

NUCLEAR DATA LIBRARY OF FISSION PRODUCTS FOR DECAY POWER CALCULATION

Kanji Tasaka

~~120555031837 2 ANR2
US NRC
SECY PUBLIC DOCUMENT ROOM
BRANCH CHIEF
HST LOBBY
WASHINGTON DC 20555~~

*Richard Smith
P-016*

May 1979



EG&G Idaho, Inc.



IDAHO NATIONAL ENGINEERING LABORATORY

DEPARTMENT OF ENERGY

IDAHO OPERATIONS OFFICE UNDER CONTRACT DE-AC07-76IDO1570

337 067

192
7907170/110

NOTICE

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, or any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for any third party's use, or the results of such use, of any information, apparatus, product or process disclosed in this report, or represents that its use by such third party would not infringe privately owned rights.

The views expressed in this report are not necessarily those of the U.S. Nuclear Regulatory Commission.

Available from
National Technical Information Service
Springfield, Virginia 22161
Price: Printed Copy A09; Microfiche \$3.00

The price of this document for requesters outside the North American continent can be obtained from the National Technical Information Service.

337 060

NUREG/CR-0705
TREE-1325
R2

NUCLEAR DATA LIBRARY OF FISSION PRODUCTS FOR DECAY POWER CALCULATION

Kanji Tasaka

EG&G Idaho, Inc.
Idaho Falls, Idaho 83401

Published May 1979

PREPARED FOR THE
U.S. NUCLEAR REGULATORY COMMISSION
AND THE U.S. DEPARTMENT OF ENERGY
IDAHO OPERATIONS OFFICE
UNDER CONTRACT NO. DE-AC07-76IDO1570
NRC FIN NO. A6048

337 062

ABSTRACT

The decay power of fission products plays an important role in predicting the peak cladding temperature during a loss-of-coolant accident (LOCA) and a loss-of-coolant experiment (LOCE) performed by the Loss-of-Fluid Test (LOFT) facility. To improve the accuracy of fission-product decay power calculation by the summation method, the nuclear data library of fission products, evaluated by the author in 1974, has been revised including the newly obtained decay data in Nuclear Data Sheets including 1977. The correlations for estimating unknown nuclear data of short-lived nuclides were also revised on the basis of new experimental decay data. The decay power of fission products was calculated using the revised nuclear data library. The calculated decay power agreed well with the recent experiments in the United States for the thermal neutron fission of ^{235}U .

337 070

SUMMARY

The nuclear data library of fission products has been revised to improve the accuracy of summation calculations of fission-product decay power and to use the results for the best-estimate analysis of a hypothesized LOCA in a light water reactor. The decay power of fission products plays a key role in calculating the fuel cladding temperature transient during a LOCA and a LOCE conducted at the LOFT facility. Especially in the LOCE at LOFT, the accurate decay power is as important as the input data are to analytical models for evaluating the predictability of analytical models through comparing experimental data with calculated results. Comparisons of calculated and experimental fission-product decay powers following thermal neutron irradiation of ^{235}U are reported. Experimental results of Oak Ridge National Laboratory (ORNL), Los Alamos Scientific Laboratory (LASL), Intelcom Radiation Technology (IRT) Corporation, and University of California, Berkeley (UCB) on fission-product decay power are used for data qualification.

The fission-product nuclear data library has been updated to include the newly obtained decay data in Nuclear Data Sheets including 1977. Fission yield and decay scheme data are those of Meek and Rider. A library of nuclear data has been prepared for 1170 fission products, including the data for fission yields, decay schemes, half-lives, decay energies, and neutron capture cross sections.

The unknown nuclear data for short-lived nuclides are estimated theoretically or statistically. The beta-decay Q values are obtained by using the semi-empirical mass formula of Myers and Swiatecki.

The unknown beta-decay constant, λ , of a nucleus was derived from its beta-decay Q value by using the empirical correlation between λ and Q . The decay constant λ was correlated to the Q value for each of six cases by using the data of nuclides for which both λ and Q are known. The data were fitted by a straight line on a logarithm-logarithm plot. Nuclides were divided into six groups depending on the mass number and the even-odd character of neutrons and protons contained in the nucleus.

Beta- and gamma-decay energies were estimated from the Q value of the nuclide by using the correlations between (E_{β}/Q) and Q and between (E_{γ}/Q) and Q . These correlations were revised to include the tendency that (E_{β}/Q) increases when Q increases. In the former evaluation, both (E_{β}/Q) and (E_{γ}/Q) were fixed at 0.29.

The correlation between (E_{γ}/Q) and Q was obtained by using the data of nuclides for which both E_{γ} and Q were known. The data were fitted by straight lines. The ratio (E_{γ}/Q) is constant, 0.3, for Q greater than 0.5 MeV. Below 0.5 MeV, the ratio (E_{γ}/Q) was decreased to 0.133 because the transition to the ground state of the daughter nuclide is predominant in this energy region.

The correlation between (E_{β}/Q) and Q was obtained as follows. Four nuclear levels were assumed between ground levels of mother and daughter nuclei. The ratio $(E_{\beta\text{av}}/E_{\beta\text{max}})$ of average beta-ray energy to its maximum energy was calculated for each transition using the Fermi formula for allowed transitions. Nearly one thousand combinations of transition probabilities were obtained for each Q value satisfying the ratio (E_{γ}/Q) . The ratio (E_{β}/Q) was calculated for each set of transition probabilities using the data of transition probability and the ratio $(E_{\beta\text{av}}/E_{\beta\text{max}})$ for each transition, and the results obtained were averaged with equal weight for all sets of transition probabilities. This procedure was repeated for other Q values, and the correlation between (E_{β}/Q) and Q was obtained. The ratio (E_{β}/Q) increased with Q as expected. The consistency between beta- and gamma-decay energies is expected by the present correlations because the correlation between (E_{β}/Q) and Q was obtained from the correlation between (E_{γ}/Q) and Q .

Decay powers of fission products were calculated by the DCHAIN code using the revised nuclear data library of fission products for the thermal neutron fission of ^{235}U , and the results were compared with the latest decay power experiments at ORNL, LASL, UCB, and IRT Corporation.

337 071

The agreement between calculated and experimental results improves with irradiation time: +10% for the ORNL experiment for 1-, 10-, and 100-s irradiation; $\pm 4\%$ for the LASL experiment for 2×10^4 -s irradiation; and $\pm 2\%$ for the IRT experiment for 1-day irradiation, except for IRT experiments having longer cooling times than 10^3 s when the systematic error becomes larger in the measurement of gamma-ray decay power. The calculation agrees with the UCB experiment data for 22.35-h irradiation within the experiment uncertainty of $\pm 3.4\%$ for cooling times from 600 to 10^4 s. At shorter cooling times, the present measurement accuracy is too low to compare with the summation calculation. For the 1-day irradiation, the present results agree with the IRT experiment within one standard deviation, 2%, for the cooling time range of 1 to 10^3 s which is important for the analysis of a LOCA.

The present results agree better with experimental results at cooling times less than 10 s than do the calculated results using ENDF/B-IV. This improvement is due mainly to the differences in the correlations for estimating unknown decay data of short-lived nuclides. Between 10 and 10^3 s, the differences between the two calculations are small, but the results calculated from ENDF/B-IV agree better with experiments than do the results of the present calculation. The difference in the decay data of ^{96}Y has an important contribution to the difference of two calculations for the cooling time from 10 to 10^3 s. Above 10^3 s, the present results are smaller than the calculated results with ENDF/B-IV and agree better with the experiments, due to the decay energies of ^{134}I and ^{142}La in ENDF/B-IV being larger than the present evaluation based on the data of Nuclear Data Sheets.

Useful information can be obtained for the revision of the nuclear data library through the comparison of calculated and experimental decay power of fission products with the use of sensitivity analysis of decay power to the uncertainties of nuclear data of each fission-product nuclide. Accurate measurement of some nuclear data may be recommended from the sensitivity analysis. The present revision of the fission-product nuclear data library improved the agreement between calculated and experimental decay powers especially at cooling times less than 10 s.

337 07-

NOMENCLATURE

A	Mass number of a nucleus
A	Ratio of average thermal neutron cross section to 2200-m/s-neutron cross section
β	Suffix for beta particle or beta decay
E_{β}	Beta-decay energy of a nuclide
$E_{\beta av}$	Average beta-particle energy for the beta decay from one level of mother nuclide to one level of daughter nuclide
$E_{\beta max}$	Maximum beta-particle energy for the beta decay from one level of mother nuclide to one level of daughter nuclide
ECCS	Emergency core cooling system
E_{γ}	Gamma-decay energy of a nuclide
E_i	Total sensible decay energy of a nuclide
F	Fission rate
f_A	Transition probability for the decay A from one level of mother nuclide to one level of daughter nuclide
$f_{j \rightarrow i}$	Branching fraction for one decay of nuclide j to nuclide i
F(t)	Decay power (MeV/s) of fission products at cooling time t after infinite irradiation at constant rate of 1 fission/s
f(t)	Decay power (MeV/s) at cooling time t after one fission
F(t,T)	Decay power (MeV/s) of fission products at cooling time t after irradiation for T at constant rate of 1 fission/s
ϕ	Neutron flux
ϕ_{th}	Thermal neutron flux for the neutron energy below 0.5 eV
$g_{k \rightarrow i}$	Production rate of nuclide i by unit neutron reaction of nuclide k
γ	Suffix for gamma ray or gamma decay
i	Suffix for nuclide i
K	Number of beta decays from mother nuclide to levels of daughter nuclide
k	Suffix for k-th beta decay from mother to daughter nuclide except for the use in $g_{k \rightarrow i}$
LOCA	Loss-of-coolant accident

337 073

LOCE	Loss-of-coolant experiment
LOFT	Loss-of-fluid test
λ_i	Decay constant of nuclide i
N_i	Accumulation (in unit of atoms) of nuclide i
P	Decay power of fission products
P_o	Operating power of a reactor
PWR	Pressurized water reactor
Q	Energy difference between ground states of mother and daughter nuclides
R	Ratio of $E_{\beta av}$ to $E_{\beta max}$
r	Epithermal index
RI	Resonance integral
σ	Standard deviation
σ_i	Cross section of nuclide i
T	Irradiation time
t	Cooling time
T_B	Thermal neutron temperature (K)
$T_{1/2}$	Half-life
th	Suffix for thermal neutron
y_i	Fission yield of fission-product nuclide i
2200	Suffix for 2200 m/s-neutron

337 074

CONTENTS

ABSTRACT	ii
SUMMARY	iii
NOMENCLATURE	v
I. INTRODUCTION	1
II. NUCLEAR DATA LIBRARY OF FISSION PRODUCTS	3
1. NECESSARY NUCLEAR DATA FOR DECAY POWER CALCULATION	3
2. ESTIMATION OF UNKNOWN DECAY DATA	5
2.1 Q Value	5
2.2 Beta-Decay Constant	5
2.3 Beta- and Gamma-Ray Decay Energies	6
3. NEUTRON CAPTURE CROSS SECTION	11
4. NUCLEAR DATA TABLES	14
III. COMPARISON OF CALCULATED AND EXPERIMENTAL DECAY POWERS	79
1. COMPARISON WITH ORNL EXPERIMENT	79
2. COMPARISON WITH LASL EXPERIMENT	85
3. COMPARISON WITH IRT EXPERIMENT	86
4. COMPARISON WITH UCB EXPERIMENT	87
IV. SENSITIVITY ANALYSIS	89
1. CONTRIBUTION	89
2. SENSITIVITY TO CORRELATIONS ESTIMATING UNKNOWN DECAY ENERGIES	92
2.1 Change in (E_{γ}/Q) for Q greater than 0.5 MeV	92
2.2 Constant or Linear Function for (E_{γ}/Q) in the range $0.5 \text{ MeV} \leq Q \leq 3.8 \text{ MeV}$	94
2.3 Changes of Correlations (E_{β}/Q) and (E_{γ}/Q) with Q to a Constant Value 0.29	94
3. SENSITIVITY TO DECAY DATA OF ^{100}Nb AND $^{100\text{m}}\text{Nb}$	95
4. SENSITIVITY TO DECAY ENERGY OF ^{96}Y	97
5. SENSITIVITY TO DECAY ENERGIES OF ^{134}I AND ^{142}La	101
6. COMPARISON OF DECAY POWER WITH ENDF/B-IV RESULTS	101

337 075

7.	SENSITIVITY OF DECAY POWER TO DELAYED NEUTRON CAPTURED GAMMA RAYS	103
V.	CALCULATION OF DECAY POWER OF FISSION PRODUCTS	105
VI.	CONCLUSIONS	143
VII.	REFERENCES	144
APPENDIX A — COMPUTER PROGRAM STEB FOR CALCULATION OF CORRELATION BETWEEN (E_{β}/Q) AND Q		147
APPENDIX B — COMPUTER PROGRAM RRR FOR CALCULATION OF RATIO $(E_{\beta av}/E_{\beta max})$ BETWEEN AVERAGE AND MAXIMUM BETA-RAY ENERGIES FOR ALLOWED BETA-DECAY TRANSITIONS		155

FIGURES

1.	Correlation between (E_{γ}/Q) and Q	6
2.	Assumed decay scheme, transition probabilities, and equation for (E_{β}/Q)	7
3.	Comparison of raw experimental data with calculated correlation between (E_{β}/Q) and Q	8
4.	Correlation between (E_{β}/Q) and Q	10
5.	Distributions of known and unknown fission-product nuclides about Q value	11
6.	Comparison of calculated decay power with experiment at ORNL for irradiations of 1, 10, and 100 s.	80
7.	Contribution of unknown nuclides to decay power of fission products	81
8.	Sensitivity of decay power to uncertainty of decay energy of ^{96}Y	82
9.	Sensitivity of decay power to uncertainties of decay energies of ^{134}I and ^{142}La	83
10.	Separate comparison of calculated beta- and gamma-decay powers with ORNL experiment ...	84
11.	Comparison of calculated decay power with experiment at LASL for irradiation of 2×10^4 s ...	85
12.	Comparison of calculated decay power with experiment at IRT Corporation for irradiation of 1 day	86
13.	Separate comparison of calculated beta- and gamma-decay powers with experiment at IRT Corporation for irradiation of 1 day	87
14.	Comparison of calculated decay power with experiment at University of California, Berkeley for irradiation of 22.354 h.	88
15.	Contribution of each important nuclide to decay power of fission products for burst fission. ...	90

16.	Contribution of each important nuclide to decay power of fission products for irradiation of 2×10^4 s	91
17.	Sensitivity of decay power to correlations estimating unknown decay energies for changes of (E_γ/Q) as 0.28, 0.30, and 0.32 for Q greater than 0.5 MeV	93
18.	Sensitivity of decay power to correlations estimating unknown decay energies for change of (E_γ/Q) from constant 0.30 to linear function with Q for Q from 0.5 to 3.8 MeV	94
19.	Sensitivity of decay power to correlations estimating unknown decay energies for change from present ones to constant correlations $(E_\beta/Q) = (E_\gamma/Q) = 0.29$	95
20.	Sensitivity of decay power to uncertainties of decay data of ^{100}Nb and $^{100\text{m}}\text{Nb}$	96
21.	Sensitivity of decay power to half-life of ^{100}Nb	97
22.	Sensitivity of decay power for burst fission to change of maximum beta-ray energy $E_{\beta\text{max}}$ of ^{96}Y from 2.75 to 1.75 MeV	98
23.	Sensitivity of decay power for 2×10^4 -s irradiation to change of maximum beta-ray energy $E_{\beta\text{max}}$ from 2.75 to 1.75 MeV	99
24.	Sensitivity of decay power for burst fission to change of maximum beta-ray energy $E_{\beta\text{max}}$ from 2.75 to 3.5 MeV	99
25.	Sensitivity of decay power for 2×10^4 -s irradiation to change of maximum beta-ray energy $E_{\beta\text{max}}$ from 2.75 to 3.5 MeV	100
26.	Sensitivity of beta- and gamma-decay powers to uncertainties of decay energies of ^{134}I and ^{142}La	101
27.	Comparison of calculated decay powers using present library and ENDF/B-IV library for burst fission	102
28.	Comparison of calculated decay powers using present library and ENDF/B-IV library for irradiation of 2×10^4 s	102
29.	Sensitivity of decay power to consideration of delayed neutron capture gamma rays	104

TABLES

I.	Fission Product Library: General Contents	3
II.	Nuclides Having Neutron Capture Cross-Sectional Data in Library	12
III.	Group Structure of ABBN 25-Group Neutron Cross-Sectional Set	13
IV.	Decay Data of Each Fission-Product Nuclide	15
V.	Fission Yield Data for Each Fission-Product Nuclide	46
VI.	Neutron Capture Cross-Sectional Data for Each Fission-Product Nuclide	71

337 077

VII.	Comparison of Decay Energies of ^{134}I and ^{142}La	98
VIII.	Comparison of Decay Data of ^{100}Nb and $^{100\text{m}}\text{Nb}$ in Present Library and in ENDF/B-IV.	83
IX.	Comparison of Decay Energies of ^{96}Y	96
X.	Decay Power After One Fission	106
XI.	Decay Power After Irradiation For One Year At Constant Rate of 1 fission/s	107
XII.	Decay Power After Infinite Irradiation at Constant Rate of 1 fission/s.	108
XIII.	Contribution of Each Important Nuclide to Decay Power for Burst Thermal Neutron Fission of ^{235}U as a Function of Cooling Time	109
XIV.	Contribution of Each Important Nuclide to Decay Power as a Function of Cooling Time for Irradiation of One Year of ^{235}U by Thermal Neutrons	119
XV.	Contribution of each Important Nuclide to Decay Power as a Function of Cooling Time for Infinite Irradiation of ^{235}U by Thermal Neutrons	130
A-I.	FORTTRAN Listing of Program STEB	150
A-II.	Output Data Listing of Program STEB	154
B-I.	FORTTRAN Listing of Program RRR	159
B-II.	Output Data Listing of Program RRR	163

337 070

NUCLEAR DATA LIBRARY OF FISSION PRODUCTS FOR DECAY POWER CALCULATION

I. INTRODUCTION

A reliable nuclear data library of fission products is indispensable for accurate calculation of fission-product accumulation in the nuclear power reactors. The nuclear data library consists of half-lives, decay schemes, decay energies, neutron reaction cross sections, and fission yields.

Accurate knowledge of fission-product accumulation during operation and following shutdown of power reactors is essential to many aspects of nuclear reactor safety, operation, and nuclear safeguards considerations. Certain fission-product accumulations are important for accurate reactivity predictions during fuel depletion, conversion, and burnup in nuclear reactor calculations.

The decay power of fission products is of great importance in the safety analysis of power reactors. The loss-of-coolant accident (LOCA) is a major issue today concerning the use of nuclear power. The major defense against a LOCA is the emergency core cooling system (ECCS), and one of the significant constraints on the power rating of a nuclear power reactor is the maximum amount of energy the ECCS can handle. Thus, accurate decay power data are important in evaluating how well the ECCS will work and in calculating the consequences of a LOCA. The primary objective of the Loss-of-Fluid Test (LOFT) Experimental Program at the Idaho National Engineering Laboratory (INEL) is to provide experimental and analytical data to evaluate the adequacy and to improve the analytical methods currently used to predict the LOCA response of large pressurized water reactors (PWR). Therefore, the accurate decay power data of fission products are important in the LOFT Experimental Program to assess the analytical models. Decay power also plays an important role in the design of spent-fuel containers and reprocessing facilities.

The American Nuclear Society Draft Standard ANS 5.1¹ is widely used at present for the specification of the decay power of fission products for the analysis of a LOCA. The ANS Draft Standard relies upon the work of K. Shure²; uncertainties are estimated to be +20%, -40% for the first 10³ s after shutdown. Therefore, the Code of Federal Regulations³ requires that LOCA analysis for licensing purposes shall use ANS 5.1 plus 20% for the fission-product decay power. This requirement has been reviewed to be excessively conservative and has promoted research to improve the accuracy of fission-product decay power.

Since 1973, four new measurements of fission-product decay power were initiated in the United States: (a) beta- and gamma-ray spectra measurement at Oak Ridge National Laboratory (ORNL)⁴, (b) a fast-response calorimeter measurement at Los Alamos Scientific Laboratory (LASL)⁵, (c) a total absorption or nuclear calorimetric measurement at Intelcom Radiation Technology (IRT) Corporation⁶, and (d) a second calorimetric measurement using different techniques at the University of California, Berkeley (UCB)⁷. These recent accurate measurements enable the examination of the accuracy of the summation calculation of decay power. The method consists of solving analytically the large set of ordinary differential equations that describe the production and decay of each nuclide. The summation calculation, having the merit of versatility, can predict the decay power with a mixture of fissionable isotopes with complicated history, can predict the decay power including the neutron capture transformation of fission products, and can also give detailed isotopic inventories of fission products. The method of summation calculation is essentially exact; however, many of the required nuclear data are imprecisely known. Theoretical or statistical estimations are necessary for half-lives and decay energies of many short-lived nuclides. Therefore, reliability of the fission-product nuclear data library for the summation calculation of decay power should be examined by comparing the summation calculation results with experimental data.

In the present report, the nuclear data⁸ library of fission products that were evaluated by the author at the Japan Atomic Energy Research Institute (JAERI) has been revised including newly obtained decay data in Nuclear Data Sheets⁹ including 1977 and revising the correlations for estimating unknown nuclear data of short-lived nuclides. The revised library has been prepared for 1170 fission products, including the data for fission yields, decay schemes, half-lives, decay energies, and neutron capture cross sections. Experimental results from ORNL, LASL, IRT Corporation, and UCB on fission-product decay power are used for data qualification.

The primary objective of the present revision of the fission-product nuclear data library is to calculate the decay power of fission products accurately by the summation method and to use the results for the best-estimate analysis of a LOCA. However, other characteristics of fission products are also obtainable by the summation method with additional information for the weighting function for each nuclide.

337 080

II. NUCLEAR DATA LIBRARY OF FISSION PRODUCTS

The nuclear data library⁸ of fission products has been revised for the summation calculation of the decay power of fission products. A library of nuclear data has been prepared for 1170 fission products, of which 113 are stable and the others are unstable. Table I summarizes the number of nuclides for which data of various types are available.

TABLE I
FISSION PRODUCT LIBRARY: GENERAL CONTENTS

Number of Nuclide	Type, Comment
1170	Total number of nuclides in library
159	Stable nuclides
1011	Unstable nuclides
123	Excited state nuclides
392	Nuclides with known decay energies
619	Nuclides with estimated decay energies
689	Nuclides with known half-life
322	Nuclides with estimated half-life

1. NECESSARY NUCLEAR DATA FOR DECAY POWER CALCULATION

Buildup and decay of fission product nuclides in a nuclear reactor can be described as:

$$\frac{dN_i}{dt} = -(\lambda_i + \sigma_i \phi) N_i + \sum_j f_{j \rightarrow i} (\lambda_j N_j) + \sum_k g_{k \rightarrow i} (\sigma_k \phi N_k) + y_i F \quad (1)$$

where

- N_i = atom number of nuclide i
- λ_i = decay constant of nuclide i
- σ_i = neutron reaction cross section of nuclide i
- ϕ = neutron flux
- $f_{j \rightarrow i}$ = production rate of nuclide i by the unit decay of nuclide j

337 081

$g_{k \rightarrow i}$ = production rate of nuclide i by the unit neutron reaction of nuclide k

y_i = fission yield for nuclide i

F = fission rate.

The decay power of fission products can be calculated as the summation of the activities of all fission product nuclides with the weight of decay energy of each nuclide

$$P(t) = \sum_i E_i \left[\lambda_i N_i(t) \right] \quad (2)$$

where

P = decay power of fission products

E_i = sensible decay energy of nuclide i .

Therefore, the following nuclear data are necessary for each fission-product nuclide to calculate the decay power of fission products by the summation method:

- (1) Fission yields (y_i)
- (2) Decay schemes ($f_{j \rightarrow i}$)
- (3) Half-lives ($T_{1/2} = \ln 2 / \lambda$)
- (4) Decay energies (E_i)
- (5) Neutron reaction cross sections ($\sigma_i, g_{k \rightarrow i}$).

Fission yield data are those of Meek and Rider¹⁰. Decay data such as decay schemes, half-lives, and decay energies have been updated including the newly obtained decay data in Nuclear Data Sheets⁹ including 1977.

Beta- and gamma-ray energy release rates per disintegration are defined as

$$b_i = \sum_{k=1}^K p_k^i E_{\beta av}^{i,k} \quad (3)$$

$$g_i = \sum_{k=1}^K p_k^i (Q_i - E_{\beta max}^{i,k}) \quad (4)$$

where

b_i = beta-ray energy release rate per unit decay of the i -th nuclide

g_i = gamma-ray energy release rate per unit decay of the i -th nuclide

K = number of beta rays with different energies emitted from the i -th nuclide

337 082

- P_k^i = branching fraction of the k-th beta ray of the i-th nuclide
 Q_i = Q value of beta decay of the i-th nuclide
 $E_{\beta_{av}}^{i,k}, E_{\beta_{max}}^{i,k}$ = average and maximum energy of the k-th beta ray of the i-th nuclide.

Neglect of internal conversion effects in the derivation of Equations (3) and (4), which greatly simplify the formula, only slightly affects the beta- and gamma-ray energy release rates since these effects decrease rapidly as the photon energy increases over several hundred keV.

2. ESTIMATION OF UNKNOWN DECAY DATA

The unknown decay data for short-lived nuclides were estimated theoretically or statistically.

2.1 Q Value

Unknown Q values for beta decays were obtained by using the semi-empirical mass formula of Myers and Swiatecki¹¹ which considers the shell effect.

2.2 Beta-Decay Constant

The beta-decay constant, λ , was estimated from the beta-decay Q value for each nuclide. Although the decay constant depends essentially on the energies, spins, and parities of the levels of the mother and daughter nuclei, these data are usually not known for the nuclide whose decay constant is unknown. The decay constant was then correlated to the Q value for each of six cases by using the data of nuclides for which both λ and Q were known. The data were fitted by a straight line on a logarithm-logarithm plot. The results are as follows.

$$\begin{aligned} \text{odd } A \leq 115 \\ \log \lambda = 6.5 \log Q - 6.0 \end{aligned} \quad (5)$$

$$\begin{aligned} \text{odd } A > 115 \\ \log \lambda = 6.7 \log Q - 6.0 \end{aligned} \quad (6)$$

$$\begin{aligned} \text{even } A \leq 115 \text{ (odd-odd)} \\ \log \lambda = 8.4 \log Q - 8.4 \end{aligned} \quad (7)$$

$$\begin{aligned} \text{even } A > 115 \text{ (odd-odd)} \\ \log \lambda = 9.5 \log Q - 8.8 \end{aligned} \quad (8)$$

$$\begin{aligned} \text{even } A \leq 115 \text{ (even-even)} \\ \log \lambda = 4.5 \log Q - 4.2 \end{aligned} \quad (9)$$

$$\begin{aligned} \text{even } A > 115 \text{ (even-even)} \\ \log \lambda = 5.2 \log Q - 4.4 \end{aligned} \quad (10)$$

The evaluations were divided at mass number of 115 to consider the dependence of the correlation on nuclides that are close to the double-closed shell ^{132}Sn . The results obtained do not vary much between the two groups.

337 083

Equations (5) through (10) are valid only on the average, and the individual decay constant estimated by using the equations may have large errors since no direct relationship between the decay constant and Q value for a nuclide is expected. However, the decay power of fission products may be calculated accurately by estimating unknown decay constants from Equations (5) through (10) because many short-lived nuclides contribute to the decay power at short times after fission.

2.3 Beta- and Gamma-Ray Decay Energies

Unknown beta- and gamma-ray decay energies were estimated for each fission-product nuclide from its beta-decay Q value by using the correlations between (E_{β}/Q) and Q , and between (E_{γ}/Q) and Q . These correlations were revised to include the tendency that (E_{β}/Q) increases when Q increases. In the former evaluation both (E_{β}/Q) and E_{γ}/Q were fixed at 0.29⁸.

The correlation between (E_{γ}/Q) and Q was obtained by using the data of nuclides for which both E_{γ} and Q were known. The data were fitted by straight lines as shown in Figure 1. In Figure 1 measured values of E_{γ} and Q are averaged for each 0.5-MeV interval of Q . The standard deviations of averaged (E_{γ}/Q) were so large that the data were fitted by straight lines freely drawn without the use of least-squares analysis. The ratio (E_{γ}/Q) is constant, 0.3, for Q greater than 5 MeV. The ratio (E_{γ}/Q) is decreased to

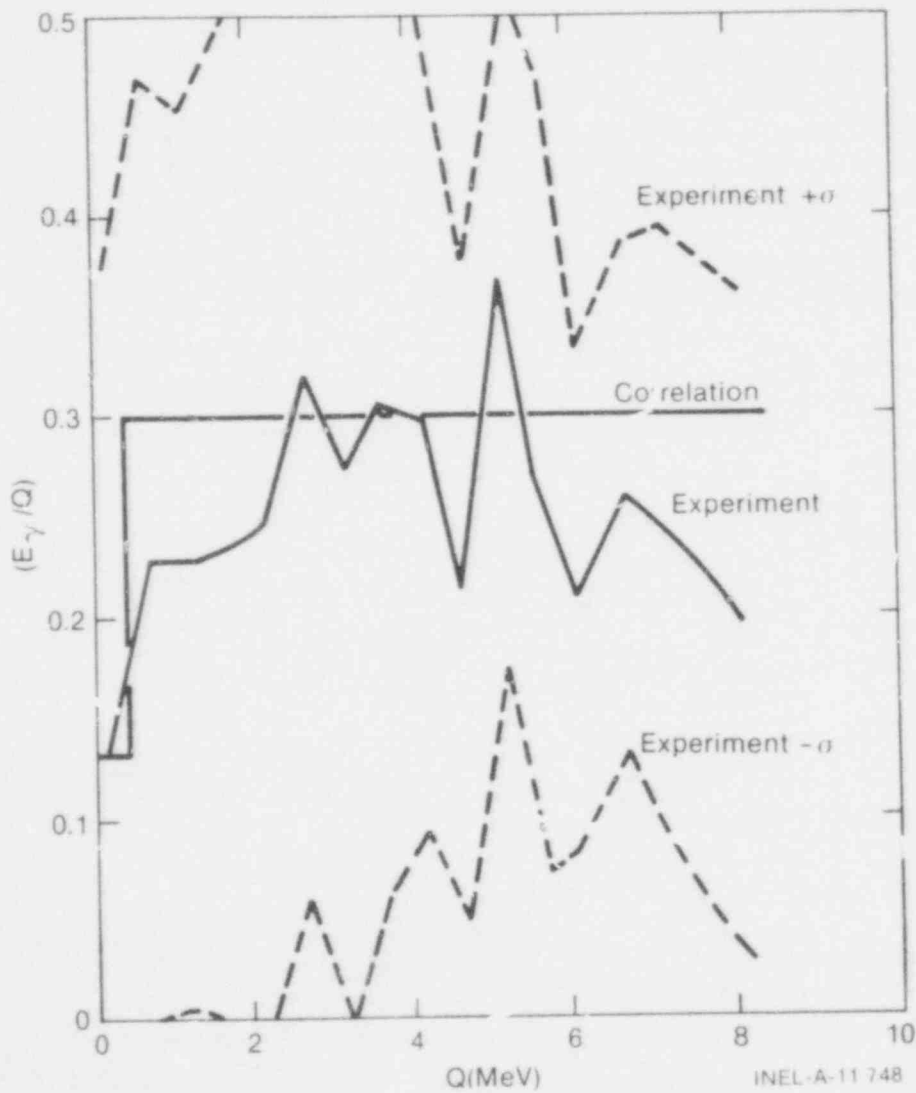


Fig. 1 Correlation between (E_{γ}/Q) and Q .

