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TABLES OF ENERGY LOSSES AND RANGES OF ELECTRONS AND POSITRONS

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Preface

This work, supported in part by the National Aeronautics and Space Administration under Contract R-80, was carried out under the auspices of the National Academy of Sciences - National Research Council (Subcommittee on the Penetration of Charged Particles of the Committee on Nuclear Sciences, U. Fano, Chairman). It forms part of a collection to be issued as NAS-NRC Publication 1133, which will contain the following reports:

1. J. Lindhard, Thomas-Fermi Approach and Similarity in Atomic Collisions.
2. H. Bichsel, A Critical Review of Experimental Stopping Power and Range Data.
3. J. E. Turner, An Overall Review of Experimental Evidence on Stopping Power.
4. U. Fano and J. E. Turner, Contributions on the Theory of Shell Corrections.
5. M. J. Berger and S. M. Seltzer, Multiple Scattering Corrections for Proton Range Measurements.
6. J. E. Turner, Values of I and I_{adj} suggested by Subcommittee.
7. W. H. Barkas and M. J. Berger, Tables of Energy Losses and Ranges of Heavy Charged Particles.
8. L. C. Northcliffe, Passage of Heavy Ions through Matter II. Range-Energy Curves.
9. S. M. Seltzer and M. J. Berger, Energy Loss Straggling of Protons and Mesons: Tabulation of the Vavilov Distribution.
10. M. J. Berger and S. M. Seltzer, Tables of Energy Losses and Ranges of Electrons and Positrons.
11. S. K. Allison, Atomic and Ionic Partial Stopping Powers.
12. U. Fano, A List of Currently Unsolved Problems.

Appendix A. U. Fano, Penetration of Protons, Alpha Particles and Mesons. (Reprinted from Annual Review of Nuclear Science 13, p. 1, 1963).

Appendix B. L. C. Northcliffe, Passage of Heavy Ions through Matter. (Reprinted from Annual Review of Nuclear Science 13, p. 67, 1963).

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Tables of Energy Losses and Ranges of Electrons and Positrons*

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Tables are presented for approximately forty materials, and eighty energies between 10 kev and 1000 Mev, which contain the following information: mean energy loss of electrons by collisions with atomic electrons and by bremsstrahlung, the mean range, and the radiation yield (conversion of electron kinetic energy into bremsstrahlung energy). Auxiliary tables contain information about restricted collision losses in water, critical energies (at which the collision and bremsstrahlung losses are equal), and electron-positron differences in regard to energy loss and range. Some comparisons are made between calculated and experimental values of the mean energy loss.

1. Introduction

The most recent extensive tables of electron and positron stopping power and range were made by Nelms.[1] They include only energy loss by collision with atomic electrons and are therefore limited to energies of a few Mev or smaller at which the neglected bremsstrahlung loss is only a few percent of the total energy loss.

* Supported by the National Aeronautics and Space Administration under Contract R-80.

Hansen and Fultz,[2] in the course of evaluating thin-target bremsstrahlung spectra and the conversion of electron kinetic energy into bremsstrahlung, calculated the mean energy loss by collision and bremsstrahlung for five materials at energies up to 35 Mev. Some data on collision and radiative losses at very high energies, in air, water and lead, have also been given by Heitler.[3]

The present tables can be characterized as follows:

a. Approximately forty elements, mixtures and compounds are included.

b. The best current values of the mean excitation energy are used for the computation of the collision loss.

c. Bremsstrahlung losses are included.

d. The energy region covered extends from 10 kev to 1000 Mev.

e. An estimate is given of the radiation yield, i.e., the fraction of electron kinetic energy converted into bremsstrahlung energy.

f. Detailed tables for positrons, similar to those for electrons, have been prepared for all substances considered. However, these additional tables are too lengthy for inclusion in the present report; instead, positron-electron energy loss ratios and range ratios have been tabulated for a set of representative substances.

The energy loss per unit pathlength and the range* are both subject to strong statistical fluctuations. The mean values of these quantities are therefore not sufficient to characterize the penetration and diffusion of electrons, particularly at high energies where radiative energy losses predominate. To obtain a realistic description, one must include not only energy loss straggling, but also the detours (wiggliness of the track) caused by the multiple elastic Coulomb scattering by atoms.

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* A definition of the range will be given in Section 2.5.

At high energies, one cannot treat the electrons or positrons by themselves, but must simultaneously take into account the transport of associated bremsstrahlung and annihilation radiation and consider, in turn, the pair or Compton electrons produced by photons. All these processes can be described only by rather complicated transport theory.

Nevertheless, there are justifications for tabulating such relatively crude parameters as the mean energy loss and range.

a. They are among the few quantities, in the present state of the art, which can be tabulated systematically, for all kinds of media and electron energies, with a modest amount of computing effort.

b. They provide useful typical values and orders of magnitude characterizing penetration and diffusion. Even in the presence of strong fluctuations, mean values are informative.

c. The mean energy loss and range are required as input data for more elaborate and realistic transport calculations. In fact, it was as part of the preparatory work for such calculations that the present tabulations were undertaken.

The theory of collision losses has recently been the subject of thorough review by Fano,[4] and bremsstrahlung cross sections have been reviewed by Koch and Motz.[5] We shall therefore limit ourselves in this paper to a brief statement of the method of computation.

2. Method of Calculation

2.1 Collision Loss

The mean collision loss was calculated according to Bethe's stopping power theory, using the formulation of Rohrlich and Carlson:[6]

$$-\frac{1}{\rho}\left(\frac{dE}{dx}\right)^{\pm}_{col} = \frac{2\pi N_a r_o^2 mc^2}{\beta^2}\,\frac{Z}{A}\left\{\log\left[\frac{\tau^2(\tau+2)}{2(I/mc^2)^2}\right] + F^{\pm}(\tau) - \delta\right\} \qquad (1)$$

$$F^{-}(\tau) = 1-\beta^2 + [\tau^2/8 - (2\tau+1)\log 2]/(\tau+1)^2 \quad \text{for electrons,} \qquad (2)$$

$$F^{+}(\tau) = 2\log 2 - \frac{\beta^2}{12}\left[23 + \frac{14}{\tau+2} + \frac{10}{(\tau+2)^2} + \frac{4}{(\tau+2)^3}\right] \quad \text{for positrons.} \qquad (3)$$

The various symbols have the following meaning:

Properties of the Electron or Positron:

mc^2 = rest energy = 0.510976 Mev

τ = kinetic energy in units of mc^2

β = $[\tau(\tau+2)]^{1/2}/(\tau+1)$ = velocity/c

Properties of the Medium:

Z = atomic number

A = atomic weight

ρ = density

I = mean excitation energy

δ = density effect correction

Other Parameters:

N_a = Avogadro's number = 6.02486×10^{23} electron/mole*

$r_o^2 = (e^2/mc^2)^2 = 7.94030 \times 10^{26}$ cm^2.

Corresponding equations will be given later, in Section 3.5, for the restricted mean energy loss resulting from collision against atomic electrons with energy transfers less than some arbitrary value Δ.

2.2 Mean Excitation Energy

The mean excitation energy, I, is an atomic parameter which can - in principle, if not yet in practice - be calculated from a knowledge of the absorption frequencies and oscillator strengths of the medium. The scarcity of information about oscillator strengths forces one to obtain the mean excitation energy empirically through the analysis of stopping power or range experiments. Experimental data for protons or other heavy particles are commonly used rather than electron data because the required energy-loss straggling and multiple scattering corrections are smaller and easier to make. Even so, the experimental data for heavy particles are subject to considerable uncertainties. Moreover, the percent error of the mean excitation energy is several times larger than the corresponding percent error of the stopping power or range because it enters logarithmically into the stopping power formula. As new information is developed, the value of the mean excitation energy must therefore be revised, and there is no reason for assuming that this process has come to an end.

The values of the mean excitation energy used in the present work are based on the analysis of proton stopping data in which the assumption was made that shell corrections (decrease of stopping power due to the binding of atomic electrons) vanish in the high-energy limit. Fano[4] has stressed that the proton shell corrections in the high-energy limit are small but non-vanishing. If the limiting value of these corrections is disregarded in the analysis of stopping power data, one obtains a quantity denoted as the adjusted mean excitation energy (I_{adj}) which is

*This value of Avogadro's number corresponds to the old mass scale in which the atomic weight of O^{16} is exactly 16.

slightly larger than the theoretical mean excitation energy (I) defined in terms of oscillator strengths (see Report No. 6 of NAS-NRC Publication 1133).

We have used the adjusted mean excitation energies I_{adj} for the evaluation of electron and positron collision losses. This involves the assumption that shell corrections in the high-energy limit can be defined equally for electrons and positrons as for protons. There is no evidence for or against this assumption which we have used for lack of a more justifiable procedure.

The values of I_{adj} were chosen to conform with the recommendations of the Subcommittee (see Report No. 6 of NAS-NRC Publication 1133 For low-Z materials, the values of I_{adj} are 18.7 ev for H, 42 ev for He, 38 ev for Li, 60 ev for Be, 78 ev for C, 85 ev for N_2, 89 ev for O_2 and 131 ev for Ne. For $Z \geq 13$, an empirical relation between I_{adj} and Z is recommended which has been proposed by Sternheimer (private communication) and which yields 163 ev for Al, 314 ev for Cu and 826 ev for Pb:

$$\frac{I_{adj}}{Z} = 9.76 + 58.8\, Z^{-1.19} \text{ ev}. \tag{4}$$

For mixtures and compounds, we have assumed the mean energy loss to be the sum of the losses in the constituent elements (Bragg's rule). This implies the use of an average

$$\log \langle I_{adj} \rangle = \left\langle \frac{Z}{A} \right\rangle^{-1} \frac{1}{\rho} \sum_j \frac{Z_j}{A_j} \rho_j \log I_{adj,j} \tag{5}$$

with

$$\left\langle \frac{Z}{A} \right\rangle = \frac{1}{\rho} \sum_j \frac{Z_j}{A_j} \rho_j \,, \tag{6}$$

where Z_j, A_j and ρ_j pertain to the j'th constituent ($\sum_j \rho_j = \rho$).

For compounds, particularly those of low average atomic number, departures from additivity occur due to chemical binding effects.[7] It would then be better to use I_{adj}-values obtained directly from an experiment with the substance under consideration.

2.3 Density Effect Correction

The density effect correction, δ, takes into account the reduction of the collision loss due to the polarization of the medium. We have relied upon the systematic evaluation by Sternheimer[8] who expressed δ as function of the particle velocity by means of an empirical formula with parameters that depend on the characteristics of the medium:

$$\delta[\beta^2/(1-\beta^2)] = \begin{cases} 0 & , \quad x < x_o \\ \log[\beta^2/(1-\beta^2)] + C + a(x_1-x)^m & , \quad x_o \le x < x_1 \\ \log[\beta^2/(1-\beta^2)] + C & , \quad x \ge x_1 \end{cases} \qquad (7)$$

where

$$x = (\log_{10} e)\,\frac{1}{2}\log[\beta^2/(1-\beta^2)] = 0.21715\,\log[\beta^2/(1-\beta^2)]\,. \qquad (8)$$

The values of the quantities x_o, x_1, C, a and m depend, among other things, on the value of the mean excitation energy. Two sets of these parameters have been given by Sternheimer: in his 1952 paper with the use of one set of I-values, and in his 1956 paper with the use of another set. Following his recommendation, we have adjusted

the density effect correction to the I_{adj}-values adopted in the present work through the following interpolation procedure: Let δ_1 and δ_2 denote the corrections for a given medium and energy, evaluated with mean excitation energies I_1 and I_2. The desired value, corresponding to mean excitation energy I_{adj}, is calculated as

$$\delta = [\delta_1 \log(I_2/I_{adj}) + \delta_2 \log(I_{adj}/I_1)]/\log(I_2/I_1). \quad (9)$$

For lead and copper we have also used additional parameter values as follows (Sternheimer, private communication):

	I	C	a	m	x_o	x_1
Cu	323 ev	-4.43	0.109	3.39	0.2	3.0
Pb	826 ev	-6.21	0.355	2.64	0.4	3.0

Sternheimer's density effect parameters apply to gases at normal pressure. The correction δ_P for a gas at a pressure of P atmospheres is

$$\delta_p[\beta^2/(1-\beta^2)] = \delta[P\beta^2/(1-\beta^2)]. \quad (10)$$

2.4. Bremsstrahlung Loss

The mean energy loss by bremsstrahlung was calculated according to the Bethe-Heitler theory modified by empirical corrections. These modifications are required because the Born approximation underlying the Bethe-Heitler theory becomes less reliable as the kinetic energy of the electron decreases, particularly for media of large atomic number, and as the photon energy approaches the initial electron energy (high-frequency limit). Exact theoretical results are available only in the high-frequency limit. Otherwise the required modifications must be based on the analysis of the rather scarce experimental data. We have relied for this purpose on the detailed and comprehensive review of Koch and Motz.[5] In the notation of these authors, the forms of the bremsstrahlung cross sections used by us are designated as 3BN, 3BS and 3CS:

3BN: screening disregarded (Bethe and Heitler,[9] Sauter,[10] Racah[11]).

3BS: screening included; extreme relativistic approximation (Bethe and Heitler[9]).

3CS: screening and Coulomb correction included; extreme relativistic approximation (Olsen[12]).

In addition, three other modifications were made:

a) For low electron energies, the Elwert[13] factor f_E was applied which is a multiplicative Coulomb correction derived on the basis of a comparison between the non-relativistic Born approximation and the non-relativistic calculations of Sommerfeld.[14]

The expression for this factor is

$$f_E = \frac{\beta\{1-\exp[-(2\pi Z/137\beta)]\}}{\beta_F\{1-\exp[-(2\pi Z/137\beta_F)]\}}, \qquad (11)$$

where β and β_F are the ratios of the initial and final electron velocities to the velocity of light.

b) At low and intermediate electron energies an empirical correction factor b was applied to the bremsstrahlung cross section. For aluminum and gold, correction factors have been estimated by Koch and Motz from experimental data for electron energies between 50 kev and 5 Mev. We have extrapolated these to energies somewhat below 50 kev until they reach the value unity which they were assumed to retain for all lower energies. Furthermore, we have by interpolation estimated similar correction factors for materials of different atomic number, assuming that no correction is required for hydrogen. Figure 1 gives some typical correction factors.

c) The bremsstrahlung cross section in the high-frequency limit has been obtained from experimental data presented by Fano, Koch and Motz[15] for aluminum and gold (see also Fig. 12 of Ref. 5), and by interpolation for other materials. In this interpolation it was assumed that the cross section can be represented in the form $aZ^3+bZ^4+cZ^5$. This form of Z-dependence is consistent with the theory of Jabbur and Pratt[16] which treats bremsstrahlung as the approximate inverse of the photoelectric process and which gives results for high-energy electrons in close agreement with experiment.

Following essentially the recommendations of Koch and Motz, we have adopted, for the purpose of calculating the mean energy loss, the following cross section package:

Kinetic energy range for incident electron	Cross section	
$T < 4mc^2$	$d\sigma = bf_E\ (3BN)$	
$4mc^2 < T < 30mc^2$	$d\sigma = bf_E\ (3BN)$ if $\gamma > 15$	
	$= bf_E\ (3BS)$ if $\gamma < 15$	(12)
$30mc^2 < T$	$d\sigma = (3BN)$ if $\gamma > 15$	
	$= (3CS)$ if $\gamma < 15$	

(3BN), (3BS) and (3CS) indicate the Born-approximation cross sections discussed above, f_E is the Elwert factor, $\underline{b}$ the empirical Koch-Motz correction factor, and

$$\lambda = 100Z^{-1/3}\Delta/(\tau+1)(\tau+1-\Delta), \tag{13}$$

with Δ the energy of the bremsstrahlung photon. The spectral shape for $\Delta > 0.95\ \tau$ has been adjusted so that the cross sections go into the appropriate high-frequency limit. The mean radiative energy loss as function of the electron energy was smoothed slightly to overcome the effect of using a patchwork of cross sections. The necessary corrections were negligible for low-Z materials, were confined to the region 4 mc^2 to 30 mc^2, and even for $Z = 82$ amounted to no more than 5-10%, well within the accuracy of the cross sections used.

In order to take into account bremsstrahlung in the field of atomic electrons, the factor Z^2 in the bremsstrahlung cross section was replaced by $Z(Z+1)$. It would have been more correct to use a factor $Z(Z+\eta)$, with a parameter η that depends on the energy as well as on Z. However, the precise value of η is not well known except that it is expected to be quite close to unity. Heitler[3] recommends $\eta \sim 0.8$. Koch and Motz state that at extremely relativistic energies and for complete screening

$$\eta = \log \frac{530}{Z^{2/3}} \Big/ \left(\log \frac{183}{Z^{1/3}} + \frac{1}{18}\right), \tag{14}$$

which varies from 1.04 for magnesium to 0.88 for lead. In view of the uncertainty of the proper value of η, we have set $\eta = 1.0$ throughout, which is correct to first order and which makes it easy

for the user of the tables to apply his own correction by using the value of η which he prefers.

For compounds and mixtures, the mean bremsstrahlung loss was calculated for each element, and the results were averaged in proportion by weight.

2.5. Range

The c.s.d.a. range, as defined in the preface to NAS-NRC Publication 1133, was calculated by integrating the reciprocal of the total stopping power:

$$r^{\pm}(\tau) = \int_0^{\tau} \left[-\frac{1}{\rho} \left(\frac{dE}{dx}\right)^{\pm}_{tot} \right]^{-1} d\tau, \tag{15}$$

where

$$-\frac{1}{\rho} \left(\frac{dE}{dx}\right)^{\pm}_{tot} = -\frac{1}{\rho} \left(\frac{dE}{dx}\right)^{\pm}_{col} - \frac{1}{\rho} \left(\frac{dE}{dx}\right)^{\pm}_{rad}. \tag{16}$$

The abbreviation c.s.d.a. stands for continuous-slowing-down-approximation. The c.s.d.a. range is the pathlength which a particle would travel in the course of slowing down, in an unbounded homogeneous medium, from energy τ to zero energy if its

rate of energy loss along the entire track were always equal to the mean rate of energy loss. Actually the rate of energy loss fluctuates, but this is neglected in the continuous-slowing-down-approximation, so that the residual range of a particle becomes a deterministic function of its energy, and vice versa. It should also be noted that the definition of the c.s.d.a. range involves the pathlength and not the depth of penetration in any special direction. The c.s.d.a. range thus differs from other types of range such as the "projected range" or "extrapolated range" which are usually defined with reference to transmission through a plane-parallel absorber. The c.s.d.a. range pertains to a particle track that is "typical" but not experimentally realizable. If the pathlength distribution were to be measured in a track visualization device such as a photographic emulsion, the arithmetic average of this distribution would be somewhat greater than the c.s.d.a. range.*

When the velocity of the particle being stopped falls to a value comparable with the velocity of the atomic electrons, the stopping power formula (1) ceases to be valid, and the exact form of the stopping law is not known. This forces one to use an arbitrary approximate procedure for the evaluation of the range integral (15) at very low energies. We have followed the procedure of Nelms, assuming the function

$$\left[-\frac{1}{\rho}\left(\frac{dE}{dx}\right)^{\pm}_{tot}\right]^{-1}$$ to be zero at $\tau = 0$ and interpolating linearly between zero and a value at energy $\tau = \tau_c$. However, we have used $mc^2\tau_c = 1$ kev, whereas Nelms used 5 kev. The result is that our ranges at 10^ckev are somewhat higher than those of Nelms (12% for Pb, 6% for Ag, 2% for Al and 1% for H_2). At 50 kev, the differences are at most 0.5% and at higher energies they are completely negligible. The ranges of Nelms are on the low side, ours on the high side, and the discrepancies give an indication of the error likely to result from lack of knowledge of low-energy stopping behavior.

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* This has been shown by Lewis[17] for heavy charged particles for which the difference is quite small. For electrons, the difference is expected to be greater (see also Appendix A of NAS-NRC Publication 1133, p. 45-46).

2.6. Radiation Yield

The radiation yield $Y(T)$ is defined to be the fraction of its energy which an electron, with initial kinetic energy T, will radiate in the form of bremsstrahlung in the course of slowing down. In the continuous-slowing-down approximation

$$Y^{\pm}(T) = \frac{1}{T} \int_0^T \frac{\left(\frac{dE}{dx}\right)^{\pm}_{rad}}{\left(\frac{dE}{dx}\right)^{\pm}_{tot}} dT' . \tag{17}$$

3. Miscellaneous Information

3.1. Influence of the Density Effect Correction

Table 1 shows the percent reduction of the collision energy loss due to the density effect correction for a selected set of materials. Table 2 gives the actual reduction (in Mev/g cm^{-2}) for various gases at normal pressure. The corresponding reduction for an electron of momentum pc, in a gas at a pressure of P atmospheres, is found by interpolating in Table 2 to a momentum $pc\sqrt{P}$.

3.2. Critical Energies

The critical energy is a parameter used frequently in the theory of electron-photon cascades. It is defined as the electron energy at which the collision loss is equal to the radiation loss, and thus provides the dividing line below which the development of a cascade is dominated by collision phenomena, and above which it is governed by radiative effects. Table 3 gives a list of critical energies for various substances. In the literature on cascade theory, the critical energy is often approximated by the expression

$$T_{crit} = \frac{800}{Z+1.2} \text{ Mev.} \tag{18}$$

As can be seen in Fig. 2, this approximation is quite satisfactory.

3.3. Radiation Yield

The correct evaluation of the radiation yield must be based on the electron slowing down spectrum $y(\tau,\tau')d\tau'$. This quantity is the differential tracklength equal to the average distance traveled by an electron of initial energy τ in the course of slowing down, while its energy is between τ' and $\tau'+d\tau'$. The average fractional energy conversion from electron kinetic energy to bremsstrahlung is

$$Y(\tau) = \int_0^{\tau} y(\tau,\tau') \left[-\frac{1}{\rho} \left(\frac{dE}{dx}\right)_{rad} \right] d\tau' \,. \tag{19}$$

An accurate method of computing the slowing down spectrum, taking into account the discontinuous nature of collision losses and bremsstrahlung losses as well as the production of secondary knock-on electrons, has been developed by Spencer and Fano.[18] Their method is numerical, and difficult computationally when bremsstrahlung losses are included, so that only a few selected cases were treated. A first approximation to the slowing-down spectrum is obtained in the form of the reciprocal of the total stopping power at energy τ':

$$y(\tau,\tau') \approx \left[-\frac{1}{\rho} \left(\frac{dE}{dx}\right)_{tot} \right]^{-1} . \tag{20}$$

With this substitution, one obtains the radiation yield in the continuous-slowing-down approximation, Eq. (17). Actually, the true slowing-down spectrum exceeds the reciprocal stopping power at energies close to the source energy, then is smaller, and at very low energies again becomes the larger of the two because it includes secondary knock-on electrons.

In Table 4, we compare radiation yields based on Spencer-Fano slowing-down spectra with yields computed in the continuous-slowing-down approximation. The approximation does not include radiation from secondary electrons, but their contribution would in any case be quite small except under cascade conditions. It can be seen that the continuous-slowing-down approximation is quite serviceable for the cases where a comparison can be made, giving rise to errors of no more than a few percent.

An approximation for the radiation yield has been developed by Koch and Motz:[5]

$$Y(\tau) = \frac{3\times10^{-4}Z\tau}{1+3\times10^{-4}Z\tau} . \qquad (21)$$

As shown in Figs. 3a and b, this formula is quite adequate for all materials except for those with very low Z.

3.4. Experimental and Calculated Stopping Powers

Tables 5 and 6 contain comparisons with the measurements of Paul and Reich[19] at 2.8 and 4.7 Mev and of Ziegler[20] at 32 Mev. The results are somewhat inconsistent. At 2.8 Mev, the experimental stopping powers are slightly lower than the calculated values, by an amount roughly equal to the experimental error; at 4.7 Mev they are higher, by amounts equal to or larger than the experimental errors; at 32 Mev there is close agreement.

Tables 7 and 8 contain comparisons with relative stopping power measurements of Hereford[21] at energies between 1.4 and 9.0 Mev and of Westermark[22] at energies in the neighborhood of 1 Mev. In both cases the agreement with calculated values is very good.

We have found no data which could be used to test the validity of the formulas for radiative energy loss at very high energies.

3.5. Restricted Stopping Power

In some applications, one is interested in the energy deposited by an electron along its track or, rather, in a region of specified dimensions surrounding the track. One must then exclude from the calculated stopping power the energy that escapes from the region of interest in the form of fast knock-on electrons (delta rays). One simple device for achieving this is to introduce the restricted collision law, i.e., the mean energy loss due to collisions against atomic electrons with energy transfers less than some specified value Δ (see also Appendix A of NAS-NRC Publication 1133, p. 49-50).

The expressions for the restricted mean collision loss, $L^{\pm}(\tau,\Delta)$, for positrons and electrons can readily be derived from the formulation of stopping power theory of Rohrlich and Carlson[6] and are as follows:

$$L^{\pm}(\tau,\Delta) = \frac{2\pi N_a r_o^2 mc^2}{\beta^2} \frac{Z}{A}\left\{\log\left[\frac{2(\tau+2)}{(I/mc^2)^2}\right] + F^{\pm}(\tau,\Delta)-\delta\right\} \qquad (22)$$

For electrons

$$F^{-}(\tau,\Delta) = -1-\beta^2+\log[(\tau-\Delta)\Delta] + \tau/(\tau-\Delta) +$$

$$+ [\Delta^2/2 + (2\tau+1)\log(1-\Delta/\tau)]/(\tau+1)^2 . \qquad (23)$$

For positrons

$$F^{+}(\tau,\Delta) = \log(\tau\Delta) - \frac{\beta}{\tau}\left[\tau+\Delta - \frac{5\Delta^2/4}{\tau+2} + \right.$$

$$\left. + \frac{(\tau+1)(\tau+3)\Delta-\Delta^3/3}{(\tau+2)^2} \right. \tag{24}$$

$$\left. - \frac{(\tau+1)(\tau+3)\Delta^4-\tau\Delta^3/3+\Delta^4/4}{(\tau+2)^3}\right].$$

For electrons, Δ cannot exceed $\tau/2$, because the faster of the particles emerging from an electron-electron collision is, by definition, considered to be the primary electron. Thus

$L^{-}(\tau,\tau/2) = -\frac{1}{\rho}\left(\frac{dE}{dx}\right)^{-}_{col}$. For positrons, the upper limit of Δ is equal to τ and $L^{+}(\tau,\tau) = \frac{-1}{\rho}\left(\frac{dE}{dx}\right)^{+}_{col}$.

Figure 4a shows the ratio of the restricted to the unrestricted collision loss for electrons in water, for different electron energies T (in Mev), as function of the parameter $g = \Delta/\tau = mc^2\Delta/T$. Figure 4b gives similar data for positrons.

Figures 5a and 5b compare specific ionization measurements by Barber[23] with restricted-collision-loss calculations. Barber's experiments were done with electrons having energies up to 35 Mev, and the detection device was an ionization chamber filled with H_2 or He at a pressure of 10 atmospheres. The size and content of the ionization chamber were such that a cut-off was imposed on the energy of secondary electrons which were fully detected. In the calculation, we used Barber's estimate of $mc^2\Delta = 56$ kev for H_2 and 51 kev for He.

3.6. Electron-Positron Differences

In the calculation of the positron energy loss by collision, Eqs. (1) and (3) have been used. For the radiative loss, the Born-approximation cross sections (3BN) and (3CS) can be expected to hold for positrons as well as electrons, but the Elwert factor f_E and the Koch-Motz correction factor $\underline{b}$ no longer apply to positrons, and the appropriate corrections are not known. We have therefore, in Table 9, given the positron-electron ratio for the collision stopping power for all energies, but the corresponding ratios for the total stopping power and range only for energies above 30 mc^2.

4. Main Tables: Electron Mean Energy Loss, Range, and Radiation Yield

Table 10 gives the assumed values of the mean excitation energy I_{adj} (in ev), as well as the composition by weight where required, for all the substances considered. Table I is the main table and contains the following information for electrons:

$-\frac{1}{\rho}\left(\frac{dE}{dx}\right)^-_{col}$, $-\frac{1}{\rho}\left(\frac{dE}{dx}\right)^-_{rad}$ and $-\frac{1}{\rho}\left(\frac{dE}{dx}\right)^-_{tot}$ in units of Mev/g cm^{-2}, the range r^- in units of g cm^{-2} and the radiation yield Y^-. All quantities are shown as functions of the electron energy T in Mev. The various substances make their appearance in Table I in the same order in which they are listed in Table 10.

It is difficult to estimate very closely the error of the data in Table I. The available experimental data on stopping power have uncertainties ranging from 4 to 10% and are presumably less accurate than the calculated values. The principal source of error in the evaluation of $-\frac{1}{\rho}\left(\frac{dE}{dx}\right)^-_{col}$ is the uncertainty of I_{adj}, which may be as high as 10% for materials with very small Z, but considerably smaller for high Z. A secondary source of error is the uncertainty in the density effect correction δ, which is stated by Sternheimer to be of the order of 0.1. Taking into account that the percent error of the mean collision loss is several times smaller than the corresponding error of I_{adj} and that the density effect introduces only a relatively minor correction except at the highest energies, one might expect that the error of $-\frac{1}{\rho}\left(\frac{dE}{dx}\right)^-_{col}$ will not exceed 1-2%.

The bremsstrahlung cross sections on which the radiative energy loss $-\frac{1}{\rho}\left(\frac{dE}{dx}\right)^{-}_{rad}$ is based have been estimated by Koch and Motz to be accurate to within 20% up to 2 Mev, to within 5% between 2 and 15 Mev and to within 3% above 15 Mev. The error of $-\frac{1}{\rho}\left(\frac{dE}{dx}\right)^{-}_{tot}$ as well as of r^{-} and Y^{-} will vary depending on the relative magnitudes of collision and radiation losses.

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Table 1

Percent reduction of collision energy loss due to density effect

T (Mev)	H_2 *	C	Al	Cu	Ag	Au
0.1	0.0	0.0	0.0	0.0	0.0	0.0
0.2	0.0	0.4	0.0	0.0	0.0	0.0
0.5	0.0	1.2	0.5	0.5	0.1	0.0
1.0	0.0	2.7	1.5	1.5	0.7	0.7
2.0	0.0	4.8	3.4	3.4	2.2	2.0
5.0	0.0	8.5	6.8	6.8	5.3	4.9
10	0.0	11.8	9.8	9.9	8.2	7.6
20	0.0	15.2	13.1	13.3	11.3	10.7
50	0.7	19.5	17.3	17.6	15.7	14.9
100	3.3	22.5	20.3	20.7	18.8	18.1
200	6.6	25.1	23.1	23.6	21.8	21.1
500	10.6	28.1	26.4	27.0	25.4	24.8
1000	13.4	30.1	28.6	29.2	27.8	27.3

* Normal pressure.

Table 2

Reduction of collision energy loss due to density effect for gases at normal pressure, Mev/g cm^{-2}

T (Mev)	Momentum pc (Mev)	H_2	He	N	O	Ne	A
10	10.499	0.0	0.0	0.0	0.0	0.0	0.0
20	20.505	0.0	0.0	0.0	0.0	0.0	0.0
30	30.507	0.0	0.0	0.0	0.0	0.0	0.0
40	40.508	0.008	0.0	0.009	0.003	0.0	0.0
50	50.508	0.034	0.0	0.018	0.018	0.0	0.0
60	60.509	0.065	0.001	0.028	0.032	0.0	0.003
80	80.509	0.126	0.002	0.048	0.056	0.006	0.012
100	100.51	0.182	0.010	0.067	0.076	0.019	0.022
200	200.51	0.379	0.074	0.139	0.149	0.074	0.065
300	300.51	0.501	0.130	0.188	0.197	0.116	0.099
400	400.51	0.589	0.173	0.226	0.234	0.148	0.126
500	500.51	0.656	0.207	0.257	0.263	0.175	0.148
600	600.51	0.712	0.235	0.283	0.288	0.198	0.168
800	800.51	0.800	0.279	0.325	0.328	0.236	0.200
1000	1000.5	0.868	0.313	0.357	0.360	0.267	0.226

Table 2 (Continued)

Reduction of collision energy loss due to density effect for gases at normal pressure, Mev/g cm^{-2}

T (Mev)	Momentum pc (Mev)	Kr	Xe	CO_2	Air	Methane	Acetylene
10	10.499	0.0	0.0	0.0	0.0	0.0	0.0
20	20.505	0.0	0.0	0.0	0.0	0.003	0.0
30	30.507	0.0	0.0	0.011	0.0	0.023	0.012
40	40.508	0.0	0.001	0.029	0.008	0.045	0.027
50	50.508	0.0	0.003	0.046	0.018	0.065	0.043
60	60.509	0.003	0.006	0.060	0.029	0.084	0.057
80	80.509	0.009	0.013	0.084	0.050	0.118	0.084
100	100.51	0.017	0.020	0.105	0.068	0.147	0.107
200	200.51	0.051	0.050	0.178	0.140	0.251	0.191
300	300.51	0.079	0.074	0.226	0.189	0.319	0.247
400	400.51	0.102	0.093	0.262	0.227	0.370	0.289
500	500.51	0.122	0.110	0.292	0.257	0.410	0.323
600	600.51	0.138	0.124	0.316	0.283	0.444	0.351
800	800.51	0.166	0.149	0.356	0.324	0.497	0.397
1000	1000.5	0.190	0.169	0.388	0.356	0.539	0.433

Table 3

Critical energies for electrons
(gases at normal pressure)

Medium	T_{crit} (Mev)
H_2	403
He	280
Li	169
Be	132
C	97.1
N	107
O	95.2
Ne	78.8
Mg	55.4
Al	51.0
A	45.6
Fe	27.4
Cu	24.8
Kr	23.6
Ag	16.2
Sn	15.5
Xe	15.8
W	10.2
Au	9.66
Pb	9.51
U	8.36

Medium	T_{crit} (Mev)
H_2O	92.0
CO_2	100
Ag Cl	19.8
Ag Br	18.3
NaI	17.4
LiI	15.6
Methane	169
Ethylene	146
Polyethylene	119
Xylene	112
Toluene	111
Acetylene	132
Polystyrene	109
Stilbene	108
Lucite	100
Anthracene	105
Muscle	112
Bone	81.9
Air	102
Standard Emulsion	22.3

Table 4

Comparison of radiation yields obtained from Spencer-Fano slowing down spectra and from continuous-slowing-down approximation

Medium	Electron Source Energy τ_o (mc^2)	Radiation Yield, Percent		
		Spencer-Fano	Continuous-Slowing-Down	
		No Density Effect	No Density Effect	Density Effect
Al	4	1.95	1.90	1.91
	80	24.8	23.1	25.6
Pb	4	14.2	13.4	13.5
	80	56.4	59.3	61.0

Table 5

Comparison with energy loss measurements of Paul and Reich (1950)

Electron Energy T (Mev)	Medium	$-\frac{1}{\rho}\left(\frac{dE}{dx}\right)^{-}_{tot}$, Mev/g cm^{-2}	
		Experimental	Calculated
2.8 ± 3%	Be	1.45 ± 0.06	1.51
	C	1.53 ± 0.08	1.68
	Fe	1.43 ± 0.10	1.51
	Pb	1.32 ± 0.10	1.44
	H_2O	1.83 ± 0.10	1.92
4.7 ± 3%	Be	1.73 ± 0.12	1.56
	C	1.89 ± 0.16	1.75
	Fe	1.94 ± 0.19	1.66
	Pb	2.04 ± 0.22	1.73
	H_2O	2.43 ± 0.20	2.00

Table 6

Comparison with stopping power measurements for 32-Mev electrons by Ziegler (1958)

Medium	$-\frac{1}{\rho}\left(\frac{dE}{dx}\right)^{-}_{tot}$, Mev/g cm^{-2}	
	Experimental	Calculated
Be	2.0 ± 0.1	2.03
C	2.4 ± 0.1	2.44

Table 7

Comparison with total stopping power measurements of Hereford (1948)

Electron Energy T (Mev)	$\frac{1}{\rho}\left(\frac{dE}{dx}\right)^{-}_{water} / \frac{1}{\rho}\left(\frac{dE}{dx}\right)^{-}_{carbon}$	
	Experimental	Calculated
1.4	1.17 ± 0.02	1.15
1.6	1.16 ± 0.02	1.15
7.4	1.16 ± 0.02	1.14
9.0	1.14 ± 0.02	1.14

Table 8

Total energy loss relative to that in Be and Al for 2.8 Mev electrons. Comparison with an experiment of Westermark (1960)

Medium	$\frac{1}{\rho}\left(\frac{dE}{dx}\right)^{-}_{\text{medium}} / \frac{1}{\rho}\left(\frac{dE}{dx}\right)^{-}_{\text{beryllium}}$	
	Experimental	Calculated
Li	1.051 ± 0.021	1.017
C	1.09 ± 0.02	1.111
Mg	1.092 ± 0.016	1.079
Al	1.050 ± 0.016	1.042

Medium	$\frac{1}{\rho}\left(\frac{dE}{dx}\right)^{-}_{\text{medium}} / \frac{1}{\rho}\left(\frac{dE}{dx}\right)^{-}_{\text{aluminum}}$	
	Experimental	Calculated
H_2O	1.224 ± 0.013	1.222
Toluene	1.187 ± 0.018	1.189

Table 9

Comparison of positron and electron energy loss and range

T Energy (Mev)	H_2			C		
	$\frac{(\frac{dE}{dx})^+_{col}}{(\frac{dE}{dx})^-_{col}}$	$\frac{(\frac{dE}{dx})^+_{tot}}{(\frac{dE}{dx})^-_{tot}}$	$\frac{r^+}{r^-}$	$\frac{(\frac{dE}{dx})^+_{col}}{(\frac{dE}{dx})^-_{col}}$	$\frac{(\frac{dE}{dx})^+_{tot}}{(\frac{dE}{dx})^-_{tot}}$	$\frac{r^+}{r^-}$
0.01	1.08			1.10		
0.02	1.07			1.08		
0.05	1.05			1.06		
0.1	1.03			1.04		
0.2	1.01			1.02		
0.5	0.992			0.990		
1.0	0.982			0.979		
2.0	0.978			0.974		
5.0	0.977			0.972		
10.0	0.978			0.972		
20.0	0.979	0.980	1.02	0.973	0.977	1.03
50.0	0.981	0.983	1.02	0.974	0.982	1.02
100.0	0.981	0.985	1.02	0.974	0.987	1.02
200.0	0.981	0.988	1.02	0.975	0.992	1.02
500.0	0.982	0.992	1.01	0.976	0.996	1.01
1000.0	0.982	0.995	1.01	0.976	0.998	1.01

Table 9 (Continued)

Comparison of positron and electron energy loss and range

T Energy (Mev)	Al			Cu		
	$\frac{(\frac{dE}{dx})^+_{col}}{(\frac{dE}{dx})^-_{col}}$	$\frac{(\frac{dE}{dx})^+_{tot}}{(\frac{dE}{dx})^-_{tot}}$	$\frac{r^+}{r^-}$	$\frac{(\frac{dE}{dx})^+_{col}}{(\frac{dE}{dx})^-_{col}}$	$\frac{(\frac{dE}{dx})^+_{tot}}{(\frac{dE}{dx})^-_{tot}}$	$\frac{r^+}{r^-}$
0.01	1.12			1.14		
0.02	1.10			1.11		
0.05	1.07			1.08		
0.1	1.04			1.05		
0.2	1.02			1.02		
0.5	0.989			0.988		
1.0	0.977			0.975		
2.0	0.972			0.970		
5.0	0.971			0.969		
10.0	0.971			0.970		
20.0	0.972	0.980	1.03	0.971	0.978	1.03
50.0	0.973	0.986	1.02	0.972	0.991	1.03
100.0	0.974	0.991	1.02	0.973	0.995	1.02
200.0	0.975	0.995	1.01	0.973	0.997	1.02
500.0	0.975	0.998	1.01	0.974	0.999	1.01
1000.0	0.976	0.999	1.01	0.975	0.999	1.01

Table 9 (Continued)

Comparison of positron and electron energy loss and range

T Energy (Mev)	Ag			Au		
	$\frac{(\frac{dE}{dx})^+_{col}}{(\frac{dE}{dx})^-_{col}}$	$\frac{(\frac{dE}{dx})^+_{tot}}{(\frac{dE}{dx})^-_{tot}}$	$\frac{r^+}{r^-}$	$\frac{(\frac{dE}{dx})^+_{col}}{(\frac{dE}{dx})^-_{col}}$	$\frac{(\frac{dE}{dx})_{tot}}{(\frac{dE}{dx})^-_{tot}}$	$\frac{r^+}{r^-}$
0.01	1.16			1.19		
0.02	1.12			1.14		
0.05	1.08			1.09		
0.1	1.05			1.06		
0.2	1.02			1.02		
0.5	0.988			0.987		
1.0	0.974			0.972		
2.0	0.969			0.967		
5.0	0.968			0.967		
10.0	0.969			0.968		
20.0	0.970	0.973	1.04	0.969	0.963	1.06
50.0	0.972	0.993	1.03	0.971	0.995	1.05
100.0	0.972	0.996	1.03	0.972	0.997	1.04
200.0	0.973	0.998	1.02	0.973	0.999	1.03
500.0	0.974	0.999	1.02	0.974	0.999	1.02
1000.0	0.975	1.00	1.01	0.974	1.00	1.02

Table 10

Values of mean excitation energies

Medium	I_{adj} (ev)
H_2	18.7
He	42.0
Li	38.0
Be	60.0
C	78.0
N	85.0
O	89.0
Ne	131
Mg	156
Al	163
A	210
Fe	273
Cu	314
Kr	381
Ag	487
Sn	516
Xe	555
W	748
Au	797

Medium	I_{adj} (ev)
Pb	826
U	923
H_2O	65.1
CO_2	85.9
Ag Cl	384
Ag Br	434
NaI	433
Li I	473
Methane	44.6
Ethylene	54.6
Polyethylene	54.6
Xylene	61.0
Toluene	62.1
Acetylene	63.6
Polystyrene	63.6
Stilbene	65.2
Lucite	65.6
Anthracene	67.0

Table 10 (Continued)

Values of mean excitation energies

Medium	I_{adj} (ev)	Composition (fraction by weight)
Muscle	66.2	0.1020 H, 0.1230 C, 0.0350 N, 0.7290 O, 0.0008 Na, 0.0002 Mg, 0.0020 P, 0.0050 S, 0.0030 K
Bone	85.2	0.064 H, 0.278 C, 0.027 N, 0.410 O, 0.002 Mg, 0.070 P, 0.002 S, 0.147 Ca
Air	86.8	0.755 N, 0.232 O, 0.013 A
Standard Emulsion	320	0.01410 H, 0.07226 C, 0.01932 N, 0.06611 O, 0.00189 S, 0.34910 Br, 0.47410 Ag, 0.00312 I

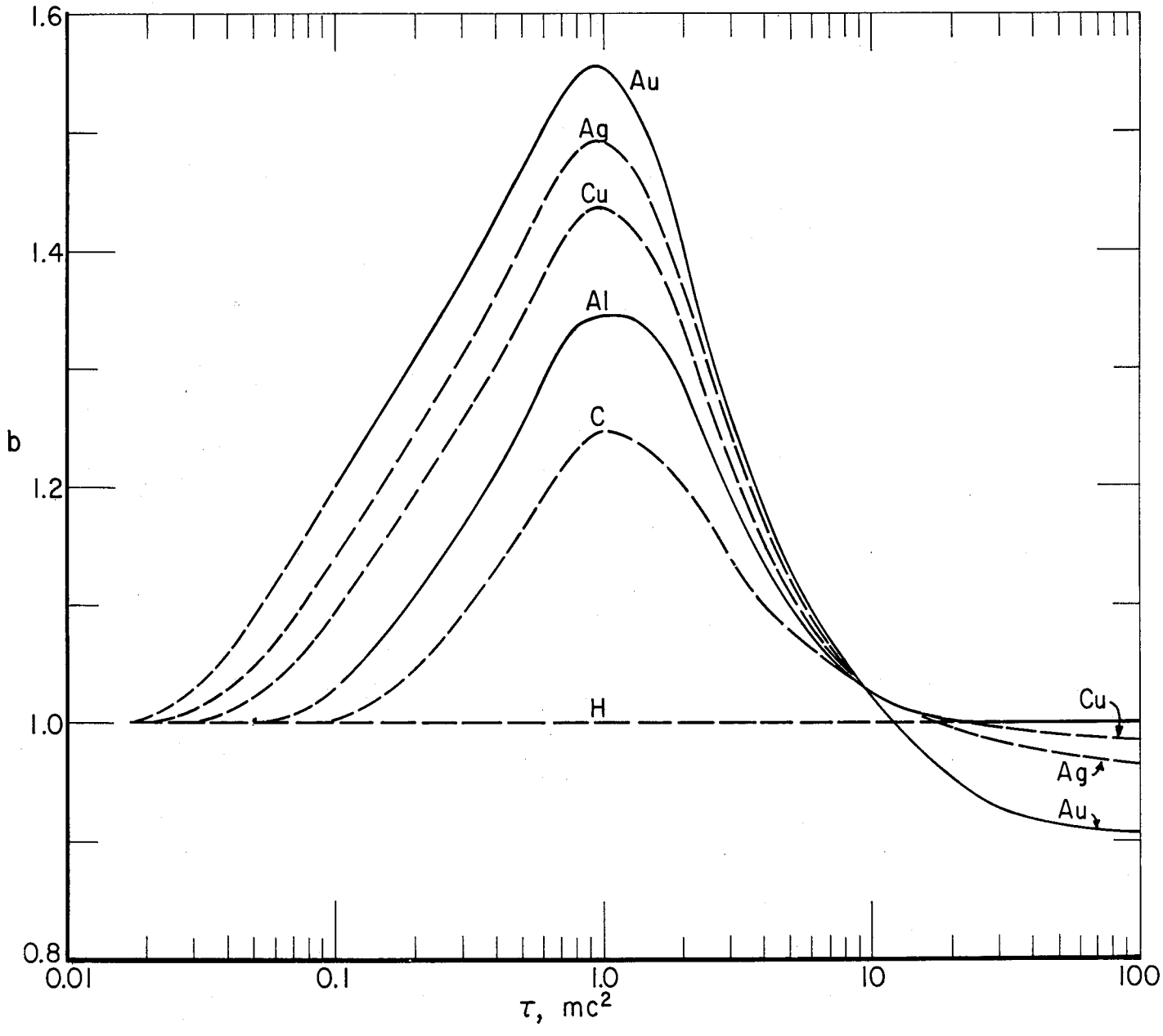


Figure 1. Correction factor $b(Z,\tau)$ used in the computation of the mean energy loss of electrons by radiation. The correction represents an estimate of the deviation of the true energy loss from the Born approximation result of Bethe and Heitler. The solid curves are derived from the analysis of experimental data by Koch and Motz. The dotted curves represent interpolations or extrapolations.

