ORNL-4032

Contract No. W-7405-eng-26

Neutron Physics Division

TISSUE CURRENT-TO-DOSE CONVERSION FACTORS FOR NEUTRONS WITH ENERGIES FROM 0.5 TO 60 MeV*

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NOTE:
This Work Partially Supported by
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
under Order R-104(1)

*Previously issued as ORNL TM-1522 without appendices.

AUGUST 1967

OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee
operated by
UNION CARBIDE CORPORATION
for the
U. S. ATOMIC ENERGY COMMISSION

TABLE OF CONTENTS

		Page No.
	ABSTRACT	v
I.	INTRODUCTION	1
II.	METHOD	3
III.	COMPARISON TO SNYDER-NEUFELD	7
IV.	COMPARISON TO ZERBY-KINNEY AT 60 MeV	13
V.	TISSUE CURRENT-TO-DOSE FACTORS FOR 0.5-TO 400-MeV NEUTRONS	15
APP. I.	DOSE AS A FUNCTION OF DEPTH	23
APP. II.	ENERGY DEPOSITION IN THE TISSUE SLAB	48

ABSTRACT

To assist in the evaluation of the hazard associated with exposure to high-energy neutrons, a Monte Carlo computer program was used to calculate the energy deposition as a function of depth in a 30-cm-thick infinite slab of tissue resulting from neutrons incident on the slab at energies up to 60 MeV. The program treated nonelastic and elastic interactions, including evaporation processes and nuclear recoils. Cases of both normal and isotropic incidence were calculated for neutrons of 0.5, 2, 10, 18, 30, and 60 MeV. From these data, current-to-dose conversion factors were extracted for the average whole-body dose, the dose at a 5-cm depth, and the maximum dose. A set of quality factors (QF's) was adopted for transforming rad dose to rem dose, but detailed energy deposition data are also presented so that any preferred set of QF's can be used to obtain estimates of the rem dose.

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I. INTRODUCTION

To assess the hazard to personnel encountering high-energy radiation, it is necessary to have a means of estimating the biological effects of these radiations. A useful and simple way of obtaining such an estimate is to multiply the current of a given type of incident particle by the appropriate current-to-dose conversion factor. In a previous paper Zerby and Kinney (1) have published such conversion factors for nucleons in the energy range 60 to 400 MeV. Before these factors can be utilized in computations they must be extended from 60 MeV down to 1 MeV or less. This is relatively easy for protons since simple analytic calculations will suffice in this energy range. For neutrons, however, the only data available are from some early calculations by Snyder and Neufeld at energies up to 10 MeV (2).

In order to obtain the needed conversion factors, calculations have been carried out for neutron energies from 0.5 to 60 MeV. The geometry considered is the same as in the work of Zerby and Kinney; i.e., an infinite slab of tissue 30-cm thick uniformly exposed to radiation over one face. Both normally and isotropically incident radiations are considered in an effort to bracket the dose that would be received with some intermediate angular distributions. The calculations have been carried out using a previously written Monte Carlo transport code (3) and using evaporation theory (4) to treat nonelastic neutron collisions. The quality factors for protons and alpha particles have been taken to be functions of LET and a quality factor of 20 has been used for all heavier particles. The calculational details are discussed in Section II.

At the lower energies, the results have been compared with the earlier work of Snyder and Neufeld (2), and the effect of various approximations (isotropic scattering, no nonelastic scattering, etc.) has been determined. The results of these comparisons, presented in Section III, show good agreement with the previous calculation in rads but exhibit some differences in rems.

In the calculations of Zerby and Kinney (1), the Bertini model (5) of the intranuclear cascade was used to predict the results of inelastic neutron collisions above 50 MeV, and evaporation theory (4) was used below this energy, while in the present calculations evaporation theory is used at all energies. To test the effect of this change in the nuclear model, the two calculations are compared in Section IV for the case of 60-MeV neutrons. The rad calculations are in very good agreement, but the rem calculations differ by from 30 to 50%.

The current-to-dose conversion factors for neutrons with energies of 0.5 to 400 MeV are presented in Section V. The factors above 60 MeV are taken from the work of Zerby and Kinney and are included on the graphs for comparison purposes.

In addition to the conversion factors, both the rad and rem doses as a function of depth in tissue for normally and isotropically incident neutrons of energy 0.5, 2, 10, 18, 30, and 60 MeV have been obtained. This information is presented in Appendix I. Also, since the method of

converting energy deposition to rem dose will be subject to change, the energy deposition by protons as they pass through various energy ranges at various depths has been obtained and is given in Appendix II. With this information any preferred set of quality factors may be applied to the protons. Results concerning energy deposition by heavy charged particles are also given in Appendix II, but no information about their energy distribution is given.

II. METHOD

The Monte Carlo method, in the form of the 05R computer program (3), was used for the calculations. The geometry of the problem is identical to that of Zerby and Kinney; i.e., a 30-cm-thick infinite slab of tissue with a composition as shown in Table 1 (6). Source neutrons were incident on the slab surface either isotropically or normally at energies of 0.5, 2, 10, 18, 30, and 60 MeV. For each source energy and angular distribution 4000 neutron histories were calculated. The neutron histories were followed by recording energy deposition due to elastic collisions, nonelastic processes, etc., until each neutron had either been absorbed, escaped from the slab, or slowed down below a 1-eV cutoff energy.

The tissue slab was divided into thirty 1-cm-thick subslabs for the purpose of recording the depth distribution of the absorbed dose and from this data, the average, maximum, and 5-cm-depth doses were derived in units of both rads and rems. In calculating the rem dose for protons, a numerical fit to the damage curve shown in ref. 7 was used. To calculate the rem dose for alpha particles, a damage curve such as that used

TABLE 1. Composition of Tissue

Element	Nucleon Density [(nuclei/cm^3)] x 10^{-24}
H	0.06265
O	0.0225083
C	0.0093975
N	0.0013425

for protons was calculated. This curve was obtained in the manner described in ref. 7 and using the quality factor as a function of LET given in ref. 7. In the low-energy region where the alpha particle charge is on the average less than two the effective charge values given by W. Whaling (8) were used. To obtain the rem dose from all charged particles heavier than an alpha particle a quality factor of 20 was used.

The total cross sections for neutron-nucleus elastic and nonelastic scattering were taken from experimental data and optical model calculations.*

The angular distribution in elastic scattering was taken to be linearly anisotropic in the cosine of the center-of-mass scattering angle. This is not a good approximation to the angular distribution, particularly at energies as high as 60 MeV, but at these energies a reasonable order (P_8) Legendre expansion of the distribution results in such a large region of negative cross section that calculation becomes impractical with the version of 05R presently available. Furthermore, the average energy transfer in a neutron-nucleus collision is determined by the average center-of-mass cosine. Since the 05R linearly anisotropic approximation maintains the correct value of the average cosine, we are correctly estimating the quantity of primary importance in an elastic collision. The angular distribution of hydrogen was taken to be isotropic in the center-of-mass system at all energies.

Nonelastic events were treated through the use of an abbreviated version of Dresner's evaporation code (4), which boils off neutrons,

*The master cross-section tape compiled for use in 05R by D. C. Irving as well as references to all the data used may be obtained from the Radiation Shielding Information Center of the Oak Ridge National Laboratory.

protons, and alpha particles only. The use of an evaporation model for these light nuclei may be somewhat inappropriate, but in the absence of experimental cross-section data, there is no choice except to use some such general nuclear model. Particle emission is assumed to be isotropic in the laboratory system. The energy of emission given by the code is divided into energy of the emitted particle and recoil energy of the residual nucleus on the basis of momentum conservation. In addition, the emitted particle receives a share of the nuclear motion before emission (initial center of mass motion plus accumulated recoil due to previous evaporations from this nucleus). The energy remaining in nuclear motion following the emission of all particles is the final recoil energy of the nucleus. The breakup of ^{8}Be into two alpha particles and the low-energy $^{14}N(n,p)$ and $H(n,\gamma)$ reactions have been put explicitly into the program. Neutrons emerging from nonelastic events are transported in turn just like the neutron initiating the event.

Calculation of the contribution to the dose from gamma rays was made somewhat approximately. At the high-energy end of our range, the insignificance of the gamma contribution compared to other contributions justifies this. However, at the lowest energies considered the relative importance of the photon dose would warrant a full treatment of the gamma transport involved. We assumed that all gamma rays had an energy of 2.2 MeV. At the low energies, where they are significant, this is true as the photons come from hydrogen absorption. At higher energies, where the gammas come from nonelastic collisions, their exact energy spectrum is not known and it is almost certainly an overestimate of the dose to say they are 2.2-MeV gammas. The gamma flux was then converted to dose

using a buildup factor and a flux-to-dose conversion (9). Since the buildup factor was that for an infinite medium and it was applied to a slab of finite thickness, the dose calculated is an overestimate of the true dose (some very rough checks suggest it is 15-25% too high). Neutrons reaching the energy cutoff were transported a distance equal to the root mean square distance traveled from thermalization to absorption before initiating, with appropriate probability, a $H(n,\gamma)$ and a $N(n,p)$ reaction.

III. COMPARISON TO SNYDER-NEUFELD

The only calculations that have previously been performed in this energy range were made by Snyder and Neufeld (2), who calculated the depth dose in a 30-cm slab of tissue for normally incident neutrons ranging in energy from thermal to 10 MeV. At the time these computations were made digital computers were much more limited than they are now, and Snyder and Neufeld were forced by considerations of memory size to make several approximations in the calculations. As a check on our computer program, we performed calculations for 1- and 10-MeV incident neutrons in which we used all of the Snyder and Neufeld approximations, duplicated their calculation except for the gamma dose, and obtained identical results. We then carried out a series of calculations in which we replaced, one at a time, each of the Snyder-Neufeld approximations by a more exact treatment and thus determined the importance of each approximation. A summary of the various models used in the calculations is shown in Table 2.

The average doses in the tissue slab as calculated by the various models are compared in Table 3. Within statistics, no noticeable change

TABLE 2. Models* Used for 1- and 10-MeV Neutron Dose Calculations

Model I	Analytic formulae of Snyder for cross sections; all scattering is elastic and isotropic in center of mass; heavy elements are lumped as oxygen (identical with Handbook 63).
Model II	Model I with latest cross-section data replacing analytic formulae; carbon and nitrogen cross sections used with mass = 16.
Model III	Model II with true masses for carbon and nitrogen.
Model IV	Model III with nonelastic scattering done by evaporation theory.
Model V	Model IV with P_1 approximation for heavy elastic scattering.
Model VI	Model IV with P_8 approximation for heavy elastic scattering.

*The N(n,p) reaction was included in all models. The dose from the H(n,γ) reaction and the recoil of the nucleus in nonelastic collisions were not calculated.

TABLE 3. Average Doses in 30-cm-thick Slab for Various Models

Model	Dose (10^{-8} rad/incident neutron/cm^2) Hydrogen Recoils	Heavy Recoils	N(n,p)	Evaporated Charged Particles	Total	Gamma Source (MeV/cm^3)
			1 MeV			
I	0.0422	0.0054	0.0022	0	0.0498	0.043
II	0.0436	0.0047	0.0023	0	0.0505	0.045
III	0.0431	0.0049	0.0023	0	0.0503	0.044
IV	0.0431	0.0049	0.0023	0	0.0503	0.044
V	0.0431	0.0049	0.0023	0	0.0502	0.044
VI	0.0427	0.0048	0.0023	0	0.0497	0.044
			10 MeV			
I	0.3631	0.0547	0.0020	0	0.4198	0.039
II	0.3747	0.0302	0.0021	0	0.4070	0.041
III	0.3779	0.0332	0.0021	0	0.4131	0.041
IV	0.3282	0.0273	0.0022	0.0007	0.3584	0.098
V	0.3282	0.0206	0.0022	0.0012	0.3522	0.099
VI	0.3251	0.0202	0.0021	0.0010	0.3484	0.098

was found in the depth profiles of the dose in the different calculations. The gamma-ray dose contribution was not included in these calculations. The neutron histories were followed to the point of absorption and the gamma sources were recorded as shown in column 7 of Table 3. The results of subsequent calculations of the gamma dose have shown that an estimate of the total dose, including the gamma contribution, may be obtained by numerically adding column 7 to column 6 in Table 3. The gamma dose contribution for model I with the gamma calculation as described in Section II was found to be 25% higher than that obtained by Snyder and Neufeld.

It may be seen from Table 2 that the rad dose is fairly independent of the various physical models used, as the differences shown are less than the Monte Carlo statistical error. (Remember to add columns 6 and 7 together to include the gamma contribution.) The total rad dose, being simply a measure of the total energy absorbed, should be independent of the actual physical processes involved in depositing the dose as long as no appreciable change is made in the energy that leaks from the slab and hence is not absorbed. There are differences in the various contributions but our results for the total rad dose as given in Section V are not substantially different from the values in Handbook 63 (2). (Our final results correspond to Model V.)

Due to both the differences in the various contributions to the total rad dose and the use of different quality factors, there are slight differences in the rem dose between our calculations and those in Handbook 63 (2). A comparison of the rem doses as a function of depth for 0.5- and 10-MeV normally incident neutrons is shown in Figs. 1 and 2.

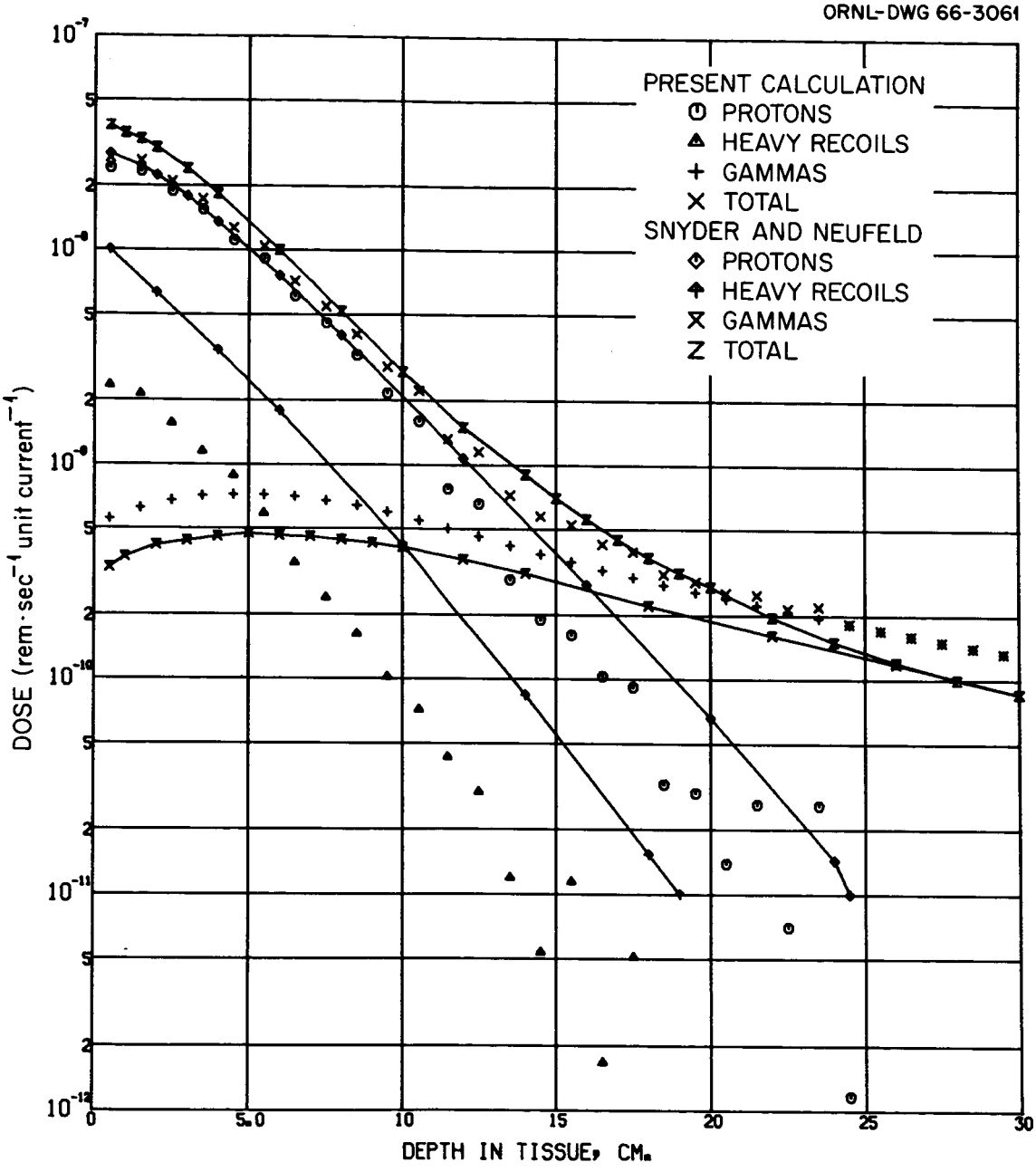

Fig. 1. Comparison of Dose Results from Present Calculation with Snyder-Neufeld Results for Normally Incident 0.5-MeV Neutrons.

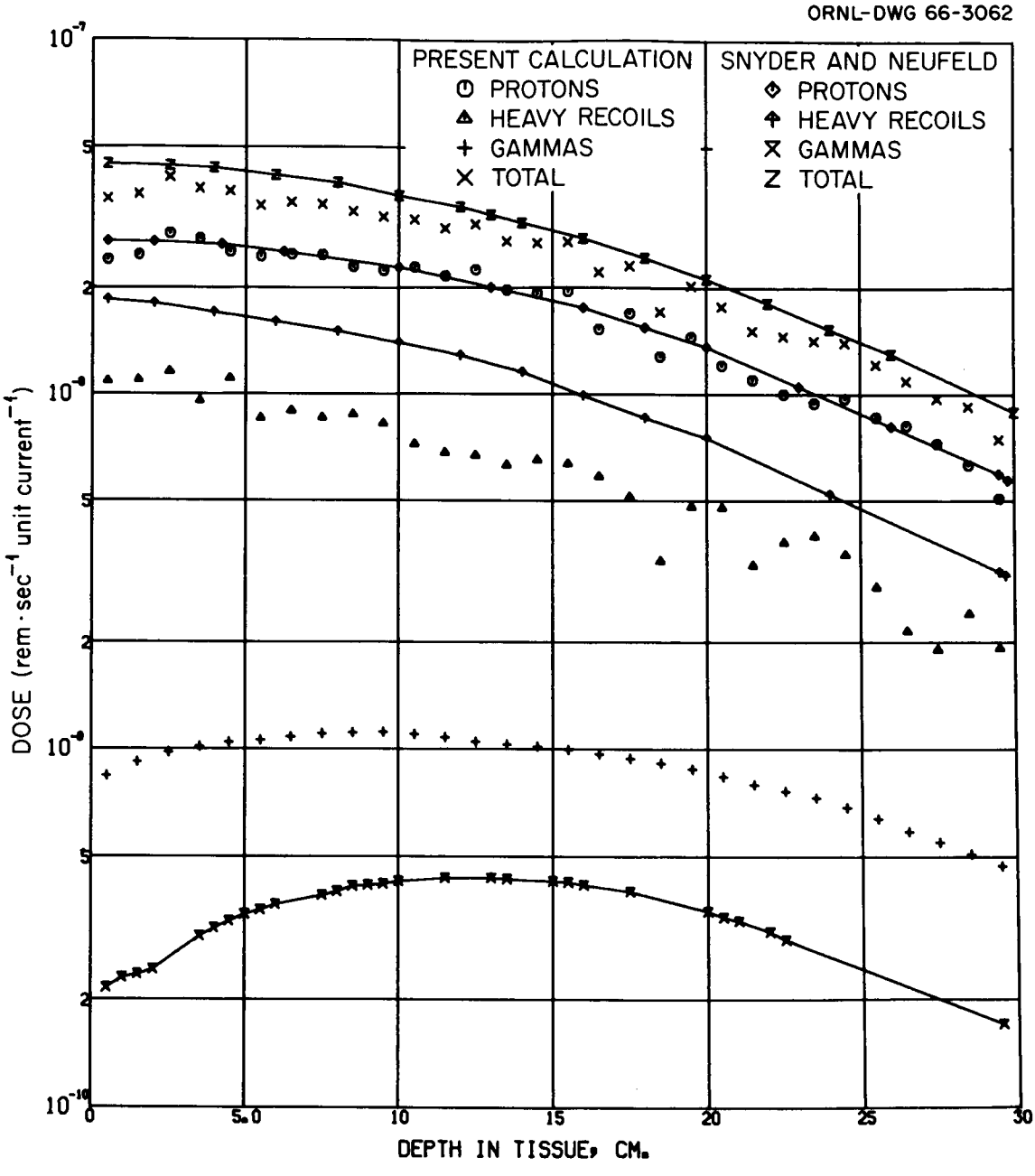

Fig. 2. Comparison of Dose Results from Present Calculation with Snyder-Neufeld Results for Normally Incident 10-MeV Neutrons.

The curves shown are the smoothed data appearing in Handbook 63; our data points are shown without smoothing.

IV. COMPARISON TO ZERBY-KINNEY AT 60 MeV

The calculations done by Zerby and Kinney (1) employed the NTC code in which nonelastic collisions are handled by the intranuclear cascade routine of Bertini (5) based on a direct interaction model. Following the intranuclear cascade, the residual nuclear excitation energy is treated by an evaporation model routine allowing further particle emission. In the present 05R calculations the nonelastic collisions proceed entirely through the evaporation model. In addition, the NTC program ignores completely elastic scattering above 50 MeV from all nuclei except hydrogen. The question therefore arose of the effect on the results of the discontinuity in the physical model between the calculations above and below 50 MeV. Therefore, calculations for 60-MeV normally incident neutrons were performed with both the 05R and the NTC code, and the resulting dose contributions are compared in Table 4. (The NTC results are not precisely those reported by Zerby and Kinney. They were obtained with essentially the same program, but more detail as to the various dose contributions was recorded.) The average dose in the 30-cm slab is used as an indicator of the difference in results since no significant difference in the profile of the dose as a function of depth was observed.

The largest difference in the rad dose contributions lies in the energy absorbed from protons and alpha particles emitted in nonelastic collisions. The 05R calculations having no direct interaction cascade exhibit a far smaller proton dose and a concomitantly greater alpha dose.

Table 4. Comparison of Average Tissue Doses for 60-MeV Normally Incident Neutrons Calculated with NTC and 05R Codes

	Rad Dose		Rem Dose	
	NTC (Cascade + Evaporation)	05R (Evaporation Only)	NTC (Cascade + Evaporation)	05R (Evaporation Only)
Hydrogen recoils	0.410	0.463	0.972	1.211
Heavy elastic recoils	0.009	0.020	0.190	0.402
Heavy nonelastic recoils	0.038	0.040	0.753	0.795
Nonelastic protons	0.236	0.077	0.510	0.273
Nonelastic alphas	0.079	0.184	1.588	2.778
Gammas	0.050	0.048	0.050	0.048
TOTAL	0.822	0.832	4.063	5.507

[The large amount of alpha emission is probably peculiar to tissue where the $(n,n'\alpha)$, $(n,n'3\alpha)$, $(n,n'4\alpha)$, and (n,α) reactions are predominant in ^{16}O and ^{12}C.] Neglect of the elastic scattering between 50 and 60 MeV in NTC results in a reduction of the elastic recoil contribution by a factor of 2. However, there are compensating changes in the hydrogen recoil dose which can be explained only by a difference in competition with other reactions with the result that the total dose, or total energy absorbed in the slab, is nearly the same for the two models.

The agreement in rem dose is unfortunately not so good. The contributions which are enhanced in the 05R calculation -- those from evaporated alpha particles and the recoil of heavy nuclei -- are contributions which have a large quality factor. The direct interaction protons appearing in the NTC calculation have a quality factor near unity. This results in a large discrepancy in the total rem dose.

V. TISSUE CURRENT-TO-DOSE FACTORS FOR 0.5- TO 400-MeV NEUTRONS

The program was run for neutron energies of 0.5, 2, 10, 18, 30, and 60 MeV for both normal and isotropic incidence. The data have been analyzed in terms of the average dose for the 30-cm slab, the dose at a depth of 5 cm from the surface (this was determined from dose contributions occurring at depths of 4 to 6 cm), and the maximum dose in any of the 1-cm-dose boxes. These results are shown in Figs. 3-8. In these figures the results of Zerby and Kinney (1) for 60-400 MeV incident neutrons have also

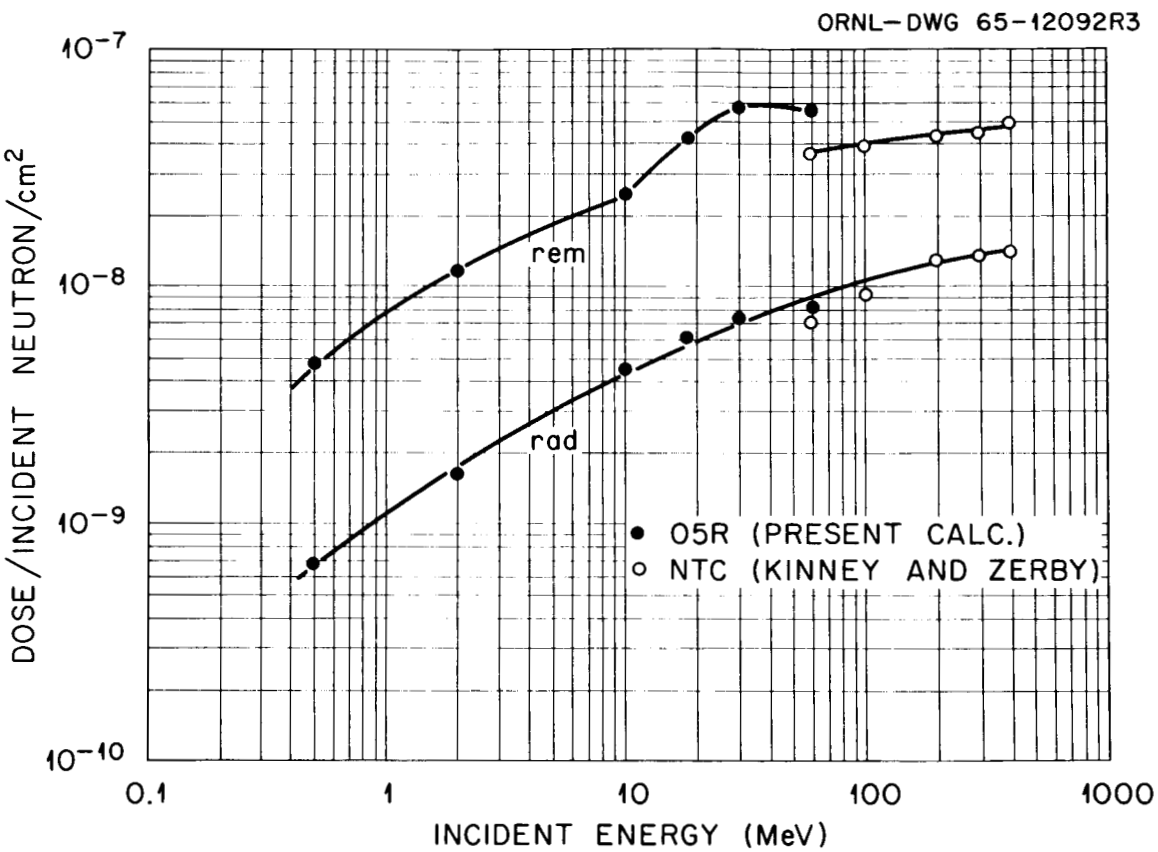

Fig. 3. Average Dose Due to Normally Incident Neutrons.

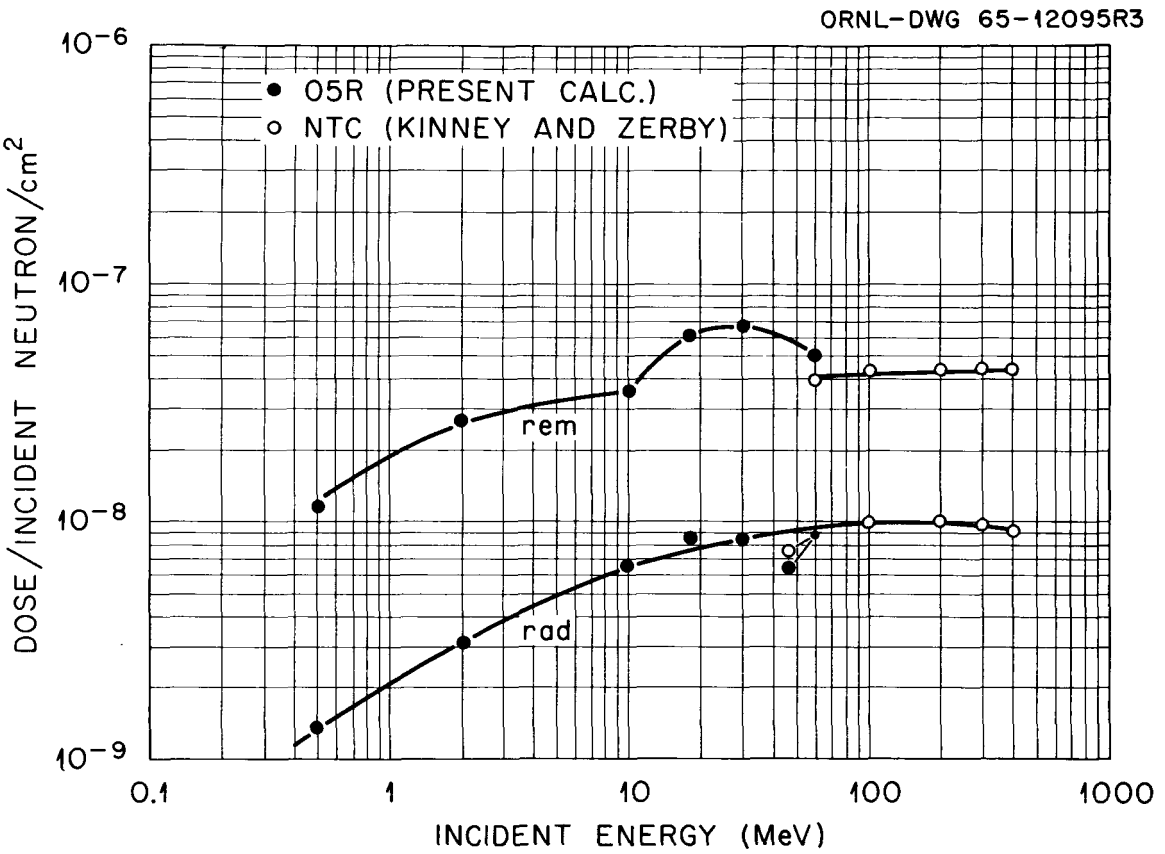

Fig. 4. Dose at 5-cm Depth Due to Normally Incident Neutrons.