337 084

0.133 for Q less than 0.5 MeV since there are few levels between the ground states of mother and daughter nuclides when Q is less than 0.5 MeV, and decays to the ground state of the daughter nuclide prevail. The fraction of decays to the ground state of the daughter nuclide is 0.21 for nuclides with Q less than 0.5 MeV; whereas, the average fraction is 0.04 for all nuclides.

The correlation between (E_{β}/Q) and Q was obtained as follows. Four nuclear levels were assumed at energies of 0.0, 0.3, 0.6 and 1.0 times the Q value between the ground levels of mother and daughter nuclides (see Figure 2). The ratio $(E_{\beta av}/E_{\beta max})$ of average beta-ray energy to its maximum energy was calculated using the Fermi function for each transition between the levels of mother and daughter nuclei considering the Coulomb effect. However, the Coulomb effect was neglected for nuclides with Q values less than 0.5 MeV since measured values of (E_{β}/Q) for Q values less than 0.5 MeV are represented better by the calculation without using the Coulomb effect. The measured values (E_{β}/Q) for the transitions between ground states of mother and daughter nuclides are compared with the calculations with and without consideration of the Coulomb effect in Figure 3. In Figure 3, the experimental values for Q values less than 0.5 MeV agree better with the calculation without consideration of the Coulomb effect. The ratio $(E_{\beta av}/E_{\beta max})$ is also dependent upon the atomic number Z; however, in the present analysis the atomic number Z was fixed at 40 without changing it from nuclide to nuclide.

Nearly one thousand combinations of transition probabilities were obtained for each Q value. Transition probabilities f_B and f_C in Figure 2 were changed from 0.0 to 1.0 with the increment of 0.01. The

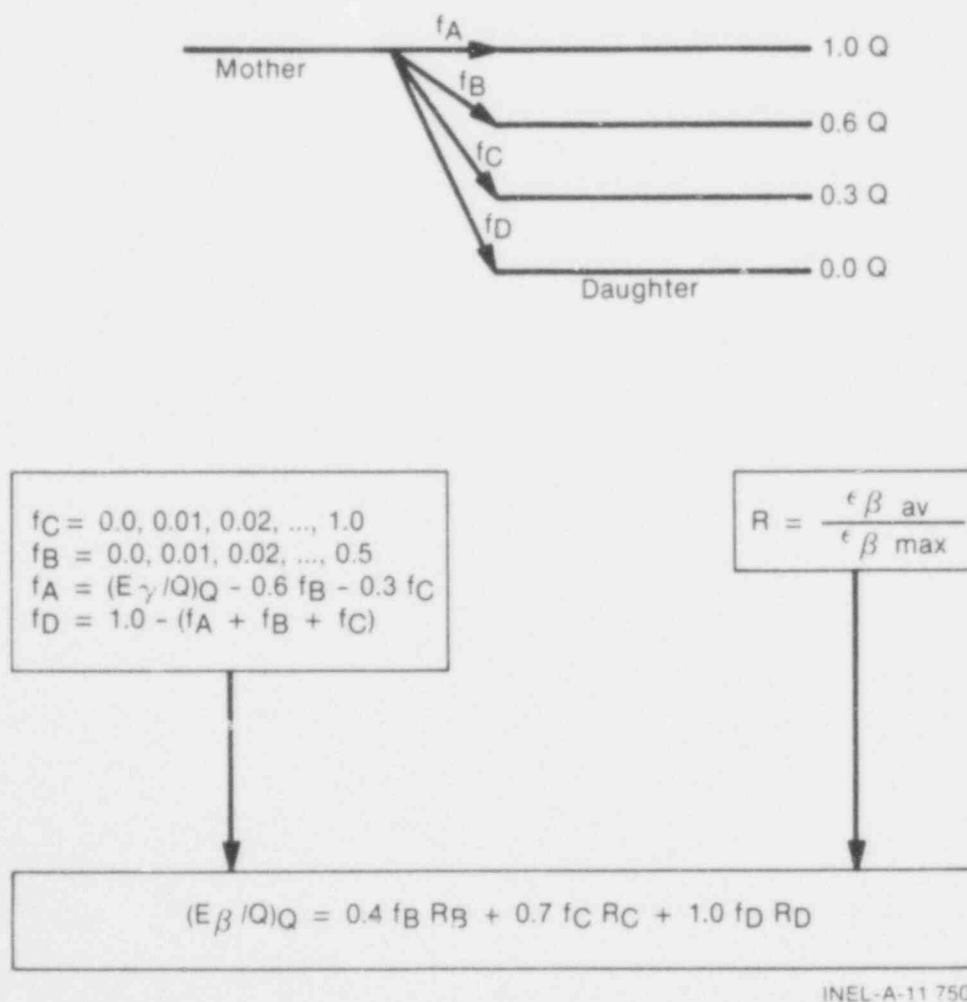


Fig. 2 Assumed decay scheme, transition probabilities, and equation for (E_{β}/Q) .

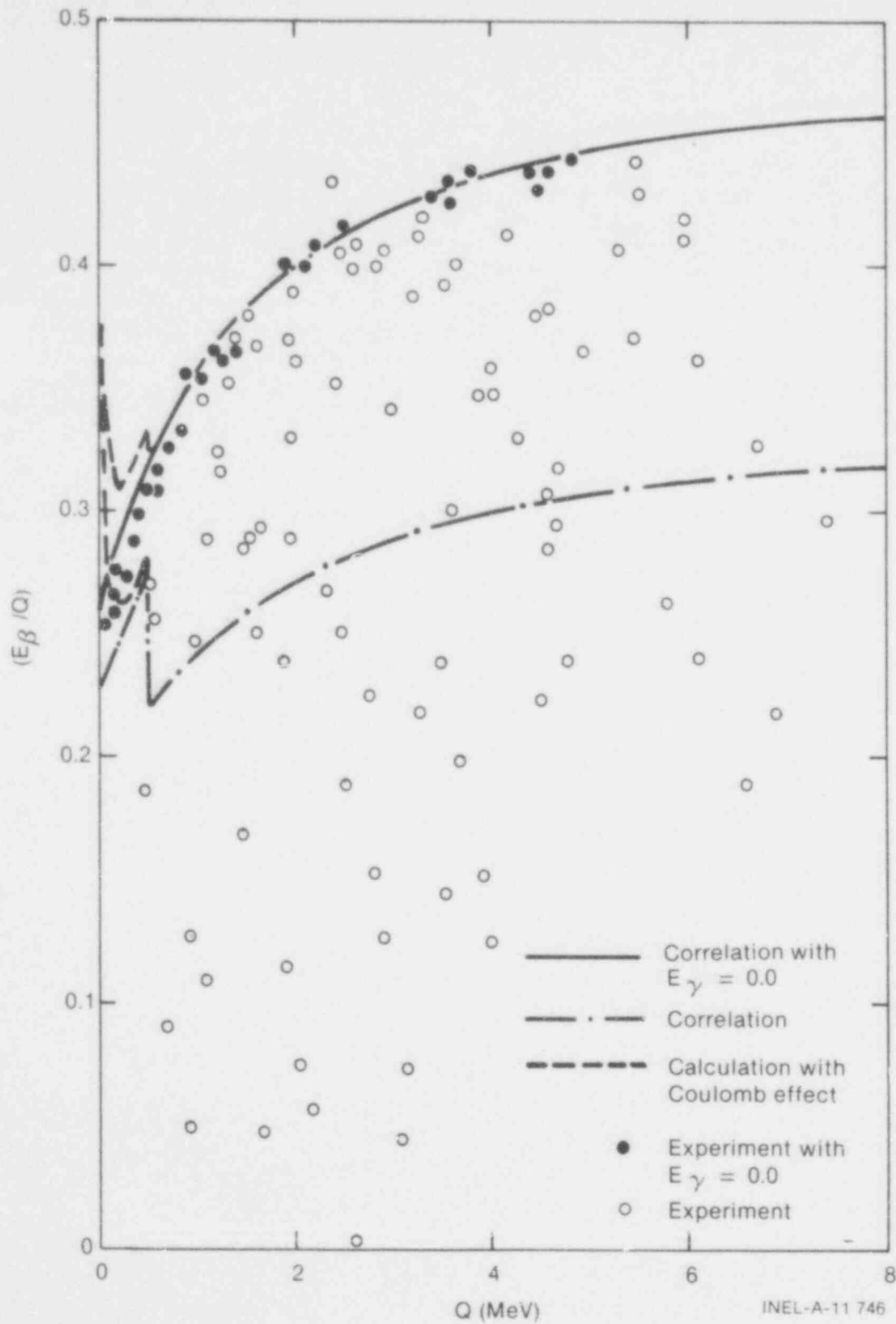


Fig. 3 Comparison of raw experimental data with calculated correlation between (E_{β}/Q) and Q .

337 086

transition probability f_A is determined for each combination of f_B and f_C from the conservation rule of gamma-decay energy

$$f_A = \left(\frac{E_\gamma}{Q} \right)_Q - 0.6 f_B - 0.3 f_C \quad (11)$$

The transition probability f_D was obtained from the conservation of transition probability

$$f_D = 1 - (f_A + f_B + f_C) \quad (12)$$

If f_A , f_B , f_C , or f_D was negative, the obtained set of transition probabilities was disregarded.

The ratio (E_β/Q) was calculated for each set of transition probabilities by the following equation

$$\left(\frac{E_\beta}{Q} \right)_Q = 0.4 R_B f_B + 0.7 R_C f_C + 1.0 R_D f_D \quad (13)$$

using the transition probability f and the ratio R for each transition. The results are then averaged for all sets with equal weight. A small computer program STEB was made to calculate (E_β/Q) as a function of Q . A FORTRAN listing of the program STEB is given in Appendix A. A FORTRAN listing of the program RRR is given in Appendix B. The program RRR calculates the ratio R of average beta-ray energy $E_{\beta av}$ to its maximum energy $E_{\beta max}$ as a function of $E_{\beta max}$ and atomic number Z . The results of (E_β/Q) calculated by using STEB are shown in Figure 4 and compared with measured data of (E_β/Q) which are averaged for each increment of 0.5 MeV in Q . The calculated (E_β/Q) values agree well with the average of measured values within the one standard deviation of the average measured values. As expected, the ratio (E_β/Q) increases as Q increases. By using the present correlations, beta- and gamma-decay energies can be estimated consistently, and the correlation is extended easily to the higher Q value region where there are no measured data for E_β . This point is important because the unknown nuclide, defined here as the nuclide without measured decay energy data, has usually a large Q value and short half-life (see Figure 5). If the simple experimental correlation between (E_β/Q) and Q is extrapolated to the higher Q value region, the estimated E_β has large errors and could become extremely large beyond the theoretical upper limit of

$$(E_\beta)_{max} = Q \cdot RQ$$

corresponding to the beta-decay energy for 100% decay to the ground state of the daughter nuclide.

In the former evaluation both (E_β/Q) and (E_γ/Q) were fixed at 0.29, as mentioned before. The calculated gamma-decay power was in good agreement with the measurement by Maienschein et al at ORNL in 1962¹². Reference 12 is the basis to fix (E_γ/Q) at a constant value for the Q value above 0.5 MeV in the present evaluation. In the present evaluation, however, (E_γ/Q) was varied parametrically as 0.28, 0.30, and 0.32 for the Q value above 0.5 MeV. The correlation between (E_β/Q) and Q was obtained for these three cases. The beta- and gamma-decay powers of fission products were calculated by using these three sets of correlations and compared with the recent measurement at ORNL⁴. The best agreement was obtained for the correlations with (E_γ/Q) of 0.30; therefore, (E_γ/Q) was fixed at 0.30 in the present evaluation for Q values above 0.5 MeV.

337 087

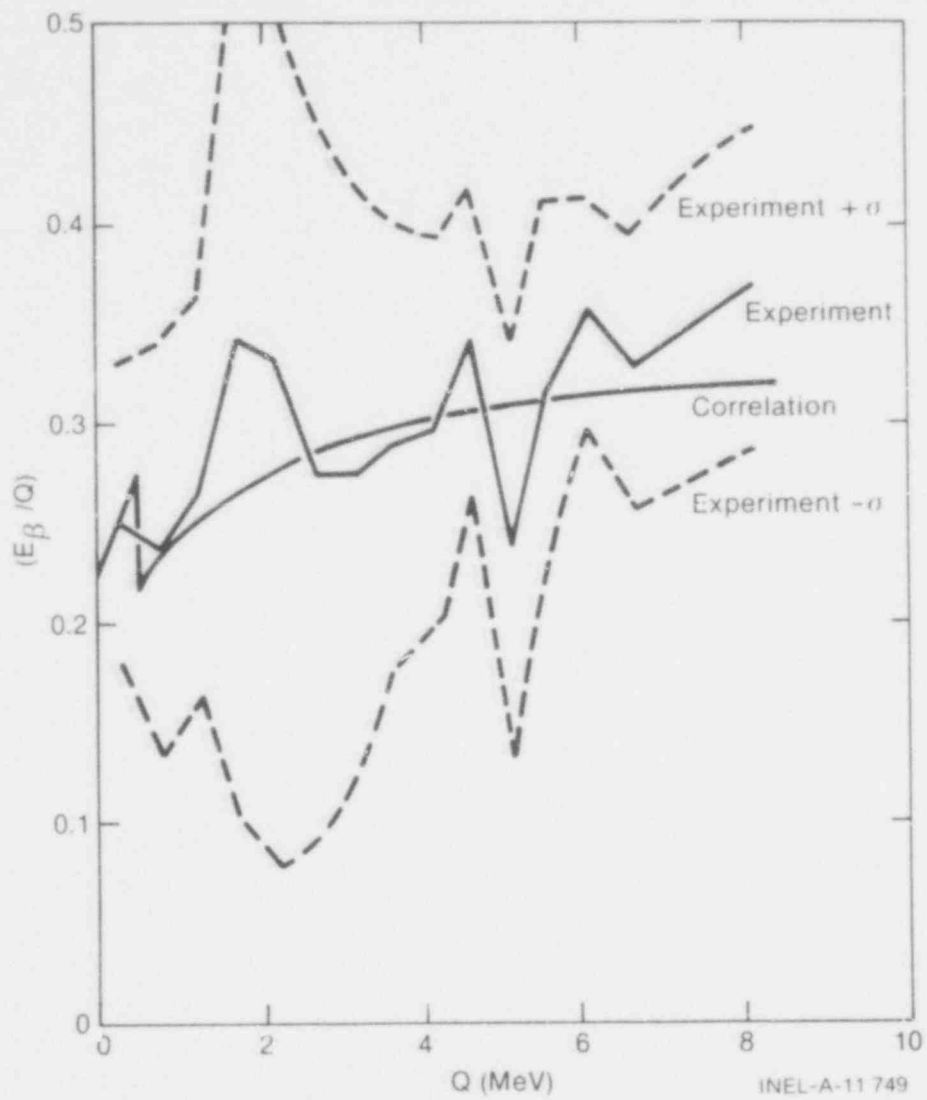


Fig. 4 Correlation between (E_{β}/Q) and Q .

337 080

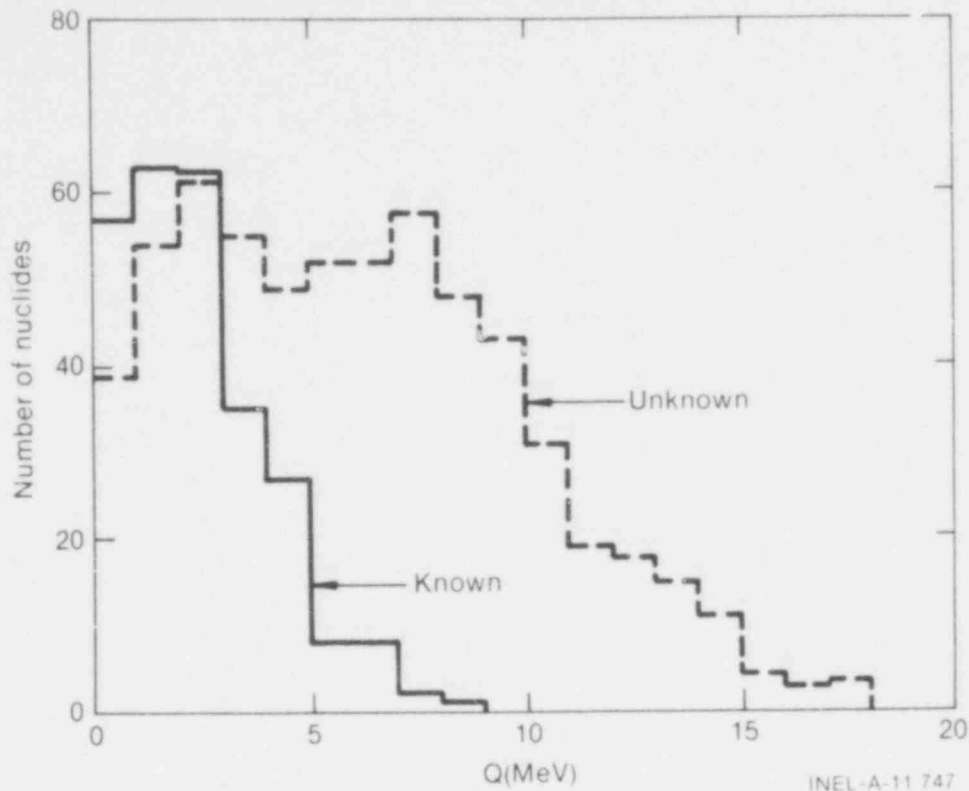


Fig. 5 Distributions of known and unknown fission-product nuclides about Q value.

3. NEUTRON CAPTURE CROSS SECTION

Twenty-seven group neutron capture cross sections are given for the 58 nuclides listed in Table II. Groups 1 to 25, in Table III, are for fast reactor calculations. Groups 26 and 27 are for thermal reactor calculations. The resonance capture integral is given in Group 26. The lower-energy limit for the resonance integral is 0.5 eV. The thermal neutron capture cross section, for 2200 m/s-neutrons, is given in Group 27.

For fast reactor calculations, the group of 25 neutron capture cross sections were calculated by the computer code SUPERTOG¹³ using the nuclear data evaluated by Japanese Nuclear Data Committee (JNDC) for 28 nuclides¹⁴, which cover more than 80% of the total neutron capture reactions of fission products. For the other 30 nuclides, fast-neutron 25-group cross sections were calculated using the data of ENDF/B-IV.

For thermal reactor calculations the data in BNL-325¹⁵ were used for the resonance integral. Calculated values by JNDC were used for those nuclides for the resonance integral when there are no data in BNL-325. The thermal neutron (2200 m/s) cross sections are the evaluations by JNDC. For the thermal reactor system, the neutron capture rate or the equivalent decay constant λ^* is given as the product of thermal neutron equivalent cross section and thermal neutron flux as

$$\lambda^* = \sigma_{eq} \cdot \phi_{th} \quad (14)$$

Thermal neutron equivalent cross section σ_{eq} is given as

$$\sigma_{eq} = A \cdot \sigma_{2200} + r \cdot RI \quad (15)$$

TABLE II

NUCLIDES HAVING NEUTRON CAPTURE
CROSS-SECTIONAL DATA IN LIBRARY

<u>Number</u>	<u>Nuclide</u>	<u>Number</u>	<u>Nuclide</u>
1	^{79}Se	30	^{135}Xe
2	^{85}Kr	31	^{135}Cs
3	^{90}Sr	32	^{137}Cs
4	^{93}Zr	33	^{139}La
5	^{95}Mo	34	^{140}Ba
6	^{97}Mo	35	^{141}Ce
7	^{99}Tc	36	^{141}Pr
8	^{100}Ru	37	^{143}Pr
9	^{101}Ru	38	^{143}Nd
10	^{102}Ru	39	^{144}Ce
11	^{103}Rh	40	^{144}Nd
12	^{104}Ru	41	^{145}Nd
13	^{104}Rh	42	^{146}Nd
14	^{105}Rh	43	^{147}Pm
15	^{105}Pd	44	^{147}Sm
16	^{106}Ru	45	^{148}Pm
17	^{107}Pd	46	^{148}Sm
18	^{108}Pd	47	^{149}Pm
19	^{109}Ag	48	^{149}Sm
20	^{113}Cd	49	^{150}Sm
21	^{115}In	50	^{151}Sm
22	^{121}Sb	51	^{151}Eu
23	^{123}Sb	52	^{152}Sm
24	^{127}I	53	^{153}Eu
25	^{129}I	54	^{154}Eu
26	^{131}Xe	55	^{155}Eu
27	^{133}Xe	56	^{156}Eu
28	^{133}Cs	57	^{158}Gd
29	^{134}Cs	58	^{159}Tb

337 090

TABLE III
 GROUP STRUCTURE OF ABBN 25-GROUP NEUTRON
 CROSS-SECTIONAL SET

<u>Group</u>	<u>Energy Limit</u>	<u>Lethargy Width</u>
1	6.5 - 10.5 MeV	0.48
2	4.0 - 6.5 MeV	0.48
3	2.5 - 4.0 MeV	0.48
4	1.4 - 2.5 MeV	0.57
5	0.8 - 1.4 MeV	0.57
6	0.4 - 0.8 MeV	0.69
7	0.2 - 0.4 MeV	0.69
8	0.1 - 0.2 MeV	0.69
9	46.5 - 100 keV	0.77
10	21.5 - 46.5 keV	0.77
11	10.0 - 21.5 keV	0.77
12	4.65 - 10.0 keV	0.77
13	2.15 - 4.65 keV	0.77
14	1.0 - 2.15 keV	0.77
15	465 - 1000 eV	0.77
16	215 - 465 eV	0.77
17	100 - 215 eV	0.77
18	46.5 - 100 eV	0.77
19	21.5 - 46.5 eV	0.77
20	10.0 - 21.5 eV	0.77
21	4.65 - 10 eV	0.77
22	2.15 - 4.65 eV	0.77
23	1.0 - 2.15 eV	0.77
24	0.465 - 1.0 eV	0.77
25	0.215 - 0.465 eV	0.77

337 091

where A is the ratio of the average thermal neutron cross section σ^{th} for the neutron energies below 0.5 eV to the cross section for 2200 m/s neutrons. Therefore, A depends upon the thermal neutron spectrum or the thermal neutron temperature. Under the assumption of a $1/v$ absorber and a neutron temperature of T_n (K), the variable A is given as

$$A = \sqrt{\frac{\pi}{4} \cdot \frac{T_0}{T_n}}, \quad T_0 = 293.16 \text{ K.} \quad (16)$$

The variable r in Equation (15) is the epithermal index or the ratio of resonance neutron flux per unit lethargy to the total thermal neutron flux. RI in Equation (15) means the resonance integral for the neutron capture reaction. For the thermal reactor analysis, the variables r and A are given as neutron spectra data in Groups 26 and 27, respectively. The thermal neutron flux ϕ_{th} in Equation (14) is given as the integral of the neutron flux below 0.5 eV,

$$\phi_{th} = \int_0^{0.5\text{eV}} \phi(E) dE. \quad (17)$$

4. NUCLEAR DATA TABLES

The revised nuclear data of fission products are shown in Tables IV through VI. Table IV gives the decay data of fission products. The following information is needed to understand Table IV.

NUCL.	=	atomic symbol, mass number, and state identifier (blank for ground state, M, N for first and second isomeric states).
HALF LIFE	=	decay half-life.
DECAY CONST	=	decay constant.
Q	=	Q value of decay. If there are more than one decay modes, Q is averaged with the weight of branching ratio.
E-BETA	=	average beta-ray energy per decay.
E-GAMMA	=	total gamma-ray energy per decay.
IE	=	flag for estimation of decay energies. If IE is equal to 0, E-BETA and E-GAMMA were obtained from measured nuclear data. If IE is equal to 1, they were estimated statistically and theoretically.
SG	=	flag for neutron reaction cross section. If SG is equal to 1, the nuclide has the data for neutron reaction cross section, which are given in Table VI.
M. NUCL.	=	nuclide name of the mother nuclide.
DTYP	=	decay mode of the mother nuclide (defined below).
BRANCHING	=	branching fraction for the decay mode of the mother nuclide to this nuclide.

