1.0E+00	3.55E-09	2.39E-09	1.03E-09	5.47E-10	3.32E-10	2.54E-10	3.28E-10
	M	1.0E+00	3.67E-09	2.46E-09	1.16E-09	7.23E-10	5.24E-10	4.12E-10	4.88E-10
	S	1.0E+00	3.69E-09	2.46E-09	1.17E-09	7.44E-10	5.47E-10	4.30E-10	5.06E-10
Re-190m	F	1.0E+00	1.62E-09	1.12E-09	4.97E-10	3.32E-10	2.03E-10	1.56E-10	1.92E-10
	M	1.0E+00	1.92E-09	1.30E-09	6.12E-10	3.73E-10	2.49E-10	1.98E-10	2.39E-10
	S	1.0E+00	1.92E-09	1.29E-09	6.11E-10	3.77E-10	2.54E-10	2.03E-10	2.44E-10
Osmium									
Os-180	F	2.0E-02	7.53E-11	5.60E-11	2.73E-11	1.70E-11	1.05E-11	8.59E-12	1.04E-11
	M	2.0E-02	1.14E-10	8.29E-11	4.09E-11	2.64E-11	1.77E-11	1.44E-11	1.70E-11
	S	2.0E-02	1.18E-10	8.59E-11	4.24E-11	2.74E-11	1.85E-11	1.50E-11	1.77E-11
Os-181	F	2.0E-02	3.04E-10	2.39E-10	1.20E-10	7.32E-11	4.25E-11	3.44E-11	4.24E-11
	M	2.0E-02	4.53E-10	3.46E-10	1.78E-10	1.15E-10	7.54E-11	6.06E-11	7.20E-11
	S	2.0E-02	4.70E-10	3.58E-10	1.85E-10	1.19E-10	7.92E-11	6.36E-11	7.54E-11
Os-182	F	2.0E-02	1.65E-09	1.27E-09	6.26E-10	3.89E-10	2.22E-10	1.81E-10	2.23E-10
	M	2.0E-02	2.65E-09	1.99E-09	1.04E-09	6.87E-10	4.71E-10	3.78E-10	4.43E-10
	S	2.0E-02	2.76E-09	2.07E-09	1.09E-09	7.22E-10	5.00E-10	4.01E-10	4.69E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Os-183	F	2.0E-02	7.07E-10	5.45E-10	2.66E-10	1.64E-10	9.33E-11	7.61E-11	9.41E-11
	M	2.0E-02	1.19E-09	8.95E-10	4.70E-10	3.09E-10	2.16E-10	1.74E-10	2.03E-10
	S	2.0E-02	1.26E-09	9.46E-10	5.01E-10	3.31E-10	2.34E-10	1.89E-10	2.20E-10
Os-183m	F	2.0E-02	6.78E-10	5.45E-10	2.77E-10	1.70E-10	9.82E-11	7.94E-11	9.77E-11
	M	2.0E-02	9.81E-10	7.68E-10	4.04E-10	2.61E-10	1.73E-10	1.39E-10	1.64E-10
	S	2.0E-02	1.03E-09	8.02E-10	4.24E-10	2.75E-10	1.85E-10	1.48E-10	1.74E-10
Os-185	F	2.0E-02	6.98E-09	5.66E-09	3.03E-09	1.84E-09	1.20E-09	1.05E-09	1.22E-09
	M	2.0E-02	6.39E-09	5.29E-09	2.85E-09	1.92E-09	1.48E-09	1.24E-09	1.39E-09
	S	2.0E-02	6.77E-09	5.67E-09	3.49E-09	2.36E-09	1.88E-09	1.55E-09	1.73E-09
Os-186	F	2.0E-02	5.62E-06	4.45E-06	2.25E-06	1.38E-06	8.50E-07	7.25E-07	8.65E-07
	M	2.0E-02	6.43E-06	5.03E-06	2.97E-06	1.85E-06	1.39E-06	1.22E-06	1.37E-06
	S	2.0E-02	1.52E-05	1.36E-05	8.71E-06	5.44E-06	4.39E-06	4.17E-06	4.51E-06
Os-189m	F	2.0E-02	3.67E-11	2.67E-11	1.13E-11	5.94E-12	3.36E-12	2.48E-12	3.32E-12
	M	2.0E-02	6.29E-11	4.00E-11	1.75E-11	1.06E-11	5.76E-12	4.83E-12	6.10E-12
	S	2.0E-02	6.58E-11	4.18E-11	1.83E-11	1.12E-11	6.07E-12	5.10E-12	6.42E-12
Os-191	F	2.0E-02	2.81E-09	1.92E-09	8.70E-10	5.40E-10	3.05E-10	2.54E-10	3.15E-10
	M	2.0E-02	8.24E-09	5.99E-09	3.54E-09	2.48E-09	2.12E-09	1.73E-09	1.91E-09
	S	2.0E-02	9.29E-09	6.78E-09	4.06E-09	2.85E-09	2.47E-09	2.01E-09	2.21E-09
Os-191m	F	2.0E-02	3.05E-10	2.06E-10	9.01E-11	5.52E-11	2.97E-11	2.49E-11	3.13E-11
	M	2.0E-02	7.99E-10	5.62E-10	3.17E-10	2.19E-10	1.80E-10	1.47E-10	1.64E-10
	S	2.0E-02	8.74E-10	6.17E-10	3.51E-10	2.44E-10	2.03E-10	1.65E-10	1.84E-10
Os-193	F	2.0E-02	1.89E-09	1.24E-09	5.29E-10	3.23E-10	1.89E-10	1.59E-10	1.97E-10
	M	2.0E-02	3.88E-09	2.65E-09	1.30E-09	8.73E-10	6.19E-10	5.01E-10	5.84E-10
	S	2.0E-02	4.11E-09	2.81E-09	1.39E-09	9.37E-10	6.73E-10	5.44E-10	6.32E-10
Os-194	F	2.0E-02	8.77E-08	6.87E-08	3.43E-08	2.12E-08	1.29E-08	1.10E-08	1.31E-08
	M	2.0E-02	9.97E-08	8.32E-08	4.86E-08	3.15E-08	2.41E-08	2.16E-08	2.39E-08