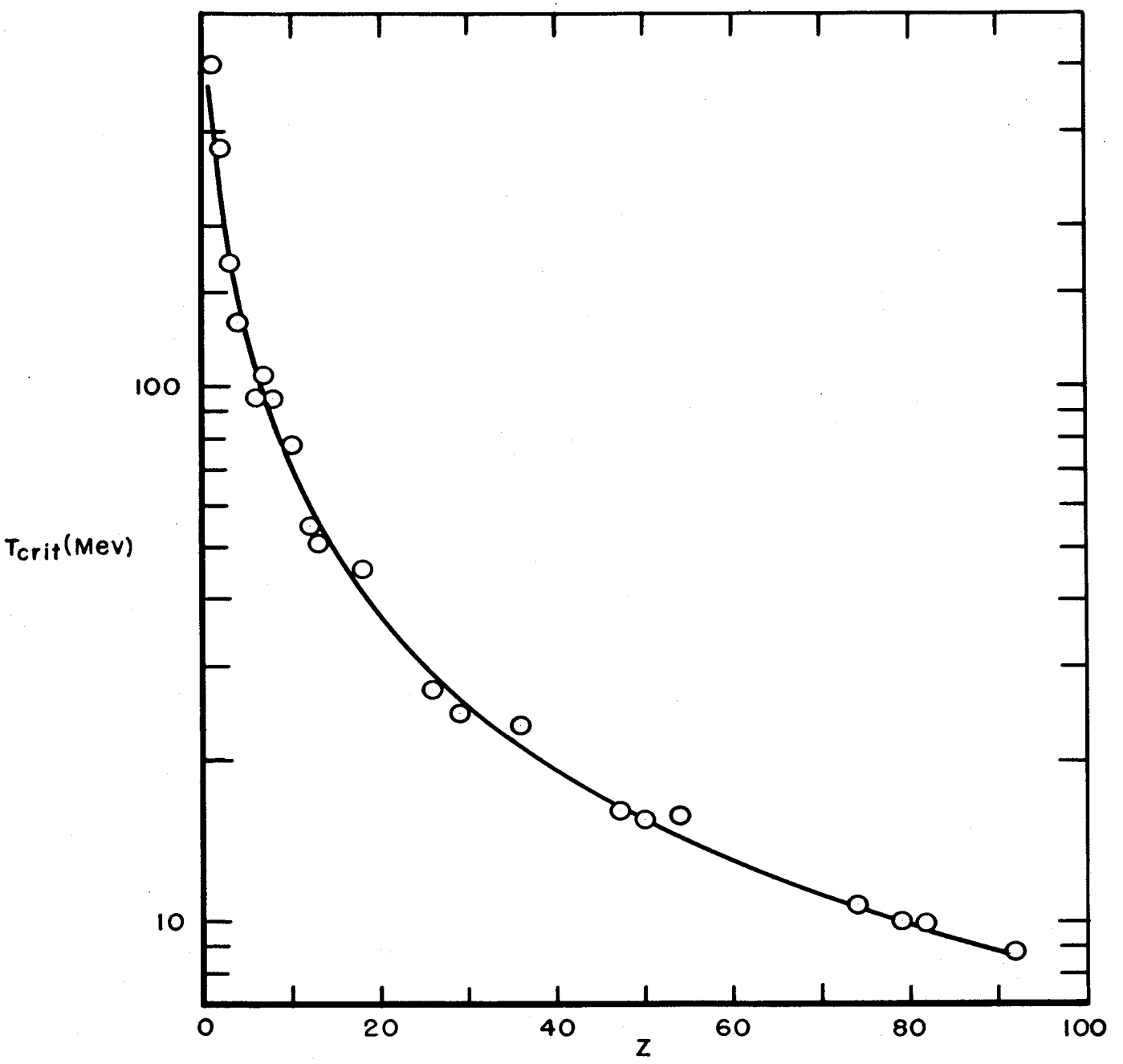
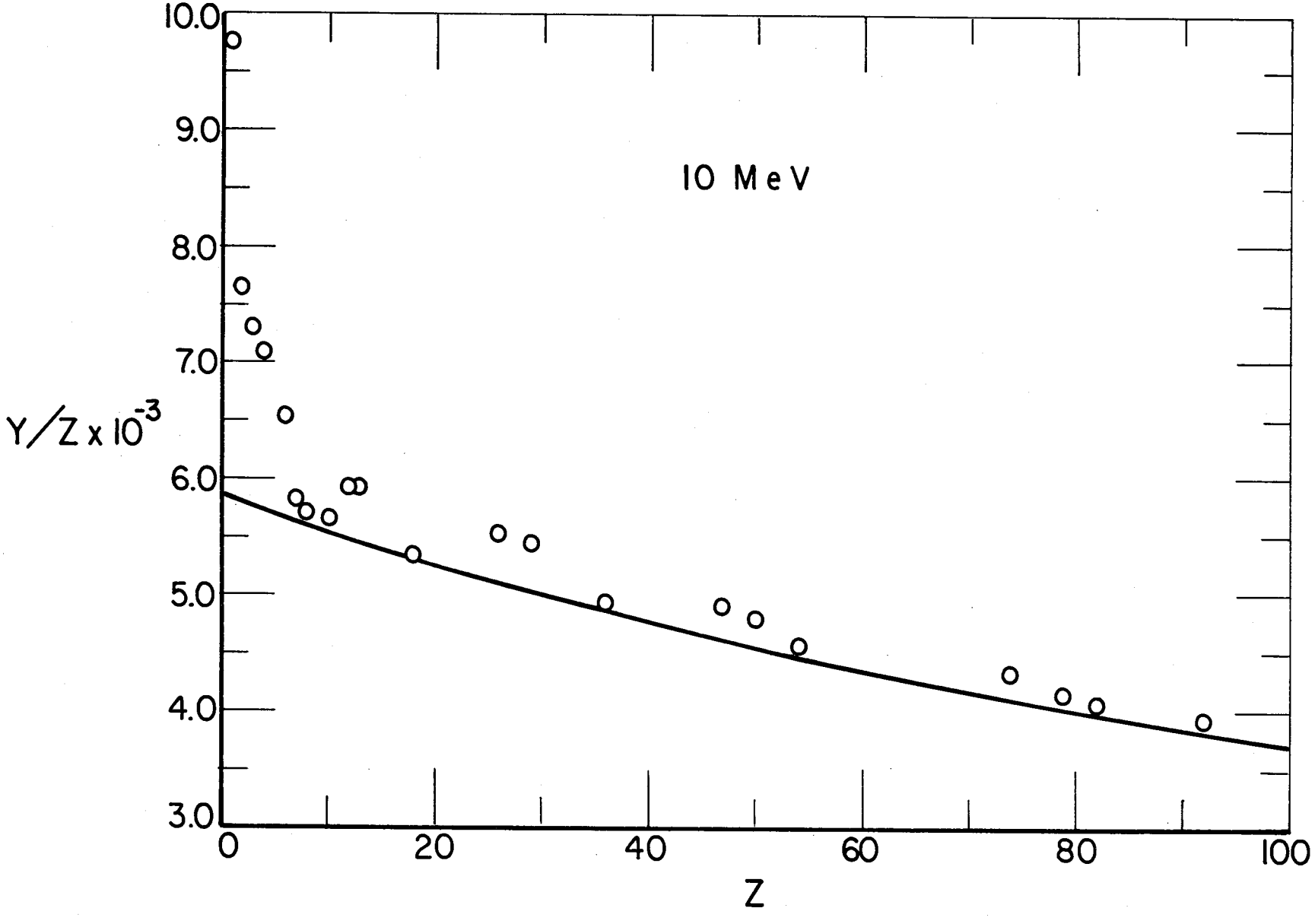
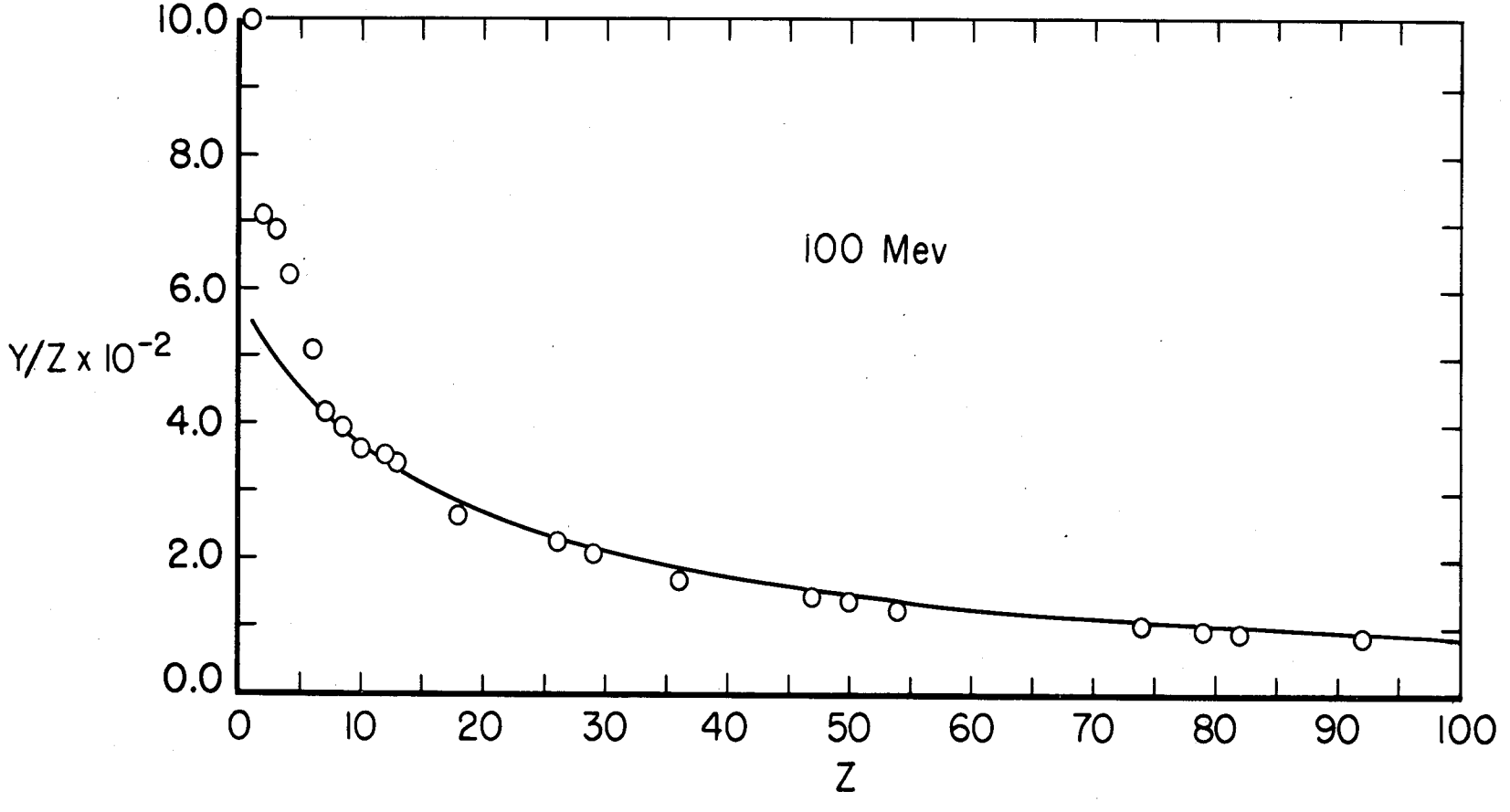


Figure 2. Critical energy for electrons (at which the mean values of the collision and radiative losses are equal). The points are derived from Table I; the curve represents the approximation formula (18).



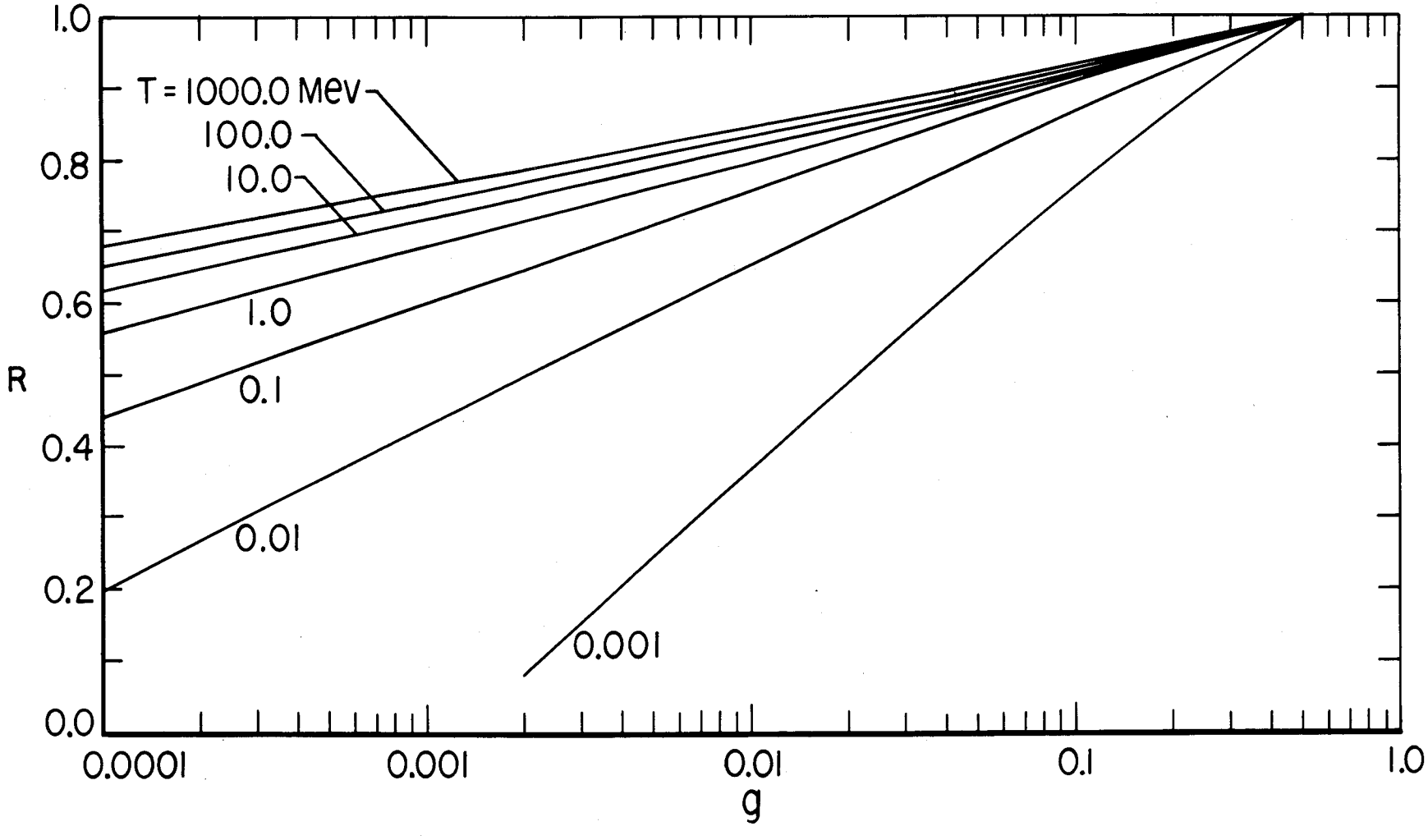
a. 10 MeV

Figure 3. Radiation yield Y (fraction of initial electron kinetic energy converted into bremsstrahlung energy in the course of slowing down). Y/Z is plotted against the atomic number Z. The curve represents the Koch-Motz approximation formula (21); the points are from Table I, calculated in the continuous-slowing-down approximation.



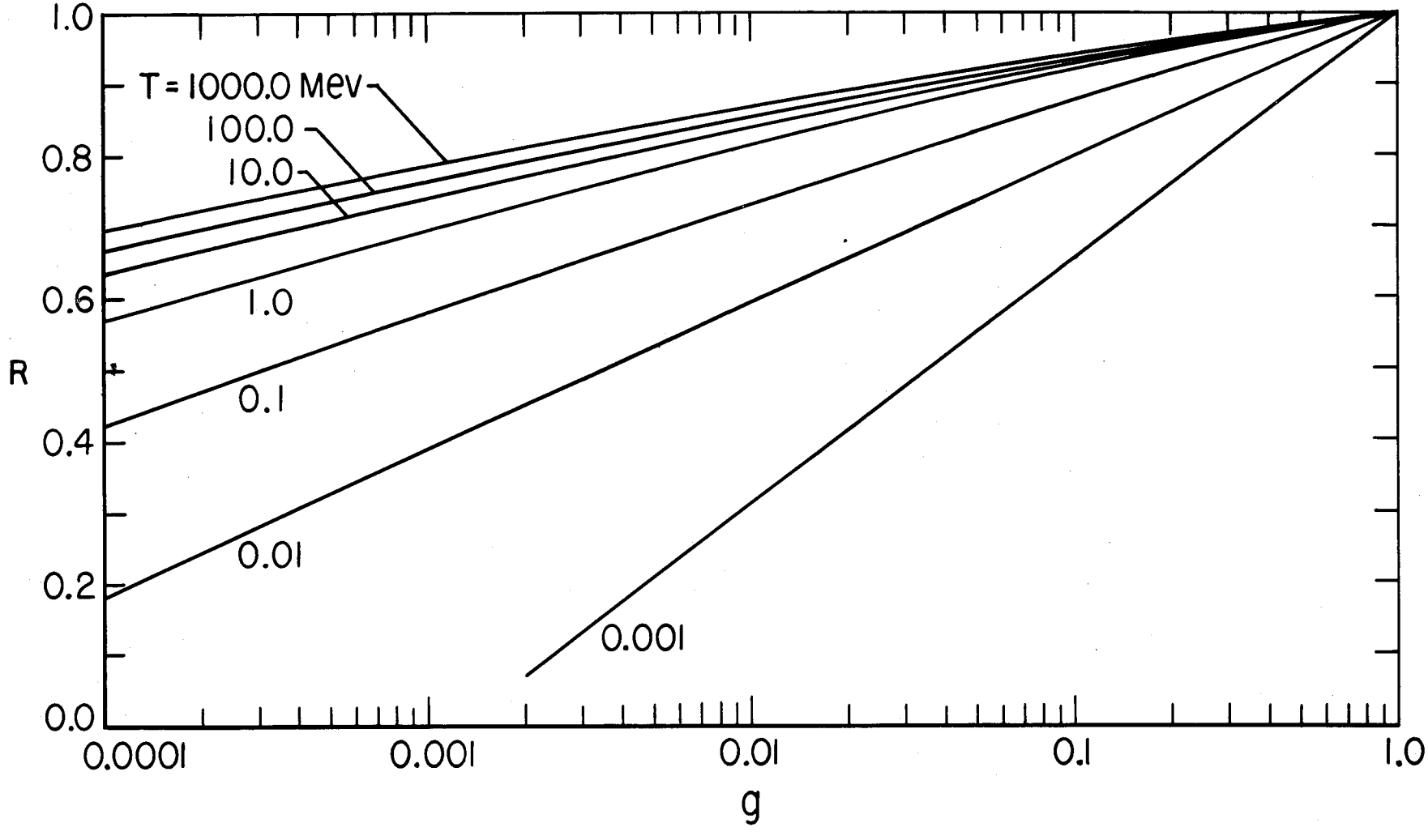
b. 100 MeV

Figure 3. Concluded.



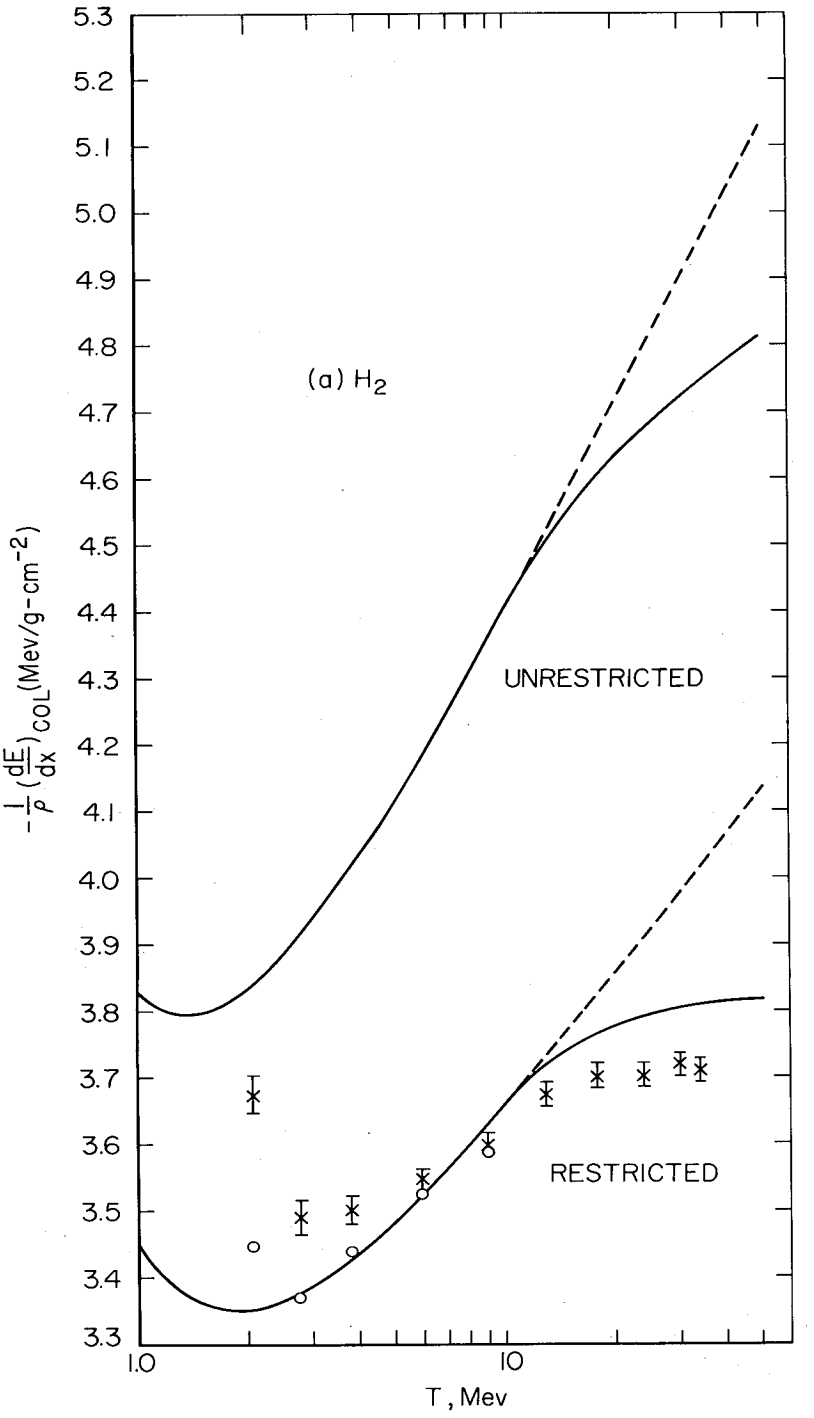
a. Electrons: $g \leq 0.5$

Figure 4. Ratio R of restricted to unrestricted mean collision loss, as function of the parameter $g = \frac{mc^2 \Delta}{T}$; g is the largest fraction of its energy which an electron or positron is allowed to lose in a single collision with an atomic electron.



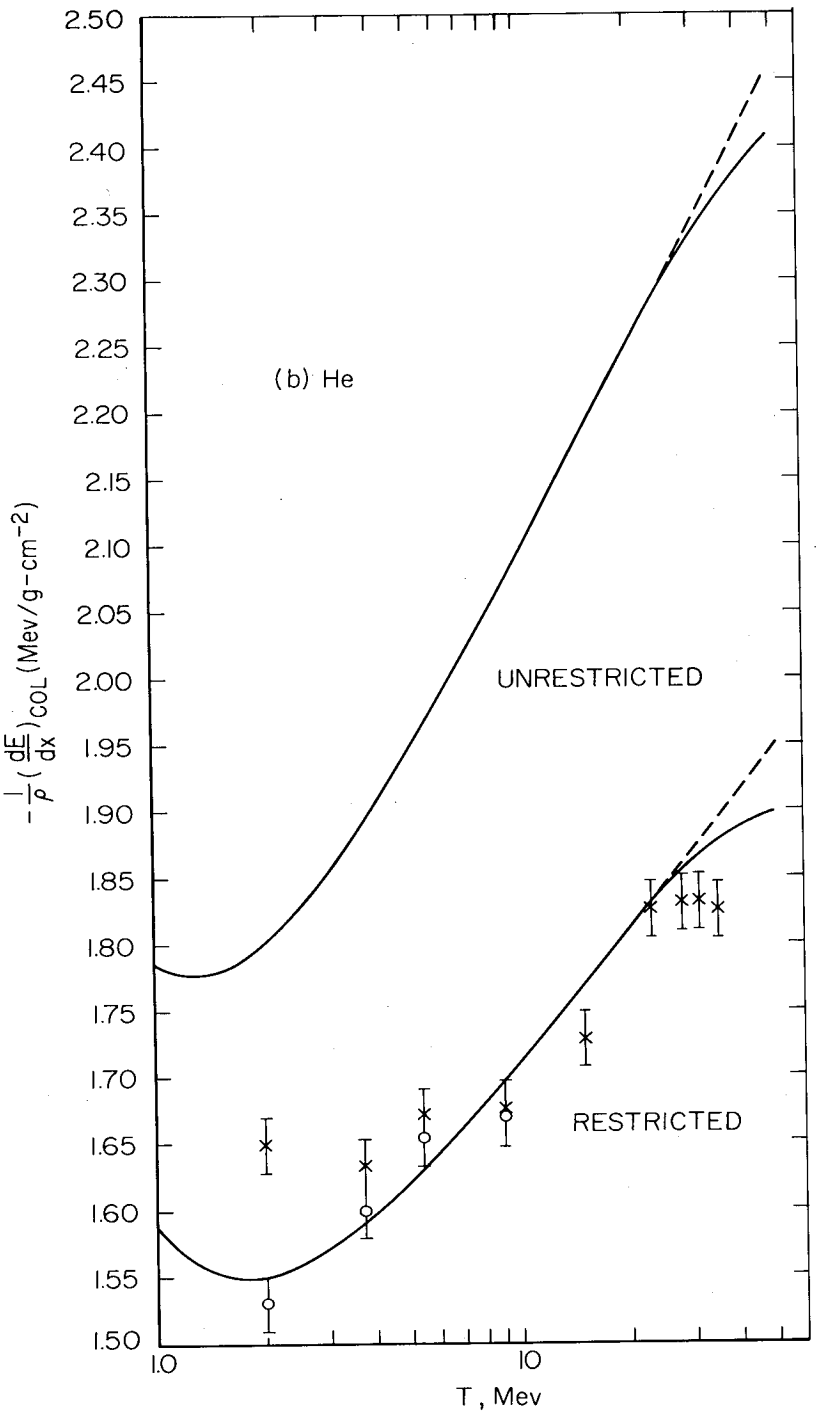
b. Positrons: $g \leq 1.0$

Figure 4. Concluded.



a. H_2 at 10 atmospheres: largest allowed energy transfer per collision 56 kev

Figure 5. Comparison of restricted and unrestricted mea loss for electrons (solid curves with, dotted curves effect correction). The experimental points for the are from Barber, whose normalization relative to the has been used.



b. He at 10 atmospheres; largest allowed energy transfer per collision 51 kev

Figure 5. Concluded.

Table I. Energy Loss, Range and Radiation Yield for Electrons in Various Materials

The order in which each material appears and the values of the mean excitation energy used are given in Table 10.

ELECTRONS IN HYDROGEN

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	5.147E 01	1.970E-03	5.147E 01	1.071E-04	2.098E-05
0.015	3.697E 01	1.965E-03	3.697E 01	2.235E-04	2.926E-05
0.020	2.928E 01	1.969E-03	2.928E 01	3.767E-04	3.701E-05
0.025	2.448E 01	1.975E-03	2.448E 01	5.643E-04	4.441E-05
0.030	2.118E 01	1.983E-03	2.118E 01	7.846E-04	5.154E-05
0.035	1.877E 01	1.993E-03	1.877E 01	1.036E-03	5.845E-05
0.040	1.693E 01	2.003E-03	1.693E 01	1.317E-03	6.518E-05
0.045	1.547E 01	2.014E-03	1.547E 01	1.626E-03	7.174E-05
0.050	1.429E 01	2.026E-03	1.429E 01	1.963E-03	7.817E-05
0.055	1.331E 01	2.038E-03	1.331E 01	2.325E-03	8.446E-05
0.060	1.249E 01	2.050E-03	1.249E 01	2.713E-03	9.064E-05
0.065	1.179E 01	2.063E-03	1.179E 01	3.126E-03	9.671E-05
0.070	1.118E 01	2.076E-03	1.118E 01	3.562E-03	1.027E-04
0.075	1.065E 01	2.090E-03	1.065E 01	4.020E-03	1.086E-04
0.080	1.018E 01	2.103E-03	1.018E 01	4.500E-03	1.144E-04
0.085	9.768E 00	2.108E-03	9.770E 00	5.002E-03	1.200E-04
0.090	9.398E 00	2.122E-03	9.400E 00	5.523E-03	1.256E-04
0.095	9.066E 00	2.137E-03	9.068E 00	6.065E-03	1.312E-04
0.100	8.766E 00	2.152E-03	8.768E 00	6.626E-03	1.366E-04
0.150	6.840E 00	2.315E-03	6.842E 00	1.317E-02	1.886E-04
0.200	5.869E 00	2.480E-03	5.871E 00	2.111E-02	2.367E-04
0.250	5.290E 00	2.671E-03	5.293E 00	3.011E-02	2.821E-04
0.300	4.912E 00	2.874E-03	4.915E 00	3.993E-02	3.259E-04
0.350	4.649E 00	3.082E-03	4.652E 00	5.041E-02	3.685E-04
0.400	4.458E 00	3.305E-03	4.461E 00	6.139E-02	4.101E-04
0.450	4.315E 00	3.536E-03	4.318E 00	7.279E-02	4.512E-04
0.500	4.205E 00	3.779E-03	4.209E 00	8.453E-02	4.919E-04
0.550	4.120E 00	4.031E-03	4.124E 00	9.653E-02	5.324E-04
0.600	4.053E 00	4.291E-03	4.057E 00	1.088E-01	5.729E-04
0.650	3.999E 00	4.560E-03	4.004E 00	1.212E-01	6.133E-04
0.700	3.956E 00	4.836E-03	3.961E 00	1.337E-01	6.537E-04
0.750	3.921E 00	5.118E-03	3.926E 00	1.464E-01	6.943E-04
0.800	3.893E 00	5.407E-03	3.899E 00	1.592E-01	7.350E-04
0.850	3.870E 00	5.732E-03	3.876E 00	1.721E-01	7.762E-04
0.900	3.852E 00	6.033E-03	3.858E 00	1.850E-01	8.176E-04
0.950	3.837E 00	6.338E-03	3.844E 00	1.980E-01	8.591E-04
1.000	3.826E 00	6.647E-03	3.832E 00	2.110E-01	9.007E-04
1.100	3.809E 00	7.278E-03	3.816E 00	2.372E-01	9.844E-04
1.200	3.800E 00	7.926E-03	3.808E 00	2.634E-01	1.069E-03
1.300	3.796E 00	8.588E-03	3.804E 00	2.897E-01	1.153E-03

ELECTRONS IN HYDROGEN

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	3.795E 00	9.265E-03	3.805E 00	3.160E-01	1.238E-03
1.500	3.798E 00	9.956E-03	3.808E 00	3.422E-01	1.324E-03
1.600	3.802E 00	1.066E-02	3.813E 00	3.685E-01	1.410E-03
1.700	3.808E 00	1.139E-02	3.820E 00	3.947E-01	1.497E-03
1.800	3.816E 00	1.211E-02	3.828E 00	4.208E-01	1.585E-03
1.900	3.824E 00	1.285E-02	3.837E 00	4.469E-01	1.673E-03
2.000	3.833E 00	1.360E-02	3.846E 00	4.730E-01	1.762E-03
2.200	3.852E 00	1.512E-02	3.867E 00	5.248E-01	1.940E-03
2.400	3.872E 00	1.668E-02	3.888E 00	5.764E-01	2.120E-03
2.600	3.892E 00	1.828E-02	3.911E 00	6.277E-01	2.302E-03
2.800	3.913E 00	1.991E-02	3.933E 00	6.787E-01	2.485E-03
3.000	3.933E 00	2.157E-02	3.955E 00	7.294E-01	2.670E-03
3.500	3.982E 00	2.583E-02	4.008E 00	8.550E-01	3.138E-03
4.000	4.029E 00	3.026E-02	4.059E 00	9.789E-01	3.614E-03
4.500	4.072E 00	3.486E-02	4.107E 00	1.101E 00	4.098E-03
5.000	4.112E 00	3.954E-02	4.152E 00	1.222E 00	4.589E-03
5.500	4.149E 00	4.432E-02	4.194E 00	1.342E 00	5.085E-03
6.000	4.184E 00	4.918E-02	4.234E 00	1.461E 00	5.585E-03
6.500	4.217E 00	5.411E-02	4.271E 00	1.579E 00	6.090E-03
7.000	4.248E 00	5.911E-02	4.307E 00	1.695E 00	6.597E-03
7.500	4.277E 00	6.418E-02	4.341E 00	1.811E 00	7.108E-03
8.000	4.304E 00	6.931E-02	4.373E 00	1.925E 00	7.621E-03
8.500	4.330E 00	7.449E-02	4.404E 00	2.039E 00	8.136E-03
9.000	4.354E 00	7.999E-02	4.434E 00	2.153E 00	8.655E-03
9.500	4.377E 00	8.529E-02	4.463E 00	2.265E 00	9.177E-03
10.000	4.400E 00	9.064E-02	4.490E 00	2.377E 00	9.700E-03
20.000	4.707E 00	2.042E-01	4.912E 00	4.498E 00	2.030E-02
30.000	4.890E 00	3.255E-01	5.216E 00	6.471E 00	3.089E-02
40.000	5.013E 00	4.512E-01	5.464E 00	8.343E 00	4.130E-02
50.000	5.089E 00	5.797E-01	5.669E 00	1.014E 01	5.153E-02
60.000	5.141E 00	7.102E-01	5.852E 00	1.187E 01	6.159E-02
80.000	5.211E 00	9.756E-01	6.187E 00	1.520E 01	8.112E-02
100.000	5.258E 00	1.245E 00	6.503E 00	1.835E 01	9.985E-02
200.000	5.377E 00	2.623E 00	8.000E 00	3.218E 01	1.818E-01
300.000	5.440E 00	4.026E 00	9.466E 00	4.365E 01	2.476E-01
400.000	5.484E 00	5.439E 00	1.092E 01	5.348E 01	3.015E-01
500.000	5.518E 00	6.857E 00	1.238E 01	6.207E 01	3.466E-01
600.000	5.546E 00	8.281E 00	1.383E 01	6.972E 01	3.851E-01
800.000	5.590E 00	1.114E 01	1.673E 01	8.285E 01	4.474E-01
1000.000	5.624E 00	1.400E 01	1.962E 01	9.388E 01	4.961E-01

ELECTRONS IN HELIUM

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.265E 01	1.551E-03	2.266E 01	2.469E-04	3.849E-05
0.015	1.641E 01	1.536E-03	1.641E 01	5.102E-04	5.273E-05
0.020	1.307E 01	1.532E-03	1.307E 01	8.543E-04	6.593E-05
0.025	1.097E 01	1.532E-03	1.097E 01	1.274E-03	7.846E-05
0.030	9.516E 00	1.535E-03	9.518E 00	1.765E-03	9.047E-05
0.035	8.453E 00	1.539E-03	8.455E 00	2.323E-03	1.021E-04
0.040	7.638E 00	1.545E-03	7.640E 00	2.947E-03	1.133E-04
0.045	6.992E 00	1.551E-03	6.994E 00	3.632E-03	1.243E-04
0.050	6.468E 00	1.558E-03	6.469E 00	4.376E-03	1.350E-04
0.055	6.033E 00	1.566E-03	6.034E 00	5.177E-03	1.455E-04
0.060	5.666E 00	1.575E-03	5.668E 00	6.032E-03	1.558E-04
0.065	5.353E 00	1.584E-03	5.354E 00	6.940E-03	1.658E-04
0.070	5.081E 00	1.593E-03	5.083E 00	7.899E-03	1.758E-04
0.075	4.845E 00	1.602E-03	4.846E 00	8.907E-03	1.855E-04
0.080	4.636E 00	1.612E-03	4.638E 00	9.962E-03	1.951E-04
0.085	4.451E 00	1.602E-03	4.452E 00	1.106E-02	2.043E-04
0.090	4.285E 00	1.613E-03	4.287E 00	1.221E-02	2.134E-04
0.095	4.136E 00	1.624E-03	4.138E 00	1.340E-02	2.224E-04
0.100	4.001E 00	1.637E-03	4.003E 00	1.462E-02	2.313E-04
0.150	3.136E 00	1.785E-03	3.138E 00	2.892E-02	3.173E-04
0.200	2.699E 00	1.954E-03	2.701E 00	4.621E-02	3.996E-04
0.250	2.438E 00	2.139E-03	2.440E 00	6.575E-02	4.797E-04
0.300	2.268E 00	2.332E-03	2.270E 00	8.704E-02	5.585E-04
0.350	2.149E 00	2.534E-03	2.152E 00	1.097E-01	6.362E-04
0.400	2.064E 00	2.737E-03	2.067E 00	1.334E-01	7.131E-04
0.450	2.000E 00	2.944E-03	2.003E 00	1.580E-01	7.891E-04
0.500	1.951E 00	3.155E-03	1.954E 00	1.833E-01	8.644E-04
0.550	1.913E 00	3.371E-03	1.917E 00	2.091E-01	9.392E-04
0.600	1.884E 00	3.590E-03	1.887E 00	2.354E-01	1.013E-03
0.650	1.860E 00	3.813E-03	1.864E 00	2.621E-01	1.087E-03
0.700	1.841E 00	4.040E-03	1.845E 00	2.891E-01	1.161E-03
0.750	1.826E 00	4.270E-03	1.831E 00	3.163E-01	1.234E-03
0.800	1.814E 00	4.502E-03	1.819E 00	3.437E-01	1.307E-03
0.850	1.805E 00	4.743E-03	1.809E 00	3.713E-01	1.380E-03
0.900	1.797E 00	4.982E-03	1.802E 00	3.990E-01	1.453E-03
0.950	1.791E 00	5.223E-03	1.796E 00	4.267E-01	1.526E-03
1.000	1.786E 00	5.467E-03	1.792E 00	4.546E-01	1.599E-03
1.100	1.780E 00	5.962E-03	1.786E 00	5.105E-01	1.744E-03
1.200	1.777E 00	6.467E-03	1.784E 00	5.665E-01	1.889E-03
1.300	1.777E 00	6.980E-03	1.784E 00	6.226E-01	2.033E-03

ELECTRONS IN HELIUM

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.778E 00	7.502E-03	1.785E 00	6.787E-01	2.178E-03
1.500	1.780E 00	8.033E-03	1.788E 00	7.346E-01	2.323E-03
1.600	1.783E 00	8.571E-03	1.792E 00	7.905E-01	2.467E-03
1.700	1.787E 00	9.125E-03	1.796E 00	8.463E-01	2.612E-03
1.800	1.791E 00	9.677E-03	1.801E 00	9.019E-01	2.758E-03
1.900	1.796E 00	1.023E-02	1.806E 00	9.573E-01	2.903E-03
2.000	1.801E 00	1.080E-02	1.811E 00	1.013E 00	3.049E-03
2.200	1.811E 00	1.194E-02	1.823E 00	1.123E 00	3.340E-03
2.400	1.822E 00	1.310E-02	1.835E 00	1.232E 00	3.632E-03
2.600	1.833E 00	1.429E-02	1.847E 00	1.341E 00	3.925E-03
2.800	1.843E 00	1.546E-02	1.859E 00	1.449E 00	4.219E-03
3.000	1.854E 00	1.668E-02	1.871E 00	1.556E 00	4.512E-03
3.500	1.879E 00	1.981E-02	1.899E 00	1.821E 00	5.249E-03
4.000	1.903E 00	2.305E-02	1.926E 00	2.083E 00	5.992E-03
4.500	1.925E 00	2.641E-02	1.952E 00	2.340E 00	6.743E-03
5.000	1.946E 00	2.983E-02	1.976E 00	2.595E 00	7.500E-03
5.500	1.965E 00	3.333E-02	1.998E 00	2.847E 00	8.263E-03
6.000	1.982E 00	3.688E-02	2.019E 00	3.096E 00	9.030E-03
6.500	1.999E 00	4.049E-02	2.039E 00	3.342E 00	9.801E-03
7.000	2.014E 00	4.415E-02	2.059E 00	3.586E 00	1.058E-02
7.500	2.029E 00	4.786E-02	2.077E 00	3.828E 00	1.135E-02
8.000	2.043E 00	5.162E-02	2.094E 00	4.067E 00	1.213E-02
8.500	2.056E 00	5.543E-02	2.111E 00	4.305E 00	1.292E-02
9.000	2.068E 00	5.958E-02	2.128E 00	4.541E 00	1.371E-02
9.500	2.080E 00	6.347E-02	2.144E 00	4.775E 00	1.450E-02
10.000	2.091E 00	6.740E-02	2.159E 00	5.008E 00	1.530E-02
20.000	2.246E 00	1.511E-01	2.398E 00	9.386E 00	3.124E-02
30.000	2.339E 00	2.403E-01	2.579E 00	1.340E 01	4.691E-02
40.000	2.405E 00	3.324E-01	2.737E 00	1.716E 01	6.205E-02
50.000	2.456E 00	4.264E-01	2.882E 00	2.072E 01	7.660E-02
60.000	2.497E 00	5.219E-01	3.019E 00	2.411E 01	9.059E-02
80.000	2.561E 00	7.156E-01	3.277E 00	3.047E 01	1.170E-01
100.000	2.605E 00	9.119E-01	3.517E 00	3.635E 01	1.414E-01
200.000	2.700E 00	1.914E 00	4.614E 00	6.106E 01	2.422E-01
300.000	2.738E 00	2.932E 00	5.670E 00	8.057E 01	3.179E-01
400.000	2.761E 00	3.956E 00	6.717E 00	9.675E 01	3.771E-01
500.000	2.779E 00	4.983E 00	7.762E 00	1.106E 02	4.250E-01
600.000	2.793E 00	6.014E 00	8.807E 00	1.227E 02	4.647E-01
800.000	2.815E 00	8.080E 00	1.089E 01	1.431E 02	5.271E-01
1000.000	2.832E 00	1.015E 01	1.298E 01	1.599E 02	5.743E-01

ELECTRONS IN LITHIUM

ENERGY	STOPPING POWER COLLISION	STOPPING POWER RADIATION	STOPPING POWER TOTAL	RANGE	RADIATION YIELD
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.995E 01	1.857E-03	1.995E 01	2.797E-04	5.260E-05
0.015	1.443E 01	1.830E-03	1.443E 01	5.789E-04	7.178E-05
0.020	1.148E 01	1.818E-03	1.149E 01	9.702E-04	8.950E-05
0.025	9.633E 00	1.813E-03	9.635E 00	1.448E-03	1.063E-04
0.030	8.357E 00	1.811E-03	8.359E 00	2.007E-03	1.223E-04
0.035	7.421E 00	1.812E-03	7.423E 00	2.643E-03	1.378E-04
0.040	6.703E 00	1.816E-03	6.705E 00	3.353E-03	1.527E-04
0.045	6.135E 00	1.822E-03	6.137E 00	4.133E-03	1.673E-04
0.050	5.674E 00	1.830E-03	5.676E 00	4.981E-03	1.815E-04
0.055	5.291E 00	1.839E-03	5.293E 00	5.894E-03	1.955E-04
0.060	4.969E 00	1.849E-03	4.971E 00	6.870E-03	2.092E-04
0.065	4.693E 00	1.859E-03	4.695E 00	7.905E-03	2.226E-04
0.070	4.455E 00	1.871E-03	4.457E 00	8.999E-03	2.358E-04
0.075	4.247E 00	1.883E-03	4.249E 00	1.015E-02	2.489E-04
0.080	4.064E 00	1.896E-03	4.066E 00	1.135E-02	2.618E-04
0.085	3.901E 00	1.887E-03	3.903E 00	1.261E-02	2.742E-04
0.090	3.755E 00	1.901E-03	3.757E 00	1.391E-02	2.864E-04
0.095	3.624E 00	1.916E-03	3.626E 00	1.527E-02	2.986E-04
0.100	3.506E 00	1.932E-03	3.508E 00	1.667E-02	3.106E-04
0.150	2.746E 00	2.120E-03	2.749E 00	3.299E-02	4.275E-04
0.200	2.359E 00	2.335E-03	2.361E 00	5.275E-02	5.408E-04
0.250	2.130E 00	2.569E-03	2.133E 00	7.510E-02	6.520E-04
0.300	1.979E 00	2.813E-03	1.982E 00	9.947E-02	7.619E-04
0.350	1.874E 00	3.068E-03	1.877E 00	1.254E-01	8.712E-04
0.400	1.797E 00	3.323E-03	1.800E 00	1.527E-01	9.799E-04
0.450	1.738E 00	3.581E-03	1.742E 00	1.809E-01	1.088E-03
0.500	1.693E 00	3.841E-03	1.697E 00	2.100E-01	1.195E-03
0.550	1.658E 00	4.104E-03	1.662E 00	2.398E-01	1.301E-03
0.600	1.629E 00	4.370E-03	1.634E 00	2.702E-01	1.407E-03
0.650	1.607E 00	4.639E-03	1.611E 00	3.010E-01	1.513E-03
0.700	1.588E 00	4.910E-03	1.593E 00	3.322E-01	1.618E-03
0.750	1.573E 00	5.183E-03	1.578E 00	3.637E-01	1.722E-03
0.800	1.560E 00	5.459E-03	1.565E 00	3.956E-01	1.826E-03
0.850	1.549E 00	5.734E-03	1.555E 00	4.276E-01	1.930E-03
0.900	1.541E 00	6.015E-03	1.547E 00	4.598E-01	2.033E-03
0.950	1.533E 00	6.298E-03	1.540E 00	4.922E-01	2.136E-03
1.000	1.527E 00	6.583E-03	1.534E 00	5.248E-01	2.239E-03
1.100	1.518E 00	7.161E-03	1.525E 00	5.902E-01	2.444E-03
1.200	1.511E 00	7.747E-03	1.519E 00	6.559E-01	2.648E-03
1.300	1.507E 00	8.341E-03	1.515E 00	7.218E-01	2.852E-03

ELECTRONS IN LITHIUM

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.504E 00	8.943E-03	1.513E 00	7.878E-01	3.056E-03
1.500	1.503E 00	9.553E-03	1.512E 00	8.540E-01	3.260E-03
1.600	1.502E 00	1.017E-02	1.512E 00	9.201E-01	3.464E-03
1.700	1.502E 00	1.080E-02	1.512E 00	9.862E-01	3.668E-03
1.800	1.502E 00	1.143E-02	1.513E 00	1.052E 00	3.872E-03
1.900	1.503E 00	1.206E-02	1.515E 00	1.118E 00	4.077E-03
2.000	1.504E 00	1.271E-02	1.517E 00	1.184E 00	4.281E-03
2.200	1.507E 00	1.401E-02	1.521E 00	1.316E 00	4.691E-03
2.400	1.510E 00	1.533E-02	1.526E 00	1.447E 00	5.103E-03
2.600	1.514E 00	1.668E-02	1.531E 00	1.578E 00	5.516E-03
2.800	1.518E 00	1.798E-02	1.536E 00	1.709E 00	5.930E-03
3.000	1.522E 00	1.937E-02	1.542E 00	1.839E 00	6.343E-03
3.500	1.532E 00	2.292E-02	1.555E 00	2.161E 00	7.387E-03
4.000	1.542E 00	2.661E-02	1.568E 00	2.482E 00	8.444E-03
4.500	1.550E 00	3.044E-02	1.581E 00	2.799E 00	9.517E-03
5.000	1.559E 00	3.434E-02	1.593E 00	3.114E 00	1.061E-02
5.500	1.566E 00	3.831E-02	1.604E 00	3.427E 00	1.171E-02
6.000	1.573E 00	4.235E-02	1.615E 00	3.738E 00	1.282E-02
6.500	1.579E 00	4.645E-02	1.626E 00	4.046E 00	1.394E-02
7.000	1.585E 00	5.062E-02	1.636E 00	4.353E 00	1.507E-02
7.500	1.591E 00	5.483E-02	1.646E 00	4.657E 00	1.621E-02
8.000	1.596E 00	5.910E-02	1.655E 00	4.960E 00	1.735E-02
8.500	1.601E 00	6.342E-02	1.664E 00	5.262E 00	1.850E-02
9.000	1.605E 00	6.808E-02	1.673E 00	5.561E 00	1.966E-02
9.500	1.610E 00	7.250E-02	1.682E 00	5.859E 00	2.083E-02
10.000	1.614E 00	7.696E-02	1.691E 00	6.156E 00	2.201E-02
20.000	1.666E 00	1.719E-01	1.837E 00	1.182E 01	4.581E-02
30.000	1.694E 00	2.730E-01	1.967E 00	1.708E 01	6.937E-02
40.000	1.714E 00	3.773E-01	2.091E 00	2.201E 01	9.200E-02
50.000	1.729E 00	4.837E-01	2.212E 00	2.666E 01	1.136E-01
60.000	1.741E 00	5.915E-01	2.332E 00	3.106E 01	1.340E-01
80.000	1.760E 00	8.104E-01	2.570E 00	3.922E 01	1.719E-01
100.000	1.775E 00	1.032E 00	2.807E 00	4.667E 01	2.059E-01
200.000	1.821E 00	2.161E 00	3.982E 00	7.642E 01	3.353E-01
300.000	1.848E 00	3.306E 00	5.155E 00	9.843E 01	4.222E-01
400.000	1.867E 00	4.458E 00	6.325E 00	1.159E 02	4.854E-01
500.000	1.882E 00	5.613E 00	7.495E 00	1.304E 02	5.340E-01
600.000	1.894E 00	6.771E 00	8.665E 00	1.428E 02	5.726E-01
800.000	1.913E 00	9.092E 00	1.101E 01	1.632E 02	6.308E-01
1000.000	1.928E 00	1.142E 01	1.334E 01	1.797E 02	6.730E-01