337 092

TABLE IV

DECAY DATA OF EACH FISSION-PRODUCT NUCLIDE

NO.	NUCL.	HAIF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE SG	M. NUCL	DTP	BRANCHING
1	CR 66	.23991E+00	.28892E+01	10.8440	3.5267	3.2532	1 0			C 0.
2	MN 66	.45518E-01	.15228E+02	13.7600	4.5275	4.1280	1 0	CR 66	1	.10000E+01
3	FE 66	.35262E+01	.19657E+00	5.9978	1.8706	1.7993	1 0	MN 66	1	.10000E+01
4	CU 66	.78785E+00	.87980E+00	9.7888	3.1645	2.9366	1 0	FE 66	1	.10000E+01
5	NI 66	.19256E+06	.35264E-05	.2000	.0573	0.0000	0 0	CO 66	1	.10000E+01
6	CU 66	.30600E+03	.22652E-02	2.6300	1.0780	.0594	0 0	NI 66	1	.10000E+01
7	ZN 66	0.	0.	0.0000	0.0000	0.0000	0 0	CU 66	1	.10000E+01
								GA 66	4	.10000E+01
8	GA 66	.34200E+05	.20268E-04	5.1750	1.5917	1.5525	1 0	GE 66	4	.10000E+01
9	GE 66	.86400E+04	.80225E-04	3.0000	.8664	.9000	1 0			0 0.
10	CR 67	.22732E-01	.30492E+02	14.4460	4.7635	4.3338	1 0			C 0.
11	MN 67	.76158E-01	.91014E+02	11.9910	3.9197	3.5973	1 0	CR 67	1	.10000E+01
12	FE 67	.30499E+00	.22727E+01	9.6843	3.1287	2.9053	1 0	MN 67	1	.10000E+01
13	CC 67	.98401E+00	.70441E+00	8.0858	2.5820	2.4257	1 0	FE 67	1	.10000E+01
14	NI 67	.50000E+02	.13863E-01	4.1000	1.4280	.8100	0 0	CO 67	1	.10000E+01
15	CU 67	.22176E+06	.31257E-05	.9770	.1480	.1140	0 0	NI 67	1	.10000E+01
16	ZN 67	0.	0.	0.0000	0.0000	0.0000	0 0	CU 67	1	.10000E+01
								GA 67	4	.10000E+01
17	GA 67	.28152E+06	.24622E-05	1.0010	.2435	.3003	1 0	GE 67	4	.10000E+01
18	GE 67	.11400E+04	.60802E-03	4.4000	1.3257	1.3200	1 0			0 0.
19	CR 68	.12049E+00	.57527E+01	12.6220	4.1363	3.7866	1 0			C 0.
20	MN 68	.16105E-01	.43047E+02	15.5780	5.1526	4.6734	1 0	CR 68	1	.10000E+01
21	FE 68	.54461E+00	.73379E+00	8.0177	2.5588	2.4053	1 0	MN 68	1	.10000E+01
22	CC 68	.13929E+00	.49762E+01	12.0390	3.9362	3.6117	1 0	FE 68	1	.10000E+01
23	NI 68	.69315E+20	.10000E-19	0.0000	0.0000	0.0000	0 0	CO 68	1	.10000E+01
24	CU 68	.31000E+02	.22360E-01	4.6000	1.4220	1.3120	0 0	NI 68	1	.10000E+01
								CU 68M	2	.50000E+00
25	CU 68M	0.	0.	0.0000	0.0000	0.0000	0 0			0 0.
26	ZN 68	0.	0.	0.0000	0.0000	0.0000	0 0	CU 68	1	.10000E+01
								GA 68	4	.10000E+01
								CU 68M	1	.50000E+00
								GE 68	4	.10000E+01
27	GA 68	.40920E+04	.16939E-03	2.9200	.8399	.8760	1 0	GE 68	4	.10000E+01
28	GE 68	.24797E+08	.27953E-07	.5000	.1363	.0650	1 0			C 0.
29	MN 69	.30646E-01	.22618E+02	13.7960	4.5399	4.1388	1 0			0 0.
30	FE 69	.86037E-01	.80564E+01	11.7680	3.8431	3.5304	1 0	MN 69	1	.10000E+01
31	CC 69	.70731E-01	.97997E+01	12.1290	3.9670	3.6387	1 0	FE 69	1	.10000E+01
32	NI 69	.48239E+09	.14369E-08	.3709	.0967	.0482	1 0	CO 69	1	.10000E+01
33	CU 69	.18000E+03	.38508E-02	1.9560	.5303	.5868	1 0	NI 69	1	.10000E+01
34	ZN 69	.34800E+04	.19018E-03	.9070	.3262	.0000	0 0	CU 69	1	.10000E+01
								ZN 69M	2	.10000E+01
35	ZN 69M	.49320E+05	.14054E-04	.4390	0.0000	.4390	0 0			C 0.
36	GA 69	0.	0.	0.0000	0.0000	0.0000	0 0	ZN 69	1	.10000E+01
								GE 69	4	.10000E+01
37	GE 69	.14112E+06	.49118E-05	2.2250	.6150	.6675	1 0	AS 69	4	.10000E+01
38	AS 69	.90000E+03	.77016E-03	3.9000	1.1449	1.1700	1 0			0 0.
39	CR 70	.10983E+00	.63113E+01	12.8820	4.2259	3.8646	1 0			C 0.
40	MN 70	.71148E-02	.97423E+02	17.1740	5.7021	5.1522	1 0	CR 70	1	.10000E+01
41	FE 70	.22979E+00	.30164E+01	10.9480	3.065	3.2844	1 0	MN 70	1	.10000E+01
42	CC 70	.10669E+01	.64766E+00	9.4406	3.0412	2.8322	1 0	FF 70	1	.10000E+01
43	NI 70	.10226E+03	.67783E-02	2.8558	.117	.8567	1 0	CO 70	1	.10000E+01

337 093

TABLE IV (continued)

NC.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE SG	M. NUCL	DTYP	BRANCHING
44	CU 70	.42000E+02	.16504E-01	6.3000	1.6412	2.5730	0 0	NI 70	1	.50000E+00
45	CU 70M	0.	0.	0.0000	0.0000	0.0000	0 0	NI 70	1	.50000E+00
46	ZN 70	0.	0.	0.0000	0.0000	0.0000	0 0	CU 70	1	.10000E+01
								CU 70M	1	.10000E+01
								GA 70	4	.10000E+01
								GE 70	4	.10000E+01
47	GA 70	.12660E+04	.54751E-03	1.6500	.6430	.0055	0 0	GE 70	4	.10000E+01
48	GE 70	0.	0.	0.0000	0.0000	0.0000	0 0	0 0	0 0	0.
49	MN 71	.15683E-01	.44197E+02	15.2960	5.0559	4.5888	1 0	0 0	0 0	0.
50	FE 71	.46293E-01	.14973E+02	12.9470	4.2483	3.8841	1 0	MN 71	1	.10000E+01
51	CO 71	.16987E+00	.40802E+01	10.5980	3.4420	3.1794	1 0	FE 71	1	.10000E+01
52	NI 71	.31719E+01	.21893E+00	6.7520	2.1266	2.0256	1 0	CO 71	1	.10000E+01
53	CU 71	.38389E+03	.18056E-02	3.2258	.9401	.9677	1 0	NI 71	1	.10000E+01
54	ZN 71	.14400E+03	.48135E-02	2.8060	1.0555	.2971	0 0	CU 71	1	.10000E+01
55	ZN 71M	.14112E+05	.49113E-04	2.9630	.5529	1.5396	0 0	0 0	0 0	0.
56	GA 71	0.	0.	0.0000	0.0000	0.0000	0 0	ZN 71	1	.10000E+01
								ZN 71M	1	.10000E+01
								GE 71	4	.10000E+01
57	GE 71	.95040E+06	.72932E-06	.2350	.0580	.0306	1 0	AS 71	4	.10000E+01
58	AS 71	.23040E+06	.30085E-05	2.0100	.5475	.6030	1 0	0 0	0 0	0.
59	FE 72	.21115E+00	.32828E+01	11.1540	3.6330	3.3462	1 0	0 0	0 0	0.
60	CC 72	.39015E-01	.17766E+02	14.0160	4.6157	4.2048	1 0	FE 72	1	.10000E+01
61	NI 72	.27720E+01	.25005E+00	6.3244	1.9812	1.8973	1 0	CO 72	1	.10000E+01
62	CU 72	.11029E+03	.62845E-02	5.4252	1.6763	1.6276	1 0	NI 72	1	.10000E+01
63	ZN 72	.16740E+06	.41407E-05	.4570	.0860	.1440	0 0	CU 72	1	.10000E+01
64	GA 72	.50760E+05	.13655E-04	3.9900	.5010	2.7200	0 0	ZN 72	1	.10000E+01
65	GE 72	0.	0.	0.0000	0.0000	0.0000	0 0	GA 72	1	.10000E+01
								AS 72	4	.10000E+01
								SE 72	4	.10000E+01
66	AS 72	.93600E+05	.74054E-05	4.3600	1.3102	1.3080	1 0	SE 72	4	.10000E+01
67	SE 72	.73440E+06	.94383E-06	.6000	.1352	.1800	1 0	0 0	0 0	0.
68	FE 73	.21908E-01	.31639E+02	14.5280	4.7917	4.3584	1 0	0 0	0 0	0.
69	CC 73	.67042E-01	.10339E+02	12.2290	4.0013	3.6687	1 0	FE 73	1	.10000E+01
70	NI 73	.11621E+01	.59646E+00	7.8812	2.5121	2.3644	1 0	CO 73	1	.10000E+01
71	CU 73	.90980E+01	.76187E-01	5.7405	1.7830	1.7222	1 0	NI 73	1	.10000E+01
72	ZN 73	.23500E+02	.29496E-01	4.7000	1.4317	1.4100	1 0	CU 73	1	.10000E+01
73	GA 73	.17676E+05	.39214E-04	1.5500	.4423	.3062	0 0	ZN 73	1	.10000E+01
74	GE 73	0.	0.	0.0000	0.0000	0.0000	0 0	GE 73M	2	.10000E+01
								AS 73	4	.10000E+01
75	GE 73M	.53000E+00	.13078E+01	.0670	0.0000	.0670	0 0	GA 73	1	.10000E+01
76	AS 73	.65664E+07	.10556E-06	.3700	.0964	.0481	1 0	SE 73M	4	.10000E+01
								SE 73	4	.10000E+01
77	SE 73	.25560E+06	.27118E-05	2.7500	.7842	.8250	1 0	0 0	0 0	0.
78	SE 73M	.25200E+04	.27506E-03	2.7000	.7679	.8100	1 0	0 0	0 0	0.
79	FE 74	.11573E+00	.59893E+01	12.7340	4.1749	3.8202	1 0	0 0	0 0	0.
80	CC 74	.16132E-01	.42967E+02	15.5750	5.1516	4.6725	1 0	FE 74	1	.10000E+01
81	NI 74	.31361E+01	.22102E+00	6.1547	1.9236	1.8464	1 0	CO 74	1	.10000E+01
82	CU 74	.81091E+00	.85478E+00	9.7551	3.1529	2.9265	1 0	NI 74	1	.10000E+01
83	ZN 74	.98000E+02	.70729E-02	.8451	.2000	.2535	1 0	CU 74	1	.10000E+01
84	GA 74	.49200E+03	.14088E-02	5.5000	1.0700	3.0400	0 0	ZN 74	1	.10000E+01
85	GE 74	0.	0.	0.0000	0.0000	0.0000	0 0	GA 74	1	.10000E+01
								AS 74	4	.67300E+00
86	AS 74	.15293E+07	.45325E-06	2.1790	.1273	.4670	0 0	AS 74M	2	.10000E+01

337 094

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE SG	M-NUCL	DTYP	BRANCHING
87	AS 74M	.80000E+01	.86643E-01	.2830	0.0000	.2830	0 0			0 0.
88	SE 74	0.	0.	0.0000	0.0000	0.0000	0 0	AS 74	1	.32700E+00
89	CO 75	.30770E-01	.22527E+02	13.7880	4.5372	4.1364	1 0			0 0.
90	NI 75	.33981E+00	.20398E+01	9.5244	3.0740	2.8573	1 0	CO 75	1	.10000E+01
91	CL 75	.11430E-01	.60644E+02	16.0590	5.3179	4.8177	1 0	NI 75	1	.10000E+01
92	ZN 75	.90000E+01	.77016E-01	5.8500	2.1744	1.1041	0 0	CU 75	1	.10000E+01
93	GA 75	.13020E+03	.53237E-02	3.2944	1.3600	.0209	0 0	ZN 75	1	.10000E+01
94	GE 75	.49668E+04	.13956E-03	1.1750	.4243	.0351	0 0	GA 75	1	.96000E+00
								GE 75M	2	.10000E+01
95	GE 75M	.48900E+02	.14175E-01	.1390	0.0000	.1390	0 0	GA 75	1	.40000E-01
96	AS 75	0.	0.	0.0000	0.0000	0.0000	0 0	GE 75	1	.10000E+01
								SE 75	4	.10000E+01
97	SE 75	.10403E+08	.66632E-07	.8650	.2055	.2595	1 0	BR 75	1	.10000E+01
								BR 75	4	.10000E+01
98	BR 75	.57600E+05	.12034E-04	3.0100	.8696	.9030	1 0			0 0.
99	FE 76	.69588E-01	.99607E+01	14.2450	4.6944	4.2735	1 0			0 0.
100	CC 76	.75078E-02	.92324E+02	17.0640	5.6643	5.1192	1 0	FE 76	1	.10000E+01
101	NI 76	.10734E+01	.64576E+00	7.7950	2.4826	2.3385	1 0	CO 76	1	.10000E+01
102	CL 76	.40027E+00	.17317E+01	10.6130	3.4471	3.1839	1 0	NI 76	1	.10000E+01
103	ZN 76	.57000E+01	.12160E+00	3.8679	1.1358	1.1604	1 0	CU 76	1	.10000E+01
104	GA 76	.27100E+02	.25577E-01	6.5000	1.6800	2.8100	0 0	ZN 76	1	.10000E+01
105	GE 76	0.	0.	0.0000	0.0000	0.0000	0 0	GA 76	1	.10000E+01
106	AS 76	.94680E+05	.73210E-05	2.9800	1.1367	.3529	0 0			0 0.
107	SE 76	0.	0.	0.0000	0.0000	0.0000	0 0	AS 76	1	.10000E+01
108	NI 77	.12610E+00	.54977E-01	11.0950	3.6129	3.3285	1 0			0 0.
109	CU 77	.53188E+00	.13727E-01	8.8894	2.8565	2.6668	1 0	NI 77	1	.10000E+01
110	ZN 77	.14000E+01	.4741E+00	11.4230	3.7250	3.4269	1 0	CU 77	1	.10000E+01
111	GA 77	.17100E+02	.40535E-01	4.6101	1.6813	.8775	0 0	ZN 77	1	.10000E+01
112	GE 77	.40680E+05	.17039E-04	2.7600	.6480	1.1600	0 0	GA 77	1	.12000E+00
								GE 77M	2	.21000E+00
113	GE 77M	.54000E+02	.12836E-01	2.3315	.9500	.0839	0 0	GA 77	1	.88000E+00
114	AS 77	.13968E+06	.49624E-05	.6693	.2410	.1030	0 0	GE 77	1	.10000E+01
								GE 77M	1	.79000E+00
115	SE 77	0.	0.	0.0000	0.0000	0.0000	0 0	AS 77	1	.99740E+00
								SE 77M	2	.10000E+01
								BR 77	4	.99000E+00
116	SE 77M	.17500E+02	.39608E-01	.2500	0.0000	.2500	0 0	AS 77	1	.26000E-02
								BR 77	4	.10000E-01
117	BR 77	.20160E+06	.34382E-05	1.3650	.3486	.4095	1 0	BR 77M	2	.10000E+01
								KR 77	4	.80000E+00
118	BR 77M	.25800E+03	.26866E-02	.1080	0.0000	.1080	0 0	KR 77	4	.20000E+00
119	KR 77	.43200E+04	.16045E-03	2.9000	.8333	.8700	1 0			0 0.
120	NI 78	.46689E+00	.14846E+01	9.3640	3.0191	2.8094	1 0			0 0.
121	CL 78	.12790E+00	.54194E+01	12.1630	3.9787	3.6489	1 0	NI 78	1	.10000E+01
122	ZN 78	.80808E+01	.85784E-01	4.9961	1.5317	1.4988	1 0	CU 78	1	.10000E+01
123	GA 78	.48000E+01	.14441E+00	8.4133	2.6937	2.5240	1 0	ZN 78	1	.10000E+01
124	GE 78	.52200E+04	.13279E-03	.9800	.2400	.2806	0 0	GA 78	1	.10000E+01
								GA 79	6	.14000E-02
125	AS 78	.54420E+04	.12737E-03	4.3100	1.3108	1.2748	0 0	GE 78	1	.10000E+01
126	SE 78	0.	0.	0.0000	0.0000	0.0000	0 0	AS 78	1	.10000E+01
								BR 78	4	.10000E+01

337 095

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE SG	M. NUCL	DTYP	BRANCHING
127	BR 78	.38400E+03	.18051E-02	3.5700	1.0511	1.0710	1 0			0 0.
128	KR 78	C.	0.	0.0000	0.0000	0.0000	0 0			0 0.
129	CU 79	.18757E+00	.36954E+01	10.4370	3.3867	3.1311	1 0			C C.
130	ZN 79	.84712E+00	.81824E+00	8.2744	2.5463	2.4823	1 0	CU 79	1	.10000E+01
131	GA 79	.30000E+01	.23105E+00	6.1111	1.9089	1.8333	1 0	ZN 79	1	.10000E+01
132	GE 79	.42000E+02	.16504E-01	4.3000	1.8598	.1108	C 0	GA 79	1	.99860E+00
								GA 80	6	.86000E-02
133	AS 79	.54060E+03	.12822E-02	2.2050	.8537	.1143	0 0	GE 79	1	.10000E+01
134	SE 79	.20498E+13	.33815E-12	.1590	.0465	0.0000	0 1	SE 79M	2	.10000E+01
135	SE 79M	.23460E+03	.29546E-02	.2500	.0001	.0950	0 0	AS 79	1	.10000E+01
136	BR 79	C.	0.	0.0000	0.0000	0.0000	0 0	SE 79	1	.10000E+01
								BR 79M	2	.10000E+01
								KR 79	4	.10000E+01
137	BR 79M	.48600E+01	.14262E+00	.2100	0.0000	.2100	0 0			0 0.
138	Y. 79	.12564E+06	.55169E-05	1.6200	.4258	.4860	1 0	KR 79M	2	.10000E+01
								RB 79	4	.10000E+01
139	KR 79M	.50000E+02	.13863E-01	.1270	0.0000	.1270	0 0			0 0.
140	RB 79	.13800E+04	.50228E-03	0.0000	0.0000	0.0000	0 0			0 0.
141	NI 80	.96225E-01	.72034E+01	13.2630	4.3568	3.9789	1 0			0 0.
142	CU 80	.12599E-01	.95014E+02	16.0410	5.3117	4.8123	1 0	NI 80	1	.10000E+01
143	ZN 80	.23073E+01	.30042E+00	6.5854	2.0700	1.9756	1 0	CU 80	1	.10000E+01
144	GA 80	.17000E+01	.40773E+00	9.3627	3.0185	2.8088	1 0	ZN 80	1	.10000E+01
145	GE 80	.24500E+02	.28292E-01	3.4796	1.0243	1.0439	1 0	GA 80	1	.99140E+00
146	AS 80	.16500E+02	.42009E-01	6.0000	2.4725	.5523	C 0	GE 80	1	.10000E+01
147	SE 80	C.	0.	0.0000	0.0000	0.0000	0 0	AS 80	1	.10000E+01
								BR 80	4	.86000E-01
								SE 79	3	.10000E+01
148	BR 80	.10440E+04	.66393E-03	1.9980	.7183	.2529	0 0	BR 80M	2	.10000E+01
149	BR 80M	.15912E+05	.43561E-04	.0860	0.0000	.0860	0 0			0 0.
150	KR 80	C.	0.	0.0000	0.0000	0.0000	0 0	BR 80	1	.91400E+00
151	CU 81	.24326E-01	.28494E+02	14.2960	4.7119	4.2888	1 0			0 0.
152	ZN 81	.69011E-01	.10044E+02	17.1750	3.9828	3.6525	1 0	CU 81	1	.10000E+01
153	GA 81	.13765E+01	.50354E+00	7.6783	2.4427	2.3035	1 0	ZN 81	1	.10000E+01
154	GE 81	.10100E+02	.68628E-01	5.5565	1.7208	1.6670	1 0	GA 81	1	.10000E+01
155	AS 81	.33000E+02	.21004E-01	3.8000	1.6010	.1423	0 0	GE 81	1	.10000E+01
156	SE 81	.11100E+04	.62446E-03	1.5870	.6165	.0095	0 0	AS 81	1	.10000E+01
								SE 81M	2	.10000E+01
157	SE 81M	.34350E+04	.20179E-03	.1030	0.0000	.1030	0 0			0 0.
158	BR 81	C.	0.	0.0000	0.0000	0.0000	0 0	SE 81	1	.10000E+01
								KR 81	4	.10000E+01
159	KP 81	.66226E+13	.10466E-12	.3000	0.0000	.1400	0 0	KR 81M	2	.10000E+01
								RB 81M	4	.50000E+00
								RB 81	4	.25000E+00
160	KR 81M	.13300E+02	.52116E-01	.1900	0.0000	.1900	0 0			0 0.
161	RB 81	.16920E+05	.40966E-04	2.2400	.6197	.6720	1 0	RB 81M	2	.50000E+00
162	RB 81M	.19200E+04	.36101E-03	1.2050	.3013	.3615	1 0			C C.
163	NI 82	.60984E-01	.11366E+02	14.6650	4.8389	4.3995	1 0			0 0.
164	CU 82	.63036E-02	.10996E+03	17.4240	5.7882	5.2272	1 0	NI 82	1	.10000E+01
165	ZN 82	.28198E+00	.24581E+01	10.4650	3.3963	3.1395	1 0	CU 82	1	.10000E+01
166	GA 82	.63522E-01	.10912E+02	13.2230	4.3430	3.9669	1 0	ZN 82	1	.10000E+01
167	GE 82	.46000E+01	.15068E+00	3.9066	1.1468	1.1720	1 0	GA 82	1	.10000E+01

337 096

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE SG	M. NUCL	DTYP	BRANCHING
168	AS 82	.21000E+02	.33007E-01	7.2000	3.2100	.2476	0 0	GE 82	1	.10000E+01
								GE 83	6	.16000E-02
169	AS 82M	.13000E+02	.53319E-01	7.2000	2.2794	2.1600	1 0			0 0.
170	SE 82	0.	0.	0.0000	0.0000	0.0000	0 0	AS 82	1	.10000E+01
								AS 82M	1	.10000E+01
171	BR 82	.12708E+06	.54544E-05	3.0900	.1400	2.6500	0 0	BR 82M	2	.97600E+00
172	BR 82M	.36780E+03	.18846E-02	.1202	.0274	.0359	0 0			0 0.
173	KR 82	0.	0.	0.0000	0.0000	0.0000	0 0	BR 82	1	.10000E+01
								BR 82M	1	.24000E-01
174	ZN 83	.33641E-01	.20604E+02	13.5990	4.4722	4.0797	1 0			0 0.
175	GA 83	.98912E-01	.70084E+01	11.5180	3.7579	3.4554	1 0	ZN 83	1	.10000E+01
176	GE 83	.19000E+01	.36481E+00	9.4368	3.0439	2.8310	1 0	GA 83	1	.10000E+01
177	AS 83	.14100E-02	.49159E-01	5.0177	1.5389	1.5053	1 0	GE 83	1	.99840E+00
								GE 84	6	.96000E-01
178	SE 83	.13500E+04	.51344E-03	3.7000	.5096	2.3774	0 0	AS 83	1	.36000E+00
								AS 84	1	.13000E-02
179	SE 83M	.70400E+02	.98498E-02	3.9200	1.2835	.9234	0 0	AS 83	1	.64000E+00
180	BR 83	.86040E+04	.80561E-04	.9670	.3275	.0495	0 0	SE 83	1	.10000E+01
								SE 83M	1	.10000E+01
181	KR 83	0.	0.	0.0000	0.0000	0.0000	0 0	KR 83M	2	.10000E+01
								RB 83	4	.23000E+00
182	KR 83M	.66960E+04	.10352E-03	.0478	0.0000	.0418	0 0	BR 83	1	.10000E+01
								RB 83	4	.77000E+00
183	RB 83	.71712E+07	.96657E-07	.8210	.1932	.2460	1 0	SR 83	4	.10000E+01
184	SR 83	.11664E+06	.59426E-05	2.2100	.6102	.6630	1 0			0 0.
185	ZN 84	.19801E+00	.43868E+01	11.8900	3.8850	3.5670	1 0			0 0.
186	GA 84	.27298E-01	.25429E+02	14.6290	4.8265	4.3887	1 0	ZN 84	1	.10000E+01
187	GE 84	.10917E+01	.63495E+00	7.7661	2.4727	2.3298	1 0	GA 84	1	.10000E+01
188	AS 84	.58000E+01	.11951E+00	10.5000	3.4083	3.1500	1 0	GE 84	1	.90400E+00
189	SE 84	.19800E+03	.35007E-02	1.8100	.5412	.4000	0 0	AS 84	1	.99870E+00
								AS 85	6	.20000E+00
190	BR 84	.19080E+04	.36328E-03	4.6500	1.2925	1.6563	0 0	SE 84	1	.10000E+01
191	BR 84M	.36000E+03	.19254E-02	4.9700	.8955	2.7684	0 0			0 0.
192	KR 84	0.	0.	0.0000	0.0000	0.0000	0 0	BR 84M	1	.10000E+01
								BR 84		
								RB 84M		
								RB 84		
193	RB 84	.28512E+07	.24311E-06	2.6260	.0093	.6652	0 0	RB 84M		
194	RB 84M	.12000E+04	.57762E-03	1.8040	.4824	.5412	1 0			0 0.
195	SR 84	0.	0.	0.0000	0.0000	0.0000	0 0	RB 84	1	.10000E+01
196	GA 85	.30899E-01	.22433E+02	13.7790	4.5341	4.1337	1 0			0 0.
197	GE 85	.38967E+00	.17788E+01	9.3257	3.0058	2.7977	1 0	GA 85	1	.10000E+01
198	AS 85	.20300E+01	.34145E+00	8.0000	2.5528	2.4000	1 0	GE 85	1	.10000E+01
199	SE 85	.39000E+02	.17773E-01	5.0000	1.5330	1.5000	1 0	AS 85	1	.80000E+00
								AS 86	6	.38000E-01
200	SE 85M	.19000E+02	.36481E-01	6.2200	2.1463	1.3478	0 0			0 0.
201	BR 85	.18000E+03	.38508E-02	2.4950	.9949	.0647	0 0	SE 85	1	.10000E+01
								SE 85M	1	.10000E+01
202	KR 85	.33838E+09	.20484E-08	.6770	.2265	.0072	0 1	KR 85M	2	.21200E+00
203	KR 85M	.15696E+05	.44161E-04	.9820	.2294	.1880	0 0	BR 85	1	.10000E+01

337 097

TABLE IV (continued)

NO.	NLCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M. NUCL	DTYP	BRANCHING
204	RB 85	0.	0.	0.0000	0.0000	0.0000	0	0	KR 85M	1	.78240E+00
									KR 85	1	.10000E+01
									SR 85M	4	.14000E+00
									SR 85	4	.10000E+01
205	SR 85	.55901E+07	.12400E-06	1.1100	.2740	.3330	1	0	SR 85M	2	.86000E+00
									Y 85M	4	.10000E+01
									Y 85	4	.10000E+01
206	SR 85M	.42000E+04	.16504E-03	1.24	.1031	.0510	1	0			0 0.
207	Y 85	.18000E+04	.37508E-04	3.2600	.9513	.9780	1	0			0 0.
208	Y 85M	.97200E+04	.71311E-04	3.3000	.9645	.9900	1	0			0 0.
209	Zn 86	.96084E-01	.72140E+01	13.2670	4.3581	3.9801	1	0			0 0.
210	GA 86	.12554E-01	.55215E+02	16.0480	5.3141	4.8144	1	0	ZN 86	1	.10000E+01
211	GE 86	.4176E+00	.15798E+01	9.4937	3.0635	2.8481	1	0	GA 86	1	.10000E+01
212		.5472E-01	.11616E+02	13.3220	4.3770	3.9966	1	0	GE 86	1	.10000E+01
213	S.	CE+02	.41506E-01	3.3858	.9930	1.0157	1	0	AS 86	1	.96200E+00
									AS 87	6	.31000E+00
214	BR 86	.54000E+02	.12836E-01	7.3000	1.9524	2.9227	0	0	SE 86	1	.50000E+00
									SE 87	6	.18000E-02
215	BR 86M	.45000E+01	.15403E+00	8.5900	3.0850	1.6661	0	0	SE 86	1	.50000E+00
216	KR 86	0.	0.	0.0000	0.0000	0.0000	0	0	BR 86	1	.10000E+01
									BR 86M	1	.10000E+01
									BR 87	6	.23000E-01
									KR 85	3	.10000E+01
217	RB 86	.16114E+07	.43015E-06	1.7700	.6700	.0943	0	0	RB 86M	2	.10000E+01
218	RB 86M	.61080E-02	.11348E-01	.5600	0.0000	.5600	0	0			0 0.
219	CR 86	0.	0.	0.0000	0.0000	0.0000	0	0	RB 86	1	.10000E+01
220	GE 87	.66432E-01	.10434E+02	12.2470	4.0075	3.6741	1	0			0 0.
221	AS 87	.60000E+00	.11592E+01	10.0000	3.2370	3.0000	1	0	GE 87	1	.10000E+01
222	SE 87	.58000E+01	.11951E+00	8.0000	2.5528	2.4000	1	0	AS 87	1	.69000E+00
223	BR 87	.55700E+02	.12444E-01	6.5264	2.1356	1.7263	0	0	SE 87	1	.99820E+00
									SE 88	6	.50000E-02
224	KR 87	.45840E+04	.15121E-03	3.8920	1.3782	.6981	0	0	BR 87	1	.97700E+00
									BR 88	6	.46000E-01
225	RB 87	.14822E+19	.46765E-18	.2800	.0922	.0486	0	0	KR 87	1	.10000E+01
									SR 87M	4	.30000E-02
226	SR 87	0.	0.	0.0000	0.0000	0.0000	0	0	RB 87	1	.10000E+01
									SR 87M	2	.99300E+00
									Y 87	4	.10000E+01
227	SR 87M	.10116E+05	.68520E-04	.3872	.0001	.3869	0	0			0 0.
228	Y 87	.28800E+06	.24068E-05	1.7000	.4502	.5100	1	0	Y 87M	2	.10000E+01
229	Y 87M	.46800E+05	.14811E-04	.3810	0.0000	.3810	0	0	ZR 87	4	.10000E+01
230	ZR 87	.57600E+04	.12034E-03	3.1190	.9051	.9357	1	0			0 0.
231	GE 88	.27980E+00	.25132E+01	10.5160	3.4138	3.1548	1	0			0 0.
232	AS 88	.64963E-01	.10736E+02	13.1970	4.3341	3.9591	1	0	GE 88	1	.10000E+01
233	SE 88	.15300E+01	.45304E+00	6.5924	2.0723	1.9777	1	0	AS 88	1	.10000E+01
234	BR 88	.16300E+02	.42524E-01	8.2000	2.5426	2.6142	0	0	SE 88	1	.99500E+00
									SE 89	6	.50000E-01
235	KR 88	.10224E+05	.67796E-04	2.9090	.3595	1.9558	0	0	BR 88	1	.95400E+00
									BR 89	6	.86000E-01
									KR 87	3	.10000E+01
236	RB 88	.10680E+04	.64901E-03	5.3070	2.0870	.6411	0	0	KR 88	1	.10000E+01
237	SR 88	0.	0.	0.0000	0.0000	0.0000	0	0	RB 88	1	.10000E+01
									Y 88	4	.10000E+01
238	Y 88	.92102E+07	.75258E-07	3.6210	1.0656	1.0863	1	0	ZR 88	4	.10000E+01

337 098

TABLE IV (continued)