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	2.62E-07	2.44E-07	1.61E-07	1.06E-07	8.79E-08	8.54E-08	9.09E-08
Os-196	F	2.0E-02	3.11E-10	1.94E-10	8.34E-11	5.24E-11	3.14E-11	2.68E-11	3.27E-11
	M	2.0E-02	5.20E-10	3.28E-10	1.48E-10	9.54E-11	6.31E-11	5.33E-11	6.31E-11
	S	2.0E-02	5.43E-10	3.43E-10	1.55E-10	1.00E-10	6.66E-11	5.62E-11	6.64E-11
Iridium									
Ir-182	F	2.0E-02	1.53E-10	1.05E-10	4.84E-11	3.03E-11	1.84E-11	1.54E-11	1.87E-11
	M	2.0E-02	2.24E-10	1.52E-10	7.14E-11	4.58E-11	2.97E-11	2.48E-11	2.95E-11
	S	2.0E-02	2.32E-10	1.57E-10	7.40E-11	4.75E-11	3.09E-11	2.58E-11	3.07E-11
Ir-183	F	2.0E-02	1.90E-10	1.48E-10	7.33E-11	4.49E-11	2.66E-11	2.16E-11	2.64E-11
	M	2.0E-02	2.84E-10	2.14E-10	1.09E-10	7.03E-11	4.70E-11	3.79E-11	4.48E-11
	S	2.0E-02	2.95E-10	2.22E-10	1.14E-10	7.35E-11	4.95E-11	3.99E-11	4.71E-11
Ir-184	F	2.0E-02	6.22E-10	4.75E-10	2.33E-10	1.43E-10	8.23E-11	6.71E-11	8.28E-11
	M	2.0E-02	9.44E-10	7.01E-10	3.53E-10	2.27E-10	1.48E-10	1.20E-10	1.43E-10
	S	2.0E-02	9.79E-10	7.26E-10	3.66E-10	2.36E-10	1.56E-10	1.26E-10	1.49E-10
Ir-185	F	2.0E-02	1.00E-09	7.67E-10	3.74E-10	2.30E-10	1.30E-10	1.06E-10	1.31E-10
	M	2.0E-02	1.62E-09	1.20E-09	6.19E-10	4.04E-10	2.73E-10	2.20E-10	2.60E-10
	S	2.0E-02	1.69E-09	1.26E-09	6.51E-10	4.26E-10	2.91E-10	2.35E-10	2.76E-10
Ir-186	F	2.0E-02	1.67E-09	1.30E-09	6.47E-10	4.00E-10	2.28E-10	1.86E-10	2.29E-10
	M	2.0E-02	2.51E-09	1.92E-09	9.84E-10	6.42E-10	4.22E-10	3.39E-10	4.02E-10
	S	2.0E-02	2.61E-09	1.98E-09	1.02E-09	6.69E-10	4.44E-10	3.56E-10	4.21E-10
Ir-186m	F	2.0E-02	2.55E-10	2.01E-10	1.01E-10	6.18E-11	3.60E-11	2.92E-11	3.59E-11
	M	2.0E-02	3.68E-10	2.82E-10	1.44E-10	9.21E-11	5.98E-11	4.80E-11	5.73E-11
	S	2.0E-02	3.81E-10	2.91E-10	1.49E-10	9.55E-11	6.24E-11	5.01E-11	5.97E-11
Ir-187	F	2.0E-02	3.43E-10	2.62E-10	1.27E-10	7.70E-11	4.32E-11	3.49E-11	4.36E-11
	M	2.0E-02	5.57E-10	4.13E-10	2.11E-10	1.36E-10	9.00E-11	7.27E-11	8.62E-11
	S	2.0E-02	5.81E-10	4.30E-10	2.21E-10	1.42E-10	9.53E-11	7.70E-11	9.10E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Ir-188	F	2.0E-02	2.43E-09	1.96E-09	1.01E-09	6.33E-10	3.70E-10	3.02E-10	3.68E-10
	M	2.0E-02	3.24E-09	2.57E-09	1.36E-09	8.87E-10	5.79E-10	4.63E-10	5.49E-10
	S	2.0E-02	3.33E-09	2.64E-09	1.40E-09	9.17E-10	6.04E-10	4.82E-10	5.71E-10
Ir-189	F	2.0E-02	1.14E-09	8.16E-10	3.79E-10	2.33E-10	1.33E-10	1.09E-10	1.35E-10
	M	2.0E-02	2.56E-09	1.85E-09	1.06E-09	7.33E-10	6.02E-10	4.92E-10	5.49E-10
	S	2.0E-02	2.83E-09	2.05E-09	1.20E-09	8.28E-10	6.89E-10	5.63E-10	6.26E-10
Ir-190	F	2.0E-02	5.30E-09	4.13E-09	2.12E-09	1.36E-09	8.29E-10	6.95E-10	8.30E-10
	M	2.0E-02	7.42E-09	5.82E-09	3.27E-09	2.24E-09	1.53E-09	1.22E-09	1.42E-09
	S	2.0E-02	7.84E-09	6.15E-09	3.50E-09	2.40E-09	1.69E-09	1.35E-09	1.56E-09
Ir-190m	F	2.0E-02	2.73E-11	2.03E-11	1.00E-11	6.28E-12	3.76E-12	3.14E-12	3.79E-12
	M	2.0E-02	3.92E-11	2.90E-11	1.54E-11	1.03E-11	6.79E-12	5.44E-12	6.42E-12
	S	2.0E-02	4.13E-11	3.05E-11	1.64E-11	1.10E-11	7.46E-12	5.95E-12	6.98E-12
Ir-190n	F	2.0E-02	4.08E-10	3.25E-10	1.63E-10	9.94E-11	5.76E-11	4.65E-11	5.73E-11
	M	2.0E-02	5.98E-10	4.61E-10	2.37E-10	1.52E-10	9.98E-11	7.99E-11	9.51E-11
	S	2.0E-02	6.19E-10	4.76E-10	2.46E-10	1.58E-10	1.05E-10	8.36E-11	9.93E-11
Ir-192	F	2.0E-02	1.52E-08	1.14E-08	5.69E-09	3.32E-09	2.05E-09	1.76E-09	2.11E-09
	M	2.0E-02	2.34E-08	1.83E-08	1.08E-08	7.59E-09	6.44E-09	5.21E-09	5.77E-09
	S	2.0E-02	2.82E-08	2.25E-08	1.35E-08	9.49E-09	8.15E-09	6.62E-09	7.30E-09
Ir-192n	F	2.0E-02	4.47E-08	3.67E-08	1.96E-08	1.24E-08	7.92E-09	6.91E-09	8.05E-09
	M	2.0E-02	5.03E-08	4.24E-08	2.57E-08	1.75E-08	1.45E-08	1.22E-08	1.34E-08
	S	2.0E-02	1.52E-07	1.45E-07	1.00E-07	6.88E-08	6.08E-08	5.81E-08	6.12E-08
Ir-193m	F	2.0E-02	1.09E-09	8.09E-10	3.53E-10	2.17E-10	1.17E-10	9.86E-11	1.24E-10
	M	2.0E-02	4.63E-09	3.41E-09	2.05E-09	1.49E-09	1.34E-09	1.06E-09	1.17E-09
	S	2.0E-02	5.22E-09	3.85E-09	2.33E-09	1.70E-09	1.54E-09	1.23E-09	1.35E-09
Ir-194	F	2.0E-02	2.95E-09	1.92E-09	8.14E-10	4.96E-10	2.48E-10	2.06E-10	2.68E-10
	M	2.0E-02	5.29E-09	3.53E-09	1.61E-09	1.03E-09	6.29E-10	5.24E-10	6.34E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	5.55E-09	3.71E-09	1.71E-09	1.09E-09	6.72E-10	5.60E-10	6.75E-10
Ir-194m	F	2.0E-02	3.30E-08	2.66E-08	1.43E-08	9.39E-09	6.13E-09	5.38E-09	6.20E-09
	M	2.0E-02	3.68E-08	3.01E-08	1.83E-08	1.27E-08	1.04E-08	8.60E-09	9.52E-09
	S	2.0E-02	4.74E-08	4.00E-08	2.52E-08	1.74E-08	1.46E-08	1.20E-08	1.33E-08
Ir-195	F	2.0E-02	2.90E-10	1.89E-10	8.12E-11	5.09E-11	2.88E-11	2.46E-11	3.03E-11
	M	2.0E-02	5.42E-10	3.61E-10	1.72E-10	1.15E-10	8.16E-11	6.70E-11	7.80E-11
	S	2.0E-02	5.70E-10	3.80E-10	1.82E-10	1.22E-10	8.74E-11	7.17E-11	8.32E-11
Ir-195m	F	2.0E-02	4.42E-10	3.07E-10	1.38E-10	8.62E-11	4.83E-11	4.07E-11	5.03E-11
	M	2.0E-02	8.44E-10	5.91E-10	2.96E-10	2.01E-10	1.47E-10	1.19E-10	1.37E-10
	S	2.0E-02	8.89E-10	6.24E-10	3.15E-10	2.14E-10	1.58E-10	1.28E-10	1.47E-10
Ir-196m	F	2.0E-02	4.26E-10	3.23E-10	1.58E-10	9.79E-11	5.84E-11	4.79E-11	5.83E-11
	M	2.0E-02	6.58E-10	4.86E-10	2.44E-10	1.59E-10	1.08E-10	8.74E-11	1.03E-10
	S	2.0E-02	6.83E-10	5.04E-10	2.54E-10	1.66E-10	1.14E-10	9.18E-11	1.08E-10
Platinum									
Pt-184	F	2.0E-02	1.24E-10	9.17E-11	4.43E-11	2.78E-11	1.71E-11	1.42E-11	1.71E-11
	M	2.0E-02	1.90E-10	1.38E-10	6.82E-11	4.47E-11	3.03E-11	2.49E-11	2.92E-11
	S	2.0E-02	1.97E-10	1.43E-10	7.09E-11	4.65E-11	3.18E-11	2.61E-11	3.06E-11
Pt-186	F	2.0E-02	3.57E-10	2.85E-10	1.43E-10	8.76E-11	5.04E-11	4.07E-11	5.02E-11
	M	2.0E-02	5.15E-10	3.99E-10	2.05E-10	1.31E-10	8.48E-11	6.79E-11	8.11E-11
	S	2.0E-02	5.32E-10	4.11E-10	2.12E-10	1.36E-10	8.86E-11	7.10E-11	8.46E-11
Pt-187	F	2.0E-02	2.95E-10	2.20E-10	1.05E-10	6.48E-11	3.74E-11	3.07E-11	3.78E-11
	M	2.0E-02	4.93E-10	3.60E-10	1.82E-10	1.20E-10	8.26E-11	6.69E-11	7.84E-11
	S	2.0E-02	5.15E-10	3.75E-10	1.91E-10	1.26E-10	8.77E-11	7.09E-11	8.29E-11
Pt-188	F	2.0E-02	4.08E-09	3.05E-09	1.53E-09	9.78E-10	5.87E-10	4.94E-10	5.93E-10
	M	2.0E-02	8.37E-09	6.37E-09	3.75E-09	2.68E-09	2.28E-09	1.82E-09	2.02E-09
	S	2.0E-02	9.25E-09	7.07E-09	4.20E-09	3.01E-09	2.60E-09	2.06E-09	2.28E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Pt-189	F	2.0E-02	6.18E-10	4.63E-10	2.21E-10	1.35E-10	7.57E-11	6.20E-11	7.72E-11
	M	2.0E-02	1.12E-09	8.27E-10	4.31E-10	2.87E-10	2.05E-10	1.65E-10	1.92E-10
	S	2.0E-02	1.18E-09	8.71E-10	4.57E-10	3.05E-10	2.21E-10	1.78E-10	2.06E-10
Pt-190	F	2.0E-02	9.03E-07	6.56E-07	3.22E-07	2.02E-07	1.28E-07	1.08E-07	1.29E-07
	M	2.0E-02	6.97E-06	5.34E-06	3.26E-06	2.09E-06	1.66E-06	1.44E-06	1.59E-06
	S	2.0E-02	1.87E-05	1.65E-05	1.07E-05	6.73E-06	5.48E-06	5.17E-06	5.58E-06
Pt-191	F	2.0E-02	1.16E-09	8.54E-10	4.03E-10	2.48E-10	1.38E-10	1.13E-10	1.41E-10
	M	2.0E-02	2.27E-09	1.67E-09	8.92E-10	6.05E-10	4.12E-10	3.30E-10	3.86E-10
	S	2.0E-02	2.41E-09	1.77E-09	9.54E-10	6.50E-10	4.52E-10	3.62E-10	4.21E-10
Pt-193	F	2.0E-02	2.37E-10	1.65E-10	7.73E-11	4.78E-11	2.79E-11	2.35E-11	2.87E-11
	M	2.0E-02	7.00E-10	5.47E-10	2.88E-10	1.72E-10	1.14E-10	9.46E-11	1.12E-10
	S	2.0E-02	2.48E-09	2.29E-09	1.44E-09	8.99E-10	7.09E-10	6.69E-10	7.27E-10
Pt-193m	F	2.0E-02	1.57E-09	1.05E-09	4.51E-10	2.77E-10	1.45E-10	1.24E-10	1.57E-10
	M	2.0E-02	4.21E-09	3.05E-09	1.74E-09	1.27E-09	1.11E-09	8.72E-10	9.67E-10
	S	2.0E-02	4.60E-09	3.35E-09	1.92E-09	1.41E-09	1.25E-09	9.78E-10	1.08E-09
Pt-195m	F	2.0E-02	2.19E-09	1.48E-09	6.50E-10	3.98E-10	2.10E-10	1.78E-10	2.24E-10
	M	2.0E-02	5.28E-09	3.80E-09	2.13E-09	1.54E-09	1.32E-09	1.04E-09	1.16E-09
	S	2.0E-02	5.74E-09	4.15E-09	2.35E-09	1.71E-09	1.48E-09	1.16E-09	1.29E-09
Pt-197	F	2.0E-02	1.18E-09	7.81E-10	3.33E-10	2.05E-10	1.06E-10	9.04E-11	1.15E-10
	M	2.0E-02	2.57E-09	1.77E-09	8.18E-10	5.61E-10	4.30E-10	3.45E-10	3.97E-10
	S	2.0E-02	2.46E-09	1.88E-09	8.81E-10	6.07E-10	4.70E-10	3.76E-10	4.31E-10
Pt-197m	F	2.0E-02	2.78E-10	1.83E-10	7.93E-11	4.96E-11	2.80E-11	2.39E-11	2.95E-11
	M	2.0E-02	5.53E-10	3.74E-10	1.83E-10	1.24E-10	9.07E-11	7.43E-11	8.57E-11
	S	2.0E-02	5.83E-10	3.95E-10	1.95E-10	1.32E-10	9.77E-11	8.00E-11	9.20E-11
Pt-199	F	2.0E-02	1.32E-10	8.52E-11	3.72E-11	2.37E-11	1.44E-11	1.23E-11	1.49E-11
	M	2.0E-02	2.29E-10	1.50E-10	7.01E-11	4.68E-11	3.28E-11	2.74E-11	3.18E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	2.40E-10	1.57E-10	7.38E-11	4.95E-11	3.50E-11	2.91E-11	3.38E-11
Pt-200	F	2.0E-02	2.55E-09	1.66E-09	8.22E-10	5.04E-10	2.57E-10	2.16E-10	2.73E-10
	M	2.0E-02	4.93E-09	3.32E-09	1.58E-09	1.04E-09	6.85E-10	5.61E-10	6.65E-10
	S	2.0E-02	5.19E-09	3.51E-09	1.68E-09	1.10E-09	7.38E-10	6.04E-10	7.14E-10
Pt-202	F	2.0E-02	1.07E-08	7.01E-09	3.00E-09	1.82E-09	9.14E-10	7.63E-10	9.87E-10
	M	2.0E-02	1.90E-08	1.28E-08	6.01E-09	3.86E-09	2.44E-09	2.04E-09	2.44E-09
	S	2.0E-02	1.99E-08	1.35E-08	6.36E-09	4.10E-09	2.62E-09	2.19E-09	2.61E-09
Gold									
Au-186	F	2.0E-01	1.26E-10	8.96E-11	4.21E-11	2.62E-11	1.58E-11	1.32E-11	1.60E-11
	M	2.0E-01	1.76E-10	1.23E-10	5.85E-11	3.72E-11	2.36E-11	1.97E-11	2.35E-11
	S	2.0E-01	1.82E-10	1.27E-10	6.04E-11	3.84E-11	2.45E-11	2.04E-11	2.43E-11
Au-190	F	2.0E-01	1.46E-10	1.15E-10	5.76E-11	3.51E-11	2.08E-11	1.68E-11	2.06E-11
	M	2.0E-01	1.97E-10	1.50E-10	7.51E-11	4.67E-11	2.88E-11	2.32E-11	2.81E-11
	S	2.0E-01	2.02E-10	1.54E-10	7.70E-11	4.79E-11	2.97E-11	2.39E-11	2.90E-11
Au-191	F	2.0E-01	2.41E-10	1.88E-10	9.19E-11	5.63E-11	3.25E-11	2.65E-11	3.27E-11
	M	2.0E-01	4.18E-10	3.18E-10	1.65E-10	1.08E-10	7.58E-11	6.09E-11	7.11E-11
	S	2.0E-01	4.38E-10	3.33E-10	1.73E-10	1.14E-10	8.09E-11	6.49E-11	7.56E-11
Au-192	F	2.0E-01	5.48E-10	4.55E-10	2.34E-10	1.43E-10	8.26E-11	6.64E-11	8.19E-11
	M	2.0E-01	7.26E-10	5.89E-10	3.03E-10	1.90E-10	1.15E-10	9.19E-11	1.12E-10
	S	2.0E-01	7.46E-10	6.04E-10	3.10E-10	1.95E-10	1.18E-10	9.47E-11	1.15E-10
Au-193	F	2.0E-01	3.52E-10	2.68E-10	1.25E-10	7.63E-11	4.19E-11	3.45E-11	4.32E-11
	M	2.0E-01	6.80E-10	5.10E-10	2.60E-10	1.73E-10	1.22E-10	9.84E-11	1.15E-10
	S	2.0E-01	7.18E-10	5.38E-10	2.75E-10	1.84E-10	1.32E-10	1.06E-10	1.23E-10
Au-194	F	2.0E-01	1.12E-09	9.25E-10	4.75E-10	2.93E-10	1.70E-10	1.38E-10	1.69E-10
	M	2.0E-01	1.62E-09	1.32E-09	6.87E-10	4.41E-10	2.79E-10	2.24E-10	2.68E-10
	S	2.0E-01	1.68E-09	1.36E-09	7.12E-10	4.59E-10	2.92E-10	2.34E-10	2.79E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Au-195	F	2.0E-01	7.29E-10	5.42E-10	2.49E-10	1.51E-10	8.23E-11	6.74E-11	8.49E-11
	M	2.0E-01	5.35E-09	4.19E-09	2.44E-09	1.67E-09	1.39E-09	1.12E-09	1.25E-09
	S	2.0E-01	8.29E-09	6.77E-09	4.01E-09	2.68E-09	2.18E-09	1.79E-09	2.00E-09
Au-196	F	2.0E-01	9.62E-10	7.73E-10	3.88E-10	2.43E-10	1.40E-10	1.15E-10	1.40E-10
	M	2.0E-01	1.95E-09	1.54E-09	8.39E-10	5.63E-10	4.11E-10	3.28E-10	3.78E-10
	S	2.0E-01	2.09E-09	1.65E-09	9.04E-10	6.09E-10	4.50E-10	3.14E-10	3.75E-10
Au-196m	F	2.0E-01	1.19E-09	8.45E-10	3.72E-10	2.34E-10	1.28E-10	1.10E-10	1.36E-10
	M	2.0E-01	2.77E-09	2.01E-09	1.04E-09	7.21E-10	4.93E-10	3.91E-10	4.59E-10
	S	2.0E-01	2.95E-09	2.14E-09	1.12E-09	7.77E-10	5.41E-10	4.29E-10	5.00E-10
Au-198	F	2.0E-01	2.33E-09	1.69E-09	7.56E-10	4.70E-10	2.50E-10	2.09E-10	2.63E-10
	M	2.0E-01	5.00E-09	4.07E-09	1.89E-09	1.29E-09	9.69E-10	7.79E-10	8.97E-10
	S	2.0E-01	5.37E-09	4.36E-09	2.05E-09	1.41E-09	1.07E-09	8.57E-10	9.84E-10
Au-198m	F	2.0E-01	3.15E-09	2.29E-09	1.04E-09	6.51E-10	3.54E-10	2.99E-10	3.71E-10
	M	2.0E-01	9.30E-09	6.19E-09	3.45E-09	2.48E-09	2.09E-09	1.65E-09	1.85E-09
	S	2.0E-01	9.03E-09	6.78E-09	3.80E-09	2.74E-09	2.33E-09	1.84E-09	2.05E-09
Au-199	F	2.0E-01	1.15E-09	8.15E-10	3.56E-10	2.23E-10	1.18E-10	1.01E-10	1.27E-10
	M	2.0E-01	3.50E-09	2.60E-09	1.47E-09	1.07E-09	9.21E-10	7.26E-10	8.06E-10
	S	2.0E-01	3.84E-09	2.86E-09	1.63E-09	1.18E-09	1.03E-09	8.11E-10	8.99E-10
Au-200	F	2.0E-01	1.88E-10	1.20E-10	5.20E-11	3.27E-11	1.95E-11	1.65E-11	2.01E-11
	M	2.0E-01	3.19E-10	2.04E-10	9.25E-11	5.98E-11	3.96E-11	3.32E-11	3.93E-11
	S	2.0E-01	3.33E-10	2.13E-10	9.70E-11	6.28E-11	4.18E-11	3.50E-11	4.14E-11
Au-200m	F	2.0E-01	2.59E-09	2.02E-09	9.75E-10	6.04E-10	3.38E-10	2.77E-10	3.43E-10
	M	2.0E-01	4.56E-09	3.50E-09	1.78E-09	1.17E-09	7.90E-10	6.36E-10	7.48E-10
	S	2.0E-01	4.78E-09	3.66E-09	1.87E-09	1.23E-09	8.42E-10	6.76E-10	7.95E-10
Au-201	F	2.0E-01	8.98E-11	5.74E-11	2.48E-11	1.62E-11	1.01E-11	8.73E-12	1.04E-11
	M	2.0E-01	1.48E-10	9.55E-11	4.29E-11	2.87E-11	1.94E-11	1.65E-11	1.93E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-01	1.54E-10	9.97E-11	4.49E-11	3.00E-11	2.05E-11	1.74E-11	2.03E-11
Mercury									
Hg-190	F(i)	4.0E-02	7.78E-11	6.03E-11	3.00E-11	1.83E-11	1.08E-11	8.76E-12	1.08E-11
	M(i)	4.0E-02	1.10E-10	8.26E-11	4.12E-11	2.59E-11	1.64E-11	1.32E-11	1.59E-11
	S(i)	4.0E-02	1.14E-10	8.51E-11	4.24E-11	2.68E-11	1.70E-11	1.37E-11	1.65E-11
	F(j)	8.0E-01	7.52E-11	5.97E-11	2.97E-11	1.81E-11	1.07E-11	8.68E-12	1.06E-11
	M(j)	8.0E-01	1.06E-10	8.17E-11	4.08E-11	2.56E-11	1.62E-11	1.31E-11	1.58E-11
	S(j)	8.0E-01	1.09E-10	8.41E-11	4.20E-11	2.65E-11	1.68E-11	1.36E-11	1.64E-11
	V	4.0E-02	2.92E-10	2.36E-10	1.51E-10	1.12E-10	8.34E-11	7.65E-11	8.33E-11
Hg-191m	F(i)	4.0E-02	2.00E-10	1.55E-10	7.64E-11	4.67E-11	2.74E-11	2.24E-11	2.74E-11
	M(i)	4.0E-02	3.05E-10	2.30E-10	1.17E-10	7.52E-11	5.02E-11	4.05E-11	4.79E-11
	S(i)	4.0E-02	3.17E-10	2.39E-10	1.21E-10	7.84E-11	5.28E-11	4.25E-11	5.02E-11
	F(j)	8.0E-01	1.85E-10	1.51E-10	7.43E-11	4.54E-11	2.67E-11	2.18E-11	2.67E-11
	M(j)	8.0E-01	2.79E-10	2.23E-10	1.13E-10	7.31E-11	4.92E-11	3.96E-11	4.68E-11
	S(j)	8.0E-01	2.89E-10	2.31E-10	1.18E-10	7.62E-11	5.17E-11	4.16E-11	4.90E-11
	V	4.0E-02	1.19E-09	9.68E-10	6.24E-10	4.62E-10	3.46E-10	3.20E-10	3.47E-10
Hg-192	F(i)	4.0E-02	6.49E-10	5.18E-10	2.59E-10	1.59E-10	9.00E-11	7.29E-11	9.03E-11
	M(i)	4.0E-02	9.44E-10	7.31E-10	3.71E-10	2.37E-10	1.47E-10	1.19E-10	1.43E-10
	S(i)	4.0E-02	9.77E-10	7.55E-10	3.84E-10	2.46E-10	1.54E-10	1.24E-10	1.49E-10
	F(j)	8.0E-01	5.12E-10	4.71E-10	2.37E-10	1.44E-10	8.23E-11	6.65E-11	8.21E-11
	M(j)	8.0E-01	6.89E-10	6.50E-10	3.34E-10	2.12E-10	1.35E-10	1.08E-10	1.29E-10
	S(j)	8.0E-01	7.08E-10	6.70E-10	3.45E-10	2.20E-10	1.41E-10	1.13E-10	1.35E-10
	V	4.0E-02	3.74E-09	3.04E-09	1.96E-09	1.44E-09	1.08E-09	9.94E-10	1.08E-09
Hg-193	F(i)	4.0E-02	3.46E-10	2.70E-10	1.32E-10	8.03E-11	4.56E-11	3.70E-11	4.60E-11
	M(i)	4.0E-02	5.47E-10	4.14E-10	2.11E-10	1.36E-10	9.07E-11	7.28E-11	8.63E-11
	S(i)	4.0E-02	5.69E-10	4.30E-10	2.20E-10	1.43E-10	9.58E-11	7.68E-11	9.09E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	F[(j)]	8.0E-01	2.86E-10	2.51E-10	1.24E-10	7.46E-11	4.28E-11	3.46E-11	4.28E-11
	M[(j)]	8.0E-01	4.36E-10	3.81E-10	1.97E-10	1.27E-10	8.61E-11	6.89E-11	8.12E-11
	S[(j)]	8.0E-01	4.53E-10	3.96E-10	2.05E-10	1.33E-10	9.10E-11	7.28E-11	8.55E-11
	V	4.0E-02	3.21E-09	2.62E-09	1.69E-09	1.25E-09	9.41E-10	8.70E-10	9.44E-10
Hg-193m	F[(i)]	4.0E-02	1.23E-09	9.49E-10	4.63E-10	2.83E-10	1.59E-10	1.29E-10	1.61E-10
	M[(i)]	4.0E-02	1.98E-09	1.49E-09	7.59E-10	4.93E-10	3.26E-10	2.61E-10	3.10E-10
	S[(i)]	4.0E-02	2.06E-09	1.55E-09	7.93E-10	5.17E-10	3.44E-10	2.76E-10	3.27E-10
	F[(j)]	8.0E-01	9.32E-10	8.48E-10	4.17E-10	2.52E-10	1.43E-10	1.16E-10	1.44E-10
	M[(j)]	8.0E-01	1.43E-09	1.32E-09	6.80E-10	4.42E-10	3.00E-10	2.40E-10	2.82E-10
	S[(j)]	8.0E-01	1.49E-09	1.37E-09	7.10E-10	4.64E-10	3.18E-10	2.54E-10	2.98E-10
	V	4.0E-02	1.11E-08	9.07E-09	5.85E-09	4.33E-09	3.24E-09	3.00E-09	3.25E-09
Hg-194	F[(i)]	4.0E-02	3.16E-08	2.87E-08	2.00E-08	1.61E-08	1.37E-08	1.32E-08	1.38E-08
	M[(i)]	4.0E-02	2.12E-08	1.88E-08	1.29E-08	1.01E-08	8.89E-09	8.28E-09	8.70E-09
	S[(i)]	4.0E-02	5.54E-08	5.37E-08	3.88E-08	2.75E-08	2.45E-08	2.35E-08	2.46E-08
	F[(j)]	8.0E-01	4.82E-08	3.68E-08	2.41E-08	1.88E-08	1.51E-08	1.45E-08	1.54E-08
	M[(j)]	8.0E-01	5.36E-08	3.40E-08	2.23E-08	1.67E-08	1.37E-08	1.28E-08	1.37E-08
	S[(j)]	8.0E-01	8.64E-08	6.83E-08	4.82E-08	3.49E-08	3.02E-08	2.89E-08	3.04E-08
	V	4.0E-02	9.46E-08	8.38E-08	6.30E-08	5.05E-08	4.35E-08	4.05E-08	4.25E-08
Hg-195	F[(i)]	4.0E-02	2.84E-10	2.13E-10	9.99E-11	5.98E-11	3.28E-11	2.65E-11	3.35E-11
	M[(i)]	4.0E-02	5.59E-10	4.06E-10	2.11E-10	1.36E-10	9.39E-11	7.69E-11	8.99E-11
	S[(i)]	4.0E-02	5.95E-10	4.33E-10	2.26E-10	1.46E-10	1.02E-10	8.38E-11	9.75E-11
	F[(j)]	8.0E-01	2.11E-10	1.90E-10	9.01E-11	5.34E-11	2.97E-11	2.39E-11	3.00E-11
	M[(j)]	8.0E-01	4.20E-10	3.65E-10	1.93E-10	1.24E-10	8.85E-11	7.25E-11	8.38E-11
	S[(j)]	8.0E-01	4.49E-10	3.89E-10	2.07E-10	1.34E-10	9.66E-11	7.92E-11	9.12E-11
	V	4.0E-02	5.49E-09	4.50E-09	2.91E-09	2.16E-09	1.62E-09	1.50E-09	1.63E-09
Hg-195m	F[(i)]	4.0E-02	1.58E-09	1.12E-09	5.03E-10	3.07E-10	1.64E-10	1.37E-10	1.73E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M[(i)]	4.0E-02	3.59E-09	2.58E-09	1.36E-09	8.29E-10	6.50E-10	5.22E-10	6.01E-10
	S[(i)]	4.0E-02	3.85E-09	2.77E-09	1.31E-09	9.09E-10	7.21E-10	5.78E-10	6.58E-10
	F[(j)]	8.0E-01	1.11E-09	9.53E-10	4.30E-10	2.60E-10	1.41E-10	1.18E-10	1.47E-10
	M[(j)]	8.0E-01	2.72E-09	2.30E-09	1.24E-09	7.55E-10	6.16E-10	4.94E-10	5.62E-10
	S[(j)]	8.0E-01	2.94E-09	2.48E-09	1.18E-09	8.32E-10	6.85E-10	5.49E-10	6.18E-10
	V	4.0E-02	2.98E-08	2.44E-08	1.57E-08	1.17E-08	8.74E-09	8.12E-09	8.80E-09
Hg-197	F[(i)]	4.0E-02	7.27E-10	5.11E-10	2.28E-10	1.38E-10	7.32E-11	6.05E-11	7.69E-11
	M[(i)]	4.0E-02	1.78E-09	1.26E-09	7.04E-10	4.91E-10	4.01E-10	3.24E-10	3.63E-10
	S[(i)]	4.0E-02	1.92E-09	1.37E-09	7.71E-10	5.40E-10	4.44E-10	3.59E-10	4.01E-10
	F[(j)]	8.0E-01	5.12E-10	4.33E-10	1.93E-10	1.15E-10	6.20E-11	5.11E-11	6.45E-11
	M[(j)]	8.0E-01	1.39E-09	1.14E-09	6.51E-10	4.58E-10	3.85E-10	3.11E-10	3.45E-10
	S[(j)]	8.0E-01	1.52E-09	1.24E-09	7.16E-10	5.05E-10	4.28E-10	3.46E-10	3.83E-10
	V	4.0E-02	1.72E-08	1.40E-08	9.06E-09	6.71E-09	5.03E-09	4.67E-09	5.06E-09
Hg-197m	F[(i)]	4.0E-02	1.41E-09	9.60E-10	4.14E-10	2.56E-10	1.34E-10	1.15E-10	1.45E-10
	M[(i)]	4.0E-02	3.53E-09	2.51E-09	1.17E-09	8.30E-10	6.84E-10	5.41E-10	6.13E-10
	S[(i)]	4.0E-02	3.78E-09	2.69E-09	1.28E-09	9.08E-10	7.55E-10	5.97E-10	6.74E-10
	F[(j)]	8.0E-01	9.57E-10	8.06E-10	3.47E-10	2.15E-10	1.14E-10	9.87E-11	1.23E-10
	M[(j)]	8.0E-01	2.69E-09	2.24E-09	1.06E-09	7.62E-10	6.52E-10	5.15E-10	5.77E-10
	S[(j)]	8.0E-01	2.90E-09	2.41E-09	1.16E-09	8.36E-10	7.22E-10	5.70E-10	6.37E-10
	V	4.0E-02	2.16E-08	1.76E-08	1.14E-08	8.43E-09	6.33E-09	5.89E-09	6.38E-09
Hg-199m	F[(i)]	4.0E-02	1.44E-10	9.54E-11	4.19E-11	2.72E-11	1.68E-11	1.46E-11	1.74E-11
	M[(i)]	4.0E-02	2.52E-10	1.69E-10	7.88E-11	5.35E-11	3.78E-11	3.16E-11	3.66E-11
	S[(i)]	4.0E-02	2.64E-10	1.77E-10	8.29E-11	5.63E-11	4.01E-11	3.35E-11	3.87E-11
	F[(j)]	8.0E-01	1.42E-10	9.50E-11	4.17E-11	2.71E-11	1.68E-11	1.45E-11	1.73E-11
	M[(j)]	8.0E-01	2.50E-10	1.69E-10	7.86E-11	5.33E-11	3.78E-11	3.15E-11	3.65E-11
	S[(j)]	8.0E-01	2.62E-10	1.77E-10	8.26E-11	5.62E-11	4.01E-11	3.34E-11	3.86E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	V	4.0E-02	6.53E-10	5.28E-10	3.41E-10	2.53E-10	1.90E-10	1.77E-10	1.91E-10
Hg-203	F[(i)]	4.0E-02	4.14E-09	2.93E-09	1.41E-09	8.98E-10	5.48E-10	4.67E-10	5.59E-10
	M[(i)]	4.0E-02	1.02E-08	7.80E-09	4.68E-09	3.38E-09	3.00E-09	2.39E-09	2.63E-09
	S[(i)]	4.0E-02	1.21E-08	9.37E-09	5.68E-09	4.11E-09	3.68E-09	2.93E-09	3.22E-09
	F[(j)]	8.0E-01	5.66E-09	3.67E-09	1.74E-09	1.10E-09	6.64E-10	5.67E-10	6.83E-10
	M[(j)]	8.0E-01	1.19E-08	8.47E-09	4.97E-09	3.56E-09	3.10E-09	2.48E-09	2.74E-09
	S[(j)]	8.0E-01	1.39E-08	1.00E-08	5.98E-09	4.30E-09	3.79E-09	3.03E-09	3.34E-09
	V	4.0E-02	2.96E-08	2.34E-08	1.46E-08	1.05E-08	7.67E-09	7.03E-09	7.71E-09
	(i) Inorganic Mercury								
	(j) Organic Mercury								
Thallium									
Tl-194	F	1.0E+00	1.22E-10	8.26E-11	3.80E-11	2.31E-11	1.36E-11	1.12E-11	1.39E-11
	M	1.0E+00	1.85E-10	1.22E-10	5.67E-11	3.51E-11	2.21E-11	1.83E-11	2.21E-11
	S	1.0E+00	1.92E-10	1.27E-10	5.88E-11	3.65E-11	2.30E-11	1.91E-11	2.30E-11
Tl-194m	F	1.0E+00	1.63E-10	1.26E-10	6.23E-11	3.81E-11	2.32E-11	1.88E-11	2.29E-11
	M	1.0E+00	2.30E-10	1.72E-10	8.59E-11	5.42E-11	3.55E-11	2.87E-11	3.42E-11
	S	1.0E+00	2.37E-10	1.77E-10	8.85E-11	5.60E-11	3.68E-11	2.98E-11	3.54E-11
Tl-195	F	1.0E+00	1.26E-10	1.02E-10	5.17E-11	3.07E-11	1.81E-11	1.45E-11	1.79E-11
	M	1.0E+00	1.76E-10	1.38E-10	7.23E-11	4.48E-11	2.98E-11	2.39E-11	2.84E-11
	S	1.0E+00	1.82E-10	1.42E-10	7.49E-11	4.66E-11	3.13E-11	2.51E-11	2.98E-11
Tl-196	F	1.0E+00	2.38E-10	1.92E-10	9.85E-11	5.87E-11	3.47E-11	2.78E-11	3.43E-11
	M	1.0E+00	3.06E-10	2.39E-10	1.23E-10	7.52E-11	4.72E-11	3.78E-11	4.58E-11
	S	1.0E+00	3.14E-10	2.44E-10	1.26E-10	7.70E-11	4.86E-11	3.89E-11	4.70E-11
Tl-197	F	1.0E+00	1.32E-10	1.04E-10	5.12E-11	3.07E-11	1.81E-11	1.46E-11	1.80E-11
	M	1.0E+00	2.25E-10	1.71E-10	9.27E-11	6.09E-11	4.56E-11	3.66E-11	4.21E-11
	S	1.0E+00	2.37E-10	1.80E-10	9.77E-11	6.45E-11	4.89E-11	3.93E-11	4.50E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Tl-198	F	1.0E+00	4.85E-10	4.15E-10	2.20E-10	1.31E-10	7.76E-11	6.19E-11	7.60E-11
	M	1.0E+00	5.50E-10	4.64E-10	2.48E-10	1.50E-10	9.35E-11	7.40E-11	8.98E-11
	S	1.0E+00	5.57E-10	4.69E-10	2.51E-10	1.52E-10	9.53E-11	7.53E-11	9.13E-11
Tl-198m	F	1.0E+00	3.27E-10	2.57E-10	1.28E-10	7.76E-11	4.63E-11	3.78E-11	4.62E-11
	M	1.0E+00	4.75E-10	3.61E-10	1.86E-10	1.19E-10	8.17E-11	6.58E-11	7.74E-11
	S	1.0E+00	4.91E-10	3.73E-10	1.92E-10	1.24E-10	8.56E-11	6.90E-11	8.09E-11
Tl-199	F	1.0E+00	1.81E-10	1.39E-10	6.75E-11	4.08E-11	2.39E-11	1.96E-11	2.41E-11
	M	1.0E+00	2.98E-10	2.25E-10	1.19E-10	7.90E-11	5.93E-11	4.76E-11	5.46E-11
	S	1.0E+00	3.11E-10	2.34E-10	1.25E-10	8.33E-11	6.33E-11	5.07E-11	5.81E-11
Tl-200	F	1.0E+00	1.05E-09	8.77E-10	4.61E-10	2.79E-10	1.67E-10	1.35E-10	1.65E-10
	M	1.0E+00	1.22E-09	1.01E-09	5.42E-10	3.37E-10	2.19E-10	1.75E-10	2.09E-10
	S	1.0E+00	1.24E-09	1.02E-09	5.51E-10	3.44E-10	2.25E-10	1.80E-10	2.14E-10
Tl-201	F	1.0E+00	4.73E-10	3.46E-10	1.62E-10	9.83E-11	5.59E-11	4.61E-11	5.72E-11
	M	1.0E+00	1.02E-09	7.56E-10	4.24E-10	2.58E-10	2.22E-10	1.77E-10	2.00E-10
	S	1.0E+00	1.09E-09	8.09E-10	4.58E-10	2.83E-10	2.46E-10	1.96E-10	2.20E-10
Tl-202	F	1.0E+00	1.50E-09	1.17E-09	5.99E-10	3.80E-10	2.29E-10	1.93E-10	2.31E-10
	M	1.0E+00	2.21E-09	1.74E-09	9.54E-10	6.31E-10	4.50E-10	3.67E-10	4.23E-10
	S	1.0E+00	2.34E-09	1.84E-09	1.02E-09	6.78E-10	4.91E-10	3.99E-10	4.59E-10
Tl-204	F	1.0E+00	4.94E-09	3.31E-09	1.46E-09	8.77E-10	4.71E-10	3.95E-10	4.99E-10
	M	1.0E+00	2.82E-08	2.27E-08	1.33E-08	9.15E-09	7.62E-09	6.37E-09	7.04E-09
	S	1.0E+00	6.68E-08	5.98E-08	3.81E-08	2.51E-08	2.07E-08	1.90E-08	2.05E-08
Lead									
Pb-194	F	6.0E-01	7.79E-11	5.59E-11	2.64E-11	1.62E-11	9.75E-12	8.05E-12	9.82E-12
	M	2.0E-01	1.15E-10	8.06E-11	3.82E-11	2.40E-11	1.52E-11	1.26E-11	1.51E-11
	S	2.0E-02	1.20E-10	8.34E-11	3.95E-11	2.48E-11	1.59E-11	1.31E-11	1.57E-11
Pb-195m	F	6.0E-01	1.22E-10	9.16E-11	4.44E-11	2.77E-11	1.72E-11	1.42E-11	1.71E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	2.0E-01	1.74E-10	1.28E-10	6.30E-11	4.05E-11	2.71E-11	2.22E-11	2.62E-11
	S	2.0E-02	1.80E-10	1.32E-10	6.51E-11	4.20E-11	2.82E-11	2.31E-11	2.73E-11
Pb-196	F	6.0E-01	1.36E-10	1.06E-10	5.28E-11	3.21E-11	1.91E-11	1.57E-11	1.91E-11
	M	2.0E-01	1.92E-10	1.45E-10	7.24E-11	4.57E-11	2.97E-11	2.41E-11	2.88E-11
	S	2.0E-02	1.98E-10	1.49E-10	7.46E-11	4.72E-11	3.09E-11	2.51E-11	2.99E-11
Pb-197m	F	6.0E-01	2.12E-10	1.59E-10	7.64E-11	4.73E-11	2.85E-11	2.38E-11	2.88E-11
	M	2.0E-01	3.38E-10	2.47E-10	1.22E-10	8.01E-11	5.51E-11	4.50E-11	5.27E-11
	S	2.0E-02	3.53E-10	2.57E-10	1.28E-10	8.38E-11	5.82E-11	4.74E-11	5.54E-11
Pb-198	F	6.0E-01	3.34E-10	2.80E-10	1.43E-10	8.59E-11	5.03E-11	4.14E-11	5.06E-11
	M	2.0E-01	4.63E-10	3.69E-10	1.90E-10	1.20E-10	7.69E-11	6.15E-11	7.37E-11
	S	2.0E-02	4.83E-10	3.81E-10	1.97E-10	1.24E-10	8.01E-11	6.40E-11	7.66E-11
Pb-199	F	6.0E-01	1.53E-10	1.26E-10	6.38E-11	3.82E-11	2.23E-11	1.82E-11	2.23E-11
	M	2.0E-01	2.19E-10	1.72E-10	8.90E-11	5.60E-11	3.64E-11	2.90E-11	3.47E-11
	S	2.0E-02	2.28E-10	1.78E-10	9.20E-11	5.81E-11	3.81E-11	3.03E-11	3.62E-11
Pb-200	F	6.0E-01	1.16E-09	9.37E-10	4.59E-10	2.82E-10	1.63E-10	1.41E-10	1.70E-10
	M	2.0E-01	2.14E-09	1.64E-09	8.56E-10	5.68E-10	4.04E-10	3.24E-10	3.77E-10
	S	2.0E-02	2.35E-09	1.75E-09	9.14E-10	6.09E-10	4.36E-10	3.48E-10	4.05E-10
Pb-201	F	6.0E-01	4.92E-10	4.15E-10	2.08E-10	1.25E-10	7.19E-11	6.06E-11	7.39E-11
	M	2.0E-01	8.13E-10	6.42E-10	3.31E-10	2.13E-10	1.41E-10	1.12E-10	1.33E-10
	S	2.0E-02	8.83E-10	6.79E-10	3.50E-10	2.26E-10	1.50E-10	1.20E-10	1.42E-10
Pb-202	F	6.0E-01	5.82E-08	4.00E-08	2.42E-08	2.70E-08	3.01E-08	2.03E-08	2.18E-08
	M	2.0E-01	6.83E-08	5.03E-08	3.09E-08	2.35E-08	2.23E-08	1.83E-08	1.97E-08
	S	2.0E-02	1.62E-07	1.48E-07	9.74E-08	6.27E-08	5.19E-08	4.93E-08	5.29E-08
Pb-202m	F	6.0E-01	4.98E-10	4.19E-10	2.14E-10	1.29E-10	7.58E-11	6.29E-11	7.66E-11
	M	2.0E-01	7.40E-10	5.88E-10	3.03E-10	1.93E-10	1.23E-10	9.85E-11	1.18E-10
	S	2.0E-02	7.83E-10	6.12E-10	3.15E-10	2.01E-10	1.29E-10	1.03E-10	1.24E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Pb-203	F	6.0E-01	7.29E-10	5.94E-10	2.88E-10	1.76E-10	1.00E-10	8.68E-11	1.05E-10
	M	2.0E-01	1.37E-09	1.06E-09	5.47E-10	3.63E-10	2.58E-10	2.05E-10	2.39E-10
	S	2.0E-02	1.51E-09	1.13E-09	5.87E-10	3.91E-10	2.80E-10	2.22E-10	2.58E-10
Pb-204m	F	6.0E-01	1.73E-10	1.44E-10	7.46E-11	4.49E-11	2.66E-11	2.15E-11	2.63E-11
	M	2.0E-01	2.27E-10	1.82E-10	9.39E-11	5.79E-11	3.55E-11	2.82E-11	3.44E-11
	S	2.0E-02	2.34E-10	1.86E-10	9.62E-11	5.95E-11	3.66E-11	2.91E-11	3.54E-11
Pb-205	F	6.0E-01	1.05E-09	6.71E-10	3.87E-10	4.01E-10	4.16E-10	3.26E-10	3.44E-10
	M	2.0E-01	1.02E-09	7.42E-10	4.19E-10	3.12E-10	2.78E-10	2.39E-10	2.58E-10
	S	2.0E-02	2.76E-09	2.57E-09	1.66E-09	1.07E-09	8.78E-10	8.24E-10	8.88E-10
Pb-209	F	6.0E-01	1.82E-10	1.23E-10	5.27E-11	3.39E-11	1.95E-11	1.73E-11	2.09E-11
	M	2.0E-01	4.04E-10	2.75E-10	1.34E-10	9.23E-11	6.89E-11	5.64E-11	6.46E-11
	S	2.0E-02	4.36E-10	2.94E-10	1.44E-10	9.94E-11	7.46E-11	6.10E-11	6.98E-11
Pb-210	F	6.0E-01	4.63E-06	2.86E-06	1.55E-06	1.39E-06	1.30E-06	9.07E-07	1.01E-06
	M	2.0E-01	4.94E-06	3.71E-06	2.22E-06	1.55E-06	1.33E-06	1.11E-06	1.21E-06
	S	2.0E-02	1.83E-05	1.75E-05	1.15E-05	7.14E-06	5.84E-06	5.61E-06	6.03E-06
Pb-211	F	6.0E-01	2.49E-08	1.72E-08	8.63E-09	6.06E-09	4.60E-09	3.88E-09	4.38E-09
	M	2.0E-01	6.13E-08	4.42E-08	2.54E-08	1.85E-08	1.40E-08	1.11E-08	1.26E-08
	S	2.0E-02	6.53E-08	4.72E-08	2.72E-08	1.99E-08	1.52E-08	1.20E-08	1.36E-08
Pb-212	F	6.0E-01	1.96E-07	1.26E-07	5.52E-08	3.60E-08	2.05E-08	1.80E-08	2.18E-08
	M	2.0E-01	7.49E-07	4.61E-07	3.00E-07	2.25E-07	2.17E-07	1.72E-07	1.86E-07
	S	2.0E-02	6.76E-07	5.06E-07	3.30E-07	2.48E-07	2.40E-07	1.90E-07	2.05E-07
Pb-214	F	6.0E-01	2.21E-08	1.52E-08	7.03E-09	4.88E-09	3.36E-09	2.92E-09	3.35E-09
	M	2.0E-01	6.45E-08	4.66E-08	2.60E-08	1.91E-08	1.39E-08	1.36E-08	1.47E-08
	S	2.0E-02	6.92E-08	5.01E-08	2.81E-08	2.07E-08	1.53E-08	1.47E-08	1.60E-08
Bismuth									
Bi-200	F	1.0E-01	2.06E-10	1.60E-10	8.00E-11	4.91E-11	2.92E-11	2.35E-11	2.89E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	1.0E-01	2.80E-10	2.13E-10	1.08E-10	6.80E-11	4.41E-11	3.54E-11	4.23E-11
	S	1.0E-01	2.89E-10	2.19E-10	1.11E-10	7.01E-11	4.58E-11	3.67E-11	4.39E-11
Bi-201	F	1.0E-01	4.24E-10	3.36E-10	1.70E-10	1.04E-10	6.06E-11	4.86E-11	5.99E-11
	M	1.0E-01	5.68E-10	4.38E-10	2.24E-10	1.41E-10	9.04E-11	7.22E-11	8.67E-11
	S	1.0E-01	5.84E-10	4.50E-10	2.30E-10	1.46E-10	9.38E-11	7.49E-11	8.98E-11
Bi-202	F	1.0E-01	3.86E-10	3.14E-10	1.63E-10	9.94E-11	5.89E-11	4.70E-11	5.77E-11
	M	1.0E-01	4.83E-10	3.84E-10	1.98E-10	1.23E-10	7.62E-11	6.06E-11	7.35E-11
	S	1.0E-01	4.94E-10	3.92E-10	2.02E-10	1.26E-10	7.81E-11	6.21E-11	7.53E-11
Bi-203	F	1.0E-01	1.62E-09	1.32E-09	6.78E-10	4.18E-10	2.42E-10	1.94E-10	2.39E-10
	M	1.0E-01	2.09E-09	1.67E-09	8.65E-10	5.51E-10	3.45E-10	2.75E-10	3.31E-10
	S	1.0E-01	2.14E-09	1.71E-09	8.87E-10	5.66E-10	3.57E-10	2.84E-10	3.42E-10
Bi-204	F	1.0E-01	1.89E-09	1.56E-09	8.10E-10	4.99E-10	2.91E-10	2.33E-10	2.86E-10
	M	1.0E-01	2.35E-09	1.90E-09	9.90E-10	6.26E-10	3.85E-10	3.06E-10	3.71E-10
	S	1.0E-01	2.40E-09	1.94E-09	1.01E-09	6.40E-10	3.96E-10	3.15E-10	3.81E-10
Bi-205	F	1.0E-01	3.05E-09	2.47E-09	1.29E-09	8.10E-10	4.77E-10	3.86E-10	4.70E-10
	M	1.0E-01	5.58E-09	4.53E-09	2.53E-09	1.66E-09	1.19E-09	9.54E-10	1.10E-09
	S	1.0E-01	6.08E-09	4.94E-09	2.79E-09	1.83E-09	1.33E-09	1.07E-09	1.23E-09
Bi-206	F	1.0E-01	6.26E-09	4.99E-09	2.56E-09	1.60E-09	9.34E-10	7.54E-10	9.24E-10
	M	1.0E-01	1.04E-08	8.25E-09	4.51E-09	3.00E-09	2.16E-09	1.72E-09	1.99E-09
	S	1.0E-01	1.10E-08	8.72E-09	4.79E-09	3.21E-09	2.34E-09	1.86E-09	2.15E-09
Bi-207	F	1.0E-01	4.32E-09	3.34E-09	1.68E-09	1.05E-09	6.09E-10	4.94E-10	6.07E-10
	M	1.0E-01	2.38E-08	2.04E-08	1.25E-08	8.38E-09	6.62E-09	5.68E-09	6.29E-09
	S	1.0E-01	9.61E-08	9.35E-08	6.63E-08	4.61E-08	4.03E-08	3.88E-08	4.08E-08
Bi-208	F	1.0E-01	3.95E-09	3.25E-09	1.71E-09	1.10E-09	6.51E-10	5.31E-10	6.42E-10
	M	1.0E-01	1.77E-08	1.57E-08	9.84E-09	6.68E-09	5.34E-09	4.48E-09	4.97E-09
	S	1.0E-01	8.15E-08	8.10E-08	5.95E-08	4.29E-08	3.83E-08	3.67E-08	3.83E-08