ELECTRONS IN BERYLLIUM

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.884E 01	2.463E-03	1.885E 01	2.993E-04	7.482E-05
0.015	1.371E 01	2.418E-03	1.371E 01	6.150E-04	1.012E-04
0.020	1.095E 01	2.396E-03	1.095E 01	1.026E-03	1.253E-04
0.025	9.207E 00	2.382E-03	9.209E 00	1.526E-03	1.480E-04
0.030	8.002E 00	2.375E-03	8.005E 00	2.110E-03	1.697E-04
0.035	7.117E 00	2.370E-03	7.119E 00	2.774E-03	1.904E-04
0.040	6.437E 00	2.373E-03	6.440E 00	3.514E-03	2.105E-04
0.045	5.898E 00	2.379E-03	5.900E 00	4.326E-03	2.299E-04
0.050	5.460E 00	2.388E-03	5.462E 00	5.208E-03	2.490E-04
0.055	5.096E 00	2.400E-03	5.098E 00	6.156E-03	2.676E-04
0.060	4.789E 00	2.413E-03	4.791E 00	7.168E-03	2.859E-04
0.065	4.526E 00	2.428E-03	4.529E 00	8.242E-03	3.039E-04
0.070	4.299E 00	2.445E-03	4.301E 00	9.376E-03	3.217E-04
0.075	4.100E 00	2.462E-03	4.103E 00	1.057E-02	3.392E-04
0.080	3.925E 00	2.480E-03	3.928E 00	1.181E-02	3.565E-04
0.085	3.770E 00	2.479E-03	3.772E 00	1.311E-02	3.733E-04
0.090	3.631E 00	2.499E-03	3.633E 00	1.446E-02	3.899E-04
0.095	3.506E 00	2.521E-03	3.508E 00	1.586E-02	4.064E-04
0.100	3.393E 00	2.543E-03	3.395E 00	1.731E-02	4.228E-04
0.150	2.666E 00	2.802E-03	2.669E 00	3.415E-02	5.819E-04
0.200	2.298E 00	3.095E-03	2.301E 00	5.445E-02	7.360E-04
0.250	2.077E 00	3.407E-03	2.080E 00	7.738E-02	8.871E-04
0.300	1.932E 00	3.732E-03	1.935E 00	1.024E-01	1.036E-03
0.350	1.830E 00	4.068E-03	1.834E 00	1.289E-01	1.185E-03
0.400	1.755E 00	4.408E-03	1.760E 00	1.568E-01	1.332E-03
0.450	1.699E 00	4.756E-03	1.704E 00	1.857E-01	1.478E-03
0.500	1.655E 00	5.104E-03	1.660E 00	2.154E-01	1.624E-03
0.550	1.621E 00	5.453E-03	1.626E 00	2.459E-01	1.768E-03
0.600	1.594E 00	5.803E-03	1.599E 00	2.769E-01	1.912E-03
0.650	1.571E 00	6.155E-03	1.578E 00	3.084E-01	2.054E-03
0.700	1.553E 00	6.508E-03	1.560E 00	3.402E-01	2.196E-03
0.750	1.539E 00	6.863E-03	1.545E 00	3.725E-01	2.337E-03
0.800	1.526E 00	7.220E-03	1.533E 00	4.049E-01	2.476E-03
0.850	1.516E 00	6.600E-03	1.523E 00	4.377E-01	2.581E-03
0.900	1.507E 00	6.969E-03	1.514E 00	4.706E-01	2.686E-03
0.950	1.500E 00	7.370E-03	1.508E 00	5.037E-01	2.794E-03
1.000	1.494E 00	7.803E-03	1.502E 00	5.369E-01	2.907E-03
1.100	1.485E 00	8.757E-03	1.494E 00	6.037E-01	3.144E-03
1.200	1.479E 00	9.821E-03	1.489E 00	6.707E-01	3.401E-03
1.300	1.475E 00	1.099E-02	1.486E 00	7.380E-01	3.677E-03

ELECTRONS IN BERYLLIUM

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.472E 00	1.225E-02	1.484E 00	8.054E-01	3.973E-03
1.500	1.470E 00	1.360E-02	1.484E 00	8.728E-01	4.289E-03
1.600	1.469E 00	1.504E-02	1.484E 00	9.401E-01	4.624E-03
1.700	1.469E 00	1.781E-02	1.487E 00	1.007E 00	5.023E-03
1.800	1.469E 00	1.925E-02	1.489E 00	1.075E 00	5.436E-03
1.900	1.470E 00	2.060E-02	1.491E 00	1.142E 00	5.854E-03
2.000	1.471E 00	2.186E-02	1.493E 00	1.209E 00	6.273E-03
2.200	1.474E 00	2.416E-02	1.498E 00	1.343E 00	7.103E-03
2.400	1.477E 00	2.615E-02	1.503E 00	1.476E 00	7.909E-03
2.600	1.481E 00	2.786E-02	1.509E 00	1.609E 00	8.682E-03
2.800	1.484E 00	2.560E-02	1.510E 00	1.741E 00	9.399E-03
3.000	1.488E 00	2.673E-02	1.515E 00	1.873E 00	9.925E-03
3.500	1.498E 00	3.004E-02	1.528E 00	2.202E 00	1.117E-02
4.000	1.507E 00	3.401E-02	1.541E 00	2.528E 00	1.238E-02
4.500	1.515E 00	3.901E-02	1.554E 00	2.851E 00	1.361E-02
5.000	1.522E 00	4.393E-02	1.566E 00	3.172E 00	1.490E-02
5.500	1.530E 00	4.894E-02	1.579E 00	3.489E 00	1.623E-02
6.000	1.536E 00	5.404E-02	1.590E 00	3.805E 00	1.759E-02
6.500	1.542E 00	5.923E-02	1.601E 00	4.118E 00	1.896E-02
7.000	1.548E 00	6.449E-02	1.612E 00	4.430E 00	2.036E-02
7.500	1.553E 00	6.982E-02	1.623E 00	4.739E 00	2.177E-02
8.000	1.558E 00	7.522E-02	1.633E 00	5.046E 00	2.319E-02
8.500	1.563E 00	8.069E-02	1.643E 00	5.351E 00	2.463E-02
9.000	1.567E 00	8.675E-02	1.654E 00	5.654E 00	2.608E-02
9.500	1.571E 00	9.235E-02	1.663E 00	5.956E 00	2.755E-02
10.000	1.575E 00	9.800E-02	1.673E 00	6.255E 00	2.902E-02
20.000	1.626E 00	2.184E-01	1.844E 00	1.194E 01	5.888E-02
30.000	1.654E 00	3.464E-01	2.001E 00	1.714E 01	8.801E-02
40.000	1.674E 00	4.783E-01	2.152E 00	2.196E 01	1.155E-01
50.000	1.690E 00	6.129E-01	2.302E 00	2.645E 01	1.414E-01
60.000	1.702E 00	7.492E-01	2.451E 00	3.066E 01	1.655E-01
80.000	1.722E 00	1.026E 00	2.748E 00	3.836E 01	2.093E-01
100.000	1.737E 00	1.305E 00	3.042E 00	4.528E 01	2.478E-01
200.000	1.785E 00	2.729E 00	4.513E 00	7.208E 01	3.877E-01
300.000	1.812E 00	4.172E 00	5.984E 00	9.126E 01	4.768E-01
400.000	1.832E 00	5.623E 00	7.455E 00	1.062E 02	5.395E-01
500.000	1.847E 00	7.078E 00	8.925E 00	1.184E 02	5.866E-01
600.000	1.860E 00	8.536E 00	1.040E 01	1.288E 02	6.234E-01
800.000	1.879E 00	1.146E 01	1.334E 01	1.458E 02	6.780E-01
1000.000	1.895E 00	1.438E 01	1.628E 01	1.593E 02	7.168E-01

ELECTRONS IN CARBON

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.015E 01	4.089E-03	2.016E 01	2.819E-04	1.168E-04
0.015	1.472E 01	4.002E-03	1.472E 01	5.764E-04	1.572E-04
0.020	1.178E 01	3.952E-03	1.178E 01	9.589E-04	1.939E-04
0.025	9.921E 00	3.917E-03	9.925E 00	1.423E-03	2.282E-04
0.030	8.634E 00	3.893E-03	8.638E 00	1.965E-03	2.606E-04
0.035	7.686E 00	3.872E-03	7.690E 00	2.580E-03	2.916E-04
0.040	6.958E 00	3.869E-03	6.962E 00	3.264E-03	3.214E-04
0.045	6.380E 00	3.873E-03	6.383E 00	4.015E-03	3.502E-04
0.050	5.909E 00	3.885E-03	5.913E 00	4.830E-03	3.784E-04
0.055	5.518E 00	3.901E-03	5.522E 00	5.706E-03	4.060E-04
0.060	5.188E 00	3.921E-03	5.192E 00	6.640E-03	4.331E-04
0.065	4.906E 00	3.945E-03	4.910E 00	7.631E-03	4.597E-04
0.070	4.661E 00	3.971E-03	4.665E 00	8.676E-03	4.860E-04
0.075	4.447E 00	3.999E-03	4.451E 00	9.774E-03	5.119E-04
0.080	4.259E 00	4.029E-03	4.263E 00	1.092E-02	5.375E-04
0.085	4.091E 00	4.039E-03	4.095E 00	1.212E-02	5.626E-04
0.090	3.941E 00	4.073E-03	3.945E 00	1.336E-02	5.874E-04
0.095	3.807E 00	4.109E-03	3.811E 00	1.465E-02	6.121E-04
0.100	3.685E 00	4.145E-03	3.689E 00	1.599E-02	6.365E-04
0.150	2.900E 00	4.568E-03	2.904E 00	3.147E-02	8.741E-04
0.200	2.493E 00	5.042E-03	2.498E 00	5.015E-02	1.105E-03
0.250	2.254E 00	5.549E-03	2.260E 00	7.126E-02	1.331E-03
0.300	2.097E 00	6.078E-03	2.103E 00	9.425E-02	1.555E-03
0.350	1.987E 00	6.627E-03	1.994E 00	1.187E-01	1.777E-03
0.400	1.907E 00	7.177E-03	1.914E 00	1.443E-01	1.997E-03
0.450	1.847E 00	7.736E-03	1.855E 00	1.709E-01	2.215E-03
0.500	1.801E 00	8.295E-03	1.809E 00	1.982E-01	2.431E-03
0.550	1.764E 00	8.855E-03	1.773E 00	2.261E-01	2.646E-03
0.600	1.735E 00	9.418E-03	1.745E 00	2.545E-01	2.858E-03
0.650	1.712E 00	9.983E-03	1.722E 00	2.834E-01	3.069E-03
0.700	1.693E 00	1.055E-02	1.704E 00	3.126E-01	3.278E-03
0.750	1.678E 00	1.112E-02	1.689E 00	3.421E-01	3.485E-03
0.800	1.665E 00	1.169E-02	1.677E 00	3.718E-01	3.691E-03
0.850	1.655E 00	1.227E-02	1.667E 00	4.017E-01	3.896E-03
0.900	1.646E 00	1.285E-02	1.659E 00	4.317E-01	4.099E-03
0.950	1.639E 00	1.343E-02	1.653E 00	4.619E-01	4.301E-03
1.000	1.634E 00	1.402E-02	1.648E 00	4.922E-01	4.502E-03
1.100	1.625E 00	1.519E-02	1.640E 00	5.531E-01	4.900E-03
1.200	1.619E 00	1.638E-02	1.636E 00	6.141E-01	5.295E-03
1.300	1.616E 00	1.757E-02	1.633E 00	6.753E-01	5.686E-03

ELECTRONS IN CARBON

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.614E 00	1.877E-02	1.633E 00	7.366E-01	6.075E-03
1.500	1.613E 00	1.999E-02	1.633E 00	7.978E-01	6.461E-03
1.600	1.613E 00	2.121E-02	1.635E 00	8.590E-01	6.845E-03
1.700	1.614E 00	2.241E-02	1.637E 00	9.202E-01	7.227E-03
1.800	1.615E 00	2.365E-02	1.639E 00	9.812E-01	7.606E-03
1.900	1.617E 00	2.491E-02	1.642E 00	1.042E 00	7.985E-03
2.000	1.619E 00	2.617E-02	1.645E 00	1.103E 00	8.362E-03
2.200	1.624E 00	2.874E-02	1.653E 00	1.224E 00	9.116E-03
2.400	1.629E 00	3.135E-02	1.660E 00	1.345E 00	9.868E-03
2.600	1.634E 00	3.400E-02	1.668E 00	1.465E 00	1.062E-02
2.800	1.640E 00	3.659E-02	1.676E 00	1.585E 00	1.137E-02
3.000	1.645E 00	3.931E-02	1.684E 00	1.704E 00	1.212E-02
3.500	1.658E 00	4.631E-02	1.704E 00	1.999E 00	1.399E-02
4.000	1.670E 00	5.357E-02	1.724E 00	2.291E 00	1.588E-02
4.500	1.682E 00	6.111E-02	1.743E 00	2.579E 00	1.779E-02
5.000	1.692E 00	6.878E-02	1.761E 00	2.864E 00	1.972E-02
5.500	1.701E 00	7.659E-02	1.778E 00	3.147E 00	2.166E-02
6.000	1.710E 00	8.454E-02	1.795E 00	3.427E 00	2.361E-02
6.500	1.718E 00	9.260E-02	1.811E 00	3.704E 00	2.557E-02
7.000	1.726E 00	1.008E-01	1.826E 00	3.979E 00	2.754E-02
7.500	1.733E 00	1.091E-01	1.842E 00	4.252E 00	2.952E-02
8.000	1.739E 00	1.174E-01	1.856E 00	4.522E 00	3.150E-02
8.500	1.745E 00	1.259E-01	1.871E 00	4.791E 00	3.349E-02
9.000	1.751E 00	1.351E-01	1.886E 00	5.057E 00	3.549E-02
9.500	1.756E 00	1.438E-01	1.900E 00	5.321E 00	3.750E-02
10.000	1.761E 00	1.526E-01	1.914E 00	5.583E 00	3.951E-02
20.000	1.825E 00	3.388E-01	2.164E 00	1.049E 01	7.913E-02
30.000	1.859E 00	5.367E-01	2.396E 00	1.488E 01	1.165E-01
40.000	1.882E 00	7.402E-01	2.622E 00	1.887E 01	1.508E-01
50.000	1.899E 00	9.475E-01	2.847E 00	2.252E 01	1.823E-01
60.000	1.914E 00	1.158E 00	3.071E 00	2.591E 01	2.111E-01
80.000	1.936E 00	1.583E 00	3.519E 00	3.198E 01	2.621E-01
100.000	1.953E 00	2.013E 00	3.966E 00	3.734E 01	3.056E-01
200.000	2.007E 00	4.200E 00	6.206E 00	5.732E 01	4.548E-01
300.000	2.038E 00	6.414E 00	8.452E 00	7.108E 01	5.438E-01
400.000	2.060E 00	8.639E 00	1.070E 01	8.157E 01	6.041E-01
500.000	2.077E 00	1.087E 01	1.295E 01	9.005E 01	6.482E-01
600.000	2.091E 00	1.311E 01	1.520E 01	9.718E 01	6.821E-01
800.000	2.113E 00	1.758E 01	1.970E 01	1.087E 02	7.313E-01
1000.000	2.130E 00	2.206E 01	2.419E 01	1.178E 02	7.656E-01

ELECTRONS IN NITROGEN

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.981E 01	4.769E-03	1.982E 01	2.874E-04	1.386E-04
0.015	1.449E 01	4.669E-03	1.449E 01	5.868E-04	1.864E-04
0.020	1.160E 01	4.606E-03	1.161E 01	9.752E-04	2.298E-04
0.025	9.780E 00	4.562E-03	9.784E 00	1.446E-03	2.702E-04
0.030	8.515E 00	4.530E-03	8.519E 00	1.996E-03	3.084E-04
0.035	7.583E 00	4.502E-03	7.587E 00	2.619E-03	3.447E-04
0.040	6.866E 00	4.497E-03	6.870E 00	3.313E-03	3.796E-04
0.045	6.297E 00	4.502E-03	6.301E 00	4.073E-03	4.135E-04
0.050	5.834E 00	4.516E-03	5.838E 00	4.899E-03	4.466E-04
0.055	5.449E 00	4.535E-03	5.453E 00	5.786E-03	4.789E-04
0.060	5.124E 00	4.560E-03	5.128E 00	6.732E-03	5.107E-04
0.065	4.845E 00	4.589E-03	4.850E 00	7.735E-03	5.421E-04
0.070	4.604E 00	4.621E-03	4.609E 00	8.793E-03	5.729E-04
0.075	4.394E 00	4.656E-03	4.398E 00	9.904E-03	6.035E-04
0.080	4.208E 00	4.693E-03	4.213E 00	1.107E-02	6.336E-04
0.085	4.043E 00	4.716E-03	4.048E 00	1.228E-02	6.633E-04
0.090	3.895E 00	4.757E-03	3.900E 00	1.354E-02	6.927E-04
0.095	3.762E 00	4.800E-03	3.767E 00	1.484E-02	7.219E-04
0.100	3.642E 00	4.844E-03	3.647E 00	1.619E-02	7.508E-04
0.150	2.868E 00	5.344E-03	2.873E 00	3.184E-02	1.032E-03
0.200	2.475E 00	5.894E-03	2.481E 00	5.068E-02	1.304E-03
0.250	2.242E 00	6.486E-03	2.248E 00	7.192E-02	1.569E-03
0.300	2.089E 00	7.104E-03	2.096E 00	9.501E-02	1.831E-03
0.350	1.983E 00	7.747E-03	1.991E 00	1.195E-01	2.089E-03
0.400	1.906E 00	8.390E-03	1.915E 00	1.452E-01	2.345E-03
0.450	1.849E 00	9.048E-03	1.858E 00	1.717E-01	2.599E-03
0.500	1.806E 00	9.701E-03	1.816E 00	1.989E-01	2.849E-03
0.550	1.773E 00	1.035E-02	1.783E 00	2.267E-01	3.097E-03
0.600	1.747E 00	1.101E-02	1.758E 00	2.550E-01	3.342E-03
0.650	1.726E 00	1.166E-02	1.738E 00	2.836E-01	3.584E-03
0.700	1.710E 00	1.232E-02	1.722E 00	3.125E-01	3.823E-03
0.750	1.697E 00	1.297E-02	1.710E 00	3.416E-01	4.059E-03
0.800	1.687E 00	1.363E-02	1.701E 00	3.709E-01	4.293E-03
0.850	1.679E 00	1.424E-02	1.693E 00	4.004E-01	4.523E-03
0.900	1.673E 00	1.490E-02	1.688E 00	4.300E-01	4.751E-03
0.950	1.668E 00	1.557E-02	1.684E 00	4.597E-01	4.976E-03
1.000	1.665E 00	1.624E-02	1.681E 00	4.894E-01	5.200E-03
1.100	1.660E 00	1.759E-02	1.678E 00	5.489E-01	5.643E-03
1.200	1.659E 00	1.895E-02	1.678E 00	6.085E-01	6.080E-03
1.300	1.659E 00	2.033E-02	1.680E 00	6.681E-01	6.513E-03

ELECTRONS IN NITROGEN

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.661E 00	2.172E-02	1.683E 00	7.276E-01	6.941E-03
1.500	1.664E 00	2.312E-02	1.688E 00	7.869E-01	7.365E-03
1.600	1.668E 00	2.454E-02	1.693E 00	8.461E-01	7.786E-03
1.700	1.673E 00	2.596E-02	1.699E 00	9.051E-01	8.204E-03
1.800	1.678E 00	2.740E-02	1.705E 00	9.638E-01	8.619E-03
1.900	1.683E 00	2.885E-02	1.712E 00	1.022E 00	9.032E-03
2.000	1.688E 00	3.030E-02	1.718E 00	1.081E 00	9.442E-03
2.200	1.699E 00	3.325E-02	1.732E 00	1.197E 00	1.026E-02
2.400	1.710E 00	3.623E-02	1.747E 00	1.312E 00	1.107E-02
2.600	1.722E 00	3.924E-02	1.761E 00	1.426E 00	1.187E-02
2.800	1.733E 00	4.207E-02	1.775E 00	1.539E 00	1.267E-02
3.000	1.744E 00	4.515E-02	1.789E 00	1.651E 00	1.346E-02
3.500	1.770E 00	5.306E-02	1.823E 00	1.928E 00	1.541E-02
4.000	1.794E 00	6.127E-02	1.855E 00	2.200E 00	1.737E-02
4.500	1.816E 00	6.982E-02	1.886E 00	2.467E 00	1.933E-02
5.000	1.837E 00	7.851E-02	1.915E 00	2.730E 00	2.130E-02
5.500	1.856E 00	8.735E-02	1.943E 00	2.989E 00	2.327E-02
6.000	1.874E 00	9.635E-02	1.970E 00	3.245E 00	2.524E-02
6.500	1.890E 00	1.055E-01	1.996E 00	3.497E 00	2.721E-02
7.000	1.906E 00	1.148E-01	2.021E 00	3.746E 00	2.918E-02
7.500	1.921E 00	1.241E-01	2.045E 00	3.992E 00	3.115E-02
8.000	1.935E 00	1.336E-01	2.068E 00	4.235E 00	3.312E-02
8.500	1.948E 00	1.433E-01	2.091E 00	4.475E 00	3.509E-02
9.000	1.960E 00	1.538E-01	2.114E 00	4.713E 00	3.706E-02
9.500	1.972E 00	1.636E-01	2.136E 00	4.948E 00	3.904E-02
10.000	1.983E 00	1.736E-01	2.157E 00	5.181E 00	4.102E-02
20.000	2.139E 00	3.849E-01	2.523E 00	9.451E 00	7.913E-02
30.000	2.231E 00	6.094E-01	2.840E 00	1.318E 01	1.142E-01
40.000	2.288E 00	8.401E-01	3.128E 00	1.653E 01	1.462E-01
50.000	2.330E 00	1.075E 00	3.405E 00	1.960E 01	1.755E-01
60.000	2.361E 00	1.313E 00	3.674E 00	2.242E 01	2.024E-01
80.000	2.408E 00	1.795E 00	4.203E 00	2.751E 01	2.502E-01
100.000	2.440E 00	2.282E 00	4.722E 00	3.199E 01	2.914E-01
200.000	2.528E 00	4.757E 00	7.285E 00	4.890E 01	4.354E-01
300.000	2.572E 00	7.262E 00	9.834E 00	6.067E 01	5.235E-01
400.000	2.600E 00	9.778E 00	1.238E 01	6.971E 01	5.842E-01
500.000	2.620E 00	1.230E 01	1.492E 01	7.706E 01	6.290E-01
600.000	2.637E 00	1.483E 01	1.747E 01	8.325E 01	6.637E-01
800.000	2.661E 00	1.989E 01	2.256E 01	9.330E 01	7.145E-01
1000.000	2.680E 00	2.496E 01	2.764E 01	1.013E 02	7.502E-01

ELECTRONS IN OXYGEN

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.964E 01	5.460E-03	1.964E 01	2.904E-04	1.598E-04
0.015	1.437E 01	5.348E-03	1.437E 01	5.923E-04	2.152E-04
0.020	1.152E 01	5.274E-03	1.152E 01	9.837E-04	2.652E-04
0.025	9.708E 00	5.221E-03	9.713E 00	1.458E-03	3.118E-04
0.030	8.454E 00	5.183E-03	8.459E 00	2.012E-03	3.558E-04
0.035	7.530E 00	5.145E-03	7.535E 00	2.639E-03	3.975E-04
0.040	6.819E 00	5.139E-03	6.825E 00	3.338E-03	4.375E-04
0.045	6.255E 00	5.146E-03	6.260E 00	4.104E-03	4.764E-04
0.050	5.795E 00	5.163E-03	5.801E 00	4.934E-03	5.144E-04
0.055	5.414E 00	5.188E-03	5.419E 00	5.827E-03	5.516E-04
0.060	5.091E 00	5.218E-03	5.096E 00	6.779E-03	5.882E-04
0.065	4.815E 00	5.253E-03	4.820E 00	7.788E-03	6.243E-04
0.070	4.576E 00	5.291E-03	4.581E 00	8.853E-03	6.598E-04
0.075	4.367E 00	5.333E-03	4.372E 00	9.970E-03	6.950E-04
0.080	4.182E 00	5.377E-03	4.188E 00	1.114E-02	7.298E-04
0.085	4.019E 00	5.414E-03	4.024E 00	1.236E-02	7.642E-04
0.090	3.872E 00	5.463E-03	3.877E 00	1.362E-02	7.982E-04
0.095	3.740E 00	5.514E-03	3.745E 00	1.494E-02	8.320E-04
0.100	3.621E 00	5.566E-03	3.626E 00	1.629E-02	8.656E-04
0.150	2.852E 00	6.144E-03	2.858E 00	3.203E-02	1.192E-03
0.200	2.462E 00	6.765E-03	2.469E 00	5.097E-02	1.505E-03
0.250	2.230E 00	7.443E-03	2.237E 00	7.231E-02	1.811E-03
0.300	2.078E 00	8.152E-03	2.086E 00	9.550E-02	2.112E-03
0.350	1.973E 00	8.893E-03	1.982E 00	1.201E-01	2.410E-03
0.400	1.897E 00	9.629E-03	1.907E 00	1.459E-01	2.705E-03
0.450	1.841E 00	1.038E-02	1.851E 00	1.725E-01	2.997E-03
0.500	1.798E 00	1.112E-02	1.809E 00	1.998E-01	3.285E-03
0.550	1.764E 00	1.187E-02	1.776E 00	2.277E-01	3.569E-03
0.600	1.739E 00	1.261E-02	1.751E 00	2.561E-01	3.850E-03
0.650	1.718E 00	1.335E-02	1.732E 00	2.848E-01	4.128E-03
0.700	1.702E 00	1.410E-02	1.716E 00	3.138E-01	4.402E-03
0.750	1.690E 00	1.485E-02	1.704E 00	3.431E-01	4.672E-03
0.800	1.680E 00	1.559E-02	1.695E 00	3.725E-01	4.940E-03
0.850	1.672E 00	1.634E-02	1.688E 00	4.020E-01	5.205E-03
0.900	1.666E 00	1.709E-02	1.683E 00	4.317E-01	5.467E-03
0.950	1.661E 00	1.785E-02	1.679E 00	4.615E-01	5.726E-03
1.000	1.658E 00	1.860E-02	1.676E 00	4.913E-01	5.983E-03
1.100	1.653E 00	2.012E-02	1.674E 00	5.510E-01	6.490E-03
1.200	1.652E 00	2.165E-02	1.674E 00	6.107E-01	6.990E-03
1.300	1.653E 00	2.319E-02	1.676E 00	6.705E-01	7.482E-03

ELECTRONS IN OXYGEN

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.655E 00	2.474E-02	1.679E 00	7.301E-01	7.968E-03
1.500	1.658E 00	2.629E-02	1.684E 00	7.895E-01	8.448E-03
1.600	1.662E 00	2.786E-02	1.690E 00	8.488E-01	8.923E-03
1.700	1.666E 00	2.937E-02	1.696E 00	9.079E-01	9.392E-03
1.800	1.671E 00	3.096E-02	1.702E 00	9.668E-01	9.857E-03
1.900	1.676E 00	3.256E-02	1.709E 00	1.025E 00	1.032E-02
2.000	1.682E 00	3.417E-02	1.716E 00	1.084E 00	1.078E-02
2.200	1.693E 00	3.744E-02	1.730E 00	1.200E 00	1.169E-02
2.400	1.704E 00	4.076E-02	1.745E 00	1.315E 00	1.259E-02
2.600	1.715E 00	4.412E-02	1.760E 00	1.429E 00	1.348E-02
2.800	1.727E 00	4.739E-02	1.774E 00	1.542E 00	1.437E-02
3.000	1.738E 00	5.085E-02	1.788E 00	1.655E 00	1.525E-02
3.500	1.764E 00	5.972E-02	1.823E 00	1.931E 00	1.744E-02
4.000	1.788E 00	6.890E-02	1.857E 00	2.203E 00	1.963E-02
4.500	1.810E 00	7.844E-02	1.889E 00	2.470E 00	2.181E-02
5.000	1.831E 00	8.814E-02	1.919E 00	2.733E 00	2.401E-02
5.500	1.850E 00	9.803E-02	1.948E 00	2.991E 00	2.620E-02
6.000	1.868E 00	1.081E-01	1.976E 00	3.246E 00	2.839E-02
6.500	1.884E 00	1.183E-01	2.003E 00	3.498E 00	3.058E-02
7.000	1.900E 00	1.286E-01	2.029E 00	3.746E 00	3.277E-02
7.500	1.915E 00	1.391E-01	2.054E 00	3.991E 00	3.496E-02
8.000	1.929E 00	1.498E-01	2.078E 00	4.233E 00	3.714E-02
8.500	1.942E 00	1.605E-01	2.102E 00	4.472E 00	3.932E-02
9.000	1.954E 00	1.724E-01	2.127E 00	4.708E 00	4.151E-02
9.500	1.966E 00	1.834E-01	2.149E 00	4.942E 00	4.370E-02
10.000	1.977E 00	1.945E-01	2.172E 00	5.174E 00	4.589E-02
20.000	2.133E 00	4.308E-01	2.564E 00	9.395E 00	8.781E-02
30.000	2.225E 00	6.817E-01	2.907E 00	1.305E 01	1.260E-01
40.000	2.288E 00	9.395E-01	3.227E 00	1.631E 01	1.603E-01
50.000	2.324E 00	1.202E 00	3.526E 00	1.928E 01	1.916E-01
60.000	2.352E 00	1.468E 00	3.820E 00	2.200E 01	2.201E-01
80.000	2.394E 00	2.005E 00	4.400E 00	2.687E 01	2.705E-01
100.000	2.425E 00	2.549E 00	4.974E 00	3.115E 01	3.134E-01
200.000	2.512E 00	5.311E 00	7.823E 00	4.703E 01	4.604E-01
300.000	2.557E 00	8.105E 00	1.066E 01	5.794E 01	5.481E-01
400.000	2.587E 00	1.091E 01	1.350E 01	6.626E 01	6.076E-01
500.000	2.609E 00	1.372E 01	1.633E 01	7.298E 01	6.511E-01
600.000	2.626E 00	1.654E 01	1.917E 01	7.863E 01	6.846E-01
800.000	2.652E 00	2.219E 01	2.484E 01	8.777E 01	7.333E-01
1000.000	2.672E 00	2.784E 01	3.051E 01	9.502E 01	7.673E-01

ELECTRONS IN NEON

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.791E 01	6.784E-03	1.792E 01	3.226E-04	2.190E-04
0.015	1.319E 01	6.661E-03	1.320E 01	6.523E-04	2.936E-04
0.020	1.061E 01	6.571E-03	1.062E 01	1.078E-03	3.608E-04
0.025	8.974E 00	6.506E-03	8.981E 00	1.592E-03	4.231E-04
0.030	7.832E 00	6.457E-03	7.838E 00	2.190E-03	4.817E-04
0.035	6.988E 00	6.408E-03	6.994E 00	2.866E-03	5.372E-04
0.040	6.337E 00	6.400E-03	6.344E 00	3.618E-03	5.904E-04
0.045	5.820E 00	6.409E-03	5.826E 00	4.442E-03	6.419E-04
0.050	5.397E 00	6.430E-03	5.404E 00	5.334E-03	6.923E-04
0.055	5.046E 00	6.461E-03	5.053E 00	6.291E-03	7.415E-04
0.060	4.749E 00	6.499E-03	4.756E 00	7.312E-03	7.900E-04
0.065	4.495E 00	6.542E-03	4.502E 00	8.393E-03	8.377E-04
0.070	4.275E 00	6.590E-03	4.281E 00	9.533E-03	8.847E-04
0.075	4.082E 00	6.643E-03	4.088E 00	1.073E-02	9.312E-04
0.080	3.911E 00	6.698E-03	3.918E 00	1.198E-02	9.772E-04
0.085	3.760E 00	6.753E-03	3.767E 00	1.328E-02	1.023E-03
0.090	3.624E 00	6.814E-03	3.631E 00	1.463E-02	1.068E-03
0.095	3.502E 00	6.876E-03	3.509E 00	1.603E-02	1.113E-03
0.100	3.392E 00	6.941E-03	3.399E 00	1.748E-02	1.157E-03
0.150	2.680E 00	7.653E-03	2.688E 00	3.424E-02	1.587E-03
0.200	2.318E 00	8.409E-03	2.327E 00	5.436E-02	1.999E-03
0.250	2.103E 00	9.238E-03	2.112E 00	7.699E-02	2.398E-03
0.300	1.962E 00	1.010E-02	1.972E 00	1.015E-01	2.790E-03
0.350	1.864E 00	1.102E-02	1.875E 00	1.276E-01	3.177E-03
0.400	1.794E 00	1.191E-02	1.806E 00	1.548E-01	3.560E-03
0.450	1.742E 00	1.281E-02	1.755E 00	1.829E-01	3.936E-03
0.500	1.702E 00	1.371E-02	1.716E 00	2.117E-01	4.307E-03
0.550	1.672E 00	1.461E-02	1.686E 00	2.411E-01	4.673E-03
0.600	1.648E 00	1.551E-02	1.664E 00	2.710E-01	5.033E-03
0.650	1.630E 00	1.641E-02	1.646E 00	3.012E-01	5.387E-03
0.700	1.615E 00	1.732E-02	1.633E 00	3.317E-01	5.738E-03
0.750	1.604E 00	1.822E-02	1.622E 00	3.624E-01	6.083E-03
0.800	1.595E 00	1.914E-02	1.614E 00	3.933E-01	6.425E-03
0.850	1.588E 00	2.011E-02	1.608E 00	4.244E-01	6.764E-03
0.900	1.583E 00	2.102E-02	1.604E 00	4.555E-01	7.100E-03
0.950	1.579E 00	2.194E-02	1.601E 00	4.867E-01	7.432E-03
1.000	1.576E 00	2.286E-02	1.599E 00	5.179E-01	7.760E-03
1.100	1.573E 00	2.470E-02	1.598E 00	5.805E-01	8.408E-03
1.200	1.572E 00	2.655E-02	1.599E 00	6.431E-01	9.043E-03
1.300	1.574E 00	2.840E-02	1.602E 00	7.056E-01	9.668E-03

ELECTRONS IN NEON

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.576E 00	3.026E-02	1.607E 00	7.679E-01	1.028E-02
1.500	1.580E 00	3.213E-02	1.612E 00	8.301E-01	1.089E-02
1.600	1.584E 00	3.400E-02	1.618E 00	8.920E-01	1.149E-02
1.700	1.589E 00	3.579E-02	1.625E 00	9.536E-01	1.208E-02
1.800	1.594E 00	3.769E-02	1.632E 00	1.015E 00	1.266E-02
1.900	1.599E 00	3.960E-02	1.639E 00	1.076E 00	1.324E-02
2.000	1.605E 00	4.153E-02	1.647E 00	1.137E 00	1.381E-02
2.200	1.616E 00	4.544E-02	1.662E 00	1.258E 00	1.494E-02
2.400	1.628E 00	4.940E-02	1.677E 00	1.378E 00	1.607E-02
2.600	1.639E 00	5.343E-02	1.693E 00	1.496E 00	1.718E-02
2.800	1.651E 00	5.726E-02	1.708E 00	1.614E 00	1.828E-02
3.000	1.662E 00	6.139E-02	1.723E 00	1.731E 00	1.936E-02
3.500	1.688E 00	7.203E-02	1.760E 00	2.018E 00	2.207E-02
4.000	1.712E 00	8.308E-02	1.795E 00	2.299E 00	2.476E-02
4.500	1.734E 00	9.464E-02	1.829E 00	2.575E 00	2.745E-02
5.000	1.755E 00	1.064E-01	1.861E 00	2.846E 00	3.015E-02
5.500	1.774E 00	1.183E-01	1.892E 00	3.112E 00	3.285E-02
6.000	1.792E 00	1.304E-01	1.922E 00	3.375E 00	3.554E-02
6.500	1.808E 00	1.427E-01	1.951E 00	3.633E 00	3.823E-02
7.000	1.824E 00	1.552E-01	1.979E 00	3.887E 00	4.092E-02
7.500	1.838E 00	1.678E-01	2.006E 00	4.138E 00	4.359E-02
8.000	1.852E 00	1.806E-01	2.033E 00	4.386E 00	4.626E-02
8.500	1.865E 00	1.935E-01	2.059E 00	4.630E 00	4.892E-02
9.000	1.877E 00	2.074E-01	2.085E 00	4.871E 00	5.157E-02
9.500	1.889E 00	2.206E-01	2.110E 00	5.110E 00	5.423E-02
10.000	1.900E 00	2.339E-01	2.134E 00	5.345E 00	5.687E-02
20.000	2.055E 00	5.167E-01	2.571E 00	9.597E 00	1.068E-01
30.000	2.146E 00	8.167E-01	2.963E 00	1.321E 01	1.510E-01
40.000	2.211E 00	1.125E 00	3.336E 00	1.639E 01	1.901E-01
50.000	2.262E 00	1.439E 00	3.701E 00	1.924E 01	2.248E-01
60.000	2.304E 00	1.756E 00	4.060E 00	2.182E 01	2.559E-01
80.000	2.364E 00	2.399E 00	4.762E 00	2.636E 01	3.093E-01
100.000	2.401E 00	3.047E 00	5.448E 00	3.028E 01	3.540E-01
200.000	2.504E 00	6.341E 00	8.845E 00	4.454E 01	5.019E-01
300.000	2.555E 00	9.672E 00	1.223E 01	5.411E 01	5.872E-01
400.000	2.588E 00	1.302E 01	1.560E 01	6.133E 01	6.439E-01
500.000	2.612E 00	1.637E 01	1.898E 01	6.714E 01	6.850E-01
600.000	2.631E 00	1.973E 01	2.236E 01	7.198E 01	7.163E-01
800.000	2.658E 00	2.645E 01	2.911E 01	7.980E 01	7.614E-01
1000.000	2.679E 00	3.318E 01	3.586E 01	8.598E 01	7.926E-01

ELECTRONS IN MAGNESIUM

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.714E 01	8.125E-03	1.715E 01	3.395E-04	2.744E-04
0.015	1.267E 01	8.001E-03	1.268E 01	6.833E-04	3.676E-04
0.020	1.021E 01	7.895E-03	1.022E 01	1.126E-03	4.514E-04
0.025	8.646E 00	7.831E-03	8.654E 00	1.660E-03	5.290E-04
0.030	7.554E 00	7.788E-03	7.562E 00	2.280E-03	6.022E-04
0.035	6.746E 00	7.747E-03	6.753E 00	2.981E-03	6.717E-04
0.040	6.122E 00	7.752E-03	6.130E 00	3.759E-03	7.385E-04
0.045	5.625E 00	7.777E-03	5.633E 00	4.611E-03	8.034E-04
0.050	5.220E 00	7.815E-03	5.227E 00	5.533E-03	8.668E-04
0.055	4.882E 00	7.863E-03	4.890E 00	6.523E-03	9.291E-04
0.060	4.597E 00	7.918E-03	4.605E 00	7.577E-03	9.903E-04
0.065	4.352E 00	7.980E-03	4.360E 00	8.694E-03	1.051E-03
0.070	4.140E 00	8.047E-03	4.148E 00	9.870E-03	1.110E-03
0.075	3.954E 00	8.117E-03	3.962E 00	1.110E-02	1.169E-03
0.080	3.790E 00	8.192E-03	3.799E 00	1.239E-02	1.228E-03
0.085	3.645E 00	8.277E-03	3.653E 00	1.374E-02	1.285E-03
0.090	3.514E 00	8.356E-03	3.522E 00	1.513E-02	1.343E-03
0.095	3.396E 00	8.437E-03	3.405E 00	1.657E-02	1.400E-03
0.100	3.290E 00	8.520E-03	3.298E 00	1.807E-02	1.456E-03
0.150	2.603E 00	9.405E-03	2.612E 00	3.532E-02	2.003E-03
0.200	2.254E 00	1.031E-02	2.264E 00	5.600E-02	2.523E-03
0.250	2.046E 00	1.132E-02	2.057E 00	7.925E-02	3.024E-03
0.300	1.910E 00	1.237E-02	1.922E 00	1.044E-01	3.515E-03
0.350	1.809E 00	1.348E-02	1.822E 00	1.312E-01	4.003E-03
0.400	1.742E 00	1.457E-02	1.757E 00	1.592E-01	4.484E-03
0.450	1.693E 00	1.567E-02	1.709E 00	1.881E-01	4.955E-03
0.500	1.655E 00	1.675E-02	1.672E 00	2.177E-01	5.420E-03
0.550	1.626E 00	1.784E-02	1.643E 00	2.479E-01	5.876E-03
0.600	1.602E 00	1.892E-02	1.621E 00	2.785E-01	6.325E-03
0.650	1.584E 00	2.000E-02	1.604E 00	3.095E-01	6.767E-03
0.700	1.569E 00	2.108E-02	1.591E 00	3.408E-01	7.202E-03
0.750	1.558E 00	2.217E-02	1.580E 00	3.724E-01	7.632E-03
0.800	1.548E 00	2.325E-02	1.572E 00	4.041E-01	8.055E-03
0.850	1.541E 00	2.440E-02	1.565E 00	4.360E-01	8.476E-03
0.900	1.535E 00	2.549E-02	1.560E 00	4.680E-01	8.892E-03
0.950	1.530E 00	2.657E-02	1.557E 00	5.001E-01	9.303E-03
1.000	1.526E 00	2.766E-02	1.554E 00	5.322E-01	9.710E-03
1.100	1.521E 00	2.982E-02	1.551E 00	5.966E-01	1.051E-02
1.200	1.519E 00	3.199E-02	1.551E 00	6.611E-01	1.129E-02
1.300	1.518E 00	3.416E-02	1.552E 00	7.256E-01	1.207E-02

ELECTRONS IN MAGNESIUM

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.518E 00	3.634E-02	1.555E 00	7.899E-01	1.282E-02
1.500	1.520E 00	3.851E-02	1.558E 00	8.542E-01	1.357E-02
1.600	1.522E 00	4.068E-02	1.562E 00	9.183E-01	1.431E-02
1.700	1.524E 00	4.272E-02	1.567E 00	9.822E-01	1.503E-02
1.800	1.527E 00	4.491E-02	1.572E 00	1.046E 00	1.575E-02
1.900	1.530E 00	4.713E-02	1.577E 00	1.109E 00	1.646E-02
2.000	1.534E 00	4.937E-02	1.583E 00	1.173E 00	1.716E-02
2.200	1.540E 00	5.390E-02	1.594E 00	1.299E 00	1.856E-02
2.400	1.547E 00	5.851E-02	1.606E 00	1.424E 00	1.994E-02
2.600	1.555E 00	6.318E-02	1.618E 00	1.548E 00	2.131E-02
2.800	1.562E 00	6.764E-02	1.629E 00	1.671E 00	2.267E-02
3.000	1.568E 00	7.243E-02	1.641E 00	1.793E 00	2.401E-02
3.500	1.585E 00	8.481E-02	1.669E 00	2.095E 00	2.736E-02
4.000	1.599E 00	9.769E-02	1.697E 00	2.392E 00	3.071E-02
4.500	1.613E 00	1.112E-01	1.724E 00	2.685E 00	3.408E-02
5.000	1.625E 00	1.249E-01	1.750E 00	2.972E 00	3.746E-02
5.500	1.636E 00	1.388E-01	1.775E 00	3.256E 00	4.085E-02
6.000	1.646E 00	1.529E-01	1.799E 00	3.536E 00	4.425E-02
6.500	1.656E 00	1.672E-01	1.823E 00	3.812E 00	4.764E-02
7.000	1.665E 00	1.818E-01	1.846E 00	4.084E 00	5.103E-02
7.500	1.673E 00	1.965E-01	1.869E 00	4.354E 00	5.442E-02
8.000	1.680E 00	2.114E-01	1.891E 00	4.620E 00	5.779E-02
8.500	1.687E 00	2.264E-01	1.914E 00	4.882E 00	6.116E-02
9.000	1.694E 00	2.426E-01	1.936E 00	5.142E 00	6.453E-02
9.500	1.700E 00	2.580E-01	1.958E 00	5.399E 00	6.789E-02
10.000	1.706E 00	2.734E-01	1.979E 00	5.653E 00	7.125E-02
20.000	1.781E 00	6.029E-01	2.383E 00	1.025E 01	1.344E-01
30.000	1.820E 00	9.524E-01	2.773E 00	1.413E 01	1.896E-01
40.000	1.847E 00	1.311E 00	3.158E 00	1.751E 01	2.374E-01
50.000	1.867E 00	1.676E 00	3.543E 00	2.050E 01	2.789E-01
60.000	1.883E 00	2.046E 00	3.928E 00	2.318E 01	3.154E-01
80.000	1.907E 00	2.793E 00	4.700E 00	2.782E 01	3.764E-01
100.000	1.925E 00	3.546E 00	5.471E 00	3.177E 01	4.256E-01
200.000	1.980E 00	7.374E 00	9.353E 00	4.558E 01	5.779E-01
300.000	2.011E 00	1.124E 01	1.325E 01	5.452E 01	6.591E-01
400.000	2.033E 00	1.512E 01	1.716E 01	6.113E 01	7.109E-01
500.000	2.050E 00	1.902E 01	2.107E 01	6.638E 01	7.473E-01
600.000	2.063E 00	2.292E 01	2.498E 01	7.074E 01	7.745E-01
800.000	2.085E 00	3.072E 01	3.281E 01	7.770E 01	8.128E-01
1000.000	2.102E 00	3.853E 01	4.063E 01	8.317E 01	8.388E-01

ELECTRONS IN ALUMINUM

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.657E 01	8.600E-03	1.658E 01	3.519E-04	3.002E-04
0.015	1.225E 01	8.482E-03	1.226E 01	7.074E-04	4.025E-04
0.020	9.885E 00	8.373E-03	9.893E 00	1.165E-03	4.944E-04
0.025	8.372E 00	8.313E-03	8.380E 00	1.716E-03	5.795E-04
0.030	7.316E 00	8.276E-03	7.325E 00	2.356E-03	6.598E-04
0.035	6.535E 00	8.241E-03	6.543E 00	3.080E-03	7.362E-04
0.040	5.932E 00	8.252E-03	5.940E 00	3.883E-03	8.098E-04
0.045	5.451E 00	8.285E-03	5.459E 00	4.762E-03	8.813E-04
0.050	5.059E 00	8.329E-03	5.067E 00	5.714E-03	9.512E-04
0.055	4.733E 00	8.384E-03	4.741E 00	6.735E-03	1.020E-03
0.060	4.456E 00	8.446E-03	4.465E 00	7.822E-03	1.087E-03
0.065	4.220E 00	8.515E-03	4.228E 00	8.974E-03	1.154E-03
0.070	4.014E 00	8.588E-03	4.023E 00	1.019E-02	1.220E-03
0.075	3.834E 00	8.666E-03	3.843E 00	1.146E-02	1.285E-03
0.080	3.676E 00	8.746E-03	3.684E 00	1.279E-02	1.349E-03
0.085	3.534E 00	8.843E-03	3.543E 00	1.417E-02	1.413E-03
0.090	3.408E 00	8.928E-03	3.417E 00	1.561E-02	1.476E-03
0.095	3.294E 00	9.016E-03	3.303E 00	1.710E-02	1.539E-03
0.100	3.191E 00	9.105E-03	3.200E 00	1.864E-02	1.602E-03
0.150	2.526E 00	1.005E-02	2.536E 00	3.641E-02	2.204E-03
0.200	2.188E 00	1.100E-02	2.199E 00	5.772E-02	2.775E-03
0.250	1.986E 00	1.206E-02	1.998E 00	8.165E-02	3.324E-03
0.300	1.848E 00	1.317E-02	1.861E 00	1.077E-01	3.864E-03
0.350	1.757E 00	1.434E-02	1.771E 00	1.353E-01	4.397E-03
0.400	1.691E 00	1.549E-02	1.706E 00	1.640E-01	4.921E-03
0.450	1.641E 00	1.666E-02	1.658E 00	1.938E-01	5.437E-03
0.500	1.603E 00	1.782E-02	1.621E 00	2.243E-01	5.946E-03
0.550	1.574E 00	1.897E-02	1.593E 00	2.554E-01	6.446E-03
0.600	1.551E 00	2.011E-02	1.571E 00	2.871E-01	6.939E-03
0.650	1.532E 00	2.126E-02	1.553E 00	3.191E-01	7.424E-03
0.700	1.517E 00	2.240E-02	1.540E 00	3.514E-01	7.902E-03
0.750	1.505E 00	2.354E-02	1.529E 00	3.840E-01	8.374E-03
0.800	1.496E 00	2.469E-02	1.521E 00	4.168E-01	8.839E-03
0.850	1.488E 00	2.590E-02	1.514E 00	4.498E-01	9.301E-03
0.900	1.482E 00	2.704E-02	1.509E 00	4.828E-01	9.757E-03
0.950	1.477E 00	2.819E-02	1.505E 00	5.160E-01	1.021E-02
1.000	1.473E 00	2.933E-02	1.502E 00	5.493E-01	1.065E-02
1.100	1.468E 00	3.161E-02	1.499E 00	6.159E-01	1.153E-02
1.200	1.465E 00	3.388E-02	1.498E 00	6.826E-01	1.239E-02
1.300	1.463E 00	3.616E-02	1.499E 00	7.493E-01	1.324E-02