NL.	NLCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	EE SG	M-NUCL	DTYP	BRANCHING
239	ZP 88	.440E+07	.94383E-07	.5000	.1363	.0650	1 0			0 0.
240	AS 89	.10051E+00	.68964E+01	11.4900	3.7479	3.4470	1 0			0 0.
241	SE 89	.4100CE+00	.16906E+01	9.0000	2.8944	2.7000	1 0	AS 89	1	.10000E+01
242	BR P	.49300E+01	.15301E+00	7.7000	2.4901	2.3100	1 0	SE 89	1	.95000E+00
243	KR	.1842CE+03	.37630E-02	4.9300	1.2601	1.9885	0 0	BR 89	1	.91400E+00
								BR 90	6	.12000E+00
244	RB 1	.92400E+03	.75016E-03	4.4860	.9248	2.2527	0 0	KR 89	1	.10000E+01
245	SR 89	.43675E+07	.15870E-06	1.4890	.5727	.0000	0 0	RB 89	1	.10000E+01
246	Y 89	0.	0.	0.0000	0.0000	0.0000	0 0	SR 89	1	.99990E+00
								ZR 89M	4	.60000E-01
								Y 89M	2	.10000E+01
247	Y 89P	.15700E+02	.44150E-01	.9100	0.0000	.9100	0 0	SR 89	1	.10000E-03
								ZR 89	4	.10000E+01
248	ZR 89	.28224E+06	.24559E-05	2.8340	.8116	.8502	1 0	ZR 89M	2	.94000E+00
								NB 89	4	.10000E+01
249	ZR 89M	.2520CE+03	.27506E-02	.7580	.1765	.2274	1 0	NB 89M	4	.10000E+01
250	NB 89	.68400E+04	.10134E-03	3.9000	1.1449	1.1700	1 0			0 0.
251	NB 89P	.40800E+04	.16989E-03	4.7000	1.4317	1.4100	1 0			0 0.
252	AS 90	.29641E-01	.23389E+02	4.4830	4.7762	4.3449	1 0			0 0.
253	SE 90	.10573E+01	.65558E+00	7.8210	2.4915	2.3463	1 0	AS 90	1	.10000E+01
254	BR 90	.1710CE+01	.40535E+00	10.5000	3.4083	3.1900	1 0	SE 90	1	.10000E+01
255	KR 90	.32320E+02	.21446E-01	4.5900	1.3047	1.3435	0 0	BR 90	1	.88000E+00
								BR 91	6	.70000E-01
256	RB 90	.19300E+03	.45304E-02	6.3200	1.8586	2.6604	0 0	KR 90	1	.84000E+00
								RB 90M	2	.50000E-01
257	RB 90M	.25800E+03	.26866E-02	6.4270	1.9290	2.1450	0 0	KR 90	1	.16000E+00
258	SR 90	.90193E+09	.76852E-09	.5460	.1783	0.0000	0 1	RB 90	1	.10000E+01
								RB 90M	1	.95000E+00
259	Y 90	.23076E+06	.30038E-05	2.2792	.9339	.0002	0 0	SR 90	1	.10000E+01
								Y 90M	2	.99620E+00
260	Y 90P	.11484E+05	.60358E-04	.6848	.0009	.6825	0 0			0 0.
261	ZR 90	0.	0.	0.0000	0.0000	0.0000	0 0	Y 90	1	.10000E+01
								ZR 90M	2	.10000E+01
								NB 90	4	.30000E-01
262	ZP 90P	.83000E+00	.83512E+00	2.3187	0.0000	2.3148	0 0	Y 90M	1	.40000E-02
								NB 90	4	.97000E+00
263	NB 90	.52560E+05	.13188E-04	6.1100	1.9085	1.8330	1 0	NB 90M	2	.10000E+01
264	NB 90P	.24000E+02	.28881E-01	.1200	0.0000	.1200	0 0	MO 90	4	.10000E+01
265	MC 90	.20520E+05	.33779E-04	2.3700	.6614	.7110	1 0			0 0.
266	SE 91	.14837E+00	.46717E+01	10.8210	3.5187	3.2463	1 0			0 0.
267	BR 91	.63000E+00	.11002E+01	8.8136	2.8305	2.6441	1 0	SE 91	1	.10000E+01
268	KR 91	.86000E+01	.80599E-01	5.0800	2.0561	.4717	0 0	BR 91	1	.93000E+00
								BR 92	6	.26000E+00
269	RB 91	.58000E+02	.11951E-01	5.6800	1.7625	1.7040	1 0	KR 91	1	.10000E+01
								KR 92	6	.40000E-03
270	SR 91	.34200E+05	.20267E-04	2.6820	.6558	.6870	0 0	RB 91	1	.10000E+01
								RB 92	6	.10000E-03
								SR 90	3	.10000E+01
271	Y 91	.50553E+07	.13711E-06	1.5450	.6060	.0027	0 0	SR 91	1	.42400E+00
								Y 91M	2	.10000E+01
272	Y 91P	.29826E+04	.23240E-03	.5556	0.0000	.5552	0 0	SR 91	1	.57500E+00

337 099

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE SG	M. NUCL	DTYP	BRANCHING
273	Zr 91	0.	0.	0.0000	0.0000	0.0000	0 0	Y 91	1	.10000E+01
								NB 91M	4	.30000E-01
								NB 91	4	.10000E+01
274	NB 91	.69315E+20	.10000E-19	1.1000	.2712	.3300	1 0	MO 91	4	.10000E+01
								NB 91M	2	.97000E+00
275	NB 91M	.53568E+07	.12940E-06	.1045	0.0000	.1045	0 0	MO 91M	4	.43000E+00
276	MC 91	.9294CE+03	.74580E-03	4.4600	1.3492	1.3380	1 0	MO 91M	2	.57000E+00
277	MC 91M	.65000E+02	.10664E-01	2.5310	.7136	.7593	1 0			0 0.
278	SE 92	.50214E+00	.13804E+01	9.2156	2.9681	2.7647	1 0			0 0.
279	BR 92	.25000E+00	.27726E+01	11.7930	3.0517	3.5379	1 0	SE 92	1	.10000E+01
280	KR 92	.18400E+01	.37671E+00	6.6000	2.6681	.7378	0 0	BR 92	1	.74000E+00
281	RB 92	.44800E+01	.15472E+00	8.1800	3.6974	.2140	0 0	KR 92	1	.99960E+00
								KR 93	6	.32000E-01
282	SR 92	.97560E+04	.71048E-04	1.9300	.1998	1.3334	0 0	RB 92	1	.99990E+00
								RB 93	6	.16200E-01
283	Y 92	.12744E+05	.54390E-04	3.6200	1.4533	.2517	0 0	SR 92	1	.10000E+01
284	ZR 92	0.	0.	0.0000	0.0000	0.0000	0 0	Y 92	1	.10000E+01
								NB 92M	4	.10000E+01
								NB 92	4	.10000E+01
285	NB 92	.11038E+11	.62799E-10	2.0100	.5475	.6030	1 0			0 0.
286	NB 92M	.87523E+06	.79196E-06	2.1450	.5897	.6435	1 0			0 0.
287	MC 92	0.	0.	0.0000	0.0000	0.0000	0 0			0 0.
288	SE 93	.83071E-01	.83440E+01	11.6100	3.7890	3.4830	1 0			0 0.
289	BR 93	.21898E+00	.31654E+01	10.1910	3.3023	3.0573	1 0	SE 93	1	.10000E+01
290	KR 93	.12890E+01	.53774E+00	7.0000	2.2113	2.1000	1 0	BR 93	1	.10000E+01
291	RB 93	.58000E+01	.11951E+00	7.3300	2.3238	2.1990	1 0	KR 93	1	.96800E+00
								KR 94	6	.44000E-01
292	SR 93	.45600E+03	.15201E-02	4.1000	1.1598	1.3450	0 0	RB 93	1	.98380E+00
								RB 94	6	.11100E+00
293	Y 93	.36360E+05	.19063E-04	2.8900	1.1810	.0895	0 0	SR 93	1	.10000E+01
								Y 93M	2	.10000E+01
294	Y 93M	.43800E+03	.15825E-02	.2500	0.0000	.2500	0 0			0 0.
295	ZR 93	.48250E+14	.14366E-13	.0900	.0192	0.0000	0 1	Y 93	1	.10000E+01
296	NB 93	0.	0.	0.0000	0.0000	0.0000	0 0	ZR 93	1	.50000E-01
								NB 93M	2	.10000E+01
								MO 93	4	.15000E+00
297	NB 93M	.37843E+09	.18316E-08	.0304	0.0000	.0304	0 0	ZR 93	1	.95000E+00
								MO 93	4	.65000E+00
298	MC 93	.94608E+11	.73265E-11	.4200	.1115	.0546	1 0	MO 93M	2	.10000E+01
								TC 93M	4	.18000E+00
								TC 93	4	.10000E+01
299	MC 93M	.24840E+05	.27905E-04	2.4280	.6802	.7284	1 0			0 0.
300	TC 93	.98280E+04	.70528E-04	3.1900	.9283	.9570	1 0	TC 93M	2	.82000E+00
301	TC 93M	.25800E+04	.26866E-03	.9640	0.0000	.7990	0 0			0 0.
302	SE 94	.26521E+00	.26136E+01	10.6080	3.4454	3.1824	1 0			0 0.
303	BR 94	.66502E-01	.10423E+02	13.1510	4.3183	3.9453	1 0	SE 94	1	.10000E+01
304	KR 94	.20000E+00	.34657E+01	7.5000	2.3820	2.2500	1 0	BR 94	1	.10000E+01
305	RB 94	.26900E+01	.25768E+00	10.1400	3.8702	1.5290	0 0	KR 94	1	.95600E+00
306	SR 94	.78000E+02	.88865E-02	3.3500	.8696	1.7425	0 0	RB 94	1	.88900E+00
								RB 95	6	.71000E-01
307	Y 94	.11460E+04	.60484E-03	4.8600	1.6906	.9972	0 0	SR 94	1	.10000E+01
308	ZR 94	0.	0.	0.0000	0.0000	0.0000	0 0	Y 94	1	.10000E+01
								ZR 93	3	.10000E+01

337-100

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE SG	M. NUCL	DTYP	BRANCHING
309	NB 94	.63072E+12	.1C990E-11	2.0500	.1910	1.5600	0 0	NB 94M	2	.99800E+00
310	NB 94M	.37560E+03	.18454E-02	.0448	.0013	.0413	0 0			0 0.
311	MC 94	0.	0.	0.0000	0.0000	0.0000	0 0	NB 94 NB 94M	1 1	.10000E+01 .20000E-02
312	SE 95	.30441E-01	.22770E+02	13.5490	4.4550	4.0647	1 0			0 0.
313	BR 95	.84008E-01	.82510E+01	11.5900	3.7821	3.4770	1 0	SE 95	1	.10000E+01
314	KR 95	.10000E+01	.69315E+00	6.5000	2.0410	1.9500	1 0	BR 95	1	.10000E+01
315	RB 95	.36000E+00	.19254E+01	8.6000	2.7575	2.5800	1 0	KR 95	1	.10000E+01
316	SR 95	.26000E+02	.26660E-01	6.1100	1.9085	1.8330	1 0	RB 95 RB 96	1 6	.92900E+00 .12700E+00
317	Y 95	.64200E+03	.1C797E-02	4.4300	1.7732	.4018	0 0	SR 95	1	.10000E+01
318	ZR 95	.55279E+07	.12539E-06	1.1223	.1205	.7359	0 0	Y 95	1	.10000E+01
319	NB 95	.30370E+07	.22824E-06	.9255	.0473	.7652	0 0	ZR 95 NB 95M	1 2	.98800E+00 .10000E+01
320	NB 95M	.31190E+06	.22223E-05	.2356	0.0000	.2355	0 0	ZR 95	1	.12000E-01
321	MC 95	0.	0.	0.0000	0.0000	0.0000	0 1	NB 95 TC 95M TC 95 TC 95M RU 95	1 4 4 2 4	.10000E+01 .90000E+00 .10000E+01 .40000E-01 .10000E+01
322	TC 95	.72000E+05	.96270E-05	1.6600	.4380	.4980	1 0			0 0.
323	TC 95M	.52704E+07	.13152E-06	1.6990	.4499	.5097	1 0			0 0.
324	RU 95	.59400E+04	.11669E-03	2.3500	.6550	.7050	1 0			0 0.
325	SE 96	.15345E+00	.45171E+01	11.9670	3.9115	3.5901	1 0			C C.
326	BR 96	.29562E-01	.23447E+02	14.4880	4.7780	4.3464	1 0	SE 96	1	.10000E+01
327	KR 96	.93785E+00	.73908E+00	8.0304	2.5631	2.4091	1 0	BR 96	1	.10000E+01
328	RB 96	.20700E+00	.33489E+01	10.5610	3.4293	3.1683	1 0	KR 96	1	.10000E+01
329	SR 96	.40000E+01	.17329E+00	4.1222	1.2191	1.2367	1 0	RB 96 RB 97	1 6	.87300E+00 .21000E+00
330	Y 96	.13800E+03	.50228E-02	6.8000	1.1540	4.0500	0 0	SR 96 SR 97	1 6	.10000E+01 .10000E-02
331	ZR 96	0.	0.	0.0000	0.0000	0.7000	0 0	Y 96 Y 97	1 6	.10000E+01 .16000E-01
332	NB 96	.84060E+05	.82459E-05	3.1870	.2537	2.4431	0 0			0 0.
333	MC 96	0.	0.	0.0000	0.0000	0.0000	0 0	NB 96 MO 95	1 3	.10000E+01 .10000E+01
334	KR 97	.10000E+00	.69315E+01	10.9560	3.5653	3.2868	1 0			0 0.
335	RB 97	.17600E+00	.39383E+01	9.0059	2.8964	2.7018	1 0	KR 97	1	.10000E+01
336	SR 97	.20000E+00	.34657E+01	7.0644	2.2332	2.1193	1 0	RB 97 RB 98	1 6	.79000E+00 .26000E+00
337	Y 97	.11100E+01	.62446E+00	5.1382	1.5793	1.5415	1 0	SR 97 SR 98	1 6	.99910E+00 .50000E-02
338	ZR 97	.61200E+05	.11326E-04	2.6720	.7170	.2370	0 0	Y 97 Y 98	1 6	.98400E+00 .48000E-02
339	NB 97	.43260E+04	.16023E-03	1.9360	.4738	.6656	0 0	ZR 97 NB 97M	1 2	.13800E+00 .10000E+01
340	NB 97M	.60000E+02	.11552E-01	.7430	0.0000	.7427	0 0	ZR 97	1	.86200E+00
341	MC 97	0.	0.	0.0000	0.0000	0.0000	0 1	NB 97 TC 97	1 4	.10000E+01 .10000E+01
342	TC 97	.61994E+14	.84537E-14	.3000	.0760	.0390	1 0	RU 97 TC 97M	4 2	.99960E+00 .10000E+01
343	TC 97M	.77760E+07	.89139E-07	.0965	0.0000	.0965	0 0	RU 97	4	.40000E-03

337 101

TABLE IV (continued)

NC.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M.NUCL	DTYP	BRANCHING
344	RL 97	.24970E+06	.27700E-05	1.2000	.2999	.3600	1	0			0 0.
345	KR 98	.45804E+00	.15133E+01	9.4041	3.0327	2.8212	1	0			0 0.
346	RB 98	.13600E+00	.50967E+01	11.9110	3.8922	3.5733	1	0	KR 98	1	.10000E+01
347	SR 98	.85000E+00	.81547E+00	5.5344	1.7133	1.6603	1	0	RB 98	1	.74000E+00
									RB 99	6	.37000E+00
348	Y 98	.30000E+00	.23105E+01	8.0575	2.5724	2.4173	1	0	SR 98	1	.99500E+00
349	ZR 98	.31000E+02	.22360E-01	2.2400	.6197	.6720	1	0	Y 98	1	.99520E+00
									Y 99	6	.38000E-01
350	NB 98	.30600E+04	.22652E-03	4.6000	.8913	2.4140	0	0			0 0.
351	NB 98M	.28000E+01	.24755E+00	4.6000	1.9851	.1159	0	0	ZR 98	1	.10000E+01
352	MC 98	0.	0.	0.0000	0.0000	0.0000	0	0	NB 98	1	.10000E+01
									NB 98M	1	.10000E+01
									MO 97	3	.10000E+01
353	TC 98	.47304E+14	.14653E-13	1.7000	.0816	1.4200	0	0			0 0.
354	RU 98	0.	0.	0.0000	0.0000	0.0000	0	0	TC 98	1	.10000E+01
355	KR 99	.57475E-01	.12060E+02	12.2870	4.0212	3.6861	1	0			0 0.
356	RB 99	.76000E-01	.91204E+01	10.3630	3.3613	3.1089	1	0	KR 99	1	.10000E+01
357	SR 99	.56003E+00	.12377E+01	8.4420	2.7035	2.5326	1	0	RB 99	1	.63000E+00
358	Y 99	.80000E+00	.86643E+00	6.5286	2.0507	1.9586	1	0	SR 99	1	.10000E+01
359	ZR 99	.24000E+01	.28881E+00	4.6284	1.4077	1.3885	1	0	Y 99	1	.96200E+00
360	NB 99	.14300E+02	.48472E-01	3.7360	1.5102	.2360	0	0	ZR 99	1	.10000E+01
361	NB 99M	.15600E+03	.44433E-02	4.1050	1.3666	.9050	0	0			0 0.
362	MC 99	.23767E+06	.29164E-05	1.3722	.3937	.1700	0	0	NB 99	1	.10000E+01
									NB 99M	1	.10000E+01
363	TC 99	.67172E+13	.10319E-12	.2911	.0880	0.0000	0	1	MO 99	1	.13700E+00
									TC 99M	2	.10000E+01
364	TC 99M	.21672E+05	.31984E-04	.1426	0.0000	.1427	0	0	MO 99	1	.86300E+00
365	RU 99	0.	0.	0.0000	0.0000	0.0000	0	0	TC 99	1	.10000E+01
									RH 99M	4	.10000E+01
									RH 99	4	.10000E+01
366	RH 99	.12960E+07	.53484E-06	2.0500	.5599	.6150	1	0	PD 99	4	.10000E+01
367	RH 99M	.16920E+05	.40966E-04	2.1000	.5755	.6300	1	0	PD 99	4	0.
368	PD 99	.13800E+04	.50228E-03	3.8000	1.1165	1.1400	1	0			0 0.
369	KR100	.25088E-01	.27629E+02	10.7380	3.4902	3.2214	1	0			0 0.
370	RB100	.63347E-01	.10942E+02	13.2770	4.3616	3.9831	1	0	KR100	1	.10000E+01
371	SR100	.18440E+01	.37590E+00	6.9188	2.1835	2.0756	1	0	RB100	1	.10000E+01
372	Y 100	.10909E+01	.63537E+00	9.4156	3.0367	2.8247	1	0	SR100	1	.10000E+01
373	ZR100	.71000E+01	.97626E-01	3.1000	.8989	.9300	1	0	Y 100	1	.10000E+01
374	NB100	.15000E+01	.46210E+00	6.5000	2.0410	1.9500	1	0	ZR100	1	.10000E+01
375	NB100M	.31000E+01	.22360E+00	6.5000	2.0410	1.9500	1	0			0 0.
376	MC100	0.	0.	0.0000	0.0000	0.0000	0	0	NB100	1	.10000E+01
									NB100M	1	.10000E+01
377	TC100	.16000E+02	.43322E-01	3.3700	1.4000	.0780	0	0	TC 99	3	.10000E+01
378	RU100	0.	0.	0.0000	0.0000	0.0000	0	1	TC100	1	.10000E+01
379	RB101	.10195E+00	.67990E+01	11.2500	3.6658	3.3750	1	0			0 0.
380	SR101	.28492E+00	.24328E+01	9.7864	3.1637	2.9359	1	0	RB101	1	.10000E+01
381	Y 101	.11493E+01	.60311E+00	7.8947	2.5167	2.3684	1	0	SR101	1	.10000E+01
382	ZR101	.33000E+01	.21004E+00	6.5000	2.5970	.7650	0	0	Y 101	1	.10000E+01
383	NB101	.70000E+01	.99021E-01	4.6000	1.8473	.4000	0	0	ZR101	1	.10000E+01
384	MC101	.87720E+03	.79018E-03	2.8200	.5759	1.3371	0	0	NB101	1	.10000E+01
385	TC101	.85200E+03	.81355E-03	1.6270	.4796	.3403	0	0	MO101	1	.10000E+01

337 102

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M. NUCL	DTYP	BRANCHING
386	RU101	0.	0.	0.0000	0.0000	0.0000	0	1	TC101	1	.10000E+01
									RH101M	4	.90000E+00
									RH101	4	.10000E+01
									RU100	3	.10000E+01
387	RH101	.94608E+08	.73265E-08	.5600	.1250	.1680	1	0	RH101M	2	.10000E+00
388	RH101M	.38621E+06	.17948E-05	.6613	.1509	.1984	1	0	PD101	4	.10000E+01
389	PD101	.29880E+05	.23198E-04	1.9900	.5412	.5970	1	0		0	0.
390	SR102	.82261E+00	.84262E+00	8.2658	2.6433	2.4797	1	0		0	0.
391	Y 102	.90000E+00	.77016E+00	10.7430	3.4919	3.2229	1	0	SR102	1	.10000E+01
392	ZR102	.80000E+00	.86643E+00	4.5122	1.3589	1.3537	1	0	Y 102	1	.10000E+01
393	NB102	.29000E+01	.23902E+00	7.0000	2.2113	2.1000	1	0	ZR102	1	.10000E+01
394	MC102	.16600E+03	.10408E-02	1.0400	.2543	.3120	1	0	NB102	1	.10000E+01
395	TC102	.52800E+01	.13128E+00	4.5000	1.7518	.4907	0	0	MD102	1	.10000E+01
396	TC102M	.26100E+03	.26557E-02	5.0000	1.0195	2.5540	0	0		0	0.
397	RU102	0.	0.	0.0000	0.0000	0.0000	0	1	TC102M	1	.10000E+01
									TC102	1	.10000E+01
									RU101	3	.10000E+01
									RH102M	4	.10000E+01
									RH102	4	.84000E+00
398	RH102	.17885E+08	.38756E-07	2.3200	.6453	.6960	1	0		0	0.
399	RH102M	.66225E+08	.10467E-07	2.3200	.6453	.6960	1	0		0	0.
400	PD102	0.	0.	0.0000	0.0000	0.0000	0	0	RH102	1	.16000E+00
401	RB103	.40654E-01	.17050E+02	12.9590	4.2525	3.8877	1	0		0	0.
402	SR103	.14381E+00	.48200E+01	10.6700	3.4667	3.2010	1	0	RB103	1	.10000E+01
403	Y 103	.41801E+00	.16582E+01	9.2254	2.9715	2.7676	1	0	SR103	1	.10000E+01
404	ZR103	.18078E+01	.38343E+00	7.3627	2.3350	2.2088	1	0	Y 103	1	.10000E+01
405	NB103	.11914E+02	.58177E-01	5.5070	1.7041	1.6521	1	0	ZR103	1	.10000E+01
406	MD103	.60000E+02	.11552E-01	4.4000	1.3257	1.3200	1	0	NB103	1	.10000E+01
407	TC103	.50000E+02	.13863E-01	2.2000	.6070	.6600	1	0	MD103	1	.10000E+01
408	RU103	.33998E+07	.20388E-06	.7617	.0766	.5107	0	0	TC103	1	.10000E+01
									RU102	3	.10000E+01
409	RH103	0.	0.	0.0000	0.0000	0.0000	0	1	RU103	1	.10000E-01
									RH103M	2	.10000E+01
									PD103	4	.10000E-02
410	RH103M	.33600E+04	.20629E-03	.0398	0.0000	.0398	0	0	RU103	1	.99000E+00
									PD103	4	.99900E+00
411	PD103	.14688E+07	.47191E-06	.5600	.1250	.1680	1	0	AG103	4	.10000E+01
412	AG103	.39600E+04	.17504E-03	2.6000	.7357	.7800	1	0	AG103M	2	.10000E+01
413	AG103M	.58000E+01	.11951E+00	.1380	0.0000	.1380	0	0		0	0.
414	SR104	.42281E+00	.16394E+01	9.5715	3.0901	2.8715	1	0		0	0.
415	Y 104	.13988E+00	.49553E+01	12.0330	3.9341	3.6099	1	0	SR104	1	.10000E+01
416	ZR104	.38900E+01	.17819E+00	5.8685	1.8265	1.7606	1	0	Y 104	1	.10000E+01
417	NB104	.30200E+01	.22952E+00	8.3379	2.6679	2.5014	1	0	ZR104	1	.10000E+01
418	MC104	.78000E+02	.88865E-02	2.4000	.6711	.7200	1	0	NB104	1	.10000E+01
419	TC104	.10920E+04	.63475E-03	5.4000	1.6158	1.6810	0	0	MD104	1	.10000E+01
420	RU104	0.	0.	0.0000	0.0000	0.0000	0	1	TC104	1	.10000E+01
									RH104	4	.12000E-02
421	RH104	.42000E+02	.16504E-01	2.4430	1.0030	.0115	0	1	RH104M	2	.99800E+00
									RH103	3	.10000E+01
										0	0.
										0	0.
422	PD104	.26100E+03	.26557E-02	.1339	.0006	.1322	0	0	RH104	1	.99880E+00
423	PD104	0.	0.	0.0000	0.0000	0.0000	0	0	RH104M	1	.20000E-02
										0	0.
424	SR105	.59452E-01	.12500E+02	12.3550	4.0446	3.7065	1	0		0	0.
425	Y 105	.20550E+00	.33730E+01	10.1000	3.2712	3.0300	1	0	SR105	1	.10000E+01

337 103

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE SG	M. NUCL	DTYP	BRANCHING
426	ZR105	.62132E+00	.11156E+01	8.6791	2.7845	2.6037	1 0	Y 105	1	.10000E+01
427	NR105	.18000E+01	.38508E+00	7.0000	2.2113	2.1000	1 0	ZR105	1	.10000E+01
428	MC105	.42000E+02	.16504E-01	5.5000	1.7017	1.6500	1 0	NB105	1	.10000E+01
429	TC105	.46800E+03	.14811E-02	3.4000	.9977	1.0200	1 0	MO105	1	.10000E+01
430	RU105	.15984E+05	.43365E-04	1.9170	.4076	.7980	0 0	TC105	1	.10000E+01
431	RH105	.12730E+06	.54452E-05	.5655	.1567	.0785	0 1	RU105	1	.74200E+00
								RH105M	2	.10000E+01
								RH104	3	.10000E+01
432	RH105P	.45000E+02	.15403E-01	.1300	0.0000	.1300	0 0	RU105	1	.25800E+00
433	PD105	0.	0.	0.0000	0.0000	0.0000	0 1	RH105	1	.10000E+01
								AG105	4	.10000E+01
434	AG105	.35424E+07	.19567E-06	1.3000	.3292	.3900	1 0	CD105	4	.10000E+01
								AG105M	2	.10000E+01
435	AG105P	0.	0.	0.0000	0.0000	0.0000	0 0			0 0.
436	CD105	.34200E+04	.20268E-03	2.8000	.8005	.8400	1 0			0 0.
437	Y 106	.76011E-01	.91190E+01	13.0100	4.2700	3.9030	1 0			0 0.
438	ZR106	.15530E+01	.44633E+00	7.1857	2.2745	2.1557	1 0	Y 106	1	.10000E+01
439	NB106	.89723E+00	.77294E+00	9.6380	3.1128	2.8914	1 0	ZR106	1	.10000E+01
440	MC106	.95000E+01	.72963E-01	3.9000	1.1449	1.1700	1 0	NB106	1	.10000E+01
441	TC106	.36000E+02	.19254E-01	6.9000	2.0410	1.9500	1 0	MO106	1	.10000E+01
442	RU106	.31812E+08	.21789E-07	.0394	.0130	0.0000	0 1	TC106	1	.10000E+01
443	RH106	.29900E+02	.23182E-01	3.5400	1.4327	.1884	0 0	RU106	1	.10000E+01
								RH105	3	.10000E+01
444	RH106P	.79200E+04	.87519E-04	3.6780	.3212	2.7633	0 0			0 0.
445	PD106	0.	0.	0.0000	0.0000	0.0000	0 0	RH106M	1	.10000E+01
								RH106	1	.10000E+01
								PD105	3	.10000E+01
								AG106M	4	.10000E+01
								AG106	4	.10000E+01
446	AG106	.14460E+04	.47936E-03	2.9600	.8531	.8880	1 0			0 0.
447	AG106P	.72576E+06	.95506E-06	3.2600	.9513	.9780	1 0			0 0.
448	CD106	0.	0.	0.0000	0.0000	0.0000	0 0			0 0.
449	Y 107	.10252E+00	.67610E+01	11.2400	3.6624	3.3720	1 0			0 0.
450	ZR107	.25488E+00	.27195E+01	9.9557	3.2218	2.9867	1 0	Y 107	1	.10000E+01
451	NB107	.93689E+00	.73984E+00	8.1471	2.6029	2.4441	1 0	ZR107	1	.10000E+01
452	MC107	.47606E+01	.14560E+00	6.3427	1.9874	1.9028	1 0	NB107	1	.10000E+01
453	TC107	.29000E+02	.23902E-01	4.5463	1.3803	1.3639	1 0	MO107	1	.10000E+01
454	RU107	.25200E+03	.27506E-02	3.1500	1.2245	.2407	0 0	TC107	1	.10000E+01
								RU106	3	.10000E+01
455	RH107	.13020E+04	.53237E-03	1.5100	.4412	.3098	0 0	RU107	1	.10000E+01
456	PD107	.20498E+15	.33815E-14	.0330	.0110	0.0000	0 1	RH107	1	.10000E+01
								PD107M	2	.10000E+01
457	PD107M	.21300E+02	.32542E-01	.2100	0.0000	.2100	0 0			0 0.
458	AG107	0.	0.	0.0000	0.0000	0.0000	0 0	PD107	1	.10000E+01
								AG107M	2	.10000E+01
								CD107	4	.34000E-02
459	AG107M	.44000E+02	.15753E-01	.0931	0.0000	.0931	0 0	CD107	4	.99660E+00
460	CD107	.23400E+05	.29622E-04	1.4170	.3644	.4251	1 0	IN107	4	.10000E+01
461	IN107	.19200E+04	.36101E-03	3.5000	1.0311	1.0500	1 0			0 0.
462	ZR108	.73971E+00	.93705E+00	8.4610	2.7100	2.5383	1 0			0 0.
463	NB108	.32020E+00	.21647E+01	10.9000	3.5460	3.2700	1 0	ZR108	1	.10000E+01

337 104

TABLE IV (continued)