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Bi-210	F	1.0E-01	1.06E-08	6.88E-09	3.24E-09	2.07E-09	1.28E-09	1.07E-09	1.29E-09
	M	1.0E-01	3.86E-07	2.95E-07	1.85E-07	1.28E-07	1.12E-07	9.33E-08	1.02E-07
	S	1.0E-01	5.61E-07	4.38E-07	2.73E-07	1.86E-07	1.59E-07	1.33E-07	1.46E-07
Bi-210m	F	1.0E-01	4.04E-07	2.59E-07	1.27E-07	8.32E-08	5.56E-08	4.62E-08	5.43E-08
	M	1.0E-01	1.46E-05	1.12E-05	7.04E-06	4.77E-06	4.09E-06	3.43E-06	3.77E-06
	S	1.0E-01	3.46E-05	3.02E-05	1.96E-05	1.28E-05	1.08E-05	9.89E-06	1.07E-05
Bi-212	F	1.0E-01	6.51E-08	4.52E-08	2.11E-08	1.48E-08	1.04E-08	9.03E-09	1.03E-08
	M	1.0E-01	1.55E-07	1.11E-07	6.05E-08	4.43E-08	3.77E-08	3.08E-08	3.41E-08
	S	1.0E-01	1.65E-07	1.18E-07	6.49E-08	4.75E-08	4.07E-08	3.32E-08	3.67E-08
Bi-213	F	1.0E-01	7.70E-08	5.34E-08	2.46E-08	1.73E-08	1.20E-08	1.05E-08	1.20E-08
	M	1.0E-01	1.62E-07	1.16E-07	6.03E-08	4.40E-08	3.63E-08	2.98E-08	3.32E-08
	S	1.0E-01	1.71E-07	1.22E-07	6.43E-08	4.70E-08	3.89E-08	3.20E-08	3.55E-08
Bi-214	F	1.0E-01	5.14E-08	3.57E-08	1.67E-08	1.17E-08	8.35E-09	7.23E-09	8.24E-09
	M	1.0E-01	8.83E-08	6.23E-08	3.10E-08	2.23E-08	1.74E-08	1.46E-08	1.63E-08
	S	1.0E-01	9.24E-08	6.53E-08	3.26E-08	2.35E-08	1.84E-08	1.54E-08	1.72E-08
Polonium									
Po-203	F	2.0E-01	2.12E-10	1.66E-10	8.38E-11	5.17E-11	3.15E-11	2.56E-11	3.10E-11
	M	2.0E-01	3.11E-10	2.39E-10	1.24E-10	7.99E-11	5.43E-11	4.39E-11	5.16E-11
	S	2.0E-02	3.27E-10	2.48E-10	1.29E-10	8.37E-11	5.71E-11	4.62E-11	5.42E-11
Po-204	F	2.0E-01	1.12E-09	8.76E-10	4.42E-10	2.71E-10	1.63E-10	1.32E-10	1.61E-10
	M	2.0E-01	2.30E-09	1.75E-09	9.97E-10	6.67E-10	4.41E-10	3.64E-10	4.24E-10
	S	2.0E-02	2.48E-09	1.86E-09	1.07E-09	7.17E-10	4.83E-10	3.98E-10	4.61E-10
Po-205	F	2.0E-01	2.32E-10	1.90E-10	9.81E-11	5.95E-11	3.56E-11	2.85E-11	3.49E-11
	M	2.0E-01	3.11E-10	2.48E-10	1.32E-10	8.30E-11	5.48E-11	4.39E-11	5.21E-11
	S	2.0E-02	3.20E-10	2.54E-10	1.36E-10	8.58E-11	5.71E-11	4.57E-11	5.41E-11
Po-206	F	2.0E-01	1.00E-07	6.27E-08	2.87E-08	1.72E-08	1.03E-08	8.28E-09	1.03E-08

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	2.0E-01	2.48E-07	1.76E-07	1.11E-07	7.80E-08	6.95E-08	5.74E-08	6.27E-08
	S	2.0E-02	2.61E-07	1.92E-07	1.24E-07	8.75E-08	7.88E-08	6.52E-08	7.09E-08
Po-207	F	2.0E-01	4.81E-10	4.00E-10	2.05E-10	1.24E-10	7.20E-11	5.74E-11	7.10E-11
	M	2.0E-01	6.46E-10	5.25E-10	2.75E-10	1.73E-10	1.09E-10	8.72E-11	1.05E-10
	S	2.0E-02	6.87E-10	5.48E-10	2.87E-10	1.81E-10	1.15E-10	9.22E-11	1.11E-10
Po-208	F	2.0E-01	9.00E-06	6.00E-06	2.74E-06	1.62E-06	9.58E-07	7.65E-07	9.57E-07
	M	2.0E-01	1.79E-05	1.31E-05	7.98E-06	5.36E-06	4.51E-06	3.76E-06	4.16E-06
	S	2.0E-02	2.80E-05	2.32E-05	1.46E-05	9.47E-06	7.79E-06	6.75E-06	7.42E-06
Po-209	F	2.0E-01	8.90E-06	5.95E-06	2.72E-06	1.61E-06	9.51E-07	7.59E-07	9.51E-07
	M	2.0E-01	1.75E-05	1.29E-05	7.82E-06	5.20E-06	4.33E-06	3.63E-06	4.02E-06
	S	2.0E-02	3.38E-05	2.93E-05	1.89E-05	1.23E-05	1.03E-05	9.44E-06	1.02E-05
Po-210	F	2.0E-01	7.37E-06	4.83E-06	2.19E-06	1.29E-06	7.66E-07	6.10E-07	7.65E-07
	M	2.0E-01	1.50E-05	1.09E-05	6.68E-06	4.58E-06	3.96E-06	3.28E-06	3.60E-06
	S	2.0E-02	1.79E-05	1.38E-05	8.64E-06	5.92E-06	5.13E-06	4.27E-06	4.68E-06
Astatine									
At-205	F	1.0E+00	1.27E-09	9.14E-10	5.22E-10	3.66E-10	2.75E-10	2.21E-10	2.52E-10
	M	1.0E+00	2.55E-09	1.87E-09	1.22E-09	8.85E-10	8.36E-10	6.73E-10	7.29E-10
	S	1.0E+00	2.72E-09	2.00E-09	1.30E-09	9.49E-10	8.98E-10	7.23E-10	7.83E-10
At-206	F	1.0E+00	3.36E-10	2.44E-10	1.24E-10	7.90E-11	5.42E-11	4.43E-11	5.20E-11
	M	1.0E+00	9.42E-10	6.77E-10	4.18E-10	2.94E-10	2.59E-10	2.13E-10	2.33E-10
	S	1.0E+00	1.04E-09	7.53E-10	4.67E-10	3.29E-10	2.91E-10	2.39E-10	2.62E-10
At-207	F	1.0E+00	2.22E-09	1.57E-09	8.32E-10	5.51E-10	4.14E-10	3.40E-10	3.89E-10
	M	1.0E+00	8.03E-09	5.82E-09	3.75E-09	2.69E-09	2.48E-09	2.03E-09	2.20E-09
	S	1.0E+00	8.72E-09	6.33E-09	4.10E-09	2.94E-09	2.72E-09	2.22E-09	2.41E-09
At-208	F	1.0E+00	5.50E-10	4.24E-10	2.15E-10	1.32E-10	8.33E-11	6.75E-11	8.14E-11
	M	1.0E+00	2.02E-09	1.54E-09	9.09E-10	5.23E-10	4.51E-10	3.73E-10	4.18E-10

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	1.0E+00	3.07E-09	2.47E-09	1.25E-09	8.31E-10	6.93E-10	5.91E-10	6.56E-10
At-209	F	1.0E+00	2.52E-09	1.80E-09	8.90E-10	5.57E-10	3.64E-10	3.00E-10	3.57E-10
	M	1.0E+00	1.03E-08	7.45E-09	4.75E-09	3.37E-09	3.05E-09	2.51E-09	2.73E-09
	S	1.0E+00	1.14E-08	8.24E-09	5.27E-09	3.74E-09	3.39E-09	2.79E-09	3.04E-09
At-210	F	1.0E+00	4.19E-09	2.98E-09	1.38E-09	8.24E-10	4.62E-10	3.82E-10	4.77E-10
	M	1.0E+00	3.41E-08	2.56E-08	1.58E-08	1.09E-08	9.49E-09	7.87E-09	8.63E-09
	S	1.0E+00	4.61E-08	3.54E-08	2.19E-08	1.49E-08	1.28E-08	1.06E-08	1.17E-08
At-211	F	1.0E+00	1.45E-07	9.78E-08	4.33E-08	2.86E-08	1.76E-08	1.57E-08	1.85E-08
	M	1.0E+00	5.18E-07	3.75E-07	1.94E-07	1.43E-07	1.34E-07	1.08E-07	1.18E-07
	S	1.0E+00	5.60E-07	4.06E-07	2.13E-07	1.57E-07	1.48E-07	1.19E-07	1.30E-07
Francium									
Fr-212	F	1.0E+00	1.22E-08	8.69E-09	4.53E-09	3.15E-09	2.46E-09	2.07E-09	2.32E-09
	M	1.0E+00	2.95E-08	2.15E-08	1.27E-08	7.73E-09	7.35E-09	5.88E-09	6.50E-09
	S	1.0E+00	3.15E-08	2.30E-08	1.14E-08	8.38E-09	7.98E-09	6.38E-09	6.98E-09
Fr-222	F	1.0E+00	9.12E-08	6.37E-08	3.06E-08	2.16E-08	1.59E-08	1.36E-08	1.54E-08
	M	1.0E+00	1.54E-07	1.09E-07	5.51E-08	3.96E-08	3.12E-08	2.61E-08	2.92E-08
	S	1.0E+00	1.61E-07	1.14E-07	5.78E-08	4.15E-08	3.29E-08	2.75E-08	3.08E-08
Fr-223	F	1.0E+00	1.11E-08	7.43E-09	3.22E-09	1.95E-09	1.06E-09	9.03E-10	1.13E-09
	M	1.0E+00	4.42E-08	3.27E-08	1.99E-08	1.45E-08	1.31E-08	1.05E-08	1.15E-08
	S	1.0E+00	4.99E-08	3.71E-08	2.28E-08	1.66E-08	1.52E-08	1.21E-08	1.33E-08
Radium									
Ra-223	F	6.0E-01	2.93E-06	1.03E-06	4.95E-07	4.00E-07	3.29E-07	1.24E-07	1.83E-07
	M	2.0E-01	2.77E-05	2.06E-05	1.33E-05	9.86E-06	9.35E-06	7.43E-06	8.05E-06
	S	2.0E-02	3.16E-05	2.39E-05	1.54E-05	1.15E-05	1.09E-05	8.66E-06	9.39E-06
Ra-224	F	6.0E-01	1.52E-06	6.00E-07	2.93E-07	2.24E-07	1.70E-07	7.59E-08	1.07E-07
	M	2.0E-01	1.11E-05	8.21E-06	5.30E-06	3.94E-06	3.74E-06	2.97E-06	3.22E-06