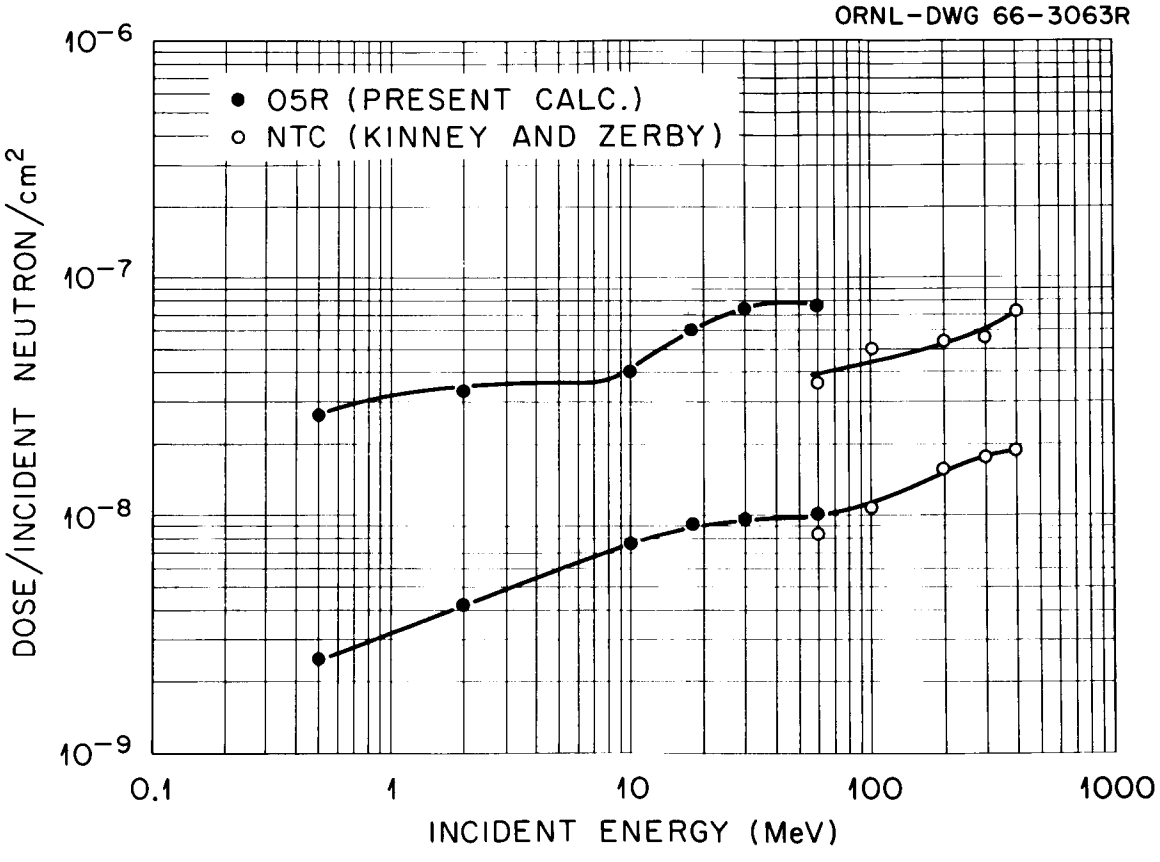

Fig. 5. Maximum Dose Due to Normally Incident Neutrons.

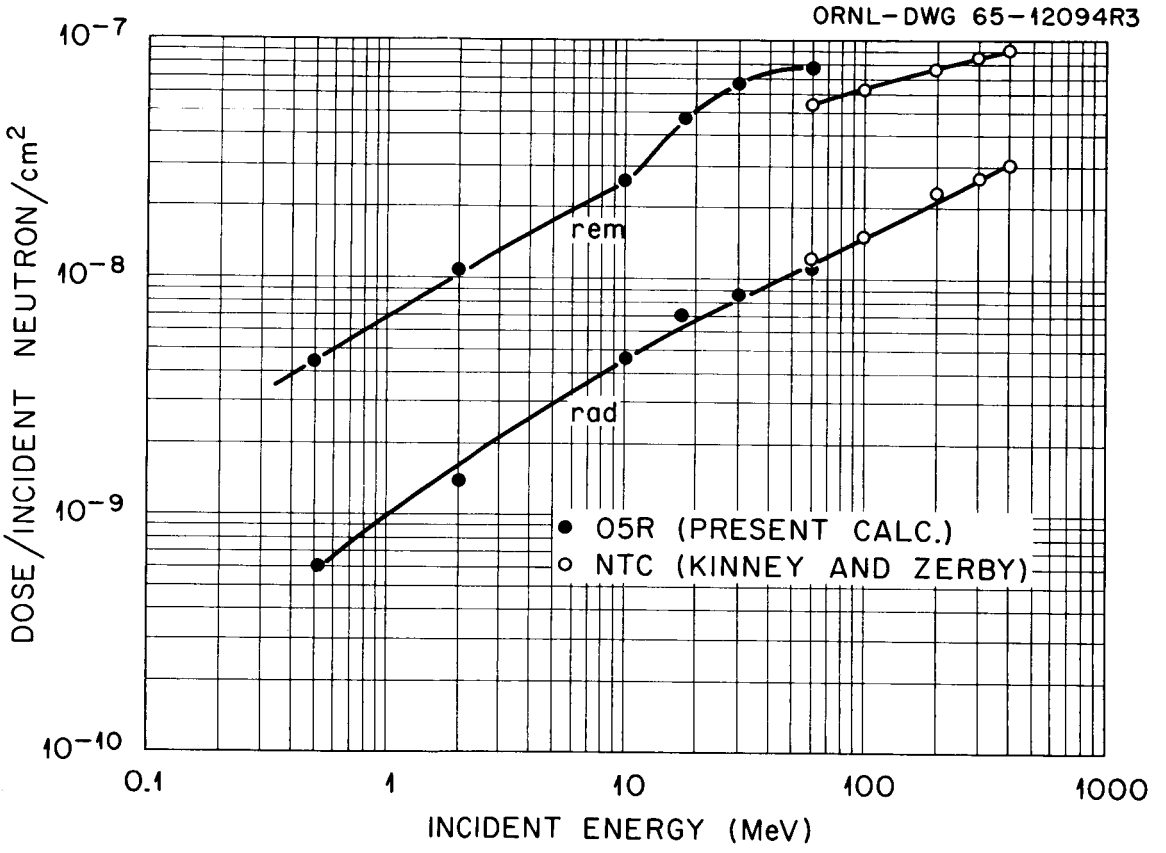

Fig. 6. Average Dose Due to Isotropically Incident Neutrons.

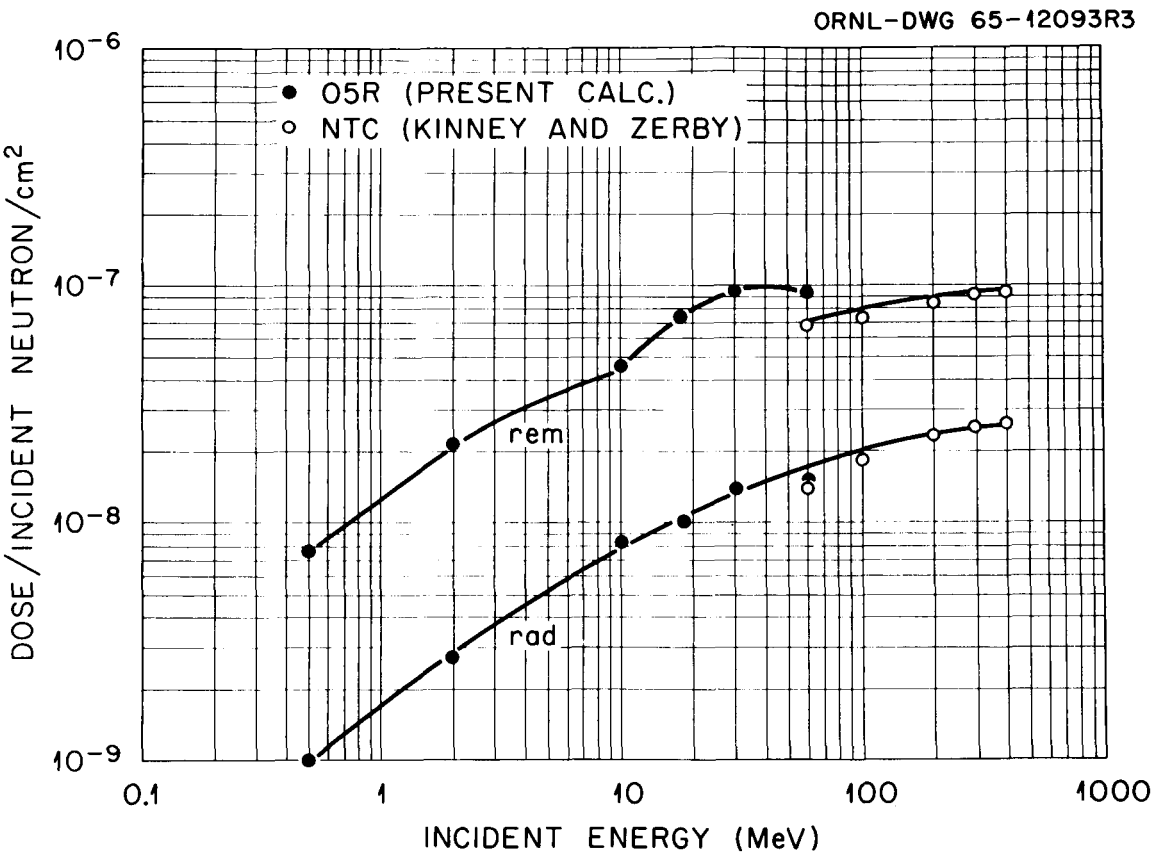

Fig. 7. Dose at 5-cm-Depth Due to Isotropically Incident Neutrons.

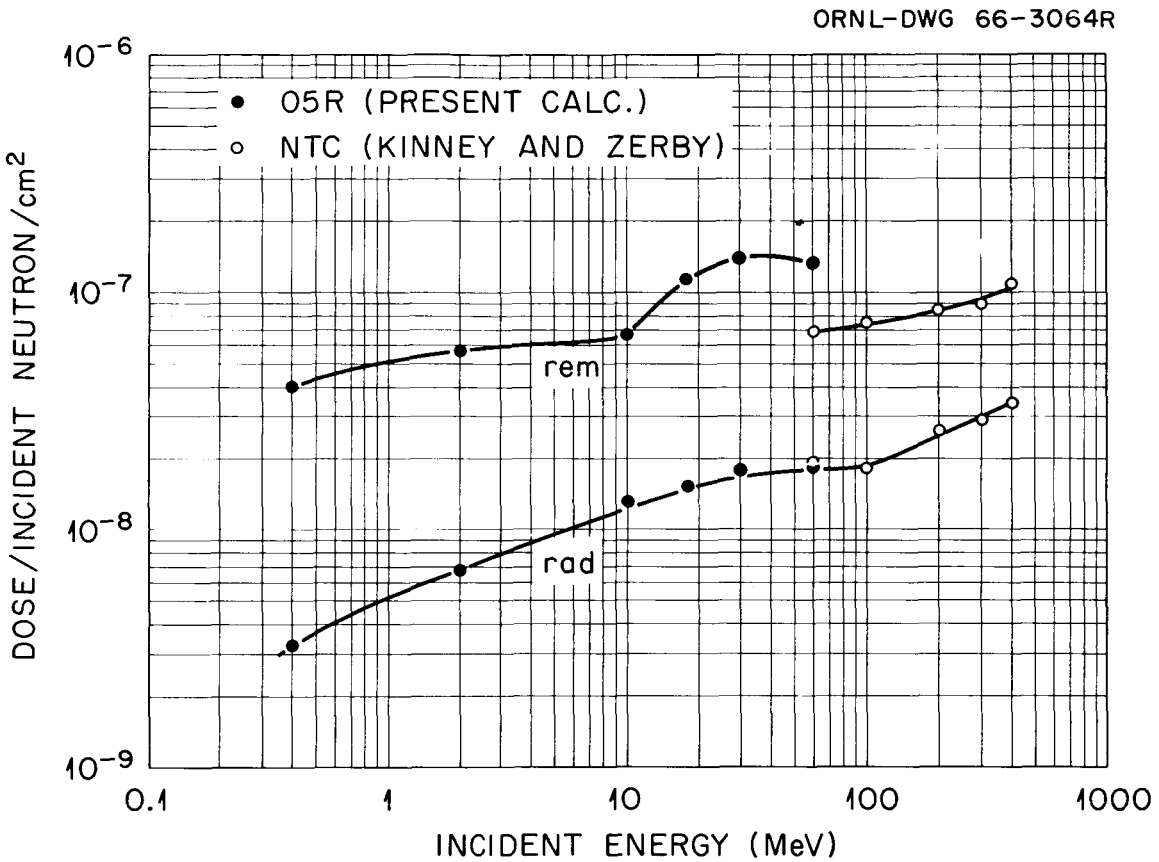

Fig. 8. Maximum Dose Due to Isotropically Incident Neutrons.

been included. Smooth curves through the Monte Carlo data have been drawn. These curves may differ slightly in the 60-100 MeV region from the curves shown in ref. 1 since the data from below 60 MeV occasionally showed a somewhat different trend than was apparent from the 60-400 MeV data alone.

As may be noted from the figures, there is good agreement in the rad doses between the 0.5-60 MeV and the 60-400 MeV results. This is due, as has been noted previously, to the relative invariance of the rad dose with respect to the nuclear collision model used. The rem doses disagree at 60 MeV. This is mainly due to the large contribution from evaporated alpha particles (with their large quality factor) in the 05R calculations. There seems to be a sudden increase in the rem dose above the level indicated by the 0.5 -10 MeV and 60-400 MeV results at the threshold for alpha emission (slightly above 10 MeV for the evaporation model used). Unfortunately, the cross-section data needed to resolve the discrepancy are either sparse or nonexistent. Until comparisons can be made between the nuclear models used in the program and the experimental data, the disagreement at 60 MeV must remain unsettled.

APPENDIX I. DOSE AS A FUNCTION OF DEPTH

The energy deposition data presented in the main text are for the average whole-body dose, the maximum dose, and the dose at a depth of 5 cm. Since complete information about the energy deposition as a function of depth may be of value in some instances, the detailed data are presented in this appendix. Figures A1.1-A1.24 show both the total dose and the dose contributions in rad and rem from recoiling hydrogen nuclei, evaporated protons, evaporated alpha particles, recoiling heavy nuclei, and gamma rays. The data are presented as a histogram of the Monte Carlo estimates for each 1-cm-thick subslab. No smoothing has been performed and the fluctuations in the Monte Carlo estimates are evident.

The graphs are arranged in the order of increasing energy. First the rad and rem curves for normally incident neutrons of a given energy are presented and then the rad and rem curves for isotropically incident neutrons of this same energy are presented.

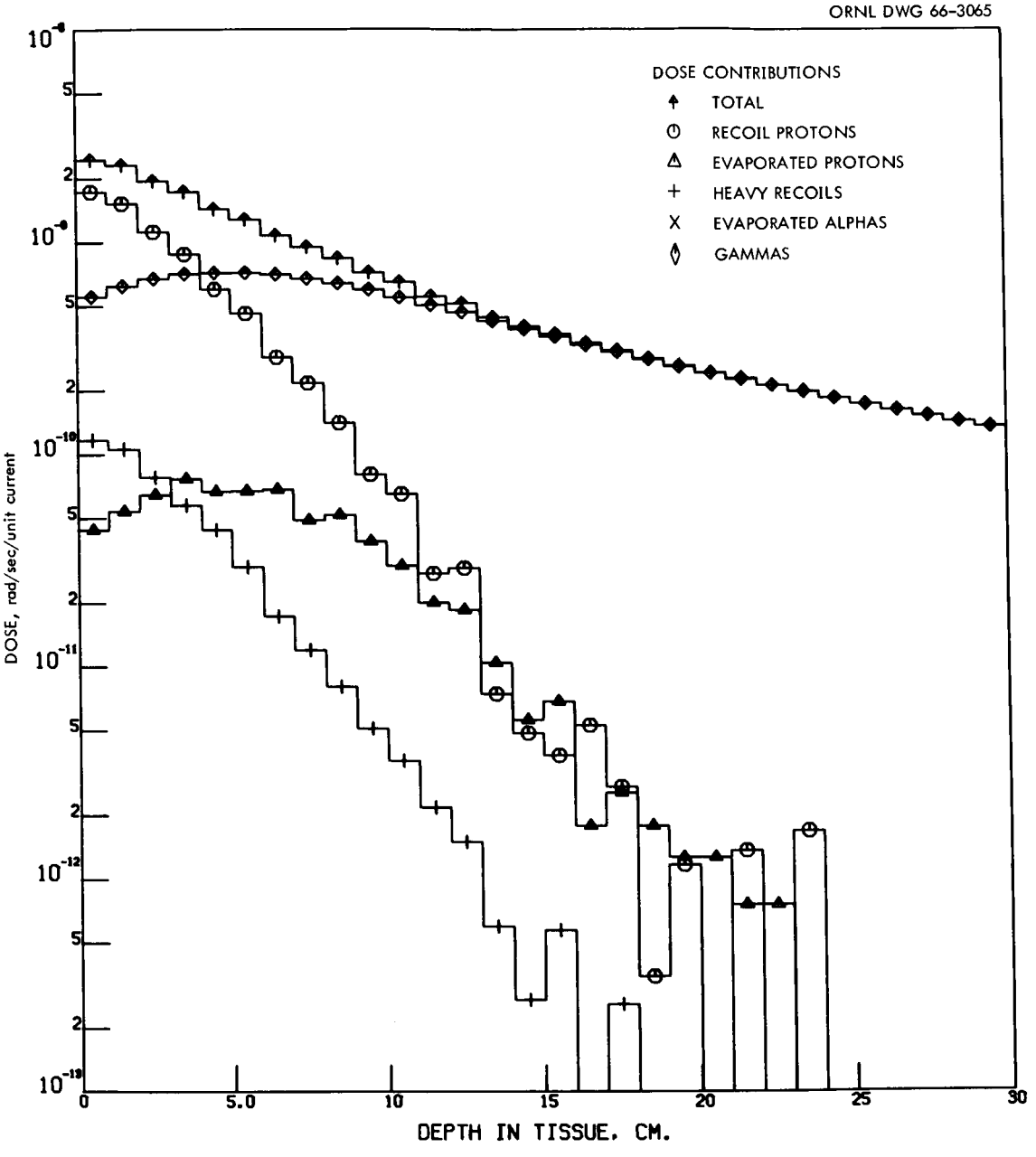

Fig. A1.1. Dose vs Depth in Tissue for 0.5-MeV Normally Incident Neutrons.

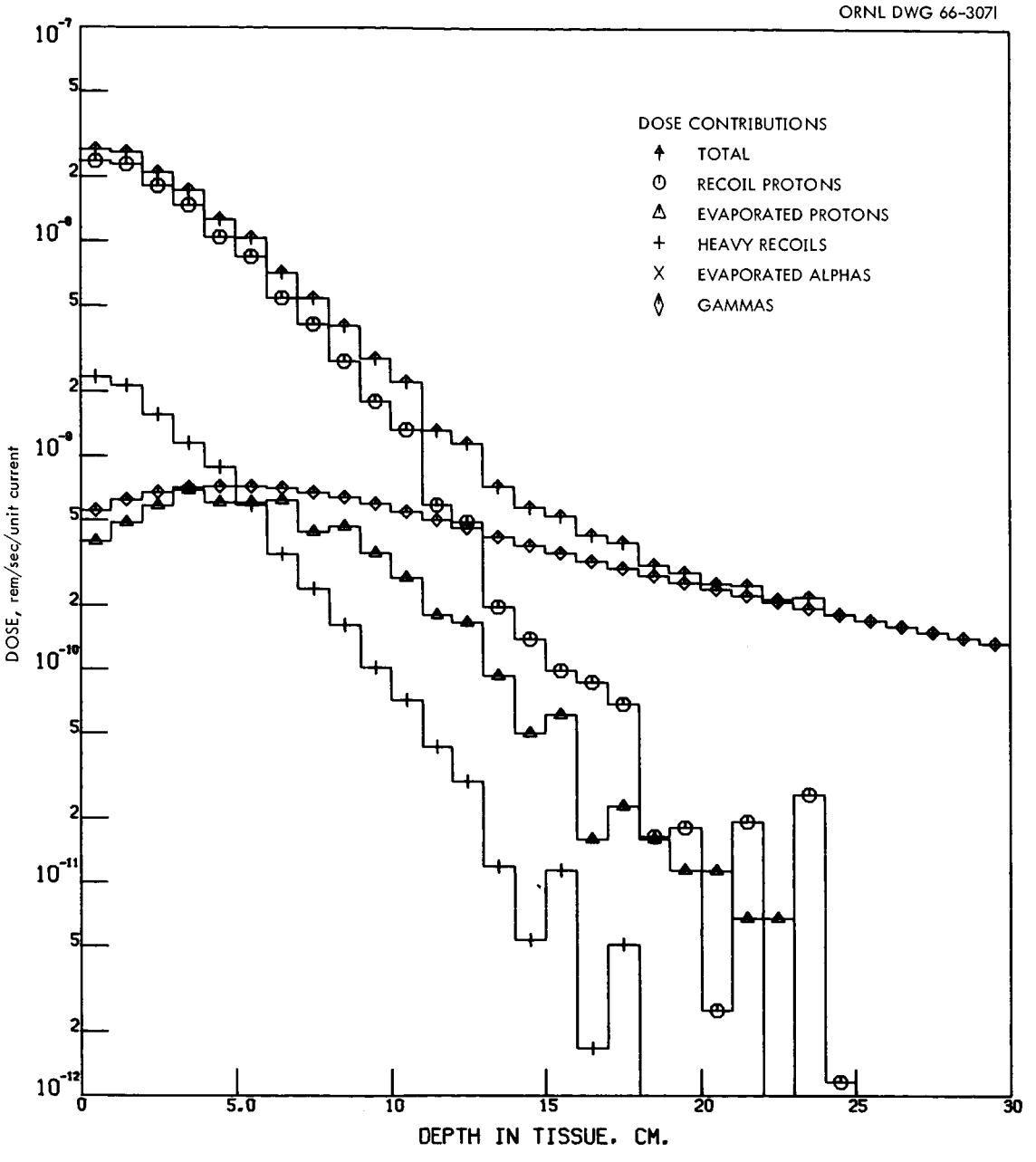

Fig. A1.2. Dose vs Depth in Tissue for 0.5-MeV Normally Incident Neutrons

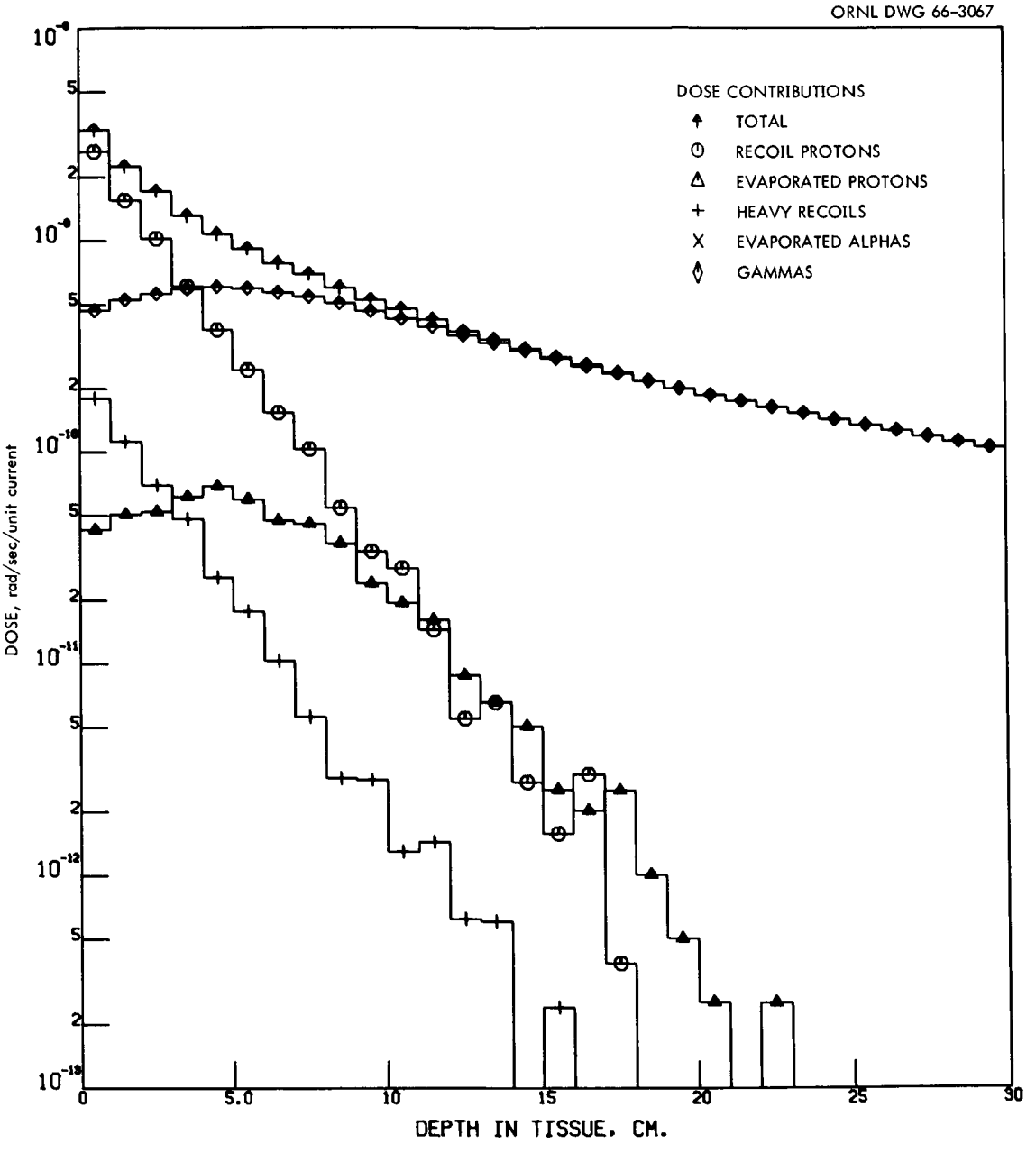

Fig. A1.3. Dose vs Depth in Tissue for 0.5-MeV Isotropically Incident Neutrons.

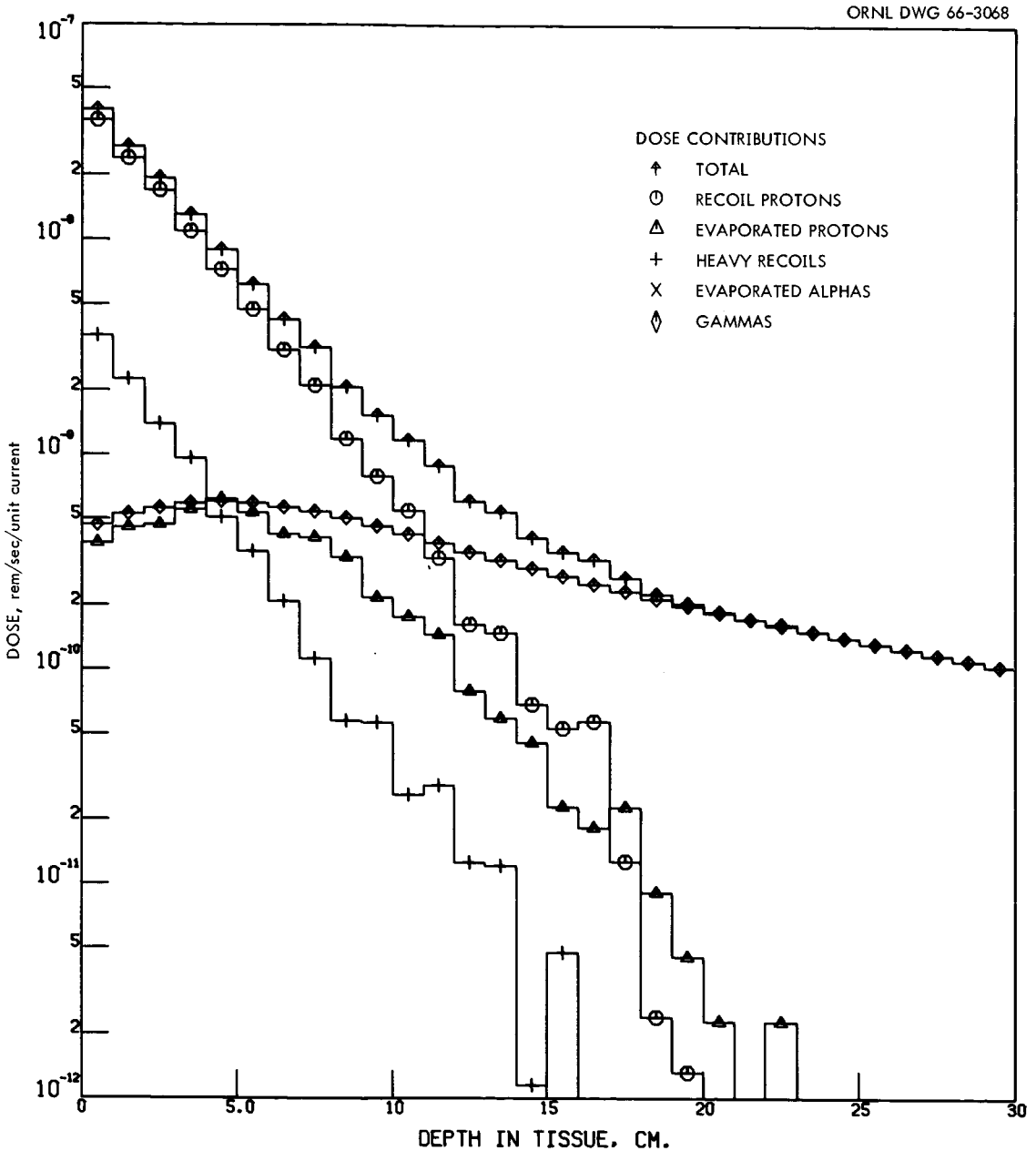

Fig. A1.4. Dose vs Depth in Tissue for 0.5-MeV Isotropically Incident Neutrons.