NO.	NUCL.	HA' (SEC)	TFE	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE SG	M. NUCL	DTYP	BRANCHING
464	MO108	.15000E+01		.46210E+00	4.6738	1.4902	1.4621	1 0	NB108	1	.10000E+01
469	TC108	.52000E+01		.13330E+00	7.3217	2.3209	2.1965	1 0	MO108	1	.10000E+01
466	RU108	.27000E+03		.25672E-02	1.3200	.4724	.0476	0 0	TC108	1	.10000E+01
467	RH108	.16800E+02		.41259E-01	4.5000	1.8120	.3563	0 0	RU108	1	.10000E+01
468	RH108M	.35400E+03		.19580E-02	4.4300	.8041	2.4395	0 0			0 0.
469	PD108	0.		0.	0.0000	0.0000	0.0000	0 1	RH108	1	.10000E+01
									RH108M	1	.10000E+01
									AG108	4	.23000E-01
									AG108M	4	.92300E+00
									PD107	3	.10000E+01
									AG108M	2	.77000E-01
470	AG108	.14460E+03		.47936E-02	1.6462	.5013	.2841	0 0			
471	AG108M	.40997E+10		.16907E-09	1.8729	0.0000	.9000	0 0			0 0.
472	CD108	0.		0.	0.0000	0.0000	0.0000	0 0	AG108	1	.97700E+00
473	ZR109	.18318E+00		.37840E+01	10.2800	3.3328	3.0840	1 0			0 0.
474	NB109	.36783E+00		.18844E+01	9.4089	3.0344	2.8227	1 0	ZR109	1	.10000E+01
475	MC109	.14352E+01		.48296E+00	7.6291	2.4260	2.2887	1 0	NB109	1	.10000E+01
476	TC109	.80081E+01		.86556E-01	5.8545	1.8218	1.7564	1 0	MO109	1	.10000E+01
477	RU109	.34500E+02		.20091E-01	4.0892	1.2067	1.2268	1 0	TC109	1	.10000E+01
478	RH109	.90000E+02		.77086E-02	2.5000	.7038	.7500	1 0	RU109	1	.50000E+00
									RH109M	2	.10000E+01
479	RH109M	.50000E+02		.13863E-01	.2500	0.0000	.2500	0 0	RU109	1	.50000E+00
480	PD109	.48456E+05		.14305E-04	1.1160	.3666	.0007	0 0	RH109	1	.50000E+00
									PD109M	2	.10000E+01
									PD108	3	.10000E+01
481	PD109M	.28140E+03		.24632E-02	.1880	0.0000	.1880	0 0	RH109	1	.50000E+00
482	AG109	0.		0.	0.0000	0.0000	0.0000	0 1	PD109	1	.20000E-03
									AG109M	2	.10000E+01
483	AG109M	.39600E+02		.17504E-01	.0877	0.0000	.0877	0 0	PD109	1	.99980E+00
									CD109	4	.10000E+01
484	CD109	.39200E+08		.17682E-07	.0900	.0246	.0160	0 0	IN109	4	.10000E+01
485	IN109	.15120E+05		.45843E-04	2.0200	.5506	.6060	1 0	IN109M	2	.10000E+01
486	IN109M	.75000E+02		.88865E-02	.6580	0.0000	.6580	0 0			0 0.
487	ZR110	.39914E+00		.17366E+01	9.6937	3.1319	2.9081	1 0			0 0.
488	NB110	.13157E+00		.52682E+01	12.1220	3.9646	3.6366	1 0	ZR110	1	.10000E+01
489	MC110	.31241E+01		.22187E+00	6.1600	1.9254	1.8480	1 0	NB110	1	.10000E+01
490	TC110	.82000E+00		.84530E+00	9.0000	2.8944	2.7000	1 0	MO110	1	.10000E+01
491	RU110	.15900E+02		.43594E-01	2.5000	.7038	.7500	1 0	TC110	1	.10000E+01
492	RH110	.28500E+02		.24321E-01	5.4000	1.3521	2.2210	0 0	RU110	1	.10000E+01
493	RH110M	.30000E+01		.23105E+00	5.5000	2.4812	.0561	0 0			0 0.
494	PD110	0.		0.	0.0000	0.0000	0.0000	0 0	RH110	1	.10000E+01
									RH110M	1	.10000E+01
									AG110	4	.30000E-02
495	AG110	.24600E+02		.28177E-01	2.8839	1.1800	.0416	0 0	AG110M	2	.14000E-01
									AG109	3	.96700E+00
496	AG110M	.21773E+08		.31835E-07	2.9458	.0680	2.7900	0 0	AG109	3	.33000E-01
497	CD110	0.		0.	0.0000	0.0000	0.0000	0 0	AG110	1	.99700E+00
									AG110M	1	.98600E+00
											0 0.
498	NB111	.20027E+00		.34610E+01	10.1400	3.2849	3.0420	1 0			
499	MC111	.62558E+00		.11080E+01	8.5100	2.7268	2.5530	1 0	NB111	1	.10000E+01
500	TC111	.22358E+01		.31002E+00	7.1256	2.2540	2.1377	1 0	MO111	1	.10000E+01
501	RU111	.13831E+02		.50114E-01	5.3819	1.6616	1.6146	1 0	TC111	1	.10000E+01

337 105

TABLE IV (continued)

NC.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M. NUCL	DTYP	BRANCHING
502	RH111	.17198E+03	.40303E-02	3.6505	1.0740	1.0952	1	0	RU111	1	.10000E+01
503	PD111	.13200E+04	.52511E-03	2.1405	.8442	.0529	0	0	RH111	1	.99570E+00
									PD111M	2	.68000E+00
504	PD111M	.19800E+05	.35007E-04	2.3600	.1913	.3190	0	0	RH111	1	.43000E-02
505	AG111	.64541E+06	.10740E-05	1.0280	.3985	.0193	0	0	PD111	1	.75000E-02
									PD111M	1	.66000E-01
									AG111M	2	.10000E+01
506	AG111M	.74000E+02	.93669E-02	.0650	0.0000	.0650	0	0	PD111	1	.99250E+00
									PD111M	1	.25430E+00
507	CD111	0.	0.	0.0000	0.0000	0.0000	0	0	AG111	1	.10000E+01
									CD111M	2	.10000E+01
									IN111	4	.99990E+00
508	CD111M	.29220E+04	.23722E-03	.3960	0.0000	.3960	0	0	IN111	4	.10000E-03
509	IN111	.24365E+06	.28449E-05	1.1000	.2712	.3300	1	0	SN111	4	.10000E+01
									IN111M	2	.10000E+01
510	IN111M	.48000E+03	.14441E-02	0.0000	0.0000	0.0000	0	0			0 0.
511	SN111	.21060E+04	.32913E-03	2.5200	.7101	.7560	1	0			0 0.
512	NB112	.74078E-01	.93570E+01	13.0500	4.2837	3.9150	1	0			0 0.
513	MC112	.13556E+01	.51131E+00	7.4042	2.3492	2.2213	1	0	NB112	1	.10000E+01
514	TC112	.76376E+00	.90795E+00	9.8252	3.1770	2.9476	1	0	MO112	1	.10000E+01
515	RU112	.70000E+00	.99021E+00	3.9359	1.1551	1.1808	1	0	TC112	1	.10000E+01
516	RH112	.46500E+01	.14906E+00	6.3723	1.9975	1.9117	1	0	RU112	1	.10000E+01
517	PD112	.72432E+05	.95696E-05	.3000	.0844	.0200	0	0	RH112	1	.10000E+01
518	AG112	.11232E+05	.61712E-04	4.0000	1.4239	.6680	0	0	PD112	1	.10000E+01
519	CD112	0.	0.	0.0000	0.0000	0.0000	0	0	AG112	1	.10000E+01
									IN112	4	.56000E+00
520	IN112	.86400E+03	.80225E-03	1.7410	.4628	.5223	1	0	IN112M	2	.10000E+01
521	IN112M	.12480E+04	.55541E-03	.1560	0.0000	.1560	0	0			0 0.
522	SN112	0.	0.	0.0000	0.0000	0.0000	0	0	IN112	1	.44000E+00
523	MO113	.28583E+00	.24250E+01	9.6000	3.0998	2.8800	1	0			0 0.
524	TC113	.79449E+00	.87244E+00	8.3566	2.6743	2.5070	1	0	MO113	1	.10000E-01
525	RU113	.35432E+01	.19563E+00	6.6379	2.0878	1.9914	1	0	TC113	1	.10000E+01
526	RH113	.24505E+02	.18286E-01	4.9281	1.5086	1.4784	1	0	RU113	1	.10000E+01
527	PD113	.90000E+02	.17086E-02	3.5750	1.0641	.9221	0	0	RH113	1	.10000E+01
528	AG113	.19332E+05	.35855E-04	2.0100	.7752	.0541	0	0	PD113	1	.90000E+00
529	AG113M	.72000E+02	.96270E-02	2.0100	.5519	.5505	0	0	PD113	1	.10000E+00
530	CD113	0.	0.	0.0000	0.0000	0.0000	0	1	AG113	1	.98700E+00
									AG113M	1	.95500E+00
									CD113M	2	.10000E-02
531	CD113M	.42889E+09	.16161E-08	.5610	.1916	0.0000	0	0	AG113	1	.13000E-01
									AG113M	1	.45000E-01
532	IN113	0.	0.	0.0000	0.0000	0.0000	0	0	CD113M	1	.99900E+00
									IN113M	2	.10000E+01
									SN113M	4	.90000E-01
533	IN113M	.59688E+04	.11613E-03	.3930	0.0000	.3930	0	0	SN113	4	.10000E+01
534	SN113	.99360E+07	.65761E-07	1.0200	.2487	.3060	1	0	SN113M	2	.91000E+00
									SB113	4	.10000E+01
535	SN113M	.12000E+04	.57762E-03	.0719	0.0000	.0719	0	0			0 0.
536	SB113	.18049E+02	.38404E-01	0.0000	0.0000	0.0000	0	0			0 0.
537	MO114	.68669E+00	.10094E+01	8.6013	2.7579	2.5804	1	0			0 0.
538	TC114	.29307E+00	.23651E+01	11.0160	3.5860	3.3048	1	0	MO114	1	.10000E+01

337 100

TABLE IV (continued)

NC.	NLCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M.NUCL	DTYP	BRANCHING
539	RU114	.67952E+01	.10200E+00	5.1905	1.5969	1.5572	1	0	TC114	1	.10000E+01
540	RH114	.64557E+01	.10737E+00	7.6143	2.4209	2.2843	1	0	RU114	1	.10000E+01
541	PD114	.14400E+03	.48135E-02	2.1000	.5792	.5937	0	0	RH114	1	.10000E+01
542	AG114	.45200E+01	.15335E+00	4.8600	2.0525	.2071	0	0	PD114	1	.10000E+01
543	CD114	0.	0.	0.0000	0.0000	0.0000	0	0	AG114	1	.10000E+01
									IN114	4	.20000E-01
									IN114M	4	.35000E-01
									CD113	3	.10000E+01
544	IN114	.71900E+02	.96404E-02	1.9888	1.0000	.3875	0	0	IN114M	2	.96000E+00
545	IN114M	.42777E+07	.16204E-06	.2000	.0167	.1961	0	0		0	0.
546	SN114	0.	0.	0.0000	0.0000	0.0000	0	0	IN114	1	.90000E+00
547	MC115	.14034E+00	.49390E+01	10.7	3.4805	3.2130	1	0		0	0.
548	TC115	.29967E+00	.23130E+01	9.	3.0759	2.8590	1	0	MO115	1	.10000E+01
549	RU115	.11895E+01	.58271E+00	7.8000	2.5024	2.3559	1	0	TC115	1	.10000E+01
550	RH115	.56955E+01	.12170E+00	6.1694	1.9288	1.8510	1	0	RU115	1	.10000E+01
551	PD115	.37400E+02	.18533E-01	4.5000	1.3649	1.3500	1	0	RH115	1	.10000E+01
552	AG115	.12000E+04	.57762E-03	3.1800	1.0470	.6498	0	0	PD115	1	.73000E+00
553	AG115M	.55000E+02	.12603E-01	3.4614	1.0153	.8926	0	0	PD115	1	.27000E+00
554	CD115	.19246E+06	.36016E-05	1.4490	.3046	.5780	0	0	AG115	1	.91500E+00
									AG115M	1	.73000E+00
555	CD115M	.38534E+07	.17988E-06	1.6224	.6139	.0219	0	0	AG115	1	.85000E-01
									AG115M	1	.27000E+00
556	IN115	.16083E+24	.43097E-23	.4860	.1542	0.0000	0	1	CD115M	1	.99990E+00
									IN115M	2	.96300E+00
557	IN115M	.15480E+05	.44777E-04	.8222	.0102	.3240	0	0	CD115	1	.10000E+01
									CD115M	1	.10000E-03
558	SN115	0.	0.	0.0000	0.0000	0.0000	0	0	IN115M	1	.50000E-01
									IN115	1	.10000E+01
									SB115	4	.10000E+01
559	SB115	.19140E+04	.36215E-03	3.0300	.8761	.9090	1	0	TE115	4	.10000E+01
560	TE115	.36000E+03	.19254E-02	4.5000	1.3649	1.3500	1	0		0	0.
561	MO116	.10367E+00	.66859E+01	9.7363	3.1465	2.9209	1	0		0	0.
562	TC116	.24140E-01	.28714E+02	12.1560	3.9763	3.6468	1	0	MO116	1	.10000E+01
563	RU116	.93547E+00	.74096E+00	6.4000	2.0069	1.9200	1	0	TC116	1	.10000E+01
564	RH116	.50676E+00	.13678E+01	8.2184	2.8322	2.6455	1	0	RU116	1	.10000E+01
565	PD116	.13600E+02	.50967E-01	3.0794	.8922	.9238	1	0	RH116	1	.10000E+01
566	AG116	.16080E+03	.43106E-02	6.3000	2.1850	.7096	0	0	PD116	1	.50000E+00
									AG116M	2	.20000E-01
567	AG116M	.87000E+01	.79672E-01	6.2280	.9617	1.5947	0	0	PD116	1	.50000E+00
568	CD116	0.	0.	0.0000	0.0000	0.0000	0	0	AG116	1	.10000E+01
									AG116M	1	.98000E+00
569	IN116	.14200E+02	.48813E-01	3.3200	.9927	.7147	0	0		0	0.
570	IN116M	.32520E+04	.21315E-03	3.3800	1.0106	.7276	0	0	IN116M	2	.10000E+01
									IN115	3	.10000E+01
571	IN116M	.22000E+01	.31507E+00	.2500	0.0000	.2500	0	0		0	0.
572	SN116	0.	0.	0.0000	0.0000	0.0000	0	0	IN116	1	.10000E+01
									IN116M	1	.10000E+01
573	TC117	.10842E+00	.63930E+01	10.3700	3.3637	3.1110	1	0		C	0.
574	RU117	.27661E+00	.25059E+01	9.0172	2.9003	2.7052	1	0	TC117	1	.10000E+01
575	RH117	.10639E+01	.65154E+00	7.3700	2.3375	2.2110	1	0	RU117	1	.10000E+01
576	PD117	.90000E+01	.13863E+00	5.7342	1.7809	1.7203	1	0	RH117	1	.10000E+01

337 107

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M. NUCL	DTYP	BRANCHING
577	AG117	.7320CE+02	.94692E-02	3.8000	1.1165	1.1400	1	0	PD117	1	.50000E+00
578	AG117M	.5300CE+01	.13078E+00	4.5235	1.3408	1.2591	0	0	PD117	1	.50000E+00
579	CD117	.93600E+04	.74054E-04	2.2280	.6340	.5806	0	0	AG117	1	.80000E+00
									AG117M	1	.50000E+00
580	CD117M	.12240E+05	.56630E-04	2.5148	.7157	.6553	0	0	AG117	1	.20000E+00
									AG117M	1	.50000E+00
581	IN117	.2640CE+04	.26256E-03	1.4700	.4074	.3529	0	0	CD117	1	.70000E-01
									CD117M	1	.56000E+00
									IN117M	2	.47000E+00
582	IN117M	.69840E+04	.99248E-04	1.0931	.2621	.3745	0	0	CD117	1	.93000E+00
									CD117M	1	.44000E+00
583	SN117	0.	0.	0.0000	0.0000	0.0000	0	0	IN117M	1	.53000E+00
									SN117M	2	.10000E+01
									SB117	4	.10000E+01
									IN117	1	.10000E+01
584	SN117M	.12096E+07	.57304E-06	.3170	0.0000	.3170	0	0		0	0.
585	SB117	.1008CE+05	.68765E-04	1.8200	.4873	.5460	1	0	TE117	4	.10000E+01
586	TE117	.38400E+04	.18091E-03	3.5000	1.0311	1.0500	1	0		0	0.
587	TC118	.61999E-01	.11180E+02	13.3300	4.3797	3.9990	1	0		0	0.
588	RU118	.39457E+00	.17567E+01	7.5454	2.3974	2.2636	1	0	TC118	1	.10000E+01
589	RH118	.15746E+00	.44020E+01	9.9749	3.2284	2.9925	1	0	RU118	1	.10000E+01
590	PD118	.31000E+01	.22360E+00	4.3121	1.2917	1.2936	1	0	RH118	1	.10000E+01
591	AG118	.37000E+01	.18734E+00	6.5000	2.5558	.8062	0	0	PD118	1	.50000E+00
									AG118M	2	.46000E+00
592	AG118M	.27995E+01	.24760E+00	6.6280	.6920	1.2690	0	0	PD118	1	.50000E+00
593	CD118	.30180E+04	.22967E-03	.8000	.2126	.2268	0	0	AG118	1	.10000E+01
									AG118M	1	.54000E+00
594	IN118	.50000E+01	.13863E-00	4.2000	1.7253	.2192	0	0	CD118	1	.10000E+01
595	IN118M	.2670CE+03	.2541E-02	4.2600	.5770	2.7428	0	0	IN118M	2	.10000E+01
596	IN118M	.85000E+01	.81547E-01	4.4000	.0107	.2360	0	0		0	0.
597	SN118	0.	0.	0.0000	0.0000	0.0000	0	0	IN118M	1	.10000E+01
									IN118	1	.10000E+01
									SB118M	4	.10000E+01
									SB118	4	.10000E+01
598	SB118	.21000E+03	.33007E-02	3.7000	1.0881	1.1100	1	0	TE118	4	.10000E+01
599	SB118M	.17856E+05	.38819E-04	3.8900	1.1420	1.1670	1	0		0	0.
600	TE118	.51840E+06	.13371E-05	.3000	.0760	.0390	1	0		0	0.
601	RU119	.17682E+00	.39200E+01	9.6400	3.1135	2.8920	1	0		0	0.
602	RH119	.4079CE+00	.16993E+01	8.5077	2.7260	2.5523	1	0	RU119	1	.10000E+01
603	PD119	.16047E+01	.43195E+00	6.9300	2.1873	2.0790	1	0	RH119	1	.10000E+01
604	AG119	.86051E+01	.80551E-01	5.3891	1.6640	1.6167	1	0	PD119	1	.10000E+01
605	CD119	.56400E+03	.12290E-02	3.2507	.9401	.9102	0	0	AG119	1	.50000E+00
606	CD119M	.19200E+03	.36101E-02	3.6250	1.0485	1.0152	0	0	AG119	1	.50000E+00
607	IN119	.15000E+03	.46210E-02	2.4956	.6994	.6501	0	0	CD119M	1	.50000E+00
									IN119M	2	.50000E-01
608	IN119M	.10800E+04	.64180E-03	2.6250	.7321	.6931	0	0	CD119	1	.10000E+01
									CD119M	1	.50000E+00
609	SN119	0.	0.	0.0000	0.0000	0.0000	0	0	IN119M	1	.95000E+00
									IN119	1	.95000E+00
									SN119M	2	.10000E+01
									SB119	4	.10000E+01

337 100

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE SG	M. NUCL	DTYP	BRANCHING
610	SN119M	.21168E+08	.32749E-07	.0890	0.0000	.0890	0 0	IN119	1	.50000E-01
611	SB119	.13716E+06	.56536E-05	.5800	.1301	.1740	1 0	TE119M TE119	4 4	.10000E+01 .10000E+01
612	TE119	.57600E+05	.12034E-04	2.2940	.6370	.6882	1 0			0 0.
613	TE119M	.40608E+06	.17069E-05	2.5940	.7338	.7782	1 0			0 0.
614	RU120	.21194E+00	.32705E+01	8.4950	2.7217	2.5485	1 0			0 0.
615	RH120	.60776E-01	.11405E+02	11.0280	3.5900	3.784	1 0	RU120	1	.10000E+01
616	PD120	.20710E+01	.33470E+00	5.4998	1.7016	1.6499	1 0	RH120	1	.10000E+01
617	AG120	.11700E+01	.59243E+00	6.0000	2.3276	.7776	0 0	PD120	1	.10000E+01
618	CD120	.50800E+02	.13645E-01	1.5000	.5686	0.0000	0 0	AG120	1	.10000E+01
619	IN120	.30800E+01	.22505E+00	5.6000	2.3780	.2616	0 0	CD120	1	.10000E+01
620	IN120M	.44400E+02	.15611E-01	5.3000	.9541	2.9518	0 0			0 0.
621	SN120	0.	0.	0.0000	0.0000	0.0000	0 0	IN120M IN120 SB120M SB120	1 1 4 4	.10000E+01 .10000E+01 .10000E+01 .10000E+01
622	SB120	.96000E+03	.72203E-03	2.6900	.7647	.8070	1 0			0 0.
623	SB120M	.49766E+06	.13928E-05	2.6900	.7647	.8070	1 0			C 0.
624	TE120	0.	0.	0.0000	0.0000	0.0000	0 0			0 0.
625	RH121	.22166E+00	.31271E+01	9.3212	3.0043	2.7964	1 0			0 0.
626	PD121	.59157E+00	.11717E+01	8.0470	2.5688	2.4141	1 0	RH121	1	.10000E+01
627	AG121	.17677E+01	.39211E+00	6.8303	2.1533	2.0491	1 0	PD121	1	.10000E+01
628	CD121	.12800E+02	.54192E-01	4.8000	1.4653	1.4400	1 0	AG121	1	.10000E+01
629	IN121	.30000E+02	.23105E-01	3.8000	1.0200	1.0116	0 0	CD121	1	.82000E+00
630	IN121M	.18600E+03	.57266E-02	3.7050	1.5901	.0580	0 0	CD121	1	.18000E+00
631	SN121	.97410E+05	.71153E-05	.3870	.1197	0.0000	0 0	IN121 IN121M	1 1	.10000E+01 .10000E+01
632	SN121M	.15768E+10	.43959E-09	.3950	.1086	.0410	0 0			C 0.
633	SB121	0.	0.	0.0000	0.0000	0.0000	0 1	SN121M SN121 TE121M TE121 TE121M I 121	1 1 4 4 2 4	.10000E+01 .10000E+01 .10000E+00 .10000E+01 .90000E+00 .10000E+01
634	TE121	.14688E+07	.47191E-06	1.2900	.3262	.3870	1 0			0 0.
635	TE121M	.12960E+08	.53484E-07	.4230	.1124	.0550	1 0			0 0.
636	I 121	.76320E+04	.90821E-04	2.3600	.6582	.7080	1 0			0 0.
637	RU122	.11002E+00	.63002E+01	9.6266	3.1089	2.8880	1 0			0 0.
638	RH122	.25838E-01	.26827E+02	12.0690	3.9464	3.6207	1 0	RU122	1	.10000E+01
639	PD122	.83266E+00	.83245E+00	6.5437	2.0558	1.9631	1 0	RH122	1	.10000E+01
640	AG122	.15000E+01	.46210E+00	8.9354	2.8894	2.6956	1 0	PD122	1	.10000E+01
641	CD122	.55000E+01	.12603E+00	3.4598	1.0176	1.0379	1 0	AG122	1	.10000E+01
642	IN122	.10000E+02	.69315E-01	6.7500	2.0938	1.6595	0 0	CD122	1	.10000E+01
643	IN122M	.15000E+01	.46210E+00	7.0000	2.1713	1.9284	0 0			C 0.
644	SN122	0.	0.	0.0000	0.0000	0.0000	0 0	IN122 IN122M SB122 SB122M SB121	1 1 4 2 3	.10000E+01 .10000E+01 .30000E-01 .10000E+01 .10000E+01
645	SB122	.23501E+06	.29494E-05	1.9598	.5677	.4663	0 0			0 0.
646	SB122M	.25200E+03	.27506E-02	.1620	0.0000	.1620	0 0			0 0.
647	TE122	0.	0.	0.0000	0.0000	0.0000	0 0	SB122	1	.97000E+00
648	RH123	.94820E-01	.73101E+01	10.9850	3.4375	3.1755	1 0			0 0.

337 109

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M. NUCL	DTYP	BRANCHING
649	PD123	.2693CE+00	.75739E+01	9.0534	2.9126	2.7160	1	0	RH123	1	.10000E+01
650	AG123	.92865E+00	.74640E+00	7.5215	2.3893	2.2965	1	0	PD123	1	.10000E+01
651	CD123	.42911E+01	.16305E+00	5.9893	1.8677	1.7968	1	0	AG123	1	.10000E+01
652	IN123	.5970CE+01	.11611E+00	4.5000	1.3649	1.3500	1	0	CD123	1	.77000E+00
653	IN123P	.47800E+02	.14501E-01	4.7000	2.0216	.1000	0	0	CD123	1	.23000E+00
654	SN123	.11163E+08	.62094E-07	1.4100	.5244	.0077	0	0	IN123	1	.50000E+00
									IN123M	1	.50000E+00
655	SN123M	.24048E+04	.28823E-03	1.4340	.4624	.1742	0	0	IN123	1	.50000E+00
									IN123M	1	.50000E+00
656	SB123	0.	0.	0.0000	0.0000	0.0000	0	1	SN123	1	.10000E+01
									SN123M	1	.10000E+01
									TE123	4	.10000E+01
657	TE123	.37843E+21	.18316E-20	.0500	0.0000	.0200	0	0	TE123M	2	.10000E+01
									I 123	4	.10000E+01
658	TE123P	.10342E+08	.57023E-07	.2475	0.0000	.2475	0	0			0 0.
659	I 123	.4716CE+05	.14698E-04	1.4000	.3592	.4200	1	0			0 0.
660	RH124	.65348E-01	.10607E+02	10.6320	3.4537	3.1896	1	0			0 0.
661	RH124	.12205E-01	.56793E+02	13.0620	4.2878	3.9186	1	0	RH124	1	.10000E+01
662	PD124	.38295E+00	.18100E+01	7.5886	2.4122	2.2766	1	0	RH124	1	.10000E+01
663	AG124	.15121E+00	.45839E+01	10.0180	3.2432	3.0054	1	0	PD124	1	.10000E+01
664	CD124	.56353E+01	.12300E+00	4.5439	1.3795	1.3632	1	0	AG124	1	.10000E+01
665	IN124	.32100E+01	.21593E+00	7.4000	2.3591	2.1000	0	0	CD124	1	.10000E+01
666	SN124	0.	0.	0.0000	0.0000	0.0000	0	0	IN124	1	.10000E+01
667	SB124	.52013E+07	.13326E-06	2.9100	.8618	.7459	0	0	SB124M	2	.10000E+01
									SB123	3	.10000E+01
668	SB124M	.93000E+02	.74532E-02	.0100	0.0000	.0100	0	0	SB124M	2	.10000E+01
669	SB124N	.12120E+04	.57190E-03	.2500	0.0000	.2500	0	0			0 0.
670	TE124	0.	0.	0.0000	0.0000	0.0000	0	0	SB124	1	.10000E+01
671	PD125	.23828E+00	.29090E+01	9.2200	2.9696	2.7660	1	0			0 0.
672	AG125	.39295E+00	.17638E+01	8.5553	2.7423	2.5666	1	0	PD125	1	.10000E+01
673	CD125	.14414E+01	.48089E+00	7.0423	2.2257	2.1127	1	0	AG125	1	.10000E+01
674	IN125	.23300E+01	.29749E+00	5.9294	1.7116	1.6588	1	0	CD125	1	.70000E+00
675	IN125M	.12000E+02	.57762E-01	5.4800	1.5864	1.7642	0	0	CD125	1	.30000E+00
676	SN125	.8329CE+06	.83221E-06	2.3620	.8248	.3108	0	0	IN125	1	.30000E+00
									IN125M	1	.80000E-01
677	SN125M	.57120E+03	.12135E-02	2.3880	.8070	.3546	0	0	IN125	1	.70000E+00
									IN125M	1	.92000E+00
678	SB125	.87355E+08	.79349E-08	.7657	.0889	.4470	0	0	SN125	1	.10000E+01
									SN125M	1	.10000E+01
679	TE125	0.	0.	0.0000	0.0000	0.0000	0	0	SB125	1	.79000E+00
									TE125M	2	.10000E+01
									I 125	4	.10000E+01
680	TE125P	.50112E+07	.13832E-06	.1447	0.0000	.1438	0	0	SB125	1	.23000E+00
681	I 125	.51981E+07	.13438E-06	.1490	.0354	.0194	1	0	XE125	4	.10000E+01
682	XE125	.6120CE+05	.11326E-04	1.9000	.5125	.5700	1	0	XE125M	2	.10000E+01
683	XE125M	.55000E+02	.12603E-01	.2500	.0621	.0325	1	0			0 0.
684	PD126	.19815E+00	.34981E+01	8.6047	2.7591	2.5814	1	0			0 0.
685	AG126	.6124E-01	.11340E+02	11.0210	3.5877	3.3063	1	0	PD126	1	.10000E+01
686	CD126	.18872E+01	.36728E+00	5.5982	1.7348	1.6795	1	0	AG126	1	.10000E+01
687	IN126	.1530CE+01	.45304E+00	8.0143	2.5577	2.4043	1	0	CD126	1	.10000E+01