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	1.22E-05	9.20E-06	5.96E-06	4.43E-06	4.21E-06	3.36E-06	3.64E-06
Ra-225	F	6.0E-01	3.92E-06	1.20E-06	5.60E-07	4.57E-07	3.82E-07	1.29E-07	2.00E-07
	M	2.0E-01	2.38E-05	1.78E-05	1.14E-05	8.42E-06	7.95E-06	6.28E-06	6.83E-06
	S	2.0E-02	2.82E-05	2.18E-05	1.39E-05	1.03E-05	9.76E-06	7.76E-06	8.41E-06
Ra-226	F	6.0E-01	2.58E-06	9.27E-07	5.46E-07	7.20E-07	1.32E-06	3.59E-07	4.66E-07
	M	2.0E-01	1.50E-05	1.12E-05	7.01E-06	4.88E-06	4.47E-06	3.46E-06	3.82E-06
	S	2.0E-02	3.35E-05	2.92E-05	1.89E-05	1.23E-05	1.04E-05	9.51E-06	1.03E-05
Ra-227	F	6.0E-01	1.53E-09	1.23E-09	7.84E-10	6.11E-10	5.28E-10	4.60E-10	4.93E-10
	M	2.0E-01	7.99E-10	6.71E-10	4.43E-10	3.21E-10	2.90E-10	2.73E-10	2.87E-10
	S	2.0E-02	1.01E-09	8.46E-10	4.38E-10	2.88E-10	2.43E-10	2.23E-10	2.42E-10
Ra-228	F	6.0E-01	1.64E-05	5.68E-06	3.11E-06	3.55E-06	4.46E-06	9.06E-07	1.47E-06
	M	2.0E-01	1.46E-05	1.01E-05	6.32E-06	4.64E-06	4.33E-06	2.64E-06	3.08E-06
	S	2.0E-02	4.83E-05	4.73E-05	3.17E-05	1.97E-05	1.64E-05	1.61E-05	1.71E-05
Ra-230	F	6.0E-01	5.56E-10	4.23E-10	1.92E-10	1.10E-10	5.82E-11	6.09E-11	7.21E-11
	M	2.0E-01	9.46E-10	6.32E-10	2.97E-10	1.93E-10	1.31E-10	1.10E-10	1.29E-10
	S	2.0E-02	9.95E-10	6.55E-10	3.09E-10	2.02E-10	1.39E-10	1.15E-10	1.35E-10
Actinium									
Ac-224	F	5.0E-03	5.86E-08	3.11E-08	1.62E-08	1.09E-08	7.69E-09	8.14E-09	8.86E-09
	M	5.0E-03	3.77E-07	2.80E-07	1.81E-07	1.35E-07	1.28E-07	1.02E-07	1.10E-07
	S	5.0E-03	4.16E-07	3.12E-07	2.03E-07	1.51E-07	1.44E-07	1.14E-07	1.24E-07
Ac-225	F	5.0E-03	9.99E-06	6.74E-06	3.02E-06	1.75E-06	1.06E-06	7.96E-07	1.02E-06
	M	5.0E-03	2.74E-05	2.07E-05	1.32E-05	9.83E-06	9.31E-06	7.38E-06	8.01E-06
	S	5.0E-03	3.06E-05	2.32E-05	1.50E-05	1.12E-05	1.07E-05	8.48E-06	9.18E-06
Ac-226	F	5.0E-03	1.01E-06	6.66E-07	2.99E-07	1.74E-07	1.06E-07	1.27E-07	1.41E-07
	M	5.0E-03	4.32E-06	3.22E-06	2.08E-06	1.55E-06	1.48E-06	1.18E-06	1.27E-06
	S	5.0E-03	4.71E-06	3.53E-06	2.30E-06	1.72E-06	1.64E-06	1.31E-06	1.41E-06

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Ac-227	F	5.0E-03	3.68E-04	3.46E-04	2.38E-04	1.78E-04	1.50E-04	1.56E-04	1.61E-04
	M	5.0E-03	1.63E-04	1.52E-04	1.08E-04	7.82E-05	7.18E-05	7.28E-05	7.50E-05
	S	5.0E-03	1.77E-04	1.61E-04	1.06E-04	6.93E-05	5.91E-05	5.53E-05	5.91E-05
Ac-228	F	5.0E-03	6.45E-08	5.36E-08	3.12E-08	1.97E-08	1.34E-08	1.20E-08	1.36E-08
	M	5.0E-03	4.93E-08	4.04E-08	2.52E-08	1.70E-08	1.43E-08	1.19E-08	1.32E-08
	S	5.0E-03	5.86E-08	4.86E-08	3.05E-08	2.05E-08	1.74E-08	1.46E-08	1.61E-08
Thorium									
Th-226	F	5.0E-03	1.43E-07	9.95E-08	4.83E-08	3.39E-08	2.50E-08	2.14E-08	2.42E-08
	M	5.0E-03	2.94E-07	2.10E-07	1.14E-07	8.25E-08	6.93E-08	5.70E-08	6.31E-08
	S	5.0E-03	3.11E-07	2.23E-07	1.21E-07	8.79E-08	7.41E-08	6.09E-08	6.74E-08
Th-227	F	5.0E-03	8.33E-06	5.16E-06	2.58E-06	1.56E-06	1.02E-06	6.68E-07	8.65E-07
	M	5.0E-03	3.20E-05	2.43E-05	1.55E-05	1.13E-05	1.05E-05	8.41E-06	9.14E-06
	S	5.0E-03	3.85E-05	2.95E-05	1.89E-05	1.38E-05	1.29E-05	1.04E-05	1.12E-05
Th-228	F	5.0E-03	1.77E-04	1.47E-04	8.31E-05	5.17E-05	3.53E-05	2.95E-05	3.43E-05
	M	5.0E-03	1.32E-04	1.08E-04	6.77E-05	4.56E-05	3.86E-05	3.20E-05	3.53E-05
	S	5.0E-03	1.57E-04	1.31E-04	8.22E-05	5.52E-05	4.71E-05	3.97E-05	4.35E-05
Th-229	F	5.0E-03	5.44E-04	5.16E-04	3.66E-04	2.91E-04	2.48E-04	2.39E-04	2.49E-04
	M	5.0E-03	2.28E-04	2.16E-04	1.59E-04	1.21E-04	1.12E-04	1.08E-04	1.12E-04
	S	5.0E-03	2.11E-04	1.92E-04	1.29E-04	8.69E-05	7.59E-05	7.11E-05	7.55E-05
Th-230	F	5.0E-03	2.07E-04	1.99E-04	1.41E-04	1.13E-04	1.00E-04	1.02E-04	1.04E-04
	M	5.0E-03	7.71E-05	7.41E-05	5.57E-05	4.33E-05	4.18E-05	4.28E-05	4.35E-05
	S	5.0E-03	3.96E-05	3.47E-05	2.38E-05	1.65E-05	1.47E-05	1.40E-05	1.47E-05
Th-231	F	5.0E-03	1.09E-09	7.49E-10	2.62E-10	1.62E-10	9.19E-11	7.82E-11	9.85E-11
	M	5.0E-03	2.23E-09	1.56E-09	8.10E-10	4.90E-10	3.79E-10	3.08E-10	3.55E-10
	S	5.0E-03	2.36E-09	1.65E-09	7.64E-10	5.23E-10	4.09E-10	3.30E-10	3.78E-10
Th-232	F	5.0E-03	2.32E-04	2.25E-04	1.65E-04	1.34E-04	1.16E-04	1.10E-04	1.15E-04

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	5.0E-03	8.28E-05	8.10E-05	6.30E-05	4.98E-05	4.71E-05	4.54E-05	4.67E-05
	S	5.0E-03	5.36E-05	5.04E-05	3.67E-05	2.65E-05	2.50E-05	2.48E-05	2.56E-05
Th-233	F	5.0E-03	9.03E-11	5.83E-11	2.56E-11	1.65E-11	1.02E-11	8.83E-12	1.06E-11
	M	5.0E-03	1.44E-10	9.44E-11	4.35E-11	2.92E-11	2.04E-11	1.72E-11	2.00E-11
	S	5.0E-03	1.50E-10	9.88E-11	4.57E-11	3.09E-11	2.17E-11	1.83E-11	2.12E-11
Th-234	F	5.0E-03	3.95E-08	2.45E-08	1.09E-08	6.08E-09	3.53E-09	2.49E-09	3.33E-09
	M	5.0E-03	3.92E-08	2.85E-08	1.54E-08	1.03E-08	7.95E-09	6.65E-09	7.50E-09
	S	5.0E-03	4.08E-08	3.05E-08	1.69E-08	1.15E-08	9.09E-09	7.71E-09	8.60E-09
Th-236	F	5.0E-03	2.80E-10	1.82E-10	8.05E-11	5.02E-11	2.99E-11	2.53E-11	3.08E-11
	M	5.0E-03	4.86E-10	3.17E-10	1.47E-10	9.58E-11	6.48E-11	5.39E-11	6.35E-11
	S	5.0E-03	5.09E-10	3.32E-10	1.54E-10	1.01E-10	6.87E-11	5.70E-11	6.71E-11
Protactinium									
Pa-227	F	5.0E-03	1.49E-07	1.04E-07	5.00E-08	3.49E-08	2.55E-08	2.18E-08	2.47E-08
	M	5.0E-03	3.57E-07	2.57E-07	1.42E-07	1.04E-07	8.93E-08	7.30E-08	8.05E-08
	S	5.0E-03	3.81E-07	2.74E-07	1.53E-07	1.12E-07	8.00E-08	7.89E-08	8.57E-08
Pa-228	F	5.0E-03	2.40E-07	1.97E-07	1.11E-07	6.88E-08	4.68E-08	3.90E-08	4.54E-08
	M	5.0E-03	2.37E-07	1.89E-07	1.19E-07	8.24E-08	7.20E-08	5.90E-08	6.47E-08
	S	5.0E-03	2.76E-07	2.24E-07	1.42E-07	9.77E-08	8.57E-08	7.11E-08	7.78E-08
Pa-229	F	5.0E-03	9.33E-09	6.36E-09	3.26E-09	1.85E-09	1.14E-09	9.00E-10	1.12E-09
	M	5.0E-03	2.38E-08	1.79E-08	1.14E-08	8.40E-09	7.87E-09	6.29E-09	6.83E-09
	S	5.0E-03	2.64E-08	1.99E-08	1.28E-08	9.51E-09	8.99E-09	7.18E-09	7.78E-09
Pa-230	F	5.0E-03	7.72E-07	4.44E-07	2.17E-07	1.27E-07	8.22E-08	5.57E-08	7.21E-08
	M	5.0E-03	2.03E-06	1.55E-06	9.79E-07	7.15E-07	6.65E-07	5.29E-07	5.77E-07
	S	5.0E-03	2.51E-06	1.95E-06	1.24E-06	9.05E-07	8.45E-07	6.75E-07	7.34E-07
Pa-231	F	5.0E-03	4.15E-04	4.09E-04	3.13E-04	2.64E-04	2.35E-04	2.30E-04	2.37E-04
	M	5.0E-03	1.45E-04	1.45E-04	1.18E-04	9.66E-05	9.39E-05	9.35E-05	9.50E-05

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	5.0E-03	6.39E-05	5.87E-05	4.32E-05	3.17E-05	2.98E-05	2.89E-05	2.99E-05
Pa-232	F	5.0E-03	3.34E-09	2.72E-09	1.69E-09	1.32E-09	1.26E-09	1.15E-09	1.20E-09
	M	5.0E-03	5.36E-09	4.10E-09	2.31E-09	1.59E-09	1.16E-09	9.35E-10	1.07E-09
	S	5.0E-03	9.87E-09	8.50E-09	4.57E-09	3.05E-09	2.58E-09	2.41E-09	2.60E-09
Pa-233	F	5.0E-03	1.30E-08	8.74E-09	4.30E-09	2.46E-09	1.44E-09	1.13E-09	1.43E-09
	M	5.0E-03	1.67E-08	1.24E-08	7.28E-09	5.17E-09	4.51E-09	3.58E-09	3.96E-09
	S	5.0E-03	1.79E-08	1.36E-08	8.08E-09	5.85E-09	5.21E-09	4.14E-09	4.56E-09
Pa-234	F	5.0E-03	1.34E-09	9.83E-10	4.65E-10	2.84E-10	1.59E-10	1.31E-10	1.63E-10
	M	5.0E-03	2.35E-09	1.70E-09	8.61E-10	5.69E-10	3.97E-10	3.20E-10	3.75E-10
	S	5.0E-03	2.46E-09	1.78E-09	9.06E-10	6.01E-10	4.23E-10	3.41E-10	3.98E-10
Pa-235	F	5.0E-03	9.07E-11	5.72E-11	2.45E-11	1.59E-11	9.81E-12	8.53E-12	1.02E-11
	M	5.0E-03	1.48E-10	9.49E-11	4.23E-11	2.81E-11	1.89E-11	1.61E-11	1.88E-11
	S	5.0E-03	1.55E-10	9.90E-11	4.43E-11	2.94E-11	1.99E-11	1.69E-11	1.98E-11
Uranium									
U-230	F	4.0E-02	3.26E-06	1.50E-06	7.34E-07	5.47E-07	4.15E-07	3.86E-07	4.26E-07
	M	4.0E-02	4.95E-05	3.76E-05	2.42E-05	1.80E-05	1.70E-05	1.35E-05	1.47E-05
	S	2.0E-02	5.90E-05	4.50E-05	2.89E-05	2.15E-05	2.03E-05	1.62E-05	1.76E-05
U-231	F	4.0E-02	1.15E-09	7.84E-10	3.71E-10	1.70E-10	1.14E-10	7.18E-11	9.87E-11
	M	4.0E-02	2.98E-09	2.17E-09	1.04E-09	7.14E-10	5.71E-10	4.68E-10	5.30E-10
	S	2.0E-02	2.90E-09	2.37E-09	1.15E-09	7.84E-10	6.27E-10	5.14E-10	5.80E-10
U-232	F	4.0E-02	1.60E-05	1.04E-05	6.88E-06	6.78E-06	7.50E-06	4.02E-06	4.61E-06
	M	4.0E-02	3.00E-05	2.42E-05	1.56E-05	1.12E-05	1.02E-05	7.81E-06	8.62E-06
	S	2.0E-02	1.02E-04	9.67E-05	6.57E-05	4.31E-05	3.78E-05	3.69E-05	3.89E-05
U-233	F	4.0E-02	2.19E-06	1.45E-06	9.41E-07	8.40E-07	8.66E-07	5.80E-07	6.39E-07
	M	4.0E-02	1.48E-05	1.13E-05	7.16E-06	4.92E-06	4.28E-06	3.55E-06	3.89E-06
	S	2.0E-02	3.37E-05	2.93E-05	1.90E-05	1.24E-05	1.05E-05	9.59E-06	1.03E-05

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
U-234	F	4.0E-02	2.12E-06	1.39E-06	9.02E-07	7.98E-07	8.25E-07	5.60E-07	6.15E-07
	M	4.0E-02	1.45E-05	1.12E-05	7.03E-06	4.81E-06	4.18E-06	3.48E-06	3.81E-06
	S	2.0E-02	3.31E-05	2.88E-05	1.87E-05	1.22E-05	1.03E-05	9.41E-06	1.01E-05
U-235	F	4.0E-02	1.98E-06	1.31E-06	8.48E-07	7.51E-07	7.69E-07	5.21E-07	5.73E-07
	M	4.0E-02	1.31E-05	1.00E-05	6.30E-06	4.28E-06	3.69E-06	3.08E-06	3.38E-06
	S	2.0E-02	3.01E-05	2.62E-05	1.70E-05	1.10E-05	9.19E-06	8.47E-06	9.13E-06
U-235m	F	4.0E-02	7.93E-15	4.70E-15	1.97E-15	1.21E-15	7.00E-16	6.17E-16	7.55E-16
	M	4.0E-02	1.14E-14	6.45E-15	2.63E-15	1.54E-15	8.51E-16	7.02E-16	9.01E-16
	S	2.0E-02	1.18E-14	6.64E-15	2.71E-15	1.57E-15	8.68E-16	7.11E-16	9.17E-16
U-236	F	4.0E-02	1.99E-06	1.31E-06	8.49E-07	7.51E-07	7.76E-07	5.27E-07	5.79E-07
	M	4.0E-02	1.34E-05	1.03E-05	6.48E-06	4.41E-06	3.81E-06	3.18E-06	3.49E-06
	S	2.0E-02	3.08E-05	2.68E-05	1.74E-05	1.12E-05	9.43E-06	8.68E-06	9.36E-06
U-237	F	4.0E-02	1.86E-09	1.49E-09	6.70E-10	4.33E-10	1.90E-10	1.82E-10	2.28E-10
	M	4.0E-02	7.88E-09	5.75E-09	3.33E-09	2.41E-09	2.11E-09	1.66E-09	1.84E-09
	S	2.0E-02	8.79E-09	6.44E-09	3.76E-09	2.72E-09	2.40E-09	1.90E-09	2.10E-09
U-238	F	4.0E-02	1.92E-06	1.26E-06	8.17E-07	7.25E-07	7.42E-07	5.03E-07	5.53E-07
	M	4.0E-02	1.22E-05	9.37E-06	5.90E-06	3.99E-06	3.41E-06	2.86E-06	3.14E-06
	S	2.0E-02	2.85E-05	2.49E-05	1.61E-05	1.04E-05	8.70E-06	8.05E-06	8.68E-06
U-239	F	4.0E-02	1.04E-10	6.84E-11	3.02E-11	1.96E-11	1.21E-11	1.06E-11	1.26E-11
	M	4.0E-02	1.79E-10	1.19E-10	5.63E-11	3.81E-11	2.72E-11	2.27E-11	2.62E-11
	S	2.0E-02	1.87E-10	1.25E-10	5.92E-11	4.02E-11	2.89E-11	2.41E-11	2.78E-11
U-240	F	4.0E-02	2.38E-09	1.58E-09	7.02E-10	4.44E-10	2.40E-10	1.99E-10	2.50E-10
	M	4.0E-02	4.50E-09	3.05E-09	1.46E-09	9.55E-10	6.35E-10	5.22E-10	6.17E-10
	S	2.0E-02	4.82E-09	3.27E-09	1.56E-09	1.02E-09	6.82E-10	5.59E-10	6.61E-10
U-242	F	4.0E-02	1.68E-10	1.08E-10	4.69E-11	3.04E-11	1.89E-11	1.66E-11	1.98E-11
	M	4.0E-02	2.61E-10	1.67E-10	7.42E-11	4.86E-11	3.18E-11	2.72E-11	3.21E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	2.0E-02	2.71E-10	1.73E-10	7.72E-11	5.06E-11	3.33E-11	2.84E-11	3.35E-11
Neptunium									
Np-232	F	5.0E-03	2.08E-10	2.01E-10	1.31E-10	1.13E-10	1.13E-10	1.20E-10	1.20E-10
	M	5.0E-03	9.30E-11	8.46E-11	5.75E-11	4.71E-11	4.94E-11	5.19E-11	5.20E-11
	S	5.0E-03	1.18E-10	9.94E-11	5.91E-11	3.96E-11	2.54E-11	2.45E-11	2.74E-11
Np-233	F	5.0E-03	1.16E-11	9.19E-12	4.44E-12	2.59E-12	1.54E-12	1.21E-12	1.52E-12
	M	5.0E-03	1.59E-11	1.21E-11	5.94E-12	3.59E-12	2.29E-12	1.81E-12	2.20E-12
	S	5.0E-03	1.64E-11	1.25E-11	6.11E-12	3.69E-12	2.37E-12	1.87E-12	2.27E-12
Np-234	F	5.0E-03	2.32E-09	1.81E-09	9.19E-10	5.75E-10	3.43E-10	2.79E-10	3.39E-10
	M	5.0E-03	3.10E-09	2.40E-09	1.26E-09	8.11E-10	5.33E-10	4.30E-10	5.09E-10
	S	5.0E-03	3.21E-09	2.48E-09	1.31E-09	8.43E-10	5.59E-10	4.50E-10	5.33E-10
Np-235	F	5.0E-03	4.85E-09	4.03E-09	2.21E-09	1.31E-09	8.60E-10	7.26E-10	8.55E-10
	M	5.0E-03	2.60E-09	2.14E-09	1.25E-09	7.64E-10	5.62E-10	4.74E-10	5.41E-10
	S	5.0E-03	2.84E-09	2.38E-09	1.41E-09	8.80E-10	6.62E-10	5.54E-10	6.29E-10
Np-236	F	5.0E-03	1.31E-05	1.34E-05	1.05E-05	1.08E-05	1.15E-05	1.15E-05	1.14E-05
	M	5.0E-03	4.42E-06	4.60E-06	3.89E-06	3.90E-06	4.49E-06	4.58E-06	4.51E-06
	S	5.0E-03	2.33E-06	2.33E-06	1.84E-06	1.47E-06	1.47E-06	1.47E-06	1.49E-06
Np-236m	F	5.0E-03	2.85E-08	2.59E-08	1.54E-08	1.08E-08	9.11E-09	9.18E-09	9.65E-09
	M	5.0E-03	1.62E-08	1.40E-08	8.93E-09	6.27E-09	5.69E-09	5.40E-09	5.68E-09
	S	5.0E-03	1.59E-08	1.33E-08	8.47E-09	5.66E-09	4.83E-09	4.26E-09	4.62E-09
Np-237	F	5.0E-03	9.88E-05	9.42E-05	6.09E-05	5.02E-05	4.82E-05	4.97E-05	5.05E-05
	M	5.0E-03	4.41E-05	4.06E-05	2.80E-05	2.20E-05	2.22E-05	2.27E-05	2.30E-05
	S	5.0E-03	3.66E-05	3.19E-05	2.13E-05	1.44E-05	1.26E-05	1.19E-05	1.26E-05
Np-238	F	5.0E-03	9.02E-09	7.99E-09	4.82E-09	3.74E-09	3.39E-09	3.48E-09	3.58E-09
	M	5.0E-03	7.29E-09	5.78E-09	3.43E-09	2.50E-09	2.23E-09	2.13E-09	2.24E-09
	S	5.0E-03	7.99E-09	6.19E-09	3.14E-09	2.13E-09	1.72E-09	1.50E-09	1.66E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Np-239	F	5.0E-03	2.64E-09	1.41E-09	6.49E-10	3.94E-10	2.14E-10	1.77E-10	2.25E-10
	M	5.0E-03	5.97E-09	4.26E-09	2.07E-09	1.46E-09	1.20E-09	9.51E-10	1.08E-09
	S	5.0E-03	5.75E-09	4.08E-09	2.24E-09	1.59E-09	1.32E-09	1.05E-09	1.17E-09
Np-240	F	5.0E-03	3.05E-10	2.15E-10	1.00E-10	6.33E-11	3.88E-11	3.28E-11	3.94E-11
	M	5.0E-03	5.23E-10	3.64E-10	1.78E-10	1.19E-10	8.43E-11	6.92E-11	8.03E-11
	S	5.0E-03	5.46E-10	3.81E-10	1.87E-10	1.25E-10	8.92E-11	7.30E-11	8.47E-11
Np-241	F	5.0E-03	6.85E-11	4.53E-11	2.04E-11	1.40E-11	9.51E-12	8.54E-12	9.79E-12
	M	5.0E-03	1.02E-10	6.70E-11	3.02E-11	2.04E-11	1.38E-11	1.20E-11	1.40E-11
	S	5.0E-03	1.05E-10	6.92E-11	3.11E-11	2.09E-11	1.40E-11	1.21E-11	1.41E-11
Plutonium									
Pu-232	F	5.0E-03	4.15E-08	2.90E-08	1.39E-08	9.80E-09	7.09E-09	6.22E-09	7.03E-09
	M	5.0E-03	1.07E-07	7.73E-08	4.28E-08	3.14E-08	2.72E-08	2.22E-08	2.44E-08
	S	1.0E-04	1.14E-07	8.25E-08	4.59E-08	3.37E-08	2.42E-08	2.38E-08	2.59E-08
Pu-234	F	5.0E-03	2.93E-08	2.02E-08	9.78E-09	5.70E-09	3.56E-09	3.02E-09	3.64E-09
	M	5.0E-03	7.79E-08	5.86E-08	3.75E-08	2.75E-08	2.57E-08	2.06E-08	2.24E-08
	S	1.0E-04	8.69E-08	6.58E-08	4.25E-08	3.14E-08	2.96E-08	2.37E-08	2.57E-08
Pu-235	F	5.0E-03	1.06E-11	8.30E-12	4.03E-12	2.31E-12	1.38E-12	1.08E-12	1.35E-12
	M	5.0E-03	1.40E-11	1.07E-11	5.23E-12	3.09E-12	1.96E-12	1.54E-12	1.88E-12
	S	1.0E-04	1.44E-11	1.09E-11	5.37E-12	3.18E-12	2.03E-12	1.59E-12	1.95E-12
Pu-236	F	5.0E-03	1.05E-04	9.56E-05	6.21E-05	4.55E-05	3.82E-05	4.08E-05	4.21E-05
	M	5.0E-03	4.80E-05	4.29E-05	2.95E-05	2.12E-05	1.95E-05	1.99E-05	2.05E-05
	S	1.0E-04	3.62E-05	3.10E-05	2.01E-05	1.36E-05	1.18E-05	1.06E-05	1.14E-05
Pu-237	F	5.0E-03	2.35E-09	1.67E-09	8.38E-10	5.08E-10	3.11E-10	2.77E-10	3.28E-10
	M	5.0E-03	1.98E-09	1.47E-09	8.32E-10	5.47E-10	4.27E-10	3.53E-10	3.99E-10
	S	1.0E-04	2.03E-09	1.53E-09	8.86E-10	5.92E-10	4.76E-10	3.88E-10	4.36E-10
Pu-238	F	5.0E-03	1.99E-04	1.91E-04	1.38E-04	1.12E-04	1.01E-04	1.08E-04	1.10E-04