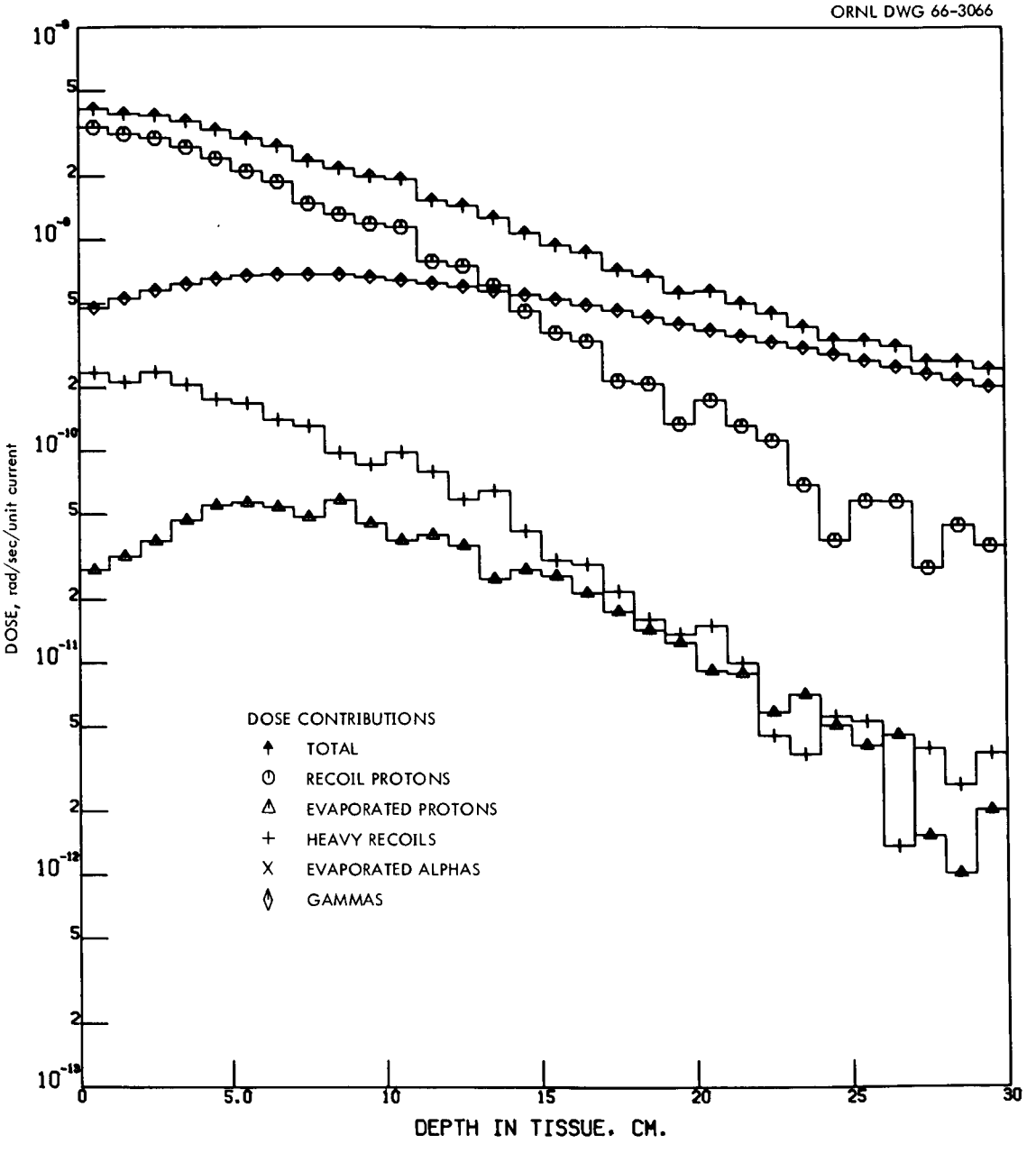

Fig. A1.5. Dose vs Depth in Tissue for 2-MeV Normally Incident Neutrons.

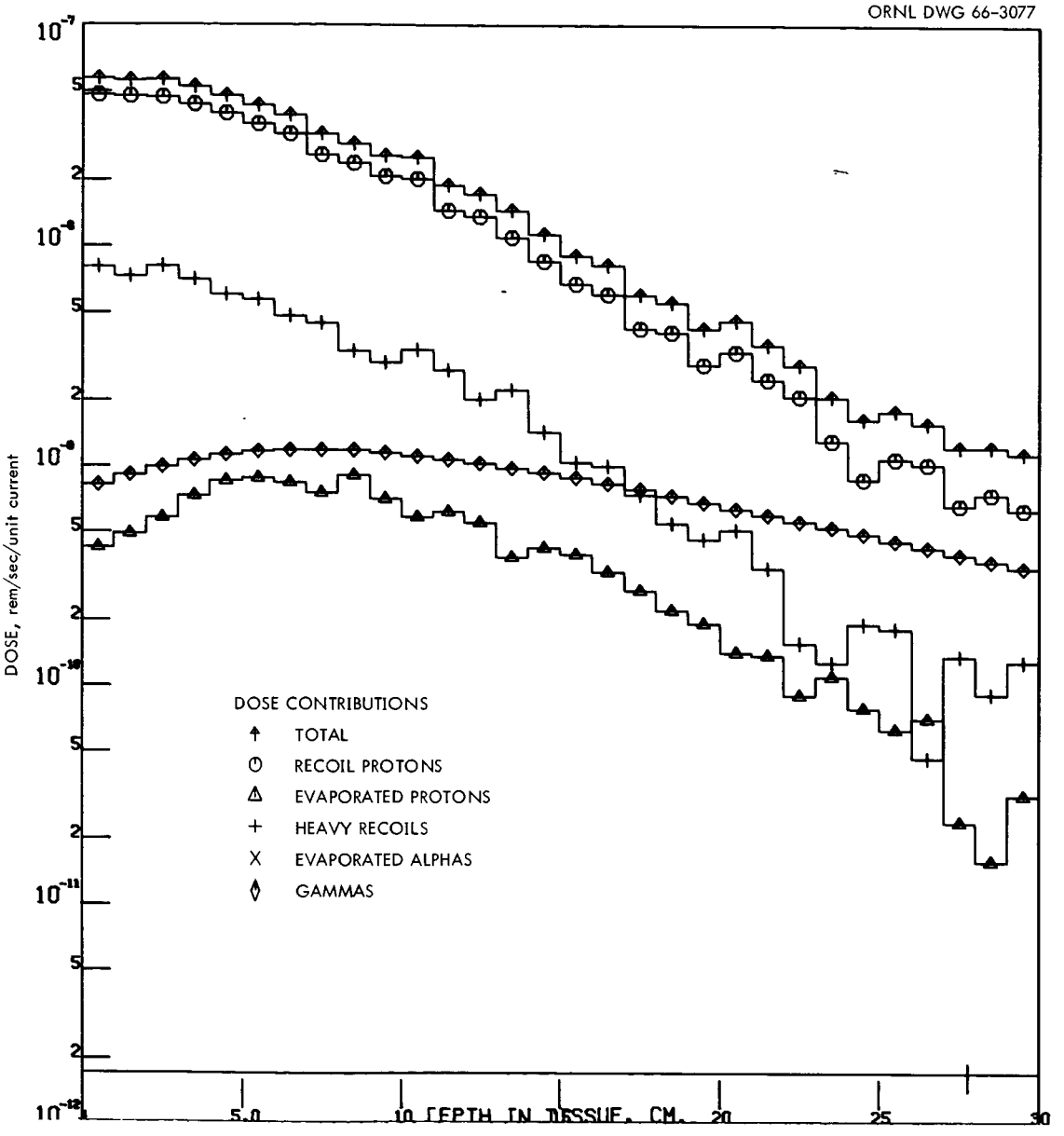

Fig. A1.6. Dose vs Depth in Tissue for 2-MeV Normally Incident Neutrons.

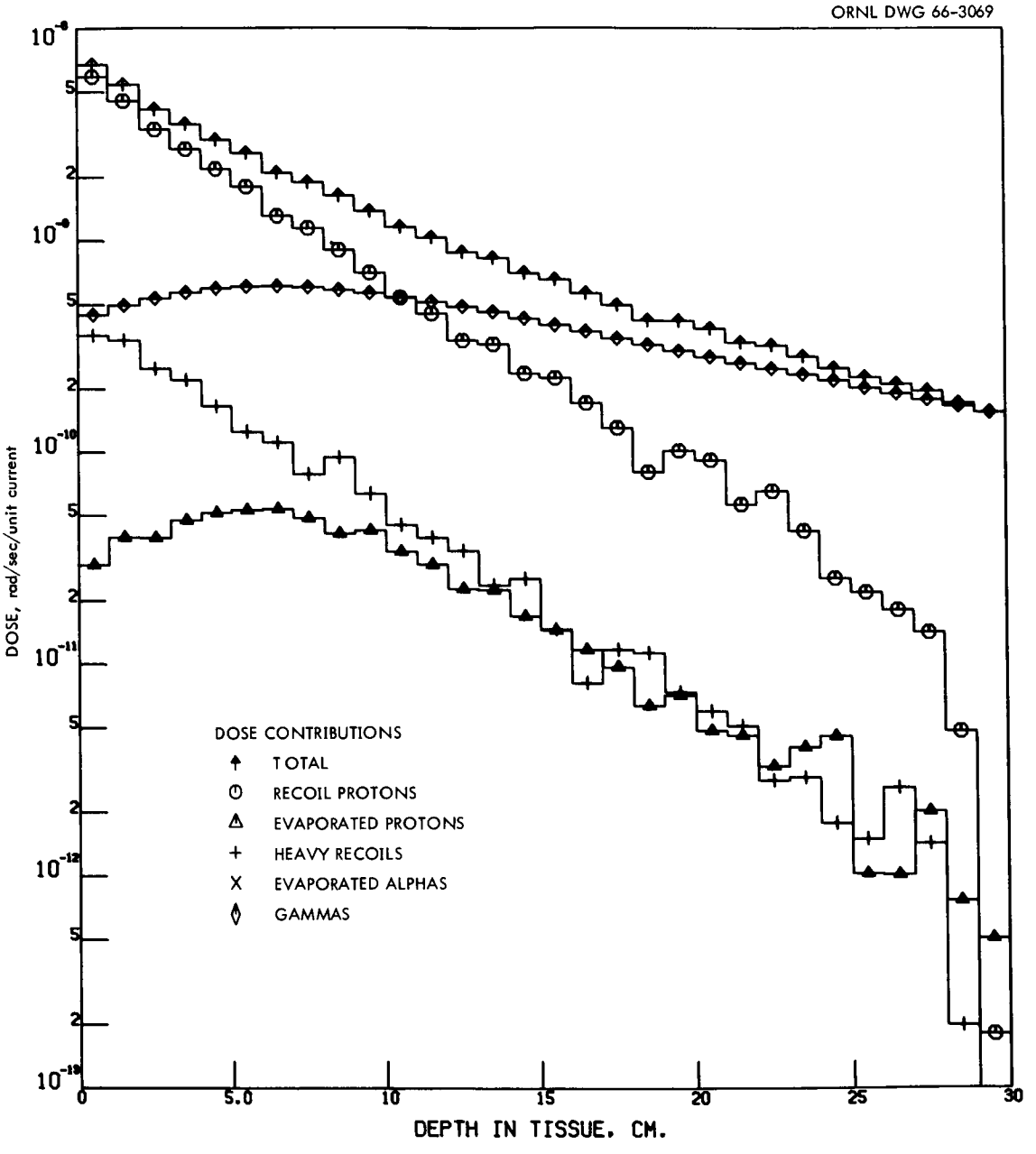

Fig. A1.7. Dose vs Depth in Tissue for 2-MeV Isotropically Incident Neutrons.

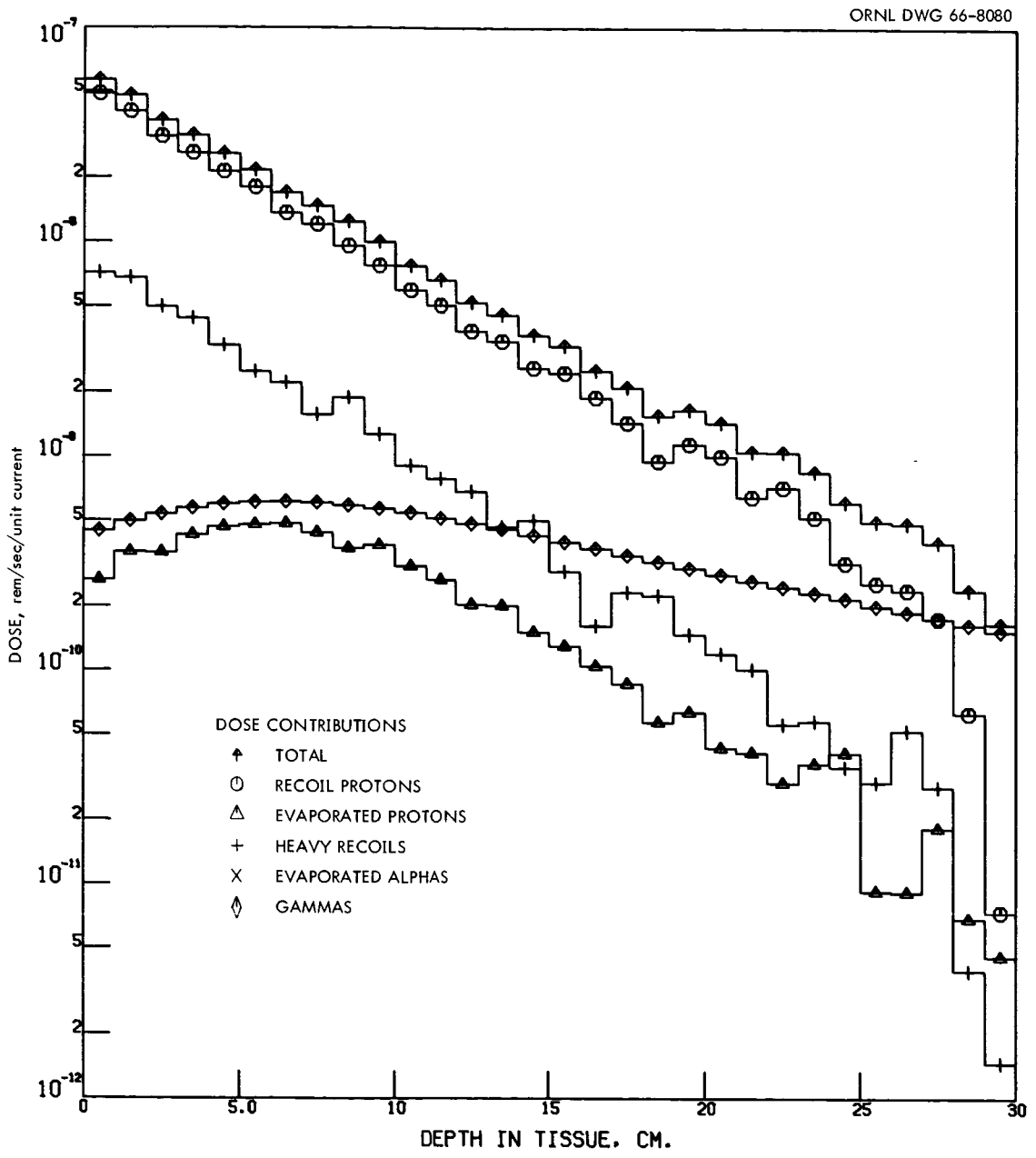

Fig. A1.8. Dose vs Depth in Tissue for 2-MeV Isotropically Incident Neutrons.

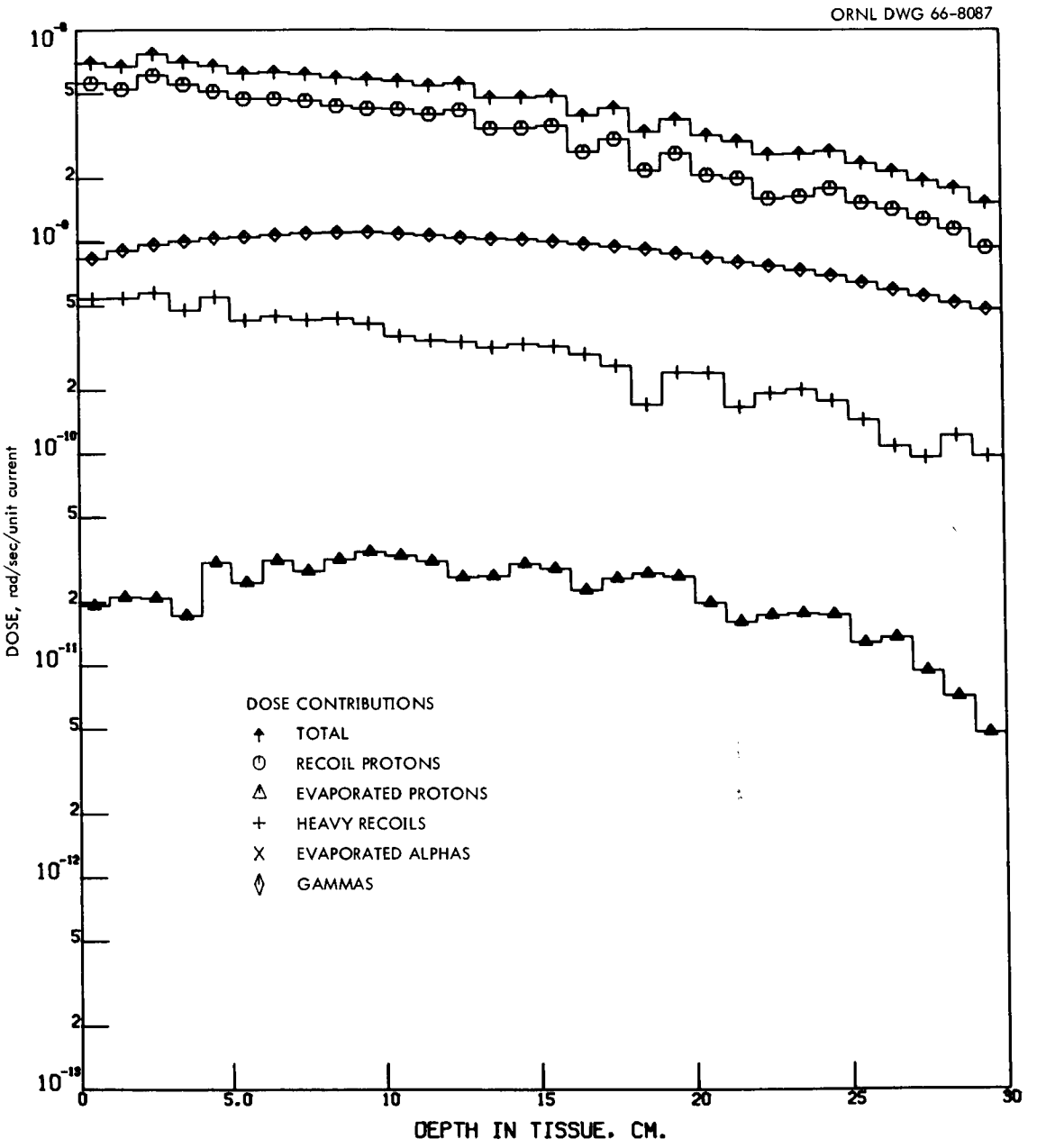

Fig. A1.9. Dose vs Depth in Tissue for 10-MeV Normally Incident Neutrons.

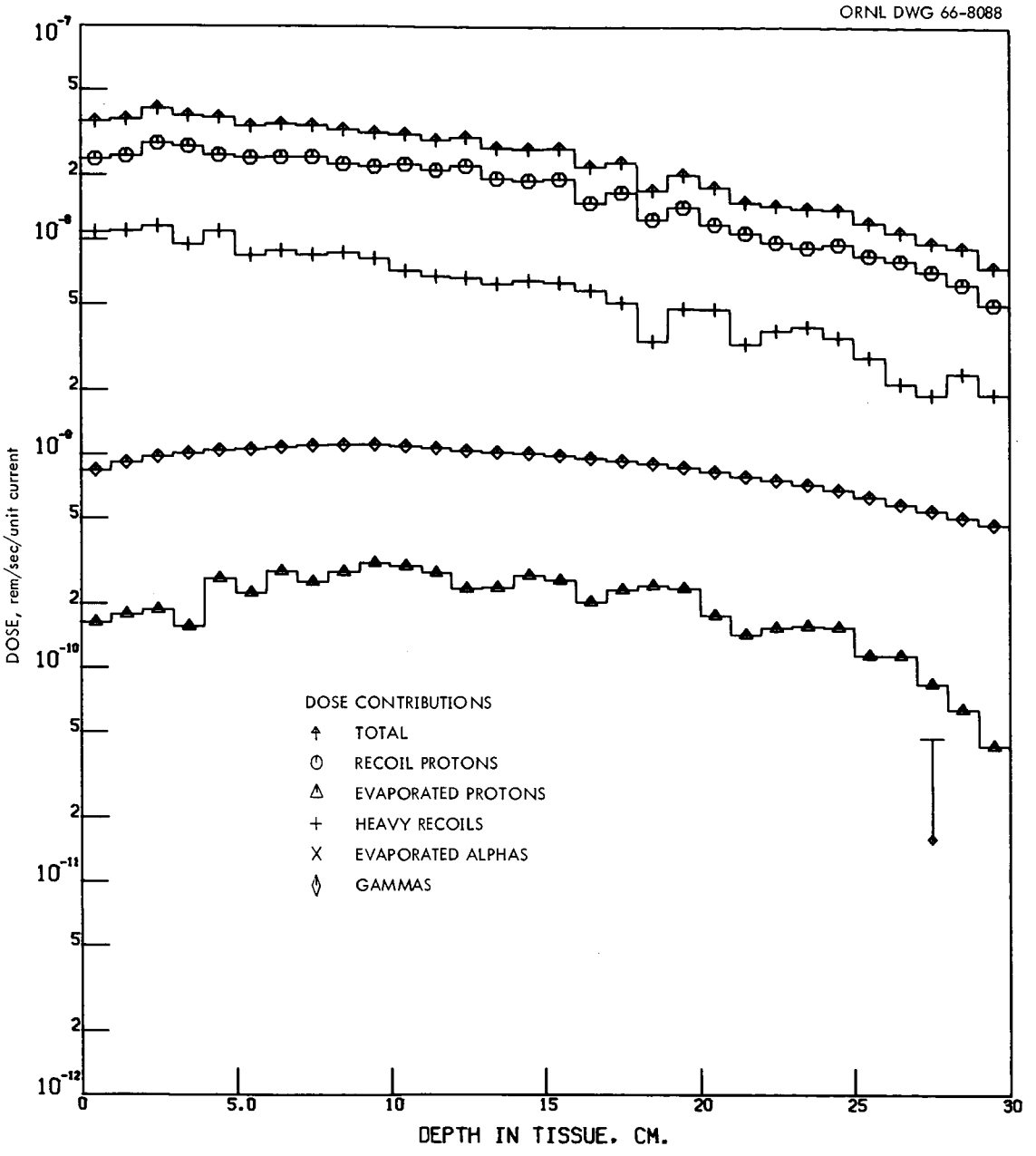

Fig. A1.10. Dose vs Depth in Tissue for 10-MeV Normally Incident Neutrons.

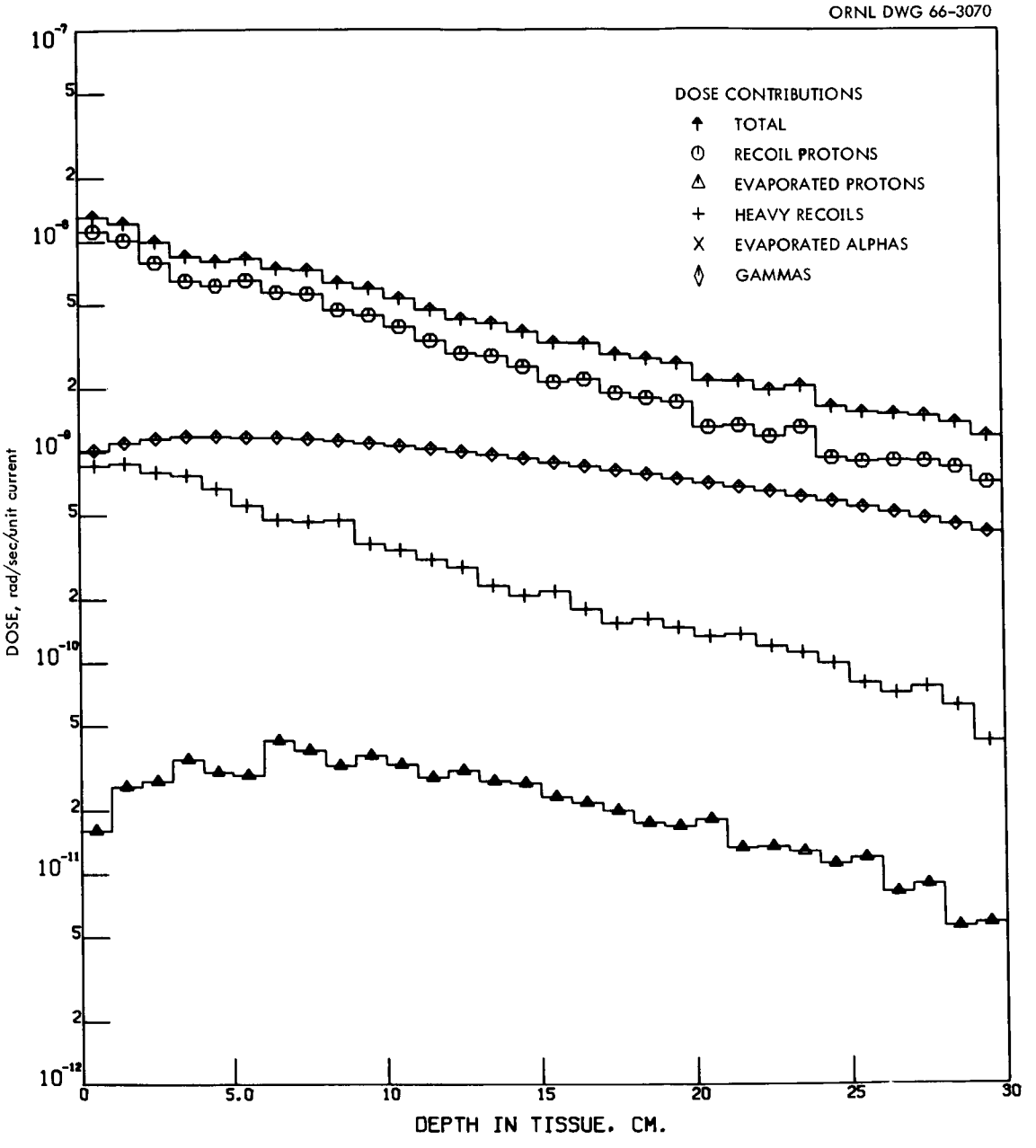

Fig. A1.11. Dose vs Depth in Tissue for 10-MeV Isotropically Incident Neutrons.

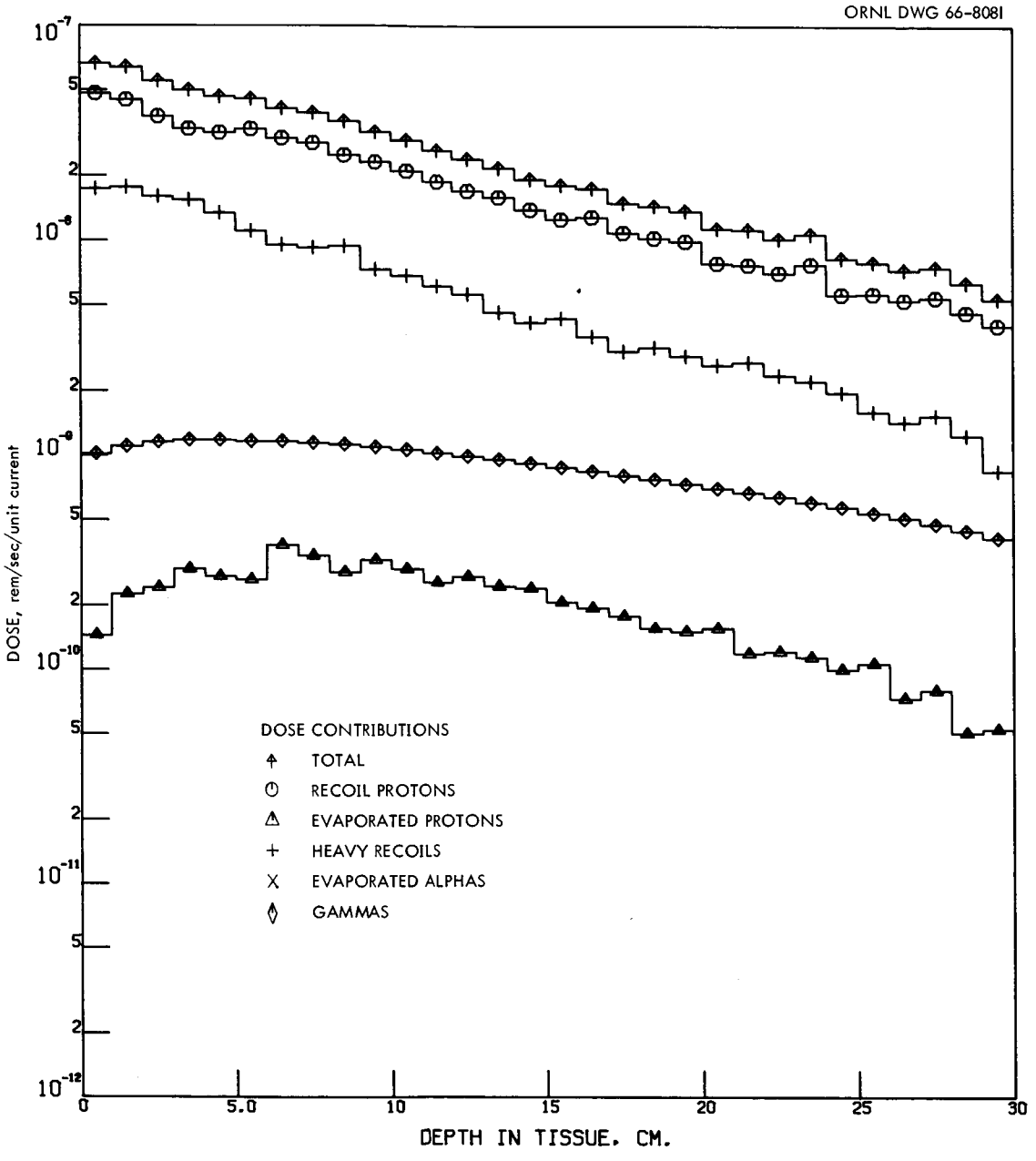

Fig. A1.12. Dose vs Depth in Tissue for 10-MeV Isotropically Incident Neutrons.