ELECTRONS IN ALUMINUM

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.463E 00	3.843E-02	1.502E 00	8.160E-01	1.407E-02
1.500	1.464E 00	4.071E-02	1.505E 00	8.825E-01	1.488E-02
1.600	1.466E 00	4.298E-02	1.509E 00	9.489E-01	1.569E-02
1.700	1.468E 00	4.509E-02	1.513E 00	1.015E 00	1.648E-02
1.800	1.470E 00	4.738E-02	1.518E 00	1.081E 00	1.726E-02
1.900	1.473E 00	4.970E-02	1.523E 00	1.147E 00	1.803E-02
2.000	1.476E 00	5.204E-02	1.528E 00	1.212E 00	1.879E-02
2.200	1.482E 00	5.677E-02	1.539E 00	1.343E 00	2.031E-02
2.400	1.489E 00	6.158E-02	1.550E 00	1.472E 00	2.181E-02
2.600	1.495E 00	6.647E-02	1.562E 00	1.601E 00	2.330E-02
2.800	1.502E 00	7.111E-02	1.573E 00	1.728E 00	2.477E-02
3.000	1.508E 00	7.612E-02	1.584E 00	1.855E 00	2.623E-02
3.500	1.523E 00	8.907E-02	1.612E 00	2.168E 00	2.986E-02
4.000	1.537E 00	1.025E-01	1.639E 00	2.476E 00	3.349E-02
4.500	1.549E 00	1.167E-01	1.666E 00	2.778E 00	3.713E-02
5.000	1.561E 00	1.310E-01	1.692E 00	3.076E 00	4.079E-02
5.500	1.571E 00	1.456E-01	1.717E 00	3.369E 00	4.446E-02
6.000	1.581E 00	1.604E-01	1.741E 00	3.658E 00	4.813E-02
6.500	1.590E 00	1.755E-01	1.765E 00	3.944E 00	5.179E-02
7.000	1.598E 00	1.907E-01	1.789E 00	4.225E 00	5.545E-02
7.500	1.606E 00	2.061E-01	1.812E 00	4.503E 00	5.910E-02
8.000	1.613E 00	2.217E-01	1.835E 00	4.777E 00	6.273E-02
8.500	1.620E 00	2.375E-01	1.857E 00	5.048E 00	6.636E-02
9.000	1.626E 00	2.545E-01	1.880E 00	5.315E 00	6.998E-02
9.500	1.632E 00	2.706E-01	1.902E 00	5.580E 00	7.360E-02
10.000	1.637E 00	2.869E-01	1.924E 00	5.841E 00	7.721E-02
20.000	1.709E 00	6.317E-01	2.341E 00	1.054E 01	1.445E-01
30.000	1.747E 00	9.973E-01	2.745E 00	1.448E 01	2.026E-01
40.000	1.773E 00	1.373E 00	3.146E 00	1.788E 01	2.522E-01
50.000	1.792E 00	1.755E 00	3.547E 00	2.087E 01	2.951E-01
60.000	1.808E 00	2.141E 00	3.949E 00	2.355E 01	3.325E-01
80.000	1.831E 00	2.923E 00	4.754E 00	2.816E 01	3.945E-01
100.000	1.849E 00	3.710E 00	5.559E 00	3.204E 01	4.441E-01
200.000	1.902E 00	7.712E 00	9.614E 00	4.555E 01	5.953E-01
300.000	1.933E 00	1.176E 01	1.369E 01	5.423E 01	6.747E-01
400.000	1.954E 00	1.581E 01	1.777E 01	6.062E 01	7.250E-01
500.000	1.971E 00	1.988E 01	2.185E 01	6.569E 01	7.601E-01
600.000	1.984E 00	2.396E 01	2.594E 01	6.988E 01	7.863E-01
800.000	2.005E 00	3.212E 01	3.412E 01	7.658E 01	8.230E-01
1000.000	2.022E 00	4.028E 01	4.230E 01	8.184E 01	8.478E-01

ELECTRONS IN ARGON

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.457E 01	1.112E-02	1.458E 01	4.050E-04	4.425E-04
0.015	1.084E 01	1.104E-02	1.085E 01	8.078E-04	5.924E-04
0.020	8.770E 00	1.091E-02	8.781E 00	1.324E-03	7.273E-04
0.025	7.445E 00	1.090E-02	7.456E 00	1.944E-03	8.524E-04
0.030	6.517E 00	1.093E-02	6.528E 00	2.663E-03	9.718E-04
0.035	5.829E 00	1.100E-02	5.840E 00	3.474E-03	1.087E-03
0.040	5.297E 00	1.107E-02	5.308E 00	4.374E-03	1.199E-03
0.045	4.872E 00	1.116E-02	4.884E 00	5.357E-03	1.309E-03
0.050	4.525E 00	1.125E-02	4.537E 00	6.420E-03	1.416E-03
0.055	4.236E 00	1.135E-02	4.248E 00	7.560E-03	1.522E-03
0.060	3.992E 00	1.145E-02	4.003E 00	8.773E-03	1.626E-03
0.065	3.782E 00	1.156E-02	3.793E 00	1.006E-02	1.728E-03
0.070	3.599E 00	1.167E-02	3.611E 00	1.141E-02	1.829E-03
0.075	3.440E 00	1.178E-02	3.451E 00	1.283E-02	1.928E-03
0.080	3.299E 00	1.189E-02	3.311E 00	1.431E-02	2.027E-03
0.085	3.173E 00	1.199E-02	3.185E 00	1.585E-02	2.124E-03
0.090	3.061E 00	1.211E-02	3.073E 00	1.744E-02	2.220E-03
0.095	2.959E 00	1.222E-02	2.972E 00	1.910E-02	2.315E-03
0.100	2.868E 00	1.234E-02	2.880E 00	2.081E-02	2.409E-03
0.150	2.275E 00	1.357E-02	2.289E 00	4.053E-02	3.312E-03
0.200	1.973E 00	1.477E-02	1.988E 00	6.411E-02	4.157E-03
0.250	1.793E 00	1.615E-02	1.810E 00	9.056E-02	4.962E-03
0.300	1.676E 00	1.759E-02	1.694E 00	1.192E-01	5.744E-03
0.350	1.595E 00	1.913E-02	1.614E 00	1.495E-01	6.513E-03
0.400	1.536E 00	2.062E-02	1.557E 00	1.810E-01	7.268E-03
0.450	1.493E 00	2.212E-02	1.515E 00	2.136E-01	8.007E-03
0.500	1.461E 00	2.361E-02	1.484E 00	2.470E-01	8.732E-03
0.550	1.436E 00	2.509E-02	1.461E 00	2.809E-01	9.442E-03
0.600	1.416E 00	2.656E-02	1.443E 00	3.154E-01	1.014E-02
0.650	1.401E 00	2.802E-02	1.429E 00	3.502E-01	1.082E-02
0.700	1.390E 00	2.948E-02	1.419E 00	3.853E-01	1.149E-02
0.750	1.381E 00	3.094E-02	1.412E 00	4.207E-01	1.215E-02
0.800	1.374E 00	3.240E-02	1.406E 00	4.562E-01	1.279E-02
0.850	1.368E 00	3.394E-02	1.402E 00	4.918E-01	1.343E-02
0.900	1.364E 00	3.539E-02	1.400E 00	5.275E-01	1.406E-02
0.950	1.362E 00	3.684E-02	1.398E 00	5.632E-01	1.468E-02
1.000	1.360E 00	3.829E-02	1.398E 00	5.990E-01	1.529E-02
1.100	1.358E 00	4.117E-02	1.399E 00	6.705E-01	1.648E-02
1.200	1.358E 00	4.404E-02	1.402E 00	7.419E-01	1.764E-02
1.300	1.360E 00	4.691E-02	1.407E 00	8.130E-01	1.878E-02

ELECTRONS IN ARGON

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.363E 00	4.977E-02	1.413E 00	8.840E-01	1.988E-02
1.500	1.367E 00	5.262E-02	1.420E 00	9.546E-01	2.097E-02
1.600	1.371E 00	5.547E-02	1.427E 00	1.025E 00	2.203E-02
1.700	1.376E 00	5.808E-02	1.434E 00	1.095E 00	2.306E-02
1.800	1.381E 00	6.094E-02	1.442E 00	1.164E 00	2.408E-02
1.900	1.386E 00	6.384E-02	1.450E 00	1.233E 00	2.508E-02
2.000	1.392E 00	6.676E-02	1.458E 00	1.302E 00	2.608E-02
2.200	1.402E 00	7.267E-02	1.475E 00	1.439E 00	2.803E-02
2.400	1.413E 00	7.867E-02	1.492E 00	1.573E 00	2.994E-02
2.600	1.424E 00	8.476E-02	1.509E 00	1.707E 00	3.183E-02
2.800	1.434E 00	9.054E-02	1.525E 00	1.838E 00	3.369E-02
3.000	1.445E 00	9.679E-02	1.541E 00	1.969E 00	3.551E-02
3.500	1.469E 00	1.129E-01	1.582E 00	2.289E 00	4.002E-02
4.000	1.491E 00	1.297E-01	1.621E 00	2.601E 00	4.448E-02
4.500	1.511E 00	1.472E-01	1.659E 00	2.906E 00	4.891E-02
5.000	1.530E 00	1.650E-01	1.695E 00	3.205E 00	5.332E-02
5.500	1.548E 00	1.831E-01	1.731E 00	3.496E 00	5.771E-02
6.000	1.564E 00	2.016E-01	1.765E 00	3.783E 00	6.207E-02
6.500	1.579E 00	2.203E-01	1.799E 00	4.063E 00	6.640E-02
7.000	1.593E 00	2.393E-01	1.832E 00	4.338E 00	7.069E-02
7.500	1.606E 00	2.585E-01	1.865E 00	4.609E 00	7.495E-02
8.000	1.619E 00	2.779E-01	1.897E 00	4.875E 00	7.918E-02
8.500	1.631E 00	2.976E-01	1.928E 00	5.136E 00	8.337E-02
9.000	1.642E 00	3.204E-01	1.962E 00	5.393E 00	8.755E-02
9.500	1.653E 00	3.405E-01	1.993E 00	5.646E 00	9.174E-02
10.000	1.663E 00	3.609E-01	2.024E 00	5.895E 00	9.588E-02
20.000	1.803E 00	7.888E-01	2.592E 00	1.024E 01	1.703E-01
30.000	1.887E 00	1.242E 00	3.128E 00	1.375E 01	2.311E-01
40.000	1.946E 00	1.708E 00	3.654E 00	1.670E 01	2.818E-01
50.000	1.992E 00	2.182E 00	4.174E 00	1.926E 01	3.247E-01
60.000	2.026E 00	2.661E 00	4.687E 00	2.152E 01	3.615E-01
80.000	2.077E 00	3.630E 00	5.707E 00	2.538E 01	4.221E-01
100.000	2.114E 00	4.606E 00	6.720E 00	2.860E 01	4.701E-01
200.000	2.215E 00	9.559E 00	1.177E 01	3.970E 01	6.148E-01
300.000	2.265E 00	1.456E 01	1.683E 01	4.677E 01	6.904E-01
400.000	2.298E 00	1.958E 01	2.188E 01	5.196E 01	7.382E-01
500.000	2.321E 00	2.460E 01	2.692E 01	5.608E 01	7.715E-01
600.000	2.340E 00	2.964E 01	3.198E 01	5.948E 01	7.964E-01
800.000	2.367E 00	3.972E 01	4.208E 01	6.491E 01	8.313E-01
1000.000	2.388E 00	4.980E 01	5.219E 01	6.917E 01	8.549E-01

ELECTRONS IN IRON

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.407E 01	1.645E-02	1.408E 01	4.259E-04	6.843E-04
0.015	1.053E 01	1.642E-02	1.054E 01	8.415E-04	9.116E-04
0.020	8.553E 00	1.630E-02	8.569E 00	1.371E-03	1.117E-03
0.025	7.279E 00	1.638E-02	7.296E 00	2.006E-03	1.308E-03
0.030	6.385E 00	1.652E-02	6.401E 00	2.740E-03	1.493E-03
0.035	5.719E 00	1.673E-02	5.736E 00	3.566E-03	1.672E-03
0.040	5.204E 00	1.691E-02	5.221E 00	4.481E-03	1.848E-03
0.045	4.792E 00	1.710E-02	4.809E 00	5.480E-03	2.020E-03
0.050	4.455E 00	1.729E-02	4.472E 00	6.560E-03	2.189E-03
0.055	4.174E 00	1.747E-02	4.191E 00	7.715E-03	2.355E-03
0.060	3.935E 00	1.766E-02	3.953E 00	8.945E-03	2.519E-03
0.065	3.730E 00	1.784E-02	3.748E 00	1.024E-02	2.680E-03
0.070	3.553E 00	1.802E-02	3.571E 00	1.161E-02	2.839E-03
0.075	3.397E 00	1.820E-02	3.415E 00	1.304E-02	2.996E-03
0.080	3.259E 00	1.839E-02	3.278E 00	1.454E-02	3.150E-03
0.085	3.136E 00	1.852E-02	3.155E 00	1.609E-02	3.302E-03
0.090	3.027E 00	1.870E-02	3.045E 00	1.771E-02	3.452E-03
0.095	2.927E 00	1.888E-02	2.946E 00	1.938E-02	3.601E-03
0.100	2.838E 00	1.907E-02	2.857E 00	2.110E-02	3.748E-03
0.150	2.257E 00	2.094E-02	2.278E 00	4.095E-02	5.149E-03
0.200	1.961E 00	2.270E-02	1.984E 00	6.461E-02	6.446E-03
0.250	1.783E 00	2.474E-02	1.808E 00	9.110E-02	7.670E-03
0.300	1.667E 00	2.689E-02	1.694E 00	1.197E-01	8.855E-03
0.350	1.584E 00	2.918E-02	1.613E 00	1.500E-01	1.002E-02
0.400	1.526E 00	3.139E-02	1.557E 00	1.816E-01	1.116E-02
0.450	1.482E 00	3.360E-02	1.516E 00	2.142E-01	1.227E-02
0.500	1.449E 00	3.578E-02	1.485E 00	2.475E-01	1.336E-02
0.550	1.424E 00	3.795E-02	1.461E 00	2.814E-01	1.442E-02
0.600	1.403E 00	4.011E-02	1.443E 00	3.159E-01	1.546E-02
0.650	1.387E 00	4.226E-02	1.430E 00	3.507E-01	1.647E-02
0.700	1.375E 00	4.441E-02	1.419E 00	3.858E-01	1.747E-02
0.750	1.364E 00	4.655E-02	1.411E 00	4.211E-01	1.845E-02
0.800	1.356E 00	4.868E-02	1.405E 00	4.567E-01	1.941E-02
0.850	1.350E 00	5.055E-02	1.400E 00	4.923E-01	2.034E-02
0.900	1.345E 00	5.268E-02	1.397E 00	5.281E-01	2.126E-02
0.950	1.341E 00	5.482E-02	1.395E 00	5.639E-01	2.217E-02
1.000	1.337E 00	5.696E-02	1.394E 00	5.997E-01	2.307E-02
1.100	1.333E 00	6.127E-02	1.395E 00	6.714E-01	2.482E-02
1.200	1.331E 00	6.561E-02	1.397E 00	7.431E-01	2.654E-02
1.300	1.331E 00	6.997E-02	1.401E 00	8.146E-01	2.823E-02

ELECTRONS IN IRON

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.331E 00	7.436E-02	1.406E 00	8.858E-01	2.989E-02
1.500	1.333E 00	7.876E-02	1.411E 00	9.568E-01	3.152E-02
1.600	1.335E 00	8.319E-02	1.418E 00	1.028E 00	3.312E-02
1.700	1.337E 00	8.748E-02	1.425E 00	1.098E 00	3.471E-02
1.800	1.340E 00	9.197E-02	1.432E 00	1.168E 00	3.627E-02
1.900	1.343E 00	9.650E-02	1.439E 00	1.238E 00	3.781E-02
2.000	1.346E 00	1.011E-01	1.447E 00	1.307E 00	3.935E-02
2.200	1.352E 00	1.103E-01	1.462E 00	1.444E 00	4.237E-02
2.400	1.359E 00	1.197E-01	1.478E 00	1.580E 00	4.536E-02
2.600	1.365E 00	1.292E-01	1.494E 00	1.715E 00	4.831E-02
2.800	1.372E 00	1.394E-01	1.511E 00	1.848E 00	5.123E-02
3.000	1.378E 00	1.492E-01	1.527E 00	1.980E 00	5.415E-02
3.500	1.393E 00	1.739E-01	1.567E 00	2.303E 00	6.132E-02
4.000	1.406E 00	1.990E-01	1.605E 00	2.618E 00	6.835E-02
4.500	1.419E 00	2.243E-01	1.643E 00	2.926E 00	7.523E-02
5.000	1.430E 00	2.500E-01	1.680E 00	3.227E 00	8.197E-02
5.500	1.440E 00	2.762E-01	1.717E 00	3.521E 00	8.860E-02
6.000	1.450E 00	3.027E-01	1.752E 00	3.810E 00	9.512E-02
6.500	1.459E 00	3.295E-01	1.788E 00	4.092E 00	1.015E-01
7.000	1.467E 00	3.566E-01	1.823E 00	4.369E 00	1.078E-01
7.500	1.474E 00	3.841E-01	1.858E 00	4.641E 00	1.141E-01
8.000	1.481E 00	4.118E-01	1.893E 00	4.907E 00	1.202E-01
8.500	1.488E 00	4.398E-01	1.927E 00	5.169E 00	1.262E-01
9.000	1.494E 00	4.706E-01	1.964E 00	5.426E 00	1.322E-01
9.500	1.499E 00	4.992E-01	1.999E 00	5.678E 00	1.381E-01
10.000	1.505E 00	5.279E-01	2.033E 00	5.926E 00	1.440E-01
20.000	1.575E 00	1.133E 00	2.708E 00	1.017E 01	2.444E-01
30.000	1.612E 00	1.776E 00	3.388E 00	1.347E 01	3.211E-01
40.000	1.637E 00	2.443E 00	4.080E 00	1.615E 01	3.817E-01
50.000	1.656E 00	3.118E 00	4.774E 00	1.842E 01	4.308E-01
60.000	1.671E 00	3.801E 00	5.472E 00	2.037E 01	4.715E-01
80.000	1.694E 00	5.180E 00	6.874E 00	2.363E 01	5.352E-01
100.000	1.711E 00	6.570E 00	8.281E 00	2.628E 01	5.830E-01
200.000	1.763E 00	1.361E 01	1.537E 01	3.500E 01	7.157E-01
300.000	1.792E 00	2.072E 01	2.251E 01	4.034E 01	7.788E-01
400.000	1.813E 00	2.785E 01	2.966E 01	4.420E 01	8.167E-01
500.000	1.829E 00	3.498E 01	3.681E 01	4.722E 01	8.424E-01
600.000	1.842E 00	4.212E 01	4.397E 01	4.970E 01	8.610E-01
800.000	1.863E 00	5.643E 01	5.829E 01	5.364E 01	8.867E-01
1000.000	1.879E 00	7.074E 01	7.262E 01	5.671E 01	9.036E-01

ELECTRONS IN COPPER

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.328E 01	1.793E-02	1.329E 01	4.556E-04	7.967E-04
0.015	9.973E 00	1.792E-02	9.991E 00	8.949E-04	1.056E-03
0.020	8.120E 00	1.773E-02	8.137E 00	1.453E-03	1.290E-03
0.025	6.921E 00	1.790E-02	6.939E 00	2.121E-03	1.508E-03
0.030	6.078E 00	1.818E-02	6.096E 00	2.892E-03	1.720E-03
0.035	5.449E 00	1.857E-02	5.468E 00	3.760E-03	1.930E-03
0.040	4.962E 00	1.886E-02	4.981E 00	4.719E-03	2.138E-03
0.045	4.572E 00	1.914E-02	4.591E 00	5.766E-03	2.342E-03
0.050	4.252E 00	1.940E-02	4.272E 00	6.896E-03	2.544E-03
0.055	3.986E 00	1.964E-02	4.005E 00	8.106E-03	2.742E-03
0.060	3.759E 00	1.988E-02	3.779E 00	9.392E-03	2.937E-03
0.065	3.565E 00	2.011E-02	3.585E 00	1.075E-02	3.129E-03
0.070	3.396E 00	2.033E-02	3.417E 00	1.218E-02	3.318E-03
0.075	3.248E 00	2.054E-02	3.269E 00	1.368E-02	3.505E-03
0.080	3.118E 00	2.076E-02	3.138E 00	1.524E-02	3.689E-03
0.085	3.001E 00	2.084E-02	3.022E 00	1.686E-02	3.868E-03
0.090	2.896E 00	2.105E-02	2.917E 00	1.855E-02	4.046E-03
0.095	2.802E 00	2.126E-02	2.823E 00	2.029E-02	4.221E-03
0.100	2.717E 00	2.147E-02	2.738E 00	2.209E-02	4.394E-03
0.150	2.164E 00	2.359E-02	2.188E 00	4.277E-02	6.041E-03
0.200	1.882E 00	2.557E-02	1.908E 00	6.739E-02	7.560E-03
0.250	1.713E 00	2.784E-02	1.741E 00	9.492E-02	8.989E-03
0.300	1.603E 00	3.022E-02	1.634E 00	1.246E-01	1.037E-02
0.350	1.527E 00	3.275E-02	1.560E 00	1.560E-01	1.171E-02
0.400	1.473E 00	3.519E-02	1.508E 00	1.886E-01	1.302E-02
0.450	1.427E 00	3.767E-02	1.465E 00	2.222E-01	1.429E-02
0.500	1.396E 00	4.010E-02	1.436E 00	2.567E-01	1.554E-02
0.550	1.372E 00	4.251E-02	1.414E 00	2.918E-01	1.677E-02
0.600	1.353E 00	4.489E-02	1.398E 00	3.274E-01	1.796E-02
0.650	1.338E 00	4.726E-02	1.386E 00	3.633E-01	1.913E-02
0.700	1.327E 00	4.961E-02	1.376E 00	3.995E-01	2.027E-02
0.750	1.317E 00	5.195E-02	1.369E 00	4.360E-01	2.138E-02
0.800	1.310E 00	5.428E-02	1.364E 00	4.725E-01	2.247E-02
0.850	1.304E 00	5.605E-02	1.360E 00	5.093E-01	2.353E-02
0.900	1.299E 00	5.837E-02	1.358E 00	5.461E-01	2.456E-02
0.950	1.296E 00	6.070E-02	1.357E 00	5.829E-01	2.557E-02
1.000	1.293E 00	6.304E-02	1.356E 00	6.198E-01	2.658E-02
1.100	1.290E 00	6.774E-02	1.358E 00	6.935E-01	2.854E-02
1.200	1.288E 00	7.248E-02	1.361E 00	7.670E-01	3.046E-02
1.300	1.288E 00	7.725E-02	1.366E 00	8.404E-01	3.234E-02

ELECTRONS IN COPPER

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.289E 00	8.206E-02	1.371E 00	9.135E-01	3.419E-02
1.500	1.291E 00	8.689E-02	1.378E 00	9.862E-01	3.601E-02
1.600	1.293E 00	9.176E-02	1.385E 00	1.059E 00	3.780E-02
1.700	1.296E 00	9.659E-02	1.392E 00	1.131E 00	3.956E-02
1.800	1.299E 00	1.015E-01	1.400E 00	1.202E 00	4.131E-02
1.900	1.302E 00	1.065E-01	1.408E 00	1.273E 00	4.303E-02
2.000	1.305E 00	1.115E-01	1.417E 00	1.344E 00	4.474E-02
2.200	1.312E 00	1.216E-01	1.433E 00	1.485E 00	4.810E-02
2.400	1.319E 00	1.318E-01	1.450E 00	1.623E 00	5.141E-02
2.600	1.325E 00	1.421E-01	1.467E 00	1.760E 00	5.468E-02
2.800	1.332E 00	1.529E-01	1.485E 00	1.896E 00	5.791E-02
3.000	1.338E 00	1.635E-01	1.502E 00	2.030E 00	6.111E-02
3.500	1.353E 00	1.902E-01	1.544E 00	2.358E 00	6.896E-02
4.000	1.367E 00	2.173E-01	1.584E 00	2.678E 00	7.662E-02
4.500	1.380E 00	2.446E-01	1.624E 00	2.990E 00	8.409E-02
5.000	1.391E 00	2.724E-01	1.663E 00	3.294E 00	9.141E-02
5.500	1.401E 00	3.007E-01	1.702E 00	3.591E 00	9.857E-02
6.000	1.411E 00	3.292E-01	1.740E 00	3.881E 00	1.056E-01
6.500	1.419E 00	3.582E-01	1.778E 00	4.166E 00	1.125E-01
7.000	1.428E 00	3.875E-01	1.815E 00	4.444E 00	1.193E-01
7.500	1.435E 00	4.171E-01	1.852E 00	4.717E 00	1.260E-01
8.000	1.442E 00	4.470E-01	1.889E 00	4.984E 00	1.325E-01
8.500	1.449E 00	4.771E-01	1.926E 00	5.246E 00	1.390E-01
9.000	1.455E 00	5.104E-01	1.965E 00	5.503E 00	1.454E-01
9.500	1.460E 00	5.412E-01	2.002E 00	5.755E 00	1.517E-01
10.000	1.466E 00	5.722E-01	2.038E 00	6.003E 00	1.579E-01
20.000	1.535E 00	1.224E 00	2.759E 00	1.020E 01	2.632E-01
30.000	1.573E 00	1.917E 00	3.490E 00	1.342E 01	3.421E-01
40.000	1.597E 00	2.637E 00	4.234E 00	1.602E 01	4.037E-01
50.000	1.616E 00	3.365E 00	4.981E 00	1.819E 01	4.530E-01
60.000	1.631E 00	4.101E 00	5.732E 00	2.006E 01	4.936E-01
80.000	1.653E 00	5.588E 00	7.242E 00	2.316E 01	5.566E-01
100.000	1.670E 00	7.086E 00	8.756E 00	2.567E 01	6.036E-01
200.000	1.721E 00	1.468E 01	1.640E 01	3.388E 01	7.321E-01
300.000	1.750E 00	2.234E 01	2.409E 01	3.888E 01	7.925E-01
400.000	1.770E 00	3.002E 01	3.179E 01	4.249E 01	8.285E-01
500.000	1.786E 00	3.770E 01	3.949E 01	4.530E 01	8.528E-01
600.000	1.799E 00	4.540E 01	4.720E 01	4.762E 01	8.704E-01
800.000	1.819E 00	6.081E 01	6.263E 01	5.128E 01	8.945E-01
1000.000	1.835E 00	7.623E 01	7.807E 01	5.414E 01	9.104E-01

ELECTRONS IN KRYPTON

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.182E 01	2.083E-02	1.185E 01	5.194E-04	1.052E-03
0.015	8.933E 00	2.085E-02	8.954E 00	1.011E-03	1.384E-03
0.020	7.297E 00	2.057E-02	7.318E 00	1.632E-03	1.682E-03
0.025	6.235E 00	2.087E-02	6.256E 00	2.374E-03	1.960E-03
0.030	5.484E 00	2.135E-02	5.505E 00	3.229E-03	2.234E-03
0.035	4.923E 00	2.202E-02	4.946E 00	4.189E-03	2.510E-03
0.040	4.488E 00	2.249E-02	4.510E 00	5.249E-03	2.787E-03
0.045	4.139E 00	2.291E-02	4.162E 00	6.404E-03	3.060E-03
0.050	3.853E 00	2.330E-02	3.876E 00	7.650E-03	3.330E-03
0.055	3.613E 00	2.366E-02	3.637E 00	8.983E-03	3.596E-03
0.060	3.410E 00	2.399E-02	3.434E 00	1.040E-02	3.859E-03
0.065	3.236E 00	2.431E-02	3.260E 00	1.189E-02	4.118E-03
0.070	3.084E 00	2.461E-02	3.109E 00	1.346E-02	4.373E-03
0.075	2.951E 00	2.490E-02	2.976E 00	1.511E-02	4.624E-03
0.080	2.833E 00	2.517E-02	2.858E 00	1.682E-02	4.871E-03
0.085	2.728E 00	2.524E-02	2.754E 00	1.861E-02	5.112E-03
0.090	2.634E 00	2.551E-02	2.660E 00	2.046E-02	5.349E-03
0.095	2.549E 00	2.577E-02	2.575E 00	2.237E-02	5.583E-03
0.100	2.472E 00	2.604E-02	2.498E 00	2.434E-02	5.815E-03
0.150	1.973E 00	2.864E-02	2.002E 00	4.697E-02	8.010E-03
0.200	1.719E 00	3.101E-02	1.750E 00	7.384E-02	1.002E-02
0.250	1.567E 00	3.372E-02	1.600E 00	1.038E-01	1.190E-02
0.300	1.467E 00	3.656E-02	1.504E 00	1.361E-01	1.370E-02
0.350	1.399E 00	3.957E-02	1.439E 00	1.701E-01	1.544E-02
0.400	1.350E 00	4.247E-02	1.392E 00	2.055E-01	1.714E-02
0.450	1.314E 00	4.537E-02	1.359E 00	2.419E-01	1.879E-02
0.500	1.287E 00	4.822E-02	1.335E 00	2.790E-01	2.038E-02
0.550	1.266E 00	5.103E-02	1.317E 00	3.167E-01	2.193E-02
0.600	1.250E 00	5.381E-02	1.304E 00	3.549E-01	2.344E-02
0.650	1.238E 00	5.657E-02	1.295E 00	3.934E-01	2.490E-02
0.700	1.229E 00	5.930E-02	1.288E 00	4.321E-01	2.633E-02
0.750	1.222E 00	6.202E-02	1.284E 00	4.710E-01	2.772E-02
0.800	1.217E 00	6.472E-02	1.282E 00	5.099E-01	2.907E-02
0.850	1.213E 00	6.654E-02	1.280E 00	5.490E-01	3.036E-02
0.900	1.210E 00	6.922E-02	1.279E 00	5.881E-01	3.162E-02
0.950	1.208E 00	7.192E-02	1.280E 00	6.271E-01	3.286E-02
1.000	1.207E 00	7.463E-02	1.282E 00	6.662E-01	3.408E-02
1.100	1.207E 00	8.010E-02	1.287E 00	7.440E-01	3.645E-02
1.200	1.209E 00	8.562E-02	1.294E 00	8.215E-01	3.877E-02
1.300	1.211E 00	9.119E-02	1.303E 00	8.985E-01	4.102E-02

ELECTRONS IN KRYPTON

ENERGY	STOPPING POWER COLLISION	STOPPING POWER RADIATION	STOPPING POWER TOTAL	RANGE	RADIATION YIELD
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.215E 00	9.681E-02	1.312E 00	9.750E-01	4.323E-02
1.500	1.219E 00	1.025E-01	1.322E 00	1.051E 00	4.539E-02
1.600	1.224E 00	1.082E-01	1.332E 00	1.126E 00	4.751E-02
1.700	1.229E 00	1.140E-01	1.343E 00	1.201E 00	4.960E-02
1.800	1.234E 00	1.198E-01	1.354E 00	1.275E 00	5.166E-02
1.900	1.239E 00	1.256E-01	1.365E 00	1.349E 00	5.369E-02
2.000	1.245E 00	1.314E-01	1.376E 00	1.422E 00	5.570E-02
2.200	1.255E 00	1.432E-01	1.399E 00	1.566E 00	5.963E-02
2.400	1.266E 00	1.552E-01	1.421E 00	1.708E 00	6.348E-02
2.600	1.277E 00	1.672E-01	1.444E 00	1.847E 00	6.725E-02
2.800	1.287E 00	1.798E-01	1.467E 00	1.985E 00	7.095E-02
3.000	1.297E 00	1.921E-01	1.489E 00	2.120E 00	7.461E-02
3.500	1.320E 00	2.230E-01	1.543E 00	2.450E 00	8.350E-02
4.000	1.342E 00	2.542E-01	1.596E 00	2.769E 00	9.206E-02
4.500	1.361E 00	2.855E-01	1.647E 00	3.077E 00	1.003E-01
5.000	1.379E 00	3.173E-01	1.697E 00	3.376E 00	1.083E-01
5.500	1.396E 00	3.495E-01	1.746E 00	3.667E 00	1.161E-01
6.000	1.412E 00	3.821E-01	1.794E 00	3.949E 00	1.236E-01
6.500	1.426E 00	4.151E-01	1.841E 00	4.224E 00	1.310E-01
7.000	1.440E 00	4.485E-01	1.888E 00	4.492E 00	1.381E-01
7.500	1.452E 00	4.821E-01	1.935E 00	4.754E 00	1.452E-01
8.000	1.464E 00	5.161E-01	1.981E 00	5.009E 00	1.520E-01
8.500	1.476E 00	5.505E-01	2.026E 00	5.259E 00	1.587E-01
9.000	1.487E 00	5.881E-01	2.075E 00	5.503E 00	1.653E-01
9.500	1.497E 00	6.231E-01	2.120E 00	5.741E 00	1.718E-01
10.000	1.507E 00	6.583E-01	2.165E 00	5.975E 00	1.782E-01
20.000	1.640E 00	1.395E 00	3.036E 00	9.852E 00	2.833E-01
30.000	1.720E 00	2.180E 00	3.900E 00	1.275E 01	3.597E-01
40.000	1.777E 00	2.999E 00	4.775E 00	1.506E 01	4.187E-01
50.000	1.821E 00	3.827E 00	5.647E 00	1.699E 01	4.658E-01
60.000	1.854E 00	4.663E 00	6.517E 00	1.863E 01	5.044E-01
80.000	1.904E 00	6.352E 00	8.256E 00	2.135E 01	5.644E-01
100.000	1.941E 00	8.050E 00	9.991E 00	2.355E 01	6.092E-01
200.000	2.043E 00	1.666E 01	1.870E 01	3.075E 01	7.329E-01
300.000	2.095E 00	2.535E 01	2.744E 01	3.514E 01	7.916E-01
400.000	2.130E 00	3.406E 01	3.619E 01	3.830E 01	8.270E-01
500.000	2.154E 00	4.276E 01	4.492E 01	4.078E 01	8.510E-01
600.000	2.174E 00	5.149E 01	5.366E 01	4.281E 01	8.685E-01
800.000	2.202E 00	6.896E 01	7.116E 01	4.604E 01	8.926E-01
1000.000	2.223E 00	8.643E 01	8.866E 01	4.855E 01	9.085E-01

ELECTRONS IN SILVER

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.113E 01	2.740E-02	1.116E 01	5.656E-04	1.501E-03
0.015	8.475E 00	2.744E-02	8.502E 00	1.085E-03	1.950E-03
0.020	6.956E 00	2.708E-02	6.983E 00	1.738E-03	2.353E-03
0.025	5.962E 00	2.752E-02	5.990E 00	2.514E-03	2.729E-03
0.030	5.257E 00	2.820E-02	5.285E 00	3.405E-03	3.101E-03
0.035	4.728E 00	2.914E-02	4.758E 00	4.404E-03	3.477E-03
0.040	4.316E 00	2.981E-02	4.346E 00	5.505E-03	3.855E-03
0.045	3.986E 00	3.041E-02	4.016E 00	6.703E-03	4.228E-03
0.050	3.714E 00	3.096E-02	3.745E 00	7.993E-03	4.597E-03
0.055	3.487E 00	3.147E-02	3.518E 00	9.372E-03	4.962E-03
0.060	3.294E 00	3.196E-02	3.326E 00	1.083E-02	5.322E-03
0.065	3.127E 00	3.241E-02	3.160E 00	1.238E-02	5.676E-03
0.070	2.983E 00	3.285E-02	3.016E 00	1.400E-02	6.027E-03
0.075	2.856E 00	3.327E-02	2.889E 00	1.569E-02	6.372E-03
0.080	2.743E 00	3.368E-02	2.777E 00	1.746E-02	6.713E-03
0.085	2.643E 00	3.396E-02	2.677E 00	1.929E-02	7.047E-03
0.090	2.553E 00	3.435E-02	2.587E 00	2.119E-02	7.377E-03
0.095	2.472E 00	3.474E-02	2.506E 00	2.316E-02	7.703E-03
0.100	2.398E 00	3.511E-02	2.433E 00	2.518E-02	8.025E-03
0.150	1.920E 00	3.870E-02	1.958E 00	4.836E-02	1.107E-02
0.200	1.674E 00	4.178E-02	1.716E 00	7.579E-02	1.383E-02
0.250	1.529E 00	4.535E-02	1.574E 00	1.063E-01	1.638E-02
0.300	1.434E 00	4.908E-02	1.483E 00	1.391E-01	1.881E-02
0.350	1.368E 00	5.304E-02	1.421E 00	1.736E-01	2.116E-02
0.400	1.321E 00	5.684E-02	1.378E 00	2.093E-01	2.342E-02
0.450	1.286E 00	6.067E-02	1.346E 00	2.461E-01	2.562E-02
0.500	1.260E 00	6.441E-02	1.324E 00	2.835E-01	2.774E-02
0.550	1.241E 00	6.811E-02	1.309E 00	3.215E-01	2.980E-02
0.600	1.225E 00	7.177E-02	1.297E 00	3.599E-01	3.179E-02
0.650	1.213E 00	7.540E-02	1.288E 00	3.986E-01	3.372E-02
0.700	1.204E 00	7.900E-02	1.283E 00	4.375E-01	3.560E-02
0.750	1.196E 00	8.258E-02	1.279E 00	4.765E-01	3.744E-02
0.800	1.191E 00	8.613E-02	1.277E 00	5.157E-01	3.922E-02
0.850	1.187E 00	8.830E-02	1.275E 00	5.549E-01	4.091E-02
0.900	1.183E 00	9.183E-02	1.275E 00	5.941E-01	4.256E-02
0.950	1.181E 00	9.538E-02	1.276E 00	6.333E-01	4.419E-02
1.000	1.179E 00	9.897E-02	1.278E 00	6.724E-01	4.578E-02
1.100	1.178E 00	1.062E-01	1.284E 00	7.505E-01	4.890E-02
1.200	1.178E 00	1.135E-01	1.291E 00	8.282E-01	5.193E-02
1.300	1.179E 00	1.209E-01	1.300E 00	9.054E-01	5.490E-02

ELECTRONS IN SILVER

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.181E 00	1.284E-01	1.310E 00	9.820E-01	5.781E-02
1.500	1.184E 00	1.360E-01	1.320E 00	1.058E 00	6.066E-02
1.600	1.187E 00	1.437E-01	1.330E 00	1.134E 00	6.346E-02
1.700	1.190E 00	1.517E-01	1.342E 00	1.208E 00	6.624E-02
1.800	1.194E 00	1.595E-01	1.353E 00	1.283E 00	6.897E-02
1.900	1.197E 00	1.672E-01	1.365E 00	1.356E 00	7.167E-02
2.000	1.201E 00	1.750E-01	1.376E 00	1.429E 00	7.433E-02
2.200	1.209E 00	1.907E-01	1.399E 00	1.573E 00	7.955E-02
2.400	1.216E 00	2.064E-01	1.423E 00	1.715E 00	8.464E-02
2.600	1.224E 00	2.221E-01	1.446E 00	1.854E 00	8.962E-02
2.800	1.231E 00	2.378E-01	1.469E 00	1.992E 00	9.449E-02
3.000	1.238E 00	2.537E-01	1.491E 00	2.127E 00	9.926E-02
3.500	1.254E 00	2.937E-01	1.548E 00	2.456E 00	1.108E-01
4.000	1.269E 00	3.343E-01	1.603E 00	2.773E 00	1.219E-01
4.500	1.282E 00	3.750E-01	1.657E 00	3.080E 00	1.325E-01
5.000	1.294E 00	4.164E-01	1.710E 00	3.377E 00	1.427E-01
5.500	1.305E 00	4.581E-01	1.763E 00	3.665E 00	1.526E-01
6.000	1.315E 00	5.003E-01	1.815E 00	3.944E 00	1.622E-01
6.500	1.324E 00	5.429E-01	1.867E 00	4.216E 00	1.715E-01
7.000	1.333E 00	5.859E-01	1.918E 00	4.480E 00	1.806E-01
7.500	1.340E 00	6.292E-01	1.970E 00	4.737E 00	1.894E-01
8.000	1.348E 00	6.729E-01	2.021E 00	4.988E 00	1.979E-01
8.500	1.355E 00	7.168E-01	2.071E 00	5.233E 00	2.063E-01
9.000	1.361E 00	7.637E-01	2.125E 00	5.471E 00	2.144E-01
9.500	1.367E 00	8.084E-01	2.175E 00	5.703E 00	2.224E-01
10.000	1.373E 00	8.533E-01	2.226E 00	5.931E 00	2.301E-01
20.000	1.446E 00	1.785E 00	3.231E 00	9.637E 00	3.534E-01
30.000	1.485E 00	2.780E 00	4.264E 00	1.232E 01	4.376E-01
40.000	1.510E 00	3.824E 00	5.335E 00	1.442E 01	4.999E-01
50.000	1.530E 00	4.879E 00	6.408E 00	1.612E 01	5.480E-01
60.000	1.545E 00	5.944E 00	7.488E 00	1.757E 01	5.864E-01
80.000	1.568E 00	8.094E 00	9.661E 00	1.991E 01	6.442E-01
100.000	1.585E 00	1.025E 01	1.184E 01	2.178E 01	6.859E-01
200.000	1.635E 00	2.121E 01	2.284E 01	2.775E 01	7.948E-01
300.000	1.663E 00	3.225E 01	3.391E 01	3.133E 01	8.436E-01
400.000	1.682E 00	4.330E 01	4.499E 01	3.388E 01	8.720E-01
500.000	1.697E 00	5.438E 01	5.608E 01	3.586E 01	8.909E-01
600.000	1.709E 00	6.548E 01	6.719E 01	3.749E 01	9.045E-01
800.000	1.729E 00	8.768E 01	8.941E 01	4.006E 01	9.228E-01
1000.000	1.744E 00	1.099E 02	1.116E 02	4.206E 01	9.348E-01

ELECTRONS IN TIN

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.056E 01	2.815E-02	1.059E 01	6.000E-04	1.633E-03
0.015	8.061E 00	2.819E-02	8.089E 00	1.146E-03	2.115E-03
0.020	6.624E 00	2.769E-02	6.652E 00	1.832E-03	2.545E-03
0.025	5.683E 00	2.826E-02	5.711E 00	2.646E-03	2.946E-03
0.030	5.013E 00	2.914E-02	5.042E 00	3.581E-03	3.348E-03
0.035	4.511E 00	3.039E-02	4.542E 00	4.627E-03	3.762E-03
0.040	4.120E 00	3.122E-02	4.151E 00	5.780E-03	4.180E-03
0.045	3.806E 00	3.195E-02	3.838E 00	7.035E-03	4.596E-03
0.050	3.547E 00	3.260E-02	3.580E 00	8.385E-03	5.008E-03
0.055	3.331E 00	3.318E-02	3.364E 00	9.827E-03	5.415E-03
0.060	3.147E 00	3.372E-02	3.181E 00	1.136E-02	5.817E-03
0.065	2.989E 00	3.422E-02	3.023E 00	1.297E-02	6.213E-03
0.070	2.851E 00	3.469E-02	2.886E 00	1.466E-02	6.603E-03
0.075	2.730E 00	3.513E-02	2.765E 00	1.643E-02	6.987E-03
0.080	2.623E 00	3.555E-02	2.658E 00	1.828E-02	7.365E-03
0.085	2.527E 00	3.559E-02	2.563E 00	2.020E-02	7.731E-03
0.090	2.441E 00	3.598E-02	2.477E 00	2.218E-02	8.090E-03
0.095	2.364E 00	3.638E-02	2.400E 00	2.423E-02	8.446E-03
0.100	2.294E 00	3.677E-02	2.330E 00	2.635E-02	8.797E-03
0.150	1.837E 00	4.054E-02	1.878E 00	5.053E-02	1.211E-02
0.200	1.604E 00	4.391E-02	1.648E 00	7.911E-02	1.513E-02
0.250	1.465E 00	4.774E-02	1.512E 00	1.109E-01	1.793E-02
0.300	1.374E 00	5.173E-02	1.425E 00	1.450E-01	2.060E-02
0.350	1.311E 00	5.599E-02	1.367E 00	1.809E-01	2.318E-02
0.400	1.266E 00	5.996E-02	1.326E 00	2.180E-01	2.567E-02
0.450	1.233E 00	6.388E-02	1.296E 00	2.562E-01	2.806E-02
0.500	1.208E 00	6.773E-02	1.276E 00	2.951E-01	3.038E-02
0.550	1.189E 00	7.152E-02	1.261E 00	3.345E-01	3.261E-02
0.600	1.175E 00	7.528E-02	1.250E 00	3.743E-01	3.476E-02
0.650	1.164E 00	7.900E-02	1.243E 00	4.144E-01	3.685E-02
0.700	1.155E 00	8.269E-02	1.238E 00	4.547E-01	3.887E-02
0.750	1.149E 00	8.636E-02	1.235E 00	4.952E-01	4.084E-02
0.800	1.144E 00	8.999E-02	1.234E 00	5.357E-01	4.275E-02
0.850	1.140E 00	9.230E-02	1.232E 00	5.763E-01	4.456E-02
0.900	1.137E 00	9.591E-02	1.233E 00	6.168E-01	4.633E-02
0.950	1.135E 00	9.954E-02	1.235E 00	6.573E-01	4.806E-02
1.000	1.134E 00	1.032E-01	1.237E 00	6.978E-01	4.975E-02
1.100	1.133E 00	1.106E-01	1.244E 00	7.784E-01	5.306E-02
1.200	1.134E 00	1.180E-01	1.252E 00	8.586E-01	5.628E-02
1.300	1.135E 00	1.255E-01	1.261E 00	9.382E-01	5.940E-02