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	5.0E-03	7.77E-05	7.42E-05	5.64E-05	4.41E-05	4.32E-05	4.62E-05	4.65E-05
	S	1.0E-04	4.45E-05	3.99E-05	2.72E-05	1.88E-05	1.69E-05	1.61E-05	1.69E-05
Pu-239	F	5.0E-03	2.10E-04	2.04E-04	1.52E-04	1.25E-04	1.12E-04	1.19E-04	1.21E-04
	M	5.0E-03	8.00E-05	7.73E-05	6.04E-05	4.81E-05	4.72E-05	5.02E-05	5.04E-05
	S	1.0E-04	4.27E-05	3.85E-05	2.66E-05	1.86E-05	1.68E-05	1.60E-05	1.68E-05
Pu-240	F	5.0E-03	2.10E-04	2.04E-04	1.52E-04	1.25E-04	1.12E-04	1.19E-04	1.21E-04
	M	5.0E-03	8.01E-05	7.74E-05	6.04E-05	4.81E-05	4.72E-05	5.02E-05	5.04E-05
	S	1.0E-04	4.28E-05	3.86E-05	2.66E-05	1.86E-05	1.68E-05	1.61E-05	1.68E-05
Pu-241	F	5.0E-03	2.84E-06	2.93E-06	2.58E-06	2.38E-06	2.22E-06	2.28E-06	2.30E-06
	M	5.0E-03	9.18E-07	9.82E-07	9.24E-07	8.33E-07	8.58E-07	8.99E-07	8.94E-07
	S	1.0E-04	2.22E-07	2.36E-07	2.03E-07	1.69E-07	1.72E-07	1.75E-07	1.75E-07
Pu-242	F	5.0E-03	1.99E-04	1.93E-04	1.44E-04	1.19E-04	1.07E-04	1.13E-04	1.15E-04
	M	5.0E-03	7.59E-05	7.33E-05	5.73E-05	4.56E-05	4.47E-05	4.76E-05	4.79E-05
	S	1.0E-04	4.02E-05	3.62E-05	2.50E-05	1.74E-05	1.57E-05	1.50E-05	1.58E-05
Pu-243	F	5.0E-03	2.87E-10	1.94E-10	8.83E-11	5.77E-11	3.50E-11	3.20E-11	3.76E-11
	M	5.0E-03	5.72E-10	3.92E-10	1.96E-10	1.34E-10	8.74E-11	8.30E-11	9.38E-11
	S	1.0E-04	6.03E-10	4.13E-10	2.06E-10	1.41E-10	9.24E-11	8.66E-11	9.82E-11
Pu-244	F	5.0E-03	1.97E-04	1.91E-04	1.42E-04	1.17E-04	1.05E-04	1.12E-04	1.13E-04
	M	5.0E-03	7.43E-05	7.19E-05	5.62E-05	4.47E-05	4.39E-05	4.67E-05	4.70E-05
	S	1.0E-04	3.88E-05	3.51E-05	2.42E-05	1.69E-05	1.51E-05	1.46E-05	1.53E-05
Pu-245	F	5.0E-03	1.78E-09	1.21E-09	5.35E-10	3.33E-10	1.80E-10	1.57E-10	1.94E-10
	M	5.0E-03	3.44E-09	2.38E-09	1.17E-09	7.79E-10	4.90E-10	3.95E-10	4.74E-10
	S	1.0E-04	3.63E-09	2.51E-09	1.23E-09	8.26E-10	5.26E-10	4.23E-10	5.06E-10
Pu-246	F	5.0E-03	1.75E-08	1.19E-08	5.87E-09	3.77E-09	2.45E-09	2.27E-09	2.60E-09
	M	5.0E-03	2.35E-08	1.72E-08	9.53E-09	6.59E-09	5.29E-09	4.40E-09	4.91E-09
	S	1.0E-04	2.46E-08	1.81E-08	1.01E-08	7.00E-09	5.67E-09	4.64E-09	5.19E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Americium									
Am-237	F	5.0E-03	1.01E-10	7.46E-11	3.57E-11	2.23E-11	1.37E-11	1.13E-11	1.36E-11
	M	5.0E-03	1.69E-10	1.23E-10	6.30E-11	4.20E-11	3.08E-11	2.50E-11	2.88E-11
	S	5.0E-03	1.77E-10	1.29E-10	6.61E-11	4.42E-11	3.27E-11	2.66E-11	3.05E-11
Am-238	F	5.0E-03	4.22E-10	3.87E-10	2.55E-10	2.03E-10	1.81E-10	1.88E-10	1.93E-10
	M	5.0E-03	3.08E-10	2.66E-10	1.28E-10	9.66E-11	8.87E-11	8.96E-11	9.33E-11
	S	5.0E-03	2.67E-10	2.20E-10	1.27E-10	8.20E-11	6.10E-11	5.37E-11	6.01E-11
Am-239	F	5.0E-03	8.38E-10	5.95E-10	2.72E-10	1.66E-10	9.25E-11	7.75E-11	9.63E-11
	M	5.0E-03	1.57E-09	1.12E-09	5.72E-10	3.84E-10	2.81E-10	2.27E-10	2.62E-10
	S	5.0E-03	1.65E-09	1.18E-09	6.05E-10	4.07E-10	2.61E-10	2.43E-10	2.77E-10
Am-240	F	5.0E-03	2.15E-09	1.69E-09	8.94E-10	5.72E-10	3.62E-10	2.35E-10	3.02E-10
	M	5.0E-03	2.94E-09	2.26E-09	1.20E-09	7.80E-10	5.36E-10	4.37E-10	5.10E-10
	S	5.0E-03	3.03E-09	2.31E-09	1.22E-09	7.94E-10	5.43E-10	4.36E-10	5.12E-10
Am-241	F	5.0E-03	1.86E-04	1.78E-04	1.23E-04	1.01E-04	9.28E-05	9.64E-05	9.81E-05
	M	5.0E-03	7.37E-05	6.97E-05	5.11E-05	4.06E-05	4.03E-05	4.17E-05	4.21E-05
	S	5.0E-03	4.59E-05	4.01E-05	2.73E-05	1.89E-05	1.70E-05	1.60E-05	1.69E-05
Am-242	F	5.0E-03	9.13E-08	7.05E-08	3.46E-08	2.09E-08	1.36E-08	1.12E-08	1.34E-08
	M	5.0E-03	7.51E-08	5.88E-08	3.55E-08	2.44E-08	2.11E-08	1.73E-08	1.91E-08
	S	5.0E-03	7.90E-08	6.19E-08	3.88E-08	2.71E-08	2.41E-08	1.97E-08	2.16E-08
Am-242m	F	5.0E-03	1.56E-04	1.53E-04	1.11E-04	9.37E-05	8.78E-05	9.16E-05	9.28E-05
	M	5.0E-03	5.27E-05	5.30E-05	4.10E-05	3.39E-05	3.46E-05	3.67E-05	3.67E-05
	S	5.0E-03	2.51E-05	2.39E-05	1.71E-05	1.21E-05	1.11E-05	1.11E-05	1.15E-05
Am-243	F	5.0E-03	1.83E-04	1.75E-04	1.21E-04	1.00E-04	9.23E-05	9.57E-05	9.75E-05
	M	5.0E-03	7.19E-05	6.81E-05	5.02E-05	4.00E-05	3.98E-05	4.12E-05	4.16E-05
	S	5.0E-03	4.40E-05	3.86E-05	2.63E-05	1.82E-05	1.64E-05	1.55E-05	1.63E-05
Am-244	F	5.0E-03	1.02E-08	9.19E-09	5.61E-09	4.09E-09	3.51E-09	3.71E-09	3.84E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	5.0E-03	6.03E-09	5.04E-09	3.15E-09	2.26E-09	2.04E-09	2.01E-09	2.10E-09
	S	5.0E-03	5.99E-09	4.74E-09	2.39E-09	1.63E-09	1.36E-09	1.20E-09	1.32E-09
Am-244m	F	5.0E-03	4.56E-10	4.02E-10	2.44E-10	1.78E-10	1.53E-10	1.61E-10	1.67E-10
	M	5.0E-03	3.34E-10	2.13E-10	1.31E-10	9.28E-11	8.41E-11	8.37E-11	8.75E-11
	S	5.0E-03	3.04E-10	2.24E-10	1.22E-10	8.19E-11	6.41E-11	5.76E-11	6.36E-11
Am-245	F	5.0E-03	2.16E-10	1.41E-10	6.19E-11	4.02E-11	2.45E-11	2.15E-11	2.56E-11
	M	5.0E-03	3.97E-10	2.66E-10	1.28E-10	8.77E-11	6.44E-11	5.33E-11	6.12E-11
	S	5.0E-03	4.17E-10	2.80E-10	1.35E-10	9.25E-11	6.84E-11	5.62E-11	6.46E-11
Am-246	F	5.0E-03	3.33E-10	2.27E-10	1.03E-10	6.69E-11	4.23E-11	3.64E-11	4.32E-11
	M	5.0E-03	5.59E-10	3.82E-10	1.81E-10	1.23E-10	8.75E-11	7.29E-11	8.43E-11
	S	5.0E-03	5.84E-10	3.99E-10	1.90E-10	1.29E-10	9.22E-11	7.67E-11	8.85E-11
Am-246m	F	5.0E-03	1.31E-10	9.02E-11	4.19E-11	2.67E-11	1.67E-11	1.43E-11	1.70E-11
	M	5.0E-03	1.96E-10	1.34E-10	6.27E-11	4.08E-11	2.70E-11	2.27E-11	2.67E-11
	S	5.0E-03	2.04E-10	1.39E-10	6.49E-11	4.22E-11	2.80E-11	2.34E-11	2.76E-11
Am-247	F	5.0E-03	1.37E-10	8.95E-11	3.91E-11	2.57E-11	1.62E-11	1.41E-11	1.67E-11
	M	5.0E-03	2.20E-10	1.45E-10	6.61E-11	4.45E-11	3.06E-11	2.59E-11	3.02E-11
	S	5.0E-03	2.30E-10	1.51E-10	6.90E-11	4.66E-11	3.21E-11	2.72E-11	3.17E-11
Curium									
Cm-238	F	5.0E-03	3.35E-09	2.45E-09	8.75E-10	6.22E-10	5.16E-10	4.69E-10	5.20E-10
	M	5.0E-03	8.17E-09	6.01E-09	3.15E-09	2.33E-09	2.21E-09	1.80E-09	1.95E-09
	S	5.0E-03	8.71E-09	6.40E-09	3.38E-09	2.49E-09	2.37E-09	1.91E-09	2.08E-09
Cm-239	F	5.0E-03	2.69E-10	1.98E-10	9.31E-11	5.62E-11	3.12E-11	2.57E-11	3.21E-11
	M	5.0E-03	4.68E-10	3.41E-10	1.74E-10	1.15E-10	8.10E-11	6.50E-11	7.59E-11
	S	5.0E-03	4.91E-10	3.57E-10	1.83E-10	1.21E-10	8.64E-11	6.92E-11	8.06E-11
Cm-240	F	5.0E-03	8.29E-06	6.29E-06	3.21E-06	2.07E-06	1.49E-06	1.35E-06	1.52E-06
	M	5.0E-03	1.19E-05	9.13E-06	5.78E-06	4.18E-06	3.85E-06	3.17E-06	3.43E-06

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	5.0E-03	1.29E-05	9.92E-06	6.37E-06	4.63E-06	4.30E-06	3.48E-06	3.78E-06
Cm-241	F	5.0E-03	1.14E-07	8.92E-08	4.95E-08	3.51E-08	2.78E-08	2.66E-08	2.86E-08
	M	5.0E-03	1.33E-07	1.03E-07	6.58E-08	4.77E-08	4.37E-08	3.73E-08	4.00E-08
	S	5.0E-03	1.41E-07	1.08E-07	6.90E-08	4.95E-08	4.52E-08	3.71E-08	4.03E-08
Cm-242	F	5.0E-03	2.68E-05	2.07E-05	1.02E-05	6.14E-06	4.00E-06	3.31E-06	3.95E-06
	M	5.0E-03	2.23E-05	1.75E-05	1.06E-05	7.30E-06	6.34E-06	5.20E-06	5.72E-06
	S	5.0E-03	2.35E-05	1.84E-05	1.16E-05	8.12E-06	7.23E-06	5.92E-06	6.47E-06
Cm-243	F	5.0E-03	1.60E-04	1.50E-04	9.65E-05	7.39E-05	6.60E-05	6.99E-05	7.16E-05
	M	5.0E-03	6.68E-05	6.15E-05	4.23E-05	3.16E-05	3.05E-05	3.17E-05	3.23E-05
	S	5.0E-03	4.59E-05	3.98E-05	2.63E-05	1.79E-05	1.58E-05	1.47E-05	1.56E-05
Cm-244	F	5.0E-03	1.46E-04	1.35E-04	8.38E-05	6.16E-05	5.37E-05	5.71E-05	5.89E-05
	M	5.0E-03	6.19E-05	5.64E-05	3.77E-05	2.73E-05	2.58E-05	2.66E-05	2.73E-05
	S	5.0E-03	4.42E-05	3.81E-05	2.49E-05	1.68E-05	1.47E-05	1.35E-05	1.44E-05
Cm-245	F	5.0E-03	1.87E-04	1.79E-04	1.25E-04	1.03E-04	9.52E-05	9.85E-05	1.00E-04
	M	5.0E-03	7.36E-05	6.98E-05	5.16E-05	4.12E-05	4.10E-05	4.24E-05	4.28E-05
	S	5.0E-03	4.50E-05	3.94E-05	2.69E-05	1.87E-05	1.68E-05	1.59E-05	1.67E-05
Cm-246	F	5.0E-03	1.87E-04	1.79E-04	1.24E-04	1.03E-04	9.46E-05	9.81E-05	9.99E-05
	M	5.0E-03	7.38E-05	6.99E-05	5.15E-05	4.11E-05	4.08E-05	4.23E-05	4.27E-05
	S	5.0E-03	4.53E-05	3.97E-05	2.70E-05	1.88E-05	1.69E-05	1.60E-05	1.68E-05
Cm-247	F	5.0E-03	1.71E-04	1.64E-04	1.14E-04	9.44E-05	8.68E-05	9.00E-05	9.16E-05
	M	5.0E-03	6.72E-05	6.36E-05	4.70E-05	3.74E-05	3.72E-05	3.86E-05	3.90E-05
	S	5.0E-03	4.08E-05	3.57E-05	2.43E-05	1.68E-05	1.50E-05	1.43E-05	1.50E-05
Cm-248	F	5.0E-03	6.89E-04	6.59E-04	4.59E-04	3.80E-04	3.49E-04	3.62E-04	3.68E-04
	M	5.0E-03	2.49E-04	2.40E-04	1.78E-04	1.43E-04	1.42E-04	1.49E-04	1.50E-04
	S	5.0E-03	1.35E-04	1.21E-04	8.25E-05	5.65E-05	4.99E-05	4.86E-05	5.10E-05
Cm-249	F	5.0E-03	1.79E-10	9.86E-11	5.93E-11	4.62E-11	4.02E-11	4.02E-11	4.20E-11

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	5.0E-03	2.40E-10	1.64E-10	8.25E-11	5.82E-11	3.72E-11	3.29E-11	3.79E-11
	S	5.0E-03	2.41E-10	1.61E-10	7.79E-11	5.32E-11	3.93E-11	3.34E-11	3.80E-11
Cm-250	F	5.0E-03	4.69E-03	4.48E-03	3.12E-03	2.58E-03	2.37E-03	2.46E-03	2.51E-03
	M	5.0E-03	1.66E-03	1.60E-03	1.19E-03	9.55E-04	9.52E-04	1.00E-03	1.01E-03
	S	5.0E-03	8.63E-04	7.76E-04	5.30E-04	3.61E-04	3.18E-04	3.12E-04	3.27E-04
Cm-251	F	5.0E-03	1.18E-10	7.88E-11	3.61E-11	2.41E-11	1.60E-11	1.44E-11	1.66E-11
	M	5.0E-03	1.89E-10	1.25E-10	5.85E-11	3.95E-11	2.80E-11	2.37E-11	2.74E-11
	S	5.0E-03	1.96E-10	1.30E-10	6.04E-11	4.06E-11	2.86E-11	2.41E-11	2.79E-11
Berkelium									
Bk-245	F	5.0E-03	4.66E-09	3.41E-09	1.85E-09	1.22E-09	6.74E-10	5.91E-10	7.08E-10
	M	5.0E-03	8.99E-09	6.67E-09	4.05E-09	2.94E-09	2.62E-09	2.11E-09	2.31E-09
	S	5.0E-03	9.54E-09	7.06E-09	4.29E-09	3.14E-09	2.84E-09	2.26E-09	2.48E-09
Bk-246	F	5.0E-03	1.99E-09	1.64E-09	6.44E-10	4.46E-10	3.06E-10	2.79E-10	3.18E-10
	M	5.0E-03	2.16E-09	1.69E-09	9.01E-10	5.79E-10	3.85E-10	2.54E-10	3.20E-10
	S	5.0E-03	2.11E-09	1.63E-09	8.48E-10	5.39E-10	3.46E-10	2.80E-10	3.34E-10
Bk-247	F	5.0E-03	4.47E-04	4.26E-04	2.92E-04	2.15E-04	1.75E-04	1.67E-04	1.77E-04
	M	5.0E-03	1.55E-04	1.50E-04	1.10E-04	7.93E-05	7.16E-05	6.93E-05	7.22E-05
	S	5.0E-03	5.59E-05	4.89E-05	3.38E-05	2.35E-05	2.12E-05	1.98E-05	2.09E-05
Bk-248m	F	5.0E-03	1.53E-07	1.33E-07	7.92E-08	4.83E-08	2.60E-08	2.34E-08	2.81E-08
	M	5.0E-03	7.87E-08	6.66E-08	4.26E-08	2.76E-08	2.08E-08	1.79E-08	2.00E-08
	S	5.0E-03	6.42E-08	5.17E-08	3.24E-08	2.22E-08	1.92E-08	1.60E-08	1.75E-08
Bk-249	F	5.0E-03	1.04E-06	1.00E-06	6.96E-07	5.19E-07	4.35E-07	4.18E-07	4.40E-07
	M	5.0E-03	3.35E-07	3.35E-07	2.50E-07	1.82E-07	1.69E-07	1.66E-07	1.72E-07
	S	5.0E-03	8.78E-08	8.15E-08	5.92E-08	4.17E-08	3.85E-08	3.77E-08	3.92E-08
Bk-250	F	5.0E-03	8.22E-09	7.55E-09	4.70E-09	2.99E-09	2.18E-09	2.13E-09	2.33E-09
	M	5.0E-03	3.44E-09	3.08E-09	2.01E-09	1.29E-09	1.06E-09	1.02E-09	1.09E-09

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	5.0E-03	2.30E-09	1.86E-09	9.60E-10	6.38E-10	5.36E-10	4.78E-10	5.23E-10
Bk-251	F	5.0E-03	2.15E-10	1.57E-10	5.84E-11	4.06E-11	3.09E-11	2.79E-11	3.15E-11
	M	5.0E-03	3.08E-10	2.11E-10	1.04E-10	7.08E-11	5.24E-11	4.48E-11	5.09E-11
	S	5.0E-03	3.11E-10	2.09E-10	1.00E-10	6.78E-11	4.93E-11	4.12E-11	4.74E-11
Californium									
Cf-244	F	5.0E-03	4.57E-08	3.25E-08	1.60E-08	1.11E-08	7.74E-09	6.71E-09	7.66E-09
	M	5.0E-03	7.53E-08	5.38E-08	2.80E-08	2.01E-08	1.61E-08	1.35E-08	1.50E-08
	S	5.0E-03	7.88E-08	5.61E-08	2.93E-08	2.11E-08	1.71E-08	1.42E-08	1.58E-08
Cf-246	F	5.0E-03	7.39E-07	5.54E-07	3.04E-07	1.91E-07	8.80E-08	7.28E-08	9.39E-08
	M	5.0E-03	1.71E-06	1.29E-06	8.31E-07	6.10E-07	5.65E-07	4.52E-07	4.92E-07
	S	5.0E-03	1.83E-06	1.38E-06	8.94E-07	6.61E-07	6.26E-07	5.01E-07	5.42E-07
Cf-247	F	5.0E-03	1.72E-10	1.47E-10	9.26E-11	6.64E-11	5.16E-11	4.84E-11	5.22E-11
	M	5.0E-03	2.32E-10	1.80E-10	1.03E-10	5.59E-11	4.74E-11	4.13E-11	4.62E-11
	S	5.0E-03	2.17E-10	1.62E-10	8.81E-11	5.81E-11	4.47E-11	3.67E-11	4.17E-11
Cf-248	F	5.0E-03	7.34E-05	6.38E-05	3.81E-05	2.33E-05	1.25E-05	1.13E-05	1.35E-05
	M	5.0E-03	3.80E-05	3.22E-05	2.07E-05	1.34E-05	1.02E-05	8.78E-06	9.79E-06
	S	5.0E-03	3.11E-05	2.50E-05	1.58E-05	1.08E-05	9.44E-06	7.86E-06	8.60E-06
Cf-249	F	5.0E-03	4.53E-04	4.31E-04	2.95E-04	2.16E-04	1.75E-04	1.68E-04	1.78E-04
	M	5.0E-03	1.57E-04	1.52E-04	1.11E-04	8.00E-05	7.22E-05	7.00E-05	7.29E-05
	S	5.0E-03	5.81E-05	5.08E-05	3.50E-05	2.43E-05	2.20E-05	2.05E-05	2.16E-05
Cf-250	F	5.0E-03	2.84E-04	2.63E-04	1.65E-04	1.05E-04	7.69E-05	7.53E-05	8.21E-05
	M	5.0E-03	1.05E-04	9.79E-05	6.57E-05	4.18E-05	3.48E-05	3.39E-05	3.61E-05
	S	5.0E-03	4.99E-05	4.26E-05	2.78E-05	1.84E-05	1.60E-05	1.45E-05	1.56E-05
Cf-251	F	5.0E-03	4.59E-04	4.37E-04	2.99E-04	2.20E-04	1.79E-04	1.71E-04	1.81E-04
	M	5.0E-03	1.59E-04	1.54E-04	1.13E-04	8.14E-05	7.35E-05	7.12E-05	7.41E-05
	S	5.0E-03	5.81E-05	5.08E-05	3.51E-05	2.45E-05	2.21E-05	2.06E-05	2.17E-05