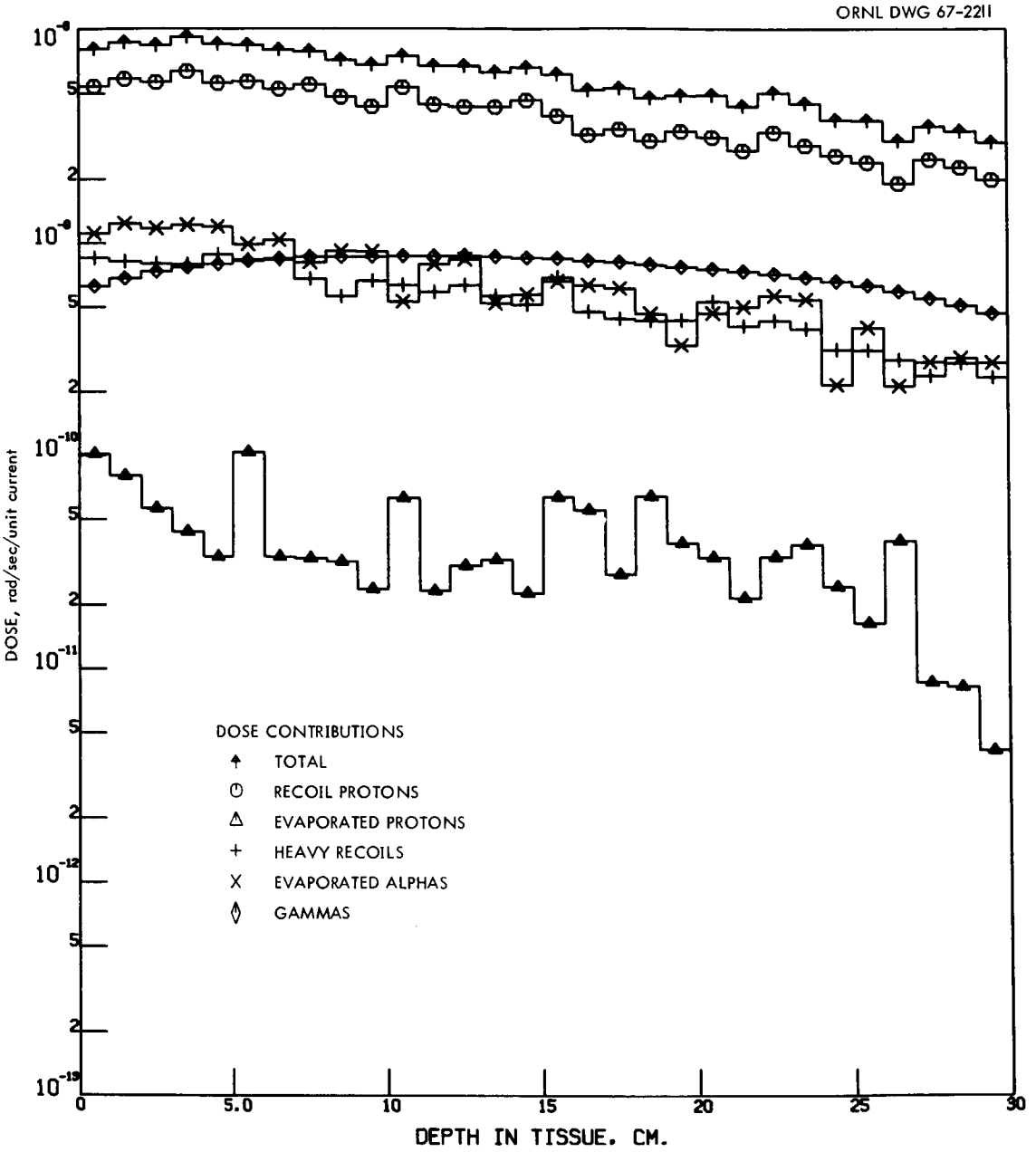

Fig. A1.13. Dose vs Depth in Tissue for 18-MeV Normally Incident Neutrons.

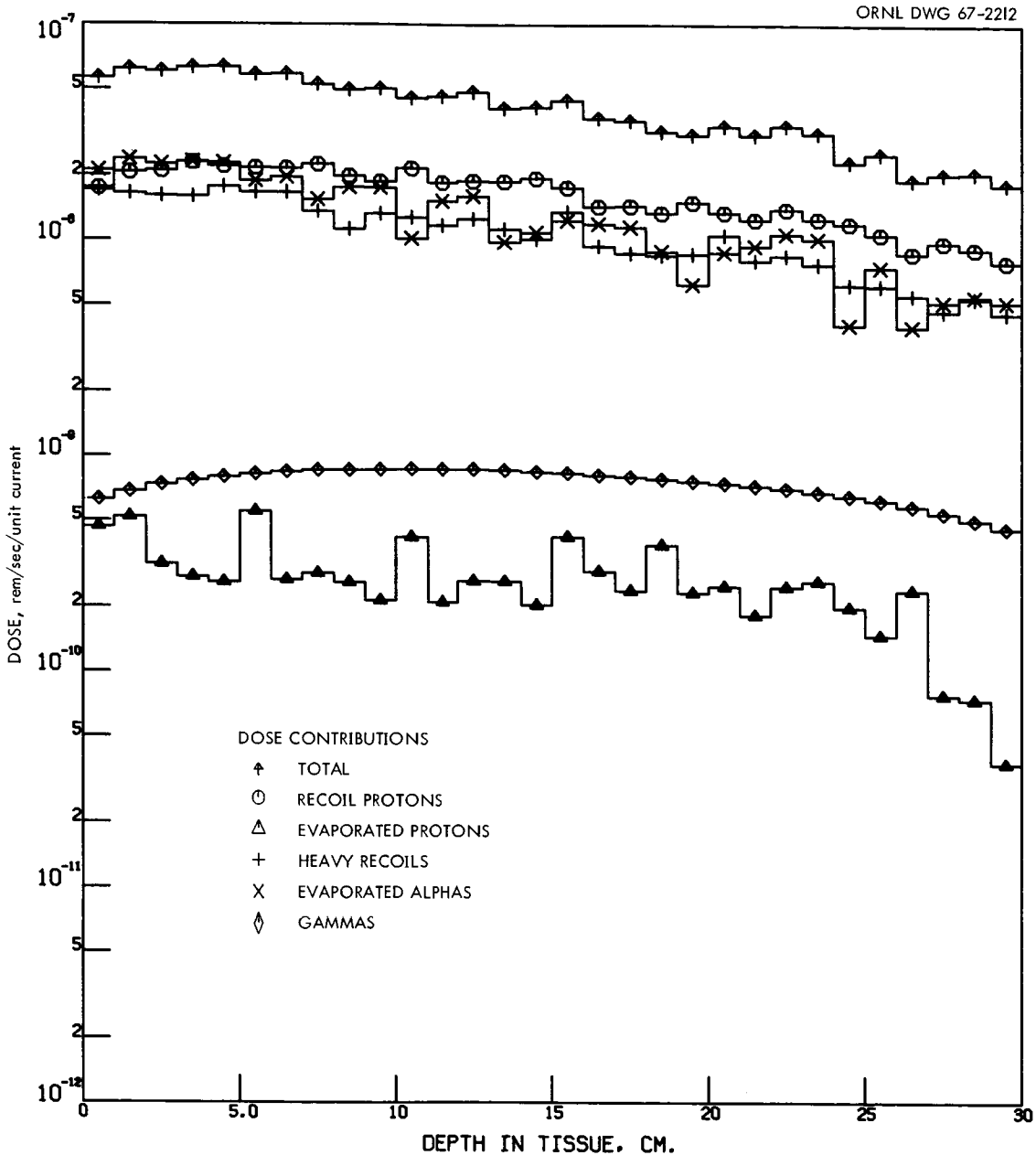

Fig. A1.14. Dose vs Depth in Tissue for 18-MeV Normally Incident Neutrons.

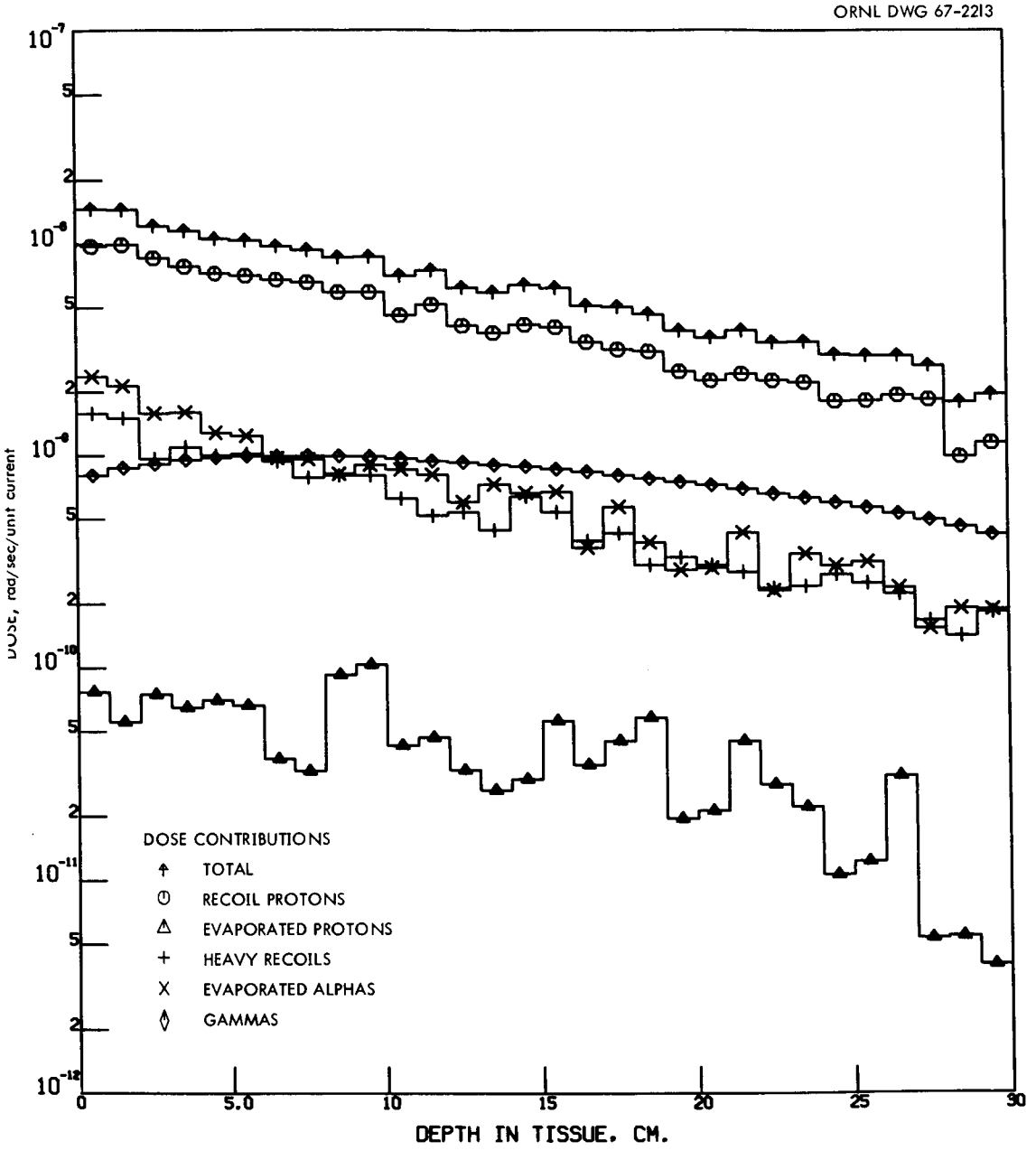

Fig. A1.15. Dose vs Depth in Tissue for 18-MeV Isotropically Incident Neutrons.

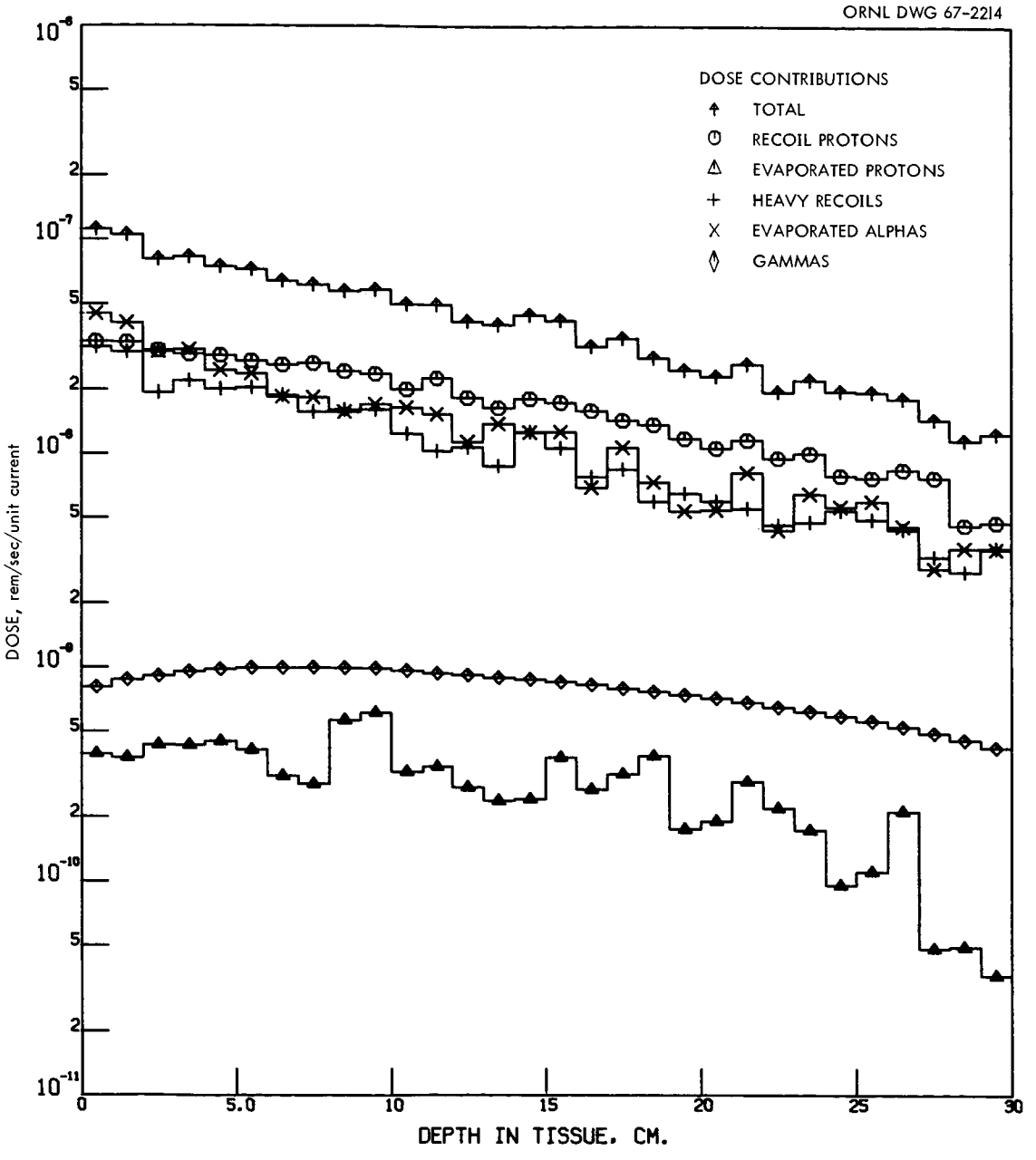

Fig. A1.16. Dose vs Depth in Tissue for 18-MeV Isotropically Incident Neutrons.

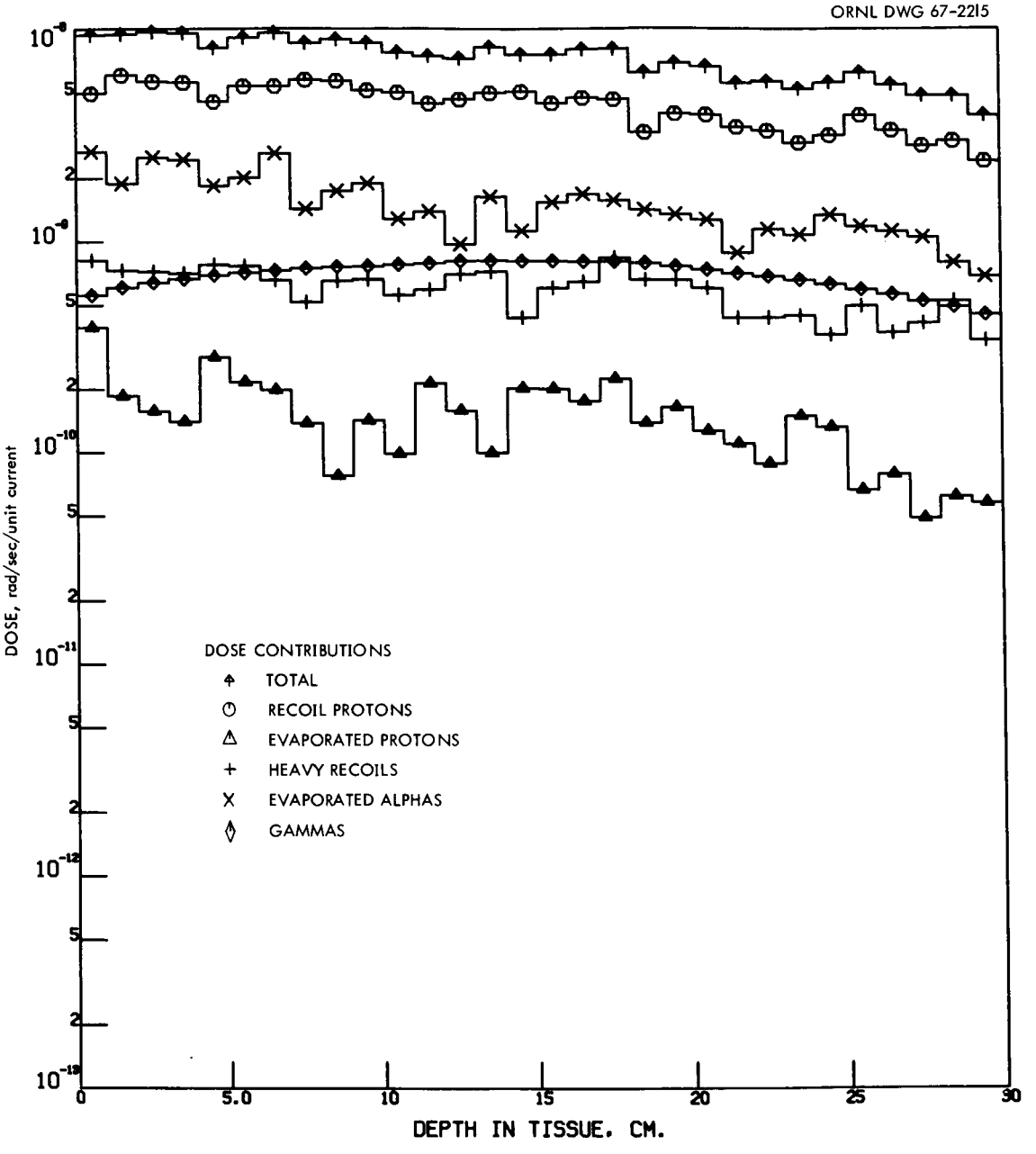

Fig. A1.17. Dose vs Depth in Tissue for 30-MeV Normally Incident Neutrons.

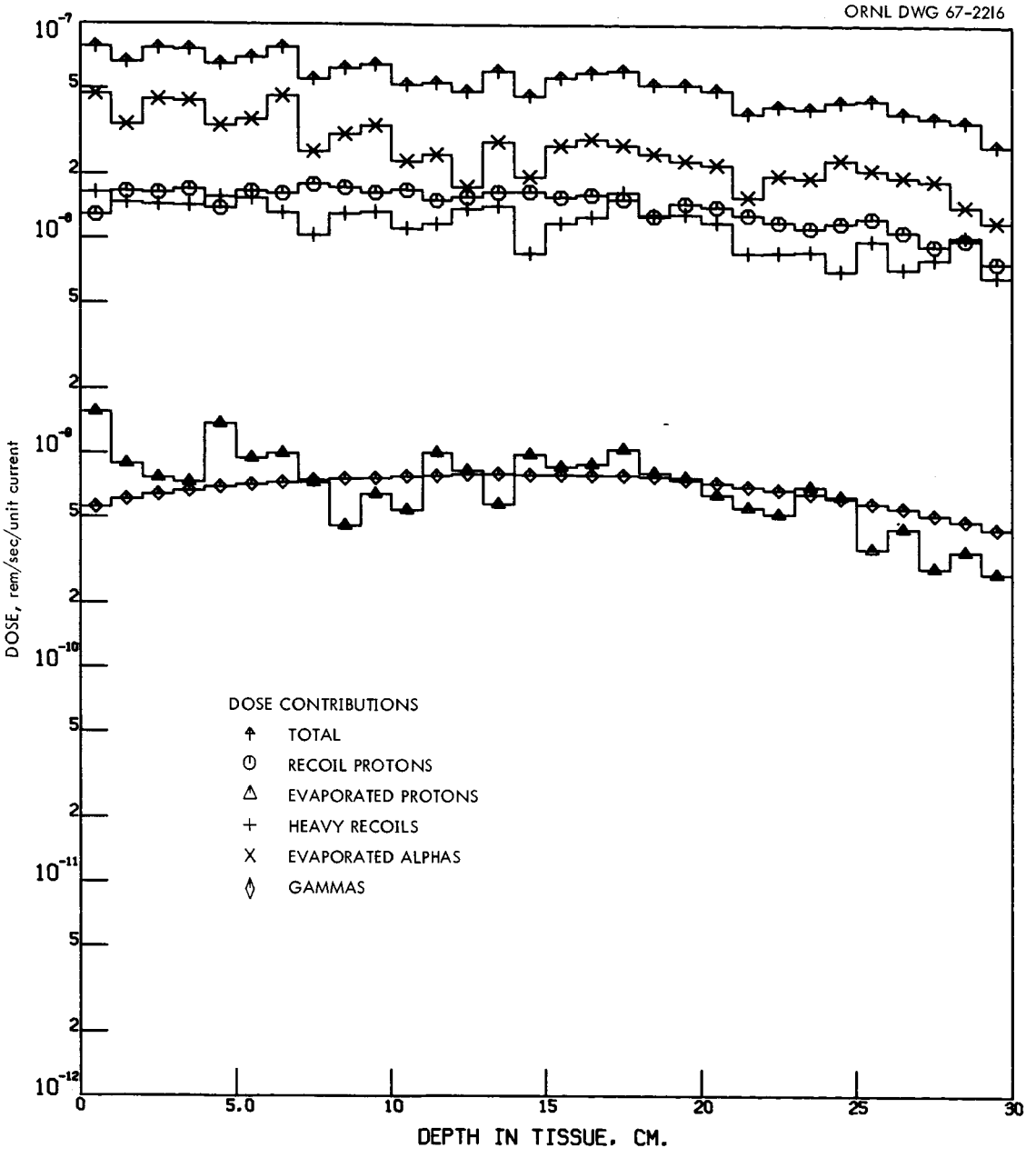

Fig. A1.18. Dose vs Depth in Tissue for 30-MeV Normally Incident Neutrons.

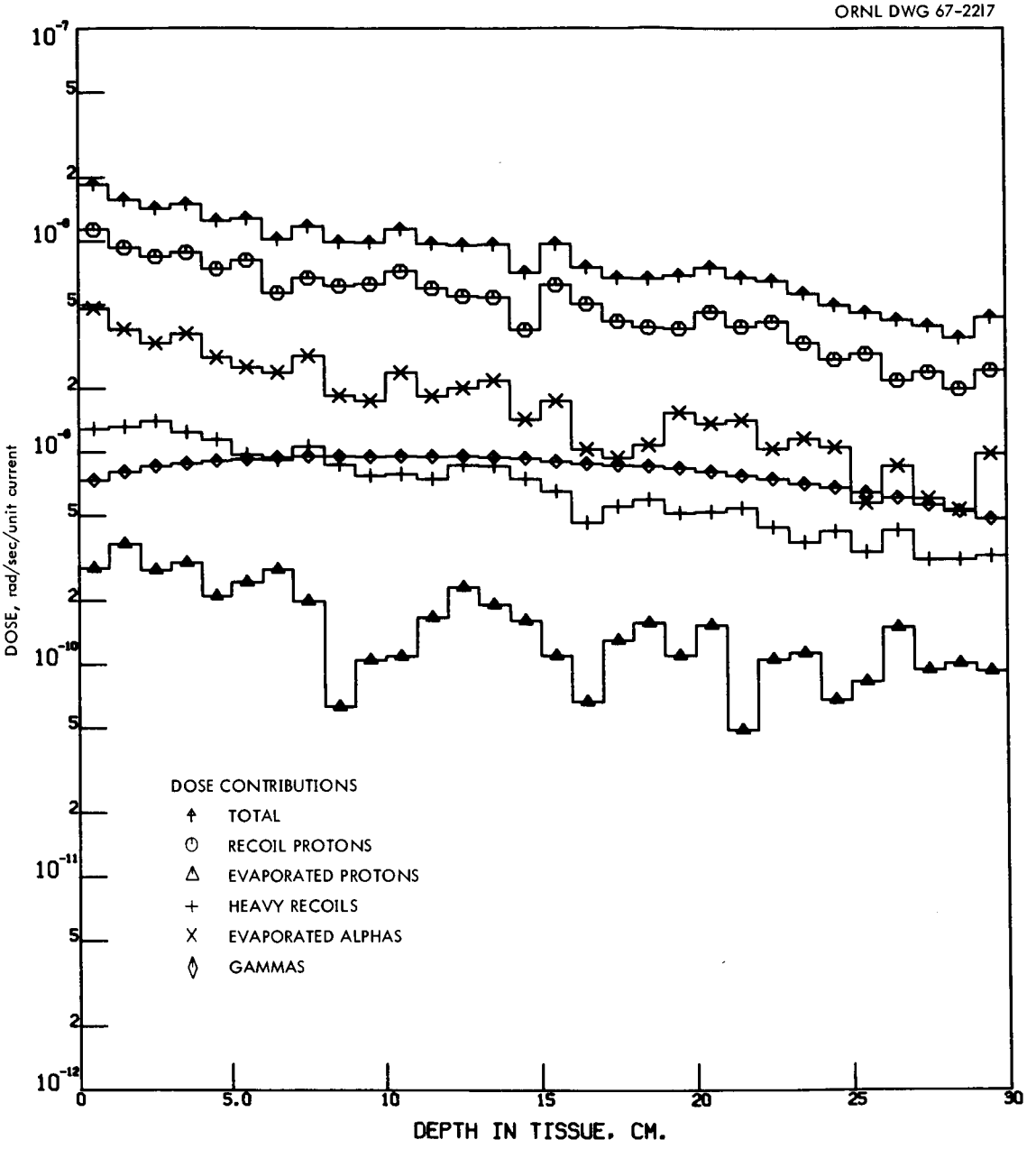

Fig. A1.19. Dose vs Depth in Tissue for 30-MeV Isotropically Incident Neutrons.

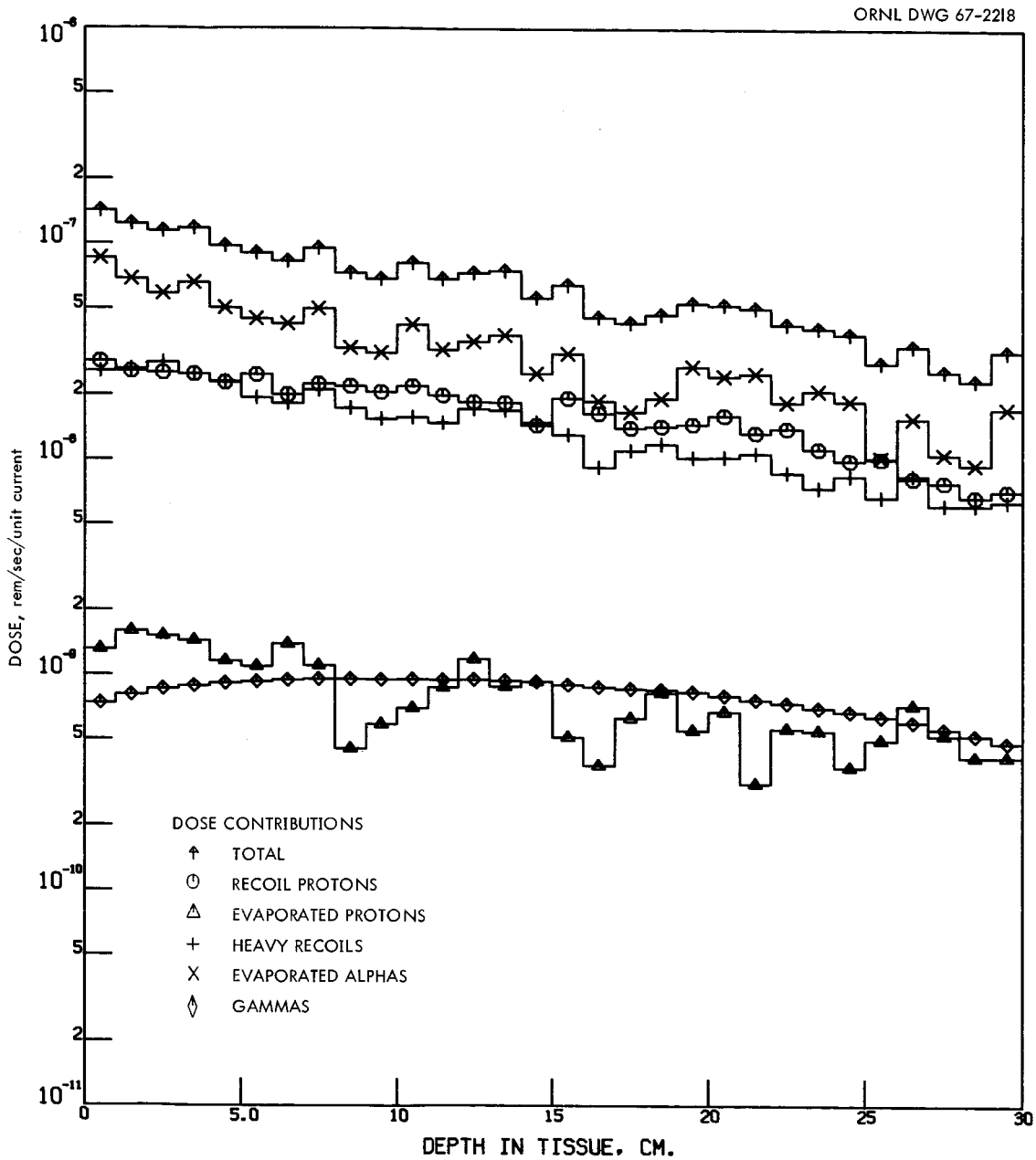

Fig. A1.20. Dose vs Depth in Tissue for 30-MeV Isotropically Incident Neutrons.