337 110

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	Z-BETA (MEV)	E-GAMMA (MEV)	IE SG	M. NUCL	DTYP	BRANCHING
688	SN126	.31536E+13	.21980E-12	.0500	.0700	.0498	0 0	IN126	1	.10000E+01
								IN127	6	.67000E-02
689	SB126	.10714E+07	.64698E-06	3.6700	.3580	2.6700	0 0	SB126M	2	.14000E+00
690	SB126M	.11400E+04	.60802E-03	3.4578	1.0036	.9952	0 0	SN126	1	.10000E+01
691	TE126	0.	0.	0.0000	0.0000	0.0000	0 0	SB126M	1	.10000E-01
								SB126	1	.10000E+01
								I 126	4	.56000E+00
692	I 126	.11232E+07	.61712E-06	1.7540	.4668	.5262	1 0		0	0.
693	XE126	0.	0.	0.0000	0.0000	0.0000	0 0	I 126	1	.44000E+00
694	AG127	.18711E+00	.37045E+01	9.5608	3.0864	2.8682	1 0		0	0.
695	CD127	.58199E+00	.11910E+01	8.0667	2.5755	2.4200	1 0	AG127	1	.10000E+01
696	IN127	.20000E+01	.34657E+00	6.5724	2.0655	1.9717	1 0	CD127	1	.50000E+00
697	IN127M	.36400E+01	.19043E+00	6.6900	2.1055	2.0070	1 0	CD127	1	.50000E+00
698	SN127	.75600E+04	.91686E-04	3.2000	.9316	.9600	1 0	IN127	1	.99330E+00
								IN127M	1	.10000E+01
								IN128	6	.12000E-01
699	SN127M	.26400E+03	.26256E-02	3.2000	.9316	.9600	1 0		0	0.
700	SB127	.33264E+06	.20818E-05	1.5810	.3103	.6894	0 0	SN127	1	.10000E+01
								SN127M	1	.10000E+01
701	TE127	.33660E+05	.20593E-04	.6930	.2284	.0050	0 0	SB127	1	.84000E+00
								TE127M	2	.97600E+00
702	TE127M	.94176E+07	.73601E-07	.7810	.0058	.0875	0 0	SB127	1	.10000E+00
703	I 127	0.	0.	0.0000	0.0000	0.0000	0 1	TE127M	1	.80000E-02
								TE127	1	.10000E+01
								XE127	4	.10000E+01
704	XE127	.31458E+07	.22034E-06	.4400	.1176	.0572	1 0	XE127M	2	.10000E+01
								CS127	4	.10000E+01
705	XE127M	.70000E+02	.99021E-02	.3000	0.0000	.3000	0 0		0	0.
706	CS127	.22320E+05	.31095E-04	2.1000	.5755	.6300	1 0		0	0.
707	PD128	.11203E+00	.61869E+01	9.5934	3.0976	2.8780	1 0		0	0.
708	AG128	.27324E-01	.25368E+02	11.9980	3.9221	3.5994	1 0	PD128	1	.10000E+01
709	CD128	.78118E+00	.88731E+00	6.6238	2.0830	1.9871	1 0	AG128	1	.10000E+01
710	IN128	.37000E+01	.18734E+00	9.0279	2.9039	2.7084	1 0	CD128	1	.10000E+01
711	SN128	.36000E+04	.19254E-03	1.3000	.2172	.5965	0 0	IN128	1	.98800E+00
								IN127	6	.35000E-01
712	SB128	.32436E+05	.21370E-04	4.3000	1.2870	1.2900	1 0		0	0.
713	SB128M	.62400E+03	.11108E-02	4.2610	.9473	1.9861	0 0	SN128	1	.10000E+01
714	TE128	0.	0.	0.0000	0.0000	0.0000	0 0	SB128	1	.10000E+01
								SB128M	1	.10000E+01
								I 128	4	.63000E-01
715	I 128	.15000E+04	.46217E-03	2.0196	.7480	.1550	0 0	I 127	3	.10000E+01
716	XE128	0.	0.	0.0000	0.0000	0.0000	0 0	I 128	1	.93700E+00
717	AG129	.97284E-01	.71250E+01	10.9390	3.4217	3.1617	1 0		0	0.
718	CD129	.64841E+00	.10690E+01	7.9400	2.5322	2.3820	1 0	AG129	1	.10000E+01
719	IN129	.80000E+00	.86643E+00	7.5874	2.4117	2.2762	1 0	CD130	1	.10000E+01
720	SN129	.45000E+03	.15403E-02	4.0000	1.1732	1.2000	1 0	IN130	1	.99500E+00
								IN131	6	.95000E-01
721	SN129M	.12000E+03	.57762E-02	4.0000	1.1732	1.2000	1 0	IN129	1	.50000E+00
722	SB129	.15552E+05	.44570E-04	2.4130	.4127	1.2790	0 0	SN129	1	.10000E+01
								SN129M	1	.10000E+01
723	TE129	.41760E+04	.16598E-03	1.5000	.5298	.0827	0 0	SB129	1	.76000E+00
								TE129M	2	.63400E+00

337 111

TABLE IV (continued)

NO.	NLCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M. NUCL	DTYP	BRANCHING
724	TE129M	.2903CE+07	.23077E-06	1.6060	.2111	.1090	0	0	S8129	1	.24000E+00
725	I 129	.49512E+15	.14000E-14	.1890	.0452	.0390	0	1	TE129	1	.10000E+01
									TE129M	1	.36600E+00
726	XE129	0.	0.	0.0000	0.0000	0.0000	0	0	I 129	1	.10000E+01
									XE129M	2	.10000E+01
									CS129	4	.10000E+01
727	XE129M	.6912CE+06	.10028E-05	.2360	0.0000	.2360	0	0		0	0.
728	CS129	.11628E+06	.59610E-05	1.1000	.2712	.3300	1	0	BA129M	4	.10000E+01
									BA129	4	.10000E+01
729	BA129	.7920CE+04	.87519E-04	2.4500	.6874	.7350	1	0		0	0.
730	BA129M	.75600E+04	.91586E-04	2.4500	.6874	.7350	1	0		0	0.
731	PD130	.26492E-01	.26164E+02	12.6300	4.1391	3.7890	1	0		0	0.
732	AG130	.32389E-02	.21401E+03	15.0230	4.9624	4.9069	1	0	PD130	1	.10000E+01
733	CD130	.37419E+00	.18524E+01	7.6221	2.4236	2.2866	1	0	AG130	1	.10000E+01
734	IN130	.53000E+00	.13078E+01	10.0140	3.2418	3.0042	1	0	CD130	1	.10000E+01
									IN131	6	.95000E-01
735	SN130	.22320E+03	.31055E-02	2.0000	.3576	.9903	0	0	IN130	1	.95000E+00
736	S8130	.24000E+04	.28881E-03	9.0000	.7133	3.1887	0	0	SN130	1	.10000E+00
737	S8130M	.37800E+03	.18337E-02	9.0000	1.0073	2.5314	0	0	SN130	1	.90000E+00
738	TE130	0.	0.	0.0000	0.0000	0.0000	0	0	J130	1	.10000E+01
									S8130M	1	.10000E+01
739	I 130	.44640E+05	.15528E-04	2.9900	.2950	2.1200	0	0	I 130M	2	.85000E+00
									I 129	3	.10000E+01
740	I 130M	.53400E+03	.17980E-02	.6925	.1367	.3471	0	0		0	0.
741	XE130	0.	0.	0.0000	0.0000	0.0000	0	0	I 130	1	.10000E+01
									I 130M	1	.15000E+00
742	CD131	.38867E-01	.17854E+02	12.0970	3.9560	3.6291	1	0		0	0.
743	IN131	.27000E+00	.25670E+01	8.5753	2.7491	2.5726	1	0	CD131	1	.10000E+01
744	SN131	.61000E+02	.11363E-01	9.0000	1.5330	1.5000	1	0	IN131	1	.90500E+00
745	S8131	.13800E+04	.50228E-03	3.1000	.5572	1.6300	0	0	SN131	1	.10000E+01
746	TE131	.15000E+04	.46210E-03	2.2500	.7084	.4340	0	0	S8131	1	.93200E+00
									TE131M	2	.18000E+00
747	TE131M	.10800E+06	.64180E-05	2.4320	.1547	1.4840	0	0	S8131	1	.68000E-01
748	I 131	.69466E+06	.99783E-06	.9708	.1874	.3933	0	0	TE131	1	.10000E+01
									TE131M	1	.82000E+00
749	XE131	0.	0.	0.0000	0.0000	0.0000	0	1	I 131	1	.99400E+00
									XE131M	2	.10000E+01
									CS131	4	.10000E+01
750	XE131M	.10359E+07	.66910E-06	.1639	0.0000	.1675	0	0	I 131	1	.70000E-02
751	CS131	.83722E+06	.82792E-06	0.0000	0.0000	0.0000	0	0	BA131	4	.10000E+01
752	BA131	.10109E+07	.68569E-04	1.1600	.2883	.3480	1	0	BA131M	2	.10000E+01
753	BA131M	.87600E+03	.79126E-03	.1800	0.0000	.1800	0	0		0	0.
754	CD132	.64847E-01	.10689E+02	10.7480	3.4592	3.1944	1	0		0	0.
755	IN132	.12000E+00	.57762E+01	13.0140	4.2762	3.9084	1	0	CD132	1	.10000E+01
756	SN132	.40000E+02	.17329E-01	3.2200	.7437	1.3243	0	0	IN132	1	.10000E+01
757	S8132	.25200E+03	.27506E-02	5.6000	1.3469	2.4063	0	0	SN132	1	.10000E+01
									SN133	6	.20000E-07
758	S8132M	.16800E+03	.41259E-02	5.6000	1.2895	2.5287	0	0		0	0.
759	TE132	.28152E+06	.24622E-05	.5050	.0680	.2780	0	0	S8132	1	.10000E+01
									S8132M	1	.10000E+01
760	I 132	.82800E+04	.83713E-04	3.5800	.4916	2.2602	0	0	TE132	1	.10000E+01

337 112

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M. NUCL	JTYP	BRANCHING
761	XE132	0.	0.	0.0000	0.0000	0.0000	0	0	I 132	1	.10000E+01
									XE131	3	.10000E+01
									CS132	4	.97800E+00
762	CS132	.56851E+06	.12192E-05	2.0620	.0045	.6900	0	0			0 0.
763	BA132	C.	0.	0.0000	0.0000	0.0000	0	0	CS132	1	.22000E-01
764	IA133	.>2022E-01	.13324E+02	11.5810	3.7790	3.4743	1	0			0 0.
765	SA133	.17000E+01	.40773E+00	8.4328	2.7004	2.5298	1	0	IN133	1	.10000E+01
766	SB133	.16200E+03	.42787E-02	4.0000	1.1732	1.2000	1	0	SN133	1	.99980E+00
767	TE133	.74700E+03	.92791E-03	2.9600	.5064	.9297	0	0	SB133	1	.97760E+00
									SB134M	6	.80000E-03
									TE133M	2	.13000E+00
768	TE133P	.33240E+04	.20853E-03	3.2940	.8370	.8670	0	0	SB133	1	.22400E-01
769	I 133	.74880E+05	.92568E-05	1.7600	.4122	.5870	0	0	TE133	1	.10000E+01
									TE133M	1	.87000E+00
									I 133M	2	.10000E+01
770	I 133P	.90000E+01	.77016E-01	.2500	0.0000	.2500	0	0			0 0.
771	XE133	.45706E+06	.15165E-05	.4270	.1058	.0815	0	1	I 133	1	.86000E+00
									XE133M	2	.10000E+01
772	XE133P	.19267E+06	.35976E-05	.2329	0.0000	.2327	0	0	I 133	1	.14000E+00
773	CS133	C.	0.	0.0000	0.0000	0.0000	0	1	XE133	1	.10000E+01
									BA133	4	.10000E+01
774	BA133	.33744E+09	.20542E-08	.4880	.1325	.0634	1	0	BA133M	2	.10000E+01
									LA133	4	.50000E+00
775	BA133P	.14004E+06	.45496E-05	.2880	0.0000	.2880	0	0	LA133	4	.50000E+00
776	LA133	.14400E+05	.48135E-04	2.2000	.6070	.6600	1	0			0 0.
777	IA134	.65720E-02	.10547E+03	13.9430	4.5906	4.1829	1	0			0 0.
778	SA134	.58004E+00	.11950E+01	7.0108	2.2150	2.1032	1	0	IN134	1	.10000E+01
779	SB134	.11000E+02	.63013E-01	8.4900	2.8833	2.0924	0	0	SN134	1	.10000E+01
780	SB134P	.85000E+00	.81547E+00	8.4910	2.7203	2.5473	1	0			0 0.
781	TE134	.25080E+04	.27637E-03	1.4000	.1529	.9185	0	0	SB134	1	.10000E+01
									SB135	6	.80000E-01
									SB134M	1	.99920E+00
782	I 134	.31560E+04	.21963E-03	4.1500	.6191	2.5312	0	0	TE134	1	.10000E+01
									I 134M	2	.10000E+01
783	I 134P	.22200E+03	.31223E-02	.3163	0.0000	.3163	0	0			0 0.
784	XE134	0.	0.	0.0000	0.0000	0.0000	0	0	I 134	1	.10000E+01
									XE134M	2	.10000E+01
									XE133	3	.10000E+01
785	XE134P	.29000E+00	.23902E+01	2.0000	0.0000	2.0000	0	0			0 0.
786	CS134	.65027E+08	.10659E-07	2.0585	.1627	1.5622	0	1	CS134M	2	.10000E+01
									CS133	3	.10000E+01
787	CS134P	.10440E+05	.66393E-04	.1376	0.0000	.1376	0	0			0 0.
788	BA134	C.	0.	0.0000	0.0000	0.0000	0	0	CS134	1	.10000E+01
789	SA135	.21200E+00	.32695E+01	9.3836	3.0257	2.8151	1	0			0 0.
790	SB135	.20000E+01	.34657E+00	7.0000	2.2113	2.1000	1	0	SN135	1	.10000E+01
791	TE135	.18000E+02	.38508E-01	6.0000	1.8714	1.8000	1	0	SB135	1	.92000E+00
792	I 135	.23796E+05	.29129E-04	2.7340	.3839	1.5900	0	1	TE135	1	.10000E+01
									TE136	6	.50000E-02
793	XE135	.32699E+05	.21198E-04	1.1580	.3183	.2422	0	1	I 135	1	.83500E+00
									XE135M	2	.10000E+01
794	XE135P	.93900E+03	.73818E-03	.5266	0.0000	.5266	0	0	I 135	1	.16500E+00

337 113

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M. NUCL	D TYP	BRANCHING
795	CS135	.72533E+14	.95563E-14	.2090	.0694	.0001	0	1	XE135	1	.10000E+01
									CS135M	2	.10000E+01
									CS134	3	.10000E+01
796	CS135P	.31800E+04	.21797E-03	1.6210	0.0000	1.6210	C	0			0 0.
797	BA135	0.	0.	0.0000	0.0000	0.0000	0	0	CS135	1	.10000E+01
									BA135M	2	.10000E+01
									LA135	4	.10000E+01
798	BA135P	.10332E+06	.67087E-05	.2680	0.0000	.2680	0	0			0 0.
799	LA135	.70200E+05	.98739E-05	1.3000	.3292	.3900	1	0	CE135	4	.10000E+01
800	CE135	.63720E+05	.10878E-04	2.1000	.5755	.6300	1	0			0 0.
801	CD136	.28246E-01	.24540E+02	12.4770	4.0865	3.7431	1	0			0 0.
802	IM136	.36514E-02	.18983E+03	14.8340	4.8972	4.4502	1	0	CD136	1	.10000E+01
803	SM136	.29741E+00	.23306E+01	7.9634	2.5402	2.3890	1	0	IM136	1	.10000E+01
804	SB136	.11405E+00	.60778E+01	10.3200	3.3465	3.0960	1	0	SM136	1	.10000E+01
805	TE136	.20900E+02	.33165E-01	4.3800	1.1400	1.7000	0	0	SB136	1	.10000E+01
806	I 136	.83000E+02	.83512E-02	6.9800	2.1107	2.1732	0	0	TE136	1	.99500E+00
									TE137	6	.50000E-02
807	I 136M	.46000E+02	.15068E-01	6.9800	2.2382	1.9063	0	0			0 0.
808	XE136	0.	0.	0.0000	0.0000	0.0000	0	0	I 136	1	.10000E+01
									I 136M	1	.10000E+01
									I 137	6	.54000E-01
									XE135	3	.10000E+01
809	CS136	.11232E+07	.61712E-06	2.2439	.1192	2.1573	0	0	CS135	3	.10000E+01
810	BA136	0.	0.	0.0000	0.0000	0.0000	0	0	CS136	1	.84000E+00
									BA136M	2	.10000E+01
									CS136	1	.16000E+00
811	BA136M	.30800E+00	.22509E+01	2.0400	0.0000	2.0400	0	0			0 0.
812	SM137	.11304E+00	.61318E+01	10.3100	3.3431	3.0930	1	0			0 0.
813	SB137	.30139E+00	.22998E+01	8.9020	2.8608	2.6706	1	0	SM137	1	.10000E+01
814	TE137	.35000E+01	.19804E+00	7.4936	2.3798	2.2481	1	0	SB137	1	.10000E+01
815	I 137	.24700E+02	.28063E-01	5.8000	1.8032	1.7400	1	0	TE137	1	.99500E+00
816	XE137	.22980E+03	.30163E-02	4.3470	1.8010	.1816	0	0	I 137	1	.94600E+00
									I 138	6	.25000E-01
817	CS137	.95144E+09	.72852E-09	.5473	.1744	0.0000	0	1	XE137	1	.10000E+01
818	BA137	0.	0.	0.0000	0.0000	0.0000	0	0	CS137	1	.65000E-01
									BA137M	2	.10000E+01
									LA137	4	.10000E+01
819	BA137M	.15312E+03	.45268E-02	.6616	0.0000	.6622	0	0	CS137	1	.94600E+00
820	LA137	.18922E+13	.36633E-12	.5000	.1363	.0650	1	0	CE137M	4	.60000E-02
									CE137	4	.13000E+01
821	CE137	.32400E+05	.21393E-04	1.2000	.2999	.3600	1	0	CE137M	2	.99400E+00
822	CE137M	.12240E+06	.56630E-05	.2550	0.0000	.2550	0	0			0 0.
823	SM138	.16681E+00	.41552E+01	8.8920	2.8574	2.6676	1	0			0 0.
824	SB138	.50847E-01	.13632E+02	11.2370	3.6614	3.3711	1	0	SM138	1	.10000E+01
825	TE138	.14000E+01	.49511E+00	6.0915	1.9023	1.8275	1	0	SB138	1	.10000E+01
826	I 138	.64000E+01	.10830E+00	8.0000	3.2724	.7820	0	0	TE138	1	.10000E+01
827	XE138	.84780E+03	.81758E-03	2.8300	.6617	1.1436	0	0	I 138	1	.97500E+00
									I 139	6	.10000E+00
828	CS138	.19320E+04	.35877E-03	5.2900	1.2131	2.3643	0	0	XE138	1	.10000E+01
									CS137	3	.10000E+01
829	CS138M	.17400E+03	.39836E-02	5.3700	.3417	.5437	0	0			0 0.

337 114

TABLE IV (continued)

NC.	NLCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE SG	M. NUCL	DTYP	BRANCHING
830	BA138	0.	0.	0.0000	0.0000	0.0000	0 0	CS138	1	.10000E+01
								CS138M	1	.10000E+01
								LA138	4	.70000E+00
								CE142	5	.10000E+01
831	LA138	.33113E+19	.2C933E-18	1.5460	.4036	.4638	1 0		C	0.
832	CE138	0.	0.	0.0000	0.0000	0.0000	0 0	LA138	1	.30000E+00
833	SB139	.15636E+00	.44330E+01	9.8213	3.1756	2.9434	1 0		0	0.
834	TE139	.43403E+00	.15970E+01	8.4290	2.6991	2.5287	1 0	SB139	1	.10000E+01
835	I 139	.24000E+01	.28881E+00	7.0000	2.2113	2.1000	1 0	TE139	1	.10000E+01
836	XE139	.40000E+02	.17329E-01	4.8800	1.7490	.8297	0 0	I 139	1	.90000E+00
								I 140	6	.32000E+00
837	CS139	.56400E+03	.12290E-02	4.2900	1.7139	.3066	0 0	XE139	1	.10000E+01
838	BA139	.50940E+04	.13607E-03	2.2600	.8795	.0498	0 0	CS139	1	.10000E+01
839	LA139	0.	0.	0.0000	0.0000	0.0000	0 1	BA139	1	.10000E+01
								CE139	4	.10000E+01
840	CE139	.11880E+08	.58346E-07	.2700	.0676	.0351	1 0	CE139M	2	.10000E+01
								PR139	4	.10000E+01
841	CE139M	.56000E+02	.12378E-01	.7460	0.0000	.7460	0 0		0	0.
842	PR139	.15876E+05	.43660E-04	2.1100	.787	.6330	1 0		0	0.
843	TE140	.57242E+00	.12109E+01	7.0285	2.2210	2.1086	1 0		0	0.
844	I 140	.86000E+00	.80599E+00	9.3623	3.0184	2.8087	1 0	TE140	1	.10000E+01
845	XE140	.13600E+02	.50967E-01	3.5100	.8810	1.3600	0 0	I 140	1	.68000E+00
								I 141	6	.12000E+00
846	CS140	.63700E+02	.10881E-01	5.7000	1.6402	1.8734	0 0	XE140	1	.10000E+01
								XE141	6	.90000E-03
847	BA140	.11050E+07	.62730E-06	1.0350	.2922	.1862	0 1	CS140	1	.10000E+01
								CS141	6	.70000E-03
848	LA140	.14479E+06	.47872E-05	3.7610	.5510	2.2800	0 0	BA140	1	.10000E+01
								LA139	3	.10000E+01
849	CE140	0.	0.	0.0000	0.0000	0.0000	0 0	LA140	1	.10000E+01
								PR140	4	.10000E+01
								ND144	5	.10000E+01
850	PR140	.20340E+03	.34078E-02	3.3400	.9778	1.0020	1 0	ND140	4	.10000E+01
851	ND140	.29117E+06	.23806E-05	0.0000	0.0000	0.0000	0 0		C	0.
852	SB141	.16500E+00	.42010E+01	9.7401	3.1478	2.9220	1 0		0	0.
853	TE141	.43787E+00	.15830E+01	8.4200	2.6960	2.5260	1 0	SB141	1	.10000E+01
854	I 141	.43000E+00	.16120E+01	8.4719	2.7138	2.5416	1 0	TE141	1	.10000E+01
855	XE141	.17300E+01	.40066E+00	6.0000	1.8714	1.8000	1 0	I 141	1	.88000E+00
856	CS141	.24900E+02	.27837E-01	4.9900	1.5296	1.4970	1 0	XE141	1	.99950E+00
								XE142	6	.51000E-02
857	BA141	.10962E+04	.63232E-03	3.0100	.8684	.8343	0 0	CS141	1	.99930E+00
								CS142	6	.21000E-02
858	LA141	.14148E+05	.48993E-04	2.4300	.9598	.0428	0 0	BA141	1	.10000E+01
859	CE141	.28080E+07	.24685E-06	.5810	.1515	.1015	0 1	LA141	1	.10000E+01
860	PR141	0.	0.	0.0000	0.0000	0.0000	0 1	CE141	1	.10000E+01
								ND141	4	.10000E+01
861	ND141	.87840E+04	.78910E-04	1.8000	.4811	.5400	1 0	ND141M	2	.10000E+01
								PM141	4	.10000E+01
862	NC141M	.62000E+02	.11180E-01	.7550	0.0000	.7550	0 0		C	0.
863	PP141	.12540E+04	.55275E-03	3.6000	1.0596	1.0800	1 0		0	0.
864	TE142	.30866E+00	.22457E+01	7.9072	2.5210	2.3722	1 0		0	0.
865	I 142	.11807E+00	.58707E+01	10.2820	3.3335	3.0846	1 0	I 142	1	.10000E+01
866	XE142	.12200E+01	.56815E+00	4.9000	1.7477	.8455	0 0	I 142	1	.10000E+01

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M. NUCL	DTYP	BRANCHING
867	CS142	.17000E+01	.40773E+00	6.9000	1.9091	2.5040	0	0	XE142	1	.99490E+00
									XE143	6	.11000E-01
868	BA142	.64200E+03	.10797E-02	2.2000	.6070	.6600	1	0	CS142	1	.99790E+00
									CS143	6	.11300E-01
869	LA142	.55620E+04	.12462E-03	4.5170	.8469	2.3944	0	0	BA142	1	.10000E+01
870	CE142	.33113E+19	.20933E-18	1.4344	.3697	.4303	1	0	LA142	1	.10000E+01
									CE141	3	.10000E+01
871	PR142	.68976E+05	.10049E-04	2.1600	.8070	.0582	0	0	PR142M	2	.10000E+01
									PR141	3	.10000E+01
872	PR142M	.87600E+03	.79126E-03	.2500	0.0000	.2500	0	0			0 0.
873	ND142	0.	0.	0.0000	0.0000	0.0000	0	0	PR142	1	.10000E+01
874	TE143	.11760E+00	.58940E+01	10.2450	3.3208	3.0735	1	0			0 0.
875	I 143	.75671E+00	.91600E+00	7.7600	2.4706	2.3280	1	0	TE143	1	.10000E+01
876	XE143	.30000E+00	.23105E+01	8.0000	2.5528	2.4000	1	0	I 143	1	.10000E+01
877	CS143	.16800E+01	.41259E+00	6.2000	1.9390	1.8600	1	0	XE143	1	.98900E+00
878	BA143	.20000E+02	.34657E-01	3.5000	1.0311	1.0500	1	0	CS143	1	.98870E+00
									CS144	6	.11000E-01
879	LA143	.84000E+03	.82518E-03	3.3210	.9715	.9963	1	0	BA143	1	.10000E+01
880	CE143	.11830E+06	.58346E-05	1.4440	.4120	.2710	0	0	LA143	1	.10000E+01
881	PR143	.11733E+07	.59076E-06	.9312	.3239	0.0000	0	1	CE143	1	.10000E+01
882	ND143	0.	0.	0.0000	0.0000	0.0000	0	1	PR143	1	.10000E+01
									PM143	4	.10000E+01
									SM147	5	.10000E+01
883	PM143	.22896E+08	.30274E-07	1.1000	.2712	.3300	1	0	SM143	4	.10000E+01
884	SM143	.52980E+03	.13083E-02	3.3000	.9645	.9900	1	0	SM143M	2	.10000E+01
885	SM143M	.63000E+02	.11002E-01	.7480	0.0000	.7480	0	0			0 0.
886	TE144	.20202E+00	.34310E+01	8.8944	2.8582	2.6683	1	0			0 0.
887	I 144	.11142E+00	.62210E+01	10.2300	3.3157	3.0690	1	0	TE144	1	.10000E+01
888	XE144	.10000E+01	.69315E+00	6.0000	1.8714	1.8000	1	0	I 144	1	.10000E+01
889	CS144	.10200E+01	.67956E+00	8.3000	3.7610	.0525	0	0	XE144	1	.10000E+01
890	BA144	.11900E+02	.58248E-01	2.9000	.8333	.8700	1	0	CS144	1	.98900E+00
									CS145	6	.44000E-01
891	LA144	.40700E+02	.17031E-01	5.6000	1.5100	1.9400	0	0	BA144	1	.10000E+01
892	CE144	.24564E+08	.28218E-07	.3155	.0866	.0309	0	1	LA144	1	.10000E+01
893	PR144	.10368E+04	.66854E-03	2.9970	1.2241	.0302	0	0	CE144	1	.98780E+00
									PR144M	2	.10000E+01
									PR143	3	.10000E+01
894	PR144M	.43200E+03	.16045E-02	3.0560	.0003	.0600	0	0	CE144	1	.12200E-01
895	ND144	.66226E+23	.10466E-22	1.8940	.5106	.5682	1	1	PR144	1	.10000E+01
									ND143	3	.10000E+01
									PM144	4	.10000E+01
									SM148	5	.10000E+01
896	PF144	.31363E+08	.22101E-07	2.3000	.6389	.6900	1	0			0 0.
897	SP144	0.	0.	0.0000	0.0000	0.0000	0	0			0 0.
898	I 145	.36271E+00	.19110E+01	8.6600	2.7780	2.5980	1	0			0 0.
899	XE145	.90000E+00	.77016E+00	8.4096	2.6925	2.5229	1	0	I 145	1	.10000E+01
900	CS145	.56300E+01	.12312E+01	7.0080	2.2140	2.1024	1	0	XE145	1	.10000E+01
901	BA145	.62000E+01	.11180E+00	5.6116	1.7394	1.6835	1	0	CS145	1	.95600E+00
									CS146	6	.39000E
902	LA145	.30000E+02	.23105E-01	4.1500	1.0600	1.5200	0	0	BA145	1	.10000E+01
903	CE145	.18000E+03	.38508E-02	2.4900	.6118	.8731	0	0	LA145	1	.10000E+01
									CE144	3	.10000E+01

337 116

TABLE IV (continued)