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
Cf-252	F	5.0E-03	2.44E-04	2.18E-04	1.31E-04	7.43E-05	4.02E-05	3.68E-05	4.42E-05
	M	5.0E-03	9.62E-05	8.58E-05	5.53E-05	3.21E-05	2.18E-05	1.97E-05	2.25E-05
	S	5.0E-03	5.94E-05	4.94E-05	3.10E-05	1.97E-05	1.59E-05	1.38E-05	1.53E-05
Cf-253	F	5.0E-03	4.74E-06	3.58E-06	1.93E-06	1.22E-06	5.23E-07	4.28E-07	5.66E-07
	M	5.0E-03	5.40E-06	4.18E-06	2.62E-06	1.88E-06	1.66E-06	1.33E-06	1.46E-06
	S	5.0E-03	6.03E-06	4.66E-06	2.96E-06	2.17E-06	2.02E-06	1.62E-06	1.76E-06
Cf-254	F	5.0E-03	4.33E-04	3.32E-04	1.80E-04	1.12E-04	4.78E-05	3.90E-05	5.19E-05
	M	5.0E-03	2.47E-04	1.85E-04	1.10E-04	6.90E-05	4.71E-05	4.08E-05	4.68E-05
	S	5.0E-03	2.29E-04	1.68E-04	1.01E-04	6.37E-05	4.93E-05	4.31E-05	4.81E-05
Cf-255	F	5.0E-03	1.65E-08	1.24E-08	6.67E-09	4.18E-09	1.78E-09	1.45E-09	1.93E-09
	M	5.0E-03	2.25E-08	1.73E-08	1.09E-08	7.95E-09	7.17E-09	5.70E-09	6.24E-09
	S	5.0E-03	2.49E-08	1.92E-08	1.22E-08	9.04E-09	8.52E-09	6.77E-09	7.35E-09
Einsteinium									
Es-249	F	5.0E-03	6.74E-10	5.38E-10	2.25E-10	1.63E-10	1.32E-10	1.20E-10	1.32E-10
	M	5.0E-03	1.13E-09	8.42E-10	4.95E-10	3.56E-10	2.70E-10	2.22E-10	2.49E-10
	S	5.0E-03	1.14E-09	8.38E-10	4.86E-10	3.50E-10	2.64E-10	2.12E-10	2.40E-10
Es-250	F	5.0E-03	2.19E-08	2.01E-08	1.25E-08	7.94E-09	5.77E-09	5.65E-09	6.16E-09
	M	5.0E-03	9.57E-09	8.49E-09	5.50E-09	3.52E-09	2.88E-09	2.76E-09	2.96E-09
	S	5.0E-03	6.65E-09	5.35E-09	2.74E-09	1.82E-09	1.52E-09	1.35E-09	1.48E-09
Es-250m	F	5.0E-03	5.54E-09	5.13E-09	3.21E-09	2.04E-09	1.49E-09	1.46E-09	1.59E-09
	M	5.0E-03	2.10E-09	1.94E-09	1.30E-09	8.25E-10	6.83E-10	6.65E-10	7.10E-10
	S	5.0E-03	1.04E-09	8.77E-10	5.64E-10	3.73E-10	3.19E-10	2.90E-10	3.12E-10
Es-251	F	5.0E-03	4.19E-09	3.39E-09	2.06E-09	1.43E-09	9.79E-10	9.03E-10	1.00E-09
	M	5.0E-03	7.96E-09	6.02E-09	3.88E-09	2.84E-09	2.62E-09	2.15E-09	2.32E-09
	S	5.0E-03	8.15E-09	6.06E-09	3.88E-09	2.84E-09	2.65E-09	2.14E-09	2.32E-09
Es-253	F	5.0E-03	5.68E-06	4.15E-06	2.22E-06	1.40E-06	6.04E-07	4.93E-07	6.53E-07

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	M	5.0E-03	1.04E-05	7.91E-06	5.04E-06	3.70E-06	3.41E-06	2.72E-06	2.96E-06
	S	5.0E-03	1.16E-05	8.80E-06	5.66E-06	4.19E-06	3.97E-06	3.16E-06	3.43E-06
Es-254	F	5.0E-03	6.78E-05	5.86E-05	3.47E-05	2.12E-05	1.14E-05	1.03E-05	1.23E-05
	M	5.0E-03	3.68E-05	3.10E-05	1.98E-05	1.30E-05	1.00E-05	8.57E-06	9.54E-06
	S	5.0E-03	3.10E-05	2.49E-05	1.57E-05	1.09E-05	9.59E-06	7.93E-06	8.67E-06
Es-254m	F	5.0E-03	6.08E-07	4.44E-07	2.43E-07	1.53E-07	7.57E-08	6.56E-08	8.17E-08
	M	5.0E-03	1.74E-06	1.31E-06	8.48E-07	6.32E-07	5.98E-07	4.76E-07	5.16E-07
	S	5.0E-03	1.87E-06	1.41E-06	9.14E-07	6.86E-07	6.57E-07	5.22E-07	5.64E-07
Es-255	F	5.0E-03	1.11E-05	8.33E-06	4.48E-06	2.81E-06	1.20E-06	9.73E-07	1.30E-06
	M	5.0E-03	1.51E-05	1.16E-05	7.34E-06	5.35E-06	4.83E-06	3.84E-06	4.21E-06
	S	5.0E-03	1.67E-05	1.29E-05	8.22E-06	6.09E-06	5.74E-06	4.56E-06	4.95E-06
Es-256	F	5.0E-03	9.00E-08	6.07E-08	3.03E-08	1.88E-08	9.30E-09	7.74E-09	9.88E-09
	M	5.0E-03	1.90E-07	1.32E-07	8.22E-08	5.36E-08	4.35E-08	3.81E-08	4.19E-08
	S	5.0E-03	2.01E-07	1.40E-07	8.82E-08	5.76E-08	4.73E-08	4.14E-08	4.55E-08
Fermium									
Fm-251	F	5.0E-03	3.28E-09	2.34E-09	1.17E-09	7.85E-10	3.25E-10	2.79E-10	3.66E-10
	M	5.0E-03	8.62E-09	6.31E-09	3.25E-09	2.40E-09	2.28E-09	1.83E-09	2.00E-09
	S	5.0E-03	9.19E-09	6.72E-09	3.50E-09	2.60E-09	2.47E-09	1.98E-09	2.16E-09
Fm-252	F	5.0E-03	5.39E-07	4.15E-07	2.33E-07	1.45E-07	7.32E-08	6.27E-08	7.79E-08
	M	5.0E-03	1.31E-06	9.91E-07	6.43E-07	4.73E-07	4.42E-07	3.54E-07	3.84E-07
	S	5.0E-03	1.39E-06	1.05E-06	6.82E-07	5.07E-07	4.84E-07	3.86E-07	4.17E-07
Fm-253	F	5.0E-03	8.37E-07	6.12E-07	3.27E-07	2.07E-07	8.91E-08	7.26E-08	9.62E-08
	M	5.0E-03	1.51E-06	1.15E-06	7.32E-07	5.38E-07	4.95E-07	3.94E-07	4.30E-07
	S	5.0E-03	1.68E-06	1.28E-06	8.22E-07	6.10E-07	5.77E-07	4.60E-07	4.98E-07
Fm-254	F	5.0E-03	1.23E-07	8.64E-08	4.11E-08	2.76E-08	1.75E-08	1.57E-08	1.82E-08
	M	5.0E-03	3.17E-07	2.31E-07	1.34E-07	9.82E-08	7.64E-08	6.08E-08	6.85E-08

Table A-2: Effective Dose Coefficients from Inhaled Air (continued)

Nuclide	Type	f_1	Dose Coefficient (Sv/Bq)						
			Newborn	1-year	5-year	10-year	15-year	Adult	Reference Person
	S	5.0E-03	3.38E-07	2.46E-07	1.44E-07	1.06E-07	8.34E-08	6.62E-08	7.44E-08
Fm-255	F	5.0E-03	4.10E-07	2.82E-07	8.83E-08	8.80E-08	4.43E-08	3.88E-08	4.69E-08
	M	5.0E-03	1.18E-06	7.28E-07	4.73E-07	3.52E-07	3.35E-07	2.67E-07	2.90E-07
	S	5.0E-03	1.06E-06	7.93E-07	5.17E-07	3.87E-07	3.71E-07	2.95E-07	3.19E-07
Fm-256	F	5.0E-03	5.77E-07	3.89E-07	1.99E-07	1.24E-07	6.74E-08	5.68E-08	7.02E-08
	M	5.0E-03	1.19E-06	8.23E-07	5.16E-07	3.36E-07	2.73E-07	2.39E-07	2.63E-07
	S	5.0E-03	1.26E-06	8.73E-07	5.52E-07	3.60E-07	2.96E-07	2.60E-07	2.85E-07
Fm-257	F	5.0E-03	4.75E-05	3.84E-05	2.14E-05	1.33E-05	5.78E-06	4.77E-06	6.26E-06
	M	5.0E-03	3.30E-05	2.64E-05	1.64E-05	1.12E-05	8.89E-06	7.22E-06	8.09E-06
	S	5.0E-03	3.31E-05	2.61E-05	1.63E-05	1.15E-05	1.03E-05	8.37E-06	9.15E-06

Table A-3: Effective Dose Rate Coefficients from Air Submersion

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Hydrogen			
H-3	12.32	y	0
Beryllium			
Be-7	53.22	d	2.21E-15
Be-10	1.51E+06	y	1.39E-16
Carbon			
C-10	19.255	s	7.90E-14
C-11	20.39	m	4.56E-14
C-14	5.70E+03	y	2.60E-18
Nitrogen			
N-13	9.965	m	4.57E-14
N-16	7.13	s	2.59E-13
Oxygen			
O-14	70.606	s	1.63E-13
O-15	122.24	s	4.60E-14
O-19	26.464	s	4.60E-14
Fluorine			
F-17	64.49	s	4.60E-14
F-18	109.77	m	4.41E-14
Neon			
Ne-19	17.22	s	4.63E-14
Ne-24	3.38	m	2.48E-14
Sodium			
Na-22	2.6019	y	1.02E-13
Na-24	14.959	h	2.08E-13
Magnesium			
Mg-27	9.458	m	4.16E-14
Mg-28	20.915	h	6.38E-14
Aluminum			
Al-26	7.17E+05	y	1.28E-13
Al-28	2.2414	m	8.88E-14
Al-29	6.56	m	6.71E-14
Silicon			
Si-31	157.3	m	4.83E-16
Si-32	132	y	1.05E-17
Phosphorus			
P-30	2.498	m	4.69E-14
P-32	14.263	d	5.36E-16
P-33	25.34	d	1.44E-17
Sulphur			
S-35	87.51	d	3.07E-18
S-37	5.05	m	1.54E-13
S-38	170.3	m	8.47E-14
Chlorine			
Cl-34	1.5264	s	4.77E-14
Cl-34m	32	m	1.03E-13
Cl-36	3.01E+05	y	1.66E-16
Cl-38	37.24	m	7.36E-14
Cl-39	55.6	m	6.97E-14
Cl-40	1.35	m	2.09E-13
Argon			
Ar-37	35.04	d	6.12E-19
Ar-39	269	y	1.15E-16
Ar-41	109.61	m	6.15E-14
Ar-42	32.9	y	1.26E-16
Ar-43	5.37	m	7.55E-14
Ar-44	11.87	m	9.46E-14
Potassium			
K-38	7.636	m	1.56E-13
K-40	1.25E+09	y	7.94E-15
K-42	12.36	h	1.49E-14
K-43	22.3	h	4.33E-14
K-44	22.13	m	1.19E-13
K-45	17.3	m	9.05E-14
K-46	105	s	1.47E-13
Calcium			
Ca-41	1.02E+05	y	0
Ca-45	162.67	d	1.52E-17
Ca-47	4.536	d	5.02E-14
Ca-49	8.718	m	1.67E-13
Scandium			
Sc-42m	62	s	1.98E-13
Sc-43	3.891	h	4.41E-14
Sc-44	3.97	h	9.87E-14
Sc-44m	58.61	h	1.22E-14
Sc-46	83.79	d	9.37E-14
Sc-47	3.3492	d	4.70E-15
Sc-48	43.67	h	1.58E-13
Sc-49	57.2	m	7.13E-16
Sc-50	102.5	s	1.54E-13

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Titanium			
Ti-44	60	y	4.88E-15
Ti-45	184.8	m	3.90E-14
Ti-51	5.76	m	1.71E-14
Ti-52	1.7	m	5.75E-15
Vanadium			
V-47	32.6	m	4.50E-14
V-48	15.9735	d	1.36E-13
V-49	330	d	0
V-50	1.50E+17	y	6.87E-14
V-52	3.743	m	7.05E-14
V-53	1.61	m	4.93E-14
Chromium			
Cr-48	21.56	h	1.88E-14
Cr-49	42.3	m	4.68E-14
Cr-51	27.7025	d	1.40E-15
Cr-55	3.497	m	1.00E-15
Cr-56	5.94	m	3.47E-15
Manganese			
Mn-50m	1.75	m	2.18E-13
Mn-51	46.2	m	4.52E-14
Mn-52m	21.1	m	1.13E-13
Mn-52	5.591	d	1.62E-13
Mn-53	3.70E+06	y	0
Mn-54	312.12	d	3.83E-14
Mn-56	2.5789	h	8.17E-14
Mn-57	85.4	s	5.30E-15
Mn-58m	65.2	s	1.15E-13
Iron			
Fe-52	8.275	h	3.28E-14
Fe-53	8.51	m	5.35E-14
Fe-53m	2.526	m	1.44E-13
Fe-55	2.737	y	6.69E-24
Fe-59	44.495	d	5.62E-14
Fe-60	1.50E+06	y	6.93E-18
Fe-61	5.98	m	6.68E-14
Fe-62	68	s	2.32E-14
Cobalt			
Co-54m	1.48	m	1.85E-13
Co-55	17.53	h	9.18E-14
Co-56	77.23	d	1.76E-13
Co-57	271.74	d	4.98E-15
Co-58	70.86	d	4.44E-14
Co-58m	9.04	h	6.09E-20
Co-60	5.2713	y	1.19E-13
Co-60m	10.467	m	1.94E-16
Co-61	1.65	h	4.06E-15
Co-62	1.5	m	7.92E-14
Co-62m	13.91	m	1.30E-13
Nickel			
Ni-56	6.075	d	7.82E-14
Ni-57	35.6	h	9.19E-14
Ni-59	1.01E+05	y	6.92E-19
Ni-63	100.1	y	0
Ni-65	2.51719	h	2.72E-14
Ni-66	54.6	h	1.36E-17
Copper			
Cu-57	0.1963	s	5.65E-14
Cu-59	81.5	s	6.68E-14
Cu-60	23.7	m	1.88E-13
Cu-61	3.333	h	3.70E-14
Cu-62	9.673	m	4.60E-14
Cu-64	12.7	h	8.29E-15
Cu-66	5.12	m	5.50E-15
Cu-67	61.83	h	4.91E-15
Cu-69	2.85	m	2.53E-14
Zinc			
Zn-60	2.38	m	6.91E-14
Zn-61	89.1	s	7.23E-14
Zn-62	9.186	h	1.94E-14
Zn-63	38.47	m	4.99E-14
Zn-65	244.06	d	2.72E-14
Zn-69m	13.76	h	1.84E-14
Zn-69	56.4	m	2.00E-16
Zn-71m	3.96	h	7.04E-14
Zn-71	2.45	m	1.52E-14
Zn-72	46.5	h	6.18E-15
Gallium			
Ga-64	2.627	m	1.64E-13
Ga-65	15.2	m	5.23E-14
Ga-66	9.49	h	1.24E-13
Ga-67	3.2612	d	6.57E-15
Ga-68	67.71	m	4.29E-14
Ga-70	21.14	m	8.27E-16

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Ga-72	14.1	h	1.31E-13
Ga-73	4.86	h	1.56E-14
Ga-74	8.12	m	1.55E-13
Germanium			
Ge-66	2.26	h	2.97E-14
Ge-67	18.9	m	6.54E-14
Ge-68	270.95	d	8.87E-20
Ge-69	39.05	h	4.38E-14
Ge-71	11.43	d	9.00E-20
Ge-75	82.78	m	1.83E-15
Ge-77	11.3	h	4.95E-14
Ge-78	88	m	1.23E-14
Arsenic			
As-68	151.6	s	1.76E-13
As-69	15.23	m	5.25E-14
As-70	52.6	m	2.00E-13
As-71	65.28	h	2.55E-14
As-72	26	h	8.21E-14
As-73	80.3	d	1.54E-16
As-74	17.77	d	3.40E-14
As-76	1.0778	d	2.00E-14
As-77	38.83	h	4.86E-16
As-78	90.7	m	6.27E-14
As-79	9.01	m	2.25E-15
Selenium			
Se-70	41.1	m	3.14E-14
Se-71	4.74	m	7.40E-14
Se-72	8.4	d	6.10E-16
Se-73	7.15	h	4.81E-14
Se-73m	39.8	m	1.18E-14
Se-75	119.779	d	1.66E-14
Se-77m	17.36	s	3.70E-15
Se-79	2.95E+05	y	3.05E-18
Se-79m	3.92	m	3.60E-16
Se-81	18.45	m	8.16E-16
Se-81m	57.28	m	5.54E-16
Se-83	22.3	m	1.24E-13
Se-83m	70.1	s	4.78E-14
Se-84	3.1	m	1.90E-14
Bromine			
Br-72	78.6	s	1.41E-13
Br-73	3.4	m	6.52E-14
Br-74	25.4	m	2.30E-13
Br-74m	46	m	2.00E-13
Br-75	96.7	m	5.36E-14
Br-76	16.2	h	1.34E-13
Br-76m	1.31	s	9.66E-16
Br-77	57.036	h	1.40E-14
Br-77m	4.28	m	5.96E-16
Br-78	6.46	m	4.69E-14
Br-80	17.68	m	3.98E-15
Br-80m	4.4205	h	2.38E-16
Br-82	35.3	h	1.22E-13
Br-82m	6.13	m	1.59E-16
Br-83	2.4	h	5.10E-16
Br-84	31.8	m	8.88E-14
Br-84m	6	m	1.31E-13
Br-85	2.9	m	3.98E-15
Krypton			
Kr-74	11.5	m	4.70E-14
Kr-75	4.29	m	5.85E-14
Kr-76	14.8	h	1.83E-14
Kr-77	74.4	m	4.63E-14
Kr-79	35.04	h	1.11E-14
Kr-81	2.29E+05	y	3.82E-17
Kr-81m	13.1	s	5.57E-15
Kr-83m	1.83	h	1.10E-18
Kr-85	10.756	y	2.41E-16
Kr-85m	4.48	h	6.85E-15
Kr-87	76.3	m	3.97E-14
Kr-88	2.84	h	9.71E-14
Kr-89	3.15	m	9.56E-14
Rubidium			
Rb-77	3.77	m	7.09E-14
Rb-78	17.66	m	2.04E-13
Rb-78m	5.74	m	1.52E-13
Rb-79	22.9	m	6.52E-14
Rb-80	33.4	s	5.54E-14
Rb-81	4.576	h	2.25E-14
Rb-81m	30.5	m	1.07E-15
Rb-82	1.273	m	5.09E-14
Rb-82m	6.472	h	1.34E-13
Rb-83	86.2	d	2.16E-14
Rb-84	32.77	d	4.13E-14

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Rb-84m	20.26	m	1.68E-14
Rb-86	18.642	d	4.88E-15
Rb-86m	1.017	m	2.44E-14
Rb-87	4.92E+10	y	3.57E-17
Rb-88	17.78	m	3.37E-14
Rb-89	15.15	m	1.09E-13
Rb-90	158	s	1.08E-13
Rb-90m	258	s	1.63E-13
Strontium			
Sr-79	2.25	m	5.39E-14
Sr-80	106.3	m	1.92E-14
Sr-81	22.3	m	6.26E-14
Sr-82	25.36	d	4.73E-18
Sr-83	32.41	h	3.70E-14
Sr-85	64.84	d	2.19E-14
Sr-85m	67.63	m	9.42E-15
Sr-87m	2.815	h	1.41E-14
Sr-89	50.53	d	4.39E-16
Sr-90	28.79	y	9.83E-17
Sr-91	9.63	h	3.32E-14
Sr-92	2.66	h	6.41E-14
Sr-93	7.423	m	1.07E-13
Sr-94	75.3	s	6.92E-14
Yttrium			
Y-81	70.4	s	5.35E-14
Y-83	7.08	m	6.16E-14
Y-83m	2.85	m	3.77E-14
Y-84m	39.5	m	1.84E-13
Y-85	2.68	h	4.85E-14
Y-85m	4.86	h	6.18E-14
Y-86	14.74	h	1.68E-13
Y-86m	48	m	9.60E-15
Y-87	79.8	h	1.94E-14
Y-87m	13.37	h	1.35E-14
Y-88	106.65	d	1.30E-13
Y-89m	15.663	s	4.16E-14
Y-90	64.1	h	7.91E-16
Y-90m	3.19	h	2.80E-14
Y-91	58.51	d	6.01E-16
Y-91m	49.71	m	2.36E-14
Y-92	3.54	h	1.32E-14
Y-93	10.18	h	5.63E-15
Y-94	18.7	m	3.82E-14
Y-95	10.3	m	5.71E-14
Zirconium			
Zr-85	7.86	m	6.74E-14
Zr-86	16.5	h	1.20E-14
Zr-87	1.68	h	4.22E-14
Zr-88	83.4	d	1.69E-14
Zr-89	78.41	h	5.29E-14
Zr-89m	4.161	m	2.88E-14
Zr-93	1.53E+06	y	6.45E-22
Zr-95	64.032	d	3.33E-14
Zr-97	16.744	h	4.07E-14
Niobium			
Nb-87	3.75	m	5.54E-14
Nb-88	14.5	m	1.94E-13
Nb-88m	7.78	m	1.91E-13
Nb-89	2.03	h	6.51E-14
Nb-89m	66	m	5.88E-14
Nb-90	14.6	h	2.05E-13
Nb-91	680	y	8.45E-17
Nb-91m	60.86	d	1.20E-15
Nb-92	3.47E+07	y	6.83E-14
Nb-92m	10.15	d	4.44E-14
Nb-93m	16.13	y	3.04E-18
Nb-94	2.03E+04	y	7.13E-14
Nb-94m	6.263	m	2.15E-16
Nb-95	34.991	d	3.49E-14
Nb-95m	3.61	d	2.83E-15
Nb-96	23.35	h	1.13E-13
Nb-97	72.1	m	3.04E-14
Nb-98m	51.3	m	1.32E-13
Nb-99	15	s	8.32E-15
Nb-99m	2.6	m	3.86E-14
Molybdenum			
Mo-89	2.11	m	5.70E-14
Mo-90	5.56	h	3.66E-14
Mo-91	15.49	m	4.50E-14
Mo-91m	64.6	s	6.45E-14
Mo-93	4.00E+03	y	1.70E-17
Mo-93m	6.85	h	1.09E-13
Mo-99	65.94	h	6.92E-15
Mo-101	14.61	m	6.97E-14