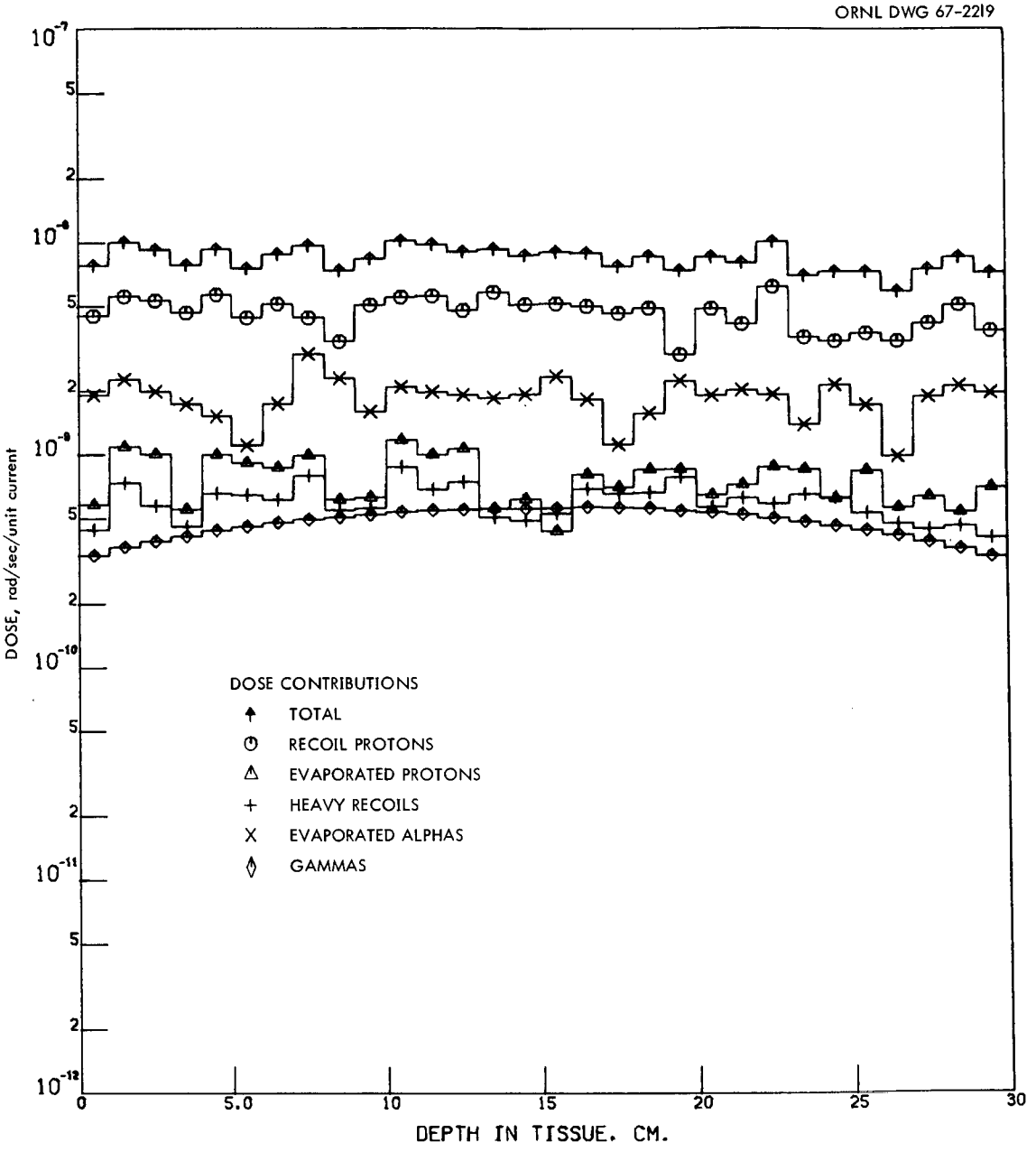

Fig. A1.21. Dose vs Depth in Tissue for 60-MeV Normally Incident Neutrons.

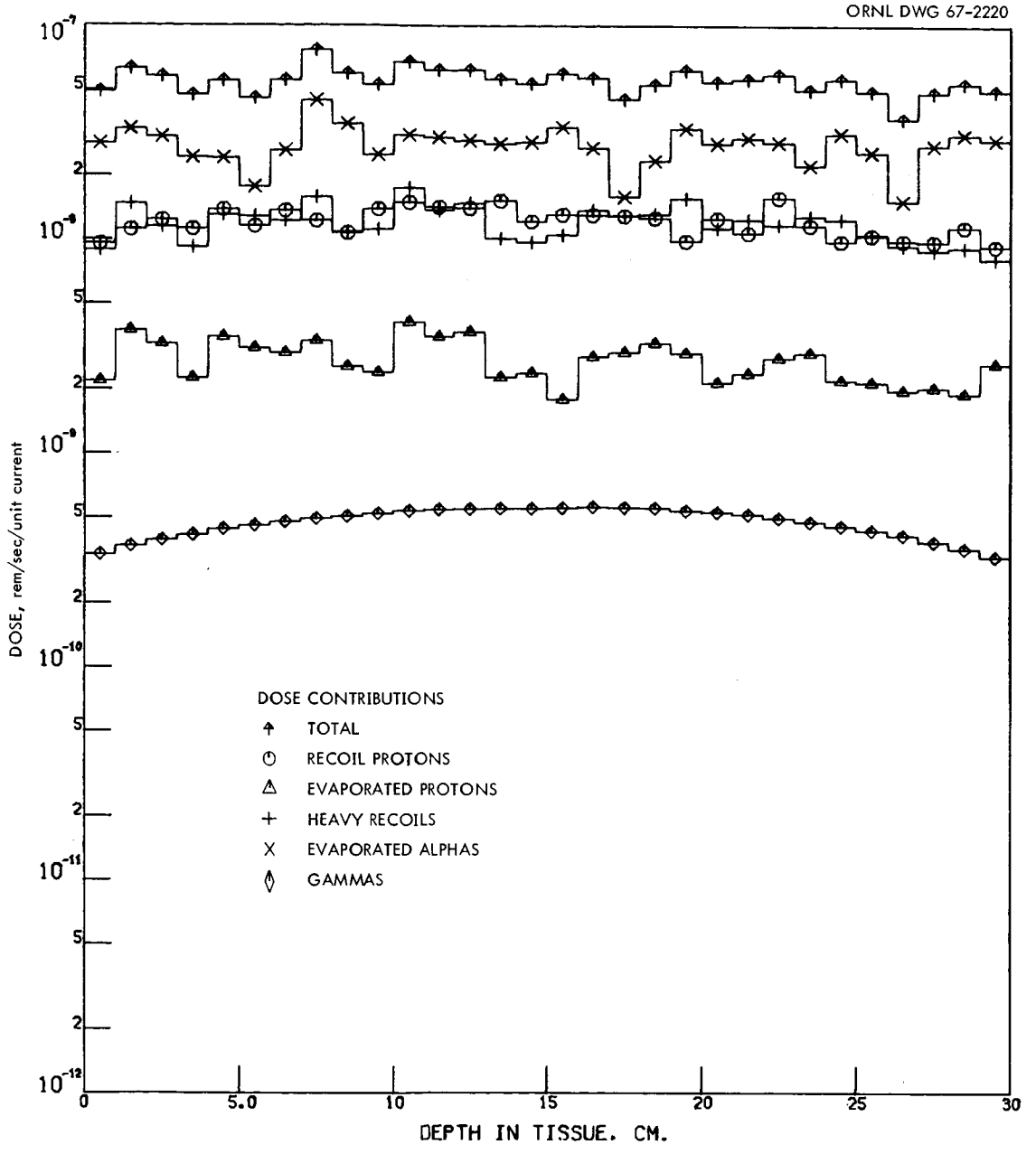

Fig. A1.22. Dose vs Depth in Tissue for 60-MeV Normally Incident Neutrons.

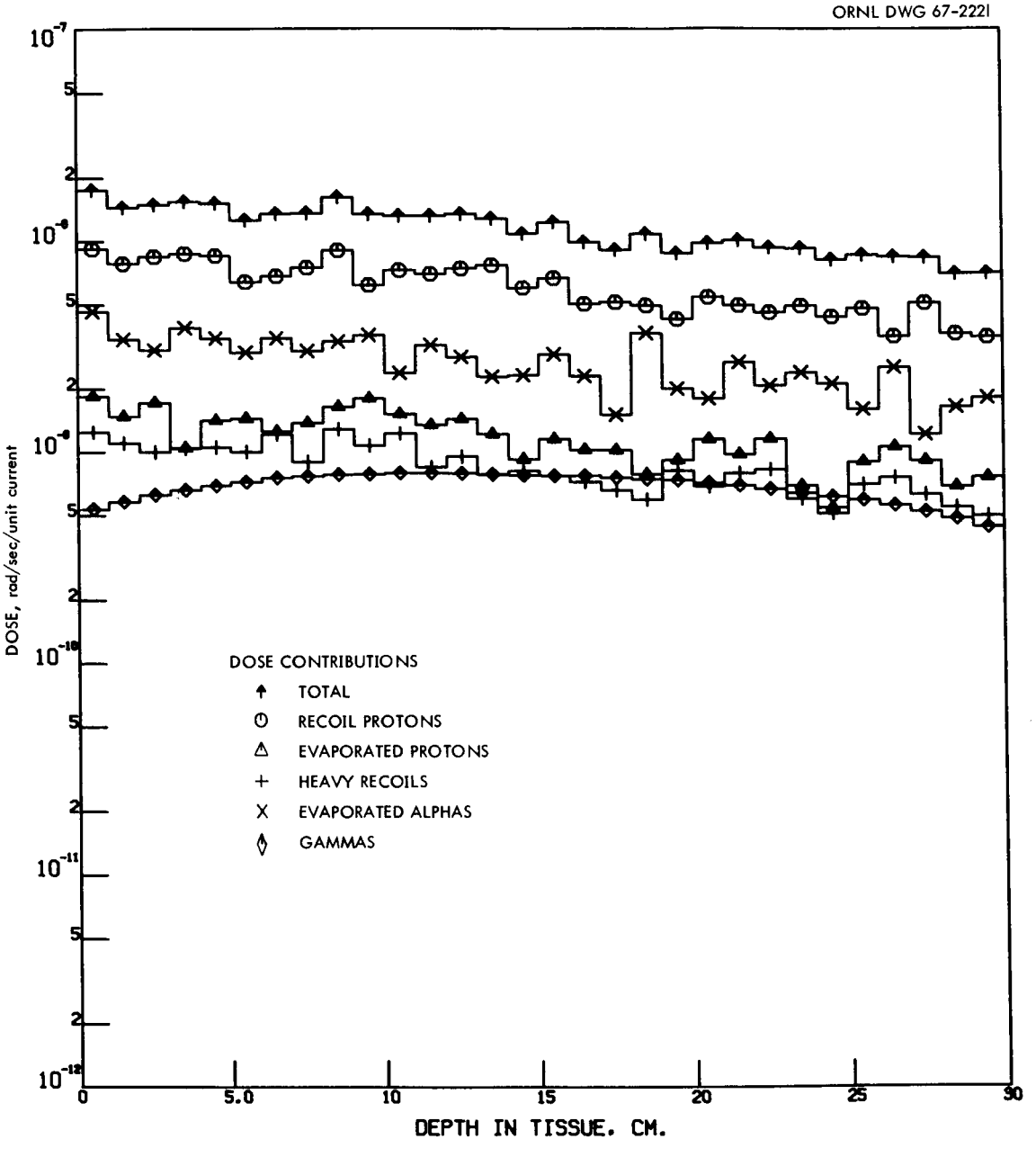

Fig. A1.23. Dose vs Depth in Tissue for 60-MeV Isotropically Incident Neutrons.

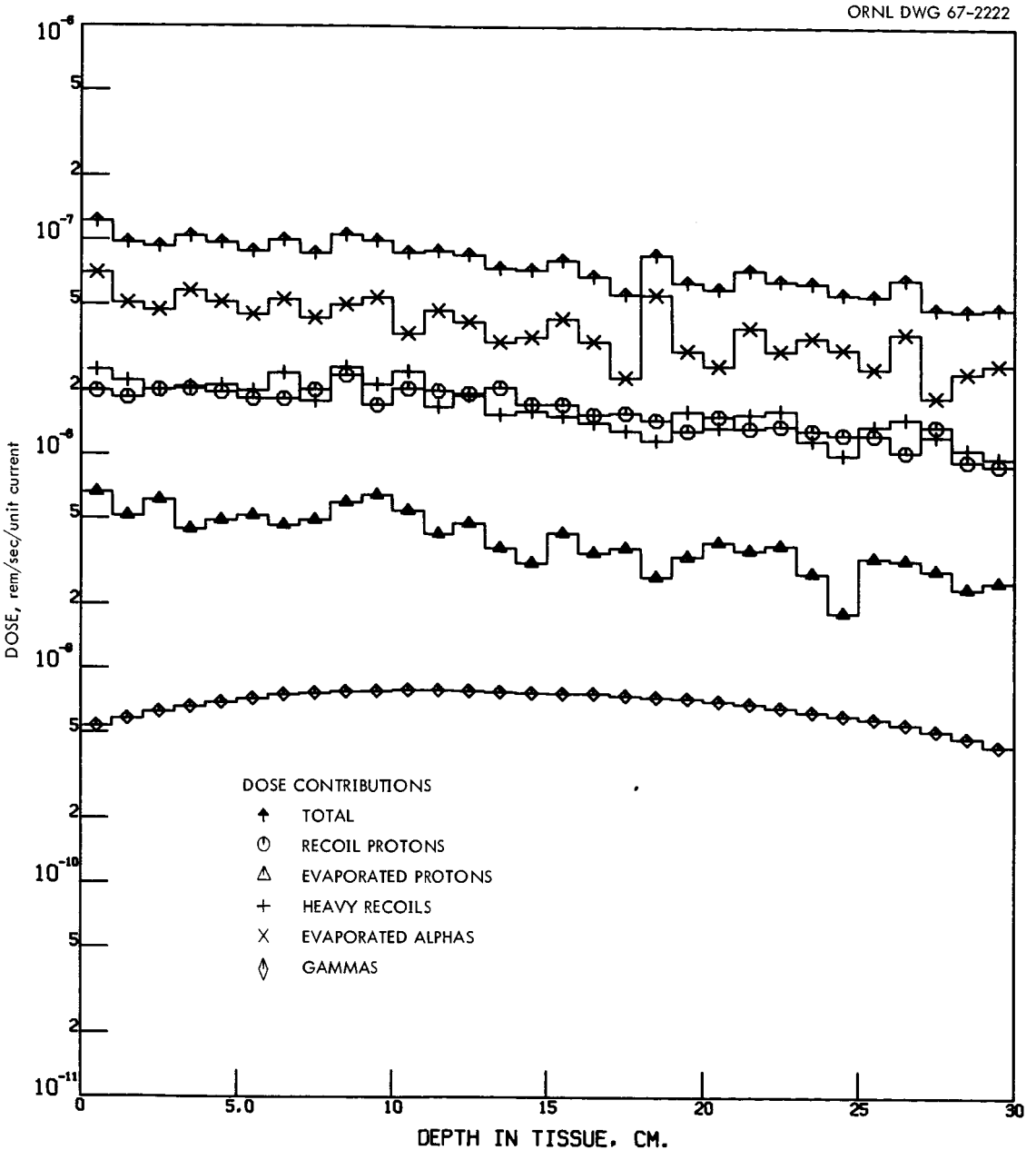

Fig. A1.24. Dose vs Depth in Tissue for 60-MeV Isotropically Incident Neutrons.

APPENDIX II. ENERGY DEPOSITION IN THE TISSUE SLAB

In order that any desired set of quality factors may be used in converting energy deposition to rem dose, the detailed data on energy deposition in the tissue slab are presented in this appendix. For each incident energy and angular distribution we have presented a set of three tables. In each set the first table gives the dose contribution, as a function of depth in the tissue, from recoil hydrogen nuclei, evaporation protons, recoil heavy nuclei, evaporation alpha particles, and gamma rays. The second and third tables of each set give the energy deposition for the proton contributions subdivided into ionizations occurring while the protons were in the energy ranges 0-1, 1-5, 5-10, and >10 MeV. The units used in reporting the energy deposition is MeV/gram-sec/unit current.

The tables are given in the order of increasing neutron energy. For a given incident energy the tables corresponding to normal incidence are given and then the tables corresponding to isotropic incidence are given.

TABLE A2.1. 0.5-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION IN TISSUE

DEPTH, CM.	HYD RECOILS	EVAP PROTONS	HEAVY RECOILS	EVAP ALPHAS	GAMMAS	TOTAL
0 TO 1	0.10794E-00	0.27575E-02	0.72817E-02	0.	0.34818E-01	0.15279E-00
1 TO 2	0.95170E-01	0.33ElCE-02	0.66244E-02	0.	0.38928E-01	0.14410E-00
2 TO 3	0.70249E-01	0.40467E-02	0.48796E-02	0.	0.42183E-01	0.12136E-00
3 TO 4	0.55038E-01	0.48006E-02	0.35955E-02	0.	0.44503E-01	0.10794E-00
4 TO 5	0.37580E-01	0.41882E-02	0.27617E-02	0.	0.45047E-01	0.89577E-01
5 TO 6	0.28917E-01	0.41985E-02	0.18393E-02	0.	0.45095E-01	0.80051E-01
6 TO 7	0.17882E-01	0.4284CE-02	0.10812E-02	0.	0.44232E-01	0.67479E-01
7 TO 8	0.13519E-01	0.30528E-02	0.74556E-03	0.	0.42164E-01	0.59481E-01
8 TO 9	0.87619E-02	0.32369E-02	0.50286E-C3	0.	0.40077E-01	0.52579E-01
9 TO 10	0.50131E-02	0.24315E-02	0.31792E-03	0.	0.37351E-01	0.45113E-01
10 TO 11	0.40518E-02	0.18620E-02	0.22430E-03	0.	0.34409E-01	0.40547E-01
11 TO 12	0.17085E-02	0.12453E-02	0.13485E-03	0.	0.31471E-01	0.34560E-01
12 TO 13	0.18108E-02	0.11494E-02	0.92783E-04	0.	0.28860E-01	0.31913E-01
13 TO 14	0.45939E-03	0.6459CE-C3	0.37165E-04	0.	0.26215E-01	0.27358E-01
14 TO 15	0.30127E-03	0.34749E-03	0.16792E-04	0.	0.23862E-01	0.24527E-01
15 TO 16	0.23599E-03	0.42543E-03	0.35682E-04	0.	0.21991E-01	0.22688E-01
16 TO 17	0.32894E-03	0.11031E-03	0.52016E-05	0.	0.20154E-01	0.20598E-01
17 TO 18	0.16814E-03	0.15763E-03	0.16025E-04	0.	0.18621E-01	0.18963E-01
18 TO 19	0.21732E-04	0.11041E-03	0.40011E-09	0.	0.17254E-01	0.17386E-01
19 TO 20	0.72446E-04	0.78871E-04	0.96C70E-10	0.	0.16018E-01	0.16169E-01
20 TO 21	0.75514E-06	0.78591E-04	0.	0.	0.14915E-01	0.14994E-01
21 TO 22	0.84613E-04	0.47216E-04	0.	0.	0.13909E-01	0.14041E-01
22 TO 23	0.11887E-07	0.47141E-04	0.93045E-08	0.	0.12958E-01	0.13005E-01
23 TO 24	0.10504E-03	0.19928E-06	0.26346E-09	0.	0.12087E-01	0.12192E-01
24 TO 25	0.26581E-06	0.81721E-07	0.	0.	0.11303E-01	0.11303E-01
25 TO 26	0.	0.	0.	0.	0.10595E-01	0.10595E-01
26 TO 27	0.	0.	0.	0.	0.99468E-02	0.99468E-02
27 TO 28	0.	0.	0.	0.	0.93506E-02	0.93506E-02
28 TO 29	0.	0.	0.	0.	0.87996E-02	0.87996E-02
29 TO 30	0.	0.	0.	0.	0.82888E-02	0.82888E-02
AVERAGE	0.14981E-01	0.14228E-02	0.1C064E-02	0.	0.25513E-01	0.42923E-01

TABLE A2.2. 0.5-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY HYDROGEN RECOILS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.10794E-00	0.	0.	0.
1 TO 2	0.95170E-01	0.	0.	0.
2 TO 3	0.70249E-01	0.	0.	0.
3 TO 4	0.55038E-01	0.	0.	0.
4 TO 5	0.37580E-01	0.	0.	0.
5 TO 6	0.28917E-01	0.	0.	0.
6 TO 7	0.17882E-01	0.	0.	0.
7 TO 8	0.13519E-01	0.	0.	0.
8 TO 9	0.87619E-02	0.	0.	0.
9 TO 10	0.50131E-02	0.	0.	0.
10 TO 11	0.40518E-02	0.	0.	0.
11 TO 12	0.17085E-02	0.	0.	0.
12 TO 13	0.18108E-02	0.	0.	0.
13 TO 14	0.45939E-03	0.	0.	0.
14 TO 15	0.30127E-03	0.	0.	0.
15 TO 16	0.23599E-03	0.	0.	0.
16 TO 17	0.32894E-03	0.	0.	0.
17 TO 18	0.16814E-03	0.	0.	0.
18 TO 19	0.21732E-04	0.	0.	0.
19 TO 20	0.72446E-04	0.	0.	0.
20 TO 21	0.75514E-06	0.	0.	0.
21 TO 22	0.84613E-04	0.	0.	0.
22 TO 23	0.11887E-07	0.	0.	0.
23 TO 24	0.10504E-03	0.	0.	0.
24 TO 25	0.26581E-06	0.	0.	0.
25 TO 26	0.	0.	0.	0.
26 TO 27	0.	0.	0.	0.
27 TO 28	0.	0.	0.	0.
28 TO 29	0.	0.	0.	0.
29 TO 30	0.	0.	0.	0.
AVERAGE	0.14981E-01	0.	0.	0.

TABLE A2.3. 0.5-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY EVAPORATED PROTONS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.27575E-02	0.	0.	0.
1 TO 2	0.33810E-02	0.	0.	0.
2 TO 3	0.40467E-02	0.	0.	0.
3 TO 4	0.48006E-02	0.	0.	0.
4 TO 5	0.41882E-02	0.	0.	0.
5 TO 6	0.41985E-02	0.	0.	0.
6 TO 7	0.42840E-02	0.	0.	0.
7 TO 8	0.30528E-02	0.	0.	0.
8 TO 9	0.32369E-02	0.	0.	0.
9 TO 10	0.24315E-02	0.	0.	0.
10 TO 11	0.18620E-02	0.	0.	0.
11 TO 12	0.12453E-02	0.	0.	0.
12 TO 13	0.11494E-02	0.	0.	0.
13 TO 14	0.64590E-03	0.	0.	0.
14 TO 15	0.34749E-03	0.	0.	0.
15 TO 16	0.42543E-03	0.	0.	0.
16 TO 17	0.11031E-03	0.	0.	0.
17 TO 18	0.15763E-03	0.	0.	0.
18 TO 19	0.11041E-03	0.	0.	0.
19 TO 20	0.78871E-04	0.	0.	0.
20 TO 21	0.78591E-04	0.	0.	0.
21 TO 22	0.47216E-04	0.	0.	0.
22 TO 23	0.47141E-04	0.	0.	0.
23 TO 24	0.19928E-06	0.	0.	0.
24 TO 25	0.81721E-07	0.	0.	0.
25 TO 26	0.	0.	0.	0.
26 TO 27	0.	0.	0.	0.
27 TO 28	0.	0.	0.	0.
28 TO 29	0.	0.	0.	0.
29 TO 30	0.	0.	0.	0.
AVERAGE	0.14228E-02	0.	0.	0.

TABLE A2.4. 0.5-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION IN TISSUE

DEPTH, CM.	HYD RECOILS	EVAP PROTONS	HEAVY RECOILS	EVAP ALPHAS	GAMMAS	TOTAL
0 TO 1	0.16442E-00	0.26821E-02	0.11214E-01	0.	0.29419E-01	0.20773E-00
1 TO 2	0.96754E-01	0.31621E-02	0.70280E-02	0.	0.32932E-01	0.13988E-00
2 TO 3	0.63977E-01	0.32627E-02	0.43475E-02	0.	0.35218E-01	0.10681E-00
3 TO 4	0.38094E-01	0.38228E-02	0.30052E-02	0.	0.36982E-01	0.81904E-01
4 TO 5	0.23729E-01	0.42909E-02	0.15974E-02	0.	0.37835E-01	0.67453E-01
5 TO 6	0.15282E-01	0.37179E-02	0.11076E-02	0.	0.37195E-01	0.57303E-01
6 TO 7	0.95873E-02	0.29571E-02	0.64761E-03	0.	0.35632E-01	0.48824E-01
7 TO 8	0.64144E-02	0.28576E-02	0.35102E-03	0.	0.33936E-01	0.43559E-01
8 TO 9	0.33977E-02	0.23037E-02	0.17993E-03	0.	0.31644E-01	0.37526E-01
9 TO 10	0.21183E-02	0.15000E-02	0.17675E-03	0.	0.29017E-01	0.32812E-01
10 TO 11	0.17655E-02	0.12150E-02	0.81173E-04	0.	0.26630E-01	0.29692E-01
11 TO 12	0.90220E-03	0.10070E-02	0.89678E-04	0.	0.24323E-01	0.26321E-01
12 TO 13	0.34287E-03	0.55116E-03	0.39085E-04	0.	0.22112E-01	0.23045E-01
13 TO 14	0.40926E-03	0.40972E-03	0.37836E-04	0.	0.20198E-01	0.21054E-01
14 TO 15	0.17071E-03	0.31437E-03	0.35838E-05	0.	0.18534E-01	0.19023E-01
15 TO 16	0.97771E-04	0.15754E-03	0.14901E-04	0.	0.16996E-01	0.17266E-01
16 TO 17	0.18666E-03	0.12636E-03	0.31349E-09	0.	0.15652E-01	0.15965E-01
17 TO 18	0.24056E-04	0.15729E-03	0.75733E-10	0.	0.14475E-01	0.14657E-01
18 TO 19	0.63956E-06	0.62931E-04	0.44312E-09	0.	0.13377E-01	0.13440E-01
19 TO 20	0.25931E-06	0.31566E-04	0.73477E-07	0.	0.12391E-01	0.12423E-01
20 TO 21	0.14215E-08	0.15752E-04	0.	0.	0.11517E-01	0.11533E-01
21 TO 22	0.	0.	0.	0.	0.10732E-01	0.10732E-01
22 TO 23	0.	0.15713E-04	0.	0.	0.10031E-01	0.10047E-01
23 TO 24	0.	0.	0.	0.	0.93811E-02	0.93811E-02
24 TO 25	0.	0.	0.	0.	0.87936E-02	0.87936E-02
25 TO 26	0.	0.	0.	0.	0.82551E-02	0.82551E-02
26 TO 27	0.	0.	0.	0.	0.77592E-02	0.77592E-02
27 TO 28	0.	0.	0.	0.	0.73008E-02	0.73008E-02
28 TO 29	0.	0.	0.	0.	0.68759E-02	0.68759E-02
29 TO 30	0.	0.	0.	0.	0.64811E-02	0.64811E-02
AVERAGE	0.14256E-01	0.11540E-02	0.99739E-03	0.	0.20387E-01	0.36795E-01

TABLE A2.5. 0.5-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY HYDROGEN RECOILS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.16442E-00	0.	0.	0.
1 TO 2	0.96754E-01	0.	0.	0.
2 TO 3	0.63977E-01	0.	0.	0.
3 TO 4	0.38094E-01	0.	0.	0.
4 TO 5	0.23729E-01	0.	0.	0.
5 TO 6	0.15282E-01	0.	0.	0.
6 TO 7	0.95873E-02	0.	0.	0.
7 TO 8	0.64144E-02	0.	0.	0.
8 TO 9	0.33977E-02	0.	0.	0.
9 TO 10	0.21183E-02	0.	0.	0.
10 TO 11	0.17655E-02	0.	0.	0.
11 TO 12	0.90220E-03	0.	0.	0.
12 TO 13	0.34287E-03	0.	0.	0.
13 TO 14	0.40926E-03	0.	0.	0.
14 TO 15	0.17071E-03	0.	0.	0.
15 TO 16	0.97771E-04	0.	0.	0.
16 TO 17	0.18666E-03	0.	0.	0.
17 TO 18	0.24056E-04	0.	0.	0.
18 TO 19	0.63956E-06	0.	0.	0.
19 TO 20	0.25931E-06	0.	0.	0.
20 TO 21	0.14215E-08	0.	0.	0.
21 TO 22	0.	0.	0.	0.
22 TO 23	0.	0.	0.	0.
23 TO 24	0.	0.	0.	0.
24 TO 25	0.	0.	0.	0.
25 TO 26	0.	0.	0.	0.
26 TO 27	0.	0.	0.	0.
27 TO 28	0.	0.	0.	0.
28 TO 29	0.	0.	0.	0.
29 TO 30	0.	0.	0.	0.
AVERAGE	0.14256E-01	0.	0.	0.

TABLE A2.6. 0.5-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY EVAPORATED PROTONS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.26824E-02	0.	0.	0.
1 TO 2	0.31621E-02	0.	0.	0.
2 TO 3	0.32627E-02	0.	0.	0.
3 TO 4	0.38228E-02	0.	0.	0.
4 TO 5	0.42909E-02	0.	0.	0.
5 TO 6	0.37179E-02	0.	0.	0.
6 TO 7	0.29571E-02	0.	0.	0.
7 TO 8	0.28576E-02	0.	0.	0.
8 TO 9	0.23037E-02	0.	0.	0.
9 TO 10	0.15000E-02	0.	0.	0.
10 TO 11	0.12150E-02	0.	0.	0.
11 TO 12	0.10070E-02	0.	0.	0.
12 TO 13	0.55116E-03	0.	0.	0.
13 TO 14	0.40972E-03	0.	0.	0.
14 TO 15	0.31437E-03	0.	0.	0.
15 TO 16	0.15754E-03	0.	0.	0.
16 TO 17	0.12636E-03	0.	0.	0.
17 TO 18	0.15729E-03	0.	0.	0.
18 TO 19	0.62931E-04	0.	0.	0.
19 TO 20	0.31566E-04	0.	0.	0.
20 TO 21	0.15752E-04	0.	0.	0.
21 TO 22	0.	0.	0.	0.
22 TO 23	0.15713E-04	0.	0.	0.
23 TO 24	0.	0.	0.	0.
24 TO 25	0.	0.	0.	0.
25 TO 26	0.	0.	0.	0.
26 TO 27	0.	0.	0.	0.
27 TO 28	0.	0.	0.	0.
28 TO 29	0.	0.	0.	0.
29 TO 30	0.	0.	0.	0.
AVERAGE	0.11540E-02	0.	0.	0.