NC.	NLCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M.NUCL	DTYP	BRANCHING
904	PR145	.21528E+05	.32197E-04	1.8050	.6863	.0156	0	0	CE145	1	.10000E+01
905	ND145	0.	0.	0.0000	0.0000	0.0000	0	1	PR145	1	.10000E+01
									ND144	3	.10000E+01
									PM145	4	.10000E+01
									SM149	5	.10000E+01
906	PM145	.56765E+09	.12211E-08	.1400	.0331	.0182	1	0	SM145	4	.10000E+01
907	SM145	.29376E+08	.23596E-07	.6500	.1480	.1950	1	0		C	0.
908	XE146	.55926E+00	.12394E+01	7.0598	2.2316	2.1179	1	0		0	0.
909	CS146	.18900E+00	.36674E+01	9.2987	2.9966	2.7896	1	0	XE146	1	.10000E+01
910	BA146	.19100E+01	.36290E+00	4.2558	1.2700	1.2767	1	0	CS146	1	.96100E+00
911	LA146	.88000E+01	.78767E-01	6.3000	1.9729	1.8900	1	0	BA146	1	.10000E+01
912	CE146	.85200E+03	.81350E-03	1.0800	.2401	.3573	0	0	LA146	1	.10000E+01
913	PR146	.14442E+04	.47995E-03	4.0800	1.2032	1.2140	1	0	CE146	1	.10000E+01
914	ND146	0.	0.	0.0000	0.0000	0.0000	0	1	PR146	1	.10000E+01
									ND145	3	.10000E+01
									PM146	4	.65000E+00
915	PM146	.17439E+09	.39746E-08	1.4720	.0840	.7980	0	0		C	0.
916	SM146	.31536E+16	.21980E-15	2.5400	2.5400	0.0000	0	0	PM146	1	.35000E+00
917	XE147	.67100E+00	.10330E+01	7.9000	2.5185	2.3700	1	0		C	0.
918	CS147	.15541E+01	.44600E+00	6.9700	2.2010	2.0910	1	0	XE147	1	.10000E+01
919	BA147	.23389E+01	.29635E+00	6.5499	2.0579	1.9650	1	0	CS147	1	.10000E+01
920	LA147	.11626E+02	.59621E-01	5.1517	1.5839	1.5455	1	0	BA147	1	.10000E+01
921	CE147	.70000E+02	.99021E-02	3.2000	.9316	.9600	1	0	LA147	1	.10000E+01
922	PR147	.72000E+03	.96270E-03	2.7500	.7192	.8904	0	0	CE147	1	.10000E+01
923	ND147	.95558E+06	.72537E-06	.8980	.2406	.1778	0	0	PR147	1	.10000E+01
									ND146	3	.10000E+01
924	PM147	.82732E+08	.83783E-08	.2247	.0679	.0001	0	1	ND147	1	.10000E+01
925	SM147	.33744E+19	.20541E-18	2.3141	.6434	.6942	1	1	PM147	1	.10000E+01
									EU147	4	.10000E+01
926	EL147	.20995E+07	.33015E-06	1.8000	.4811	.5400	1	0	GD147	4	.10000E+01
927	GD147	.13680E+06	.50669E-05	2.2000	.6070	.6600	1	0		0	0.
928	XE148	.28857E+00	.24020E+01	8.0094	2.5960	2.4028	1	0		C	0.
929	CS148	.12390E+00	.55943E+01	10.2300	3.3157	3.0690	1	0	XE148	1	.10000E+01
930	BA148	.47000E+00	.14748E+01	5.2200	1.6069	1.5660	1	0	CS148	1	.10000E+01
931	LA148	.12900E+01	.53732E+00	7.4400	2.3614	2.2320	1	0	BA148	1	.10000E+01
932	CE148	.48000E+02	.14441E-01	2.0000	.5444	.6000	1	0	LA148	1	.10000E+01
933	PR148	.13800E+03	.50228E-02	4.8000	1.5843	.8550	0	0	CE148	1	.10000E+01
934	ND148	0.	0.	0.3000	0.0000	0.0000	0	0	PR148	1	.10000E+01
935	PM148	.46397E+06	.14940E-05	2.4650	.7443	.6304	0	1	PM148M	2	.60000E-01
									PM147	3	0.
936	PM148M	.35683E+07	.19425E-06	2.4541	.1474	2.0094	0	0	PM147	3	C.
937	SM148	.25229E+24	.27474E-23	2.0049	.5459	.6015	1	1	PM148	1	.10000E+01
									PM148M	1	.94000E+00
									SM147	3	.10000E+01
938	CS149	.63767E+00	.10870E+01	7.9600	2.5391	2.3880	1	0		0	0.
939	BA149	.94859E+00	.73071E+00	7.4976	2.3812	2.2493	1	0	CS149	1	.10000E+01
940	LA149	.37417E+01	.18525E+00	6.1000	1.9052	.8300	1	0	BA149	1	.10000E+01
941	CE149	.50000E+01	.13863E+00	4.7100	1.4351	.4130	1	0	LA149	1	.10000E+01
942	PR149	.15000E+03	.46210E-02	3.0000	1.1578	.2513	0	0	CE149	1	.10000E+01
943	ND149	.62280E+04	.11130E-03	1.6800	.4744	.3368	0	0	PR149	1	.10000E+01

337 117

TABLE IV (continued)

NO.	NLCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M-NUCL	DTYP	BRANCHING
944	PM149	.19109E+06	.36274E-05	1.072	.3766	.0142	0	1	ND149	1	.10000E+01
945	SM149	.31936E+24	.21980E-23	1.8949	.5109	.5685	1	1	PM148	3	.10000E+01
									SM148	3	.10000E+01
									EU149	4	.10000E+01
946	EU149	.80352E+07	.86264E-07	.8000	.1878	.2400	1	0	GD149	4	.10000E+01
947	GD149	.82080E+06	.84448E-06	1.2000	.2999	.3600	1	0		0	0.
948	XE150	.16190E+00	.42814E+01	8.9428	2.8748	2.6828	1	0		0	0.
949	CS150	.54716E-01	.12668E+02	11.1510	3.6320	3.3453	1	0	XE150	1	.10000E+01
950	BA150	.11321E+01	.61226E+00	6.1713	1.9293	1.8514	1	0	CS150	1	.10000E+01
951	LA150	.82963E+00	.83954E+00	8.3761	2.6810	2.5128	1	0	BA150	1	.10000E+01
952	CE150	.40000E+01	.17329E+00	3.4000	.9977	1.0200	1	0	LA150	1	.10000E+01
953	PR150	.62000E+01	.11180E+00	5.7000	2.4822	.0750	0	0	CE150	1	.10000E+01
954	ND150	0.	0.	0.0000	0.0000	0.0000	0	0	PR150	1	.10000E+01
955	PM150	.96480E+04	.71844E-04	3.4300	.7350	1.5100	0	0	PM149	3	.10000E+01
956	SM150	0.	0.	0.0000	0.0000	0.0000	0	1	PM150	1	.10000E+01
									SM149	3	.10000E+01
957	BA151	.13975E+01	.49600E+00	7.0800	2.2385	2.1240	1	0		0	0.
958	LA151	.14288E+01	.48511E+00	7.0915	2.2288	2.1155	1	0	BA151	1	.10000E+01
959	CE151	.10200E+01	.67956E+00	5.6700	1.7591	1.7010	1	0	LA151	1	.10000E+01
960	PR151	.40000E+01	.17329E+00	4.2900	1.2831	1.2870	1	0	CE151	1	.10000E+01
961	ND151	.74640E+03	.92865E-03	2.5100	.6330	.8466	0	0	PR151	1	.10000E+01
962	PM151	.10224E+06	.67796E-05	1.1880	.2888	.3437	0	0	ND151	1	.10000E+01
963	SM151	.28382E+10	.24422E-09	.0760	.0195	.0004	0	1	PM151	1	.10000E+01
									SM150	3	.10000E+01
964	EU151	0.	0.	0.0000	0.0000	0.0000	0	1	SM151	1	.10000E+01
									GD151	4	.10000E+01
965	GD151	.10376E+01	.66800E+00	.4000	.1054	.0520	1	0	TB151	4	.10000E+01
966	TB151	.70920E+05	.97737E-05	2.7000	.7679	.8100	1	0		0	0.
967	BA152	.53853E+00	.12871E+01	7.1108	2.2490	2.1332	1	0		0	0.
968	LA152	.30487E+00	.22736E+01	9.3037	2.9983	2.7911	1	0	BA152	1	.10000E+01
969	CE152	.70134E+01	.98832E-01	4.3582	1.3095	1.3075	1	0	LA152	1	.10000E+01
970	PR152	.84965E+01	.81580E-01	6.5500	2.0579	1.9650	1	0	CE152	1	.10000E+01
971	ND152	.69000E+03	.10046E-02	1.6100	.4228	.4830	1	0	PR152	1	.10000E+01
972	PM152	.24600E+03	.28177E-02	3.6000	1.4388	.2881	0	0	ND152	1	.10000E+01
973	PM152M	.45000E+03	.15403E-02	3.6000	.4195	1.2873	0	0	PM152N	2	.20000E+00
974	PM152N	.10800E+04	.64180E-03	3.2420	.8097	1.1506	0	0		0	0.
975	SM152	0.	0.	0.0000	0.0000	0.0000	0	1	PM152	1	.10000E+01
									PM152M	1	.10000E+01
									EU152	4	.72000E+00
									EU152M	4	.23000E+00
									PM152N	1	.80000E+00
									SM151	3	.10000E+01
976	EU152	.40997E+09	.16907E-08	1.8416	.4255	.5683	0	0	EU152M	2	.10000E+01
									EU151	3	.10000E+01
977	EU152M	.33480E+05	.20703E-04	1.8769	.4336	.5792	0	0		0	0.
978	EU152N	.57600E+04	.12034E-03	.0978	0.0000	.0978	0	0		0	0.
979	GD152	.34690E+22	.19981E-21	2.2342	.6179	.6703	1	0	EU152	1	.28000E+00
									EU152M	1	.77000E+00
									DY156	5	.10000E+01
980	LA153	.62412E+00	.11106E+01	7.9827	2.5469	2.3948	1	0		0	0.
981	CE153	.21955E+01	.31571E+00	6.6122	2.0750	1.9837	1	0	LA153	1	.10000E+01

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE SG	M. NUCL	DTYP	BRANCHING
982	PR153	.10358E+02	.66922E-01	5.2400	1.6136	1.5720	1 0	CE153	1	.10000E+01
983	ND153	.78331E+02	.88490E-02	3.8700	1.1364	1.1610	1 0	PR153	1	.10000E+01
984	PM153	.32400E+03	.21393E-02	1.8000	.6726	.0775	0 0	ND153	1	.10000E+01
985	SM153	.16812E+06	.41229E-05	.8086	.2307	.1045	0 0	PM153	1	.10000E+01
								SM152	3	.10000E+01
986	EU153	0.	0.	0.0000	0.0000	0.0000	0 1	SM153	1	.10000E+01
								GD153	4	.10000E+01
987	GD153	.20800E+08	.33324E-07	.2430	.0602	.0316	1 0	TB153	4	.10000E+01
988	TB153	.20736E+06	.33427E-05	1.9000	.5125	.5700	1 0		0	0.
989	BA154	.28443E+00	.24370E+01	8.0315	2.5635	2.4095	1 0		0	0.
990	LA154	.12574E+00	.55124E+01	10.2140	3.3102	3.0642	1 0	BA154	1	.10000E+01
991	CE154	.25031E+01	.27691E+00	5.3046	1.6354	1.5914	1 0	LA154	1	.10000E+01
992	PR154	.23977E+01	.28909E+00	7.4856	2.3771	2.2457	1 0	CE154	1	.10000E+01
993	ND154	.11057E+03	.62688E-02	2.5800	.7293	.7740	1 0	PR154	1	.10000E+01
994	PM154	.16800E+03	.41259E-02	3.9000	.7600	1.8847	0 0	ND154	1	.10000E+01
								PM154M	2	.10000E+01
995	PM154P	.10800E+03	.64180E-02	4.1020	1.0337	1.5223	0 0		0	0.
996	SM154	0.	0.	0.0000	0.0000	0.0000	0 0	PM154	1	.10000E+01
								PM154M	1	.90000E+00
997	EU154	.27121E+09	.25558E-08	1.9800	.2470	1.2500	0 1	EU153	3	.10000E+01
998	GD154	0.	0.	0.0000	0.0000	0.0000	0 0	EU154	1	.10000E+01
999	LA155	.45934E+00	.15090E+01	8.3600	2.6755	2.5080	1 0		0	0.
1000	CE155	.91520E+00	.75737E+00	7.5380	2.3949	2.2614	1 0	LA155	1	.10000E+01
1001	PR155	.34497E+01	.20093E+00	6.1796	1.9321	1.8539	1 0	CE155	1	.10000E+01
1002	ND155	.13102E+02	.38292E-01	4.8200	1.4721	1.4460	1 0	PR155	1	.10000E+01
1003	PM155	.16489E+03	.42037E-02	3.4600	1.0177	1.0380	1 0	ND155	1	.10000E+01
1004	SM155	.13260E+04	.52274E-03	1.6500	.3719	.6119	0 0	PM155	1	.10000E+01
1005	EU155	.15642E+09	.44314E-08	.2500	.0545	.0875	0 1	SM155	1	.10000E+01
								EU154	3	.10000E+01
1006	GD155	0.	0.	0.0000	0.0000	0.0000	0 0	EU155	1	.10000E+01
								TB155	4	.10000E+01
1007	TB155	.45656E+06	.14857E-05	.9000	.2151	.2700	1 0	OY155	1	.10000E+01
1008	OY155	.36720E+05	.18877E-04	2.1000	.5755	.6300	1 0		0	0.
1009	CE156	.10752E+01	.64469E+00	6.2323	1.9499	1.8697	1 0		0	0.
1010	PR156	.80053E+00	.86586E+00	8.4034	2.6903	2.5210	1 0	CE156	1	.10000E+01
1011	ND156	.21231E+02	.32648E-01	3.5283	1.0392	1.0585	1 0	PR156	1	.10000E+01
1012	PM156	.31854E+02	.21760E-01	5.7000	1.7693	1.7100	1 0	ND156	1	.10000E+01
1013	SM156	.33840E+05	.20483E-04	.7350	.1787	.1803	0 0	PM156	1	.10000E+01
1014	EU156	.13124E+07	.52815E-06	2.4520	.4081	1.3622	0 1	SM156	1	.10000E+01
								EU155	3	.10000E+01
1015	GD156	0.	0.	0.0000	0.0000	0.0000	0 0	EU156	1	.10000E+01
								TB156M	4	.90000E+00
								TB156	4	.10000E+01
1016	TB156	.44064E+06	.15731E-05	2.4000	.6711	.7200	1 0	TB156M	2	.50000E+00
1017	TB156P	.18000E+05	.38508E-04	1.2880	.3256	.3864	1 0		0	0.
1018	OY156	.63072E+22	.10990E-21	0.0000	0.0000	0.0000	0 0		0	0.
1019	CE157	.42864E+00	.16171E+01	8.4447	2.7045	2.5334	1 0		0	0.
1020	PR157	.13656E+01	.50757E+00	7.0995	2.2451	2.1299	1 0	CE157	1	.10000E+01
1021	ND157	.55581E+01	.12471E+00	5.7536	1.7875	1.7261	1 0	PR157	1	.10000E+01
1022	PM157	.32953E+02	.21035E-01	4.4076	1.3287	1.3223	1 0	ND157	1	.10000E+01
1023	SM157	.83000E+02	.83512E-02	2.4600	.5537	.9678	0 0	PM157	1	.10000E+01

337 119

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M. NUCL	DTYP	BRANCHING
1024	EU157	.54540E+05	.12709E-04	1.2700	.2809	.4707	0	0	SM157	1	.10000E+01
									EU156	3	.10000E+01
1025	GD157	0.	0.	0.0000	0.0000	0.0000	0	0	EU157	1	.10000E+01
									TB157	4	.10000E+01
1026	TB157	.50458E+10	.13737E-09	0.0000	0.0000	0.0000	0	0	DY157	4	.10000E+01
1027	DY157	.29160E+05	.23771E-04	1.1000	.2712	.3300	1	0		0	0.
1028	CE158	.52691E+00	.13355E+01	7.1405	2.2591	2.1422	1	0		0	0.
1029	PR158	.30526E+00	.22707E+01	9.3025	2.9979	2.7908	1	0	CE158	1	.10000E+01
1030	ND158	.61949E+01	.11189E+00	4.4626	1.3502	1.3388	1	0	PR158	1	.10000E+01
1031	PM158	.76550E+01	.90548E-01	6.233	2.0828	1.9870	1	0	ND158	1	.10000E+01
1032	SM158	.76027E+03	.91171E-03	1.7831	.4758	.5349	1	0	PM158	1	.10000E+01
1033	EU158	.27540E+04	.25189E-02	3.4500	1.4215	.0398	0	0	SM158	1	.10000E+01
1034	GD158	0.	0.	0.0000	0.0000	0.0000	0	1	EU158	1	.10000E+01
									TB158	4	.84000E+00
1035	TB158	.47304E+11	.14653E-10	1.1650	.0388	.8170	0	0	TB158M	2	.10000E+01
1036	TB158M	.10900E+02	.62592E-01	.1100	0.0000	.1100	0	0		0	0.
1037	DY158	0.	0.	0.0000	0.0000	0.0000	0	0	TB158	1	.16000E+00
1038	PR158	.61509E+00	.11269E+01	8.0002	2.5529	2.4001	1	0		0	0.
1039	ND159	.20773E+01	.33367E+00	6.6672	2.0977	2.0002	1	0	PR159	1	.10000E+01
1040	PM159	.92180E+01	.75195E-01	5.3339	1.6453	1.6002	1	0	ND159	1	.10000E+01
1041	SM159	.62956E+02	.11010E-01	4.0003	1.1733	1.2001	1	0	PM159	1	.10000E+01
1042	EU159	.11220E+04	.61778E-03	2.9700	.5764	1.0052	0	0	SM159	1	.10000E+01
1043	GD159	.66960E+05	.10352E-04	.9400	.1992	.3513	0	0	EU159	1	.10000E+01
									GD158	3	.10000E+01
1044	TB159	0.	0.	0.0000	0.0000	0.0000	0	1	GD159	1	.10000E+01
									DY159	4	.10000E+01
1045	DY159	.12442E+08	.55712E-07	.3800	.0994	.0494	1	0	HD159	4	.10000E+01
1046	HD159	.19800E+04	.35007E-03	1.8000	.4811	.5400	1	0	HD159M	2	.10000E+01
1047	HC159M	.82000E+01	.84530E-01	.2059	0.0000	.2059	0	0		0	0.
1048	CE160	.28493E+00	.24327E+01	8.0288	2.5626	2.4086	1	0		0	0.
1049	PR160	.12953E+00	.53513E+01	10.1820	3.2992	3.0546	1	0	CE160	1	.10000E+01
1050	ND160	.23297E+01	.29752E+00	5.3777	1.6602	1.6133	1	0	PR160	1	.10000E+01
1051	PM160	.22692E+01	.30546E+00	7.5292	2.3919	2.2588	1	0	ND160	1	.10000E+01
1052	SM160	.82514E+02	.84004E-02	2.7234	.7755	.8170	1	0	PM160	1	.10000E+01
1053	EU160	.50000E+02	.13863E-01	3.5900	.8552	1.4133	0	0	SM160	1	.10000E+01
1054	GD160	0.	0.	0.0000	0.0000	0.0000	0	0	EU160	1	.10000E+01
1055	TB160	.62467E+07	.11096E-06	1.8100	.4012	.6402	0	0	TB159	3	.10000E+01
1056	DY160	0.	0.	0.0000	0.0000	0.0000	0	0	TB160	1	.10000E+01
1057	NC161	.89618E+00	.77345E+00	7.5617	2.4030	2.2685	1	0		0	0.
1058	PM161	.32283E+01	.21471E+00	6.2413	1.9530	1.8724	1	0	ND161	1	.10000E+01
1059	SM161	.15802E+02	.43864E-01	4.9203	1.5060	1.4761	1	0	PM161	1	.10000E+01
1060	EU161	.12751E+03	.54361E-02	3.5991	1.0594	1.0797	1	0	SM161	1	.10000E+01
1061	GD161	.22200E+03	.31223E-02	2.0100	.4311	.7929	0	0	EU161	1	.10000E+01
1062	TB161	.59789E+06	.11593E-05	.5800	.1219	.2158	0	0	GD161	1	.10000E+01
1063	DY161	0.	0.	0.0000	0.0000	0.0000	0	0	TB161	1	.10000E+01
									HD161	4	.10000E+01
1064	HC161	.90000E+04	.77016E-04	.8000	.1878	.2400	1	0	HD161M	2	.10000E+01
									ER161	4	.73000E+00
1065	HC161M	.68000E+01	.10193E+00	.2111	0.0000	.2111	0	0	ER161	4	.27000E+00
1066	ER161	.11160E+05	.62110E-04	2.4000	.6711	.7200	1	0		0	0.
1067	ND162	.10389E+01	.66717E+00	6.2732	1.9638	1.8820	1	0		0	0.
1068	PM162	.78900E+00	.87894E+00	8.4162	2.6947	2.5249	1	0	ND162	1	.10000E+01

337 120

TABLE IV (continued)

NO.	NUCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE SG	M. NUCL	DTYP	BRANCHING
1069	SM162	.17907E+02	.38709E-01	3.5447	1.0724	1.0934	1 0	PM162	1	.10000E+01
1070	EU162	.27550E+02	.25160E-01	5.7868	1.7967	1.7360	1 0	SM162	1	.10000E+01
1071	GD162	.60000E+03	.11553E-02	1.0148	.2473	.3044	1 0	EU162	1	.10000E+01
1072	TB162	.44820E+03	.15465E-02	2.8000	.8005	.8400	1 0	GD162	1	.98000E+00
1073	TB162M	.80280E+04	.86341E-04	3.0600	.6860	1.1460	0 0	GD162	1	.20000E-01
1074	DY162	0.	0.	0.0000	0.0000	0.0000	0 0	TB162M	1	.10000E+01
								TB162	1	.10000E+01
								HD162M	4	.37000E+00
								HD162	4	.10000E+01
								HD162M	2	.63000E+00
1075	HC162	.90000E+03	.77016E-03	2.1600	.5944	.6480	1 0	HD162M	2	.63000E+00
1076	HC162M	.40800E+04	.16989E-03	.8990	.2148	.2697	1 0		0 0	0 0.
1077	ER162	0.	0.	0.0000	0.0000	0.0000	0 0		0 0	0 0.
1078	ND163	.43133E+00	.16070E+01	8.4368	2.7018	2.5310	1 0		0 0	0 0.
1079	PM163	.13277E+01	.52206E+00	7.1295	2.2553	2.1389	1 0	ND163	1	.10000E+01
1080	SM163	.51405E+01	.13484E+00	5.8213	1.8105	1.7464	1 0	PM163	1	.10000E+01
1081	EU163	.28153E+02	.24621E-01	4.5127	1.3691	1.3538	1 0	SM163	1	.10000E+01
1082	GD163	.27731E+03	.24995E-02	3.2038	.9324	.9611	1 0	EU163	1	.10000E+01
1083	TB163	.11700E+04	.59243E-03	1.6900	.2974	.8157	0 0	GD163	1	.10000E+01
1084	DY163	0.	0.	0.0000	0.0000	0.0000	0 0	TB163	1	.10000E+01
								HD163	4	.10000E+01
1085	HC163	.31536E+11	.21980E-10	.0100	.0022	.0015	1 0	HD163M	2	.10000E+01
								ER163	4	.10000E+01
1086	HC163M	.10700E+01	.64780E+00	.2990	.0758	.0389	1 0		0 0	0 0.
1087	ER163	.45000E+04	.15403E-03	1.2100	.3028	.3630	1 0		0 0	0 0.
1088	ND164	0.	0.	7.1490	2.2620	2.1447	1 0		0 0	0 0.
1089	PM164	.31097E+00	.22290E+01	9.2843	2.9916	2.7853	1 0	ND164	1	.10000E+01
1090	SM164	.56171E+01	.12340E+00	4.5467	1.3804	1.3640	1 0	PM164	1	.10000E+01
1091	EU164	.70577E+01	.98212E-01	6.6803	2.1022	2.0041	1 0	SM164	1	.10000E+01
1092	GD164	.48621E+03	.14256E-02	1.9418	.5258	.5825	1 0	EU164	1	.10000E+01
1093	TB164	.18000E+03	.38508E-02	3.8000	1.1165	1.1400	1 0	GD164	1	.10000E+01
1094	DY164	0.	0.	0.0000	0.0000	0.0000	0 0	TB164	1	.10000E+01
								HD164	4	.47000E+00
1095	HC164	.21600E+04	.32090E-03	1.0676	.2621	.3203	1 0	HD164M	2	.10000E+01
1096	HC164M	0.	0.	0.0000	0.0000	0.0700	0 0		0 0	0 0.
1097	ER164	0.	0.	0.0000	0.0000	0.0000	0 0	HD164	1	.53000E+00
1098	PM165	.61597E+00	.11253E+01	7.9984	2.5523	2.3995	1 0		0 0	0 0.
1099	SM165	.20041E+01	.34586E+00	6.7032	2.1100	2.0110	1 0	PM165	1	.10000E+01
1100	EU165	.84138E+01	.82382E-01	5.4073	1.6702	1.6222	1 0	SM165	1	.10000E+01
1101	GD165	.52483E+02	.13207E-01	4.1108	1.2148	1.2332	1 0	EU165	1	.10000E+01
1102	TB165	.65920E+03	.10515E-02	2.8142	.8051	.8443	1 0	GD165	1	.10000E+01
1103	DY165	.84600E+04	.81932E-04	1.3000	.2696	.5114	0 0	TB165	1	.50000E+00
								DY165M	2	.97500E+00
1104	DY165M	.75360E+02	.91978E-02	.1405	.0073	.1192	0 0	TB165	1	.50000E+00
								DY165N	2	.10000E+01
1105	DY165N	.32000E+02	.21661E-01	.2500	0.0000	.2500	0 0		0 0	0 0.
1106	HD165	0.	0.	0.0000	0.0000	0.0000	0 0	DY165M	1	.24000E-01
								DY165	1	.10000E+01
								ER165	4	.10000E+01
								TM165	4	.10000E+01
1107	ER165	.37296E+05	.18595E-04	0.0000	0.0000	0.0000	0 0		0 0	0 0.
1108	TM165	.10800E+06	.64180E-05	1.5700	.4167	.4710	1 0		0 0	0 0.
1109	SM166	.22157E+01	.31284E+00	5.4294	1.6777	1.6288	1 0		0 0	0 0.

337 121

TABLE IV (continued)

NO.	NLCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE	SG	M. NUCL	DTYP	BRANCHING
1110	EUI66	.21970E+01	.31550E+00	7.5549	2.4007	2.2665	1	0	SM166	1	.10000E+01
1111	GD166	.65066E+02	.10653E-01	2.8497	.8167	.8549	1	0	EUI66	1	.10000E+01
1112	TB166	.11571E+03	.59902E-02	4.9742	1.5242	1.4923	1	0	GD166	1	.10000E+01
1113	DY166	.29340E+06	.23625E-05	.4810	.1175	.0800	0	0	TB166	1	.10000E+01
1114	HC166	.96480E+05	.71844E-05	1.8400	.3897	.6931	0	0	DY166	1	.10000E+01
1115	HC166M	.37843E+11	.18316E-10	2.0900	.4427	.7873	0	0		0	0.
1116	ER166	0.	0.	0.0000	0.0000	0.0000	0	0	HC166M	1	.10000E+01
									HC166	1	.10000E+01
									TM166	4	.10000E+01
1117	TM166	.27756E+05	.24973E-04	3.0400	.8794	.9120	1	0	YB166	4	.10000E+01
1118	YB166	.20520E+06	.37779E-05	.3000	.0760	.0390	1	0		0	0.
1119	SM167	.89289E+00	.77630E+00	7.5659	2.4044	2.2698	1	0		0	0.
1120	EU167	.30886E+01	.22477E+00	6.2828	1.9671	1.8848	1	0	SM167	1	.10000E+01
1121	GC167	.14215E+02	.8761E-01	4.9989	1.5326	1.4997	1	0	EU167	1	.10000E+01
1122	TB167	.10328E+02	.6711E-02	3.7145	1.0922	1.1144	1	0	GD167	1	.10000E+01
1123	DY167	.26400E+03	.26296E-02	2.4300	.6809	.7290	1	0	TB167	1	.10000E+01
1124	HC167	.11700E+05	.62110E-04	1.0000	.2030	.3800	0	0	DY167	1	.10000E+01
1125	ER167	0.	0.	0.0000	0.0000	0.0000	0	0	HC167	1	.10000E+01
									ER167M	2	.10000E+01
									TM167	4	.20000E-01
1126	ER167M	.23000E+01	.30137E+00	.2080	0.0000	.2080	0	0	HC167	1	.50000E-01
									TM167	4	.98000E+00
1127	TM167	.80352E+06	.86264E-06	1.1600	.2883	.3480	1	0	YB167	4	.10000E+01
1128	YB167	.10500E+04	.66014E-03	1.9600	.5316	.5880	1	0		C	C.
1129	SM168	.10222E+01	.67810E+00	6.2927	1.9704	1.8878	1	0		C	C.
1130	EU168	.79390E+00	.87309E+00	8.4107	2.6928	2.5232	1	0	SM168	1	.10000E+01
1131	GD168	.15674E+02	.44224E-01	3.7385	1.0990	1.1216	1	0	EU168	1	.10000E+01
1132	TB168	.24651E+02	.28118E-01	5.8550	1.8219	1.7565	1	0	GD168	1	.10000E+01
1133	DY168	.65682E+04	.10553E-03	1.1818	.2946	.3545	1	0	TB168	1	.10000E+01
1134	HC168	.18000E+03	.38508E-02	3.3000	.9645	.9900	1	0	DY168	1	.10000E+01
1135	ER168	0.	0.	0.0000	0.0000	0.0000	0	0	HC168	1	.10000E+01
									TM168	4	.10000E+01
1136	TM168	.80438E+07	.86171E-07	1.7200	.4563	.5160	1	0		0	0.
1137	YB168	0.	0.	0.0000	0.0000	0.0000	0	0		C	C.
1138	EU169	.13155E+01	.92690E+00	7.1393	2.2587	2.1418	1	0		0	0.
1139	GD169	.48731E+01	.14224E+00	5.8681	1.8264	1.7604	1	0	EU169	1	.10000E+01
1140	TB169	.24913E+02	.27823E-01	4.5960	1.3969	1.3788	1	0	GD169	1	.10000E+01
1141	DY169	.21700E+03	.31942E-02	3.3237	.9724	.9971	1	0	TB169	1	.10000E+01
1142	HC169	.28200E+03	.24580E-02	2.1000	.5000	.7130	0	0	DY169	1	.10000E+01
1143	ER169	.80352E+06	.86264E-06	.3400	.0979	.0034	0	0	HC169	1	.10000E+01
1144	TM169	0.	0.	0.0000	0.0000	0.0000	0	0	ER169	1	.10000E+01
									YB169	4	.10000E+01
1145	YB169	.26784E+07	.25879E-06	1.2000	.2999	.3600	1	0	YB169M	2	.10000E+01
1146	YB169M	.46000E+02	.15068E-01	.0243	0.0000	.0243	0	0		C	C.
1147	SM170	.52851E+00	.13115E+01	7.1364	2.2577	2.1409	1	0		0	0.
1148	EU170	.32283E+00	.21471E+01	9.2477	2.9791	2.7743	1	0	SM170	1	.10000E+01
1149	GD170	.52349E+01	.13241E+00	4.6082	1.4010	1.3825	1	0	EU170	1	.10000E+01
1150	TB170	.66984E+01	.10348E+00	6.7171	2.1147	2.0151	1	0	GD170	1	.10000E+01
1151	DY170	.34231E+03	.20249E-02	2.0762	.5681	.8229	1	0	TB170	1	.10000E+01
1152	HC170	.44000E+02	.15753E-01	4.2000	1.2487	1.2600	1	0	DY170	1	.10000E+01
1153	HC170M	0.	0.	0.0000	0.0000	0.0000	0	0		0	0.