ELECTRONS IN TIN

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.138E 00	1.331E-01	1.271E 00	1.017E 00	6.245E-02
1.500	1.141E 00	1.407E-01	1.281E 00	1.096E 00	6.544E-02
1.600	1.144E 00	1.484E-01	1.292E 00	1.173E 00	6.837E-02
1.700	1.148E 00	1.563E-01	1.304E 00	1.250E 00	7.126E-02
1.800	1.151E 00	1.641E-01	1.316E 00	1.327E 00	7.410E-02
1.900	1.155E 00	1.720E-01	1.327E 00	1.402E 00	7.689E-02
2.000	1.159E 00	1.799E-01	1.339E 00	1.477E 00	7.964E-02
2.200	1.167E 00	1.957E-01	1.363E 00	1.625E 00	8.504E-02
2.400	1.175E 00	2.117E-01	1.387E 00	1.771E 00	9.029E-02
2.600	1.183E 00	2.278E-01	1.410E 00	1.914E 00	9.543E-02
2.800	1.190E 00	2.443E-01	1.434E 00	2.054E 00	1.005E-01
3.000	1.197E 00	2.606E-01	1.458E 00	2.193E 00	1.054E-01
3.500	1.214E 00	3.018E-01	1.516E 00	2.529E 00	1.173E-01
4.000	1.229E 00	3.434E-01	1.572E 00	2.853E 00	1.288E-01
4.500	1.243E 00	3.853E-01	1.628E 00	3.165E 00	1.398E-01
5.000	1.255E 00	4.277E-01	1.683E 00	3.467E 00	1.503E-01
5.500	1.266E 00	4.706E-01	1.737E 00	3.760E 00	1.605E-01
6.000	1.277E 00	5.139E-01	1.790E 00	4.043E 00	1.704E-01
6.500	1.286E 00	5.575E-01	1.844E 00	4.319E 00	1.800E-01
7.000	1.295E 00	6.015E-01	1.896E 00	4.586E 00	1.893E-01
7.500	1.303E 00	6.459E-01	1.949E 00	4.846E 00	1.983E-01
8.000	1.310E 00	6.905E-01	2.001E 00	5.099E 00	2.070E-01
8.500	1.318E 00	7.355E-01	2.053E 00	5.346E 00	2.155E-01
9.000	1.324E 00	7.836E-01	2.108E 00	5.586E 00	2.238E-01
9.500	1.330E 00	8.292E-01	2.160E 00	5.821E 00	2.319E-01
10.000	1.336E 00	8.751E-01	2.211E 00	6.050E 00	2.398E-01
20.000	1.412E 00	1.821E 00	3.233E 00	9.764E 00	3.642E-01
30.000	1.452E 00	2.830E 00	4.282E 00	1.245E 01	4.481E-01
40.000	1.479E 00	3.895E 00	5.374E 00	1.453E 01	5.099E-01
50.000	1.498E 00	4.969E 00	6.468E 00	1.622E 01	5.575E-01
60.000	1.514E 00	6.054E 00	7.568E 00	1.765E 01	5.954E-01
80.000	1.537E 00	8.243E 00	9.780E 00	1.997E 01	6.523E-01
100.000	1.555E 00	1.044E 01	1.200E 01	2.181E 01	6.934E-01
200.000	1.605E 00	2.160E 01	2.320E 01	2.770E 01	8.001E-01
300.000	1.633E 00	3.283E 01	3.447E 01	3.121E 01	8.478E-01
400.000	1.652E 00	4.409E 01	4.574E 01	3.372E 01	8.755E-01
500.000	1.666E 00	5.537E 01	5.703E 01	3.568E 01	8.940E-01
600.000	1.678E 00	6.666E 01	6.834E 01	3.728E 01	9.072E-01
800.000	1.697E 00	8.926E 01	9.096E 01	3.980E 01	9.250E-01
1000.000	1.711E 00	1.119E 02	1.136E 02	4.177E 01	9.367E-01

ELECTRONS IN XENON

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.007E 01	3.012E-02	1.010E 01	6.353E-04	1.824E-03
0.015	7.707E 00	3.064E-02	7.737E 00	1.207E-03	2.375E-03
0.020	6.343E 00	3.097E-02	6.374E 00	1.923E-03	2.885E-03
0.025	5.447E 00	3.157E-02	5.479E 00	2.773E-03	3.370E-03
0.030	4.809E 00	3.223E-02	4.842E 00	3.746E-03	3.843E-03
0.035	4.331E 00	3.297E-02	4.364E 00	4.836E-03	4.310E-03
0.040	3.957E 00	3.359E-02	3.990E 00	6.036E-03	4.770E-03
0.045	3.656E 00	3.419E-02	3.691E 00	7.340E-03	5.222E-03
0.050	3.409E 00	3.474E-02	3.444E 00	8.744E-03	5.668E-03
0.055	3.202E 00	3.526E-02	3.238E 00	1.024E-02	6.106E-03
0.060	3.026E 00	3.576E-02	3.062E 00	1.183E-02	6.538E-03
0.065	2.875E 00	3.625E-02	2.911E 00	1.351E-02	6.963E-03
0.070	2.743E 00	3.671E-02	2.780E 00	1.527E-02	7.382E-03
0.075	2.627E 00	3.717E-02	2.664E 00	1.710E-02	7.795E-03
0.080	2.524E 00	3.761E-02	2.562E 00	1.902E-02	8.203E-03
0.085	2.433E 00	3.794E-02	2.470E 00	2.101E-02	8.603E-03
0.090	2.350E 00	3.837E-02	2.389E 00	2.306E-02	8.998E-03
0.095	2.276E 00	3.880E-02	2.315E 00	2.519E-02	9.388E-03
0.100	2.209E 00	3.922E-02	2.248E 00	2.738E-02	9.774E-03
0.150	1.771E 00	4.328E-02	1.814E 00	5.244E-02	1.342E-02
0.200	1.547E 00	4.693E-02	1.594E 00	8.200E-02	1.674E-02
0.250	1.413E 00	5.099E-02	1.464E 00	1.148E-01	1.982E-02
0.300	1.326E 00	5.520E-02	1.381E 00	1.501E-01	2.276E-02
0.350	1.266E 00	5.961E-02	1.326E 00	1.871E-01	2.558E-02
0.400	1.223E 00	6.383E-02	1.287E 00	2.254E-01	2.829E-02
0.450	1.192E 00	6.804E-02	1.260E 00	2.647E-01	3.091E-02
0.500	1.168E 00	7.216E-02	1.240E 00	3.047E-01	3.343E-02
0.550	1.150E 00	7.621E-02	1.227E 00	3.452E-01	3.586E-02
0.600	1.137E 00	8.020E-02	1.217E 00	3.862E-01	3.821E-02
0.650	1.127E 00	8.415E-02	1.211E 00	4.274E-01	4.048E-02
0.700	1.119E 00	8.806E-02	1.207E 00	4.687E-01	4.267E-02
0.750	1.113E 00	9.193E-02	1.205E 00	5.102E-01	4.480E-02
0.800	1.109E 00	9.577E-02	1.205E 00	5.517E-01	4.687E-02
0.850	1.106E 00	9.802E-02	1.204E 00	5.932E-01	4.882E-02
0.900	1.104E 00	1.018E-01	1.206E 00	6.347E-01	5.072E-02
0.950	1.103E 00	1.056E-01	1.208E 00	6.762E-01	5.257E-02
1.000	1.102E 00	1.095E-01	1.212E 00	7.175E-01	5.438E-02
1.100	1.103E 00	1.172E-01	1.220E 00	7.997E-01	5.791E-02
1.200	1.105E 00	1.250E-01	1.230E 00	8.814E-01	6.133E-02
1.300	1.108E 00	1.329E-01	1.241E 00	9.623E-01	6.464E-02

ELECTRONS IN XENON

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.112E 00	1.409E-01	1.253E 00	1.043E 00	6.786E-02
1.500	1.116E 00	1.489E-01	1.265E 00	1.122E 00	7.101E-02
1.600	1.121E 00	1.570E-01	1.278E 00	1.201E 00	7.409E-02
1.700	1.126E 00	1.652E-01	1.292E 00	1.278E 00	7.711E-02
1.800	1.131E 00	1.734E-01	1.305E 00	1.355E 00	8.007E-02
1.900	1.137E 00	1.817E-01	1.318E 00	1.432E 00	8.298E-02
2.000	1.142E 00	1.900E-01	1.332E 00	1.507E 00	8.584E-02
2.200	1.153E 00	2.066E-01	1.359E 00	1.656E 00	9.143E-02
2.400	1.163E 00	2.235E-01	1.387E 00	1.801E 00	9.686E-02
2.600	1.173E 00	2.404E-01	1.414E 00	1.944E 00	1.022E-01
2.800	1.183E 00	2.582E-01	1.442E 00	2.084E 00	1.073E-01
3.000	1.193E 00	2.755E-01	1.468E 00	2.222E 00	1.124E-01
3.500	1.216E 00	3.188E-01	1.534E 00	2.555E 00	1.246E-01
4.000	1.236E 00	3.625E-01	1.599E 00	2.874E 00	1.362E-01
4.500	1.255E 00	4.062E-01	1.661E 00	3.181E 00	1.472E-01
5.000	1.273E 00	4.505E-01	1.723E 00	3.476E 00	1.578E-01
5.500	1.289E 00	4.952E-01	1.784E 00	3.761E 00	1.680E-01
6.000	1.304E 00	5.404E-01	1.844E 00	4.037E 00	1.778E-01
6.500	1.318E 00	5.860E-01	1.904E 00	4.304E 00	1.872E-01
7.000	1.331E 00	6.319E-01	1.963E 00	4.563E 00	1.963E-01
7.500	1.343E 00	6.782E-01	2.021E 00	4.814E 00	2.052E-01
8.000	1.354E 00	7.249E-01	2.079E 00	5.058E 00	2.137E-01
8.500	1.365E 00	7.718E-01	2.137E 00	5.295E 00	2.220E-01
9.000	1.376E 00	8.243E-01	2.200E 00	5.525E 00	2.301E-01
9.500	1.385E 00	8.721E-01	2.257E 00	5.750E 00	2.380E-01
10.000	1.395E 00	9.201E-01	2.315E 00	5.969E 00	2.457E-01
20.000	1.523E 00	1.900E 00	3.423E 00	9.491E 00	3.654E-01
30.000	1.599E 00	2.945E 00	4.544E 00	1.202E 01	4.453E-01
40.000	1.653E 00	4.055E 00	5.708E 00	1.398E 01	5.043E-01
50.000	1.692E 00	5.173E 00	6.865E 00	1.557E 01	5.501E-01
60.000	1.724E 00	6.302E 00	8.025E 00	1.692E 01	5.868E-01
80.000	1.771E 00	8.580E 00	1.035E 01	1.911E 01	6.423E-01
100.000	1.807E 00	1.087E 01	1.268E 01	2.085E 01	6.826E-01
200.000	1.907E 00	2.247E 01	2.438E 01	2.644E 01	7.894E-01
300.000	1.961E 00	3.416E 01	3.613E 01	2.979E 01	8.380E-01
400.000	1.996E 00	4.587E 01	4.787E 01	3.219E 01	8.666E-01
500.000	2.021E 00	5.761E 01	5.963E 01	3.405E 01	8.858E-01
600.000	2.041E 00	6.935E 01	7.140E 01	3.559E 01	8.997E-01
800.000	2.072E 00	9.287E 01	9.494E 01	3.801E 01	9.185E-01
1000.000	2.094E 00	1.164E 02	1.185E 02	3.989E 01	9.309E-01

ELECTRONS IN TUNGSTEN

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	8.882E 00	4.022E-02	8.922E 00	7.603E-04	2.869E-03
0.015	6.883E 00	4.097E-02	6.924E 00	1.403E-03	3.652E-03
0.020	5.707E 00	4.150E-02	5.748E 00	2.200E-03	4.383E-03
0.025	4.924E 00	4.232E-02	4.966E 00	3.139E-03	5.081E-03
0.030	4.363E 00	4.320E-02	4.406E 00	4.210E-03	5.762E-03
0.035	3.939E 00	4.416E-02	3.984E 00	5.406E-03	6.431E-03
0.040	3.607E 00	4.499E-02	3.652E 00	6.719E-03	7.090E-03
0.045	3.340E 00	4.579E-02	3.385E 00	8.142E-03	7.738E-03
0.050	3.119E 00	4.653E-02	3.165E 00	9.671E-03	8.376E-03
0.055	2.933E 00	4.724E-02	2.981E 00	1.130E-02	9.003E-03
0.060	2.775E 00	4.793E-02	2.823E 00	1.302E-02	9.621E-03
0.065	2.639E 00	4.859E-02	2.688E 00	1.484E-02	1.023E-02
0.070	2.520E 00	4.923E-02	2.570E 00	1.674E-02	1.083E-02
0.075	2.416E 00	4.985E-02	2.466E 00	1.873E-02	1.142E-02
0.080	2.323E 00	5.046E-02	2.374E 00	2.080E-02	1.200E-02
0.085	2.241E 00	5.089E-02	2.291E 00	2.294E-02	1.257E-02
0.090	2.166E 00	5.149E-02	2.218E 00	2.516E-02	1.314E-02
0.095	2.099E 00	5.208E-02	2.151E 00	2.745E-02	1.369E-02
0.100	2.038E 00	5.266E-02	2.091E 00	2.981E-02	1.424E-02
0.150	1.641E 00	5.837E-02	1.699E 00	5.664E-02	1.945E-02
0.200	1.437E 00	6.384E-02	1.501E 00	8.812E-02	2.421E-02
0.250	1.315E 00	6.940E-02	1.385E 00	1.229E-01	2.864E-02
0.300	1.236E 00	7.499E-02	1.311E 00	1.601E-01	3.282E-02
0.350	1.182E 00	8.063E-02	1.262E 00	1.990E-01	3.678E-02
0.400	1.143E 00	8.624E-02	1.229E 00	2.392E-01	4.057E-02
0.450	1.114E 00	9.197E-02	1.206E 00	2.803E-01	4.419E-02
0.500	1.093E 00	9.752E-02	1.191E 00	3.220E-01	4.769E-02
0.550	1.077E 00	1.030E-01	1.180E 00	3.642E-01	5.104E-02
0.600	1.065E 00	1.084E-01	1.174E 00	4.067E-01	5.427E-02
0.650	1.055E 00	1.137E-01	1.169E 00	4.494E-01	5.739E-02
0.700	1.049E 00	1.189E-01	1.168E 00	4.922E-01	6.040E-02
0.750	1.044E 00	1.241E-01	1.168E 00	5.350E-01	6.331E-02
0.800	1.040E 00	1.292E-01	1.169E 00	5.778E-01	6.612E-02
0.850	1.037E 00	1.318E-01	1.169E 00	6.206E-01	6.876E-02
0.900	1.035E 00	1.368E-01	1.172E 00	6.633E-01	7.131E-02
0.950	1.033E 00	1.419E-01	1.175E 00	7.059E-01	7.381E-02
1.000	1.033E 00	1.471E-01	1.180E 00	7.484E-01	7.626E-02
1.100	1.032E 00	1.575E-01	1.190E 00	8.328E-01	8.101E-02
1.200	1.033E 00	1.680E-01	1.201E 00	9.165E-01	8.560E-02
1.300	1.035E 00	1.787E-01	1.214E 00	9.993E-01	9.006E-02

ELECTRONS IN TUNGSTEN

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.038E 00	1.895E-01	1.228E 00	1.081E 00	9.439E-02
1.500	1.041E 00	2.003E-01	1.242E 00	1.162E 00	9.862E-02
1.600	1.045E 00	2.113E-01	1.256E 00	1.242E 00	1.028E-01
1.700	1.048E 00	2.231E-01	1.271E 00	1.321E 00	1.068E-01
1.800	1.052E 00	2.342E-01	1.286E 00	1.400E 00	1.108E-01
1.900	1.056E 00	2.453E-01	1.301E 00	1.477E 00	1.148E-01
2.000	1.060E 00	2.565E-01	1.316E 00	1.553E 00	1.186E-01
2.200	1.067E 00	2.788E-01	1.346E 00	1.704E 00	1.261E-01
2.400	1.075E 00	3.012E-01	1.376E 00	1.851E 00	1.333E-01
2.600	1.082E 00	3.236E-01	1.406E 00	1.994E 00	1.404E-01
2.800	1.089E 00	3.459E-01	1.435E 00	2.135E 00	1.472E-01
3.000	1.096E 00	3.684E-01	1.464E 00	2.273E 00	1.538E-01
3.500	1.112E 00	4.249E-01	1.537E 00	2.606E 00	1.696E-01
4.000	1.126E 00	4.818E-01	1.608E 00	2.924E 00	1.844E-01
4.500	1.139E 00	5.387E-01	1.677E 00	3.229E 00	1.984E-01
5.000	1.150E 00	5.962E-01	1.747E 00	3.521E 00	2.117E-01
5.500	1.161E 00	6.541E-01	1.815E 00	3.802E 00	2.244E-01
6.000	1.170E 00	7.124E-01	1.883E 00	4.072E 00	2.365E-01
6.500	1.179E 00	7.710E-01	1.950E 00	4.333E 00	2.480E-01
7.000	1.187E 00	8.300E-01	2.017E 00	4.585E 00	2.591E-01
7.500	1.195E 00	8.893E-01	2.084E 00	4.829E 00	2.698E-01
8.000	1.202E 00	9.489E-01	2.151E 00	5.065E 00	2.801E-01
8.500	1.208E 00	1.009E 00	2.217E 00	5.294E 00	2.900E-01
9.000	1.215E 00	1.077E 00	2.291E 00	5.516E 00	2.995E-01
9.500	1.220E 00	1.137E 00	2.358E 00	5.731E 00	3.088E-01
10.000	1.226E 00	1.198E 00	2.424E 00	5.940E 00	3.178E-01
20.000	1.296E 00	2.407E 00	3.703E 00	9.242E 00	4.504E-01
30.000	1.333E 00	3.700E 00	5.033E 00	1.155E 01	5.323E-01
40.000	1.357E 00	5.105E 00	6.462E 00	1.330E 01	5.904E-01
50.000	1.376E 00	6.511E 00	7.887E 00	1.470E 01	6.341E-01
60.000	1.390E 00	7.932E 00	9.322E 00	1.587E 01	6.682E-01
80.000	1.412E 00	1.080E 01	1.221E 01	1.773E 01	7.184E-01
100.000	1.428E 00	1.368E 01	1.511E 01	1.920E 01	7.539E-01
200.000	1.476E 00	2.828E 01	2.976E 01	2.383E 01	8.433E-01
300.000	1.502E 00	4.298E 01	4.449E 01	2.656E 01	8.820E-01
400.000	1.521E 00	5.771E 01	5.923E 01	2.851E 01	9.042E-01
500.000	1.535E 00	7.245E 01	7.399E 01	3.001E 01	9.187E-01
600.000	1.546E 00	8.722E 01	8.877E 01	3.124E 01	9.291E-01
800.000	1.564E 00	1.168E 02	1.183E 02	3.319E 01	9.430E-01
1000.000	1.578E 00	1.463E 02	1.479E 02	3.470E 01	9.521E-01

ELECTRONS IN GOLD

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	8.647E 00	4.383E-02	8.691E 00	7.944E-04	3.182E-03
0.015	6.722E 00	4.477E-02	6.766E 00	1.453E-03	4.069E-03
0.020	5.582E 00	4.490E-02	5.627E 00	2.268E-03	4.880E-03
0.025	4.822E 00	4.578E-02	4.868E 00	3.226E-03	5.642E-03
0.030	4.276E 00	4.686E-02	4.323E 00	4.319E-03	6.389E-03
0.035	3.863E 00	4.815E-02	3.911E 00	5.537E-03	7.130E-03
0.040	3.540E 00	4.916E-02	3.589E 00	6.873E-03	7.865E-03
0.045	3.278E 00	5.010E-02	3.328E 00	8.322E-03	8.589E-03
0.050	3.063E 00	5.096E-02	3.113E 00	9.876E-03	9.301E-03
0.055	2.881E 00	5.178E-02	2.933E 00	1.153E-02	1.000E-02
0.060	2.727E 00	5.256E-02	2.780E 00	1.328E-02	1.069E-02
0.065	2.594E 00	5.330E-02	2.647E 00	1.513E-02	1.137E-02
0.070	2.478E 00	5.402E-02	2.532E 00	1.706E-02	1.204E-02
0.075	2.375E 00	5.471E-02	2.430E 00	1.908E-02	1.270E-02
0.080	2.285E 00	5.538E-02	2.340E 00	2.117E-02	1.335E-02
0.085	2.204E 00	5.586E-02	2.259E 00	2.335E-02	1.399E-02
0.090	2.131E 00	5.651E-02	2.187E 00	2.560E-02	1.461E-02
0.095	2.065E 00	5.715E-02	2.122E 00	2.792E-02	1.523E-02
0.100	2.005E 00	5.778E-02	2.063E 00	3.031E-02	1.584E-02
0.150	1.616E 00	6.388E-02	1.680E 00	5.748E-02	2.160E-02
0.200	1.416E 00	6.944E-02	1.486E 00	8.929E-02	2.682E-02
0.250	1.297E 00	7.543E-02	1.372E 00	1.244E-01	3.164E-02
0.300	1.219E 00	8.155E-02	1.301E 00	1.619E-01	3.618E-02
0.350	1.166E 00	8.790E-02	1.253E 00	2.011E-01	4.050E-02
0.400	1.127E 00	9.403E-02	1.221E 00	2.416E-01	4.464E-02
0.450	1.100E 00	1.002E-01	1.200E 00	2.829E-01	4.859E-02
0.500	1.079E 00	1.062E-01	1.185E 00	3.248E-01	5.239E-02
0.550	1.062E 00	1.120E-01	1.174E 00	3.672E-01	5.604E-02
0.600	1.050E 00	1.178E-01	1.168E 00	4.099E-01	5.955E-02
0.650	1.041E 00	1.235E-01	1.164E 00	4.528E-01	6.293E-02
0.700	1.034E 00	1.291E-01	1.163E 00	4.958E-01	6.619E-02
0.750	1.028E 00	1.346E-01	1.163E 00	5.388E-01	6.934E-02
0.800	1.024E 00	1.401E-01	1.165E 00	5.818E-01	7.238E-02
0.850	1.022E 00	1.427E-01	1.164E 00	6.247E-01	7.522E-02
0.900	1.020E 00	1.481E-01	1.168E 00	6.676E-01	7.797E-02
0.950	1.018E 00	1.535E-01	1.172E 00	7.104E-01	8.065E-02
1.000	1.018E 00	1.590E-01	1.177E 00	7.529E-01	8.327E-02
1.100	1.018E 00	1.700E-01	1.187E 00	8.376E-01	8.835E-02
1.200	1.019E 00	1.811E-01	1.200E 00	9.213E-01	9.324E-02
1.300	1.021E 00	1.923E-01	1.213E 00	1.004E 00	9.797E-02

ELECTRONS IN GOLD

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.024E 00	2.036E-01	1.227E 00	1.086E 00	1.026E-01
1.500	1.027E 00	2.150E-01	1.242E 00	1.167E 00	1.070E-01
1.600	1.030E 00	2.265E-01	1.257E 00	1.247E 00	1.114E-01
1.700	1.034E 00	2.385E-01	1.273E 00	1.326E 00	1.156E-01
1.800	1.038E 00	2.502E-01	1.288E 00	1.404E 00	1.198E-01
1.900	1.042E 00	2.618E-01	1.303E 00	1.482E 00	1.239E-01
2.000	1.046E 00	2.735E-01	1.319E 00	1.558E 00	1.279E-01
2.200	1.053E 00	2.970E-01	1.350E 00	1.708E 00	1.357E-01
2.400	1.061E 00	3.206E-01	1.382E 00	1.854E 00	1.433E-01
2.600	1.068E 00	3.442E-01	1.413E 00	1.997E 00	1.505E-01
2.800	1.076E 00	3.684E-01	1.444E 00	2.137E 00	1.576E-01
3.000	1.082E 00	3.923E-01	1.475E 00	2.274E 00	1.645E-01
3.500	1.099E 00	4.520E-01	1.551E 00	2.605E 00	1.808E-01
4.000	1.113E 00	5.120E-01	1.625E 00	2.920E 00	1.961E-01
4.500	1.126E 00	5.719E-01	1.698E 00	3.221E 00	2.106E-01
5.000	1.138E 00	6.322E-01	1.770E 00	3.509E 00	2.242E-01
5.500	1.148E 00	6.930E-01	1.841E 00	3.786E 00	2.372E-01
6.000	1.158E 00	7.541E-01	1.912E 00	4.053E 00	2.496E-01
6.500	1.167E 00	8.155E-01	1.983E 00	4.310E 00	2.614E-01
7.000	1.175E 00	8.773E-01	2.053E 00	4.557E 00	2.727E-01
7.500	1.183E 00	9.393E-01	2.122E 00	4.797E 00	2.835E-01
8.000	1.190E 00	1.002E 00	2.192E 00	5.029E 00	2.939E-01
8.500	1.197E 00	1.064E 00	2.261E 00	5.253E 00	3.039E-01
9.000	1.203E 00	1.128E 00	2.331E 00	5.471E 00	3.135E-01
9.500	1.209E 00	1.191E 00	2.400E 00	5.682E 00	3.228E-01
10.000	1.215E 00	1.254E 00	2.469E 00	5.888E 00	3.318E-01
20.000	1.286E 00	2.553E 00	3.839E 00	9.108E 00	4.642E-01
30.000	1.324E 00	3.918E 00	5.242E 00	1.133E 01	5.461E-01
40.000	1.350E 00	5.345E 00	6.694E 00	1.302E 01	6.033E-01
50.000	1.368E 00	6.822E 00	8.190E 00	1.436E 01	6.460E-01
60.000	1.383E 00	8.310E 00	9.693E 00	1.548E 01	6.793E-01
80.000	1.405E 00	1.132E 01	1.272E 01	1.728E 01	7.281E-01
100.000	1.422E 00	1.434E 01	1.576E 01	1.869E 01	7.626E-01
200.000	1.470E 00	2.963E 01	3.111E 01	2.312E 01	8.492E-01
300.000	1.497E 00	4.504E 01	4.653E 01	2.574E 01	8.866E-01
400.000	1.515E 00	6.046E 01	6.197E 01	2.759E 01	9.079E-01
500.000	1.529E 00	7.591E 01	7.744E 01	2.903E 01	9.220E-01
600.000	1.541E 00	9.138E 01	9.292E 01	3.021E 01	9.320E-01
800.000	1.558E 00	1.223E 02	1.239E 02	3.207E 01	9.454E-01
1000.000	1.572E 00	1.533E 02	1.549E 02	3.351E 01	9.540E-01

ELECTRONS IN LEAD

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	8.419E 00	4.513E-02	8.464E 00	8.251E-04	3.372E-03
0.015	6.556E 00	4.614E-02	6.602E 00	1.501E-03	4.306E-03
0.020	5.450E 00	4.620E-02	5.496E 00	2.335E-03	5.158E-03
0.025	4.711E 00	4.713E-02	4.758E 00	3.316E-03	5.958E-03
0.030	4.179E 00	4.827E-02	4.228E 00	4.434E-03	6.742E-03
0.035	3.777E 00	4.967E-02	3.827E 00	5.679E-03	7.522E-03
0.040	3.462E 00	5.074E-02	3.513E 00	7.044E-03	8.296E-03
0.045	3.207E 00	5.172E-02	3.259E 00	8.524E-03	9.059E-03
0.050	2.997E 00	5.262E-02	3.049E 00	1.011E-02	9.810E-03
0.055	2.820E 00	5.346E-02	2.873E 00	1.180E-02	1.055E-02
0.060	2.669E 00	5.426E-02	2.724E 00	1.359E-02	1.127E-02
0.065	2.539E 00	5.503E-02	2.594E 00	1.547E-02	1.199E-02
0.070	2.426E 00	5.576E-02	2.481E 00	1.744E-02	1.269E-02
0.075	2.326E 00	5.647E-02	2.382E 00	1.950E-02	1.339E-02
0.080	2.237E 00	5.716E-02	2.294E 00	2.164E-02	1.407E-02
0.085	2.158E 00	5.745E-02	2.216E 00	2.386E-02	1.473E-02
0.090	2.087E 00	5.812E-02	2.145E 00	2.615E-02	1.539E-02
0.095	2.023E 00	5.878E-02	2.082E 00	2.852E-02	1.603E-02
0.100	1.964E 00	5.944E-02	2.024E 00	3.096E-02	1.667E-02
0.150	1.584E 00	6.593E-02	1.650E 00	5.863E-02	2.270E-02
0.200	1.389E 00	7.251E-02	1.461E 00	9.100E-02	2.824E-02
0.250	1.272E 00	7.864E-02	1.350E 00	1.267E-01	3.339E-02
0.300	1.196E 00	8.460E-02	1.280E 00	1.648E-01	3.820E-02
0.350	1.143E 00	9.041E-02	1.234E 00	2.046E-01	4.270E-02
0.400	1.106E 00	9.623E-02	1.203E 00	2.457E-01	4.695E-02
0.450	1.079E 00	1.020E-01	1.181E 00	2.877E-01	5.098E-02
0.500	1.059E 00	1.078E-01	1.167E 00	3.303E-01	5.482E-02
0.550	1.044E 00	1.136E-01	1.158E 00	3.733E-01	5.850E-02
0.600	1.033E 00	1.194E-01	1.152E 00	4.166E-01	6.204E-02
0.650	1.024E 00	1.252E-01	1.149E 00	4.601E-01	6.544E-02
0.700	1.018E 00	1.310E-01	1.149E 00	5.036E-01	6.873E-02
0.750	1.013E 00	1.367E-01	1.150E 00	5.471E-01	7.191E-02
0.800	1.010E 00	1.425E-01	1.153E 00	5.906E-01	7.500E-02
0.850	1.008E 00	1.487E-01	1.157E 00	6.339E-01	7.801E-02
0.900	1.003E 00	1.545E-01	1.157E 00	6.771E-01	8.096E-02
0.950	1.002E 00	1.603E-01	1.162E 00	7.202E-01	8.384E-02
1.000	1.002E 00	1.661E-01	1.168E 00	7.631E-01	8.666E-02
1.100	1.003E 00	1.776E-01	1.180E 00	8.483E-01	9.208E-02
1.200	1.005E 00	1.891E-01	1.194E 00	9.326E-01	9.728E-02
1.300	1.008E 00	2.005E-01	1.208E 00	1.016E 00	1.023E-01

ELECTRONS IN LEAD

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.011E 00	2.120E-01	1.223E 00	1.098E 00	1.071E-01
1.500	1.015E 00	2.234E-01	1.238E 00	1.179E 00	1.117E-01
1.600	1.019E 00	2.348E-01	1.254E 00	1.260E 00	1.163E-01
1.700	1.023E 00	2.457E-01	1.269E 00	1.339E 00	1.206E-01
1.800	1.027E 00	2.571E-01	1.284E 00	1.417E 00	1.249E-01
1.900	1.032E 00	2.686E-01	1.300E 00	1.495E 00	1.290E-01
2.000	1.036E 00	2.802E-01	1.316E 00	1.571E 00	1.330E-01
2.200	1.044E 00	3.035E-01	1.348E 00	1.721E 00	1.409E-01
2.400	1.053E 00	3.270E-01	1.380E 00	1.868E 00	1.484E-01
2.600	1.061E 00	3.508E-01	1.412E 00	2.011E 00	1.556E-01
2.800	1.069E 00	3.758E-01	1.444E 00	2.151E 00	1.627E-01
3.000	1.076E 00	3.999E-01	1.476E 00	2.288E 00	1.695E-01
3.500	1.093E 00	4.603E-01	1.554E 00	2.618E 00	1.858E-01
4.000	1.109E 00	5.212E-01	1.630E 00	2.933E 00	2.011E-01
4.500	1.123E 00	5.822E-01	1.705E 00	3.232E 00	2.155E-01
5.000	1.135E 00	6.437E-01	1.779E 00	3.519E 00	2.292E-01
5.500	1.147E 00	7.056E-01	1.852E 00	3.795E 00	2.421E-01
6.000	1.157E 00	7.678E-01	1.925E 00	4.060E 00	2.544E-01
6.500	1.167E 00	8.304E-01	1.997E 00	4.315E 00	2.662E-01
7.000	1.176E 00	8.933E-01	2.069E 00	4.561E 00	2.775E-01
7.500	1.184E 00	9.565E-01	2.140E 00	4.798E 00	2.882E-01
8.000	1.191E 00	1.020E 00	2.211E 00	5.028E 00	2.986E-01
8.500	1.199E 00	1.084E 00	2.282E 00	5.251E 00	3.086E-01
9.000	1.205E 00	1.146E 00	2.352E 00	5.466E 00	3.182E-01
9.500	1.212E 00	1.211E 00	2.422E 00	5.676E 00	3.274E-01
10.000	1.217E 00	1.275E 00	2.493E 00	5.879E 00	3.363E-01
20.000	1.293E 00	2.614E 00	3.907E 00	9.060E 00	4.682E-01
30.000	1.334E 00	4.003E 00	5.337E 00	1.124E 01	5.499E-01
40.000	1.360E 00	5.422E 00	6.783E 00	1.290E 01	6.065E-01
50.000	1.380E 00	6.923E 00	8.303E 00	1.423E 01	6.487E-01
60.000	1.396E 00	8.434E 00	9.829E 00	1.534E 01	6.817E-01
80.000	1.419E 00	1.148E 01	1.290E 01	1.711E 01	7.301E-01
100.000	1.436E 00	1.455E 01	1.599E 01	1.850E 01	7.642E-01
200.000	1.485E 00	3.008E 01	3.156E 01	2.287E 01	8.502E-01
300.000	1.511E 00	4.571E 01	4.722E 01	2.544E 01	8.873E-01
400.000	1.529E 00	6.136E 01	6.289E 01	2.727E 01	9.085E-01
500.000	1.543E 00	7.704E 01	7.858E 01	2.869E 01	9.225E-01
600.000	1.554E 00	9.274E 01	9.430E 01	2.985E 01	9.324E-01
800.000	1.571E 00	1.242E 02	1.257E 02	3.168E 01	9.457E-01
1000.000	1.585E 00	1.556E 02	1.572E 02	3.310E 01	9.543E-01

ELECTRONS IN URANIUM

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	7.874E 00	4.947E-02	7.924E 00	9.243E-04	4.044E-03
0.015	6.167E 00	5.061E-02	6.218E 00	1.643E-03	5.099E-03
0.020	5.143E 00	5.070E-02	5.194E 00	2.528E-03	6.067E-03
0.025	4.456E 00	5.171E-02	4.507E 00	3.565E-03	6.977E-03
0.030	3.959E 00	5.295E-02	4.012E 00	4.743E-03	7.870E-03
0.035	3.583E 00	5.444E-02	3.637E 00	6.054E-03	8.758E-03
0.040	3.286E 00	5.560E-02	3.342E 00	7.490E-03	9.639E-03
0.045	3.047E 00	5.667E-02	3.104E 00	9.044E-03	1.051E-02
0.050	2.849E 00	5.767E-02	2.907E 00	1.071E-02	1.136E-02
0.055	2.682E 00	5.861E-02	2.741E 00	1.248E-02	1.220E-02
0.060	2.540E 00	5.950E-02	2.600E 00	1.436E-02	1.303E-02
0.065	2.418E 00	6.035E-02	2.478E 00	1.633E-02	1.385E-02
0.070	2.311E 00	6.117E-02	2.372E 00	1.839E-02	1.465E-02
0.075	2.216E 00	6.197E-02	2.278E 00	2.054E-02	1.544E-02
0.080	2.133E 00	6.274E-02	2.195E 00	2.278E-02	1.622E-02
0.085	2.058E 00	6.325E-02	2.121E 00	2.510E-02	1.698E-02
0.090	1.990E 00	6.400E-02	2.054E 00	2.749E-02	1.773E-02
0.095	1.930E 00	6.474E-02	1.994E 00	2.996E-02	1.847E-02
0.100	1.874E 00	6.547E-02	1.940E 00	3.251E-02	1.920E-02
0.150	1.514E 00	7.253E-02	1.587E 00	6.133E-02	2.609E-02
0.200	1.329E 00	7.944E-02	1.408E 00	9.495E-02	3.235E-02
0.250	1.218E 00	8.605E-02	1.304E 00	1.320E-01	3.814E-02
0.300	1.146E 00	9.254E-02	1.238E 00	1.714E-01	4.352E-02
0.350	1.096E 00	9.892E-02	1.195E 00	2.125E-01	4.856E-02
0.400	1.061E 00	1.053E-01	1.166E 00	2.549E-01	5.331E-02
0.450	1.034E 00	1.116E-01	1.146E 00	2.982E-01	5.781E-02
0.500	1.015E 00	1.180E-01	1.133E 00	3.420E-01	6.211E-02
0.550	1.001E 00	1.243E-01	1.125E 00	3.863E-01	6.622E-02
0.600	9.903E-01	1.306E-01	1.121E 00	4.309E-01	7.016E-02
0.650	9.817E-01	1.370E-01	1.119E 00	4.755E-01	7.396E-02
0.700	9.756E-01	1.433E-01	1.119E 00	5.202E-01	7.762E-02
0.750	9.710E-01	1.496E-01	1.121E 00	5.649E-01	8.117E-02
0.800	9.677E-01	1.560E-01	1.124E 00	6.094E-01	8.461E-02
0.850	9.653E-01	1.626E-01	1.128E 00	6.539E-01	8.796E-02
0.900	9.638E-01	1.689E-01	1.133E 00	6.981E-01	9.122E-02
0.950	9.629E-01	1.752E-01	1.138E 00	7.421E-01	9.439E-02
1.000	9.625E-01	1.816E-01	1.144E 00	7.860E-01	9.749E-02
1.100	9.630E-01	1.942E-01	1.157E 00	8.729E-01	1.035E-01
1.200	9.646E-01	2.068E-01	1.171E 00	9.588E-01	1.092E-01
1.300	9.671E-01	2.194E-01	1.187E 00	1.044E 00	1.147E-01

ELECTRONS IN URANIUM

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	9.701E-01	2.321E-01	1.202E 00	1.127E 00	1.200E-01
1.500	9.736E-01	2.447E-01	1.218E 00	1.210E 00	1.251E-01
1.600	9.772E-01	2.573E-01	1.234E 00	1.291E 00	1.301E-01
1.700	9.811E-01	2.696E-01	1.251E 00	1.372E 00	1.349E-01
1.800	9.850E-01	2.822E-01	1.267E 00	1.451E 00	1.396E-01
1.900	9.890E-01	2.948E-01	1.284E 00	1.530E 00	1.442E-01
2.000	9.930E-01	3.075E-01	1.301E 00	1.607E 00	1.486E-01
2.200	1.001E 00	3.330E-01	1.334E 00	1.759E 00	1.572E-01
2.400	1.009E 00	3.586E-01	1.367E 00	1.907E 00	1.654E-01
2.600	1.016E 00	3.843E-01	1.401E 00	2.052E 00	1.733E-01
2.800	1.024E 00	4.108E-01	1.434E 00	2.193E 00	1.810E-01
3.000	1.030E 00	4.367E-01	1.467E 00	2.331E 00	1.884E-01
3.500	1.047E 00	5.016E-01	1.548E 00	2.662E 00	2.059E-01
4.000	1.061E 00	5.666E-01	1.628E 00	2.977E 00	2.222E-01
4.500	1.074E 00	6.314E-01	1.706E 00	3.277E 00	2.374E-01
5.000	1.086E 00	6.967E-01	1.783E 00	3.564E 00	2.517E-01
5.500	1.097E 00	7.623E-01	1.859E 00	3.839E 00	2.653E-01
6.000	1.107E 00	8.283E-01	1.935E 00	4.102E 00	2.781E-01
6.500	1.116E 00	8.946E-01	2.010E 00	4.356E 00	2.903E-01
7.000	1.124E 00	9.612E-01	2.085E 00	4.600E 00	3.019E-01
7.500	1.132E 00	1.028E 00	2.160E 00	4.836E 00	3.130E-01
8.000	1.139E 00	1.095E 00	2.234E 00	5.063E 00	3.237E-01
8.500	1.146E 00	1.163E 00	2.308E 00	5.283E 00	3.339E-01
9.000	1.152E 00	1.230E 00	2.382E 00	5.497E 00	3.437E-01
9.500	1.158E 00	1.298E 00	2.456E 00	5.703E 00	3.531E-01
10.000	1.164E 00	1.366E 00	2.530E 00	5.904E 00	3.621E-01
20.000	1.236E 00	2.770E 00	4.006E 00	9.018E 00	4.940E-01
30.000	1.274E 00	4.238E 00	5.512E 00	1.114E 01	5.739E-01
40.000	1.300E 00	5.760E 00	7.059E 00	1.274E 01	6.289E-01
50.000	1.319E 00	7.354E 00	8.673E 00	1.402E 01	6.697E-01
60.000	1.334E 00	8.961E 00	1.029E 01	1.507E 01	7.014E-01
80.000	1.356E 00	1.220E 01	1.356E 01	1.676E 01	7.477E-01
100.000	1.373E 00	1.546E 01	1.684E 01	1.808E 01	7.801E-01
200.000	1.421E 00	3.197E 01	3.339E 01	2.222E 01	8.611E-01
300.000	1.446E 00	4.858E 01	5.003E 01	2.465E 01	8.958E-01
400.000	1.464E 00	6.521E 01	6.668E 01	2.638E 01	9.156E-01
500.000	1.478E 00	8.188E 01	8.335E 01	2.772E 01	9.285E-01
600.000	1.489E 00	9.856E 01	1.001E 02	2.881E 01	9.377E-01
800.000	1.506E 00	1.320E 02	1.335E 02	3.053E 01	9.501E-01
1000.000	1.519E 00	1.653E 02	1.669E 02	3.187E 01	9.580E-01

ELECTRONS IN WATER

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.320E 01	5.069E-03	2.321E 01	2.436E-04	1.245E-04
0.015	1.690E 01	4.969E-03	1.691E 01	4.998E-04	1.686E-04
0.020	1.350E 01	4.904E-03	1.351E 01	8.331E-04	2.087E-04
0.025	1.136E 01	4.858E-03	1.137E 01	1.238E-03	2.460E-04
0.030	9.879E 00	4.825E-03	9.884E 00	1.712E-03	2.814E-04
0.035	8.789E 00	4.792E-03	8.794E 00	2.249E-03	3.150E-04
0.040	7.951E 00	4.788E-03	7.956E 00	2.848E-03	3.473E-04
0.045	7.287E 00	4.796E-03	7.292E 00	3.505E-03	3.787E-04
0.050	6.747E 00	4.812E-03	6.751E 00	4.218E-03	4.093E-04
0.055	6.298E 00	4.835E-03	6.303E 00	4.986E-03	4.394E-04
0.060	5.919E 00	4.863E-03	5.924E 00	5.804E-03	4.689E-04
0.065	5.596E 00	4.896E-03	5.600E 00	6.673E-03	4.981E-04
0.070	5.315E 00	4.932E-03	5.320E 00	7.589E-03	5.268E-04
0.075	5.070E 00	4.970E-03	5.075E 00	8.552E-03	5.552E-04
0.080	4.854E 00	5.011E-03	4.859E 00	9.559E-03	5.834E-04
0.085	4.662E 00	5.044E-03	4.667E 00	1.061E-02	6.111E-04
0.090	4.491E 00	5.089E-03	4.496E 00	1.170E-02	6.386E-04
0.095	4.336E 00	5.136E-03	4.341E 00	1.283E-02	6.660E-04
0.100	4.197E 00	5.184E-03	4.202E 00	1.400E-02	6.931E-04
0.150	3.299E 00	5.716E-03	3.304E 00	2.760E-02	9.565E-04
0.200	2.844E 00	6.286E-03	2.850E 00	4.400E-02	1.210E-03
0.250	2.573E 00	6.909E-03	2.580E 00	6.250E-02	1.456E-03
0.300	2.394E 00	7.561E-03	2.401E 00	8.263E-02	1.699E-03
0.350	2.271E 00	8.243E-03	2.280E 00	1.040E-01	1.940E-03
0.400	2.181E 00	8.921E-03	2.190E 00	1.264E-01	2.178E-03
0.450	2.113E 00	9.613E-03	2.123E 00	1.496E-01	2.414E-03
0.500	2.061E 00	1.030E-02	2.071E 00	1.735E-01	2.647E-03
0.550	2.021E 00	1.099E-02	2.032E 00	1.979E-01	2.879E-03
0.600	1.989E 00	1.168E-02	2.000E 00	2.227E-01	3.107E-03
0.650	1.963E 00	1.237E-02	1.975E 00	2.478E-01	3.334E-03
0.700	1.942E 00	1.306E-02	1.955E 00	2.733E-01	3.558E-03
0.750	1.925E 00	1.376E-02	1.939E 00	2.990E-01	3.780E-03
0.800	1.911E 00	1.445E-02	1.926E 00	3.248E-01	4.000E-03
0.850	1.900E 00	1.515E-02	1.915E 00	3.509E-01	4.218E-03
0.900	1.890E 00	1.586E-02	1.906E 00	3.771E-01	4.435E-03
0.950	1.882E 00	1.656E-02	1.899E 00	4.033E-01	4.650E-03
1.000	1.876E 00	1.727E-02	1.893E 00	4.297E-01	4.863E-03
1.100	1.866E 00	1.869E-02	1.885E 00	4.827E-01	5.287E-03
1.200	1.860E 00	2.012E-02	1.880E 00	5.358E-01	5.705E-03
1.300	1.856E 00	2.156E-02	1.877E 00	5.890E-01	6.120E-03

ELECTRONS IN WATER

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.853E 00	2.301E-02	1.876E 00	6.423E-01	6.531E-03
1.500	1.852E 00	2.447E-02	1.877E 00	6.956E-01	6.939E-03
1.600	1.852E 00	2.593E-02	1.878E 00	7.489E-01	7.344E-03
1.700	1.853E 00	2.736E-02	1.880E 00	8.021E-01	7.745E-03
1.800	1.854E 00	2.885E-02	1.883E 00	8.553E-01	8.145E-03
1.900	1.856E 00	3.035E-02	1.886E 00	9.083E-01	8.543E-03
2.000	1.858E 00	3.187E-02	1.889E 00	9.613E-01	8.940E-03
2.200	1.862E 00	3.494E-02	1.897E 00	1.067E 00	9.731E-03
2.400	1.867E 00	3.806E-02	1.905E 00	1.172E 00	1.052E-02
2.600	1.873E 00	4.123E-02	1.914E 00	1.277E 00	1.131E-02
2.800	1.878E 00	4.432E-02	1.922E 00	1.381E 00	1.209E-02
3.000	1.884E 00	4.757E-02	1.931E 00	1.485E 00	1.288E-02
3.500	1.897E 00	5.593E-02	1.953E 00	1.742E 00	1.484E-02
4.000	1.909E 00	6.458E-02	1.974E 00	1.997E 00	1.682E-02
4.500	1.920E 00	7.356E-02	1.994E 00	2.249E 00	1.882E-02
5.000	1.931E 00	8.270E-02	2.014E 00	2.499E 00	2.083E-02
5.500	1.940E 00	9.202E-02	2.032E 00	2.746E 00	2.287E-02
6.000	1.949E 00	1.015E-01	2.051E 00	2.991E 00	2.491E-02
6.500	1.957E 00	1.111E-01	2.068E 00	3.234E 00	2.696E-02
7.000	1.964E 00	1.209E-01	2.085E 00	3.474E 00	2.902E-02
7.500	1.971E 00	1.307E-01	2.102E 00	3.713E 00	3.109E-02
8.000	1.978E 00	1.408E-01	2.119E 00	3.950E 00	3.317E-02
8.500	1.984E 00	1.509E-01	2.135E 00	4.185E 00	3.525E-02
9.000	1.989E 00	1.621E-01	2.152E 00	4.418E 00	3.735E-02
9.500	1.995E 00	1.724E-01	2.167E 00	4.650E 00	3.946E-02
10.000	2.000E 00	1.829E-01	2.183E 00	4.880E 00	4.157E-02
20.000	2.064E 00	4.055E-01	2.470E 00	9.180E 00	8.311E-02
30.000	2.100E 00	6.419E-01	2.742E 00	1.302E 01	1.221E-01
40.000	2.125E 00	8.849E-01	3.010E 00	1.650E 01	1.578E-01
50.000	2.144E 00	1.132E 00	3.276E 00	1.968E 01	1.903E-01
60.000	2.160E 00	1.383E 00	3.543E 00	2.262E 01	2.200E-01
80.000	2.185E 00	1.890E 00	4.075E 00	2.788E 01	2.722E-01
100.000	2.204E 00	2.403E 00	4.607E 00	3.249E 01	3.165E-01
200.000	2.263E 00	5.010E 00	7.273E 00	4.962E 01	4.669E-01
300.000	2.298E 00	7.648E 00	9.946E 00	6.133E 01	5.556E-01
400.000	2.322E 00	1.030E 01	1.262E 01	7.023E 01	6.152E-01
500.000	2.341E 00	1.296E 01	1.530E 01	7.742E 01	6.587E-01
600.000	2.357E 00	1.562E 01	1.798E 01	8.344E 01	6.920E-01
800.000	2.382E 00	2.095E 01	2.333E 01	9.318E 01	7.401E-01
1000.000	2.401E 00	2.629E 01	2.869E 01	1.009E 02	7.737E-01