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Mo-102	11.3	m	1.02E-15
Technetium			
Tc-91	3.14	m	1.20E-13
Tc-91m	3.3	m	6.60E-14
Tc-92	4.25	m	1.79E-13
Tc-93	2.75	h	7.46E-14
Tc-93m	43.5	m	4.66E-14
Tc-94	293	m	1.21E-13
Tc-94m	52	m	9.11E-14
Tc-95	20	h	3.59E-14
Tc-95m	61	d	3.06E-14
Tc-96	4.28	d	1.14E-13
Tc-96m	51.5	m	1.94E-15
Tc-97	2.60E+06	y	2.21E-17
Tc-97m	90.1	d	3.68E-17
Tc-98	4.20E+06	y	6.41E-14
Tc-99	2.11E+05	y	2.88E-17
Tc-99m	6.015	h	5.27E-15
Tc-101	14.2	m	1.52E-14
Tc-102	5.28	s	5.85E-15
Tc-102m	4.35	m	1.18E-13
Tc-104	18.3	m	1.10E-13
Tc-105	7.6	m	3.77E-14
Ruthenium			
Ru-92	3.65	m	9.44E-14
Ru-94	51.8	m	2.28E-14
Ru-95	1.643	h	5.68E-14
Ru-97	2.9	d	9.96E-15
Ru-103	39.26	d	2.21E-14
Ru-105	4.44	h	3.39E-14
Ru-106	373.59	d	0
Ru-107	3.75	m	1.69E-14
Ru-108	4.55	m	2.92E-15
Rhodium			
Rh-94	70.6	s	1.81E-13
Rh-95	5.02	m	1.21E-13
Rh-95m	1.96	m	4.29E-14
Rh-96	9.9	m	1.81E-13
Rh-96m	1.51	m	6.03E-14
Rh-97	30.7	m	6.60E-14
Rh-97m	46.2	m	1.06E-13
Rh-98	8.7	m	8.34E-14
Rh-99	16.1	d	2.42E-14
Rh-99m	4.7	h	2.89E-14
Rh-100	20.8	h	1.32E-13
Rh-100m	4.6	m	2.03E-15
Rh-101	3.3	y	1.17E-14
Rh-101m	4.34	d	1.21E-14
Rh-102	207	d	2.24E-14
Rh-102m	3.742	y	9.74E-14
Rh-103m	56.114	m	5.61E-18
Rh-104	42.3	s	1.40E-15
Rh-104m	4.34	m	9.14E-16
Rh-105	35.36	h	3.47E-15
Rh-106	29.8	s	1.07E-14
Rh-106m	131	m	1.32E-13
Rh-107	21.7	m	1.41E-14
Rh-108	16.8	s	1.61E-14
Rh-109	80	s	1.38E-14
Palladium			
Pd-96	122	s	6.51E-14
Pd-97	3.1	m	1.12E-13
Pd-98	17.7	m	1.76E-14
Pd-99	21.4	m	5.88E-14
Pd-100	3.63	d	3.64E-15
Pd-101	8.47	h	1.48E-14
Pd-103	16.991	d	5.29E-17
Pd-107	6.50E+06	y	0
Pd-109	13.7012	h	4.20E-16
Pd-109m	4.69	m	4.59E-15
Pd-111	23.4	m	2.89E-15
Pd-112	21.03	h	2.68E-17
Pd-114	2.42	m	1.49E-15
Silver			
Ag-99	124	s	1.08E-13
Ag-100m	2.24	m	1.33E-13
Ag-101	11.1	m	7.19E-14
Ag-102	12.9	m	1.60E-13
Ag-102m	7.7	m	9.72E-14
Ag-103	65.7	m	3.79E-14
Ag-104	69.2	m	1.24E-13
Ag-104m	33.5	m	8.45E-14
Ag-105	41.29	d	2.21E-14
Ag-105m	7.23	m	4.42E-17

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Ag-106	23.96	m	3.13E-14
Ag-106m	8.28	d	1.29E-13
Ag-108	2.37	m	1.27E-15
Ag-108m	418	y	7.23E-14
Ag-109m	39.6	s	1.58E-16
Ag-110	24.6	s	2.46E-15
Ag-110m	249.76	d	1.28E-13
Ag-111	7.45	d	1.39E-15
Ag-111m	64.8	s	1.68E-16
Ag-112	3.13	h	3.39E-14
Ag-113	5.37	h	3.83E-15
Ag-113m	68.7	s	9.55E-15
Ag-114	4.6	s	1.46E-14
Ag-115	20	m	2.40E-14
Ag-116	2.68	m	1.07E-13
Ag-117	73.6	s	6.50E-14
Cadmium			
Cd-101	1.36	m	1.17E-13
Cd-102	5.5	m	3.73E-14
Cd-103	7.3	m	1.00E-13
Cd-104	57.7	m	1.01E-14
Cd-105	55.5	m	6.13E-14
Cd-107	6.5	h	4.90E-16
Cd-109	461.4	d	2.27E-16
Cd-111m	48.5	m	1.20E-14
Cd-113	7.70E+15	y	2.49E-17
Cd-113m	14.1	y	9.28E-17
Cd-115	53.46	h	8.73E-15
Cd-115m	44.6	d	1.99E-15
Cd-117	2.49	h	5.11E-14
Cd-117m	3.36	h	9.88E-14
Cd-118	50.3	m	7.25E-17
Cd-119	2.69	m	7.96E-14
Cd-119m	2.2	m	1.11E-13
Indium			
In-103	60	s	1.30E-13
In-105	5.07	m	8.97E-14
In-106m	5.2	m	1.35E-13
In-106	6.2	m	1.63E-13
In-107	32.4	m	7.18E-14
In-108m	39.6	m	1.35E-13
In-108	58	m	1.81E-13
In-109m	1.34	m	2.74E-14
In-109	4.2	h	2.86E-14
In-110m	69.1	m	7.26E-14
In-110	4.9	h	1.41E-13
In-111m	7.7	m	2.10E-14
In-111	2.8047	d	1.69E-14
In-112m	20.56	m	9.86E-16
In-112	14.97	m	1.19E-14
In-113m	1.6579	h	1.13E-14
In-114m	49.51	d	3.26E-15
In-114	71.9	s	7.27E-16
In-115m	4.486	h	6.94E-15
In-115	4.41E+14	y	6.60E-17
In-116m	54.41	m	1.18E-13
In-117m	116.2	m	4.08E-15
In-117	43.2	m	3.08E-14
In-118m	4.364	m	1.31E-13
In-118	5	s	5.72E-15
In-119m	18	m	3.89E-15
In-119	2.4	M	3.54E-14
In-121m	3.88	M	3.92E-15
In-121	23.1	S	4.36E-14
Tin			
Sn-106	1.92	m	5.40E-14
Sn-108	10.3	m	2.96E-14
Sn-109	18	m	1.05E-13
Sn-110	4.11	h	1.21E-14
Sn-111	35.3	m	2.21E-14
Sn-113m	21.4	m	1.02E-16
Sn-113	115.09	d	3.45E-16
Sn-117m	13.76	d	6.13E-15
Sn-119m	293.1	d	9.23E-17
Sn-121m	43.9	y	5.31E-17
Sn-121	27.03	h	3.98E-17
Sn-123m	40.06	m	6.21E-15
Sn-123	129.2	d	7.01E-16
Sn-125m	9.52	m	1.60E-14
Sn-125	9.64	d	1.64E-14
Sn-126	2.30E+05	y	1.82E-15
Sn-127m	4.13	m	2.67E-14
Sn-127	2.1	h	9.02E-14
Sn-128	59.07	m	2.52E-14

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Sn-129	2.23	m	4.76E-14
Sn-130m	1.7	m	4.20E-14
Sn-130	3.72	m	4.16E-14
Antimony			
Sb-111	75	s	6.76E-14
Sb-113	6.67	m	5.71E-14
Sb-114	3.49	m	1.27E-13
Sb-115	32.1	m	3.94E-14
Sb-116	15.8	m	1.08E-13
Sb-116m	60.3	m	1.43E-13
Sb-117	2.8	h	7.23E-15
Sb-118	3.6	m	3.65E-14
Sb-118m	5	h	1.21E-13
Sb-119	38.19	h	1.51E-16
Sb-120	15.89	m	2.00E-14
Sb-120m	5.76	d	1.13E-13
Sb-122	2.7238	d	2.04E-14
Sb-122m	4.191	m	1.77E-15
Sb-124	60.2	d	8.80E-14
Sb-124m	93	s	1.98E-14
Sb-124n	20.2	m	5.63E-21
Sb-125	2.75856	y	1.90E-14
Sb-126	12.35	d	1.25E-13
Sb-126m	19.15	m	7.02E-14
Sb-127	3.85	d	3.14E-14
Sb-128	9.01	h	1.41E-13
Sb-128m	10.4	m	8.73E-14
Sb-129	4.4	h	6.83E-14
Sb-130	39.5	m	1.51E-13
Sb-130m	6.3	m	1.26E-13
Sb-131	23.03	m	9.85E-14
Sb-133	2.5	m	1.33E-13
Tellurium			
Te-113	1.7	m	1.05E-13
Te-114	15.2	m	5.92E-14
Te-115	5.8	m	1.05E-13
Te-115m	6.7	m	1.22E-13
Te-116	2.49	h	3.66E-15
Te-117	62	m	7.25E-14
Te-118	6	d	1.51E-16
Te-119	16.05	h	3.43E-14
Te-119m	4.7	d	6.97E-14
Te-121	19.16	d	2.51E-14
Te-121m	154	d	9.02E-15
Te-123	6.00E+14	y	2.63E-19
Te-123m	119.25	d	5.81E-15
Te-125m	57.4	d	3.36E-16
Te-127	9.35	h	3.35E-16
Te-127m	109	d	1.12E-16
Te-129	69.6	m	2.99E-15
Te-129m	33.6	d	1.57E-15
Te-131	25	m	1.92E-14
Te-131m	30	h	6.69E-14
Te-132	3.204	d	9.35E-15
Te-133	12.5	m	5.67E-14
Te-133m	55.4	m	8.64E-14
Te-134	41.8	m	3.87E-14
Iodine			
I-118	13.7	m	9.38E-14
I-118m	8.5	m	1.71E-13
I-119	19.1	m	4.06E-14
I-120	81.6	m	1.28E-13
I-120m	53	m	1.63E-13
I-121	2.12	h	1.69E-14
I-122	3.63	m	4.39E-14
I-123	13.27	h	6.55E-15
I-124	4.176	d	5.11E-14
I-125	59.4	d	3.78E-16
I-126	12.93	d	1.92E-14
I-128	24.99	m	3.55E-15
I-129	1.57E+07	y	2.86E-16
I-130	12.36	h	9.68E-14
I-130m	8.84	m	4.88E-15
I-131	8.0207	d	1.70E-14
I-132	2.295	h	1.04E-13
I-132m	1.387	h	1.50E-14
I-133	20.8	h	2.78E-14
I-134	52.5	m	1.21E-13
I-134m	3.6	m	1.19E-14
I-135	6.57	h	7.57E-14
Xenon			
Xe-120	40	m	1.65E-14
Xe-121	40.1	m	6.95E-14
Xe-122	20.1	h	2.19E-15

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Xe-123	2.08	h	2.85E-14
Xe-125	16.9	h	1.08E-14
Xe-127	36.4	d	1.13E-14
Xe-127m	69.2	s	6.57E-15
Xe-129m	8.88	d	9.18E-16
Xe-131m	11.84	d	3.57E-16
Xe-133	5.243	d	1.37E-15
Xe-133m	2.19	d	1.29E-15
Xe-135	9.14	h	1.10E-14
Xe-135m	15.29	m	1.89E-14
Xe-137	3.818	m	1.04E-14
Xe-138	14.08	m	5.47E-14
Cesium			
Cs-121	155	s	5.41E-14
Cs-121m	122	s	5.38E-14
Cs-123	5.88	m	4.89E-14
Cs-124	30.8	s	5.43E-14
Cs-125	45	m	3.37E-14
Cs-126	1.64	m	5.29E-14
Cs-127	6.25	h	1.84E-14
Cs-128	3.64	m	4.04E-14
Cs-129	32.06	h	1.12E-14
Cs-130	29.21	m	2.23E-14
Cs-130m	3.46	m	2.01E-15
Cs-131	9.689	d	2.40E-16
Cs-132	6.479	d	3.15E-14
Cs-134	2.0648	y	7.07E-14
Cs-134m	2.903	h	8.00E-16
Cs-135	2.30E+06	y	2.17E-17
Cs-135m	53	m	7.31E-14
Cs-136	13.16	d	9.81E-14
Cs-137	30.1671	y	9.40E-17
Cs-138	33.41	m	1.15E-13
Cs-138m	2.91	m	1.92E-14
Cs-139	9.27	m	1.66E-14
Cs-140	63.7	s	8.89E-14
Barium			
Ba-124	11	m	2.51E-14
Ba-126	100	m	2.56E-14
Ba-127	12.7	m	3.28E-14
Ba-128	2.43	d	2.12E-15
Ba-129	2.23	h	1.44E-14
Ba-129m	2.16	h	7.20E-14
Ba-131	11.5	d	2.00E-14
Ba-131m	14.6	m	2.65E-15
Ba-133	10.52	y	1.62E-14
Ba-133m	38.9	h	2.49E-15
Ba-135m	28.7	h	2.16E-15
Ba-137m	2.552	m	2.69E-14
Ba-139	83.06	m	2.67E-15
Ba-140	12.752	d	8.06E-15
Ba-141	18.27	m	4.32E-14
Ba-142	10.6	m	4.84E-14
Lanthanum			
La-128	5.18	m	1.30E-13
La-129	11.6	m	4.11E-14
La-130	8.7	m	1.03E-13
La-131	59	m	2.88E-14
La-132	4.8	h	9.34E-14
La-132m	24.3	m	2.95E-14
La-133	3.912	h	6.39E-15
La-134	6.45	m	3.26E-14
La-135	19.5	h	7.73E-16
La-136	9.87	m	1.79E-14
La-137	6.00E+04	y	3.07E-16
La-138	1.02E+11	y	5.82E-14
La-140	1.6781	d	1.11E-13
La-141	3.92	h	2.14E-15
La-142	91.1	m	1.19E-13
La-143	14.2	m	1.39E-14
Cerium			
Ce-130	22.9	m	2.14E-14
Ce-131	10.2	m	7.43E-14
Ce-132	3.51	h	1.09E-14
Ce-133	97	m	2.28E-14
Ce-133m	4.9	h	7.95E-14
Ce-134	3.16	d	4.20E-16
Ce-135	17.7	h	3.61E-14
Ce-137	9	h	8.48E-16
Ce-137m	34.4	h	1.94E-15
Ce-139	137.641	d	5.98E-15
Ce-141	32.508	d	3.13E-15
Ce-143	33.039	h	1.19E-14
Ce-144	284.91	d	7.35E-16

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Ce-145	3.01	m	3.64E-14
Praseodymium			
Pr-134	11	m	1.44E-13
Pr-134m	17	m	1.08E-13
Pr-135	24	m	3.89E-14
Pr-136	13.1	m	9.95E-14
Pr-137	1.28	h	1.62E-14
Pr-138	1.45	m	3.73E-14
Pr-138m	2.12	h	1.13E-13
Pr-139	4.41	h	5.10E-15
Pr-140	3.39	m	2.44E-14
Pr-142	19.12	h	3.49E-15
Pr-142m	14.6	m	0
Pr-143	13.57	d	1.95E-16
Pr-144	17.28	m	2.51E-15
Pr-144m	7.2	m	2.52E-16
Pr-145	5.984	h	1.37E-15
Pr-146	24.15	m	4.92E-14
Pr-147	13.4	m	2.18E-14
Pr-148	2.29	m	4.83E-14
Pr-148m	2.01	m	4.37E-14
Neodymium			
Nd-134	8.5	m	2.32E-14
Nd-135	12.4	m	5.63E-14
Nd-136	50.65	m	1.10E-14
Nd-137	38.5	m	5.33E-14
Nd-138	5.04	h	1.08E-15
Nd-139	29.7	m	1.95E-14
Nd-139m	5.5	h	7.19E-14
Nd-140	3.37	d	4.44E-16
Nd-141	2.49	h	2.64E-15
Nd-141m	62	s	3.16E-14
Nd-144	2.29E+15	y	0
Nd-147	10.98	d	5.74E-15
Nd-149	1.728	h	1.63E-14
Nd-151	12.44	m	3.93E-14
Nd-152	11.4	m	7.29E-15
Promethium			
Pm-136	107	s	1.25E-13
Pm-137m	2.4	m	8.01E-14
Pm-139	4.15	m	4.29E-14
Pm-140	9.2	s	4.93E-14
Pm-140m	5.95	m	1.39E-13
Pm-141	20.9	m	3.35E-14
Pm-142	40.5	s	3.95E-14
Pm-143	265	d	1.35E-14
Pm-144	363	d	6.95E-14
Pm-145	17.7	y	5.50E-16
Pm-146	5.53	y	3.33E-14
Pm-147	2.6234	y	8.66E-18
Pm-148	5.368	d	2.76E-14
Pm-148m	41.29	d	8.99E-14
Pm-149	53.08	h	7.60E-16
Pm-150	2.68	h	6.97E-14
Pm-151	28.4	h	1.44E-14
Pm-152	4.12	m	1.45E-14
Pm-152m	7.52	m	7.07E-14
Pm-153	5.25	m	3.40E-15
Pm-154	1.73	m	8.73E-14
Pm-154m	2.68	m	8.50E-14
Samarium			
Sm-139	2.57	m	6.64E-14
Sm-140	14.82	m	2.53E-14
Sm-141	10.2	m	6.47E-14
Sm-141m	22.6	m	8.92E-14
Sm-142	72.49	m	4.17E-15
Sm-143	8.75	m	2.36E-14
Sm-143m	66	s	3.11E-14
Sm-145	340	d	1.23E-15
Sm-146	1.03E+08	y	0
Sm-147	1.06E+11	y	0
Sm-148	7.00E+15	y	0
Sm-151	90	y	2.65E-20
Sm-153	46.5	h	2.12E-15
Sm-155	22.3	m	4.43E-15
Sm-156	9.4	h	4.73E-15
Sm-157	8.03	m	1.91E-14
Europium			
Eu-142	2.34	s	5.78E-14
Eu-142m	1.223	m	1.58E-13
Eu-143	2.59	m	5.26E-14
Eu-144	10.2	s	5.18E-14
Eu-145	5.93	d	5.95E-14
Eu-146	4.61	d	1.11E-13

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Eu-147	24.1	d	2.03E-14
Eu-148	54.5	d	1.01E-13
Eu-149	93.1	d	2.03E-15
Eu-150	36.9	y	6.92E-14
Eu-150m	12.8	h	2.33E-15
Eu-152	13.537	y	5.38E-14
Eu-152m	9.3116	h	1.37E-14
Eu-152n	96	m	2.63E-15
Eu-154	8.593	y	5.78E-14
Eu-154m	46	m	2.15E-15
Eu-155	4.7611	y	2.17E-15
Eu-156	15.19	d	5.94E-14
Eu-157	15.18	h	1.23E-14
Eu-158	45.9	m	6.14E-14
Eu-159	18.1	m	1.32E-14
Gadolinium			
Gd-142	70.2	s	4.78E-14
Gd-143m	110	s	9.77E-14
Gd-144	4.47	m	4.25E-14
Gd-145	23	m	1.18E-13
Gd-145m	85	s	3.08E-14
Gd-146	48.27	d	8.74E-15
Gd-147	38.1	h	6.29E-14
Gd-148	74.6	y	0
Gd-149	9.28	d	2.24E-14
Gd-150	1.79E+06	y	0
Gd-151	124	d	2.15E-15
Gd-152	1.08E+14	y	0
Gd-153	240.4	d	3.11E-15
Gd-159	18.479	h	2.35E-15
Gd-162	8.4	m	1.86E-14
Terbium			
Tb-146	23	s	1.74E-13
Tb-147	1.64	h	1.02E-13
Tb-147m	1.87	m	9.11E-14
Tb-148	60	m	1.11E-13
Tb-148m	2.2	m	1.42E-13
Tb-149	4.118	h	6.28E-14
Tb-149m	4.16	m	6.20E-14
Tb-150	3.48	h	1.17E-13
Tb-150m	5.8	m	1.12E-13
Tb-151	17.609	h	4.34E-14
Tb-151m	25	s	3.20E-15
Tb-152	17.5	h	6.98E-14
Tb-152m	4.2	m	3.28E-14
Tb-153	2.34	d	1.35E-14
Tb-154	21.5	h	1.11E-13
Tb-155	5.32	d	6.30E-15
Tb-156	5.35	d	8.87E-14
Tb-156m	24.4	h	9.24E-16
Tb-156n	5.3	h	9.97E-17
Tb-157	71	y	9.83E-17
Tb-158	180	y	3.61E-14
Tb-160	72.3	d	5.20E-14
Tb-161	6.906	d	9.14E-16
Tb-162	7.6	m	5.04E-14
Tb-163	19.5	m	3.51E-14
Tb-164	3	m	1.14E-13
Tb-165	2.11	m	4.04E-14
Dysprosium			
Dy-148	3.3	m	3.15E-14
Dy-149	4.2	m	7.52E-14
Dy-150	7.17	m	1.18E-14
Dy-151	17.9	m	6.28E-14
Dy-152	2.38	h	1.18E-14
Dy-153	6.4	h	3.82E-14
Dy-154	3.00E+06	y	0
Dy-155	9.9	h	2.96E-14
Dy-157	8.14	h	1.44E-14
Dy-159	144.4	d	1.00E-15
Dy-165	2.334	h	1.39E-15
Dy-165m	1.257	m	7.08E-16
Dy-166	81.6	h	1.31E-15
Dy-167	6.2	m	2.40E-14
Dy-168	8.7	m	1.73E-14
Holmium			
Ho-150	76.8	s	8.73E-14
Ho-153	2.01	m	4.61E-14
Ho-153m	9.3	m	4.72E-14
Ho-154	11.76	m	8.63E-14
Ho-154m	3.1	m	1.09E-13
Ho-155	48	m	2.71E-14
Ho-156	56	m	9.78E-14
Ho-157	12.6	m	2.46E-14

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Ho-159	33.05	m	1.52E-14
Ho-160	25.6	m	7.64E-14
Ho-161	2.48	h	1.33E-15
Ho-162	15	m	6.54E-15
Ho-162m	67	m	2.48E-14
Ho-163	4570	y	0
Ho-164	29	m	8.04E-16
Ho-164m	38	m	1.06E-15
Ho-166	26.8	h	1.75E-15
Ho-166m	1.20E+03	y	7.29E-14
Ho-167	3.1	h	1.60E-14
Ho-168	2.99	m	4.06E-14
Ho-168m	132	s	1.50E-16
Ho-170	2.76	m	7.83E-14
Erbium			
Er-154	3.73	m	2.24E-15
Er-156	19.5	m	1.72E-15
Er-159	36	m	4.36E-14
Er-161	3.21	h	4.46E-14
Er-163	75	m	9.82E-16
Er-165	10.36	h	9.01E-16
Er-167m	2.269	s	4.03E-15
Er-169	9.4	d	2.95E-17
Er-171	7.516	h	1.61E-14
Er-172	49.3	h	2.24E-14
Er-173	1.434	m	3.73E-14
Thulium			
Tm-161	30.2	m	5.89E-14
Tm-162	21.7	m	9.14E-14
Tm-163	1.81	h	6.03E-14
Tm-164	2	m	3.57E-14
Tm-165	30.06	h	2.40E-14
Tm-166	7.7	h	9.30E-14
Tm-167	9.25	d	5.49E-15
Tm-168	93.1	d	5.51E-14
Tm-170	128.6	d	3.25E-16
Tm-171	1.92	y	1.70E-17
Tm-172	63.6	h	2.29E-14
Tm-173	8.24	h	1.72E-14
Tm-174	5.4	m	8.05E-14
Tm-175	15.2	m	4.96E-14
Tm-176	1.85	m	9.39E-14
Ytterbium			
Yb-162	18.87	m	1.00E-14
Yb-163	11.05	m	3.29E-14
Yb-164	75.8	m	1.61E-15
Yb-165	9.9	m	1.37E-14
Yb-166	56.7	h	2.37E-15
Yb-167	17.5	m	9.55E-15
Yb-169	32.026	d	1.19E-14
Yb-175	4.185	d	1.73E-15
Yb-177	1.911	h	9.11E-15
Yb-178	74	m	1.76E-15
Yb-179	8	m	4.40E-14
Lutetium			
Lu-165	10.74	m	5.02E-14
Lu-167	51.5	m	7.94E-14
Lu-169	34.06	h	6.07E-14
Lu-169m	160	s	2.52E-20
Lu-170	2.012	d	1.25E-13
Lu-171	8.24	d	2.79E-14
Lu-171m	79	s	9.86E-18
Lu-172	6.7	d	8.96E-14
Lu-172m	3.7	m	3.90E-20
Lu-173	1.37	y	6.47E-15
Lu-174	3.31	y	4.46E-15
Lu-174m	142	d	1.78E-15
Lu-176	3.85E+10	y	2.07E-14
Lu-176m	3.635	h	7.71E-16
Lu-177	6.647	d	1.50E-15
Lu-177m	160.4	d	4.23E-14
Lu-178	28.4	m	6.44E-15
Lu-178m	23.1	m	4.53E-14
Lu-179	4.59	h	1.63E-15
Lu-180	5.7	m	7.09E-14
Lu-181	3.5	m	2.58E-14
Hafnium			
Hf-167	2.05	m	2.73E-14
Hf-169	3.24	m	2.78E-14
Hf-170	16.01	h	1.83E-14
Hf-172	1.87	y	3.09E-15
Hf-173	23.6	h	1.62E-14
Hf-174	2.00E+15	y	0
Hf-175	70	d	1.47E-14