TABLE A2.7. 2-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION IN TISSUE

DEPTH, CM.	HYD RECOILS	EVAP PROTONS	HEAVY RECOILS	EVAP ALPHAS	GAMMAS	TOTAL
0 TO 1	0.21212E-00	0.17246E-02	0.14695E-01	0.	0.29960E-01	0.25850E-00
1 TO 2	0.19638E-00	0.19828E-02	0.13298E-01	0.	0.33242E-01	0.24490E-00
2 TO 3	0.18735E-00	0.23473E-02	0.14796E-01	0.	0.36121E-01	0.24061E-00
3 TO 4	0.17063E-00	0.29482E-02	0.12905E-01	0.	0.38834E-01	0.22532E-00
4 TO 5	0.15040E-00	0.34505E-02	0.11007E-01	0.	0.41047E-01	0.20590E-00
5 TO 6	0.13137E-00	0.35584E-02	0.10482E-01	0.	0.42392E-01	0.18780E-00
6 TO 7	0.11727E-00	0.33870E-02	0.88024E-02	0.	0.42913E-01	0.17237E-00
7 TO 8	0.92253E-01	0.30406E-02	0.81778E-02	0.	0.42930E-01	0.14640E-00
8 TO 9	0.82426E-01	0.36510E-02	0.60996E-02	0.	0.42877E-01	0.13505E-00
9 TO 10	0.74149E-01	0.28468E-02	0.53923E-02	0.	0.41704E-01	0.12409E-00
10 TO 11	0.71774E-01	0.23586E-02	0.61490E-02	0.	0.40249E-01	0.12053E-00
11 TO 12	0.49339E-01	0.24980E-02	0.49726E-02	0.	0.38944E-01	0.95754E-01
12 TO 13	0.46873E-01	0.22293E-02	0.36793E-02	0.	0.37355E-01	0.90137E-01
13 TO 14	0.37882E-01	0.15499E-02	0.40380E-02	0.	0.35502E-01	0.78971E-01
14 TO 15	0.28375E-01	0.17074E-02	0.25985E-02	0.	0.33901E-01	0.66582E-01
15 TO 16	0.22433E-01	0.15938E-02	0.18931E-02	0.	0.32181E-01	0.58101E-01
16 TO 17	0.20449E-01	0.13261E-02	0.18156E-02	0.	0.30330E-01	0.53921E-01
17 TO 18	0.13320E-01	0.10891E-02	0.13518E-02	0.	0.28509E-01	0.44270E-01
18 TO 19	0.12937E-01	0.88577E-03	0.99743E-03	0.	0.26630E-01	0.41450E-01
19 TO 20	0.83364E-02	0.77287E-03	0.84665E-03	0.	0.24930E-01	0.34886E-01
20 TO 21	0.10824E-01	0.56950E-03	0.93195E-03	0.	0.23274E-01	0.35599E-01
21 TO 22	0.81399E-02	0.55408E-03	0.62268E-03	0.	0.21744E-01	0.31061E-01
22 TO 23	0.69261E-02	0.36422E-03	0.28313E-03	0.	0.20369E-01	0.27943E-01
23 TO 24	0.42684E-02	0.44117E-03	0.23139E-03	0.	0.19065E-01	0.24006E-01
24 TO 25	0.23475E-02	0.31577E-03	0.34730E-03	0.	0.17770E-01	0.20781E-01
25 TO 26	0.35984E-02	0.25293E-03	0.32931E-03	0.	0.16572E-01	0.20752E-01
26 TO 27	0.35741E-02	0.28337E-03	0.84615E-04	0.	0.15467E-01	0.19410E-01
27 TO 28	0.17394E-02	0.95033E-04	0.24642E-03	0.	0.14338E-01	0.16419E-01
28 TO 29	0.27569E-02	0.63263E-04	0.16579E-03	0.	0.13330E-01	0.16316E-01
29 TO 30	0.22169E-02	0.12585E-03	0.23320E-03	0.	0.12480E-01	0.15056E-01
AVERAGE	0.59082E-01	0.16004E-02	0.45824E-02	0.	0.29832E-01	0.95096E-01

TABLE A2.8. 2-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY HYDROGEN RECOILS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.16758E-00	0.44536E-01	0.	0.
1 TO 2	0.15951E-00	0.36867E-01	0.	0.
2 TO 3	0.15468E-00	0.32668E-01	0.	0.
3 TO 4	0.14370E-00	0.26929E-01	0.	0.
4 TO 5	0.12921E-00	0.21184E-01	0.	0.
5 TO 6	0.11490E-00	0.16468E-01	0.	0.
6 TO 7	0.10312E-00	0.14148E-01	0.	0.
7 TO 8	0.82045E-01	0.10208E-01	0.	0.
8 TO 9	0.73894E-01	0.85326E-02	0.	0.
9 TO 10	0.63978E-01	0.10171E-01	0.	0.
10 TO 11	0.62460E-01	0.93137E-02	0.	0.
11 TO 12	0.44026E-01	0.53133E-02	0.	0.
12 TO 13	0.41587E-01	0.52868E-02	0.	0.
13 TO 14	0.33739E-01	0.41430E-02	0.	0.
14 TO 15	0.25017E-01	0.33585E-02	0.	0.
15 TO 16	0.20199E-01	0.22344E-02	0.	0.
16 TO 17	0.18638E-01	0.18110E-02	0.	0.
17 TO 18	0.12312E-01	0.10082E-02	0.	0.
18 TO 19	0.12018E-01	0.91882E-03	0.	0.
19 TO 20	0.83308E-02	0.56359E-05	0.	0.
20 TO 21	0.99191E-02	0.90469E-03	0.	0.
21 TO 22	0.72578E-02	0.88216E-03	0.	0.
22 TO 23	0.65634E-02	0.36276E-03	0.	0.
23 TO 24	0.40089E-02	0.25958E-03	0.	0.
24 TO 25	0.22670E-02	0.80579E-04	0.	0.
25 TO 26	0.33639E-02	0.23441E-03	0.	0.
26 TO 27	0.33948E-02	0.17926E-03	0.	0.
27 TO 28	0.16572E-02	0.82221E-04	0.	0.
28 TO 29	0.25257E-02	0.23116E-03	0.	0.
29 TO 30	0.22140E-02	0.28973E-05	0.	0.
AVERAGE	0.50471E-01	0.86108E-02	0.	0.

TABLE A2.9. 2-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY EVAPORATED PROTONS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.17246E-02	0.	0.	0.
1 TO 2	0.19828E-02	0.	0.	0.
2 TO 3	0.23473E-02	0.	0.	0.
3 TO 4	0.29482E-02	0.	0.	0.
4 TO 5	0.34505E-02	0.	0.	0.
5 TO 6	0.35584E-02	0.	0.	0.
6 TO 7	0.33870E-02	0.	0.	0.
7 TO 8	0.30406E-02	0.	0.	0.
8 TO 9	0.36510E-02	0.	0.	0.
9 TO 10	0.28468E-02	0.	0.	0.
10 TO 11	0.23586E-02	0.	0.	0.
11 TO 12	0.24980E-02	0.	0.	0.
12 TO 13	0.22293E-02	0.	0.	0.
13 TO 14	0.15499E-02	0.	0.	0.
14 TO 15	0.17074E-02	0.	0.	0.
15 TO 16	0.15938E-02	0.	0.	0.
16 TO 17	0.13261E-02	0.	0.	0.
17 TO 18	0.10891E-02	0.	0.	0.
18 TO 19	0.88577E-03	0.	0.	0.
19 TO 20	0.77287E-03	0.	0.	0.
20 TO 21	0.56950E-03	0.	0.	0.
21 TO 22	0.55408E-03	0.	0.	0.
22 TO 23	0.36422E-03	0.	0.	0.
23 TO 24	0.44117E-03	0.	0.	0.
24 TO 25	0.31577E-03	0.	0.	0.
25 TO 26	0.25293E-03	0.	0.	0.
26 TO 27	0.28337E-03	0.	0.	0.
27 TO 28	0.95033E-04	0.	0.	0.
28 TO 29	0.63263E-04	0.	0.	0.
29 TO 30	0.12585E-03	0.	0.	0.
AVERAGE	0.16004E-02	0.	0.	0.

TABLE A2.10. 2-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION IN TISSUE

DEPTH, CM.	HYD RECOILS	EVAP PROTONS	HEAVY RECOILS	EVAP ALPHAS	GAMMAS	TOTAL
0 TO 1	0.37110E-00	0.18373E-02	0.22378E-01	0.	0.28030E-01	0.42335E-00
1 TO 2	0.28433E-00	0.24734E-02	0.21301E-01	0.	0.31224E-01	0.33933E-00
2 TO 3	0.20756E-00	0.24578E-02	0.15573E-01	0.	0.33595E-01	0.25919E-00
3 TO 4	0.16775E-00	0.29801E-02	0.13771E-01	0.	0.35782E-01	0.22029E-00
4 TO 5	0.13603E-00	0.32305E-02	0.10319E-01	0.	0.37347E-01	0.18693E-00
5 TO 6	0.11251E-00	0.33103E-02	0.77960E-02	0.	0.38046E-01	0.16166E-00
6 TO 7	0.82109E-01	0.33537E-02	0.69184E-02	0.	0.38348E-01	0.13073E-00
7 TO 8	0.71682E-01	0.30380E-02	0.49046E-02	0.	0.37836E-01	0.11746E-00
8 TO 9	0.56828E-01	0.25776E-02	0.58960E-02	0.	0.36708E-01	0.10201E-00
9 TO 10	0.44210E-01	0.26699E-02	0.39604E-02	0.	0.35605E-01	0.86445E-01
10 TO 11	0.33782E-01	0.21183E-02	0.28247E-02	0.	0.33937E-01	0.72662E-01
11 TO 12	0.28320E-01	0.18327E-02	0.24567E-02	0.	0.32107E-01	0.64716E-01
12 TO 13	0.20912E-01	0.14072E-02	0.21339E-02	0.	0.30270E-01	0.54723E-01
13 TO 14	0.20159E-01	0.13887E-02	0.14637E-02	0.	0.28491E-01	0.51503E-01
14 TO 15	0.14615E-01	0.10424E-02	0.15700E-02	0.	0.26619E-01	0.43847E-01
15 TO 16	0.14025E-01	0.90001E-03	0.90785E-03	0.	0.24913E-01	0.40745E-01
16 TO 17	0.10640E-01	0.72522E-03	0.50528E-03	0.	0.23189E-01	0.35060E-01
17 TO 18	0.80790E-02	0.60060E-03	0.72409E-03	0.	0.21590E-01	0.30994E-01
18 TO 19	0.50045E-02	0.39544E-03	0.70128E-03	0.	0.20082E-01	0.26183E-01
19 TO 20	0.62904E-02	0.44204E-03	0.45856E-03	0.	0.18789E-01	0.25979E-01
20 TO 21	0.56678E-02	0.30067E-03	0.37265E-03	0.	0.17512E-01	0.23853E-01
21 TO 22	0.35040E-02	0.28496E-03	0.31629E-03	0.	0.16376E-01	0.20481E-01
22 TO 23	0.40381E-02	0.20505E-03	0.17509E-03	0.	0.15312E-01	0.19731E-01
23 TO 24	0.26203E-02	0.25237E-03	0.18132E-03	0.	0.14411E-01	0.17465E-01
24 TO 25	0.15677E-02	0.28374E-03	0.11020E-03	0.	0.13507E-01	0.15469E-01
25 TO 26	0.13521E-02	0.63843E-04	0.93213E-04	0.	0.12502E-01	0.14011E-01
26 TO 27	0.11147E-02	0.63143E-04	0.16291E-03	0.	0.11676E-01	0.13017E-01
27 TO 28	0.88002E-03	0.12586E-03	0.88623E-04	0.	0.10933E-01	0.12027E-01
28 TO 29	0.30019E-03	0.47660E-04	0.12331E-04	0.	0.10183E-01	0.10543E-01
29 TO 30	0.11229E-04	0.31671E-04	0.45703E-05	0.	0.95019E-02	0.95494E-02
AVERAGE	0.57233E-01	0.13480E-02	0.42694E-02	0.	0.24814E-01	0.87665E-01

TABLE A2.11. 2-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY HYDROGEN RECOILS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.28905E-00	0.82050E-01	0.	0.
1 TO 2	0.23226E-00	0.52076E-01	0.	0.
2 TO 3	0.17380E-00	0.33763E-01	0.	0.
3 TO 4	0.14217E-00	0.25587E-01	0.	0.
4 TO 5	0.11730E-00	0.18726E-01	0.	0.
5 TO 6	0.97340E-01	0.15166E-01	0.	0.
6 TO 7	0.71676E-01	0.10433E-01	0.	0.
7 TO 8	0.63423E-01	0.82596E-02	0.	0.
8 TO 9	0.50092E-01	0.67361E-02	0.	0.
9 TO 10	0.39688E-01	0.45214E-02	0.	0.
10 TO 11	0.30793E-01	0.29884E-02	0.	0.
11 TO 12	0.25526E-01	0.27947E-02	0.	0.
12 TO 13	0.19087E-01	0.18251E-02	0.	0.
13 TO 14	0.17488E-01	0.26709E-02	0.	0.
14 TO 15	0.13166E-01	0.14495E-02	0.	0.
15 TO 16	0.12910E-01	0.11147E-02	0.	0.
16 TO 17	0.96617E-02	0.97882E-03	0.	0.
17 TO 18	0.73163E-02	0.76270E-03	0.	0.
18 TO 19	0.46111E-02	0.39339E-03	0.	0.
19 TO 20	0.55543E-02	0.73610E-03	0.	0.
20 TO 21	0.50869E-02	0.58098E-03	0.	0.
21 TO 22	0.32826E-02	0.22134E-03	0.	0.
22 TO 23	0.36003E-02	0.43779E-03	0.	0.
23 TO 24	0.24152E-02	0.20512E-03	0.	0.
24 TO 25	0.15587E-02	0.90591E-05	0.	0.
25 TO 26	0.12827E-02	0.69409E-04	0.	0.
26 TO 27	0.11147E-02	0.	0.	0.
27 TO 28	0.78322E-03	0.96799E-04	0.	0.
28 TO 29	0.30019E-03	0.	0.	0.
29 TO 30	0.11229E-04	0.	0.	0.
AVERAGE	0.48078E-01	0.91551E-02	0.	0.

TABLE A2.12. 2-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY EVAPORATED PROTONS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.18373E-02	0.	0.	0.
1 TO 2	0.24734E-02	0.	0.	0.
2 TO 3	0.24578E-02	0.	0.	0.
3 TO 4	0.29801E-02	0.	0.	0.
4 TO 5	0.32305E-02	0.	0.	0.
5 TO 6	0.33103E-02	0.	0.	0.
6 TO 7	0.33537E-02	0.	0.	0.
7 TO 8	0.30380E-02	0.	0.	0.
8 TO 9	0.25776E-02	0.	0.	0.
9 TO 10	0.26699E-02	0.	0.	0.
10 TO 11	0.21183E-02	0.	0.	0.
11 TO 12	0.18327E-02	0.	0.	0.
12 TO 13	0.14072E-02	0.	0.	0.
13 TO 14	0.13887E-02	0.	0.	0.
14 TO 15	0.10424E-02	0.	0.	0.
15 TO 16	0.90001E-03	0.	0.	0.
16 TO 17	0.72522E-03	0.	0.	0.
17 TO 18	0.60060E-03	0.	0.	0.
18 TO 19	0.39544E-03	0.	0.	0.
19 TO 20	0.44204E-03	0.	0.	0.
20 TO 21	0.30067E-03	0.	0.	0.
21 TO 22	0.28496E-03	0.	0.	0.
22 TO 23	0.20505E-03	0.	0.	0.
23 TO 24	0.25237E-03	0.	0.	0.
24 TO 25	0.28374E-03	0.	0.	0.
25 TO 26	0.63843E-04	0.	0.	0.
26 TO 27	0.63143E-04	0.	0.	0.
27 TO 28	0.12586E-03	0.	0.	0.
28 TO 29	0.47660E-04	0.	0.	0.
29 TO 30	0.31671E-04	0.	0.	0.
AVERAGE	0.13480E-02	0.	0.	0.

TABLE A2.13. 10-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION IN TISSUE

DEPTH, CM	HYD RECOILS	EVAP PROTONS	HEAVY RECOILS	EVAP ALPHAS	GAMMAS	TOTAL
0 TO 1	0.35083E-00	0.12035E-02	0.33943E-01	0.	0.52456E-01	0.43843E-00
1 TO 2	0.32709E-00	0.13246E-02	0.34182E-01	0.	0.57454E-01	0.42005E-00
2 TO 3	0.38184E-00	0.13084E-02	0.36091E-01	0.	0.61061E-01	0.48030E-00
3 TO 4	0.34484E-00	0.10793E-02	0.29883E-01	0.	0.63371E-01	0.43897E-00
4 TO 5	0.32012E-00	0.19246E-02	0.34480E-01	0.	0.65284E-01	0.42181E-00
5 TO 6	0.29618E-00	0.15473E-02	0.26605E-01	0.	0.66039E-01	0.39037E-00
6 TO 7	0.29609E-00	0.19690E-02	0.27965E-01	0.	0.67629E-01	0.39365E-00
7 TO 8	0.28900E-00	0.17527E-02	0.26757E-01	0.	0.68834E-01	0.38635E-00
8 TO 9	0.27209E-00	0.19889E-02	0.27304E-01	0.	0.69477E-01	0.37087E-00
9 TO 10	0.26524E-00	0.21508E-02	0.25712E-01	0.	0.69685E-01	0.36279E-00
10 TO 11	0.26405E-00	0.20755E-02	0.22451E-01	0.	0.68695E-01	0.35727E-00
11 TO 12	0.25093E-00	0.19438E-02	0.21292E-01	0.	0.67294E-01	0.34146E-00
12 TO 13	0.26146E-00	0.16372E-02	0.20900E-01	0.	0.65514E-01	0.34951E-00
13 TO 14	0.21405E-00	0.16498E-02	0.19623E-01	0.	0.64302E-01	0.29963E-00
14 TO 15	0.21416E-00	0.18902E-02	0.20305E-01	0.	0.63527E-01	0.29988E-00
15 TO 16	0.21929E-00	0.17897E-02	0.19830E-01	0.	0.62052E-01	0.30296E-00
16 TO 17	0.16444E-00	0.14177E-02	0.18283E-01	0.	0.60368E-01	0.24450E-00
17 TO 18	0.18845E-00	0.16100E-02	0.16036E-01	0.	0.58821E-01	0.26492E-00
18 TO 19	0.13360E-00	0.16874E-02	0.10561E-01	0.	0.57001E-01	0.20285E-00
19 TO 20	0.16191E-00	0.16382E-02	0.15019E-01	0.	0.54891E-01	0.23346E-00
20 TO 21	0.12782E-00	0.12272E-02	0.14928E-01	0.	0.52238E-01	0.19622E-00
21 TO 22	0.12333E-00	0.99684E-03	0.10272E-01	0.	0.49654E-01	0.18426E-00
22 TO 23	0.99083E-01	0.10756E-02	0.11897E-01	0.	0.47575E-01	0.15963E-00
23 TO 24	0.10109E-00	0.10943E-02	0.12404E-01	0.	0.45636E-01	0.16023E-00
24 TO 25	0.11040E-00	0.10795E-02	0.10998E-01	0.	0.43005E-01	0.16548E-00
25 TO 26	0.94848E-01	0.79578E-03	0.89077E-02	0.	0.39877E-01	0.14443E-00
26 TO 27	0.88443E-01	0.84350E-03	0.67065E-02	0.	0.36738E-01	0.13273E-00
27 TO 28	0.79248E-01	0.58714E-03	0.59475E-02	0.	0.34293E-01	0.12008E-00
28 TO 29	0.70912E-01	0.44488E-03	0.74992E-02	0.	0.31821E-01	0.11068E-00
29 TO 30	0.58092E-01	0.29942E-03	0.60038E-02	0.	0.29509E-01	0.93904E-01
AVERAGE	0.20562E-00	0.14011E-02	0.19426E-01	0.	0.55803E-01	0.28225E-00

TABLE A2.14. 10-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY HYDROGEN RECOILS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.83948E-01	0.18589E-00	0.80991E-01	0.
1 TO 2	0.93292E-01	0.17274E-00	0.61051E-01	0.
2 TO 3	0.10584E-00	0.20324E-00	0.72762E-01	0.
3 TO 4	0.10864E-00	0.17744E-00	0.58563E-01	0.
4 TO 5	0.98296E-01	0.16185E-00	0.59977E-01	0.
5 TO 6	0.99190E-01	0.15060E-00	0.46384E-01	0.
6 TO 7	0.97530E-01	0.15533E-00	0.43227E-01	0.
7 TO 8	0.10068E-00	0.14361E-00	0.44715E-01	0.
8 TO 9	0.91802E-01	0.13597E-00	0.44323E-01	0.
9 TO 10	0.90132E-01	0.13541E-00	0.39695E-01	0.
10 TO 11	0.92721E-01	0.13308E-00	0.38251E-01	0.
11 TO 12	0.86678E-01	0.12776E-00	0.36500E-01	0.
12 TO 13	0.91965E-01	0.13069E-00	0.38802E-01	0.
13 TO 14	0.84214E-01	0.10633E-00	0.23506E-01	0.
14 TO 15	0.79884E-01	0.10801E-00	0.26263E-01	0.
15 TO 16	0.80981E-01	0.10734E-00	0.30971E-01	0.
16 TO 17	0.63096E-01	0.80922E-01	0.20420E-01	0.
17 TO 18	0.70931E-01	0.93960E-01	0.23559E-01	0.
18 TO 19	0.53933E-01	0.64173E-01	0.15494E-01	0.
19 TO 20	0.61580E-01	0.74170E-01	0.26161E-01	0.
20 TO 21	0.50051E-01	0.64022E-01	0.13749E-01	0.
21 TO 22	0.46429E-01	0.57787E-01	0.19117E-01	0.
22 TO 23	0.43656E-01	0.48118E-01	0.73095E-02	0.
23 TO 24	0.39506E-01	0.49928E-01	0.11659E-01	0.
24 TO 25	0.41049E-01	0.52899E-01	0.16449E-01	0.
25 TO 26	0.36284E-01	0.48613E-01	0.99507E-02	0.
26 TO 27	0.34198E-01	0.45355E-01	0.88900E-02	0.
27 TO 28	0.29941E-01	0.43044E-01	0.62636E-02	0.
28 TO 29	0.26066E-01	0.35798E-01	0.90481E-02	0.
29 TO 30	0.21166E-01	0.29979E-01	0.69472E-02	0.
AVERAGE	0.70122E-01	0.10414E-00	0.31367E-01	0.

TABLE A2.15. 10-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY EVAPORATED PROTONS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.11188E-02	0.84733E-04	0.	0.
1 TO 2	0.11830E-02	0.14154E-03	0.	0.
2 TO 3	0.13084E-02	0.	0.	0.
3 TO 4	0.10793E-02	0.	0.	0.
4 TO 5	0.17457E-02	0.17885E-03	0.	0.
5 TO 6	0.15473E-02	0.	0.	0.
6 TO 7	0.19690E-02	0.	0.	0.
7 TO 8	0.17527E-02	0.	0.	0.
8 TO 9	0.19683E-02	0.20607E-04	0.	0.
9 TO 10	0.21508E-02	0.	0.	0.
10 TO 11	0.20755E-02	0.	0.	0.
11 TO 12	0.19438E-02	0.	0.	0.
12 TO 13	0.16372E-02	0.	0.	0.
13 TO 14	0.16498E-02	0.	0.	0.
14 TO 15	0.18902E-02	0.	0.	0.
15 TO 16	0.17897E-02	0.	0.	0.
16 TO 17	0.14177E-02	0.	0.	0.
17 TO 18	0.16100E-02	0.	0.	0.
18 TO 19	0.16874E-02	0.	0.	0.
19 TO 20	0.16382E-02	0.	0.	0.
20 TO 21	0.12272E-02	0.	0.	0.
21 TO 22	0.99684E-03	0.	0.	0.
22 TO 23	0.10756E-02	0.	0.	0.
23 TO 24	0.10943E-02	0.	0.	0.
24 TO 25	0.10795E-02	0.	0.	0.
25 TO 26	0.79578E-03	0.	0.	0.
26 TO 27	0.80442E-03	0.39076E-04	0.	0.
27 TO 28	0.58714E-03	0.	0.	0.
28 TO 29	0.44488E-03	0.	0.	0.
29 TO 30	0.29942E-03	0.	0.	0.
AVERAGE	0.13856E-02	0.15494E-04	0.	0.

TABLE A2.16. 10-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION IN TISSUE

DEPTH, CM.	HYC RECOILS	EVAP PROTONS	HEAVY RECOILS	EVAP ALPHAS	GAMMAS	TOTAL
0 TO 1	0.69573E 00	0.10021E-02	0.53929E-01	0.	0.63606E-01	0.81427E 00
1 TO 2	0.63287E 00	0.16184E-02	0.54908E-01	0.	0.69066E-01	0.75846E 00
2 TO 3	0.49591E-00	0.17072E-02	0.49830E-01	0.	0.72179E-01	0.61963E 00
3 TO 4	0.40554E-00	0.21661E-02	0.48122E-01	0.	0.73930E-01	0.52976E 00
4 TO 5	0.38492E-00	0.18829E-02	0.41801E-01	0.	0.73650E-01	0.50226E 00
5 TO 6	0.40788E-00	0.18196E-02	0.34659E-01	0.	0.73074E-01	0.51743E 00
6 TO 7	0.35700E-00	0.26617E-02	0.29769E-01	0.	0.72996E-01	0.46243E-00
7 TO 8	0.35089E-00	0.23943E-02	0.29044E-01	0.	0.71916E-01	0.45425E-00
8 TO 9	0.29391E-00	0.20205E-02	0.29509E-01	0.	0.70441E-01	0.39588E-00
9 TO 10	0.27806E-00	0.22566E-02	0.22852E-01	0.	0.68500E-01	0.37167E-00
10 TO 11	0.24451E-00	0.20500E-02	0.21319E-01	0.	0.66561E-01	0.33444E-00
11 TO 12	0.20886E-00	0.17701E-02	0.19162E-01	0.	0.64398E-01	0.29419E-00
12 TO 13	0.18168E-00	0.19099E-02	0.17565E-01	0.	0.62206E-01	0.26336E-00
13 TO 14	0.17582E-00	0.17026E-02	0.14419E-01	0.	0.59902E-01	0.25184E-00
14 TO 15	0.15624E-00	0.16589E-02	0.12933E-01	0.	0.57563E-01	0.22840E-00
15 TO 16	0.13183E-00	0.14319E-02	0.13530E-01	0.	0.55120E-01	0.20191E-00
16 TO 17	0.13583E-00	0.13456E-02	0.11127E-01	0.	0.52927E-01	0.20123E-00
17 TO 18	0.11728E-00	0.12346E-02	0.95228E-02	0.	0.50653E-01	0.17869E-00
18 TO 19	0.11090E-00	0.10774E-02	0.99556E-02	0.	0.48437E-01	0.17037E-00
19 TO 20	0.10656E-00	0.10435E-02	0.90626E-02	0.	0.46188E-01	0.16286E-00
20 TO 21	0.80812E-01	0.11275E-02	0.82359E-02	0.	0.44012E-01	0.13419E-00
21 TO 22	0.82608E-01	0.82517E-03	0.84506E-02	0.	0.42072E-01	0.13396E-00
22 TO 23	0.73180E-01	0.83577E-03	0.73695E-02	0.	0.40106E-01	0.12149E-00
23 TO 24	0.80441E-01	0.79241E-03	0.69040E-02	0.	0.37978E-01	0.12612E-00
24 TO 25	0.57821E-01	0.69347E-03	0.61310E-02	0.	0.35914E-01	0.10056E-00
25 TO 26	0.55316E-01	0.73834E-03	0.49743E-02	0.	0.33813E-01	0.94841E-01
26 TO 27	0.56073E-01	0.50852E-03	0.44588E-02	0.	0.31801E-01	0.92841E-01
27 TO 28	0.55712E-01	0.55390E-03	0.47788E-02	0.	0.29871E-01	0.90916E-01
28 TO 29	0.52049E-01	0.34976E-03	0.38762E-02	0.	0.27852E-01	0.84127E-01
29 TO 30	0.44164E-01	0.36408E-03	0.26410E-02	0.	0.25720E-01	0.72889E-01
AVERAGE	0.21701E-00	0.13848E-02	0.19695E-01	0.	0.54082E-01	0.29217E-00

TABLE A2.17. 10-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY HYDROGEN RECOILS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.17741E-00	0.36944E-00	0.14888E-00	0.
1 TO 2	0.16590E-00	0.33537E-00	0.13160E-00	0.
2 TO 3	0.14607E-00	0.25994E-00	0.89905E-01	0.
3 TO 4	0.13388E-00	0.20799E-00	0.63670E-01	0.
4 TO 5	0.12975E-00	0.19604E-00	0.59138E-01	0.
5 TO 6	0.13527E-00	0.20347E-00	0.69135E-01	0.
6 TO 7	0.12298E-00	0.18287E-00	0.51162E-01	0.
7 TO 8	0.11382E-00	0.17512E-00	0.61949E-01	0.
8 TO 9	0.10183E-00	0.14875E-00	0.43333E-01	0.
9 TO 10	0.92765E-01	0.14378E-00	0.41512E-01	0.
10 TO 11	0.86177E-01	0.11857E-00	0.39765E-01	0.
11 TO 12	0.79394E-01	0.10025E-00	0.29224E-01	0.
12 TO 13	0.73555E-01	0.89706E-01	0.18416E-01	0.
13 TO 14	0.66666E-01	0.87635E-01	0.21515E-01	0.
14 TO 15	0.57754E-01	0.80510E-01	0.17979E-01	0.
15 TO 16	0.55091E-01	0.63021E-01	0.13720E-01	0.
16 TO 17	0.55687E-01	0.67305E-01	0.12835E-01	0.
17 TO 18	0.47139E-01	0.55395E-01	0.14744E-01	0.
18 TO 19	0.42424E-01	0.56902E-01	0.11571E-01	0.
19 TO 20	0.43134E-01	0.53010E-01	0.10419E-01	0.
20 TO 21	0.34147E-01	0.39410E-01	0.72557E-02	0.
21 TO 22	0.33139E-01	0.39993E-01	0.94769E-02	0.
22 TO 23	0.30485E-01	0.33905E-01	0.87902E-02	0.
23 TO 24	0.34286E-01	0.39943E-01	0.62111E-02	0.
24 TO 25	0.24616E-01	0.27598E-01	0.56068E-02	0.
25 TO 26	0.25111E-01	0.25058E-01	0.51461E-02	0.
26 TO 27	0.22446E-01	0.27675E-01	0.59522E-02	0.
27 TO 28	0.23233E-01	0.27826E-01	0.46528E-02	0.
28 TO 29	0.18884E-01	0.28024E-01	0.51400E-02	0.
29 TO 30	0.17813E-01	0.20984E-01	0.53665E-02	0.
AVERAGE	0.73028E-01	0.11018E-00	0.33802E-01	0.