ELECTRONS IN CARBON DIOXIDE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.978E 01	5.086E-03	1.978E 01	2.880E-04	1.478E-04
0.015	1.446E 01	4.981E-03	1.447E 01	5.879E-04	1.990E-04
0.020	1.159E 01	4.913E-03	1.159E 01	9.769E-04	2.454E-04
0.025	9.765E 00	4.865E-03	9.770E 00	1.449E-03	2.886E-04
0.030	8.502E 00	4.831E-03	8.507E 00	1.999E-03	3.294E-04
0.035	7.572E 00	4.798E-03	7.577E 00	2.623E-03	3.681E-04
0.040	6.857E 00	4.792E-03	6.861E 00	3.318E-03	4.053E-04
0.045	6.289E 00	4.799E-03	6.293E 00	4.080E-03	4.415E-04
0.050	5.826E 00	4.814E-03	5.831E 00	4.906E-03	4.767E-04
0.055	5.442E 00	4.837E-03	5.446E 00	5.794E-03	5.113E-04
0.060	5.117E 00	4.864E-03	5.122E 00	6.741E-03	5.453E-04
0.065	4.839E 00	4.896E-03	4.844E 00	7.745E-03	5.787E-04
0.070	4.599E 00	4.931E-03	4.604E 00	8.805E-03	6.117E-04
0.075	4.388E 00	4.969E-03	4.393E 00	9.917E-03	6.444E-04
0.080	4.203E 00	5.009E-03	4.208E 00	1.108E-02	6.766E-04
0.085	4.038E 00	5.039E-03	4.043E 00	1.229E-02	7.084E-04
0.090	3.891E 00	5.084E-03	3.896E 00	1.355E-02	7.400E-04
0.095	3.758E 00	5.130E-03	3.763E 00	1.486E-02	7.712E-04
0.100	3.638E 00	5.178E-03	3.643E 00	1.621E-02	8.023E-04
0.150	2.865E 00	5.714E-03	2.870E 00	3.188E-02	1.104E-03
0.200	2.473E 00	6.295E-03	2.479E 00	5.073E-02	1.395E-03
0.250	2.239E 00	6.926E-03	2.246E 00	7.199E-02	1.678E-03
0.300	2.087E 00	7.586E-03	2.094E 00	9.509E-02	1.957E-03
0.350	1.981E 00	8.275E-03	1.989E 00	1.196E-01	2.234E-03
0.400	1.904E 00	8.960E-03	1.913E 00	1.453E-01	2.507E-03
0.450	1.848E 00	9.657E-03	1.857E 00	1.718E-01	2.778E-03
0.500	1.804E 00	1.035E-02	1.815E 00	1.991E-01	3.045E-03
0.550	1.771E 00	1.104E-02	1.782E 00	2.269E-01	3.309E-03
0.600	1.745E 00	1.174E-02	1.757E 00	2.551E-01	3.570E-03
0.650	1.725E 00	1.243E-02	1.737E 00	2.838E-01	3.828E-03
0.700	1.709E 00	1.313E-02	1.722E 00	3.127E-01	4.082E-03
0.750	1.696E 00	1.383E-02	1.710E 00	3.418E-01	4.334E-03
0.800	1.686E 00	1.453E-02	1.700E 00	3.712E-01	4.583E-03
0.850	1.678E 00	1.523E-02	1.693E 00	4.006E-01	4.830E-03
0.900	1.672E 00	1.594E-02	1.687E 00	4.302E-01	5.073E-03
0.950	1.667E 00	1.664E-02	1.683E 00	4.599E-01	5.315E-03
1.000	1.663E 00	1.735E-02	1.681E 00	4.896E-01	5.555E-03
1.100	1.659E 00	1.878E-02	1.678E 00	5.492E-01	6.028E-03
1.200	1.658E 00	2.021E-02	1.678E 00	6.088E-01	6.494E-03
1.300	1.658E 00	2.166E-02	1.680E 00	6.684E-01	6.954E-03

ELECTRONS IN CARBON DIOXIDE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.660E 00	2.311E-02	1.683E 00	7.278E-01	7.408E-03
1.500	1.663E 00	2.457E-02	1.688E 00	7.872E-01	7.857E-03
1.600	1.667E 00	2.604E-02	1.693E 00	8.463E-01	8.302E-03
1.700	1.672E 00	2.747E-02	1.699E 00	9.053E-01	8.740E-03
1.800	1.676E 00	2.896E-02	1.705E 00	9.640E-01	9.176E-03
1.900	1.682E 00	3.047E-02	1.712E 00	1.023E 00	9.608E-03
2.000	1.687E 00	3.199E-02	1.719E 00	1.081E 00	1.004E-02
2.200	1.698E 00	3.506E-02	1.733E 00	1.197E 00	1.089E-02
2.400	1.709E 00	3.819E-02	1.748E 00	1.312E 00	1.174E-02
2.600	1.721E 00	4.136E-02	1.762E 00	1.426E 00	1.258E-02
2.800	1.732E 00	4.444E-02	1.776E 00	1.539E 00	1.341E-02
3.000	1.743E 00	4.770E-02	1.790E 00	1.651E 00	1.424E-02
3.500	1.769E 00	5.606E-02	1.825E 00	1.927E 00	1.630E-02
4.000	1.793E 00	6.472E-02	1.858E 00	2.199E 00	1.836E-02
4.500	1.815E 00	7.371E-02	1.889E 00	2.466E 00	2.042E-02
5.000	1.836E 00	8.286E-02	1.919E 00	2.729E 00	2.249E-02
5.500	1.855E 00	9.218E-02	1.947E 00	2.987E 00	2.456E-02
6.000	1.873E 00	1.017E-01	1.974E 00	3.242E 00	2.663E-02
6.500	1.889E 00	1.113E-01	2.001E 00	3.494E 00	2.870E-02
7.000	1.905E 00	1.210E-01	2.026E 00	3.742E 00	3.077E-02
7.500	1.920E 00	1.309E-01	2.051E 00	3.987E 00	3.284E-02
8.000	1.934E 00	1.409E-01	2.075E 00	4.230E 00	3.491E-02
8.500	1.947E 00	1.511E-01	2.098E 00	4.469E 00	3.697E-02
9.000	1.959E 00	1.622E-01	2.121E 00	4.706E 00	3.904E-02
9.500	1.971E 00	1.726E-01	2.144E 00	4.941E 00	4.112E-02
10.000	1.982E 00	1.831E-01	2.165E 00	5.173E 00	4.319E-02
20.000	2.138E 00	4.057E-01	2.543E 00	9.418E 00	8.302E-02
30.000	2.219E 00	6.422E-01	2.861E 00	1.312E 01	1.196E-01
40.000	2.266E 00	8.851E-01	3.152E 00	1.644E 01	1.530E-01
50.000	2.301E 00	1.132E 00	3.434E 00	1.948E 01	1.836E-01
60.000	2.329E 00	1.383E 00	3.712E 00	2.228E 01	2.116E-01
80.000	2.371E 00	1.890E 00	4.261E 00	2.731E 01	2.611E-01
100.000	2.401E 00	2.403E 00	4.804E 00	3.172E 01	3.034E-01
200.000	2.488E 00	5.007E 00	7.496E 00	4.824E 01	4.495E-01
300.000	2.534E 00	7.643E 00	1.018E 01	5.965E 01	5.375E-01
400.000	2.563E 00	1.029E 01	1.285E 01	6.837E 01	5.976E-01
500.000	2.585E 00	1.295E 01	1.553E 01	7.544E 01	6.417E-01
600.000	2.603E 00	1.561E 01	1.821E 01	8.138E 01	6.757E-01
800.000	2.629E 00	2.093E 01	2.356E 01	9.101E 01	7.253E-01
1000.000	2.648E 00	2.626E 01	2.891E 01	9.866E 01	7.600E-01

ELECTRONS IN SILVER CHLORIDE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.226E 01	2.339E-02	1.229E 01	5.012E-04	1.141E-03
0.015	9.265E 00	2.340E-02	9.289E 00	9.749E-04	1.499E-03
0.020	7.570E 00	2.309E-02	7.593E 00	1.574E-03	1.821E-03
0.025	6.468E 00	2.341E-02	6.492E 00	2.289E-03	2.121E-03
0.030	5.690E 00	2.393E-02	5.714E 00	3.112E-03	2.417E-03
0.035	5.109E 00	2.465E-02	5.133E 00	4.037E-03	2.714E-03
0.040	4.657E 00	2.517E-02	4.682E 00	5.059E-03	3.011E-03
0.045	4.295E 00	2.564E-02	4.320E 00	6.172E-03	3.305E-03
0.050	3.998E 00	2.607E-02	4.024E 00	7.372E-03	3.596E-03
0.055	3.750E 00	2.648E-02	3.776E 00	8.655E-03	3.882E-03
0.060	3.539E 00	2.687E-02	3.566E 00	1.002E-02	4.165E-03
0.065	3.358E 00	2.724E-02	3.385E 00	1.146E-02	4.444E-03
0.070	3.201E 00	2.760E-02	3.228E 00	1.297E-02	4.719E-03
0.075	3.063E 00	2.794E-02	3.091E 00	1.456E-02	4.991E-03
0.080	2.940E 00	2.828E-02	2.969E 00	1.621E-02	5.259E-03
0.085	2.832E 00	2.851E-02	2.860E 00	1.792E-02	5.522E-03
0.090	2.734E 00	2.884E-02	2.763E 00	1.970E-02	5.783E-03
0.095	2.646E 00	2.915E-02	2.675E 00	2.154E-02	6.040E-03
0.100	2.566E 00	2.947E-02	2.595E 00	2.344E-02	6.294E-03
0.150	2.048E 00	3.247E-02	2.081E 00	4.522E-02	8.703E-03
0.200	1.784E 00	3.509E-02	1.819E 00	7.106E-02	1.090E-02
0.250	1.626E 00	3.812E-02	1.664E 00	9.989E-02	1.294E-02
0.300	1.523E 00	4.129E-02	1.565E 00	1.309E-01	1.489E-02
0.350	1.452E 00	4.465E-02	1.497E 00	1.636E-01	1.678E-02
0.400	1.401E 00	4.788E-02	1.449E 00	1.976E-01	1.862E-02
0.450	1.364E 00	5.113E-02	1.415E 00	2.326E-01	2.039E-02
0.500	1.336E 00	5.432E-02	1.390E 00	2.682E-01	2.211E-02
0.550	1.315E 00	5.748E-02	1.372E 00	3.044E-01	2.378E-02
0.600	1.298E 00	6.060E-02	1.359E 00	3.411E-01	2.541E-02
0.650	1.286E 00	6.369E-02	1.349E 00	3.780E-01	2.698E-02
0.700	1.276E 00	6.677E-02	1.343E 00	4.151E-01	2.852E-02
0.750	1.269E 00	6.982E-02	1.339E 00	4.524E-01	3.001E-02
0.800	1.263E 00	7.286E-02	1.336E 00	4.898E-01	3.147E-02
0.850	1.259E 00	7.488E-02	1.334E 00	5.273E-01	3.286E-02
0.900	1.255E 00	7.790E-02	1.333E 00	5.648E-01	3.422E-02
0.950	1.253E 00	8.093E-02	1.334E 00	6.023E-01	3.555E-02
1.000	1.252E 00	8.399E-02	1.336E 00	6.397E-01	3.686E-02
1.100	1.250E 00	9.016E-02	1.340E 00	7.145E-01	3.943E-02
1.200	1.251E 00	9.639E-02	1.347E 00	7.889E-01	4.193E-02
1.300	1.252E 00	1.027E-01	1.355E 00	8.630E-01	4.437E-02

ELECTRONS IN SILVER CHLORIDE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.254E 00	1.090E-01	1.363E 00	9.365E-01	4.676E-02
1.500	1.257E 00	1.155E-01	1.372E 00	1.010E 00	4.912E-02
1.600	1.260E 00	1.219E-01	1.382E 00	1.082E 00	5.143E-02
1.700	1.264E 00	1.287E-01	1.392E 00	1.154E 00	5.372E-02
1.800	1.267E 00	1.352E-01	1.403E 00	1.226E 00	5.598E-02
1.900	1.271E 00	1.418E-01	1.413E 00	1.297E 00	5.821E-02
2.000	1.275E 00	1.484E-01	1.423E 00	1.367E 00	6.042E-02
2.200	1.283E 00	1.616E-01	1.445E 00	1.507E 00	6.475E-02
2.400	1.291E 00	1.749E-01	1.466E 00	1.644E 00	6.899E-02
2.600	1.299E 00	1.883E-01	1.487E 00	1.780E 00	7.314E-02
2.800	1.306E 00	2.015E-01	1.507E 00	1.913E 00	7.722E-02
3.000	1.313E 00	2.151E-01	1.528E 00	2.045E 00	8.122E-02
3.500	1.330E 00	2.493E-01	1.579E 00	2.367E 00	9.095E-02
4.000	1.345E 00	2.839E-01	1.629E 00	2.679E 00	1.003E-01
4.500	1.359E 00	3.190E-01	1.678E 00	2.981E 00	1.095E-01
5.000	1.371E 00	3.546E-01	1.725E 00	3.275E 00	1.183E-01
5.500	1.382E 00	3.906E-01	1.773E 00	3.561E 00	1.269E-01
6.000	1.392E 00	4.269E-01	1.819E 00	3.839E 00	1.353E-01
6.500	1.402E 00	4.636E-01	1.865E 00	4.111E 00	1.435E-01
7.000	1.410E 00	5.007E-01	1.911E 00	4.376E 00	1.515E-01
7.500	1.418E 00	5.381E-01	1.956E 00	4.634E 00	1.593E-01
8.000	1.426E 00	5.758E-01	2.002E 00	4.887E 00	1.669E-01
8.500	1.433E 00	6.139E-01	2.047E 00	5.134E 00	1.744E-01
9.000	1.439E 00	6.548E-01	2.094E 00	5.375E 00	1.817E-01
9.500	1.445E 00	6.935E-01	2.139E 00	5.612E 00	1.889E-01
10.000	1.451E 00	7.323E-01	2.184E 00	5.843E 00	1.959E-01
20.000	1.525E 00	1.541E 00	3.066E 00	9.688E 00	3.113E-01
30.000	1.564E 00	2.403E 00	3.967E 00	1.255E 01	3.935E-01
40.000	1.590E 00	3.306E 00	4.896E 00	1.481E 01	4.558E-01
50.000	1.610E 00	4.218E 00	5.828E 00	1.668E 01	5.048E-01
60.000	1.625E 00	5.139E 00	6.764E 00	1.827E 01	5.445E-01
80.000	1.648E 00	7.000E 00	8.648E 00	2.088E 01	6.050E-01
100.000	1.665E 00	8.871E 00	1.054E 01	2.298E 01	6.493E-01
200.000	1.717E 00	1.836E 01	2.007E 01	2.974E 01	7.675E-01
300.000	1.746E 00	2.792E 01	2.966E 01	3.381E 01	8.215E-01
400.000	1.766E 00	3.750E 01	3.926E 01	3.673E 01	8.533E-01
500.000	1.781E 00	4.709E 01	4.887E 01	3.901E 01	8.745E-01
600.000	1.794E 00	5.670E 01	5.850E 01	4.088E 01	8.899E-01
800.000	1.814E 00	7.594E 01	7.775E 01	4.383E 01	9.108E-01
1000.000	1.829E 00	9.518E 01	9.701E 01	4.613E 01	9.244E-01

ELECTRONS IN SILVER BROMIDE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.156E 01	2.453E-02	1.158E 01	5.378E-04	1.281E-03
0.015	8.769E 00	2.456E-02	8.793E 00	1.039E-03	1.674E-03
0.020	7.181E 00	2.426E-02	7.205E 00	1.671E-03	2.027E-03
0.025	6.145E 00	2.462E-02	6.170E 00	2.424E-03	2.357E-03
0.030	5.412E 00	2.518E-02	5.437E 00	3.290E-03	2.682E-03
0.035	4.864E 00	2.596E-02	4.889E 00	4.261E-03	3.010E-03
0.040	4.437E 00	2.652E-02	4.463E 00	5.333E-03	3.337E-03
0.045	4.094E 00	2.702E-02	4.121E 00	6.500E-03	3.660E-03
0.050	3.813E 00	2.748E-02	3.841E 00	7.758E-03	3.980E-03
0.055	3.578E 00	2.791E-02	3.606E 00	9.102E-03	4.295E-03
0.060	3.379E 00	2.832E-02	3.407E 00	1.053E-02	4.606E-03
0.065	3.207E 00	2.870E-02	3.236E 00	1.204E-02	4.913E-03
0.070	3.058E 00	2.907E-02	3.087E 00	1.362E-02	5.215E-03
0.075	2.927E 00	2.943E-02	2.956E 00	1.528E-02	5.513E-03
0.080	2.811E 00	2.977E-02	2.840E 00	1.700E-02	5.808E-03
0.085	2.707E 00	2.997E-02	2.737E 00	1.880E-02	6.095E-03
0.090	2.614E 00	3.030E-02	2.645E 00	2.065E-02	6.379E-03
0.095	2.531E 00	3.063E-02	2.561E 00	2.258E-02	6.659E-03
0.100	2.455E 00	3.095E-02	2.486E 00	2.456E-02	6.937E-03
0.150	1.962E 00	3.408E-02	1.997E 00	4.728E-02	9.560E-03
0.200	1.711E 00	3.684E-02	1.748E 00	7.420E-02	1.195E-02
0.250	1.560E 00	4.003E-02	1.600E 00	1.042E-01	1.417E-02
0.300	1.463E 00	4.336E-02	1.506E 00	1.365E-01	1.630E-02
0.350	1.393E 00	4.689E-02	1.440E 00	1.705E-01	1.836E-02
0.400	1.345E 00	5.028E-02	1.396E 00	2.058E-01	2.035E-02
0.450	1.311E 00	5.368E-02	1.364E 00	2.420E-01	2.228E-02
0.500	1.284E 00	5.702E-02	1.341E 00	2.790E-01	2.414E-02
0.550	1.264E 00	6.032E-02	1.324E 00	3.166E-01	2.595E-02
0.600	1.249E 00	6.359E-02	1.312E 00	3.545E-01	2.771E-02
0.650	1.236E 00	6.683E-02	1.303E 00	3.927E-01	2.941E-02
0.700	1.227E 00	7.005E-02	1.297E 00	4.312E-01	3.107E-02
0.750	1.220E 00	7.324E-02	1.293E 00	4.698E-01	3.269E-02
0.800	1.215E 00	7.643E-02	1.291E 00	5.085E-01	3.427E-02
0.850	1.211E 00	7.846E-02	1.289E 00	5.473E-01	3.576E-02
0.900	1.208E 00	8.162E-02	1.289E 00	5.861E-01	3.723E-02
0.950	1.205E 00	8.481E-02	1.290E 00	6.248E-01	3.866E-02
1.000	1.204E 00	8.801E-02	1.292E 00	6.636E-01	4.008E-02
1.100	1.203E 00	9.448E-02	1.297E 00	7.408E-01	4.284E-02
1.200	1.203E 00	1.010E-01	1.304E 00	8.177E-01	4.553E-02
1.300	1.205E 00	1.077E-01	1.312E 00	8.942E-01	4.816E-02

ELECTRONS IN SILVER BROMIDE

ENERGY	STOPPING POWER COLLISION	STOPPING POWER RADIATION	STOPPING POWER TOTAL	RANGE	RADIATION YIELD
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.207E 00	1.143E-01	1.321E 00	9.701E-01	5.075E-02
1.500	1.210E 00	1.211E-01	1.331E 00	1.045E 00	5.328E-02
1.600	1.213E 00	1.279E-01	1.341E 00	1.120E 00	5.577E-02
1.700	1.217E 00	1.351E-01	1.352E 00	1.195E 00	5.824E-02
1.800	1.221E 00	1.420E-01	1.363E 00	1.268E 00	6.067E-02
1.900	1.224E 00	1.489E-01	1.373E 00	1.341E 00	6.308E-02
2.000	1.228E 00	1.558E-01	1.384E 00	1.414E 00	6.545E-02
2.200	1.236E 00	1.698E-01	1.406E 00	1.557E 00	7.011E-02
2.400	1.244E 00	1.839E-01	1.428E 00	1.698E 00	7.466E-02
2.600	1.252E 00	1.980E-01	1.450E 00	1.837E 00	7.913E-02
2.800	1.259E 00	2.122E-01	1.471E 00	1.974E 00	8.351E-02
3.000	1.266E 00	2.265E-01	1.493E 00	2.109E 00	8.780E-02
3.500	1.283E 00	2.626E-01	1.546E 00	2.438E 00	9.824E-02
4.000	1.298E 00	2.990E-01	1.597E 00	2.757E 00	1.083E-01
4.500	1.312E 00	3.358E-01	1.648E 00	3.065E 00	1.180E-01
5.000	1.324E 00	3.731E-01	1.697E 00	3.364E 00	1.274E-01
5.500	1.335E 00	4.108E-01	1.746E 00	3.654E 00	1.365E-01
6.000	1.345E 00	4.489E-01	1.794E 00	3.937E 00	1.453E-01
6.500	1.355E 00	4.874E-01	1.842E 00	4.212E 00	1.540E-01
7.000	1.363E 00	5.262E-01	1.890E 00	4.480E 00	1.624E-01
7.500	1.371E 00	5.654E-01	1.937E 00	4.741E 00	1.706E-01
8.000	1.379E 00	6.049E-01	1.984E 00	4.996E 00	1.785E-01
8.500	1.386E 00	6.448E-01	2.031E 00	5.245E 00	1.864E-01
9.000	1.392E 00	6.874E-01	2.080E 00	5.488E 00	1.940E-01
9.500	1.399E 00	7.278E-01	2.126E 00	5.726E 00	2.015E-01
10.000	1.404E 00	7.685E-01	2.173E 00	5.959E 00	2.088E-01
20.000	1.478E 00	1.616E 00	3.094E 00	9.794E 00	3.275E-01
30.000	1.517E 00	2.520E 00	4.037E 00	1.262E 01	4.106E-01
40.000	1.544E 00	3.466E 00	5.010E 00	1.484E 01	4.731E-01
50.000	1.563E 00	4.423E 00	5.986E 00	1.666E 01	5.218E-01
60.000	1.578E 00	5.388E 00	6.967E 00	1.821E 01	5.610E-01
80.000	1.601E 00	7.338E 00	8.940E 00	2.074E 01	6.205E-01
100.000	1.619E 00	9.299E 00	1.092E 01	2.276E 01	6.639E-01
200.000	1.670E 00	1.924E 01	2.091E 01	2.926E 01	7.784E-01
300.000	1.698E 00	2.926E 01	3.096E 01	3.317E 01	8.304E-01
400.000	1.718E 00	3.930E 01	4.102E 01	3.597E 01	8.608E-01
500.000	1.733E 00	4.935E 01	5.108E 01	3.815E 01	8.811E-01
600.000	1.746E 00	5.942E 01	6.116E 01	3.993E 01	8.958E-01
800.000	1.765E 00	7.957E 01	8.134E 01	4.276E 01	9.156E-01
1000.000	1.780E 00	9.973E 01	1.015E 02	4.496E 01	9.286E-01

ELECTRONS IN SODIUM IODIDE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.131E 01	2.643E-02	1.134E 01	5.494E-04	1.398E-03
0.015	8.579E 00	2.683E-02	8.606E 00	1.062E-03	1.842E-03
0.020	7.025E 00	2.711E-02	7.053E 00	1.707E-03	2.253E-03
0.025	6.012E 00	2.761E-02	6.040E 00	2.476E-03	2.644E-03
0.030	5.295E 00	2.816E-02	5.323E 00	3.361E-03	3.025E-03
0.035	4.758E 00	2.878E-02	4.787E 00	4.353E-03	3.400E-03
0.040	4.340E 00	2.931E-02	4.370E 00	5.448E-03	3.771E-03
0.045	4.005E 00	2.980E-02	4.035E 00	6.640E-03	4.135E-03
0.050	3.730E 00	3.027E-02	3.761E 00	7.925E-03	4.493E-03
0.055	3.500E 00	3.072E-02	3.531E 00	9.298E-03	4.846E-03
0.060	3.305E 00	3.114E-02	3.336E 00	1.076E-02	5.194E-03
0.065	3.137E 00	3.155E-02	3.169E 00	1.229E-02	5.536E-03
0.070	2.991E 00	3.195E-02	3.023E 00	1.391E-02	5.874E-03
0.075	2.863E 00	3.234E-02	2.895E 00	1.560E-02	6.207E-03
0.080	2.749E 00	3.272E-02	2.782E 00	1.736E-02	6.536E-03
0.085	2.648E 00	3.301E-02	2.681E 00	1.919E-02	6.859E-03
0.090	2.557E 00	3.338E-02	2.591E 00	2.109E-02	7.178E-03
0.095	2.475E 00	3.375E-02	2.509E 00	2.305E-02	7.493E-03
0.100	2.401E 00	3.411E-02	2.435E 00	2.508E-02	7.805E-03
0.150	1.920E 00	3.762E-02	1.957E 00	4.826E-02	1.076E-02
0.200	1.673E 00	4.078E-02	1.714E 00	7.571E-02	1.346E-02
0.250	1.526E 00	4.433E-02	1.571E 00	1.063E-01	1.597E-02
0.300	1.430E 00	4.801E-02	1.478E 00	1.391E-01	1.837E-02
0.350	1.364E 00	5.189E-02	1.416E 00	1.737E-01	2.068E-02
0.400	1.317E 00	5.559E-02	1.373E 00	2.096E-01	2.292E-02
0.450	1.282E 00	5.930E-02	1.342E 00	2.465E-01	2.508E-02
0.500	1.256E 00	6.293E-02	1.319E 00	2.841E-01	2.717E-02
0.550	1.237E 00	6.649E-02	1.303E 00	3.223E-01	2.919E-02
0.600	1.221E 00	7.002E-02	1.291E 00	3.608E-01	3.114E-02
0.650	1.210E 00	7.350E-02	1.283E 00	3.997E-01	3.304E-02
0.700	1.201E 00	7.694E-02	1.278E 00	4.387E-01	3.487E-02
0.750	1.195E 00	8.036E-02	1.275E 00	4.779E-01	3.666E-02
0.800	1.190E 00	8.375E-02	1.273E 00	5.171E-01	3.839E-02
0.850	1.186E 00	8.578E-02	1.272E 00	5.564E-01	4.003E-02
0.900	1.183E 00	8.913E-02	1.272E 00	5.957E-01	4.162E-02
0.950	1.181E 00	9.250E-02	1.274E 00	6.350E-01	4.319E-02
1.000	1.180E 00	9.589E-02	1.276E 00	6.742E-01	4.472E-02
1.100	1.179E 00	1.027E-01	1.281E 00	7.525E-01	4.772E-02
1.200	1.179E 00	1.096E-01	1.289E 00	8.303E-01	5.063E-02
1.300	1.181E 00	1.166E-01	1.297E 00	9.076E-01	5.346E-02

ELECTRONS IN SODIUM IODIDE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.183E 00	1.237E-01	1.307E 00	9.844E-01	5.623E-02
1.500	1.186E 00	1.308E-01	1.317E 00	1.061E 00	5.895E-02
1.600	1.190E 00	1.379E-01	1.328E 00	1.136E 00	6.161E-02
1.700	1.193E 00	1.452E-01	1.339E 00	1.211E 00	6.424E-02
1.800	1.197E 00	1.525E-01	1.350E 00	1.286E 00	6.682E-02
1.900	1.201E 00	1.598E-01	1.361E 00	1.359E 00	6.937E-02
2.000	1.205E 00	1.671E-01	1.372E 00	1.433E 00	7.188E-02
2.200	1.213E 00	1.818E-01	1.395E 00	1.577E 00	7.680E-02
2.400	1.222E 00	1.967E-01	1.418E 00	1.719E 00	8.161E-02
2.600	1.229E 00	2.117E-01	1.441E 00	1.859E 00	8.632E-02
2.800	1.237E 00	2.272E-01	1.464E 00	1.997E 00	9.093E-02
3.000	1.245E 00	2.424E-01	1.487E 00	2.132E 00	9.548E-02
3.500	1.262E 00	2.807E-01	1.543E 00	2.463E 00	1.065E-01
4.000	1.278E 00	3.194E-01	1.597E 00	2.781E 00	1.171E-01
4.500	1.292E 00	3.581E-01	1.650E 00	3.089E 00	1.272E-01
5.000	1.305E 00	3.974E-01	1.702E 00	3.387E 00	1.370E-01
5.500	1.316E 00	4.371E-01	1.754E 00	3.677E 00	1.465E-01
6.000	1.327E 00	4.771E-01	1.804E 00	3.958E 00	1.557E-01
6.500	1.337E 00	5.176E-01	1.855E 00	4.231E 00	1.647E-01
7.000	1.346E 00	5.584E-01	1.905E 00	4.497E 00	1.733E-01
7.500	1.355E 00	5.995E-01	1.954E 00	4.756E 00	1.818E-01
8.000	1.363E 00	6.409E-01	2.004E 00	5.009E 00	1.900E-01
8.500	1.370E 00	6.826E-01	2.053E 00	5.256E 00	1.980E-01
9.000	1.377E 00	7.284E-01	2.105E 00	5.496E 00	2.059E-01
9.500	1.383E 00	7.708E-01	2.154E 00	5.731E 00	2.136E-01
10.000	1.390E 00	8.134E-01	2.203E 00	5.960E 00	2.211E-01
20.000	1.469E 00	1.690E 00	3.159E 00	9.726E 00	3.409E-01
30.000	1.511E 00	2.625E 00	4.136E 00	1.249E 01	4.234E-01
40.000	1.539E 00	3.614E 00	5.153E 00	1.465E 01	4.851E-01
50.000	1.560E 00	4.610E 00	6.170E 00	1.642E 01	5.332E-01
60.000	1.576E 00	5.617E 00	7.193E 00	1.792E 01	5.718E-01
80.000	1.601E 00	7.648E 00	9.249E 00	2.037E 01	6.303E-01
100.000	1.619E 00	9.690E 00	1.131E 01	2.232E 01	6.728E-01
200.000	1.671E 00	2.004E 01	2.171E 01	2.859E 01	7.848E-01
300.000	1.699E 00	3.047E 01	3.217E 01	3.235E 01	8.354E-01
400.000	1.719E 00	4.092E 01	4.264E 01	3.504E 01	8.651E-01
500.000	1.733E 00	5.140E 01	5.313E 01	3.714E 01	8.848E-01
600.000	1.745E 00	6.188E 01	6.362E 01	3.886E 01	8.990E-01
800.000	1.764E 00	8.286E 01	8.463E 01	4.157E 01	9.183E-01
1000.000	1.779E 00	1.038E 02	1.056E 02	4.368E 01	9.309E-01

ELECTRONS IN LITHIUM IODIDE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.078E 01	2.846E-02	1.081E 01	5.815E-04	1.589E-03
0.015	8.205E 00	2.893E-02	8.234E 00	1.118E-03	2.085E-03
0.020	6.731E 00	2.925E-02	6.760E 00	1.792E-03	2.545E-03
0.025	5.767E 00	2.982E-02	5.797E 00	2.594E-03	2.983E-03
0.030	5.083E 00	3.045E-02	5.114E 00	3.514E-03	3.411E-03
0.035	4.571E 00	3.115E-02	4.602E 00	4.547E-03	3.833E-03
0.040	4.172E 00	3.174E-02	4.204E 00	5.685E-03	4.249E-03
0.045	3.852E 00	3.229E-02	3.884E 00	6.924E-03	4.658E-03
0.050	3.589E 00	3.281E-02	3.622E 00	8.259E-03	5.061E-03
0.055	3.369E 00	3.330E-02	3.402E 00	9.684E-03	5.458E-03
0.060	3.182E 00	3.377E-02	3.216E 00	1.120E-02	5.849E-03
0.065	3.021E 00	3.423E-02	3.055E 00	1.279E-02	6.234E-03
0.070	2.881E 00	3.466E-02	2.916E 00	1.447E-02	6.613E-03
0.075	2.758E 00	3.509E-02	2.793E 00	1.622E-02	6.988E-03
0.080	2.649E 00	3.550E-02	2.685E 00	1.805E-02	7.357E-03
0.085	2.552E 00	3.582E-02	2.588E 00	1.995E-02	7.719E-03
0.090	2.465E 00	3.622E-02	2.501E 00	2.191E-02	8.077E-03
0.095	2.387E 00	3.662E-02	2.423E 00	2.394E-02	8.431E-03
0.100	2.315E 00	3.701E-02	2.352E 00	2.604E-02	8.781E-03
0.150	1.853E 00	4.082E-02	1.894E 00	5.001E-02	1.209E-02
0.200	1.616E 00	4.423E-02	1.661E 00	7.837E-02	1.510E-02
0.250	1.475E 00	4.806E-02	1.523E 00	1.099E-01	1.791E-02
0.300	1.383E 00	5.203E-02	1.435E 00	1.438E-01	2.058E-02
0.350	1.320E 00	5.622E-02	1.376E 00	1.794E-01	2.315E-02
0.400	1.274E 00	6.022E-02	1.334E 00	2.164E-01	2.563E-02
0.450	1.241E 00	6.422E-02	1.305E 00	2.543E-01	2.803E-02
0.500	1.216E 00	6.813E-02	1.284E 00	2.929E-01	3.034E-02
0.550	1.197E 00	7.197E-02	1.269E 00	3.321E-01	3.257E-02
0.600	1.183E 00	7.576E-02	1.258E 00	3.717E-01	3.473E-02
0.650	1.172E 00	7.951E-02	1.251E 00	4.115E-01	3.682E-02
0.700	1.163E 00	8.322E-02	1.246E 00	4.516E-01	3.885E-02
0.750	1.156E 00	8.689E-02	1.243E 00	4.918E-01	4.081E-02
0.800	1.151E 00	9.054E-02	1.241E 00	5.320E-01	4.273E-02
0.850	1.147E 00	9.265E-02	1.239E 00	5.724E-01	4.453E-02
0.900	1.143E 00	9.625E-02	1.240E 00	6.127E-01	4.629E-02
0.950	1.141E 00	9.987E-02	1.241E 00	6.530E-01	4.802E-02
1.000	1.140E 00	1.035E-01	1.243E 00	6.933E-01	4.971E-02
1.100	1.138E 00	1.109E-01	1.249E 00	7.735E-01	5.301E-02
1.200	1.139E 00	1.183E-01	1.257E 00	8.533E-01	5.621E-02
1.300	1.140E 00	1.258E-01	1.266E 00	9.326E-01	5.933E-02

ELECTRONS IN LITHIUM IODIDE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.142E 00	1.334E-01	1.276E 00	1.011E 00	6.238E-02
1.500	1.145E 00	1.410E-01	1.286E 00	1.089E 00	6.536E-02
1.600	1.148E 00	1.488E-01	1.297E 00	1.167E 00	6.829E-02
1.700	1.151E 00	1.567E-01	1.308E 00	1.244E 00	7.117E-02
1.800	1.155E 00	1.645E-01	1.320E 00	1.320E 00	7.401E-02
1.900	1.159E 00	1.723E-01	1.331E 00	1.395E 00	7.680E-02
2.000	1.163E 00	1.802E-01	1.343E 00	1.470E 00	7.955E-02
2.200	1.170E 00	1.961E-01	1.367E 00	1.618E 00	8.494E-02
2.400	1.178E 00	2.121E-01	1.390E 00	1.763E 00	9.020E-02
2.600	1.186E 00	2.282E-01	1.414E 00	1.905E 00	9.534E-02
2.800	1.193E 00	2.450E-01	1.438E 00	2.046E 00	1.004E-01
3.000	1.200E 00	2.614E-01	1.461E 00	2.184E 00	1.053E-01
3.500	1.217E 00	3.025E-01	1.519E 00	2.519E 00	1.173E-01
4.000	1.232E 00	3.440E-01	1.576E 00	2.842E 00	1.287E-01
4.500	1.245E 00	3.855E-01	1.631E 00	3.154E 00	1.397E-01
5.000	1.258E 00	4.276E-01	1.685E 00	3.456E 00	1.502E-01
5.500	1.269E 00	4.701E-01	1.739E 00	3.748E 00	1.604E-01
6.000	1.279E 00	5.130E-01	1.792E 00	4.031E 00	1.702E-01
6.500	1.289E 00	5.563E-01	1.845E 00	4.306E 00	1.798E-01
7.000	1.298E 00	5.999E-01	1.897E 00	4.573E 00	1.890E-01
7.500	1.306E 00	6.439E-01	1.950E 00	4.833E 00	1.979E-01
8.000	1.313E 00	6.883E-01	2.002E 00	5.086E 00	2.066E-01
8.500	1.320E 00	7.329E-01	2.053E 00	5.333E 00	2.151E-01
9.000	1.327E 00	7.819E-01	2.109E 00	5.573E 00	2.233E-01
9.500	1.334E 00	8.272E-01	2.161E 00	5.807E 00	2.314E-01
10.000	1.339E 00	8.728E-01	2.212E 00	6.036E 00	2.393E-01
20.000	1.416E 00	1.808E 00	3.225E 00	9.754E 00	3.630E-01
30.000	1.457E 00	2.807E 00	4.264E 00	1.244E 01	4.464E-01
40.000	1.485E 00	3.864E 00	5.349E 00	1.453E 01	5.080E-01
50.000	1.505E 00	4.929E 00	6.434E 00	1.624E 01	5.555E-01
60.000	1.521E 00	6.005E 00	7.526E 00	1.767E 01	5.934E-01
80.000	1.545E 00	8.176E 00	9.721E 00	2.000E 01	6.503E-01
100.000	1.563E 00	1.036E 01	1.192E 01	2.186E 01	6.914E-01
200.000	1.615E 00	2.142E 01	2.303E 01	2.779E 01	7.986E-01
300.000	1.642E 00	3.256E 01	3.420E 01	3.133E 01	8.465E-01
400.000	1.661E 00	4.372E 01	4.539E 01	3.386E 01	8.744E-01
500.000	1.676E 00	5.491E 01	5.658E 01	3.583E 01	8.930E-01
600.000	1.687E 00	6.611E 01	6.779E 01	3.744E 01	9.063E-01
800.000	1.706E 00	8.852E 01	9.022E 01	3.999E 01	9.243E-01
1000.000	1.720E 00	1.109E 02	1.127E 02	4.197E 01	9.361E-01

ELECTRONS IN METHANE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.803E 01	3.556E-03	2.803E 01	1.997E-04	7.186E-05
0.015	2.031E 01	3.490E-03	2.032E 01	4.125E-04	9.780E-05
0.020	1.618E 01	3.453E-03	1.618E 01	6.903E-04	1.216E-04
0.025	1.358E 01	3.429E-03	1.359E 01	1.029E-03	1.439E-04
0.030	1.179E 01	3.413E-03	1.179E 01	1.425E-03	1.651E-04
0.035	1.047E 01	3.400E-03	1.048E 01	1.876E-03	1.853E-04
0.040	9.465E 00	3.400E-03	9.469E 00	2.379E-03	2.049E-04
0.045	8.666E 00	3.406E-03	8.670E 00	2.932E-03	2.239E-04
0.050	8.017E 00	3.418E-03	8.020E 00	3.532E-03	2.425E-04
0.055	7.478E 00	3.433E-03	7.482E 00	4.178E-03	2.607E-04
0.060	7.024E 00	3.451E-03	7.028E 00	4.868E-03	2.785E-04
0.065	6.636E 00	3.472E-03	6.639E 00	5.600E-03	2.961E-04
0.070	6.300E 00	3.495E-03	6.304E 00	6.373E-03	3.134E-04
0.075	6.007E 00	3.519E-03	6.010E 00	7.186E-03	3.305E-04
0.080	5.748E 00	3.545E-03	5.752E 00	8.037E-03	3.474E-04
0.085	5.519E 00	3.554E-03	5.522E 00	8.924E-03	3.640E-04
0.090	5.314E 00	3.583E-03	5.317E 00	9.847E-03	3.804E-04
0.095	5.129E 00	3.613E-03	5.133E 00	1.080E-02	3.966E-04
0.100	4.962E 00	3.645E-03	4.966E 00	1.180E-02	4.127E-04
0.150	3.891E 00	4.002E-03	3.895E 00	2.332E-02	5.690E-04
0.200	3.349E 00	4.398E-03	3.353E 00	3.724E-02	7.193E-04
0.250	3.026E 00	4.826E-03	3.031E 00	5.298E-02	8.660E-04
0.300	2.815E 00	5.273E-03	2.820E 00	7.012E-02	1.010E-03
0.350	2.668E 00	5.736E-03	2.674E 00	8.836E-02	1.153E-03
0.400	2.562E 00	6.204E-03	2.568E 00	1.075E-01	1.294E-03
0.450	2.483E 00	6.681E-03	2.489E 00	1.272E-01	1.433E-03
0.500	2.422E 00	7.160E-03	2.429E 00	1.476E-01	1.572E-03
0.550	2.375E 00	7.643E-03	2.383E 00	1.684E-01	1.708E-03
0.600	2.339E 00	8.129E-03	2.347E 00	1.895E-01	1.844E-03
0.650	2.309E 00	8.620E-03	2.318E 00	2.110E-01	1.979E-03
0.700	2.286E 00	9.114E-03	2.295E 00	2.327E-01	2.112E-03
0.750	2.268E 00	9.612E-03	2.277E 00	2.545E-01	2.244E-03
0.800	2.253E 00	1.011E-02	2.263E 00	2.766E-01	2.375E-03
0.850	2.241E 00	1.063E-02	2.252E 00	2.987E-01	2.506E-03
0.900	2.232E 00	1.114E-02	2.243E 00	3.210E-01	2.636E-03
0.950	2.224E 00	1.165E-02	2.236E 00	3.433E-01	2.765E-03
1.000	2.219E 00	1.216E-02	2.231E 00	3.657E-01	2.893E-03
1.100	2.211E 00	1.320E-02	2.224E 00	4.106E-01	3.148E-03
1.200	2.208E 00	1.425E-02	2.222E 00	4.556E-01	3.400E-03
1.300	2.207E 00	1.531E-02	2.222E 00	5.006E-01	3.650E-03

ELECTRONS IN METHANE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	2.208E 00	1.638E-02	2.225E 00	5.455E-01	3.899E-03
1.500	2.211E 00	1.747E-02	2.228E 00	5.905E-01	4.146E-03
1.600	2.215E 00	1.856E-02	2.233E 00	6.353E-01	4.391E-03
1.700	2.220E 00	1.964E-02	2.239E 00	6.800E-01	4.635E-03
1.800	2.225E 00	2.075E-02	2.246E 00	7.246E-01	4.878E-03
1.900	2.231E 00	2.188E-02	2.253E 00	7.691E-01	5.120E-03
2.000	2.237E 00	2.301E-02	2.260E 00	8.134E-01	5.361E-03
2.200	2.250E 00	2.532E-02	2.275E 00	9.016E-01	5.842E-03
2.400	2.264E 00	2.766E-02	2.291E 00	9.892E-01	6.322E-03
2.600	2.277E 00	3.005E-02	2.307E 00	1.076E 00	6.801E-03
2.800	2.291E 00	3.239E-02	2.323E 00	1.163E 00	7.279E-03
3.000	2.304E 00	3.485E-02	2.339E 00	1.248E 00	7.756E-03
3.500	2.336E 00	4.116E-02	2.377E 00	1.460E 00	8.949E-03
4.000	2.365E 00	4.771E-02	2.413E 00	1.669E 00	1.015E-02
4.500	2.393E 00	5.451E-02	2.447E 00	1.875E 00	1.135E-02
5.000	2.418E 00	6.143E-02	2.480E 00	2.078E 00	1.257E-02
5.500	2.442E 00	6.848E-02	2.511E 00	2.278E 00	1.379E-02
6.000	2.464E 00	7.565E-02	2.540E 00	2.476E 00	1.502E-02
6.500	2.485E 00	8.293E-02	2.568E 00	2.672E 00	1.625E-02
7.000	2.504E 00	9.031E-02	2.595E 00	2.866E 00	1.749E-02
7.500	2.522E 00	9.778E-02	2.620E 00	3.057E 00	1.873E-02
8.000	2.540E 00	1.053E-01	2.645E 00	3.247E 00	1.997E-02
8.500	2.556E 00	1.130E-01	2.669E 00	3.436E 00	2.121E-02
9.000	2.571E 00	1.213E-01	2.693E 00	3.622E 00	2.246E-02
9.500	2.586E 00	1.291E-01	2.715E 00	3.807E 00	2.371E-02
10.000	2.600E 00	1.370E-01	2.737E 00	3.990E 00	2.497E-02
20.000	2.790E 00	3.050E-01	3.095E 00	7.411E 00	4.974E-02
30.000	2.886E 00	4.836E-01	3.369E 00	1.050E 01	7.361E-02
40.000	2.946E 00	6.675E-01	3.614E 00	1.337E 01	9.631E-02
50.000	2.990E 00	8.551E-01	3.845E 00	1.605E 01	1.178E-01
60.000	3.023E 00	1.045E 00	4.068E 00	1.858E 01	1.382E-01
80.000	3.071E 00	1.430E 00	4.502E 00	2.325E 01	1.757E-01
100.000	3.106E 00	1.820E 00	4.926E 00	2.749E 01	2.094E-01
200.000	3.201E 00	3.803E 00	7.005E 00	4.442E 01	3.375E-01
300.000	3.250E 00	5.814E 00	9.064E 00	5.693E 01	4.237E-01
400.000	3.282E 00	7.834E 00	1.112E 01	6.688E 01	4.866E-01
500.000	3.305E 00	9.861E 00	1.317E 01	7.513E 01	5.349E-01
600.000	3.324E 00	1.189E 01	1.522E 01	8.219E 01	5.734E-01
800.000	3.353E 00	1.596E 01	1.932E 01	9.383E 01	6.315E-01
1000.000	3.376E 00	2.004E 01	2.341E 01	1.032E 02	6.736E-01

ELECTRONS IN ETHYLENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.465E 01	3.784E-03	2.465E 01	2.282E-04	8.747E-05
0.015	1.791E 01	3.709E-03	1.792E 01	4.697E-04	1.185E-04
0.020	1.429E 01	3.667E-03	1.430E 01	7.845E-04	1.469E-04
0.025	1.201E 01	3.638E-03	1.202E 01	1.168E-03	1.735E-04
0.030	1.044E 01	3.619E-03	1.044E 01	1.616E-03	1.987E-04
0.035	9.279E 00	3.602E-03	9.283E 00	2.125E-03	2.228E-04
0.040	8.390E 00	3.601E-03	8.394E 00	2.692E-03	2.460E-04
0.045	7.686E 00	3.606E-03	7.690E 00	3.315E-03	2.686E-04
0.050	7.113E 00	3.618E-03	7.117E 00	3.992E-03	2.906E-04
0.055	6.638E 00	3.633E-03	6.641E 00	4.720E-03	3.122E-04
0.060	6.237E 00	3.653E-03	6.241E 00	5.497E-03	3.333E-04
0.065	5.894E 00	3.675E-03	5.898E 00	6.321E-03	3.542E-04
0.070	5.598E 00	3.699E-03	5.601E 00	7.192E-03	3.747E-04
0.075	5.338E 00	3.725E-03	5.342E 00	8.106E-03	3.950E-04
0.080	5.110E 00	3.753E-03	5.114E 00	9.063E-03	4.150E-04
0.085	4.907E 00	3.762E-03	4.911E 00	1.006E-02	4.346E-04
0.090	4.725E 00	3.793E-03	4.729E 00	1.110E-02	4.541E-04
0.095	4.562E 00	3.825E-03	4.566E 00	1.218E-02	4.733E-04
0.100	4.415E 00	3.859E-03	4.419E 00	1.329E-02	4.924E-04
0.150	3.466E 00	4.245E-03	3.470E 00	2.623E-02	6.780E-04
0.200	2.986E 00	4.674E-03	2.990E 00	4.185E-02	8.570E-04
0.250	2.700E 00	5.136E-03	2.705E 00	5.949E-02	1.032E-03
0.300	2.513E 00	5.617E-03	2.518E 00	7.869E-02	1.204E-03
0.350	2.383E 00	6.118E-03	2.389E 00	9.910E-02	1.374E-03
0.400	2.289E 00	6.620E-03	2.295E 00	1.205E-01	1.543E-03
0.450	2.219E 00	7.133E-03	2.226E 00	1.426E-01	1.710E-03
0.500	2.165E 00	7.646E-03	2.173E 00	1.654E-01	1.875E-03
0.550	2.124E 00	8.162E-03	2.132E 00	1.886E-01	2.038E-03
0.600	2.092E 00	8.681E-03	2.100E 00	2.122E-01	2.200E-03
0.650	2.066E 00	9.203E-03	2.075E 00	2.362E-01	2.361E-03
0.700	2.046E 00	9.729E-03	2.056E 00	2.604E-01	2.519E-03
0.750	2.030E 00	1.026E-02	2.040E 00	2.848E-01	2.677E-03
0.800	2.017E 00	1.079E-02	2.028E 00	3.094E-01	2.833E-03
0.850	2.007E 00	1.133E-02	2.018E 00	3.341E-01	2.988E-03
0.900	1.998E 00	1.187E-02	2.010E 00	3.589E-01	3.142E-03
0.950	1.992E 00	1.241E-02	2.005E 00	3.839E-01	3.295E-03
1.000	1.987E 00	1.296E-02	2.000E 00	4.088E-01	3.447E-03
1.100	1.981E 00	1.405E-02	1.995E 00	4.589E-01	3.748E-03
1.200	1.978E 00	1.516E-02	1.994E 00	5.090E-01	4.046E-03
1.300	1.978E 00	1.628E-02	1.994E 00	5.592E-01	4.342E-03