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Hf-177m	51.4	m	9.84E-14
Hf-178m	31	y	9.78E-14
Hf-179m	25.05	d	3.92E-14
Hf-180m	5.5	h	4.27E-14
Hf-181	42.39	d	2.32E-14
Hf-182	9.00E+06	y	1.04E-14
Hf-182m	61.5	m	3.99E-14
Hf-183	1.067	h	3.50E-14
Hf-184	4.12	h	9.88E-15
Tantalum			
Ta-170	6.76	m	4.88E-14
Ta-172	36.8	m	7.82E-14
Ta-173	3.14	h	2.56E-14
Ta-174	1.14	h	4.46E-14
Ta-175	10.5	h	5.09E-14
Ta-176	8.09	h	1.07E-13
Ta-177	56.56	h	2.17E-15
Ta-178	9.31	m	4.72E-15
Ta-178m	2.36	h	4.91E-14
Ta-179	1.82	y	6.96E-16
Ta-180	8.152	h	1.42E-15
Ta-182	114.43	d	5.98E-14
Ta-182m	15.84	m	1.05E-14
Ta-183	5.1	d	1.20E-14
Ta-184	8.7	h	7.07E-14
Ta-185	49.4	m	6.70E-15
Ta-186	10.5	m	6.43E-14
Tungsten			
W-177	132	m	3.99E-14
W-178	21.6	d	4.33E-16
W-179	37.05	m	1.45E-15
W-179m	6.4	m	1.99E-15
W-181	121.2	d	1.15E-15
W-185	75.1	d	4.96E-17
W-185m	1.597	m	9.33E-16
W-187	23.72	h	2.00E-14
W-188	69.78	d	1.10E-16
W-190	30	m	5.75E-15
Rhenium			
Re-178	13.2	m	8.17E-14
Re-179	19.5	m	4.90E-14
Re-180	2.44	m	5.44E-14
Re-181	19.9	h	3.52E-14
Re-182	64	h	8.10E-14
Re-182m	12.7	h	5.59E-14
Re-183	70	d	5.53E-15
Re-184	38	d	3.99E-14
Re-184m	169	d	1.64E-14
Re-186	3.7183	d	9.95E-16
Re-186m	2.00E+05	y	4.26E-16
Re-187	4.12E+10	y	0
Re-188	17.004	h	3.29E-15
Re-188m	18.59	m	2.26E-15
Re-189	24.3	h	2.55E-15
Re-190	3.1	m	6.04E-14
Re-190m	3.2	h	4.13E-14
Osmium			
Os-180	21.5	m	4.67E-15
Os-181	105	m	6.31E-14
Os-182	22.1	h	1.82E-14
Os-183	13	h	2.66E-14
Os-183m	9.9	h	4.63E-14
Os-185	93.6	d	3.06E-14
Os-186	2.00E+15	y	0
Os-189m	5.8	h	1.03E-19
Os-190m	9.9	m	7.04E-14
Os-191	15.4	d	2.95E-15
Os-191m	13.1	h	1.82E-16
Os-193	30.11	h	3.03E-15
Os-194	6	y	5.09E-17
Os-196	34.9	m	3.64E-15
Iridium			
Ir-180	1.5	m	7.24E-14
Ir-182	15	m	6.42E-14
Ir-183	58	m	5.48E-14
Ir-184	3.09	h	9.01E-14
Ir-185	14.4	h	3.95E-14
Ir-186	16.64	h	7.63E-14
Ir-186m	1.92	h	5.81E-14
Ir-187	10.5	h	1.40E-14
Ir-188	41.5	h	1.01E-13
Ir-189	13.2	d	2.67E-15
Ir-190	11.78	d	6.51E-14
Ir-190m	1.12	h	1.14E-19

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Ir-190n	3.087	h	1.82E-15
Ir-191m	4.94	s	2.66E-15
Ir-192	73.827	d	3.61E-14
Ir-192m	1.45	m	2.68E-18
Ir-192n	241	y	6.65E-17
Ir-193m	10.53	d	1.04E-17
Ir-194	19.28	h	4.77E-15
Ir-194m	171	d	1.04E-13
Ir-195	2.5	h	2.20E-15
Ir-195m	3.8	h	1.63E-14
Ir-196	52	s	1.16E-14
Ir-196m	1.4	h	1.10E-13
Platinum			
Pt-184	17.3	m	3.02E-14
Pt-186	2.08	h	2.99E-14
Pt-187	2.35	h	2.66E-14
Pt-188	10.2	d	8.04E-15
Pt-189	10.87	h	2.06E-14
Pt-190	6.50E+11	y	0
Pt-191	2.802	d	1.18E-14
Pt-193	50	y	2.83E-19
Pt-193m	4.33	d	3.68E-16
Pt-195m	4.02	d	2.45E-15
Pt-197	19.8915	h	9.91E-16
Pt-197m	95.41	m	3.26E-15
Pt-199	30.8	m	9.23E-15
Pt-200	12.5	h	2.33E-15
Pt-202	44	h	5.03E-16
Gold			
Au-186	10.7	m	6.87E-14
Au-187	8.4	m	4.96E-14
Au-190	42.8	m	1.16E-13
Au-191	3.18	h	2.55E-14
Au-192	4.94	h	9.29E-14
Au-193	17.65	h	6.41E-15
Au-193m	3.9	s	8.37E-15
Au-194	38.02	h	4.81E-14
Au-195	186.098	d	2.70E-15
Au-195m	30.5	s	8.52E-15
Au-196	6.183	d	2.02E-14
Au-196m	9.6	h	9.70E-15
Au-198	2.69517	d	1.80E-14
Au-198m	2.27	d	2.21E-14
Au-199	3.139	d	3.97E-15
Au-200	48.4	m	1.33E-14
Au-200m	18.7	h	8.84E-14
Au-201	26	m	1.79E-15
Au-202	28.8	s	8.90E-15
Mercury			
Hg-190	20	m	7.74E-15
Hg-191m	50.8	m	6.73E-14
Hg-192	4.85	h	1.10E-14
Hg-193	3.8	h	3.81E-14
Hg-193m	11.8	h	4.67E-14
Hg-194	440	y	4.49E-19
Hg-195	10.53	h	8.23E-15
Hg-195m	41.6	h	8.37E-15
Hg-197	64.94	h	2.39E-15
Hg-197m	23.8	h	3.75E-15
Hg-199m	42.66	m	7.53E-15
Hg-203	46.612	d	1.04E-14
Hg-205	5.2	m	6.19E-16
Hg-206	8.15	m	5.56E-15
Hg-207	2.9	m	1.28E-13
Thallium			
Tl-190	2.6	m	5.94E-14
Tl-190m	3.7	m	1.11E-13
Tl-194	33	m	4.10E-14
Tl-194m	32.8	m	1.13E-13
Tl-195	1.16	h	5.74E-14
Tl-196	1.84	h	8.80E-14
Tl-197	2.84	h	2.02E-14
Tl-198	5.3	h	9.50E-14
Tl-198m	1.87	h	5.36E-14
Tl-199	7.42	h	1.03E-14
Tl-200	26.1	h	5.98E-14
Tl-201	72.912	h	3.26E-15
Tl-202	12.23	d	1.99E-14
Tl-204	3.78	y	1.75E-16
Tl-206	4.2	m	3.97E-16
Tl-206m	3.74	m	1.09E-13
Tl-207	4.77	m	4.61E-16
Tl-208	3.053	m	1.68E-13
Tl-209	2.161	m	1.02E-13

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Tl-210	1.3	m	1.32E-13
Lead			
Pb-194	12	m	4.94E-14
Pb-195m	15	m	7.40E-14
Pb-196	37	m	2.10E-14
Pb-197	8	m	7.14E-14
Pb-197m	43	m	5.22E-14
Pb-198	2.4	h	1.86E-14
Pb-199	90	m	4.79E-14
Pb-200	21.5	h	8.16E-15
Pb-201	9.33	h	3.34E-14
Pb-201m	61	s	1.63E-14
Pb-202	5.25E+04	y	4.85E-19
Pb-202m	3.53	h	9.06E-14
Pb-203	51.873	h	1.31E-14
Pb-204m	67.2	m	9.45E-14
Pb-205	1.53E+07	y	4.92E-19
Pb-209	3.253	h	1.00E-16
Pb-210	22.2	y	4.71E-17
Pb-211	36.1	m	3.22E-15
Pb-212	10.64	h	6.11E-15
Pb-214	26.8	m	1.11E-14
Bismuth			
Bi-197	9.3	m	7.85E-14
Bi-200	36.4	m	1.10E-13
Bi-201	108	m	8.11E-14
Bi-202	1.72	h	1.26E-13
Bi-203	11.76	h	1.13E-13
Bi-204	11.22	h	1.35E-13
Bi-205	15.31	d	7.99E-14
Bi-206	6.243	d	1.51E-13
Bi-207	32.9	y	7.03E-14
Bi-208	3.68E+05	y	1.35E-13
Bi-210	5.013	d	2.58E-16
Bi-210m	3.04E+06	y	1.14E-14
Bi-211	2.14	m	2.07E-15
Bi-212	60.55	m	5.17E-15
Bi-212n	7	m	3.89E-16
Bi-213	45.59	m	5.94E-15
Bi-214	19.9	m	7.11E-14
Bi-215	7.6	m	1.18E-14
Bi-216	2.17	m	3.41E-14

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Polonium			
Po-203	36.7	m	7.55E-14
Po-204	3.53	h	5.16E-14
Po-205	1.66	h	7.31E-14
Po-206	8.8	d	5.33E-14
Po-207	5.8	h	5.86E-14
Po-208	2.898	y	9.36E-19
Po-209	102	y	2.76E-16
Po-210	138.376	d	4.45E-19
Po-211	0.516	s	3.73E-16
Po-212	2.99E-07	s	0
Po-212m	45.1	s	3.99E-15
Po-213	4.20E-06	s	1.71E-18
Po-214	1.64E-04	s	3.80E-18
Po-215	1.78E-03	s	7.80E-18
Po-216	0.145	s	7.00E-19
Po-218	3.1	m	2.62E-21
Astatine			
At-204	9.2	m	1.04E-13
At-205	26.2	m	5.22E-14
At-206	30.6	m	1.12E-13
At-207	1.8	h	9.34E-14
At-208	1.63	h	1.40E-13
At-209	5.41	h	1.03E-13
At-210	8.1	h	1.40E-13
At-211	7.214	h	1.27E-15
At-215	1.00E-04	s	7.53E-18
At-216	3.00E-04	s	9.52E-17
At-217	3.23E-02	s	1.06E-17
At-218	1.5	s	9.80E-19
At-219	56	s	0
At-220	3.71	m	2.09E-14
Radon			
Rn-207	9.25	m	4.41E-14
Rn-209	28.5	m	5.47E-14
Rn-210	2.4	h	1.27E-14
Rn-211	14.6	h	8.62E-14
Rn-212	23.9	m	1.38E-14
Rn-215	2.3	us	1.90E-14
Rn-216	4.50E-05	s	1.77E-14
Rn-217	5.40E-04	s	1.70E-14
Rn-218	3.50E-02	s	1.58E-14

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Rn-219	3.96	s	1.48E-14
Rn-220	55.6	s	1.38E-14
Rn-222	3.8235	d	1.20E-14
Rn-223	24.3	m	1.56E-14
Francium			
Fr-212	20	m	5.26E-14
Fr-219	2.00E-02	s	1.57E-16
Fr-220	27.4	s	3.52E-16
Fr-221	4.9	m	1.25E-15
Fr-222	14.2	m	8.17E-15
Fr-223	22	m	2.15E-15
Fr-224	3.33	m	2.62E-14
Fr-227	2.47	m	2.00E-14
Radium			
Ra-219	10	ms	7.37E-15
Ra-220	1.79E-02	s	2.07E-16
Ra-221	28	s	1.47E-15
Ra-222	38	s	4.04E-16
Ra-223	11.43	d	5.74E-15
Ra-224	3.66	d	4.51E-16
Ra-225	14.9	d	2.47E-16
Ra-226	1600	y	3.11E-16
Ra-227	42.2	m	6.37E-15
Ra-228	5.75	y	2.89E-18
Ra-230	93	m	3.33E-15
Actinium			
Ac-223	2.1	m	7.28E-16
Ac-224	2.78	h	9.33E-15
Ac-225	10	d	5.66E-16
Ac-226	29.37	h	5.68E-15
Ac-227	21.772	y	3.65E-18
Ac-228	6.15	h	4.01E-14
Ac-230	122	s	2.66E-14
Ac-231	7.5	m	1.84E-14
Ac-232	119	s	5.65E-14
Ac-233	145	s	2.29E-14
Thorium			
Th-223	0.6	s	2.78E-15
Th-224	1.05	s	9.75E-16
Th-226	30.57	m	3.21E-16
Th-227	18.68	d	5.22E-15
Th-228	1.9116	y	8.25E-17
Th-229	7.34E+03	y	3.32E-15
Th-230	7.54E+04	y	1.52E-17
Th-231	25.52	h	4.63E-16
Th-232	1.41E+10	y	7.90E-18
Th-233	22.3	m	1.79E-15
Th-234	24.1	d	3.22E-16
Th-235	7.1	m	2.93E-15
Th-236	37.5	m	1.68E-15
Protactinium			
Pa-227	38.3	m	7.18E-16
Pa-228	22	h	6.21E-14
Pa-229	1.5	d	2.33E-15
Pa-230	17.4	d	2.99E-14
Pa-231	3.28E+04	y	1.45E-15
Pa-232	1.31	d	4.26E-14
Pa-233	26.967	d	9.27E-15
Pa-234	6.7	h	6.67E-14
Pa-234m	1.17	m	1.42E-15
Pa-235	24.5	m	3.35E-16
Pa-236	9.1	m	4.36E-14
Pa-237	8.7	m	2.82E-14
Uranium			
U-227	1.1	m	4.85E-15
U-228	9.1	m	1.59E-16
U-230	20.8	d	4.56E-17
U-231	4.2	d	2.66E-15
U-232	68.9	y	1.08E-17
U-233	1.59E+05	y	1.06E-17
U-234	2.46E+05	y	6.14E-18
U-235	7.04E+08	y	6.87E-15
U-235m	26	m	0
U-236	2.34E+07	y	3.78E-18
U-237	6.75	d	5.28E-15
U-238	4.47E+09	y	3.20E-18
U-239	23.45	m	2.10E-15
U-240	14.1	h	2.07E-16
U-242	16.8	m	1.96E-15
Neptunium			
Np-232	14.7	m	5.35E-14
Np-233	36.2	m	3.38E-15
Np-234	4.4	d	5.23E-14
Np-235	396.1	d	2.84E-17

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Np-236	1.54E+05	y	5.57E-15
Np-236m	22.5	h	1.90E-15
Np-237	2.14E+06	y	8.60E-16
Np-238	2.117	d	2.72E-14
Np-239	2.3565	d	7.35E-15
Np-240	61.9	m	4.73E-14
Np-240m	7.22	m	1.49E-14
Np-241	13.9	m	1.79E-15
Np-242	2.2	m	1.33E-14
Np-242m	5.5	m	4.16E-14
Plutonium			
Pu-232	33.7	m	2.31E-15
Pu-234	8.8	h	2.50E-15
Pu-235	25.3	m	3.46E-15
Pu-236	2.858	y	4.33E-18
Pu-237	45.2	d	1.79E-15
Pu-238	87.7	y	3.36E-18
Pu-239	2.41E+04	y	3.77E-18
Pu-240	6564	y	3.29E-18
Pu-241	14.35	y	6.15E-20
Pu-242	3.75E+05	y	6.43E-18
Pu-243	4.956	h	9.65E-16
Pu-244	8.00E+07	y	9.70E-16
Pu-245	10.5	h	1.81E-14
Pu-246	10.84	d	5.43E-15
Americium			
Am-237	73	m	1.55E-14
Am-238	98	m	4.09E-14
Am-239	11.9	h	9.37E-15
Am-240	50.8	h	4.69E-14
Am-241	432.2	y	6.72E-16
Am-242	16.02	h	6.11E-16
Am-242m	141	y	1.98E-17
Am-243	7.37E+03	y	1.92E-15
Am-244	10.1	h	3.58E-14
Am-244m	26	m	1.04E-15
Am-245	2.05	h	1.45E-15
Am-246	39	m	3.27E-14
Am-246m	25	m	4.57E-14
Am-247	23	m	5.85E-15
Curium			
Cm-238	2.4	h	3.05E-15
Cm-239	2.9	h	1.05E-14
Cm-240	27	d	4.54E-18
Cm-241	32.8	d	2.12E-14
Cm-242	162.8	d	3.90E-18
Cm-243	29.1	y	5.33E-15
Cm-244	18.1	y	4.00E-18
Cm-245	8.50E+03	y	4.00E-15
Cm-246	4.76E+03	y	1.79E-16
Cm-247	1.56E+07	y	1.38E-14
Cm-248	3.48E+05	y	6.41E-14
Cm-249	64.15	m	1.02E-15
Cm-250	8300	y	6.52E-13
Cm-251	16.8	m	5.20E-15
Berkelium			
Bk-245	4.94	d	9.29E-15
Bk-246	1.8	d	3.82E-14
Bk-247	1.38E+03	y	5.99E-15
Bk-248m	23.7	h	2.28E-15
Bk-249	330	d	4.37E-19
Bk-250	3.212	h	4.18E-14
Bk-251	55.6	m	3.56E-15
Californium			
Cf-244	19.4	m	4.32E-18
Cf-246	35.7	h	4.90E-18
Cf-247	3.11	h	3.58E-15
Cf-248	334	d	2.00E-17
Cf-249	351	y	1.43E-14
Cf-250	13.08	y	4.82E-16
Cf-251	900	y	4.84E-15
Cf-252	2.645	y	2.23E-14
Cf-253	17.81	d	3.15E-17
Cf-254	60.5	d	8.24E-13
Cf-255	85	m	1.16E-16
Einsteinium			
Es-249	102.2	m	1.77E-14
Es-250	8.6	h	5.25E-14
Es-250m	2.22	h	2.49E-14
Es-251	33	h	3.58E-15
Es-253	20.47	d	1.50E-17
Es-254	275.7	d	1.47E-16
Es-254m	39.3	h	2.13E-14
Es-255	39.8	d	4.95E-17

Table A-3: Effective Dose Rate Coefficients from Air Submersion (cont.)

Nuclide	Half-life		Effective dose rate coefficient (Sv/s per Bq/m^3)
Es-256	25.4	m	4.33E-16
Fermium			
Fm-251	5.3	h	6.35E-15
Fm-252	25.39	h	1.71E-17
Fm-253	3	d	2.32E-15
Fm-254	3.24	h	3.47E-16
Fm-255	20.07	h	9.47E-17
Fm-256	157.6	m	6.07E-13
Fm-257	100.5	d	6.02E-15

APPENDIX B: **REFERENCES**

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APPENDIX C: **GLOSSARY**

Absorbed Dose (*D*) — The average energy imparted by ionizing radiation to the matter in a volume element per unit mass of irradiated material. The absorbed dose is expressed in units of rad or gray (Gy) (1 rad = 0.01 gray).

Absorption Type — In the International Commission on Radiological Protection's (ICRP) respiratory tract model introduced in 1994, a classification scheme for inhaled material according to its rate of absorption from the lung to blood. Three main absorption types are considered: Type F (fast rate), Type M (moderate rate), and Type S (slow rate).

Committed Effective Dose (E_{50}) — The sum of the committed equivalent doses to various tissues or organs in the body ($H_{T,50}$), each multiplied by the appropriate tissue weighting factor (w_T)--that is, $E_{50} = \Sigma w_T H_{T,50} + w_{Remainder} H_{Remainder,50}$, where $w_{Remainder}$ is the tissue weighting factor assigned to the remainder organs and tissues and $H_{Remainder,50}$ is the committed equivalent dose to the remainder organs and tissues. Committed effective dose is expressed in the SI unit sievert (Sv) or conventional unit rem (1 rem = 0.01 Sv).

Committed Equivalent Dose ($H_{T,50}$) — The equivalent dose calculated to be received by a tissue or organ over a 50-year period after the intake of a radionuclide into the body. It does not include contributions from radiation sources external to the body. Committed equivalent dose is expressed in the SI unit sievert (Sv) or conventional unit rem (1 rem = 0.01 Sv).

Effective Dose (*E*) — The summation of the products of the equivalent dose received by specified tissues and organs of the body, and tissue weighting factors for the specified tissues and organs, and is given by the expression:

$$E = \sum_T w_T \sum_R w_R D_{T,R} \quad or \quad E = \sum_T w_T H_T$$

where H_T or $w_R D_{T,R}$ is the equivalent dose in a tissue or organ, T, and w_T is the tissue weighting factor. The effective dose is expressed in the SI unit sievert (Sv) or conventional unit rem (1 rem = 0.01 Sv).

Equivalent Dose (H_T) — The product of average absorbed dose ($D_{T,R}$) in a tissue or organ (T) and a radiation (R) weighting factor (w_R). For external dose, the equivalent dose to the whole body is assessed at a depth of 1 cm in tissue; the equivalent dose to the lens of the eye is assessed at a depth of 0.3 cm in tissue, and the equivalent dose to the extremity and skin is assessed at a depth of 0.007 cm in tissue. Equivalent dose is expressed in SI unit sievert (Sv) or conventional unit rem (1 rem = 0.01 Sv)).

f_1 — The fraction of a radionuclide reaching the small intestine that would be absorbed to blood during passage through the gastrointestinal tract in the absence of radiological decay.

Member of the Public — An individual who is not a general employee. An individual is not a "member of the public" during any period in which the individual receives an occupational dose.

Radiation — Ionizing radiation: alpha particles, beta particles, gamma rays, x-rays, neutrons, high-speed electrons, high-speed protons, and other particles capable of producing ions. Radiation, as used in this

technical standard, does not include non-ionizing radiation, such as radio waves or microwaves, or visible, infrared, or ultraviolet light.

Radiation Weighting Factor (w_R) — The modifying factor used to calculate the equivalent dose from the average tissue or organ absorbed dose; the absorbed dose is multiplied by the appropriate radiation weighting factor.

Reference Individual — An idealized male or female with characteristics defined by ICRP for the purpose of radiological protection and with the anatomical and physiological characteristics defined in the report of the ICRP Task Group on Reference Man (ICRP 1975, 2002).

Reference Person — A hypothetical aggregation of human (male and female) physical and physiological characteristics arrived at by international consensus for the purpose of standardizing radiation dose calculations.

Tissue Weighting Factor (w_T) — The fraction of the overall health risk, resulting from uniform, whole body irradiation, attributable to specific tissue (T). The equivalent dose to tissue, (H_T), is multiplied by the appropriate tissue weighting factor to obtain the effective dose (E) contribution from that tissue.

Whole Body — For the purposes of external exposure, head, trunk (including male gonads), arms above and including the elbow, or legs above and including the knee.

CONCLUDING MATERIAL

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