TABLE A2.18. 10-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY EVAPORATED PROTONS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.10021E-02	0.	0.	0.
1 TO 2	0.15615E-02	0.56845E-04	0.	0.
2 TO 3	0.17072E-02	0.	0.	0.
3 TO 4	0.20130E-02	0.15310E-03	0.	0.
4 TO 5	0.18829E-02	0.	0.	0.
5 TO 6	0.18196E-02	0.	0.	0.
6 TO 7	0.26617E-02	0.	0.	0.
7 TO 8	0.23908E-02	0.35231E-05	0.	0.
8 TO 9	0.19934E-02	0.27031E-04	0.	0.
9 TO 10	0.22566E-02	0.	0.	0.
10 TO 11	0.20500E-02	0.	0.	0.
11 TO 12	0.17701E-02	0.	0.	0.
12 TO 13	0.19099E-02	0.	0.	0.
13 TO 14	0.17026E-02	0.	0.	0.
14 TO 15	0.16589E-02	0.	0.	0.
15 TO 16	0.14319E-02	0.	0.	0.
16 TO 17	0.13456E-02	0.	0.	0.
17 TO 18	0.12346E-02	0.	0.	0.
18 TO 19	0.10774E-02	0.	0.	0.
19 TO 20	0.10435E-02	0.	0.	0.
20 TO 21	0.10886E-02	0.38848E-04	0.	0.
21 TO 22	0.82517E-03	0.	0.	0.
22 TO 23	0.83577E-03	0.	0.	0.
23 TO 24	0.79241E-03	0.	0.	0.
24 TO 25	0.69347E-03	0.	0.	0.
25 TO 26	0.73834E-03	0.	0.	0.
26 TO 27	0.50852E-03	0.	0.	0.
27 TO 28	0.55390E-03	0.	0.	0.
28 TO 29	0.34976E-03	0.	0.	0.
29 TO 30	0.36408E-03	0.	0.	0.
AVERAGE	0.13754E-02	0.93117E-05	0.	0.

TABLE A2.19. 18-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION IN TISSUE

DEPTH, CM.	HYD RECOILS	EVAP PROTONS	HEAVY RECOILS	EVAP ALPHAS	GAMMAS	TOTAL
0 TO 1	0.33847E-00	0.63700E-02	0.53221E-01	0.69165E-01	0.39164E-01	0.50639E 00
1 TO 2	0.36524E-00	0.50256E-02	0.51415E-01	0.77463E-01	0.42798E-01	0.54194E 00
2 TO 3	0.35305E-00	0.35298E-02	0.50120E-01	0.73636E-01	0.45943E-01	0.52628E 00
3 TO 4	0.39773E-00	0.27405E-02	0.49718E-01	0.75899E-01	0.48188E-01	0.57427E 00
4 TO 5	0.34927E-00	0.20896E-02	0.55296E-01	0.74916E-01	0.50037E-01	0.53160E 00
5 TO 6	0.35546E-00	0.64783E-02	0.52191E-01	0.61664E-01	0.51590E-01	0.52738E 00
6 TO 7	0.32752E-00	0.20915E-02	0.52190E-01	0.64543E-01	0.52935E-01	0.49928E-00
7 TO 8	0.34280E-00	0.20588E-02	0.42533E-01	0.50869E-01	0.53704E-01	0.49196E-00
8 TO 9	0.30010E-00	0.19837E-02	0.35235E-01	0.57411E-01	0.53930E-01	0.44866E-00
9 TO 10	0.27129E-00	0.14734E-02	0.41459E-01	0.57005E-01	0.54185E-01	0.42541E-00
10 TO 11	0.33426E-00	0.39460E-02	0.39759E-01	0.33103E-01	0.54420E-01	0.46549E-00
11 TO 12	0.27745E-00	0.14513E-02	0.35732E-01	0.49781E-01	0.54417E-01	0.41983E-00
12 TO 13	0.27126E-00	0.18997E-02	0.39455E-01	0.52357E-01	0.54396E-01	0.41936E-00
13 TO 14	0.26968E-00	0.20251E-02	0.35213E-01	0.32487E-01	0.53681E-01	0.39309E-00
14 TO 15	0.29081E-00	0.14086E-02	0.31885E-01	0.35513E-01	0.52880E-01	0.41250E-00
15 TO 16	0.24441E-00	0.39731E-02	0.42417E-01	0.40810E-01	0.52160E-01	0.38377E-00
16 TO 17	0.19849E-00	0.34582E-02	0.29474E-01	0.39247E-01	0.51035E-01	0.32170E-00
17 TO 18	0.21015E-00	0.17195E-02	0.27356E-01	0.37817E-01	0.50188E-01	0.32724E-00
18 TO 19	0.18706E-00	0.39785E-02	0.25753E-01	0.28899E-01	0.49177E-01	0.29586E-00
19 TO 20	0.20655E-00	0.24017E-02	0.27018E-01	0.20574E-01	0.47933E-01	0.30448E-00
20 TO 21	0.19412E-00	0.20605E-02	0.33077E-01	0.29046E-01	0.46986E-01	0.30529E-00
21 TO 22	0.16870E-00	0.13309E-02	0.25204E-01	0.30970E-01	0.45633E-01	0.27183E-00
22 TO 23	0.20474E-00	0.20663E-02	0.26523E-01	0.34996E-01	0.44173E-01	0.31260E-00
23 TO 24	0.17666E-00	0.23664E-02	0.24272E-01	0.33573E-01	0.42475E-01	0.27935E-00
24 TO 25	0.15853E-00	0.14969E-02	0.19440E-01	0.13267E-01	0.40891E-01	0.23363E-00
25 TO 26	0.14754E-00	0.10117E-02	0.19284E-01	0.24806E-01	0.39048E-01	0.23169E-00
26 TO 27	0.11742E-00	0.24572E-02	0.17387E-01	0.13120E-01	0.36584E-01	0.18697E-00
27 TO 28	0.15226E-00	0.53558E-03	0.14579E-01	0.17032E-01	0.33931E-01	0.21843E-00
28 TO 29	0.13975E-00	0.50984E-03	0.16863E-01	0.17849E-01	0.31514E-01	0.20648E-00
29 TO 30	0.12255E-00	0.25740E-03	0.14367E-01	0.16881E-01	0.28861E-01	0.18291E-00
AVERAGE	0.24911E-00	0.24732E-02	0.34355E-01	0.42157E-01	0.46762E-01	0.37486E-00

TABLE A2.20. 18-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY HYDROGEN RECOILS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.54671E-01	0.12538E-00	0.97880E-01	0.60545E-01
1 TO 2	0.67467E-01	0.14883E-00	0.10155E-00	0.47398E-01
2 TO 3	0.71317E-01	0.14330E-00	0.94125E-01	0.44308E-01
3 TO 4	0.78822E-01	0.15325E-00	0.10183E-00	0.63820E-01
4 TO 5	0.79654E-01	0.14409E-00	0.83782E-01	0.41742E-01
5 TO 6	0.76628E-01	0.13790E-00	0.85924E-01	0.55003E-01
6 TO 7	0.79868E-01	0.12390E-00	0.76119E-01	0.42634E-01
7 TO 8	0.84300E-01	0.13447E-00	0.82902E-01	0.41130E-01
8 TO 9	0.74323E-01	0.12024E-00	0.73590E-01	0.31955E-01
9 TO 10	0.70951E-01	0.11163E-00	0.62292E-01	0.26409E-01
10 TO 11	0.78391E-01	0.13344E-00	0.78497E-01	0.43933E-01
11 TO 12	0.70522E-01	0.13726E-00	0.64109E-01	0.35557E-01
12 TO 13	0.72507E-01	0.11171E-00	0.61505E-01	0.25529E-01
13 TO 14	0.73102E-01	0.13717E-00	0.59947E-01	0.29462E-01
14 TO 15	0.72613E-01	0.11529E-00	0.67713E-01	0.35197E-01
15 TO 16	0.68659E-01	0.13167E-00	0.52774E-01	0.21308E-01
16 TO 17	0.57012E-01	0.78211E-01	0.42013E-01	0.21254E-01
17 TO 18	0.55495E-01	0.83207E-01	0.47481E-01	0.23972E-01
18 TO 19	0.52231E-01	0.74485E-01	0.38759E-01	0.21580E-01
19 TO 20	0.57756E-01	0.91465E-01	0.44878E-01	0.12453E-01
20 TO 21	0.51558E-01	0.76388E-01	0.39071E-01	0.26601E-01
21 TO 22	0.50214E-01	0.68127E-01	0.34047E-01	0.16308E-01
22 TO 23	0.52446E-01	0.85315E-01	0.44400E-01	0.21087E-01
23 TO 24	0.49005E-01	0.73520E-01	0.40359E-01	0.13774E-01
24 TO 25	0.47328E-01	0.70753E-01	0.32364E-01	0.80886E-02
25 TO 26	0.42159E-01	0.63067E-01	0.25647E-01	0.16667E-01
26 TO 27	0.34451E-01	0.53915E-01	0.21801E-01	0.10251E-01
27 TO 28	0.36396E-01	0.60537E-01	0.36906E-01	0.18417E-01
28 TO 29	0.34043E-01	0.57213E-01	0.34530E-01	0.13956E-01
29 TO 30	0.29233E-01	0.52557E-01	0.30345E-01	0.10413E-01
AVERAGE	0.60771E-01	0.13341E-00	0.58571E-01	0.29358E-01

TABLE A2.21. 18-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY EVAPORATED PROTONS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.19470E-02	0.33779E-02	0.10450E-02	0.
1 TO 2	0.27706E-02	0.22551E-02	0.	0.
2 TO 3	0.15584E-02	0.13979E-02	0.73541E-04	0.
3 TO 4	0.14110E-02	0.13295E-02	0.	0.
4 TO 5	0.16207E-02	0.46394E-03	0.	0.
5 TO 6	0.28297E-02	0.25371E-02	0.11116E-02	0.
6 TO 7	0.16753E-02	0.41617E-03	0.	0.
7 TO 8	0.19393E-02	0.11946E-03	0.	0.
8 TO 9	0.16665E-02	0.31719E-03	0.	0.
9 TO 10	0.14734E-02	0.	0.	0.
10 TO 11	0.23448E-02	0.16013E-02	0.	0.
11 TO 12	0.14513E-02	0.	0.	0.
12 TO 13	0.17851E-02	0.11459E-03	0.	0.
13 TO 14	0.17212E-02	0.33389E-03	0.	0.
14 TO 15	0.14086E-02	0.	0.	0.
15 TO 16	0.24089E-02	0.14385E-02	0.75819E-04	0.
16 TO 17	0.15601E-02	1.00000E-03	0.89807E-03	0.
17 TO 18	0.16098E-02	0.13963E-03	0.	0.
18 TO 19	0.20536E-02	0.16010E-02	0.32390E-03	0.
19 TO 20	0.12488E-02	1.00000E-03	0.15287E-03	0.
20 TO 21	0.15138E-02	0.54671E-03	0.	0.
21 TO 22	0.12311E-02	0.99856E-04	0.	0.
22 TO 23	0.14903E-02	0.57593E-03	0.	0.
23 TO 24	0.15287E-02	0.83764E-03	0.	0.
24 TO 25	0.12838E-02	0.21312E-03	0.	0.
25 TO 26	0.10117E-02	0.	0.	0.
26 TO 27	0.11980E-02	0.12592E-02	0.	0.
27 TO 28	0.53558E-03	0.	0.	0.
28 TO 29	0.50984E-03	0.	0.	0.
29 TO 30	0.25740E-03	0.	0.	0.
AVERAGE	0.15681E-02	0.78235E-03	0.12269E-03	0.

TABLE A2.22. 18-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION IN TISSUE

DEPTH, CM.	HYD RECOILS	EVAP PROTONS	HEAVY RECOILS	EVAP ALPHAS	GAMMAS	TOTAL
0 TO 1	0.61C97E 00	0.48214E-02	3.99074E-01	0.14838E-00	0.50493E-01	0.91374E 00
1 TO 2	0.62014E 00	0.34790E-02	3.93851E-01	0.13383E-00	0.54726E-01	0.90603E 00
2 TO 3	0.53690E 00	0.46904E-02	3.60526E-01	0.98872E-01	0.57163E-01	0.75815E 00
3 TO 4	0.48967E-00	0.40565E-02	3.68636E-01	0.99941E-01	0.59710E-01	0.72202E 00
4 TO 5	0.45474E-00	0.43992E-02	3.62544E-01	0.79943E-01	0.61013E-01	0.66264E 00
5 TO 6	0.44453E-00	0.41419E-02	3.63752E-01	0.77485E-01	0.62001E-01	0.65191E 00
6 TO 7	0.42606E-00	0.23181E-02	3.53765E-01	0.60746E-01	0.62263E-01	0.61015E 00
7 TO 8	0.41265E-00	0.20318E-02	3.49170E-01	0.60165E-01	0.62364E-01	0.58638E 00
8 TO 9	0.37079E-00	0.58028E-02	3.50278E-01	0.51144E-01	0.62303E-01	0.54032E 00
9 TO 10	0.37013E-00	0.64756E-02	3.50267E-01	0.56319E-01	0.61765E-01	0.54496E 00
10 TO 11	0.28806E-00	0.26817E-02	3.39221E-01	0.53619E-01	0.60370E-01	0.44365E-00
11 TO 12	0.32309E-00	0.29196E-02	3.32421E-01	0.50630E-01	0.58794E-01	0.46785E-00
12 TO 13	0.25419E-00	0.20433E-02	3.33591E-01	0.37471E-01	0.57531E-01	0.38483E-00
13 TO 14	0.23492E-00	0.16434E-02	3.27570E-01	0.45247E-01	0.56127E-01	0.36551E-00
14 TO 15	0.25667E-00	0.18512E-02	3.39715E-01	0.41404E-01	0.54973E-01	0.39461E-00
15 TO 16	0.24896E-00	0.34918E-02	3.33471E-01	0.41744E-01	0.53624E-01	0.38129E-00
16 TO 17	0.21212E-00	0.21723E-02	3.24589E-01	0.22776E-01	0.51903E-01	0.31356E-00
17 TO 18	0.19559E-00	0.28135E-02	3.26590E-01	0.35491E-01	0.49967E-01	0.31045E-00
18 TO 19	0.19166E-00	0.36099E-02	3.13861E-01	0.24134E-01	0.48325E-01	0.28659E-00
19 TO 20	0.15519E-00	0.12094E-02	3.20525E-01	0.17874E-01	0.46654E-01	0.24145E-00
20 TO 21	0.14077E-00	0.13230E-02	3.13916E-01	0.18374E-01	0.45112E-01	0.22450E-00
21 TO 22	0.15108E-00	0.28001E-02	3.17516E-01	0.26821E-01	0.42972E-01	0.24119E-00
22 TO 23	0.13968E-00	0.17483E-02	3.14649E-01	0.14312E-01	0.40900E-01	0.21129E-00
23 TO 24	0.13683E-00	0.13737E-02	3.15033E-01	0.21290E-01	0.39042E-01	0.21357E-00
24 TO 25	0.11169E-00	0.66230E-03	3.17042E-01	0.18787E-01	0.36994E-01	0.18518E-00
25 TO 26	0.11268E-00	0.76483E-03	3.15505E-01	0.19590E-01	0.35095E-01	0.18364E-00
26 TO 27	0.11932E-00	0.19339E-02	3.13852E-01	0.14859E-01	0.32964E-01	0.18293E-00
27 TO 28	0.11392E-00	0.33447E-03	3.10346E-01	0.94906E-02	0.30767E-01	0.16486E-00
28 TO 29	0.61040E-01	0.34174E-03	3.88312E-02	0.11860E-01	0.28554E-01	0.11060E-00
29 TO 30	0.71C28E-01	0.25192E-03	3.11392E-01	0.11702E-01	0.26426E-01	0.12080E-00
AVERAGE	0.27517E-00	0.26062E-02	3.36539E-01	0.46810E-01	0.49697E-01	0.41082E-00

TABLE A2.23. 18-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY HYDROGEN RECOILS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.10947E-00	0.24439E-00	0.16558E-00	0.91527E-01
1 TO 2	0.10595E-00	0.24593E-00	0.17191E-00	0.96352E-01
2 TO 3	0.10206E-00	0.21315E-00	0.14106E-00	0.80630E-01
3 TO 4	0.10154E-00	0.19532E-00	0.12784E-00	0.64978E-01
4 TO 5	0.10547E-00	0.18463E-00	0.10961E-00	0.55036E-01
5 TO 6	0.96034E-01	0.17845E-00	0.10963E-00	0.60409E-01
6 TO 7	0.92910E-01	0.16484E-00	0.10772E-00	0.60591E-01
7 TO 8	0.96045E-01	0.17033E-00	0.10270E-00	0.43578E-01
8 TO 9	0.91722E-01	0.14574E-00	0.85985E-01	0.47343E-01
9 TO 10	0.85891E-01	0.13343E-00	0.86545E-01	0.44269E-01
10 TO 11	0.78463E-01	0.11526E-00	0.64552E-01	0.29782E-01
11 TO 12	0.86749E-01	0.13760E-00	0.66930E-01	0.31812E-01
12 TO 13	0.73880E-01	0.93772E-01	0.53771E-01	0.27771E-01
13 TO 14	0.63111E-01	0.92715E-01	0.48933E-01	0.30163E-01
14 TO 15	0.70351E-01	0.13377E-00	0.58836E-01	0.23717E-01
15 TO 16	0.67436E-01	0.99300E-01	0.57707E-01	0.24515E-01
16 TO 17	0.64777E-01	0.89143E-01	0.40073E-01	0.18126E-01
17 TO 18	0.56556E-01	0.80563E-01	0.38912E-01	0.19559E-01
18 TO 19	0.54968E-01	0.74487E-01	0.42791E-01	0.19410E-01
19 TO 20	0.47508E-01	0.66130E-01	0.29740E-01	0.11814E-01
20 TO 21	0.43459E-01	0.56496E-01	0.27874E-01	0.12943E-01
21 TO 22	0.46434E-01	0.67393E-01	0.25266E-01	0.11986E-01
22 TO 23	0.37143E-01	0.56168E-01	0.29568E-01	0.16800E-01
23 TO 24	0.40581E-01	0.57769E-01	0.27035E-01	0.11441E-01
24 TO 25	0.30319E-01	0.46120E-01	0.22761E-01	0.12493E-01
25 TO 26	0.30077E-01	0.45971E-01	0.23512E-01	0.12125E-01
26 TO 27	0.32667E-01	0.54181E-01	0.23082E-01	0.93870E-02
27 TO 28	0.30688E-01	0.44313E-01	0.25106E-01	0.13309E-01
28 TO 29	0.18085E-01	0.23161E-01	0.13244E-01	0.65496E-02
29 TO 30	0.18267E-01	0.23612E-01	0.14554E-01	0.95960E-02
AVERAGE	0.65953E-01	0.11119E-00	0.64761E-01	0.33267E-01

TABLE A2.24. 18-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY EVAPORATED PROTONS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.18108E-02	0.21308E-02	0.87992E-03	0.
1 TO 2	0.20486E-02	0.14304E-02	0.	0.
2 TO 3	0.22130E-02	0.21302E-02	0.34720E-03	0.
3 TO 4	0.24411E-02	0.15154E-02	0.	0.
4 TO 5	0.23241E-02	0.23751E-02	0.	0.
5 TO 6	0.23066E-02	0.13560E-02	0.47930E-03	0.
6 TO 7	0.20648E-02	0.25327E-03	0.	0.
7 TO 8	0.19409E-02	0.93859E-04	0.	0.
8 TO 9	0.30079E-02	0.25404E-02	0.15451E-03	0.
9 TO 10	0.33066E-02	0.22611E-02	0.90796E-03	0.
10 TO 11	0.19884E-02	0.69332E-03	0.	0.
11 TO 12	0.20234E-02	0.39627E-03	0.	0.
12 TO 13	0.18442E-02	0.19908E-03	0.	0.
13 TO 14	0.16434E-02	0.	0.	0.
14 TO 15	0.15452E-02	0.30593E-03	0.	0.
15 TO 16	0.21184E-02	0.13735E-02	0.	0.
16 TO 17	0.16933E-02	0.47898E-03	0.	0.
17 TO 18	0.17879E-02	0.13256E-02	0.	0.
18 TO 19	0.20746E-02	0.15353E-02	0.	0.
19 TO 20	0.12094E-02	0.	0.	0.
20 TO 21	0.13230E-02	0.	0.	0.
21 TO 22	0.15917E-02	0.12084E-02	0.	0.
22 TO 23	0.14030E-02	0.34529E-03	0.	0.
23 TO 24	0.10809E-02	0.29287E-03	0.	0.
24 TO 25	0.66230E-03	0.	0.	0.
25 TO 26	0.76483E-03	0.	0.	0.
26 TO 27	0.12103E-02	0.72361E-03	0.	0.
27 TO 28	0.33447E-03	0.	0.	0.
28 TO 29	0.34174E-03	0.	0.	0.
29 TO 30	0.25192E-03	0.	0.	0.
AVERAGE	0.16786E-02	0.83539E-03	0.92296E-04	0.

TABLE A2.25. 30-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION IN TISSUE

DEPTH, CM.	HYD RECOILS	EVAP PROTONS	HEAVY RECOILS	EVAP ALPHAS	GAMMAS	TOTAL
0 TO 1	0.31304E-00	0.24564E-01	0.51189E-01	0.16597E-00	0.34870E-01	0.58963E 00
1 TO 2	0.37992E-00	0.11651E-01	0.45931E-01	0.11760E-00	0.38005E-01	0.59310E 00
2 TO 3	0.35508E-00	0.98533E-02	0.45150E-01	0.15575E-00	0.40029E-01	0.60586E 00
3 TO 4	0.35222E-00	0.87947E-02	0.44528E-01	0.15293E-00	0.41753E-01	0.60022E 00
4 TO 5	0.28547E-00	0.17796E-01	0.43850E-01	0.11525E-00	0.43493E-01	0.51086E 00
5 TO 6	0.33838E-00	0.13556E-01	0.48312E-01	0.12553E-00	0.44641E-01	0.57042E 00
6 TO 7	0.33766E-00	0.12384E-01	0.41384E-01	0.16352E-00	0.45754E-01	0.60070E 00
7 TO 8	0.36072E-00	0.86407E-02	0.32510E-01	0.89080E-01	0.46777E-01	0.53773E 00
8 TO 9	0.35726E-00	0.48549E-02	0.40921E-01	0.10845E-00	0.47548E-01	0.55903E 00
9 TO 10	0.32187E-00	0.89012E-02	0.41618E-01	0.11792E-00	0.48062E-01	0.53837E 00
10 TO 11	0.31477E-00	0.61950E-02	0.34911E-01	0.80004E-01	0.48775E-01	0.48465E-00
11 TO 12	0.27843E-00	0.13314E-01	0.37011E-01	0.86573E-01	0.49393E-01	0.46472E-00
12 TO 13	0.29175E-00	0.98211E-02	0.43461E-01	0.60380E-01	0.50224E-01	0.45564E-00
13 TO 14	0.31283E-00	0.62296E-02	0.44673E-01	0.10109E-00	0.50382E-01	0.51520E 00
14 TO 15	0.31603E-00	0.12567E-01	0.26957E-01	0.69124E-01	0.49984E-01	0.47466E-00
15 TO 16	0.27872E-00	0.12443E-01	0.37201E-01	0.94706E-01	0.49958E-01	0.47302E-00
16 TO 17	0.29518E-00	0.10911E-01	0.39850E-01	0.10361E-00	0.49591E-01	0.49914E-00
17 TO 18	0.29061E-00	0.13935E-01	0.51824E-01	0.96894E-01	0.49634E-01	0.50289E 00
18 TO 19	0.20212E-00	0.86531E-02	0.40756E-01	0.87218E-01	0.49023E-01	0.38776E-00
19 TO 20	0.24903E-00	0.10236E-01	0.40852E-01	0.83226E-01	0.47413E-01	0.43076E-00
20 TO 21	0.24600E-00	0.78985E-02	0.37550E-01	0.78528E-01	0.45846E-01	0.41582E-00
21 TO 22	0.21542E-00	0.68614E-02	0.27086E-01	0.54973E-01	0.43903E-01	0.34825E-00
22 TO 23	0.20690E-00	0.55170E-02	0.27141E-01	0.70858E-01	0.42456E-01	0.35288E-00
23 TO 24	0.18125E-00	0.92646E-02	0.27593E-01	0.66736E-01	0.40799E-01	0.32564E-00
24 TO 25	0.19498E-00	0.81713E-02	0.22389E-01	0.82357E-01	0.38878E-01	0.34678E-00
25 TO 26	0.24371E-00	0.41246E-02	0.30847E-01	0.73051E-01	0.36852E-01	0.38859E-00
26 TO 27	0.20687E-00	0.49199E-02	0.22904E-01	0.69260E-01	0.34931E-01	0.33888E-00
27 TO 28	0.17487E-00	0.30464E-02	0.25433E-01	0.64931E-01	0.32497E-01	0.30078E-00
28 TO 29	0.18487E-00	0.38556E-02	0.32374E-01	0.49421E-01	0.30433E-01	0.30095E-00
29 TO 30	0.14782E-00	0.35953E-02	0.21032E-01	0.42550E-01	0.27910E-01	0.24291E-00
AVERAGE	0.27446E-00	0.94184E-02	0.37075E-01	0.94250E-01	0.43327E-01	0.45853E-00

TABLE A2.26. 30-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY HYDROGEN RECOILS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.35517E-01	0.80230E-01	0.70450E-01	0.12684E-00
1 TO 2	0.49529E-01	0.10301E-00	0.85001E-01	0.14237E-00
2 TO 3	0.50424E-01	0.98370E-01	0.82388E-01	0.12390E-00
3 TO 4	0.53685E-01	0.10524E-00	0.81845E-01	0.11145E-00
4 TO 5	0.45157E-01	0.80331E-01	0.59230E-01	0.10075E-00
5 TO 6	0.53824E-01	0.10171E-00	0.78146E-01	0.10470E-00
6 TO 7	0.52821E-01	0.92821E-01	0.73549E-01	0.11847E-00
7 TO 8	0.58120E-01	0.11230E-00	0.75380E-01	0.11493E-00
8 TO 9	0.56361E-01	0.10281E-00	0.76637E-01	0.12145E-00
9 TO 10	0.53237E-01	0.10157E-00	0.70466E-01	0.9659?E-01
10 TO 11	0.57274E-01	0.95794E-01	0.63848E-01	0.96854E-01
11 TO 12	0.52647E-01	0.87269E-01	0.58233E-01	0.8028 E-01
12 TO 13	0.53402E-01	0.90491E-01	0.61179E-01	0.86680E-01
13 TO 14	0.56708E-01	0.95520E-01	0.64233E-01	0.95268E-01
14 TO 15	0.57181E-01	0.95562E-01	0.66112E-01	0.96172E-01
15 TO 16	0.53966E-01	0.95802E-01	0.56288E-01	0.72660E-01
16 TO 17	0.57104E-01	0.89115E-01	0.58064E-01	0.90894E-01
17 TO 18	0.51441E-01	0.90534E-01	0.62313E-01	0.86218E-01
18 TO 19	0.48314E-01	0.70037E-01	0.42331E-01	0.41434E-01
19 TO 20	0.50736E-01	0.91782E-01	0.57095E-01	0.49417E-01
20 TO 21	0.49367E-01	0.85482E-01	0.52059E-01	0.59089E-01
21 TO 22	0.47008E-01	0.75002E-01	0.43842E-01	0.4957 E-01
22 TO 23	0.42171E-01	0.72141E-01	0.44829E-01	0.47762E-01
23 TO 24	0.43038E-01	0.58012E-01	0.36081E-01	0.4412? E-01
24 TO 25	0.44431E-01	0.69409E-01	0.36470E-01	0.44672E-01
25 TO 26	0.40867E-01	0.77279E-01	0.50899E-01	0.74668E-01
26 TO 27	0.37193E-01	0.61250E-01	0.43934E-01	0.64492E-01
27 TO 28	0.32891E-01	0.57963E-01	0.39121E-01	0.44889E-01
28 TO 29	0.35024E-01	0.59757E-01	0.40325E-01	0.49759E-01
29 TO 30	0.27290E-01	0.45378E-01	0.31459E-01	0.43192E-01
AVERAGE	0.48224E-01	0.84355E-01	0.58727E-01	0.82652E-01

TABLE A2.27. 30-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY EVAPORATED PROTONS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.54453E-02	0.12195E-01	0.47135E-02	0.22099E-02
1 TO 2	0.35082E-02	0.68833E-02	0.12595E-02	0.
2 TO 3	0.32476E-02	0.56244E-02	0.98132E-03	0.
3 TO 4	0.30901E-02	0.54805E-02	0.22399E-03	0.
4 TO 5	0.56817E-02	0.13208E-01	0.19064E-02	0.
5 TO 6	0.38368E-02	0.70768E-02	0.23661E-02	0.27578E-03
6 TO 7	0.40585E-02	0.83543E-02	0.27159E-03	0.
7 TO 8	0.32995E-02	0.51295E-02	0.21157E-03	0.
8 TO 9	0.24332E-02	0.22593E-02	0.16273E-03	0.
9 TO 10	0.25835E-02	0.49541E-02	0.13536E-02	0.
10 TO 11	0.23929E-02	0.33667E-02	0.43538E-03	0.
11 TO 12	0.39958E-02	0.73155E-02	0.17563E-02	0.24652E-03
12 TO 13	0.38447E-02	0.53561E-02	0.92028E-03	0.
13 TO 14	0.27812E-02	0.34484E-02	0.	0.
14 TO 15	0.39901E-02	0.72712E-02	0.13057E-02	0.
15 TO 16	0.32168E-02	0.73905E-02	0.18360E-02	0.
16 TO 17	0.35918E-02	0.64613E-02	0.85850E-03	0.
17 TO 18	0.41417E-02	0.78171E-02	0.12500E-02	0.72583E-03
18 TO 19	0.39782E-02	0.46278E-02	0.44137E-04	0.
19 TO 20	0.30637E-02	0.59327E-02	0.12397E-02	0.
20 TO 21	0.29820E-02	0.39863E-02	0.93057E-03	0.
21 TO 22	0.27513E-02	0.25508E-02	0.12500E-02	0.20927E-03
22 TO 23	0.27035E-02	0.28135E-02	0.	0.
23 TO 24	0.29369E-02	0.51284E-02	0.11994E-02	0.
24 TO 25	0.27293E-02	0.41593E-02	0.12828E-02	0.
25 TO 26	0.17488E-02	0.22227E-02	0.15312E-03	0.
26 TO 27	0.21832E-02	0.26837E-02	0.53050E-04	0.
27 TO 28	0.15599E-02	0.14864E-02	0.	0.
28 TO 29	0.14284E-02	0.24271E-02	0.	0.
29 TO 30	0.11424E-02	0.22155E-02	0.23732E-03	0.
AVERAGE	0.31449E-02	0.52112E-02	0.94009E-03	0.12224E-03