ELECTRONS IN ETHYLENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.980E 00	1.741E-02	1.997E 00	6.093E-01	4.634E-03
1.500	1.983E 00	1.855E-02	2.001E 00	6.593E-01	4.925E-03
1.600	1.986E 00	1.969E-02	2.006E 00	7.092E-01	5.214E-03
1.700	1.991E 00	2.082E-02	2.012E 00	7.590E-01	5.500E-03
1.800	1.996E 00	2.199E-02	2.018E 00	8.086E-01	5.784E-03
1.900	2.002E 00	2.317E-02	2.025E 00	8.581E-01	6.068E-03
2.000	2.008E 00	2.437E-02	2.032E 00	9.074E-01	6.350E-03
2.200	2.020E 00	2.678E-02	2.046E 00	1.006E 00	6.913E-03
2.400	2.032E 00	2.924E-02	2.061E 00	1.103E 00	7.473E-03
2.600	2.045E 00	3.174E-02	2.076E 00	1.200E 00	8.032E-03
2.800	2.057E 00	3.419E-02	2.091E 00	1.296E 00	8.589E-03
3.000	2.069E 00	3.676E-02	2.106E 00	1.391E 00	9.143E-03
3.500	2.099E 00	4.337E-02	2.142E 00	1.626E 00	1.053E-02
4.000	2.126E 00	5.022E-02	2.176E 00	1.858E 00	1.192E-02
4.500	2.151E 00	5.734E-02	2.209E 00	2.086E 00	1.332E-02
5.000	2.175E 00	6.458E-02	2.239E 00	2.311E 00	1.473E-02
5.500	2.196E 00	7.196E-02	2.268E 00	2.532E 00	1.614E-02
6.000	2.217E 00	7.946E-02	2.296E 00	2.752E 00	1.756E-02
6.500	2.236E 00	8.707E-02	2.323E 00	2.968E 00	1.898E-02
7.000	2.253E 00	9.479E-02	2.348E 00	3.182E 00	2.041E-02
7.500	2.270E 00	1.026E-01	2.373E 00	3.394E 00	2.183E-02
8.000	2.286E 00	1.105E-01	2.396E 00	3.604E 00	2.326E-02
8.500	2.301E 00	1.185E-01	2.419E 00	3.811E 00	2.469E-02
9.000	2.315E 00	1.272E-01	2.442E 00	4.017E 00	2.613E-02
9.500	2.328E 00	1.354E-01	2.464E 00	4.221E 00	2.757E-02
10.000	2.341E 00	1.437E-01	2.485E 00	4.423E 00	2.901E-02
20.000	2.513E 00	3.194E-01	2.832E 00	8.176E 00	5.730E-02
30.000	2.597E 00	5.063E-01	3.104E 00	1.154E 01	8.433E-02
40.000	2.652E 00	6.986E-01	3.350E 00	1.464E 01	1.098E-01
50.000	2.691E 00	8.947E-01	3.585E 00	1.753E 01	1.337E-01
60.000	2.720E 00	1.093E 00	3.814E 00	2.023E 01	1.562E-01
80.000	2.765E 00	1.496E 00	4.260E 00	2.519E 01	1.971E-01
100.000	2.796E 00	1.902E 00	4.699E 00	2.966E 01	2.334E-01
200.000	2.884E 00	3.973E 00	6.857E 00	4.716E 01	3.678E-01
300.000	2.930E 00	6.071E 00	9.000E 00	5.985E 01	4.556E-01
400.000	2.960E 00	8.179E 00	1.114E 01	6.982E 01	5.183E-01
500.000	2.982E 00	1.029E 01	1.327E 01	7.803E 01	5.658E-01
600.000	3.000E 00	1.241E 01	1.541E 01	8.501E 01	6.034E-01
800.000	3.027E 00	1.666E 01	1.968E 01	9.647E 01	6.594E-01
1000.000	3.047E 00	2.090E 01	2.395E 01	1.057E 02	6.996E-01

ELECTRONS IN POLYETHYLENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.465E 01	3.784E-03	2.465E 01	2.282E-04	8.747E-05
0.015	1.791E 01	3.709E-03	1.792E 01	4.697E-04	1.185E-04
0.020	1.429E 01	3.667E-03	1.430E 01	7.845E-04	1.469E-04
0.025	1.201E 01	3.638E-03	1.202E 01	1.168E-03	1.735E-04
0.030	1.044E 01	3.619E-03	1.044E 01	1.616E-03	1.987E-04
0.035	9.279E 00	3.602E-03	9.283E 00	2.125E-03	2.228E-04
0.040	8.390E 00	3.601E-03	8.394E 00	2.692E-03	2.460E-04
0.045	7.686E 00	3.606E-03	7.690E 00	3.315E-03	2.686E-04
0.050	7.113E 00	3.618E-03	7.117E 00	3.992E-03	2.906E-04
0.055	6.638E 00	3.633E-03	6.641E 00	4.720E-03	3.122E-04
0.060	6.237E 00	3.653E-03	6.241E 00	5.497E-03	3.333E-04
0.065	5.894E 00	3.675E-03	5.898E 00	6.321E-03	3.542E-04
0.070	5.598E 00	3.699E-03	5.601E 00	7.192E-03	3.747E-04
0.075	5.338E 00	3.725E-03	5.342E 00	8.106E-03	3.950E-04
0.080	5.110E 00	3.753E-03	5.114E 00	9.063E-03	4.150E-04
0.085	4.907E 00	3.762E-03	4.911E 00	1.006E-02	4.346E-04
0.090	4.725E 00	3.793E-03	4.729E 00	1.110E-02	4.541E-04
0.095	4.562E 00	3.825E-03	4.566E 00	1.218E-02	4.733E-04
0.100	4.415E 00	3.859E-03	4.419E 00	1.329E-02	4.924E-04
0.150	3.466E 00	4.245E-03	3.470E 00	2.623E-02	6.780E-04
0.200	2.986E 00	4.674E-03	2.990E 00	4.185E-02	8.570E-04
0.250	2.700E 00	5.136E-03	2.705E 00	5.949E-02	1.032E-03
0.300	2.513E 00	5.617E-03	2.518E 00	7.869E-02	1.204E-03
0.350	2.379E 00	6.118E-03	2.385E 00	9.911E-02	1.375E-03
0.400	2.280E 00	6.620E-03	2.287E 00	1.205E-01	1.544E-03
0.450	2.206E 00	7.133E-03	2.213E 00	1.428E-01	1.712E-03
0.500	2.148E 00	7.646E-03	2.156E 00	1.657E-01	1.879E-03
0.550	2.103E 00	8.162E-03	2.111E 00	1.891E-01	2.046E-03
0.600	2.067E 00	8.681E-03	2.076E 00	2.130E-01	2.210E-03
0.650	2.038E 00	9.203E-03	2.047E 00	2.373E-01	2.374E-03
0.700	2.014E 00	9.729E-03	2.024E 00	2.618E-01	2.537E-03
0.750	1.995E 00	1.026E-02	2.005E 00	2.867E-01	2.698E-03
0.800	1.979E 00	1.079E-02	1.989E 00	3.117E-01	2.859E-03
0.850	1.965E 00	1.133E-02	1.977E 00	3.369E-01	3.019E-03
0.900	1.954E 00	1.187E-02	1.966E 00	3.623E-01	3.179E-03
0.950	1.945E 00	1.241E-02	1.957E 00	3.878E-01	3.337E-03
1.000	1.937E 00	1.296E-02	1.950E 00	4.134E-01	3.495E-03
1.100	1.925E 00	1.405E-02	1.939E 00	4.648E-01	3.809E-03
1.200	1.917E 00	1.516E-02	1.932E 00	5.165E-01	4.120E-03
1.300	1.912E 00	1.628E-02	1.928E 00	5.683E-01	4.430E-03

ELECTRONS IN POLYETHYLENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.908E 00	1.741E-02	1.926E 00	6.202E-01	4.738E-03
1.500	1.906E 00	1.855E-02	1.925E 00	6.721E-01	5.044E-03
1.600	1.906E 00	1.969E-02	1.925E 00	7.241E-01	5.350E-03
1.700	1.906E 00	2.082E-02	1.926E 00	7.760E-01	5.654E-03
1.800	1.906E 00	2.199E-02	1.928E 00	8.279E-01	5.957E-03
1.900	1.907E 00	2.317E-02	1.931E 00	8.797E-01	6.259E-03
2.000	1.909E 00	2.437E-02	1.933E 00	9.315E-01	6.561E-03
2.200	1.913E 00	2.678E-02	1.940E 00	1.035E 00	7.165E-03
2.400	1.918E 00	2.924E-02	1.947E 00	1.138E 00	7.769E-03
2.600	1.923E 00	3.174E-02	1.955E 00	1.240E 00	8.374E-03
2.800	1.928E 00	3.419E-02	1.963E 00	1.342E 00	8.979E-03
3.000	1.934E 00	3.676E-02	1.971E 00	1.444E 00	9.583E-03
3.500	1.947E 00	4.337E-02	1.990E 00	1.696E 00	1.110E-02
4.000	1.960E 00	5.022E-02	2.010E 00	1.946E 00	1.264E-02
4.500	1.971E 00	5.734E-02	2.029E 00	2.194E 00	1.419E-02
5.000	1.982E 00	6.458E-02	2.047E 00	2.439E 00	1.576E-02
5.500	1.992E 00	7.196E-02	2.064E 00	2.683E 00	1.735E-02
6.000	2.002E 00	7.946E-02	2.081E 00	2.924E 00	1.894E-02
6.500	2.010E 00	8.707E-02	2.097E 00	3.163E 00	2.055E-02
7.000	2.018E 00	9.479E-02	2.113E 00	3.401E 00	2.217E-02
7.500	2.025E 00	1.026E-01	2.128E 00	3.637E 00	2.379E-02
8.000	2.032E 00	1.105E-01	2.143E 00	3.871E 00	2.543E-02
8.500	2.039E 00	1.185E-01	2.157E 00	4.103E 00	2.706E-02
9.000	2.045E 00	1.272E-01	2.172E 00	4.334E 00	2.871E-02
9.500	2.050E 00	1.354E-01	2.186E 00	4.564E 00	3.037E-02
10.000	2.056E 00	1.437E-01	2.200E 00	4.792E 00	3.204E-02
20.000	2.125E 00	3.194E-01	2.445E 00	9.096E 00	6.519E-02
30.000	2.163E 00	5.063E-01	2.670E 00	1.301E 01	9.704E-02
40.000	2.189E 00	6.986E-01	2.888E 00	1.661E 01	1.269E-01
50.000	2.209E 00	8.947E-01	3.104E 00	1.995E 01	1.546E-01
60.000	2.225E 00	1.093E 00	3.319E 00	2.306E 01	1.804E-01
80.000	2.251E 00	1.496E 00	3.746E 00	2.873E 01	2.267E-01
100.000	2.270E 00	1.902E 00	4.173E 00	3.379E 01	2.670E-01
200.000	2.331E 00	3.973E 00	6.305E 00	5.314E 01	4.107E-01
300.000	2.367E 00	6.071E 00	8.438E 00	6.681E 01	5.001E-01
400.000	2.392E 00	8.179E 00	1.057E 01	7.737E 01	5.622E-01
500.000	2.412E 00	1.029E 01	1.270E 01	8.599E 01	6.084E-01
600.000	2.428E 00	1.241E 01	1.484E 01	9.327E 01	6.443E-01
800.000	2.453E 00	1.666E 01	1.911E 01	1.051E 02	6.971E-01
000.000	2.473E 00	2.090E 01	2.338E 01	1.146E 02	7.344E-01

ELECTRONS IN XYLENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.312E 01	3.887E-03	2.313E 01	2.440E-04	9.610E-05
0.015	1.683E 01	3.809E-03	1.683E 01	5.012E-04	1.300E-04
0.020	1.344E 01	3.764E-03	1.344E 01	8.361E-04	1.608E-04
0.025	1.130E 01	3.733E-03	1.131E 01	1.244E-03	1.897E-04
0.030	9.825E 00	3.712E-03	9.828E 00	1.719E-03	2.171E-04
0.035	8.738E 00	3.694E-03	8.742E 00	2.260E-03	2.433E-04
0.040	7.904E 00	3.692E-03	7.908E 00	2.862E-03	2.685E-04
0.045	7.242E 00	3.697E-03	7.246E 00	3.524E-03	2.929E-04
0.050	6.704E 00	3.708E-03	6.708E 00	4.242E-03	3.168E-04
0.055	6.258E 00	3.724E-03	6.261E 00	5.014E-03	3.402E-04
0.060	5.881E 00	3.744E-03	5.885E 00	5.838E-03	3.631E-04
0.065	5.559E 00	3.766E-03	5.562E 00	6.712E-03	3.857E-04
0.070	5.280E 00	3.791E-03	5.283E 00	7.635E-03	4.080E-04
0.075	5.036E 00	3.818E-03	5.040E 00	8.605E-03	4.299E-04
0.080	4.821E 00	3.847E-03	4.825E 00	9.619E-03	4.517E-04
0.085	4.630E 00	3.856E-03	4.634E 00	1.068E-02	4.729E-04
0.090	4.459E 00	3.888E-03	4.463E 00	1.178E-02	4.940E-04
0.095	4.306E 00	3.921E-03	4.310E 00	1.292E-02	5.148E-04
0.100	4.167E 00	3.956E-03	4.171E 00	1.410E-02	5.355E-04
0.150	3.274E 00	4.355E-03	3.278E 00	2.780E-02	7.368E-04
0.200	2.821E 00	4.799E-03	2.826E 00	4.433E-02	9.311E-04
0.250	2.552E 00	5.276E-03	2.557E 00	6.299E-02	1.121E-03
0.300	2.376E 00	5.773E-03	2.382E 00	8.329E-02	1.308E-03
0.350	2.254E 00	6.291E-03	2.260E 00	1.049E-01	1.493E-03
0.400	2.165E 00	6.809E-03	2.171E 00	1.275E-01	1.677E-03
0.450	2.095E 00	7.337E-03	2.103E 00	1.509E-01	1.858E-03
0.500	2.042E 00	7.866E-03	2.050E 00	1.750E-01	2.039E-03
0.550	2.000E 00	8.397E-03	2.009E 00	1.996E-01	2.218E-03
0.600	1.967E 00	8.931E-03	1.976E 00	2.247E-01	2.396E-03
0.650	1.940E 00	9.468E-03	1.950E 00	2.502E-01	2.572E-03
0.700	1.918E 00	1.001E-02	1.928E 00	2.760E-01	2.747E-03
0.750	1.901E 00	1.055E-02	1.911E 00	3.021E-01	2.921E-03
0.800	1.886E 00	1.110E-02	1.897E 00	3.283E-01	3.094E-03
0.850	1.874E 00	1.165E-02	1.885E 00	3.548E-01	3.266E-03
0.900	1.864E 00	1.220E-02	1.876E 00	3.813E-01	3.437E-03
0.950	1.855E 00	1.276E-02	1.868E 00	4.081E-01	3.607E-03
1.000	1.848E 00	1.332E-02	1.862E 00	4.349E-01	3.776E-03
1.100	1.838E 00	1.444E-02	1.853E 00	4.887E-01	4.112E-03
1.200	1.831E 00	1.557E-02	1.847E 00	5.428E-01	4.446E-03
1.300	1.827E 00	1.672E-02	1.843E 00	5.970E-01	4.777E-03

ELECTRONS IN XYLENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.824E 00	1.787E-02	1.842E 00	6.513E-01	5.106E-03
1.500	1.823E 00	1.904E-02	1.842E 00	7.056E-01	5.434E-03
1.600	1.822E 00	2.021E-02	1.842E 00	7.599E-01	5.760E-03
1.700	1.823E 00	2.136E-02	1.844E 00	8.141E-01	6.084E-03
1.800	1.824E 00	2.256E-02	1.846E 00	8.683E-01	6.407E-03
1.900	1.825E 00	2.376E-02	1.849E 00	9.224E-01	6.730E-03
2.000	1.827E 00	2.498E-02	1.852E 00	9.765E-01	7.052E-03
2.200	1.832E 00	2.745E-02	1.859E 00	1.084E 00	7.695E-03
2.400	1.837E 00	2.996E-02	1.867E 00	1.192E 00	8.337E-03
2.600	1.842E 00	3.251E-02	1.875E 00	1.299E 00	8.980E-03
2.800	1.848E 00	3.500E-02	1.883E 00	1.405E 00	9.623E-03
3.000	1.853E 00	3.762E-02	1.891E 00	1.511E 00	1.026E-02
3.500	1.867E 00	4.437E-02	1.911E 00	1.774E 00	1.188E-02
4.000	1.880E 00	5.135E-02	1.931E 00	2.034E 00	1.350E-02
4.500	1.892E 00	5.862E-02	1.950E 00	2.292E 00	1.515E-02
5.000	1.902E 00	6.601E-02	1.968E 00	2.547E 00	1.681E-02
5.500	1.912E 00	7.353E-02	1.986E 00	2.800E 00	1.849E-02
6.000	1.922E 00	8.118E-02	2.003E 00	3.051E 00	2.018E-02
6.500	1.930E 00	8.895E-02	2.019E 00	3.299E 00	2.188E-02
7.000	1.938E 00	9.682E-02	2.035E 00	3.546E 00	2.359E-02
7.500	1.945E 00	1.048E-01	2.050E 00	3.791E 00	2.531E-02
8.000	1.952E 00	1.129E-01	2.065E 00	4.034E 00	2.703E-02
8.500	1.958E 00	1.210E-01	2.079E 00	4.275E 00	2.876E-02
9.000	1.964E 00	1.299E-01	2.094E 00	4.515E 00	3.051E-02
9.500	1.970E 00	1.383E-01	2.108E 00	4.753E 00	3.226E-02
10.000	1.975E 00	1.467E-01	2.122E 00	4.989E 00	3.401E-02
20.000	2.043E 00	3.260E-01	2.369E 00	9.441E 00	6.890E-02
30.000	2.080E 00	5.166E-01	2.596E 00	1.347E 01	1.022E-01
40.000	2.105E 00	7.127E-01	2.817E 00	1.717E 01	1.333E-01
50.000	2.124E 00	9.126E-01	3.036E 00	2.058E 01	1.621E-01
60.000	2.139E 00	1.115E 00	3.254E 00	2.377E 01	1.888E-01
80.000	2.163E 00	1.525E 00	3.689E 00	2.953E 01	2.364E-01
100.000	2.182E 00	1.940E 00	4.122E 00	3.466E 01	2.777E-01
200.000	2.241E 00	4.050E 00	6.291E 00	5.415E 01	4.232E-01
300.000	2.275E 00	6.187E 00	8.462E 00	6.781E 01	5.127E-01
400.000	2.299E 00	8.335E 00	1.063E 01	7.833E 01	5.744E-01
500.000	2.318E 00	1.049E 01	1.281E 01	8.688E 01	6.200E-01
600.000	2.333E 00	1.265E 01	1.498E 01	9.410E 01	6.554E-01
800.000	2.357E 00	1.697E 01	1.933E 01	1.058E 02	7.072E-01
1000.000	2.376E 00	2.130E 01	2.367E 01	1.152E 02	7.436E-01

ELECTRONS IN TOLUENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.289E 01	3.903E-03	2.289E 01	2.466E-04	9.752E-05
0.015	1.666E 01	3.824E-03	1.667E 01	5.064E-04	1.318E-04
0.020	1.331E 01	3.778E-03	1.331E 01	8.446E-04	1.631E-04
0.025	1.119E 01	3.747E-03	1.120E 01	1.256E-03	1.924E-04
0.030	9.731E 00	3.726E-03	9.735E 00	1.736E-03	2.201E-04
0.035	8.656E 00	3.708E-03	8.659E 00	2.282E-03	2.466E-04
0.040	7.830E 00	3.706E-03	7.834E 00	2.890E-03	2.721E-04
0.045	7.175E 00	3.711E-03	7.178E 00	3.558E-03	2.969E-04
0.050	6.642E 00	3.722E-03	6.646E 00	4.282E-03	3.211E-04
0.055	6.200E 00	3.738E-03	6.203E 00	5.062E-03	3.447E-04
0.060	5.827E 00	3.758E-03	5.830E 00	5.894E-03	3.680E-04
0.065	5.507E 00	3.780E-03	5.511E 00	6.776E-03	3.908E-04
0.070	5.231E 00	3.805E-03	5.235E 00	7.708E-03	4.134E-04
0.075	4.990E 00	3.832E-03	4.994E 00	8.686E-03	4.356E-04
0.080	4.777E 00	3.861E-03	4.781E 00	9.710E-03	4.576E-04
0.085	4.588E 00	3.870E-03	4.592E 00	1.078E-02	4.792E-04
0.090	4.419E 00	3.902E-03	4.423E 00	1.189E-02	5.005E-04
0.095	4.267E 00	3.936E-03	4.270E 00	1.304E-02	5.216E-04
0.100	4.129E 00	3.971E-03	4.133E 00	1.423E-02	5.426E-04
0.150	3.244E 00	4.371E-03	3.249E 00	2.806E-02	7.464E-04
0.200	2.796E 00	4.818E-03	2.801E 00	4.473E-02	9.432E-04
0.250	2.530E 00	5.297E-03	2.535E 00	6.356E-02	1.136E-03
0.300	2.355E 00	5.797E-03	2.361E 00	8.404E-02	1.325E-03
0.350	2.234E 00	6.317E-03	2.240E 00	1.058E-01	1.513E-03
0.400	2.146E 00	6.838E-03	2.153E 00	1.286E-01	1.698E-03
0.450	2.079E 00	7.369E-03	2.086E 00	1.522E-01	1.882E-03
0.500	2.026E 00	7.900E-03	2.034E 00	1.765E-01	2.065E-03
0.550	1.985E 00	8.433E-03	1.993E 00	2.013E-01	2.246E-03
0.600	1.952E 00	8.969E-03	1.961E 00	2.266E-01	2.426E-03
0.650	1.925E 00	9.508E-03	1.935E 00	2.523E-01	2.604E-03
0.700	1.904E 00	1.005E-02	1.914E 00	2.783E-01	2.781E-03
0.750	1.886E 00	1.060E-02	1.897E 00	3.046E-01	2.957E-03
0.800	1.872E 00	1.114E-02	1.883E 00	3.310E-01	3.132E-03
0.850	1.860E 00	1.170E-02	1.871E 00	3.577E-01	3.306E-03
0.900	1.850E 00	1.225E-02	1.862E 00	3.844E-01	3.479E-03
0.950	1.842E 00	1.281E-02	1.854E 00	4.114E-01	3.651E-03
1.000	1.835E 00	1.337E-02	1.848E 00	4.384E-01	3.822E-03
1.100	1.825E 00	1.450E-02	1.839E 00	4.926E-01	4.161E-03
1.200	1.818E 00	1.564E-02	1.833E 00	5.471E-01	4.498E-03
1.300	1.813E 00	1.678E-02	1.830E 00	6.017E-01	4.833E-03

ELECTRONS IN TOLUENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.811E 00	1.794E-02	1.829E 00	6.563E-01	5.166E-03
1.500	1.810E 00	1.911E-02	1.829E 00	7.110E-01	5.497E-03
1.600	1.809E 00	2.029E-02	1.830E 00	7.657E-01	5.826E-03
1.700	1.810E 00	2.144E-02	1.831E 00	8.203E-01	6.154E-03
1.800	1.811E 00	2.264E-02	1.834E 00	8.749E-01	6.480E-03
1.900	1.813E 00	2.385E-02	1.837E 00	9.294E-01	6.806E-03
2.000	1.815E 00	2.507E-02	1.840E 00	9.838E-01	7.131E-03
2.200	1.819E 00	2.755E-02	1.847E 00	1.092E 00	7.780E-03
2.400	1.824E 00	3.007E-02	1.854E 00	1.200E 00	8.429E-03
2.600	1.830E 00	3.262E-02	1.862E 00	1.308E 00	9.078E-03
2.800	1.835E 00	3.513E-02	1.871E 00	1.415E 00	9.727E-03
3.000	1.841E 00	3.776E-02	1.879E 00	1.522E 00	1.037E-02
3.500	1.855E 00	4.452E-02	1.899E 00	1.787E 00	1.200E-02
4.000	1.867E 00	5.153E-02	1.919E 00	2.048E 00	1.364E-02
4.500	1.879E 00	5.881E-02	1.938E 00	2.308E 00	1.530E-02
5.000	1.890E 00	6.622E-02	1.956E 00	2.564E 00	1.698E-02
5.500	1.900E 00	7.377E-02	1.974E 00	2.819E 00	1.868E-02
6.000	1.909E 00	8.144E-02	1.991E 00	3.071E 00	2.038E-02
6.500	1.918E 00	8.923E-02	2.007E 00	3.321E 00	2.210E-02
7.000	1.926E 00	9.713E-02	2.023E 00	3.569E 00	2.382E-02
7.500	1.933E 00	1.051E-01	2.038E 00	3.816E 00	2.555E-02
8.000	1.940E 00	1.132E-01	2.053E 00	4.060E 00	2.729E-02
8.500	1.946E 00	1.214E-01	2.068E 00	4.303E 00	2.904E-02
9.000	1.952E 00	1.303E-01	2.082E 00	4.544E 00	3.079E-02
9.500	1.958E 00	1.387E-01	2.096E 00	4.783E 00	3.256E-02
10.000	1.963E 00	1.472E-01	2.110E 00	5.021E 00	3.433E-02
20.000	2.031E 00	3.270E-01	2.358E 00	9.496E 00	6.949E-02
30.000	2.067E 00	5.182E-01	2.585E 00	1.354E 01	1.031E-01
40.000	2.092E 00	7.149E-01	2.807E 00	1.725E 01	1.343E-01
50.000	2.111E 00	9.153E-01	3.026E 00	2.069E 01	1.633E-01
60.000	2.126E 00	1.118E 00	3.244E 00	2.388E 01	1.901E-01
80.000	2.150E 00	1.530E 00	3.680E 00	2.966E 01	2.379E-01
100.000	2.169E 00	1.946E 00	4.115E 00	3.480E 01	2.794E-01
200.000	2.227E 00	4.062E 00	6.289E 00	5.431E 01	4.251E-01
300.000	2.261E 00	6.205E 00	8.466E 00	6.796E 01	5.146E-01
400.000	2.285E 00	8.358E 00	1.064E 01	7.848E 01	5.762E-01
500.000	2.304E 00	1.052E 01	1.282E 01	8.702E 01	6.218E-01
600.000	2.319E 00	1.268E 01	1.500E 01	9.423E 01	6.571E-01
800.000	2.343E 00	1.702E 01	1.936E 01	1.059E 02	7.087E-01
1000.000	2.361E 00	2.136E 01	2.372E 01	1.152E 02	7.450E-01

ELECTRONS IN ACETYLENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.258E 01	3.924E-03	2.258E 01	2.502E-04	9.948E-05
0.015	1.644E 01	3.844E-03	1.644E 01	5.135E-04	1.344E-04
0.020	1.313E 01	3.798E-03	1.314E 01	8.563E-04	1.663E-04
0.025	1.105E 01	3.767E-03	1.105E 01	1.273E-03	1.960E-04
0.030	9.606E 00	3.745E-03	9.609E 00	1.760E-03	2.243E-04
0.035	8.545E 00	3.727E-03	8.548E 00	2.313E-03	2.512E-04
0.040	7.730E 00	3.725E-03	7.734E 00	2.929E-03	2.772E-04
0.045	7.084E 00	3.730E-03	7.087E 00	3.605E-03	3.024E-04
0.050	6.558E 00	3.741E-03	6.562E 00	4.339E-03	3.270E-04
0.055	6.122E 00	3.757E-03	6.125E 00	5.128E-03	3.510E-04
0.060	5.753E 00	3.777E-03	5.757E 00	5.971E-03	3.747E-04
0.065	5.438E 00	3.799E-03	5.442E 00	6.864E-03	3.979E-04
0.070	5.166E 00	3.824E-03	5.170E 00	7.808E-03	4.209E-04
0.075	4.928E 00	3.852E-03	4.931E 00	8.798E-03	4.435E-04
0.080	4.717E 00	3.880E-03	4.721E 00	9.835E-03	4.659E-04
0.085	4.531E 00	3.890E-03	4.535E 00	1.092E-02	4.878E-04
0.090	4.364E 00	3.922E-03	4.368E 00	1.204E-02	5.095E-04
0.095	4.214E 00	3.956E-03	4.218E 00	1.320E-02	5.310E-04
0.100	4.078E 00	3.991E-03	4.082E 00	1.441E-02	5.523E-04
0.150	3.205E 00	4.394E-03	3.209E 00	2.841E-02	7.597E-04
0.200	2.763E 00	4.844E-03	2.767E 00	4.529E-02	9.599E-04
0.250	2.499E 00	5.326E-03	2.504E 00	6.435E-02	1.156E-03
0.300	2.327E 00	5.830E-03	2.333E 00	8.508E-02	1.349E-03
0.350	2.207E 00	6.353E-03	2.214E 00	1.071E-01	1.540E-03
0.400	2.121E 00	6.877E-03	2.128E 00	1.302E-01	1.728E-03
0.450	2.057E 00	7.411E-03	2.064E 00	1.540E-01	1.915E-03
0.500	2.008E 00	7.945E-03	2.016E 00	1.786E-01	2.101E-03
0.550	1.970E 00	8.482E-03	1.978E 00	2.036E-01	2.284E-03
0.600	1.940E 00	9.021E-03	1.949E 00	2.291E-01	2.465E-03
0.650	1.917E 00	9.563E-03	1.926E 00	2.549E-01	2.644E-03
0.700	1.898E 00	1.011E-02	1.908E 00	2.810E-01	2.822E-03
0.750	1.883E 00	1.066E-02	1.894E 00	3.073E-01	2.998E-03
0.800	1.872E 00	1.121E-02	1.883E 00	3.338E-01	3.172E-03
0.850	1.862E 00	1.177E-02	1.874E 00	3.604E-01	3.346E-03
0.900	1.855E 00	1.232E-02	1.867E 00	3.871E-01	3.517E-03
0.950	1.849E 00	1.288E-02	1.862E 00	4.139E-01	3.688E-03
1.000	1.845E 00	1.345E-02	1.859E 00	4.408E-01	3.857E-03
1.100	1.840E 00	1.458E-02	1.854E 00	4.947E-01	4.193E-03
1.200	1.837E 00	1.572E-02	1.853E 00	5.486E-01	4.525E-03
1.300	1.837E 00	1.688E-02	1.854E 00	6.026E-01	4.853E-03

ELECTRONS IN ACETYLENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.839E 00	1.804E-02	1.857E 00	6.565E-01	5.178E-03
1.500	1.842E 00	1.921E-02	1.861E 00	7.103E-01	5.501E-03
1.600	1.846E 00	2.039E-02	1.866E 00	7.639E-01	5.821E-03
1.700	1.850E 00	2.156E-02	1.872E 00	8.174E-01	6.138E-03
1.800	1.855E 00	2.276E-02	1.878E 00	8.708E-01	6.454E-03
1.900	1.861E 00	2.397E-02	1.885E 00	9.239E-01	6.768E-03
2.000	1.866E 00	2.520E-02	1.891E 00	9.769E-01	7.080E-03
2.200	1.878E 00	2.769E-02	1.906E 00	1.082E 00	7.703E-03
2.400	1.890E 00	3.021E-02	1.920E 00	1.187E 00	8.322E-03
2.600	1.902E 00	3.278E-02	1.935E 00	1.291E 00	8.939E-03
2.800	1.914E 00	3.529E-02	1.949E 00	1.394E 00	9.554E-03
3.000	1.925E 00	3.793E-02	1.963E 00	1.496E 00	1.016E-02
3.500	1.953E 00	4.472E-02	1.998E 00	1.748E 00	1.169E-02
4.000	1.979E 00	5.176E-02	2.030E 00	1.997E 00	1.322E-02
4.500	2.003E 00	5.908E-02	2.062E 00	2.241E 00	1.476E-02
5.000	2.025E 00	6.652E-02	2.091E 00	2.482E 00	1.631E-02
5.500	2.045E 00	7.410E-02	2.119E 00	2.719E 00	1.786E-02
6.000	2.064E 00	8.180E-02	2.146E 00	2.954E 00	1.942E-02
6.500	2.082E 00	8.962E-02	2.172E 00	3.185E 00	2.098E-02
7.000	2.099E 00	9.755E-02	2.197E 00	3.414E 00	2.254E-02
7.500	2.115E 00	1.056E-01	2.220E 00	3.640E 00	2.410E-02
8.000	2.130E 00	1.137E-01	2.243E 00	3.864E 00	2.566E-02
8.500	2.144E 00	1.219E-01	2.266E 00	4.086E 00	2.723E-02
9.000	2.157E 00	1.309E-01	2.288E 00	4.306E 00	2.880E-02
9.500	2.170E 00	1.393E-01	2.309E 00	4.523E 00	3.038E-02
10.000	2.182E 00	1.478E-01	2.330E 00	4.739E 00	3.195E-02
20.000	2.349E 00	3.284E-01	2.677E 00	8.728E 00	6.272E-02
30.000	2.436E 00	5.203E-01	2.956E 00	1.228E 01	9.175E-02
40.000	2.492E 00	7.178E-01	3.210E 00	1.552E 01	1.189E-01
50.000	2.531E 00	9.190E-01	3.451E 00	1.852E 01	1.442E-01
60.000	2.562E 00	1.123E 00	3.685E 00	2.133E 01	1.678E-01
80.000	2.607E 00	1.536E 00	4.143E 00	2.644E 01	2.106E-01
100.000	2.639E 00	1.953E 00	4.592E 00	3.103E 01	2.482E-01
200.000	2.726E 00	4.078E 00	6.804E 00	4.879E 01	3.855E-01
300.000	2.771E 00	6.229E 00	9.000E 00	6.153E 01	4.736E-01
400.000	2.800E 00	8.391E 00	1.119E 01	7.147E 01	5.360E-01
500.000	2.821E 00	1.056E 01	1.338E 01	7.963E 01	5.829E-01
600.000	2.838E 00	1.273E 01	1.557E 01	8.655E 01	6.198E-01
800.000	2.864E 00	1.708E 01	1.995E 01	9.787E 01	6.745E-01
1000.000	2.883E 00	2.144E 01	2.432E 01	1.069E 02	7.135E-01

ELECTRONS IN POLYSTYRENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.260E 01	3.926E-03	2.261E 01	2.499E-04	9.940E-05
0.015	1.646E 01	3.846E-03	1.646E 01	5.129E-04	1.343E-04
0.020	1.315E 01	3.799E-03	1.315E 01	8.553E-04	1.661E-04
0.025	1.106E 01	3.768E-03	1.106E 01	1.272E-03	1.959E-04
0.030	9.617E 00	3.747E-03	9.620E 00	1.758E-03	2.241E-04
0.035	8.554E 00	3.728E-03	8.558E 00	2.310E-03	2.510E-04
0.040	7.739E 00	3.726E-03	7.743E 00	2.925E-03	2.770E-04
0.045	7.092E 00	3.731E-03	7.096E 00	3.601E-03	3.021E-04
0.050	6.565E 00	3.742E-03	6.569E 00	4.334E-03	3.267E-04
0.055	6.129E 00	3.758E-03	6.132E 00	5.122E-03	3.508E-04
0.060	5.760E 00	3.778E-03	5.764E 00	5.964E-03	3.744E-04
0.065	5.445E 00	3.801E-03	5.448E 00	6.857E-03	3.976E-04
0.070	5.172E 00	3.826E-03	5.176E 00	7.799E-03	4.205E-04
0.075	4.933E 00	3.853E-03	4.937E 00	8.788E-03	4.432E-04
0.080	4.723E 00	3.882E-03	4.727E 00	9.824E-03	4.655E-04
0.085	4.536E 00	3.891E-03	4.540E 00	1.090E-02	4.874E-04
0.090	4.369E 00	3.923E-03	4.373E 00	1.203E-02	5.090E-04
0.095	4.219E 00	3.957E-03	4.223E 00	1.319E-02	5.305E-04
0.100	4.083E 00	3.992E-03	4.087E 00	1.439E-02	5.518E-04
0.150	3.208E 00	4.395E-03	3.213E 00	2.838E-02	7.590E-04
0.200	2.766E 00	4.845E-03	2.771E 00	4.524E-02	9.591E-04
0.250	2.502E 00	5.328E-03	2.507E 00	6.427E-02	1.155E-03
0.300	2.330E 00	5.831E-03	2.335E 00	8.498E-02	1.347E-03
0.350	2.209E 00	6.355E-03	2.216E 00	1.070E-01	1.538E-03
0.400	2.119E 00	6.879E-03	2.126E 00	1.301E-01	1.728E-03
0.450	2.051E 00	7.413E-03	2.059E 00	1.540E-01	1.915E-03
0.500	1.999E 00	7.948E-03	2.007E 00	1.786E-01	2.102E-03
0.550	1.958E 00	8.484E-03	1.966E 00	2.038E-01	2.287E-03
0.600	1.925E 00	9.024E-03	1.934E 00	2.294E-01	2.471E-03
0.650	1.899E 00	9.566E-03	1.908E 00	2.554E-01	2.653E-03
0.700	1.878E 00	1.011E-02	1.888E 00	2.818E-01	2.834E-03
0.750	1.860E 00	1.066E-02	1.871E 00	3.084E-01	3.013E-03
0.800	1.846E 00	1.121E-02	1.857E 00	3.352E-01	3.192E-03
0.850	1.834E 00	1.177E-02	1.845E 00	3.622E-01	3.369E-03
0.900	1.824E 00	1.233E-02	1.836E 00	3.894E-01	3.546E-03
0.950	1.816E 00	1.289E-02	1.828E 00	4.167E-01	3.721E-03
1.000	1.809E 00	1.345E-02	1.822E 00	4.441E-01	3.896E-03
1.100	1.798E 00	1.458E-02	1.813E 00	4.991E-01	4.243E-03
1.200	1.792E 00	1.573E-02	1.807E 00	5.544E-01	4.587E-03
1.300	1.787E 00	1.688E-02	1.804E 00	6.098E-01	4.929E-03

ELECTRONS IN POLYSTYRENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.784E 00	1.804E-02	1.802E 00	6.652E-01	5.268E-03
1.500	1.783E 00	1.922E-02	1.802E 00	7.207E-01	5.606E-03
1.600	1.783E 00	2.040E-02	1.803E 00	7.762E-01	5.943E-03
1.700	1.783E 00	2.156E-02	1.805E 00	8.316E-01	6.277E-03
1.800	1.784E 00	2.277E-02	1.807E 00	8.870E-01	6.610E-03
1.900	1.786E 00	2.398E-02	1.810E 00	9.423E-01	6.942E-03
2.000	1.787E 00	2.521E-02	1.813E 00	9.975E-01	7.274E-03
2.200	1.792E 00	2.770E-02	1.819E 00	1.108E 00	7.937E-03
2.400	1.797E 00	3.023E-02	1.827E 00	1.217E 00	8.599E-03
2.600	1.802E 00	3.279E-02	1.835E 00	1.327E 00	9.261E-03
2.800	1.807E 00	3.531E-02	1.843E 00	1.435E 00	9.924E-03
3.000	1.813E 00	3.795E-02	1.851E 00	1.544E 00	1.058E-02
3.500	1.826E 00	4.474E-02	1.871E 00	1.812E 00	1.224E-02
4.000	1.838E 00	5.178E-02	1.890E 00	2.078E 00	1.392E-02
4.500	1.850E 00	5.910E-02	1.909E 00	2.341E 00	1.561E-02
5.000	1.861E 00	6.654E-02	1.927E 00	2.602E 00	1.733E-02
5.500	1.870E 00	7.412E-02	1.944E 00	2.860E 00	1.905E-02
6.000	1.879E 00	8.183E-02	1.961E 00	3.116E 00	2.079E-02
6.500	1.888E 00	8.965E-02	1.977E 00	3.370E 00	2.254E-02
7.000	1.895E 00	9.759E-02	1.993E 00	3.622E 00	2.430E-02
7.500	1.902E 00	1.056E-01	2.008E 00	3.872E 00	2.607E-02
8.000	1.909E 00	1.138E-01	2.023E 00	4.120E 00	2.784E-02
8.500	1.915E 00	1.220E-01	2.037E 00	4.367E 00	2.962E-02
9.000	1.921E 00	1.309E-01	2.052E 00	4.611E 00	3.141E-02
9.500	1.926E 00	1.393E-01	2.066E 00	4.854E 00	3.321E-02
10.000	1.932E 00	1.478E-01	2.079E 00	5.095E 00	3.501E-02
20.000	1.998E 00	3.285E-01	2.327E 00	9.633E 00	7.080E-02
30.000	2.034E 00	5.205E-01	2.555E 00	1.373E 01	1.049E-01
40.000	2.059E 00	7.181E-01	2.777E 00	1.749E 01	1.366E-01
50.000	2.077E 00	9.194E-01	2.997E 00	2.095E 01	1.659E-01
60.000	2.093E 00	1.123E 00	3.216E 00	2.417E 01	1.930E-01
80.000	2.117E 00	1.537E 00	3.653E 00	3.000E 01	2.414E-01
100.000	2.135E 00	1.954E 00	4.089E 00	3.517E 01	2.831E-01
200.000	2.193E 00	4.079E 00	6.272E 00	5.477E 01	4.294E-01
300.000	2.226E 00	6.232E 00	8.458E 00	6.845E 01	5.188E-01
400.000	2.250E 00	8.394E 00	1.064E 01	7.896E 01	5.803E-01
500.000	2.269E 00	1.056E 01	1.283E 01	8.751E 01	6.256E-01
600.000	2.284E 00	1.274E 01	1.502E 01	9.470E 01	6.607E-01
800.000	2.308E 00	1.709E 01	1.940E 01	1.064E 02	7.120E-01
1000.000	2.326E 00	2.145E 01	2.377E 01	1.157E 02	7.481E-01

ELECTRONS IN STILBENE

ENERGY	STOPPING POWER COLLISION	STOPPING POWER RADIATION	STOPPING POWER TOTAL	RANGE	RADIATION YIELD
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.226E 01	3.946E-03	2.226E 01	2.539E-04	1.015E-04
0.015	1.621E 01	3.865E-03	1.622E 01	5.210E-04	1.371E-04
0.020	1.295E 01	3.819E-03	1.296E 01	8.686E-04	1.696E-04
0.025	1.090E 01	3.787E-03	1.090E 01	1.291E-03	1.999E-04
0.030	9.477E 00	3.765E-03	9.481E 00	1.784E-03	2.287E-04
0.035	8.431E 00	3.746E-03	8.435E 00	2.345E-03	2.561E-04
0.040	7.628E 00	3.744E-03	7.632E 00	2.969E-03	2.825E-04
0.045	6.991E 00	3.749E-03	6.994E 00	3.654E-03	3.082E-04
0.050	6.472E 00	3.760E-03	6.476E 00	4.398E-03	3.332E-04
0.055	6.042E 00	3.776E-03	6.046E 00	5.198E-03	3.577E-04
0.060	5.679E 00	3.796E-03	5.682E 00	6.051E-03	3.817E-04
0.065	5.368E 00	3.819E-03	5.372E 00	6.957E-03	4.054E-04
0.070	5.099E 00	3.844E-03	5.103E 00	7.912E-03	4.287E-04
0.075	4.864E 00	3.871E-03	4.868E 00	8.916E-03	4.518E-04
0.080	4.657E 00	3.900E-03	4.661E 00	9.966E-03	4.746E-04
0.085	4.473E 00	3.910E-03	4.477E 00	1.106E-02	4.968E-04
0.090	4.308E 00	3.942E-03	4.312E 00	1.220E-02	5.189E-04
0.095	4.160E 00	3.976E-03	4.164E 00	1.338E-02	5.408E-04
0.100	4.026E 00	4.012E-03	4.030E 00	1.460E-02	5.625E-04
0.150	3.164E 00	4.417E-03	3.169E 00	2.878E-02	7.735E-04
0.200	2.728E 00	4.870E-03	2.733E 00	4.587E-02	9.773E-04
0.250	2.468E 00	5.356E-03	2.473E 00	6.517E-02	1.177E-03
0.300	2.298E 00	5.863E-03	2.304E 00	8.616E-02	1.373E-03
0.350	2.178E 00	6.389E-03	2.185E 00	1.085E-01	1.568E-03
0.400	2.090E 00	6.917E-03	2.096E 00	1.319E-01	1.761E-03
0.450	2.023E 00	7.454E-03	2.030E 00	1.561E-01	1.952E-03
0.500	1.971E 00	7.992E-03	1.979E 00	1.811E-01	2.143E-03
0.550	1.931E 00	8.532E-03	1.939E 00	2.066E-01	2.331E-03
0.600	1.899E 00	9.074E-03	1.908E 00	2.326E-01	2.519E-03
0.650	1.873E 00	9.619E-03	1.882E 00	2.590E-01	2.704E-03
0.700	1.851E 00	1.017E-02	1.862E 00	2.857E-01	2.889E-03
0.750	1.834E 00	1.072E-02	1.845E 00	3.127E-01	3.072E-03
0.800	1.820E 00	1.127E-02	1.831E 00	3.399E-01	3.254E-03
0.850	1.808E 00	1.183E-02	1.820E 00	3.673E-01	3.435E-03
0.900	1.798E 00	1.239E-02	1.811E 00	3.948E-01	3.615E-03
0.950	1.790E 00	1.296E-02	1.803E 00	4.225E-01	3.794E-03
1.000	1.784E 00	1.352E-02	1.797E 00	4.503E-01	3.972E-03
1.100	1.774E 00	1.466E-02	1.788E 00	5.061E-01	4.325E-03
1.200	1.767E 00	1.581E-02	1.783E 00	5.621E-01	4.676E-03
1.300	1.762E 00	1.697E-02	1.779E 00	6.182E-01	5.024E-03