TABLE A2.28. 30-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION IN TISSUE

DEPTH, CM.	HYD RECOILS	EVAP PROTONS	HEAVY RECOILS	EVAP ALPHAS	GAMMAS	TOTAL
0 TO 1	0.71134E 00	0.17763E-01	0.80429E-01	0.30111E-00	0.45997E-01	0.11566E 01
1 TO 2	0.58273E 00	0.23031E-01	0.82284E-01	0.23958E-00	0.50504E-01	0.97813E 00
2 TO 3	0.52927E 00	0.17391E-01	0.87945E-01	0.20616E-00	0.53722E-01	0.89449E 00
3 TO 4	0.55369E 00	0.18852E-01	0.77603E-01	0.22815E-00	0.55477E-01	0.93378E 00
4 TO 5	0.46375E-00	0.13158E-01	0.71954E-01	0.17647E-00	0.57029E-01	0.78236E 00
5 TO 6	0.50852E 00	0.15285E-01	0.60574E-01	0.15738E-00	0.57998E-01	0.79975E 00
6 TO 7	0.35325E-00	0.17479E-01	0.57273E-01	0.14846E-00	0.59035E-01	0.63550E 00
7 TO 8	0.41561E-00	0.12398E-01	0.66107E-01	0.17748E-00	0.59708E-01	0.73130E 00
8 TO 9	0.38006E-00	0.39368E-02	0.54424E-01	0.11486E-00	0.59605E-01	0.61289E 00
9 TO 10	0.38833E-00	0.65433E-02	0.48297E-01	0.10861E-00	0.59401E-01	0.61118E 00
10 TO 11	0.44410E-00	0.67983E-02	0.49174E-01	0.14710E-00	0.59556E-01	0.70672E 00
11 TO 12	0.36897E-00	0.10352E-01	0.45599E-01	0.11454E-00	0.59403E-01	0.59987E 00
12 TO 13	0.33737E-00	0.14415E-01	0.53999E-01	0.12484E-00	0.59695E-01	0.59032E 00
13 TO 14	0.33443E-00	0.11898E-01	0.53417E-01	0.13494E-00	0.59082E-01	0.59377E 00
14 TO 15	0.23427E-00	0.10035E-01	0.45728E-01	0.88904E-01	0.58257E-01	0.43819E-00
15 TO 16	0.38353E-00	0.68431E-02	0.40865E-01	0.10857E-00	0.56400E-01	0.59620E 00
16 TO 17	0.31127E-00	0.41637E-02	0.29033E-01	0.64453E-01	0.55055E-01	0.46397E-00
17 TO 18	0.25787E-00	0.81185E-02	0.34618E-01	0.58800E-01	0.54164E-01	0.41357E-00
18 TO 19	0.24176E-00	0.97661E-02	0.37219E-01	0.67509E-01	0.53471E-01	0.40973E-00
19 TO 20	0.23894E-00	0.68436E-02	0.32073E-01	0.95661E-01	0.52146E-01	0.42566E-00
20 TO 21	0.28506E-00	0.94896E-02	0.32356E-01	0.84861E-01	0.50223E-01	0.46199E-00
21 TO 22	0.24342E-00	0.30526E-02	0.33738E-01	0.87871E-01	0.48087E-01	0.41617E-00
22 TO 23	0.25566E-00	0.65902E-02	0.27399E-01	0.64206E-01	0.46217E-01	0.40008E-00
23 TO 24	0.20328E-00	0.70638E-02	0.23352E-01	0.71568E-01	0.44114E-01	0.34937E-00
24 TO 25	0.16991E-00	0.42455E-02	0.26386E-01	0.65591E-01	0.42180E-01	0.30831E-00
25 TO 26	0.18164E-00	0.51870E-02	0.21079E-01	0.35861E-01	0.40206E-01	0.28398E-00
26 TO 27	0.13535E-00	0.93439E-02	0.26540E-01	0.53447E-01	0.37930E-01	0.26271E-00
27 TO 28	0.14823E-00	0.58977E-02	0.19408E-01	0.37585E-01	0.35186E-01	0.24631E-00
28 TO 29	0.12336E-00	0.63148E-02	0.19370E-01	0.33356E-01	0.32882E-01	0.21528E-00
29 TO 30	0.15092E-00	0.58332E-02	0.20204E-01	0.61211E-01	0.30213E-01	0.26838E-00
AVERAGE	0.33120E-00	0.99363E-02	0.45352E-01	0.11530E-00	0.51098E-01	0.55289E 00

TABLE A2.29. 30-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY HYDROGEN RECOILS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.76133E-01	0.18804E-00	0.16100E-00	0.28617E-00
1 TO 2	0.76641E-01	0.15053E-00	0.13824E-00	0.20732E-00
2 TO 3	0.78799E-01	0.15885E-00	0.11673E-00	0.17490E-00
3 TO 4	0.74643E-01	0.14762E-00	0.11703E-00	0.21447E-00
4 TO 5	0.71408E-01	0.14196E-00	0.10501E-00	0.14538E-00
5 TO 6	0.80624E-01	0.14571E-00	0.10611E-00	0.17608E-00
6 TO 7	0.71048E-01	0.11259E-00	0.74418E-01	0.95195E-01
7 TO 8	0.76775E-01	0.13562E-00	0.90569E-01	0.11264E-00
8 TO 9	0.80138E-01	0.12744E-00	0.75476E-01	0.97015E-01
9 TO 10	0.70955E-01	0.11689E-00	0.84353E-01	0.11613E-00
10 TO 11	0.71646E-01	0.12884E-00	0.95129E-01	0.14849E-00
11 TO 12	0.68878E-01	0.11405E-00	0.77794E-01	0.10824E-00
12 TO 13	0.64002E-01	0.13921E-00	0.67036E-01	0.97123E-01
13 TO 14	0.64328E-01	0.13640E-00	0.72697E-01	0.91003E-01
14 TO 15	0.53939E-01	0.83032E-01	0.53064E-01	0.44233E-01
15 TO 16	0.64554E-01	0.11094E-00	0.86130E-01	0.12191E-00
16 TO 17	0.56709E-01	0.93138E-01	0.66242E-01	0.95178E-01
17 TO 18	0.47866E-01	0.83361E-01	0.51310E-01	0.75331E-01
18 TO 19	0.52373E-01	0.77494E-01	0.49619E-01	0.62275E-01
19 TO 20	0.54244E-01	0.83617E-01	0.48759E-01	0.52316E-01
20 TO 21	0.55522E-01	0.10053E-00	0.57681E-01	0.71331E-01
21 TO 22	0.45050E-01	0.73472E-01	0.49986E-01	0.69913E-01
22 TO 23	0.48136E-01	0.82068E-01	0.54660E-01	0.70801E-01
23 TO 24	0.39892E-01	0.59785E-01	0.40466E-01	0.63135E-01
24 TO 25	0.35575E-01	0.57184E-01	0.29533E-01	0.47618E-01
25 TO 26	0.36562E-01	0.57702E-01	0.35267E-01	0.52114E-01
26 TO 27	0.30687E-01	0.46638E-01	0.26592E-01	0.31435E-01
27 TO 28	0.26748E-01	0.43653E-01	0.32530E-01	0.40301E-01
28 TO 29	0.23232E-01	0.42861E-01	0.26321E-01	0.30945E-01
29 TO 30	0.23143E-01	0.44386E-01	0.32546E-01	0.50342E-01
AVERAGE	0.57342E-01	0.13147E-00	0.70743E-01	0.10164E-00

TABLE A2.30. 30-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY EVAPORATED PROTONS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.47913E-02	0.10963E-01	0.20087E-02	0.
1 TO 2	0.56723E-02	0.14363E-01	0.29953E-02	0.
2 TO 3	0.62282E-02	0.11163E-01	0.	0.
3 TO 4	0.58154E-02	0.11139E-01	0.18977E-02	0.
4 TO 5	0.51724E-02	0.74505E-02	0.52540E-03	0.
5 TO 6	0.43595E-02	0.78950E-02	0.30302E-02	0.
6 TO 7	0.55075E-02	0.99432E-02	0.19215E-02	0.10716E-03
7 TO 8	0.48934E-02	0.72868E-02	0.21756E-03	0.
8 TO 9	0.24261E-02	0.15107E-02	0.	0.
9 TO 10	0.27022E-02	0.37816E-02	0.59602E-04	0.
10 TO 11	0.35647E-02	0.32182E-02	0.15413E-04	0.
11 TO 12	0.36872E-02	0.63741E-02	0.29098E-03	0.
12 TO 13	0.50860E-02	0.85566E-02	0.77281E-03	0.
13 TO 14	0.36614E-02	0.62683E-02	0.19687E-02	0.
14 TO 15	0.42533E-02	0.57233E-02	0.58989E-04	0.
15 TO 16	0.21019E-02	0.38547E-02	0.88650E-03	0.
16 TO 17	0.18445E-02	0.22295E-02	0.89722E-04	0.
17 TO 18	0.26798E-02	0.44453E-02	0.99372E-03	0.
18 TO 19	0.38634E-02	0.49138E-02	0.99891E-03	0.
19 TO 20	0.27973E-02	0.25764E-02	0.13700E-02	0.
20 TO 21	0.29064E-02	0.43177E-02	0.24278E-02	0.13775E-03
21 TO 22	0.16580E-02	0.13945E-02	0.	0.
22 TO 23	0.25245E-02	0.37336E-02	0.33208E-03	0.
23 TO 24	0.24034E-02	0.35913E-02	0.10690E-02	0.
24 TO 25	0.19105E-02	0.17743E-02	0.56067E-03	0.
25 TO 26	0.26460E-02	0.25123E-02	0.28935E-04	0.
26 TO 27	0.29913E-02	0.53323E-02	0.10206E-02	0.
27 TO 28	0.21304E-02	0.37673E-02	0.	0.
28 TO 29	0.16638E-02	0.33542E-02	0.15969E-02	0.
29 TO 30	0.16287E-02	0.32664E-02	0.93812E-03	0.
AVERAGE	0.34524E-02	0.55399E-02	0.93586E-03	0.81636E-05

TABLE A2.31. 60-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION IN TISSUE

DEPTH, CM.	HYD RECOILS	EVAP PROTONS	HEAVY RECOILS	EVAP ALPHAS	GAMMAS	TOTAL
0 TO 1	0.28282E-00	0.36386E-01	0.27805E-01	0.11918E-00	0.21003E-01	0.48719E-00
1 TO 2	0.34909E-00	0.68321E-01	0.46021E-01	0.14161E-00	0.23141E-01	0.62819E 00
2 TO 3	0.33342E-00	0.62895E-01	0.35952E-01	0.12379E-00	0.24575E-01	0.58064E 00
3 TO 4	0.29217E-00	0.34527E-01	0.28794E-01	0.10804E-00	0.25844E-01	0.48937E-00
4 TO 5	0.35593E-00	0.62605E-01	0.41061E-01	0.94628E-01	0.27553E-01	0.58178E 00
5 TO 6	0.27541E-00	0.57007E-01	0.40254E-01	0.68965E-01	0.28672E-01	0.47031E-00
6 TO 7	0.32062E-00	0.54083E-01	0.38406E-01	0.10822E-00	0.29840E-01	0.55117E 00
7 TO 8	0.27546E-00	0.61932E-01	0.49528E-01	0.18585E-00	0.30956E-01	0.60373E 00
8 TO 9	0.21336E-00	0.38211E-01	0.34077E-01	0.14259E-00	0.31723E-01	0.45995E-00
9 TO 10	0.31609E-00	0.39235E-01	0.34935E-01	0.99108E-01	0.32647E-01	0.52202E 00
10 TO 11	0.34487E-00	0.72914E-01	0.54432E-01	0.12993E-00	0.33578E-01	0.63572E 00
11 TO 12	0.34941E-00	0.62145E-01	0.42780E-01	0.12287E-00	0.34101E-01	0.61130E 00
12 TO 13	0.29770E-00	0.66020E-01	0.46220E-01	0.11855E-00	0.34279E-01	0.56277E 00
13 TO 14	0.36268E-00	0.34657E-01	0.31548E-01	0.11423E-00	0.34562E-01	0.57767E 00
14 TO 15	0.31295E-00	0.38409E-01	0.30396E-01	0.11827E-00	0.34642E-01	0.53467E 00
15 TO 16	0.31420E-00	0.27171E-01	0.32863E-01	0.14307E-00	0.34807E-01	0.55211E 00
16 TO 17	0.30528E-00	0.49985E-01	0.42841E-01	0.11152E-00	0.35145E-01	0.54478E 00
17 TO 18	0.28421E-00	0.43572E-01	0.40504E-01	0.69012E-01	0.35038E-01	0.47234E-00
18 TO 19	0.30023E-00	0.52469E-01	0.40978E-01	0.96462E-01	0.34714E-01	0.52486E 00
19 TO 20	0.18290E-00	0.52870E-01	0.48544E-01	0.13779E-00	0.33695E-01	0.45580E-00
20 TO 21	0.30346E-00	0.40061E-01	0.35171E-01	0.11800E-00	0.33172E-01	0.52986E 00
21 TO 22	0.25581E-00	0.44815E-01	0.38768E-01	0.12451E-00	0.32377E-01	0.49628E-00
22 TO 23	0.38326E-00	0.54136E-01	0.36461E-01	0.11852E-00	0.31091E-01	0.62347E 00
23 TO 24	0.22107E-00	0.52557E-01	0.40017E-01	0.85466E-01	0.29911E-01	0.42902E-00
24 TO 25	0.21068E-00	0.38352E-01	0.38770E-01	0.13045E-00	0.28646E-01	0.44690E-00
25 TO 26	0.23008E-00	0.51702E-01	0.32833E-01	0.10509E-00	0.27330E-01	0.44704E-00
26 TO 27	0.21061E-00	0.34813E-01	0.29161E-01	0.60364E-01	0.25840E-01	0.36078E-00
27 TO 28	0.25576E-00	0.39161E-01	0.27636E-01	0.11473E-00	0.24108E-01	0.46140E-00
28 TO 29	0.31282E-00	0.33154E-01	0.28550E-01	0.12885E-00	0.22385E-01	0.52576E 00
29 TO 30	0.23442E-00	0.43224E-01	0.25225E-01	0.11951E-00	0.20542E-01	0.44292E-00
AVERAGE	0.28956E-00	0.48246E-01	0.37351E-01	0.11531E-00	0.29864E-01	0.52033E 00

TABLE A2.32. 60-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY HYDROGEN RECOILS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.24442E-01	0.45639E-01	0.37993E-01	0.17475E-00
1 TO 2	0.25633E-01	0.54313E-01	0.46375E-01	0.22277E-00
2 TO 3	0.33942E-01	0.62242E-01	0.48889E-01	0.18835E-00
3 TO 4	0.29897E-01	0.60769E-01	0.45056E-01	0.15645E-00
4 TO 5	0.38665E-01	0.73624E-01	0.54962E-01	0.18868E-00
5 TO 6	0.36567E-01	0.53727E-01	0.36064E-01	0.14905E-00
6 TO 7	0.41200E-01	0.73647E-01	0.53434E-01	0.15234E-00
7 TO 8	0.39477E-01	0.55865E-01	0.38143E-01	0.14198E-00
8 TO 9	0.36921E-01	0.52767E-01	0.28262E-01	0.95406E-01
9 TO 10	0.44378E-01	0.61715E-01	0.47044E-01	0.16296E-00
10 TO 11	0.46642E-01	0.74319E-01	0.44351E-01	0.17956E-00
11 TO 12	0.41495E-01	0.67828E-01	0.48850E-01	0.19124E-00
12 TO 13	0.45563E-01	0.69811E-01	0.42602E-01	0.13972E-00
13 TO 14	0.47032E-01	0.71914E-01	0.51789E-01	0.19194E-00
14 TO 15	0.35015E-01	0.55855E-01	0.43923E-01	0.17816E-00
15 TO 16	0.39799E-01	0.61911E-01	0.43733E-01	0.16876E-00
16 TO 17	0.39883E-01	0.61465E-01	0.46893E-01	0.15704E-00
17 TO 18	0.41826E-01	0.62900E-01	0.44996E-01	0.13449E-00
18 TO 19	0.37019E-01	0.64156E-01	0.45344E-01	0.15371E-00
19 TO 20	0.34959E-01	0.46430E-01	0.26372E-01	0.75137E-01
20 TO 21	0.38240E-01	0.58457E-01	0.43390E-01	0.16337E-00
21 TO 22	0.32769E-01	0.48961E-01	0.35309E-01	0.13877E-00
22 TO 23	0.46171E-01	0.82790E-01	0.59595E-01	0.19470E-00
23 TO 24	0.40555E-01	0.64185E-01	0.35491E-01	0.80838E-01
24 TO 25	0.31102E-01	0.50996E-01	0.33992E-01	0.94591E-01
25 TO 26	0.34296E-01	0.50531E-01	0.34609E-01	0.11065E-00
26 TO 27	0.31889E-01	0.52685E-01	0.30647E-01	0.95385E-01
27 TO 28	0.27956E-01	0.45498E-01	0.37042E-01	0.14526E-00
28 TO 29	0.29820E-01	0.64153E-01	0.49358E-01	0.16949E-00
29 TO 30	0.26125E-01	0.51655E-01	0.35939E-01	0.12070E-00
AVERAGE	0.36643E-01	0.60027E-01	0.42348E-01	0.15054E-00

TABLE A2.33. 60-MeV NORMALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY EVAPORATED PROTONS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TC 1	0.43321E-02	0.13912E-01	0.11326E-01	0.68164E-02
1 TC 2	0.81766E-02	0.27411E-01	0.18169E-01	0.14565E-01
2 TC 3	0.64103E-02	0.22461E-01	0.17366E-01	0.16658E-01
3 TC 4	0.47243E-02	0.13975E-01	0.11826E-01	0.40022E-02
4 TC 5	0.74169E-02	0.23731E-01	0.20334E-01	0.11123E-01
5 TC 6	0.65286E-02	0.20358E-01	0.17305E-01	0.12816E-01
6 TC 7	0.61710E-02	0.18963E-01	0.15621E-01	0.13328E-01
7 TC 8	0.81956E-02	0.27265E-01	0.16126E-01	0.10345E-01
8 TC 9	0.63914E-02	0.18272E-01	0.98600E-02	0.36878E-02
9 TC 10	0.52642E-02	0.16347E-01	0.10903E-01	0.67204E-02
10 TC 11	0.89589E-02	0.28624E-01	0.21037E-01	0.14294E-01
11 TC 12	0.82784E-02	0.23256E-01	0.17704E-01	0.12907E-01
12 TC 13	0.79750E-02	0.26385E-01	0.16916E-01	0.14744E-01
13 TC 14	0.56701E-02	0.15981E-01	0.10869E-01	0.21368E-02
14 TC 15	0.53594E-02	0.15361E-01	0.12954E-01	0.47350E-02
15 TC 16	0.45362E-02	0.12486E-01	0.80354E-02	0.21139E-02
16 TC 17	0.69133E-02	0.19206E-01	0.14452E-01	0.94143E-02
17 TC 18	0.66813E-02	0.20266E-01	0.14120E-01	0.25040E-02
18 TC 19	0.78885E-02	0.22823E-01	0.15024E-01	0.67337E-02
19 TC 20	0.70251E-02	0.21129E-01	0.16636E-01	0.80803E-02
20 TC 21	0.51571E-02	0.15233E-01	0.92720E-02	0.10398E-01
21 TC 22	0.54306E-02	0.18003E-01	0.14743E-01	0.66387E-02
22 TC 23	0.57026E-02	0.18792E-01	0.13936E-01	0.15705E-01
23 TC 24	0.61755E-02	0.20516E-01	0.16417E-01	0.94492E-02
24 TC 25	0.49154E-02	0.16124E-01	0.12518E-01	0.47939E-02
25 TC 26	0.52703E-02	0.14351E-01	0.12591E-01	0.19489E-01
26 TC 27	0.42895E-02	0.13439E-01	0.10318E-01	0.67676E-02
27 TC 28	0.46007E-02	0.13872E-01	0.10787E-01	0.99016E-02
28 TC 29	0.40782E-02	0.12776E-01	0.11677E-01	0.46229E-02
29 TC 30	0.57156E-02	0.18672E-01	0.13225E-01	0.56120E-02
AVERAGE	0.61411E-02	0.19000E-01	0.14069E-01	0.90368E-02

TABLE A2.34. 60-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION IN TISSUE

DEPTH, CM.	HYD RECOILS	EVAP PROTONS	HEAVY RECOILS	EVAP ALPHAS	GAMMAS	TOTAL
0 TO 1	0.57545E 00	0.11507E-00	0.77775E-01	0.29025E-00	0.33545E-01	0.10921E 01
1 TO 2	0.49048E-00	0.92372E-01	0.69091E-01	0.21395E-00	0.36393E-01	0.90229E 00
2 TO 3	0.52810E 00	0.10729E-00	0.62593E-01	0.19070E-00	0.39176E-01	0.92786E 00
3 TO 4	0.54610E 00	0.65452E-01	0.64987E-01	0.24296E-00	0.41347E-01	0.96085E 00
4 TO 5	0.53374E 00	0.88199E-01	0.65932E-01	0.21668E-00	0.43254E-01	0.94781E 00
5 TO 6	0.40232E-00	0.89660E-01	0.62357E-01	0.18587E-00	0.45134E-01	0.78534E 00
6 TO 7	0.42782E-00	0.78050E-01	0.75456E-01	0.21631E-00	0.47076E-01	0.84471E 00
7 TO 8	0.46841E-00	0.85608E-01	0.55920E-01	0.18925E-00	0.47952E-01	0.84714E 00
8 TO 9	0.56612E 00	0.10225E-00	0.80174E-01	0.20991E-00	0.48681E-01	0.10071E 01
9 TO 10	0.38781E-00	0.11257E-00	0.65939E-01	0.22412E-00	0.49203E-01	0.84064E 00
10 TO 11	0.45650E-00	0.94460E-01	0.76553E-01	0.14793E-00	0.49648E-01	0.82509E 00
11 TO 12	0.43646E-00	0.83958E-01	0.52865E-01	0.20117E-00	0.49662E-01	0.82412E 00
12 TO 13	0.46257E-00	0.89492E-01	0.59472E-01	0.17600E-00	0.49485E-01	0.83702E 00
13 TO 14	0.48082E-00	0.75556E-01	0.48564E-01	0.14181E-00	0.48676E-01	0.79543E 00
14 TO 15	0.37272E-00	0.57236E-01	0.50496E-01	0.14353E-00	0.48311E-01	0.67229E 00
15 TO 16	0.41079E-00	0.71495E-01	0.47954E-01	0.17937E-00	0.48062E-01	0.75768E 00
16 TO 17	0.30906E-00	0.63444E-01	0.44744E-01	0.14159E-00	0.47859E-01	0.60670E 00
17 TO 18	0.31432E-00	0.63358E-01	0.43864E-01	0.93092E-01	0.46874E-01	0.55851E 00
18 TO 19	0.30366E-00	0.48383E-01	0.36869E-01	0.22602E-00	0.46080E-01	0.66101E 00
19 TO 20	0.26506E-00	0.56812E-01	0.50501E-01	0.12412E-00	0.45420E-01	0.54191E 00
20 TO 21	0.33738E-00	0.71170E-01	0.42468E-01	0.11098E-00	0.44269E-01	0.60626E 00
21 TO 22	0.30725E-00	0.60242E-01	0.49318E-01	0.16541E-00	0.42880E-01	0.62480E 00
22 TO 23	0.28442E-00	0.71391E-01	0.51072E-01	0.12793E-00	0.41207E-01	0.57602E 00
23 TO 24	0.30396E-00	0.42849E-01	0.36982E-01	0.14624E-00	0.39419E-01	0.56945E 00
24 TO 25	0.27001E-00	0.33541E-01	0.31523E-01	0.12983E-00	0.37830E-01	0.50273E 00
25 TO 26	0.29560E-00	0.55483E-01	0.43122E-01	0.98320E-01	0.36571E-01	0.52910E 00
26 TO 27	0.21734E-00	0.65109E-01	0.46730E-01	0.15541E-00	0.34592E-01	0.51918E 00
27 TO 28	0.31422E-00	0.56039E-01	0.38658E-01	0.74610E-01	0.32246E-01	0.51578E 00
28 TO 29	0.22485E-00	0.42374E-01	0.33761E-01	0.10052E-00	0.29882E-01	0.43139E-00
29 TO 30	0.21573E-00	0.46755E-01	0.33721E-01	0.11107E-00	0.27297E-01	0.43157E-00
AVERAGE	0.38364E-00	0.72856E-01	0.53139E-01	0.16583E-00	0.42601E-01	0.71806E 00

TABLE A2.35. 60-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY HYDROGEN RECOILS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.48515E-01	0.11314E-00	0.84381E-01	0.33241E-00
1 TO 2	0.52218E-01	0.92123E-01	0.65965E-01	0.28018E-00
2 TO 3	0.55932E-01	0.10385E-00	0.75961E-01	0.29236E-00
3 TO 4	0.55213E-01	0.10329E-00	0.77457E-01	0.31315E-00
4 TO 5	0.52936E-01	0.83611E-01	0.71054E-01	0.32114E-00
5 TO 6	0.58279E-01	0.91336E-01	0.61544E-01	0.19116E-00
6 TO 7	0.56621E-01	0.86535E-01	0.63346E-01	0.22122E-00
7 TO 8	0.60622E-01	0.10577E-00	0.74099E-01	0.22692E-00
8 TO 9	0.73934E-01	0.10319E-00	0.73143E-01	0.31085E-00
9 TO 10	0.54069E-01	0.84461E-01	0.58337E-01	0.19094E-00
10 TO 11	0.64215E-01	0.10410E-00	0.70534E-01	0.21766E-00
11 TO 12	0.64056E-01	0.10345E-00	0.67399E-01	0.20156E-00
12 TO 13	0.59607E-01	0.95129E-01	0.65296E-01	0.24154E-00
13 TO 14	0.63165E-01	0.10922E-00	0.71660E-01	0.23678E-00
14 TO 15	0.57967E-01	0.89977E-01	0.51754E-01	0.18202E-00
15 TO 16	0.53636E-01	0.78474E-01	0.51787E-01	0.22690E-00
16 TO 17	0.53504E-01	0.74284E-01	0.51857E-01	0.12942E-00
17 TO 18	0.54947E-01	0.75607E-01	0.44528E-01	0.13924E-00
18 TO 19	0.48697E-01	0.75481E-01	0.43517E-01	0.13497E-00
19 TO 20	0.46589E-01	0.55087E-01	0.32580E-01	0.13088E-00
20 TO 21	0.48948E-01	0.74148E-01	0.50421E-01	0.16386E-00
21 TO 22	0.43227E-01	0.63202E-01	0.43189E-01	0.15763E-00
22 TO 23	0.45212E-01	0.73320E-01	0.44269E-01	0.12162E-00
23 TO 24	0.41483E-01	0.63598E-01	0.46234E-01	0.15265E-00
24 TO 25	0.42334E-01	0.63151E-01	0.37142E-01	0.13039E-00
25 TO 26	0.36823E-01	0.63832E-01	0.49215E-01	0.14573E-00
26 TO 27	0.35317E-01	0.53773E-01	0.37080E-01	0.94170E-01
27 TO 28	0.43793E-01	0.63538E-01	0.47108E-01	0.15478E-00
28 TO 29	0.29092E-01	0.45186E-01	0.29585E-01	0.11999E-00
29 TO 30	0.28687E-01	0.47322E-01	0.30543E-01	0.10918E-00
AVERAGE	0.50988E-01	0.81243E-01	0.55699E-01	0.19577E-00

TABLE A2.36. 60-MeV ISOTROPICALLY INCIDENT NEUTRONS

ENERGY DEPOSITION BY EVAPORATED PROTONS

DEPTH, CM.	0 TO 1 MEV	1 TO 5 MEV	5 TO 10 MEV	ABOVE 10 MEV
0 TO 1	0.14336E-01	0.49013E-01	0.37026E-01	0.14697E-01
1 TO 2	0.11755E-01	0.39527E-01	0.29172E-01	0.11918E-01
2 TO 3	0.13032E-01	0.46661E-01	0.27869E-01	0.19725E-01
3 TO 4	0.10642E-01	0.33910E-01	0.16945E-01	0.40549E-02
4 TO 5	0.10773E-01	0.36821E-01	0.27306E-01	0.13299E-01
5 TO 6	0.10029E-01	0.33520E-01	0.27190E-01	0.1892 E-01
6 TO 7	0.10719E-01	0.32591E-01	0.21786E-01	0.12954E-01
7 TO 8	0.10998E-01	0.33477E-01	0.24901E-01	0.16235E-01
8 TO 9	0.13830E-01	0.44248E-01	0.25544E-01	0.18628E-01
9 TO 10	0.12701E-01	0.42527E-01	0.36542E-01	0.20804E-01
10 TO 11	0.13178E-01	0.39232E-01	0.27835E-01	0.14215E-01
11 TO 12	0.96658E-02	0.31148E-01	0.22919E-01	0.20226E-01
12 TO 13	0.10417E-01	0.33480E-01	0.27891E-01	0.17705E-01
13 TO 14	0.72571E-02	0.23784E-01	0.25957E-01	0.18558E-01
14 TO 15	0.72682E-02	0.22609E-01	0.17869E-01	0.94910E-02
15 TO 16	0.93002E-02	0.29327E-01	0.21583E-01	0.11285E-01
16 TO 17	0.84857E-02	0.24962E-01	0.19373E-01	0.10624E-01
17 TO 18	0.86836E-02	0.24530E-01	0.20275E-01	0.98702E-02
18 TO 19	0.72209E-02	0.19393E-01	0.13869E-01	0.89001E-02
19 TO 20	0.77965E-02	0.22853E-01	0.17071E-01	0.90860E-02
20 TO 21	0.89965E-02	0.25258E-01	0.22343E-01	0.14572E-01
21 TO 22	0.85235E-02	0.24083E-01	0.16769E-01	0.10867E-01
22 TO 23	0.80874E-02	0.25750E-01	0.20727E-01	0.16828E-01
23 TO 24	0.73078E-02	0.20339E-01	0.12599E-01	0.26031E-02
24 TO 25	0.39017E-02	0.12587E-01	0.10302E-01	0.67505E-02
25 TO 26	0.74173E-02	0.22530E-01	0.16134E-01	0.94019E-02
26 TO 27	0.74515E-02	0.23250E-01	0.20101E-01	0.14306E-01
27 TO 28	0.66278E-02	0.22169E-01	0.14774E-01	0.12468E-01
28 TO 29	0.56642E-02	0.18561E-01	0.11642E-01	0.65066E-02
29 TO 30	0.51318E-02	0.17583E-01	0.15781E-01	0.81602E-02
AVERAGE	0.92399E-02	0.29153E-01	0.21670E-01	0.12789E-01

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