ELECTRONS IN STILBENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.760E 00	1.814E-02	1.778E 00	6.745E-01	5.370E-03
1.500	1.758E 00	1.931E-02	1.778E 00	7.307E-01	5.714E-03
1.600	1.758E 00	2.050E-02	1.779E 00	7.870E-01	6.057E-03
1.700	1.758E 00	2.167E-02	1.780E 00	8.432E-01	6.397E-03
1.800	1.759E 00	2.288E-02	1.782E 00	8.993E-01	6.737E-03
1.900	1.761E 00	2.410E-02	1.785E 00	9.554E-01	7.075E-03
2.000	1.763E 00	2.533E-02	1.788E 00	1.011E 00	7.413E-03
2.200	1.767E 00	2.783E-02	1.795E 00	1.123E 00	8.088E-03
2.400	1.772E 00	3.037E-02	1.802E 00	1.234E 00	8.762E-03
2.600	1.777E 00	3.295E-02	1.810E 00	1.345E 00	9.436E-03
2.800	1.782E 00	3.547E-02	1.818E 00	1.455E 00	1.011E-02
3.000	1.788E 00	3.812E-02	1.826E 00	1.565E 00	1.078E-02
3.500	1.801E 00	4.494E-02	1.846E 00	1.837E 00	1.247E-02
4.000	1.813E 00	5.200E-02	1.865E 00	2.107E 00	1.418E-02
4.500	1.824E 00	5.935E-02	1.884E 00	2.374E 00	1.590E-02
5.000	1.835E 00	6.682E-02	1.902E 00	2.638E 00	1.764E-02
5.500	1.844E 00	7.443E-02	1.919E 00	2.900E 00	1.940E-02
6.000	1.853E 00	8.216E-02	1.935E 00	3.159E 00	2.117E-02
6.500	1.861E 00	9.002E-02	1.951E 00	3.416E 00	2.294E-02
7.000	1.869E 00	9.798E-02	1.967E 00	3.671E 00	2.473E-02
7.500	1.876E 00	1.061E-01	1.982E 00	3.925E 00	2.653E-02
8.000	1.882E 00	1.142E-01	1.997E 00	4.176E 00	2.833E-02
8.500	1.889E 00	1.225E-01	2.011E 00	4.426E 00	3.014E-02
9.000	1.894E 00	1.314E-01	2.026E 00	4.673E 00	3.195E-02
9.500	1.900E 00	1.399E-01	2.040E 00	4.919E 00	3.379E-02
10.000	1.905E 00	1.484E-01	2.053E 00	5.164E 00	3.562E-02
20.000	1.971E 00	3.298E-01	2.300E 00	9.757E 00	7.195E-02
30.000	2.006E 00	5.225E-01	2.529E 00	1.390E 01	1.065E-01
40.000	2.030E 00	7.208E-01	2.751E 00	1.769E 01	1.386E-01
50.000	2.049E 00	9.228E-01	2.972E 00	2.119E 01	1.683E-01
60.000	2.064E 00	1.127E 00	3.191E 00	2.443E 01	1.956E-01
80.000	2.088E 00	1.542E 00	3.630E 00	3.031E 01	2.443E-01
100.000	2.106E 00	1.961E 00	4.067E 00	3.551E 01	2.864E-01
200.000	2.163E 00	4.094E 00	6.257E 00	5.518E 01	4.331E-01
300.000	2.196E 00	6.254E 00	8.450E 00	6.888E 01	5.225E-01
400.000	2.220E 00	8.424E 00	1.064E 01	7.940E 01	5.838E-01
500.000	2.238E 00	1.060E 01	1.284E 01	8.794E 01	6.290E-01
600.000	2.253E 00	1.278E 01	1.503E 01	9.513E 01	6.639E-01
800.000	2.277E 00	1.715E 01	1.943E 01	1.068E 02	7.149E-01
1000.000	2.295E 00	2.152E 01	2.382E 01	1.161E 02	7.507E-01

ELECTRONS IN LUCITE

ENERGY	STOPPING POWER COLLISION	STOPPING POWER RADIATION	STOPPING POWER TOTAL	RANGE	RADIATION YIELD
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.251E 01	4.356E-03	2.252E 01	2.511E-04	1.106E-04
0.015	1.640E 01	4.268E-03	1.640E 01	5.151E-04	1.495E-04
0.020	1.311E 01	4.215E-03	1.311E 01	8.587E-04	1.850E-04
0.025	1.103E 01	4.177E-03	1.103E 01	1.276E-03	2.180E-04
0.030	9.588E 00	4.151E-03	9.592E 00	1.764E-03	2.494E-04
0.035	8.530E 00	4.128E-03	8.534E 00	2.318E-03	2.792E-04
0.040	7.717E 00	4.125E-03	7.722E 00	2.935E-03	3.079E-04
0.045	7.073E 00	4.130E-03	7.077E 00	3.612E-03	3.358E-04
0.050	6.548E 00	4.144E-03	6.552E 00	4.347E-03	3.631E-04
0.055	6.113E 00	4.162E-03	6.117E 00	5.137E-03	3.897E-04
0.060	5.746E 00	4.185E-03	5.750E 00	5.981E-03	4.159E-04
0.065	5.431E 00	4.211E-03	5.436E 00	6.876E-03	4.417E-04
0.070	5.159E 00	4.240E-03	5.164E 00	7.820E-03	4.672E-04
0.075	4.922E 00	4.272E-03	4.926E 00	8.812E-03	4.923E-04
0.080	4.712E 00	4.305E-03	4.716E 00	9.850E-03	5.172E-04
0.085	4.526E 00	4.323E-03	4.530E 00	1.093E-02	5.416E-04
0.090	4.359E 00	4.360E-03	4.363E 00	1.206E-02	5.658E-04
0.095	4.209E 00	4.399E-03	4.214E 00	1.322E-02	5.898E-04
0.100	4.074E 00	4.439E-03	4.078E 00	1.443E-02	6.136E-04
0.150	3.202E 00	4.891E-03	3.207E 00	2.844E-02	8.450E-04
0.200	2.761E 00	5.386E-03	2.766E 00	4.533E-02	1.068E-03
0.250	2.498E 00	5.923E-03	2.504E 00	6.440E-02	1.286E-03
0.300	2.326E 00	6.483E-03	2.332E 00	8.513E-02	1.500E-03
0.350	2.206E 00	7.066E-03	2.213E 00	1.072E-01	1.713E-03
0.400	2.106E 00	7.649E-03	2.113E 00	1.304E-01	1.925E-03
0.450	2.039E 00	8.242E-03	2.047E 00	1.544E-01	2.136E-03
0.500	1.987E 00	8.835E-03	1.996E 00	1.792E-01	2.345E-03
0.550	1.946E 00	9.429E-03	1.956E 00	2.045E-01	2.552E-03
0.600	1.914E 00	1.002E-02	1.924E 00	2.303E-01	2.758E-03
0.650	1.888E 00	1.062E-02	1.898E 00	2.564E-01	2.961E-03
0.700	1.867E 00	1.122E-02	1.878E 00	2.829E-01	3.163E-03
0.750	1.849E 00	1.183E-02	1.861E 00	3.097E-01	3.363E-03
0.800	1.835E 00	1.243E-02	1.847E 00	3.367E-01	3.562E-03
0.850	1.823E 00	1.305E-02	1.836E 00	3.638E-01	3.760E-03
0.900	1.814E 00	1.366E-02	1.827E 00	3.911E-01	3.956E-03
0.950	1.806E 00	1.427E-02	1.820E 00	4.185E-01	4.151E-03
1.000	1.799E 00	1.489E-02	1.814E 00	4.460E-01	4.344E-03
1.100	1.789E 00	1.613E-02	1.805E 00	5.013E-01	4.729E-03
1.200	1.782E 00	1.738E-02	1.800E 00	5.568E-01	5.110E-03
1.300	1.778E 00	1.864E-02	1.796E 00	6.124E-01	5.487E-03

ELECTRONS IN LUCITE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.775E 00	1.991E-02	1.795E 00	6.681E-01	5.862E-03
1.500	1.774E 00	2.120E-02	1.795E 00	7.238E-01	6.235E-03
1.600	1.774E 00	2.248E-02	1.796E 00	7.795E-01	6.605E-03
1.700	1.775E 00	2.375E-02	1.798E 00	8.352E-01	6.973E-03
1.800	1.776E 00	2.506E-02	1.801E 00	8.907E-01	7.339E-03
1.900	1.777E 00	2.638E-02	1.804E 00	9.462E-01	7.703E-03
2.000	1.779E 00	2.772E-02	1.807E 00	1.002E 00	8.067E-03
2.200	1.784E 00	3.042E-02	1.814E 00	1.112E 00	8.794E-03
2.400	1.789E 00	3.318E-02	1.822E 00	1.222E 00	9.518E-03
2.600	1.794E 00	3.597E-02	1.830E 00	1.332E 00	1.024E-02
2.800	1.800E 00	3.870E-02	1.838E 00	1.441E 00	1.097E-02
3.000	1.805E 00	4.157E-02	1.847E 00	1.549E 00	1.169E-02
3.500	1.819E 00	4.895E-02	1.868E 00	1.818E 00	1.350E-02
4.000	1.832E 00	5.659E-02	1.888E 00	2.085E 00	1.532E-02
4.500	1.843E 00	6.453E-02	1.908E 00	2.348E 00	1.716E-02
5.000	1.854E 00	7.262E-02	1.927E 00	2.609E 00	1.902E-02
5.500	1.864E 00	8.085E-02	1.945E 00	2.867E 00	2.089E-02
6.000	1.873E 00	8.921E-02	1.962E 00	3.123E 00	2.278E-02
6.500	1.882E 00	9.771E-02	1.979E 00	3.377E 00	2.467E-02
7.000	1.889E 00	1.063E-01	1.996E 00	3.628E 00	2.658E-02
7.500	1.897E 00	1.151E-01	2.012E 00	3.878E 00	2.849E-02
8.000	1.903E 00	1.239E-01	2.027E 00	4.125E 00	3.040E-02
8.500	1.910E 00	1.328E-01	2.043E 00	4.371E 00	3.233E-02
9.000	1.916E 00	1.426E-01	2.058E 00	4.615E 00	3.426E-02
9.500	1.921E 00	1.518E-01	2.073E 00	4.857E 00	3.621E-02
10.000	1.926E 00	1.610E-01	2.087E 00	5.097E 00	3.815E-02
20.000	1.994E 00	3.574E-01	2.351E 00	9.603E 00	7.663E-02
30.000	2.030E 00	5.660E-01	2.596E 00	1.365E 01	1.130E-01
40.000	2.055E 00	7.806E-01	2.836E 00	1.733E 01	1.466E-01
50.000	2.074E 00	9.992E-01	3.073E 00	2.072E 01	1.774E-01
60.000	2.089E 00	1.221E 00	3.310E 00	2.385E 01	2.058E-01
80.000	2.113E 00	1.669E 00	3.782E 00	2.950E 01	2.560E-01
100.000	2.132E 00	2.122E 00	4.254E 00	3.449E 01	2.990E-01
200.000	2.189E 00	4.428E 00	6.617E 00	5.318E 01	4.474E-01
300.000	2.223E 00	6.762E 00	8.985E 00	6.610E 01	5.366E-01
400.000	2.247E 00	9.107E 00	1.135E 01	7.598E 01	5.973E-01
500.000	2.265E 00	1.146E 01	1.372E 01	8.398E 01	6.417E-01
600.000	2.281E 00	1.382E 01	1.610E 01	9.070E 01	6.760E-01
800.000	2.304E 00	1.854E 01	2.084E 01	1.016E 02	7.258E-01
1000.000	2.323E 00	2.326E 01	2.558E 01	1.102E 02	7.606E-01

ELECTRONS IN ANTHRACENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.192E 01	3.969E-03	2.193E 01	2.580E-04	1.038E-04
0.015	1.597E 01	3.887E-03	1.598E 01	5.291E-04	1.401E-04
0.020	1.277E 01	3.840E-03	1.277E 01	8.817E-04	1.731E-04
0.025	1.074E 01	3.807E-03	1.075E 01	1.310E-03	2.040E-04
0.030	9.344E 00	3.785E-03	9.348E 00	1.811E-03	2.333E-04
0.035	8.313E 00	3.766E-03	8.317E 00	2.379E-03	2.613E-04
0.040	7.522E 00	3.764E-03	7.526E 00	3.012E-03	2.882E-04
0.045	6.894E 00	3.768E-03	6.898E 00	3.707E-03	3.143E-04
0.050	6.383E 00	3.780E-03	6.387E 00	4.461E-03	3.398E-04
0.055	5.959E 00	3.796E-03	5.963E 00	5.272E-03	3.647E-04
0.060	5.601E 00	3.816E-03	5.605E 00	6.137E-03	3.892E-04
0.065	5.295E 00	3.839E-03	5.299E 00	7.055E-03	4.133E-04
0.070	5.030E 00	3.864E-03	5.034E 00	8.024E-03	4.371E-04
0.075	4.798E 00	3.891E-03	4.802E 00	9.042E-03	4.606E-04
0.080	4.594E 00	3.921E-03	4.598E 00	1.011E-02	4.838E-04
0.085	4.412E 00	3.930E-03	4.416E 00	1.122E-02	5.064E-04
0.090	4.250E 00	3.963E-03	4.254E 00	1.237E-02	5.289E-04
0.095	4.104E 00	3.997E-03	4.108E 00	1.357E-02	5.512E-04
0.100	3.972E 00	4.033E-03	3.976E 00	1.480E-02	5.733E-04
0.150	3.123E 00	4.441E-03	3.127E 00	2.917E-02	7.883E-04
0.200	2.692E 00	4.897E-03	2.697E 00	4.650E-02	9.959E-04
0.250	2.436E 00	5.386E-03	2.441E 00	6.605E-02	1.199E-03
0.300	2.268E 00	5.896E-03	2.274E 00	8.731E-02	1.399E-03
0.350	2.151E 00	6.427E-03	2.157E 00	1.099E-01	1.597E-03
0.400	2.063E 00	6.958E-03	2.070E 00	1.336E-01	1.794E-03
0.450	1.997E 00	7.499E-03	2.005E 00	1.582E-01	1.989E-03
0.500	1.946E 00	8.039E-03	1.954E 00	1.834E-01	2.183E-03
0.550	1.906E 00	8.582E-03	1.915E 00	2.093E-01	2.375E-03
0.600	1.875E 00	9.128E-03	1.884E 00	2.356E-01	2.566E-03
0.650	1.849E 00	9.676E-03	1.859E 00	2.623E-01	2.755E-03
0.700	1.828E 00	1.023E-02	1.838E 00	2.894E-01	2.943E-03
0.750	1.811E 00	1.078E-02	1.822E 00	3.167E-01	3.129E-03
0.800	1.797E 00	1.134E-02	1.808E 00	3.443E-01	3.315E-03
0.850	1.785E 00	1.190E-02	1.797E 00	3.720E-01	3.499E-03
0.900	1.776E 00	1.247E-02	1.788E 00	3.999E-01	3.682E-03
0.950	1.768E 00	1.303E-02	1.781E 00	4.279E-01	3.864E-03
1.000	1.761E 00	1.360E-02	1.775E 00	4.560E-01	4.046E-03
1.100	1.751E 00	1.474E-02	1.766E 00	5.125E-01	4.406E-03
1.200	1.744E 00	1.590E-02	1.760E 00	5.693E-01	4.763E-03
1.300	1.740E 00	1.706E-02	1.757E 00	6.261E-01	5.117E-03

ELECTRONS IN ANTHRACENE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.737E 00	1.824E-02	1.756E 00	6.831E-01	5.470E-03
1.500	1.736E 00	1.942E-02	1.756E 00	7.400E-01	5.820E-03
1.600	1.736E 00	2.061E-02	1.756E 00	7.970E-01	6.169E-03
1.700	1.736E 00	2.179E-02	1.758E 00	8.539E-01	6.515E-03
1.800	1.737E 00	2.300E-02	1.760E 00	9.107E-01	6.860E-03
1.900	1.739E 00	2.423E-02	1.763E 00	9.675E-01	7.205E-03
2.000	1.740E 00	2.546E-02	1.766E 00	1.024E 00	7.548E-03
2.200	1.745E 00	2.797E-02	1.773E 00	1.137E 00	8.235E-03
2.400	1.749E 00	3.052E-02	1.780E 00	1.250E 00	8.920E-03
2.600	1.755E 00	3.311E-02	1.788E 00	1.362E 00	9.606E-03
2.800	1.760E 00	3.564E-02	1.796E 00	1.474E 00	1.029E-02
3.000	1.765E 00	3.831E-02	1.803E 00	1.585E 00	1.098E-02
3.500	1.778E 00	4.515E-02	1.823E 00	1.860E 00	1.269E-02
4.000	1.790E 00	5.225E-02	1.842E 00	2.133E 00	1.443E-02
4.500	1.801E 00	5.963E-02	1.861E 00	2.403E 00	1.618E-02
5.000	1.812E 00	6.713E-02	1.879E 00	2.671E 00	1.795E-02
5.500	1.821E 00	7.477E-02	1.896E 00	2.936E 00	1.973E-02
6.000	1.830E 00	8.254E-02	1.913E 00	3.198E 00	2.153E-02
6.500	1.838E 00	9.042E-02	1.929E 00	3.458E 00	2.334E-02
7.000	1.846E 00	9.842E-02	1.944E 00	3.717E 00	2.515E-02
7.500	1.853E 00	1.065E-01	1.959E 00	3.973E 00	2.697E-02
8.000	1.859E 00	1.147E-01	1.974E 00	4.227E 00	2.880E-02
8.500	1.865E 00	1.230E-01	1.988E 00	4.480E 00	3.064E-02
9.000	1.871E 00	1.320E-01	2.003E 00	4.730E 00	3.249E-02
9.500	1.876E 00	1.405E-01	2.017E 00	4.979E 00	3.434E-02
10.000	1.881E 00	1.491E-01	2.030E 00	5.226E 00	3.621E-02
20.000	1.946E 00	3.312E-01	2.277E 00	9.868E 00	7.306E-02
30.000	1.981E 00	5.247E-01	2.506E 00	1.405E 01	1.081E-01
40.000	2.005E 00	7.238E-01	2.729E 00	1.787E 01	1.405E-01
50.000	2.024E 00	9.267E-01	2.951E 00	2.140E 01	1.705E-01
60.000	2.039E 00	1.132E 00	3.171E 00	2.466E 01	1.981E-01
80.000	2.062E 00	1.549E 00	3.611E 00	3.057E 01	2.471E-01
100.000	2.080E 00	1.969E 00	4.050E 00	3.580E 01	2.894E-01
200.000	2.137E 00	4.111E 00	6.247E 00	5.552E 01	4.366E-01
300.000	2.170E 00	6.279E 00	8.449E 00	6.924E 01	5.260E-01
400.000	2.193E 00	8.458E 00	1.065E 01	7.975E 01	5.871E-01
500.000	2.211E 00	1.064E 01	1.285E 01	8.829E 01	6.321E-01
600.000	2.226E 00	1.283E 01	1.506E 01	9.547E 01	6.669E-01
800.000	2.249E 00	1.722E 01	1.947E 01	1.071E 02	7.176E-01
000.000	2.267E 00	2.161E 01	2.387E 01	1.164E 02	7.531E-01

ELECTRONS IN MUSCLE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.292E 01	4.971E-03	2.292E 01	2.467E-04	1.236E-04
0.015	1.670E 01	4.874E-03	1.670E 01	5.061E-04	1.674E-04
0.020	1.334E 01	4.810E-03	1.335E 01	8.435E-04	2.072E-04
0.025	1.123E 01	4.766E-03	1.123E 01	1.254E-03	2.443E-04
0.030	9.763E 00	4.735E-03	9.768E 00	1.733E-03	2.794E-04
0.035	8.686E 00	4.705E-03	8.691E 00	2.276E-03	3.128E-04
0.040	7.859E 00	4.702E-03	7.863E 00	2.882E-03	3.449E-04
0.045	7.202E 00	4.710E-03	7.207E 00	3.547E-03	3.761E-04
0.050	6.669E 00	4.726E-03	6.673E 00	4.269E-03	4.066E-04
0.055	6.225E 00	4.749E-03	6.230E 00	5.045E-03	4.365E-04
0.060	5.851E 00	4.777E-03	5.856E 00	5.873E-03	4.659E-04
0.065	5.531E 00	4.808E-03	5.536E 00	6.752E-03	4.948E-04
0.070	5.254E 00	4.843E-03	5.259E 00	7.679E-03	5.234E-04
0.075	5.012E 00	4.881E-03	5.017E 00	8.653E-03	5.516E-04
0.080	4.799E 00	4.921E-03	4.804E 00	9.672E-03	5.795E-04
0.085	4.609E 00	4.952E-03	4.614E 00	1.073E-02	6.071E-04
0.090	4.440E 00	4.995E-03	4.445E 00	1.184E-02	6.344E-04
0.095	4.287E 00	5.041E-03	4.292E 00	1.298E-02	6.615E-04
0.100	4.149E 00	5.087E-03	4.154E 00	1.417E-02	6.884E-04
0.150	3.261E 00	5.609E-03	3.267E 00	2.792E-02	9.497E-04
0.200	2.811E 00	6.169E-03	2.817E 00	4.451E-02	1.201E-03
0.250	2.543E 00	6.781E-03	2.550E 00	6.323E-02	1.446E-03
0.300	2.367E 00	7.420E-03	2.375E 00	8.359E-02	1.687E-03
0.350	2.245E 00	8.088E-03	2.254E 00	1.052E-01	1.926E-03
0.400	2.157E 00	8.754E-03	2.166E 00	1.279E-01	2.162E-03
0.450	2.092E 00	9.432E-03	2.101E 00	1.513E-01	2.396E-03
0.500	2.041E 00	1.011E-02	2.052E 00	1.754E-01	2.627E-03
0.550	2.003E 00	1.078E-02	2.013E 00	2.000E-01	2.855E-03
0.600	1.972E 00	1.146E-02	1.984E 00	2.251E-01	3.081E-03
0.650	1.948E 00	1.214E-02	1.960E 00	2.504E-01	3.305E-03
0.700	1.929E 00	1.282E-02	1.942E 00	2.761E-01	3.525E-03
0.750	1.914E 00	1.350E-02	1.927E 00	3.019E-01	3.744E-03
0.800	1.902E 00	1.418E-02	1.916E 00	3.279E-01	3.960E-03
0.850	1.892E 00	1.487E-02	1.907E 00	3.541E-01	4.174E-03
0.900	1.884E 00	1.556E-02	1.900E 00	3.804E-01	4.387E-03
0.950	1.878E 00	1.625E-02	1.894E 00	4.067E-01	4.597E-03
1.000	1.874E 00	1.694E-02	1.890E 00	4.332E-01	4.806E-03
1.100	1.868E 00	1.834E-02	1.886E 00	4.861E-01	5.218E-03
1.200	1.865E 00	1.975E-02	1.885E 00	5.392E-01	5.625E-03
1.300	1.864E 00	2.116E-02	1.886E 00	5.922E-01	6.027E-03

ELECTRONS IN MUSCLE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.866E 00	2.259E-02	1.888E 00	6.452E-01	6.425E-03
1.500	1.868E 00	2.402E-02	1.892E 00	6.981E-01	6.818E-03
1.600	1.872E 00	2.546E-02	1.897E 00	7.509E-01	7.208E-03
1.700	1.876E 00	2.687E-02	1.903E 00	8.035E-01	7.594E-03
1.800	1.881E 00	2.833E-02	1.909E 00	8.560E-01	7.976E-03
1.900	1.886E 00	2.981E-02	1.916E 00	9.083E-01	8.356E-03
2.000	1.891E 00	3.130E-02	1.922E 00	9.604E-01	8.735E-03
2.200	1.902E 00	3.432E-02	1.936E 00	1.064E 00	9.486E-03
2.400	1.913E 00	3.739E-02	1.951E 00	1.167E 00	1.023E-02
2.600	1.925E 00	4.050E-02	1.965E 00	1.269E 00	1.098E-02
2.800	1.936E 00	4.354E-02	1.980E 00	1.371E 00	1.171E-02
3.000	1.948E 00	4.673E-02	1.994E 00	1.471E 00	1.245E-02
3.500	1.974E 00	5.495E-02	2.029E 00	1.720E 00	1.428E-02
4.000	1.999E 00	6.346E-02	2.063E 00	1.964E 00	1.611E-02
4.500	2.022E 00	7.230E-02	2.094E 00	2.205E 00	1.794E-02
5.000	2.043E 00	8.129E-02	2.125E 00	2.442E 00	1.979E-02
5.500	2.063E 00	9.045E-02	2.154E 00	2.675E 00	2.164E-02
6.000	2.082E 00	9.977E-02	2.181E 00	2.906E 00	2.349E-02
6.500	2.099E 00	1.092E-01	2.208E 00	3.134E 00	2.534E-02
7.000	2.115E 00	1.188E-01	2.234E 00	3.359E 00	2.720E-02
7.500	2.130E 00	1.285E-01	2.259E 00	3.582E 00	2.906E-02
8.000	2.144E 00	1.384E-01	2.283E 00	3.802E 00	3.092E-02
8.500	2.158E 00	1.483E-01	2.306E 00	4.020E 00	3.277E-02
9.000	2.171E 00	1.593E-01	2.330E 00	4.235E 00	3.464E-02
9.500	2.183E 00	1.695E-01	2.352E 00	4.449E 00	3.651E-02
10.000	2.194E 00	1.798E-01	2.374E 00	4.661E 00	3.838E-02
20.000	2.353E 00	3.986E-01	2.752E 00	8.559E 00	7.466E-02
30.000	2.447E 00	6.311E-01	3.078E 00	1.199E 01	1.083E-01
40.000	2.510E 00	8.701E-01	3.381E 00	1.509E 01	1.392E-01
50.000	2.549E 00	1.113E 00	3.662E 00	1.793E 01	1.676E-01
60.000	2.577E 00	1.360E 00	3.937E 00	2.056E 01	1.938E-01
80.000	2.620E 00	1.859E 00	4.479E 00	2.532E 01	2.407E-01
100.000	2.651E 00	2.363E 00	5.014E 00	2.954E 01	2.814E-01
200.000	2.737E 00	4.927E 00	7.663E 00	4.554E 01	4.249E-01
300.000	2.782E 00	7.521E 00	1.030E 01	5.676E 01	5.134E-01
400.000	2.812E 00	1.013E 01	1.294E 01	6.540E 01	5.747E-01
500.000	2.834E 00	1.274E 01	1.558E 01	7.243E 01	6.200E-01
600.000	2.852E 00	1.536E 01	1.821E 01	7.836E 01	6.552E-01
800.000	2.879E 00	2.061E 01	2.348E 01	8.801E 01	7.069E-01
000.000	2.900E 00	2.585E 01	2.875E 01	9.569E 01	7.433E-01

ELECTRONS IN BONE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	2.101E 01	6.373E-03	2.101E 01	2.711E-04	1.726E-04
0.015	1.536E 01	6.282E-03	1.537E 01	5.533E-04	2.341E-04
0.020	1.231E 01	6.206E-03	1.231E 01	9.195E-04	2.898E-04
0.025	1.037E 01	6.172E-03	1.038E 01	1.364E-03	3.418E-04
0.030	9.030E 00	6.159E-03	9.036E 00	1.882E-03	3.913E-04
0.035	8.041E 00	6.153E-03	8.047E 00	2.469E-03	4.387E-04
0.040	7.281E 00	6.169E-03	7.287E 00	3.123E-03	4.846E-04
0.045	6.678E 00	6.196E-03	6.684E 00	3.841E-03	5.292E-04
0.050	6.186E 00	6.231E-03	6.193E 00	4.619E-03	5.730E-04
0.055	5.778E 00	6.271E-03	5.785E 00	5.455E-03	6.159E-04
0.060	5.434E 00	6.316E-03	5.440E 00	6.347E-03	6.581E-04
0.065	5.139E 00	6.365E-03	5.145E 00	7.292E-03	6.998E-04
0.070	4.883E 00	6.417E-03	4.890E 00	8.290E-03	7.409E-04
0.075	4.660E 00	6.472E-03	4.666E 00	9.337E-03	7.814E-04
0.080	4.463E 00	6.528E-03	4.469E 00	1.043E-02	8.216E-04
0.085	4.288E 00	6.571E-03	4.294E 00	1.157E-02	8.612E-04
0.090	4.131E 00	6.631E-03	4.138E 00	1.276E-02	9.003E-04
0.095	3.990E 00	6.693E-03	3.997E 00	1.399E-02	9.392E-04
0.100	3.862E 00	6.757E-03	3.869E 00	1.526E-02	9.778E-04
0.150	3.041E 00	7.442E-03	3.049E 00	3.001E-02	1.351E-03
0.200	2.623E 00	8.154E-03	2.631E 00	4.778E-02	1.706E-03
0.250	2.374E 00	8.941E-03	2.383E 00	6.781E-02	2.050E-03
0.300	2.210E 00	9.765E-03	2.220E 00	8.960E-02	2.388E-03
0.350	2.097E 00	1.063E-02	2.107E 00	1.128E-01	2.722E-03
0.400	2.015E 00	1.148E-02	2.026E 00	1.370E-01	3.051E-03
0.450	1.953E 00	1.235E-02	1.965E 00	1.620E-01	3.376E-03
0.500	1.906E 00	1.321E-02	1.919E 00	1.878E-01	3.697E-03
0.550	1.869E 00	1.407E-02	1.883E 00	2.141E-01	4.013E-03
0.600	1.840E 00	1.493E-02	1.855E 00	2.409E-01	4.325E-03
0.650	1.817E 00	1.578E-02	1.833E 00	2.680E-01	4.633E-03
0.700	1.799E 00	1.664E-02	1.816E 00	2.954E-01	4.937E-03
0.750	1.784E 00	1.750E-02	1.802E 00	3.230E-01	5.237E-03
0.800	1.772E 00	1.836E-02	1.791E 00	3.509E-01	5.534E-03
0.850	1.763E 00	1.925E-02	1.782E 00	3.789E-01	5.828E-03
0.900	1.755E 00	2.012E-02	1.775E 00	4.070E-01	6.119E-03
0.950	1.749E 00	2.098E-02	1.770E 00	4.352E-01	6.407E-03
1.000	1.744E 00	2.185E-02	1.766E 00	4.635E-01	6.693E-03
1.100	1.738E 00	2.359E-02	1.761E 00	5.202E-01	7.255E-03
1.200	1.734E 00	2.533E-02	1.760E 00	5.770E-01	7.809E-03
1.300	1.733E 00	2.708E-02	1.760E 00	6.338E-01	8.353E-03

ELECTRONS IN BONE

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.734E 00	2.883E-02	1.762E 00	6.906E-01	8.890E-03
1.500	1.735E 00	3.059E-02	1.766E 00	7.473E-01	9.421E-03
1.600	1.737E 00	3.236E-02	1.770E 00	8.039E-01	9.945E-03
1.700	1.741E 00	3.400E-02	1.775E 00	8.603E-01	1.046E-02
1.800	1.744E 00	3.580E-02	1.780E 00	9.166E-01	1.097E-02
1.900	1.748E 00	3.761E-02	1.786E 00	9.727E-01	1.148E-02
2.000	1.752E 00	3.944E-02	1.792E 00	1.029E 00	1.198E-02
2.200	1.761E 00	4.317E-02	1.804E 00	1.140E 00	1.298E-02
2.400	1.770E 00	4.697E-02	1.817E 00	1.250E 00	1.397E-02
2.600	1.779E 00	5.084E-02	1.830E 00	1.360E 00	1.496E-02
2.800	1.788E 00	5.483E-02	1.843E 00	1.469E 00	1.594E-02
3.000	1.797E 00	5.883E-02	1.856E 00	1.577E 00	1.693E-02
3.500	1.819E 00	6.907E-02	1.888E 00	1.844E 00	1.939E-02
4.000	1.839E 00	7.963E-02	1.919E 00	2.107E 00	2.184E-02
4.500	1.858E 00	9.053E-02	1.948E 00	2.365E 00	2.430E-02
5.000	1.875E 00	1.016E-01	1.976E 00	2.620E 00	2.677E-02
5.500	1.890E 00	1.129E-01	2.003E 00	2.871E 00	2.923E-02
6.000	1.905E 00	1.243E-01	2.029E 00	3.119E 00	3.170E-02
6.500	1.919E 00	1.359E-01	2.055E 00	3.364E 00	3.416E-02
7.000	1.932E 00	1.477E-01	2.079E 00	3.606E 00	3.662E-02
7.500	1.943E 00	1.596E-01	2.103E 00	3.845E 00	3.908E-02
8.000	1.955E 00	1.716E-01	2.126E 00	4.082E 00	4.153E-02
8.500	1.965E 00	1.838E-01	2.149E 00	4.316E 00	4.397E-02
9.000	1.975E 00	1.969E-01	2.172E 00	4.547E 00	4.642E-02
9.500	1.985E 00	2.093E-01	2.194E 00	4.776E 00	4.888E-02
10.000	1.994E 00	2.218E-01	2.216E 00	5.003E 00	5.132E-02
20.000	2.116E 00	4.885E-01	2.604E 00	9.153E 00	9.812E-02
30.000	2.186E 00	7.718E-01	2.958E 00	1.275E 01	1.405E-01
40.000	2.234E 00	1.063E 00	3.297E 00	1.595E 01	1.785E-01
50.000	2.264E 00	1.360E 00	3.623E 00	1.884E 01	2.127E-01
60.000	2.287E 00	1.660E 00	3.947E 00	2.149E 01	2.437E-01
80.000	2.322E 00	2.267E 00	4.589E 00	2.618E 01	2.975E-01
100.000	2.347E 00	2.880E 00	5.227E 00	3.026E 01	3.427E-01
200.000	2.420E 00	5.994E 00	8.414E 00	4.520E 01	4.932E-01
300.000	2.459E 00	9.144E 00	1.160E 01	5.527E 01	5.802E-01
400.000	2.486E 00	1.231E 01	1.479E 01	6.289E 01	6.381E-01
500.000	2.506E 00	1.548E 01	1.798E 01	6.901E 01	6.799E-01
600.000	2.522E 00	1.865E 01	2.117E 01	7.413E 01	7.118E-01
800.000	2.547E 00	2.501E 01	2.756E 01	8.239E 01	7.577E-01
1000.000	2.566E 00	3.137E 01	3.394E 01	8.891E 01	7.895E-01

ELECTRONS IN AIR

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.970E 01	5.012E-03	1.971E 01	2.892E-04	1.463E-04
0.015	1.441E 01	4.909E-03	1.442E 01	5.901E-04	1.969E-04
0.020	1.155E 01	4.843E-03	1.155E 01	9.805E-04	2.428E-04
0.025	9.733E 00	4.797E-03	9.737E 00	1.454E-03	2.855E-04
0.030	8.475E 00	4.765E-03	8.479E 00	2.006E-03	3.259E-04
0.035	7.548E 00	4.735E-03	7.552E 00	2.632E-03	3.642E-04
0.040	6.835E 00	4.731E-03	6.840E 00	3.329E-03	4.011E-04
0.045	6.269E 00	4.738E-03	6.273E 00	4.093E-03	4.370E-04
0.050	5.808E 00	4.753E-03	5.812E 00	4.922E-03	4.719E-04
0.055	5.425E 00	4.775E-03	5.429E 00	5.813E-03	5.062E-04
0.060	5.101E 00	4.803E-03	5.106E 00	6.763E-03	5.398E-04
0.065	4.824E 00	4.834E-03	4.829E 00	7.771E-03	5.730E-04
0.070	4.585E 00	4.868E-03	4.590E 00	8.833E-03	6.057E-04
0.075	4.375E 00	4.906E-03	4.380E 00	9.949E-03	6.380E-04
0.080	4.190E 00	4.945E-03	4.195E 00	1.112E-02	6.700E-04
0.085	4.026E 00	4.973E-03	4.031E 00	1.233E-02	7.014E-04
0.090	3.879E 00	5.016E-03	3.884E 00	1.360E-02	7.326E-04
0.095	3.747E 00	5.062E-03	3.752E 00	1.491E-02	7.635E-04
0.100	3.627E 00	5.109E-03	3.632E 00	1.626E-02	7.943E-04
0.150	2.856E 00	5.637E-03	2.862E 00	3.197E-02	1.093E-03
0.200	2.466E 00	6.211E-03	2.472E 00	5.089E-02	1.380E-03
0.250	2.233E 00	6.834E-03	2.240E 00	7.221E-02	1.661E-03
0.300	2.081E 00	7.483E-03	2.088E 00	9.537E-02	1.937E-03
0.350	1.975E 00	8.161E-03	1.984E 00	1.200E-01	2.210E-03
0.400	1.899E 00	8.836E-03	1.908E 00	1.457E-01	2.480E-03
0.450	1.843E 00	9.527E-03	1.852E 00	1.723E-01	2.748E-03
0.500	1.800E 00	1.021E-02	1.810E 00	1.996E-01	3.012E-03
0.550	1.766E 00	1.090E-02	1.777E 00	2.275E-01	3.274E-03
0.600	1.740E 00	1.158E-02	1.752E 00	2.559E-01	3.532E-03
0.650	1.720E 00	1.227E-02	1.732E 00	2.846E-01	3.787E-03
0.700	1.704E 00	1.295E-02	1.717E 00	3.136E-01	4.039E-03
0.750	1.691E 00	1.364E-02	1.705E 00	3.428E-01	4.288E-03
0.800	1.681E 00	1.433E-02	1.696E 00	3.722E-01	4.534E-03
0.850	1.673E 00	1.498E-02	1.688E 00	4.018E-01	4.776E-03
0.900	1.667E 00	1.568E-02	1.683E 00	4.314E-01	5.016E-03
0.950	1.662E 00	1.637E-02	1.679E 00	4.612E-01	5.254E-03
1.000	1.659E 00	1.707E-02	1.676E 00	4.910E-01	5.490E-03
1.100	1.655E 00	1.848E-02	1.673E 00	5.507E-01	5.956E-03
1.200	1.653E 00	1.991E-02	1.673E 00	6.105E-01	6.415E-03
1.300	1.654E 00	2.134E-02	1.675E 00	6.702E-01	6.870E-03

ELECTRONS IN AIR

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.656E 00	2.279E-02	1.679E 00	7.298E-01	7.319E-03
1.500	1.659E 00	2.424E-02	1.683E 00	7.893E-01	7.763E-03
1.600	1.663E 00	2.571E-02	1.689E 00	8.487E-01	8.204E-03
1.700	1.667E 00	2.717E-02	1.695E 00	9.078E-01	8.640E-03
1.800	1.672E 00	2.866E-02	1.701E 00	9.667E-01	9.074E-03
1.900	1.677E 00	3.016E-02	1.708E 00	1.025E 00	9.505E-03
2.000	1.683E 00	3.168E-02	1.714E 00	1.084E 00	9.933E-03
2.200	1.694E 00	3.473E-02	1.729E 00	1.200E 00	1.078E-02
2.400	1.705E 00	3.783E-02	1.743E 00	1.315E 00	1.163E-02
2.600	1.716E 00	4.097E-02	1.757E 00	1.429E 00	1.246E-02
2.800	1.728E 00	4.394E-02	1.771E 00	1.543E 00	1.329E-02
3.000	1.738E 00	4.714E-02	1.786E 00	1.655E 00	1.412E-02
3.500	1.764E 00	5.538E-02	1.820E 00	1.933E 00	1.616E-02
4.000	1.789E 00	6.393E-02	1.852E 00	2.205E 00	1.820E-02
4.500	1.811E 00	7.282E-02	1.884E 00	2.473E 00	2.024E-02
5.000	1.831E 00	8.187E-02	1.913E 00	2.736E 00	2.229E-02
5.500	1.851E 00	9.108E-02	1.942E 00	2.995E 00	2.434E-02
6.000	1.868E 00	1.004E-01	1.969E 00	3.251E 00	2.639E-02
6.500	1.885E 00	1.099E-01	1.995E 00	3.503E 00	2.844E-02
7.000	1.901E 00	1.196E-01	2.020E 00	3.752E 00	3.049E-02
7.500	1.915E 00	1.294E-01	2.045E 00	3.998E 00	3.254E-02
8.000	1.929E 00	1.393E-01	2.068E 00	4.241E 00	3.459E-02
8.500	1.942E 00	1.493E-01	2.091E 00	4.482E 00	3.663E-02
9.000	1.955E 00	1.603E-01	2.115E 00	4.720E 00	3.868E-02
9.500	1.966E 00	1.705E-01	2.137E 00	4.955E 00	4.074E-02
10.000	1.978E 00	1.809E-01	2.159E 00	5.188E 00	4.280E-02
20.000	2.133E 00	4.008E-01	2.534E 00	9.447E 00	8.229E-02
30.000	2.225E 00	6.344E-01	2.859E 00	1.316E 01	1.185E-01
40.000	2.283E 00	8.745E-01	3.158E 00	1.648E 01	1.514E-01
50.000	2.324E 00	1.119E 00	3.443E 00	1.951E 01	1.814E-01
60.000	2.355E 00	1.366E 00	3.721E 00	2.231E 01	2.089E-01
80.000	2.400E 00	1.868E 00	4.268E 00	2.732E 01	2.576E-01
100.000	2.433E 00	2.374E 00	4.807E 00	3.173E 01	2.994E-01
200.000	2.520E 00	4.948E 00	7.468E 00	4.828E 01	4.445E-01
300.000	2.564E 00	7.552E 00	1.012E 01	5.974E 01	5.325E-01
400.000	2.593E 00	1.017E 01	1.276E 01	6.852E 01	5.928E-01
500.000	2.614E 00	1.279E 01	1.541E 01	7.564E 01	6.372E-01
600.000	2.630E 00	1.542E 01	1.805E 01	8.163E 01	6.714E-01
800.000	2.655E 00	2.068E 01	2.334E 01	9.135E 01	7.215E-01
000.000	2.674E 00	2.595E 01	2.862E 01	9.907E 01	7.566E-01

ELECTRONS IN STANDARD EMULSION

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
0.010	1.315E 01	2.109E-02	1.317E 01	4.605E-04	9.478E-04
0.015	9.884E 00	2.110E-02	9.905E 00	9.038E-04	1.255E-03
0.020	8.050E 00	2.084E-02	8.071E 00	1.467E-03	1.532E-03
0.025	6.863E 00	2.113E-02	6.884E 00	2.140E-03	1.791E-03
0.030	6.028E 00	2.159E-02	6.049E 00	2.917E-03	2.045E-03
0.035	5.405E 00	2.224E-02	5.427E 00	3.791E-03	2.301E-03
0.040	4.922E 00	2.270E-02	4.945E 00	4.758E-03	2.557E-03
0.045	4.535E 00	2.311E-02	4.559E 00	5.812E-03	2.809E-03
0.050	4.219E 00	2.350E-02	4.242E 00	6.950E-03	3.059E-03
0.055	3.955E 00	2.386E-02	3.978E 00	8.168E-03	3.305E-03
0.060	3.730E 00	2.420E-02	3.755E 00	9.463E-03	3.548E-03
0.065	3.538E 00	2.452E-02	3.562E 00	1.083E-02	3.788E-03
0.070	3.370E 00	2.483E-02	3.395E 00	1.227E-02	4.025E-03
0.075	3.224E 00	2.513E-02	3.249E 00	1.378E-02	4.258E-03
0.080	3.094E 00	2.543E-02	3.119E 00	1.535E-02	4.488E-03
0.085	2.978E 00	2.559E-02	3.004E 00	1.698E-02	4.714E-03
0.090	2.875E 00	2.587E-02	2.901E 00	1.867E-02	4.936E-03
0.095	2.781E 00	2.615E-02	2.807E 00	2.043E-02	5.156E-03
0.100	2.697E 00	2.643E-02	2.723E 00	2.224E-02	5.374E-03
0.150	2.148E 00	2.910E-02	2.177E 00	4.303E-02	7.439E-03
0.200	1.869E 00	3.148E-02	1.900E 00	6.775E-02	9.329E-03
0.250	1.702E 00	3.421E-02	1.736E 00	9.537E-02	1.109E-02
0.300	1.593E 00	3.707E-02	1.630E 00	1.252E-01	1.278E-02
0.350	1.518E 00	4.009E-02	1.558E 00	1.566E-01	1.442E-02
0.400	1.464E 00	4.301E-02	1.507E 00	1.892E-01	1.601E-02
0.450	1.424E 00	4.593E-02	1.470E 00	2.229E-01	1.756E-02
0.500	1.394E 00	4.880E-02	1.442E 00	2.572E-01	1.905E-02
0.550	1.371E 00	5.164E-02	1.423E 00	2.921E-01	2.051E-02
0.600	1.353E 00	5.445E-02	1.408E 00	3.275E-01	2.193E-02
0.650	1.340E 00	5.724E-02	1.397E 00	3.631E-01	2.330E-02
0.700	1.329E 00	6.001E-02	1.389E 00	3.990E-01	2.465E-02
0.750	1.320E 00	6.277E-02	1.383E 00	4.351E-01	2.596E-02
0.800	1.314E 00	6.551E-02	1.379E 00	4.713E-01	2.724E-02
0.850	1.309E 00	6.731E-02	1.376E 00	5.076E-01	2.845E-02
0.900	1.305E 00	7.003E-02	1.375E 00	5.440E-01	2.965E-02
0.950	1.302E 00	7.278E-02	1.374E 00	5.803E-01	3.082E-02
1.000	1.299E 00	7.554E-02	1.375E 00	6.167E-01	3.198E-02
1.100	1.297E 00	8.112E-02	1.378E 00	6.894E-01	3.425E-02
1.200	1.296E 00	8.677E-02	1.383E 00	7.618E-01	3.646E-02
1.300	1.297E 00	9.248E-02	1.390E 00	8.340E-01	3.863E-02

ELECTRONS IN STANDARD EMULSION

ENERGY	STOPPING POWER			RANGE	RADIATION YIELD
	COLLISION	RADIATION	TOTAL		
MEV	MEV CM2/G	MEV CM2/G	MEV CM2/G	G/CM2	
1.400	1.299E 00	9.824E-02	1.397E 00	9.057E-01	4.076E-02
1.500	1.301E 00	1.041E-01	1.405E 00	9.771E-01	4.285E-02
1.600	1.304E 00	1.099E-01	1.414E 00	1.048E 00	4.492E-02
1.700	1.307E 00	1.161E-01	1.423E 00	1.119E 00	4.697E-02
1.800	1.311E 00	1.220E-01	1.433E 00	1.189E 00	4.899E-02
1.900	1.314E 00	1.280E-01	1.442E 00	1.258E 00	5.099E-02
2.000	1.318E 00	1.340E-01	1.452E 00	1.327E 00	5.296E-02
2.200	1.326E 00	1.460E-01	1.472E 00	1.464E 00	5.685E-02
2.400	1.333E 00	1.582E-01	1.491E 00	1.599E 00	6.067E-02
2.600	1.341E 00	1.704E-01	1.511E 00	1.732E 00	6.442E-02
2.800	1.348E 00	1.826E-01	1.531E 00	1.864E 00	6.811E-02
3.000	1.355E 00	1.949E-01	1.550E 00	1.994E 00	7.173E-02
3.500	1.372E 00	2.261E-01	1.598E 00	2.311E 00	8.058E-02
4.000	1.387E 00	2.577E-01	1.645E 00	2.620E 00	8.915E-02
4.500	1.401E 00	2.895E-01	1.690E 00	2.919E 00	9.747E-02
5.000	1.413E 00	3.218E-01	1.735E 00	3.211E 00	1.056E-01
5.500	1.424E 00	3.545E-01	1.779E 00	3.496E 00	1.135E-01
6.000	1.435E 00	3.876E-01	1.822E 00	3.774E 00	1.212E-01
6.500	1.444E 00	4.209E-01	1.865E 00	4.045E 00	1.287E-01
7.000	1.453E 00	4.546E-01	1.908E 00	4.310E 00	1.361E-01
7.500	1.461E 00	4.886E-01	1.950E 00	4.569E 00	1.433E-01
8.000	1.469E 00	5.229E-01	1.992E 00	4.823E 00	1.504E-01
8.500	1.476E 00	5.575E-01	2.033E 00	5.071E 00	1.573E-01
9.000	1.483E 00	5.945E-01	2.077E 00	5.315E 00	1.642E-01
9.500	1.489E 00	6.296E-01	2.118E 00	5.553E 00	1.709E-01
10.000	1.495E 00	6.650E-01	2.160E 00	5.787E 00	1.775E-01
20.000	1.571E 00	1.402E 00	2.972E 00	9.715E 00	2.871E-01
30.000	1.611E 00	2.187E 00	3.798E 00	1.269E 01	3.671E-01
40.000	1.638E 00	3.009E 00	4.647E 00	1.506E 01	4.288E-01
50.000	1.658E 00	3.839E 00	5.497E 00	1.704E 01	4.779E-01
60.000	1.674E 00	4.678E 00	6.352E 00	1.873E 01	5.180E-01
80.000	1.698E 00	6.372E 00	8.070E 00	2.152E 01	5.797E-01
100.000	1.716E 00	8.076E 00	9.792E 00	2.376E 01	6.254E-01
200.000	1.770E 00	1.671E 01	1.848E 01	3.108E 01	7.490E-01
300.000	1.799E 00	2.542E 01	2.722E 01	3.551E 01	8.063E-01
400.000	1.820E 00	3.415E 01	3.597E 01	3.869E 01	8.403E-01
500.000	1.836E 00	4.289E 01	4.473E 01	4.118E 01	8.631E-01
600.000	1.849E 00	5.165E 01	5.350E 01	4.322E 01	8.797E-01
800.000	1.869E 00	6.917E 01	7.104E 01	4.645E 01	9.022E-01
000.000	1.885E 00	8.670E 01	8.858E 01	4.897E 01	9.171E-01