337 122

TABLE IV (continued)

NO.	NLCL.	HALF LIFE (SEC)	DECAY CONST (1/SEC)	Q (MEV)	E-BETA (MEV)	E-GAMMA (MEV)	IE SG	M. NUCL	DTYP	BRANCHING
1154	ER170	0.	0.	0.0000	0.0000	0.0000	0 0	HO170	1	.10000E+01
								TM170	4	.20000E-02
1155	TM170	.11146E+08	.62190E-07	.9670	.3200	.0186	0 0		0	0.
1156	YB170	0.	0.	0.0000	0.0000	0.0000	0 0	TM170	1	.99800E+00
1157	GD171	.19742E+01	.35110E+00	6.7183	2.1151	2.0155	1 0		0	0.
1158	TB171	.78965E+01	.87779E-01	5.4589	1.6877	1.6377	1 0	GD171	1	.10000E+01
1159	DY171	.45572E+02	.15210E-01	4.1987	1.2482	1.2596	1 0	TB171	1	.10000E+01
1160	HC171	.49454E+03	.14016E-02	2.9380	.8458	.8814	1 0	DY171	1	.10000E+01
1161	ER171	.27072E+05	.25604E-04	1.4900	.3682	.4326	0 0	HO171	1	.10000E+01
1162	TM171	.60549E+08	.11448E-07	.0965	.0315	.0013	0 0	ER171	1	.10000E+01
1163	YB171	0.	0.	0.0000	0.0000	0.0000	0 0	TM171	1	.10000E+01
1164	GD172	.21540E+01	.32180E+00	5.4588	1.6877	1.6376	1 0		0	0.
1165	TB172	.21810E+01	.31781E+00	7.5607	2.4027	2.2682	1 0	GD172	1	.10000E+01
1166	DY172	.54106E+02	.12811E-01	2.9517	.8504	.8855	1 0	TB172	1	.10000E+01
1167	HC172	.99879E+02	.69399E-02	5.0520	1.5504	1.5156	1 0	DY172	1	.10000E+01
1168	ER172	.17640E+06	.39294E-05	.9100	.1220	.5060	0 0	HO172	1	.10000E+01
1169	TM172	.22896E+06	.30274E-05	1.8800	.4560	.6270	0 0	ER172	1	.10000E+01
1170	YB172	0.	0.	0.0000	0.0000	0.0000	0 0	TM172	1	.10000E+01

337 123

TABLE V

FISSION YIELD DATA FOR EACH FISSION-PRODUCT NUCLIDE

NUCLIDE	U235(T)	U235(F)	U235(H)	U238(F)	U238(H)	PU239(T)	PU239(F)	PU241(T)	U233(T)	TH232(F)
CR 66	.25114E-10	.38106E-09	.15989E-07	.37497E-09	.16192E-06	.17298E-10	.54260E-10	.87540E-10	.51297E-11	0.
MN 66	.27666E-08	.43088E-07	.41131E-05	.75743E-08	.84779E-05	.36168E-08	.13045E-07	.78311E-08	.19950E-08	0.
FE 66	.41087E-07	.65419E-07	.12903E-03	.28722E-07	.67450E-04	.93904E-07	.38577E-06	.97572E-07	.91090E-07	0.
CU 66	.62099E-07	.99624E-06	.26893E-03	.31282E-07	.84342E-04	.17849E-06	.76849E-06	.13869E-06	.23208E-06	0.
NI 66	.63956E-07	.10273E-05	.29571E-03	.31323E-07	.85072E-04	.19189E-06	.83844E-06	.14168E-06	.27048E-06	0.
CU 66	.63984E-07	.10273E-05	.29587E-03	.31323E-07	.85073E-04	.19195E-06	.83833E-06	.14169E-06	.27082E-06	0.
ZN 66	.63934E-07	.10273E-05	.29587E-03	.31323E-07	.85073E-04	.19195E-06	.83833E-06	.14169E-06	.27082E-06	0.
GA 66	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
GE 66	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CR 67	.76942E-11	.37613E-10	.15989E-08	.11699E-09	.23589E-07	.17198E-11	.83039E-11	.11605E-10	0.	0.
MN 67	.26501E-08	.78284E-07	.13207E-05	.68264E-08	.37618E-05	.11416E-08	.63836E-08	.32531E-08	.16899E-08	0.
FE 67	.10872E-06	.18892E-05	.12124E-03	.59522E-07	.72227E-04	.85430E-07	.54499E-06	.10930E-06	.14708E-06	0.
CU 67	.26086E-06	.28787E-05	.47499E-03	.76220E-07	.13220E-03	.23340E-06	.20439E-05	.23636E-06	.76405E-06	0.
NI 67	.29832E-06	.33048E-05	.62687E-03	.77025E-07	.13903E-03	.38259E-06	.27564E-05	.26237E-06	.12120E-05	0.
CU 67	.29808E-06	.33082E-05	.66010E-03	.77026E-07	.13907E-03	.38389E-06	.27685E-05	.26254E-06	.12237E-05	0.
ZN 67	.29808E-06	.33082E-05	.66011E-03	.77026E-07	.13907E-03	.38389E-06	.27685E-05	.26254E-06	.12238E-05	0.
GA 67	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
GE 67	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CR 68	0.	.23509E-11	.58859E-10	.30497E-10	.28187E-08	0.	0.	.11605E-11	0.	0.
MN 68	.69938E-09	.61363E-08	.13895E-06	.54700E-08	.14321E-05	.38095E-09	.16888E-08	.10416E-08	.24399E-09	0.
FE 68	.84455E-07	.76026E-06	.44528E-04	.12446E-06	.82893E-04	.86269E-07	.44137E-06	.10309E-06	.10224E-06	0.
CU 68	.40362E-06	.37007E-05	.40528E-03	.22275E-06	.24282E-03	.66419E-06	.37889E-05	.42624E-06	.13122E-05	0.
NI 68	.61473E-06	.56711E-05	.89294E-03	.23635E-06	.29749E-03	.13141E-05	.79259E-05	.60332E-06	.35921E-05	0.
CU 68	.61719E-06	.56949E-05	.90553E-03	.23638E-06	.29780E-03	.13280E-05	.80280E-05	.60503E-06	.36775E-05	0.
CU 68M	.24814E-08	.21804E-07	.12391E-04	.26498E-10	.27887E-06	.13898E-07	.10293E-06	.15907E-08	.85395E-07	0.
ZN 68	.61728E-06	.56950E-05	.90569E-03	.23638E-06	.29780E-03	.13281E-05	.80301E-05	.60504E-06	.36792E-05	0.
GA 68	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
GE 68	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CR 69	.11666E-09	.80022E-08	.13491E-07	.24898E-08	.27468E-06	.80089E-10	.34974E-09	.18909E-09	.31458E-10	0.
FE 69	.43240E-07	.38306E-06	.12005E-04	.16148E-06	.44334E-04	.57172E-07	.28814E-06	.57115E-07	.42229E-07	0.
CU 69	.50045E-06	.45437E-05	.29281E-03	.50744E-06	.27822E-03	.11570E-05	.66135E-05	.55534E-06	.15022E-05	0.
NI 69	.12879E-05	.11855E-04	.12851E-02	.63843E-06	.49012E-03	.44066E-05	.27298E-04	.12737E-05	.8218E-05	0.
CU 69	.13407E-05	.12357E-04	.14270E-02	.64008E-06	.49716E-03	.47915E-05	.30116E-04	.13135E-05	.12302E-04	0.
ZN 69	.13412E-05	.12361E-04	.14297E-02	.64008E-06	.49718E-03	.47915E-05	.30116E-04	.13138E-05	.10344E-04	0.
CU 69M	.23113E-09	.20503E-08	.12591E-05	.10999E-11	.12794E-07	.29796E-08	.23983E-07	.13006E-09	.19999E-07	0.
GA 69	.13412E-05	.12361E-04	.14297E-02	.64008E-06	.49718E-03	.47915E-05	.30116E-04	.13138E-05	.10344E-04	0.
GE 69	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AS 69	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CR 70	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MN 70	.12907E-10	.10602E-09	.83642E-09	.70394E-09	.55873E-11	.10699E-10	.35974E-10	.36317E-10	.38698E-11	0.
FE 70	.15421E-07	.12913E-06	.23992E-05	.13769E-06	.16422E-04	.24607E-07	.96066E-07	.34852E-07	.17003E-07	0.
CU 70	.49268E-06	.42298E-05	.17228E-03	.94362E-06	.26230E-03	.14444E-05	.64414E-05	.91726E-06	.16169E-05	0.
NI 70	.26639E-05	.23133E-04	.17835E-02	.17435E-05	.83703E-03	.17643E-04	.62900E-04	.42388E-05	.26316E-04	0.
CU 70	.28620E-05	.24913E-04	.20910E-02	.17984E-05	.86422E-03	.14413E-04	.72993E-04	.44939E-05	.32855E-04	0.
CU 70M	.15811E-06	.17803E-05	.30579E-03	.14899E-07	.27187E-04	.17698E-05	.10993E-04	.25512E-06	.63966E-05	0.
ZN 70	.28124E-05	.25009E-04	.21270E-02	.17586E-05	.86469E-03	.14585E-04	.74112E-04	.45048E-05	.33975E-04	0.

337 124

TABLE V (continued)

NUCLIDE	U235(F)	U235(H)	U238(F)	U238(H)	PU239(F)	PU239(H)	PU239(T)	PU239(F)	PU241(F)	U233(T)	U232(F)
GA 70	69838E-11	65211E-10	59	20490E-09	22297E-09	20490E-09	22297E-09	16888E-08	58927E-11	27399E-08	C.
GE 70	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	C.
PN 71	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	C.
FE 71	38831E-08	38831E-08	38831E-08	38831E-08	38831E-08	38831E-08	38831E-08	38831E-08	38831E-08	38831E-08	C.
CD 71	37008E-06	37008E-06	37008E-06	37008E-06	37008E-06	37008E-06	37008E-06	37008E-06	37008E-06	37008E-06	C.
RI 71	48725E-05	48725E-05	48725E-05	48725E-05	48725E-05	48725E-05	48725E-05	48725E-05	48725E-05	48725E-05	C.
CU 71	70537E-05	70537E-05	70537E-05	70537E-05	70537E-05	70537E-05	70537E-05	70537E-05	70537E-05	70537E-05	C.
ZN 71	71378E-05	71378E-05	71378E-05	71378E-05	71378E-05	71378E-05	71378E-05	71378E-05	71378E-05	71378E-05	C.
ZN 71M	84446E-07	80313E-06	15389E-03	47277E-05	85588E-06	47277E-05	85588E-06	88136E-03	59127E-07	10899E-04	C.
GA 71	72226E-05	66437E-04	40810E-02	15813E-02	29600E-04	15813E-02	29600E-04	25040E-03	70720E-5	17863E-03	C.
GE 71	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	C.
AS 71	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	C.
FE 72	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	C.
FE 72	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	10005E-08	C.
CD 72	30216E-06	30216E-06	30216E-06	30216E-06	30216E-06	30216E-06	30216E-06	30216E-06	30216E-06	30216E-06	C.
NI 72	10086E-04	10128E-03	25586E-02	18570E-02	11476E-04	18570E-02	11476E-04	80056E-04	11908E-04	10323E-03	C.
CU 72	22922E-04	21330E-03	54656E-02	28985E-02	32699E-04	28985E-02	32699E-04	40482E-03	24114E-04	38221E-03	C.
ZN 72	24833E-04	23310E-03	60512E-02	30018E-02	10378E-03	30018E-02	10378E-03	62666E-03	26295E-04	51520E-03	C.
GA 72	24855E-04	23233E-03	60568E-02	30018E-02	10491E-03	30018E-02	10491E-03	63242E-03	26307E-04	51737E-03	C.
GE 72	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	C.
AS 72	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	C.
SE 72	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	C.
FE 73	61934E-11	34606E-10	21685E-07	10195E-06	10195E-06	10195E-06	10195E-06	50763E-09	16708E-08	16199E-08	C.
CC 73	17216E-07	11205E-06	19608E-04	94306E-03	39283E-04	94306E-03	39283E-04	61406E-06	40206E-06	12316E-05	C.
NI 73	49395E-05	37018E-04	19513E-02	89335E-05	17815E-02	89335E-05	17815E-02	80056E-04	11908E-04	10323E-03	C.
CU 73	45962E-04	38808E-03	81230E-02	33311E-04	44832E-02	33311E-04	44832E-02	19574E-03	44459E-04	25360E-03	C.
ZN 73	10269E-03	93416E-03	11533E-01	46030E-04	52208E-02	46030E-04	52208E-02	73278E-03	60366E-04	10268E-02	C.
GE 73	10569E-03	96707E-03	11599E-01	46254E-04	52273E-02	46254E-04	52273E-02	62961E-03	60631E-04	11258E-02	C.
GE 73M	10569E-03	96707E-03	11599E-01	46254E-04	52273E-02	46254E-04	52273E-02	62961E-03	60631E-04	11258E-02	C.
AS 73	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	C.
SE 73	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	C.
FE 74	13507E-10	66711E-10	82143E-09	20598E-09	20598E-09	20598E-09	20598E-09	56733E-08	81538E-11	58297E-11	C.
CO 74	42637E-07	22910E-06	24301E-05	19641E-06	71223E-05	19641E-06	71223E-05	57858E-08	20618E-07	43033E-07	C.
NI 74	13755E-04	80442E-04	74392E-04	20394E-03	95667E-03	20394E-03	95667E-03	74703E-05	53731E-05	31012E-04	C.
CU 74	14082E-03	89457E-03	72794E-02	87888E-04	49368E-02	87888E-04	49368E-02	25629E-03	47392E-04	66411E-03	C.
ZN 74	33693E-03	21908E-02	16774E-01	12678E-03	78914E-02	12678E-03	78914E-02	46950E-03	98416E-04	25768E-02	C.
GA 74	24833E-03	22742E-02	17304E-01	12758E-03	79266E-02	12758E-03	79266E-02	16673E-02	10096E-03	28108E-02	C.
GE 74	34842E-03	22749E-02	17308E-01	12758E-03	79266E-02	12758E-03	79266E-02	16673E-02	10096E-03	28108E-02	C.
AS 74	1459E-10	12712E-09	60588E-09	0.	13643E-10	60588E-09	13643E-10	15740E-02	10097E-03	28147E-02	C.
AS 74M	74145E-11	64711E-10	30879E-09	0.	79462E-11	30879E-09	79462E-11	49864E-08	21210E-11	15839E-08	C.
SE 74	47735E-11	41568E-10	19802E-09	0.	51151E-11	19802E-09	51151E-11	24482E-08	10705E-11	80896E-09	C.
CD 75	11735E-08	21504E-07	22185E-06	60594E-07	91096E-06	60594E-07	91096E-06	16305E-08	69356E-12	51794E-09	C.
NI 75	73512E-05	2325E-04	20808E-03	18859E-04	37973E-03	18859E-04	37973E-03	12294E-05	28448E-05	13405E-04	C.
CU 75	20546E-03	6343E-03	53785E-02	18784E-02	48326E-02	53049E-04	48326E-02	12614E-03	65374E-04	76636E-03	C.
ZN 75	59385E-03	34669E-02	24581E-01	43782E-03	13247E-01	43782E-03	13247E-01	17494E-02	30248E-03	83559E-02	C.
GA 75	11226E-02	39150E-02	27464E-01	13871E-01	12699E-02	13871E-01	12699E-02	26063E-02	30248E-03	83559E-02	C.
GE 75	11244E-02	39262E-02	27525E-01	45219E-03	13877E-01	45219E-03	13877E-01	26774E-02	30300E-03	84449E-02	C.

337 125

TABLE V (continued)

NUCLIDE	U235(T)	U235(F)	U235(H)	U238(F)	U238(H)	PU239(T)	PU239(F)	PU241(T)	L233(T)	TH232(F)
GE 75M	.46329E-04	.16223E-03	.11288E-02	.18131E-04	.55783E-03	.71392E-04	.13983E-03	.12359E-04	.37690E-03	.88798E-04
AS 75	.11249E-02	.39262E-02	.27525E-01	.45212E-03	.13877E-01	.13117E-02	.26775E-02	.30300E-03	.84451E-02	.22060E-02
SE 75 G.	0.	0.	.15789E-11	0.	0.	.27896E-10	.41969E-10	0.	.12799E-10	0.
BR 75 C.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
FE 76	0.	0.	0.	0.	.48977E-11	0.	0.	0.	0.	0.
CO 76	.72139E-09	.23904E-08	.12791E-07	.74093E-08	.67273E-07	.45694E-11	.12391E-10	.42720E-09	.27799E-09	.12800E-07
NI 76	.24721E-05	.79337E-05	.37887E-04	.66968E-05	.89724E-04	.70295E-07	.17289E-06	.11410E-05	.20502E-05	.19113E-04
CU 76	.21059E-03	.65304E-03	.27970E-02	.16668E-03	.31792E-02	.24967E-04	.55832E-04	.76876E-04	.36003E-03	.75511E-03
ZN 76	.25088E-02	.75872E-02	.29664E-01	.73863E-03	.18559E-01	.10498E-02	.21473E-02	.75419E-03	.80216E-02	.47801E-02
GA 76	.35224E-02	.10923E-01	.40048E-01	.82212E-03	.21652E-01	.25246E-02	.48673E-02	.99530E-03	.14170E-01	.56761E-02
GE 76	.35922E-02	.10722E-01	.40681E-01	.82381E-03	.21743E-01	.28986E-02	.55338E-02	.10087E-02	.15010E-01	.57054E-02
AS 76	.13407E-06	.36906E-06	.10493E-05	.86092E-09	.68367E-07	.30096E-05	.47865E-05	.20209E-07	.33698E-05	.24900E-07
SE 76	.13410E-06	.36913E-06	.10494E-05	.86092E-09	.68372E-07	.30122E-05	.47902E-05	.20212E-07	.33712E-05	.24902E-07
NI 77	.32418E-06	.12402E-05	.48966E-05	.26998E-05	.15093E-04	.62291E-08	.13990E-07	.17108E-06	.17099E-06	.37100E-05
CU 77	.85871E-04	.31629E-03	.11221E-02	.20368E-03	.15114E-02	.73652E-05	.15003E-04	.36688E-04	.95067E-04	.45371E-03
ZN 77	.27633E-02	.98898E-02	.31698E-01	.21985E-02	.20771E-01	.93823E-03	.17457E-02	.97612E-03	.60271E-02	.74037E-02
GA 77	.72438E-02	.20531E-01	.62631E-01	.29864E-02	.30566E-01	.46627E-02	.81251E-02	.18745E-02	.20611E-01	.11579E-01
GE 77	.29270E-02	.74824E-02	.22317E-01	.93978E-03	.97941E-02	.29795E-02	.49413E-02	.65961E-03	.97957E-02	.43558E-02
GE 77M	.67687E-02	.19079E-01	.57781E-01	.26525E-02	.27292E-01	.53910E-02	.91896E-02	.17225E-02	.20508E-01	.10392E-01
AS 77	.82871E-02	.22567E-01	.67992E-01	.30353E-02	.31357E-01	.73018E-02	.12293E-01	.20211E-02	.26092E-01	.12577E-01
SE 77	.82871E-02	.22567E-01	.67992E-01	.30353E-02	.31357E-01	.73020E-02	.12294E-01	.20211E-02	.26097E-01	.12577E-01
SE 77M	.21548E-04	.58677E-04	.17679E-03	.78918E-05	.81528E-04	.19079E-04	.32090E-04	.52551E-05	.67904E-04	.32700E-04
BR 77	0.	0.	0.	0.	0.	.11618E-10	.15619E-10	0.	.35998E-11	0.
BR 77M	0.	0.	0.	0.	0.	.58992E-11	.75145E-11	0.	.17199E-11	0.
KR 77	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NI 78	.44024E-07	.51815E-07	.26991E-06	.48196E-06	.16092E-05	.20497E-09	.46766E-09	.25412E-07	.11899E-07	.56600E-06
CU 78	.38565E-04	.82705E-04	.20413E-03	.12347E-03	.47738E-03	.98707E-06	.17492E-05	.18434E-04	.22811E-04	.23157E-03
ZN 78	.37086E-02	.81590E-02	.17106E-01	.38311E-02	.16984E-01	.47892E-03	.66726E-03	.14921E-02	.46226E-02	.11071E-01
GA 78	.16712E-01	.33834E-01	.63484E-01	.79488E-02	.39631E-01	.69240E-02	.78600E-02	.54349E-02	.32574E-01	.28853E-01
GE 78	.16427E-01	.47955E-01	.85677E-01	.87277E-02	.44038E-01	.20947E-01	.20009E-01	.72718E-02	.61143E-01	.33930E-01
AS 78	.16637E-01	.48228E-01	.86040E-01	.87322E-02	.44068E-01	.22113E-01	.20870E-01	.73003E-02	.62242E-01	.33976E-01
SE 78	.16637E-01	.48228E-01	.86040E-01	.87322E-02	.44094E-01	.22126E-01	.20877E-01	.73004E-02	.62248E-01	.33976E-01
BR 78	.10706E-10	.28205E-10	.26282E-10	0.	0.	.32395E-08	.16788E-08	.22110E-11	.51297E-09	0.
KR 78	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CU 79	.46025E-05	.88614E-05	.21485E-04	.30297E-04	.22089E-03	.62791E-07	.13590E-06	.29514E-05	.23699E-05	.44700E-04
ZN 79	.14844E-02	.27643E-02	.56716E-02	.28190E-02	.22977E-01	.11405E-03	.17501E-03	.81733E-03	.16973E-02	.71237E-02
GA 79	.15221E-01	.27591E-01	.49277E-01	.11222E-01	.98921E-01	.53203E-02	.60227E-02	.73944E-02	.34401E-01	.41773E-01
GE 79	.40283E-01	.64345E-01	.10532E+00	.15614E-01	.14058E+00	.38768E-01	.34330E-01	.16199E-01	.13123E+00	.70751E-01
AS 79	.50754E-01	.66446E-01	.10806E+00	.15694E-01	.14186E+00	.47465E-01	.39860E-01	.16650E-01	.14274E+00	.71638E-01
SE 79	.50770E-01	.66461E-01	.10808E+00	.15694E-01	.14186E+00	.47803E-01	.40017E-01	.16653E-01	.14293E+00	.71641E-01
SE 79M	.50762E-01	.66454E-01	.10807E+00	.15694E-01	.14186E+00	.47634E-01	.39938E-01	.16652E-01	.14284E+00	.71640E-01
BR 79	.50770E-01	.66461E-01	.10808E+00	.15694E-01	.14186E+00	.47803E-01	.40017E-01	.16653E-01	.14293E+00	.71641E-01
BR 79M	.14408E-08	.12002E-08	.12591E-08	.36697E-11	.37282E-10	.15698E-06	.52562E-07	.20209E-09	.34298E-07	.12600E-09
KR 79	0.	0.	0.	0.	0.	.33995E-10	.84838E-11	0.	.28398E-11	0.
KR 79C	0.	0.	0.	0.	0.	.17298E-10	.40707E-11	0.	.14399E-11	0.
RB 79	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NI 80	.59532E-10	.93015E-10	.18887E-09	.33197E-08	.48677E-08	0.	0.	.36717E-10	.65596E-11	.15200E-08
CU 80	.66142E-06	.96925E-06	.16990E-05	.88925E-05	.16697E-04	.39294E-08	.70149E-08	.32619E-06	.15800E-06	.75015E-05
ZN 80	.72005E-03	.58913E-03	.15007E-02	.24617E-02	.58359E-02	.24001E-04	.28686E-04	.28646E-03	.36614E-03	.37245E-02

TABLE V (continued)

Nuclide	U235(F)	U235(H)	U238(F)	U238(H)	PU239(F)	PU239(H)	PU239(F)	PU239(H)	PU241(T)	L233(T)	TM232(F)
GA 80	+21196E-01	+36707E-01	+22275E-01	+64017E-01	+55215E-02	+28666E-02	+69465E-02	+21496E-01	+54967E-01		
GE 8C	+13234E+00	+16082E+00	+48422E-01	+15781E+00	+67104E-01	+39266E-01	+30081E-01	+18830E+00	+16544E+00		
AS 80	+14934E+00	+17858E+00	+49781E-01	+16332E+00	+11100E+00	+57048E-01	+33353E-01	+24110E+00	+17513E+00		
SE 80	+14973E+00	+17893E+00	+49789E-01	+16337E+00	+11161E+00	+58545E-01	+33418E-01	+24367E+00	+17524E+00		
BR 8C	+75946E-06	+17078E-06	+21704E-06	+87639E-07	+64394E-05	+16888E-05	+16007E-07	+12339E-04	+29700E-07		
BR 80M	+31171E-06	+1102E-06	+18102E-06	+82628E-08	+66873E-05	+31244E-05	+28623E-07	+11279E-04	+15200E-07		
KR 80	+67471E-06	+15610E-06	+11616E-08	+82628E-08	+56873E-05	+31244E-05	+28623E-07	+11279E-04	+27146E-07		
CU 81	+38419E-07	+59059E-07	+97091E-06	+11095E-05	+95087E-10	+25681E-09	+19109E-07	+19197E-08	+61800E-06		
ZN 81	+12618E-03	+18593E-03	+93189E-03	+14374E-02	+19898E-05	+32679E-05	+57746E-04	+15456E-02	+15456E-02		
GA 81	+11308E-01	+14343E-01	+24491E-01	+49545E-01	+95285E-03	+96457E-03	+43507E-02	+71331E-02	+46673E-01		
GE 81	+1458E+00	+16146E+00	+11352E+00	+27508E+00	+52454E-01	+34225E-01	+46918E-01	+16313E+00	+31907E+00		
AS 81	+20071E+00	+21943E+00	+12710E+00	+32116E+00	+15515E+00	+74510E-01	+63650E-01	+28957E+00	+38618E+00		
SE 81	+21032E+00	+25453E+00	+12737E+00	+32241E+00	+17618E+00	+83462E-01	+64689E-01	+31164E+00	+38848E+00		
SE 81M	+74170E-02	+33479E-01	+15799E-03	+56973E-03	+50063E-02	+44787E-02	+51824E-03	+130448E-01	+10680E-02		
BR 81	+24033E+00	+25454E+00	+12737E+00	+32241E+00	+17652E+00	+83523E-01	+64690E-01	+31174E+00	+38848E+00		
KR 81	+17860E-08	+11102E-08	+80993E-11	+62270E-10	+37795E-06	+43968E-07	+29113E-09	+30898E-07	+21600E-09		
KR 81M	+51250E-09	+56661E-09	+41096E-11	+31685E-10	+19397E-06	+21284E-07	+14807E-09	+15799E-07	+11000E-09		
BR 81C	0.	0.	0.	0.	0.	0.	0.	0.	0.		
BR 81M	0.	0.	0.	0.	0.	0.	0.	0.	0.		
NI 82	0.	0.	+12899E-11	0.	+48393E-11	0.	0.	0.	0.		
CU 82	+68133E-09	+29579E-08	+4597E-07	+41680E-07	+11398E-11	+70249E-11	+72133E-09	+13399E-09	+42700E-07		
ZN 82	+12606E-04	+27884E-04	+16803E-03	+18196E-03	+80190E-07	+28080E-06	+74141E-05	+35099E-05	+24404E-03		
GA 82	+37486E-02	+62116E-02	+14570E-01	+19303E-01	+12405E-03	+25110E-03	+17842E-02	+26764E-02	+33515E-01		
SE 82	+13408E+00	+17091E+00	+17718E+00	+27860E+00	+20520E-01	+26617E-01	+52707E-01	+13892E+00	+64977E+00		
AS 82	+16681E+00	+25242E+00	+21337E+00	+34710E+00	+72013E-01	+63151E-01	+79452E-01	+29201E+00	+79388E+00		
AS 82M	+82263E-01	+36983E-01	+36587E-01	+68871E-01	+51489E-01	+38528E-01	+26910E-01	+15307E+00	+18886E+00		
SE 82	+33431E+00	+36103E+00	+28488E+00	+42775E+00	+21091E+00	+14349E+00	+11802E+00	+56262E+00	+10237E+01		
BR 82	+23335E-03	+68266E-03	+99976E-05	+28046E-04	+39419E-02	+79870E-03	+52388E-04	+13788E-02	+13065E-03		
KR 82	+71439E-04	+61138E-04	+50595E-05	+14193E-04	+72990E-03	+40470E-03	+26512E-04	+62897E-03	+64500E-04		
KR 82	+12517E-03	+68380E-03	+18121E-04	+28393E-04	+39649E-02	+81017E-03	+53055E-04	+13957E-02	+13224E-03		
ZN 82	+72725E-06	+14686E-05	+15490E-04	+19491E-04	+24797E-08	+14240E-06	+14795E-06	+24700E-04	+24700E-04		
GA 83	+52448E-01	+13620E-02	+44571E-02	+63025E-02	+12301E-04	+44682E-04	+41870E-03	+31313E-03	+11409E-01		
GE 83	+67677E-01	+10501E+00	+85437E+00	+24296E+00	+61634E-02	+14269E-01	+37844E-01	+39284E+00	+77981E+00		
AS 83	+2199E+00	+36838E+00	+33737E+00	+53751E+00	+91397E-01	+14516E+00	+14775E+00	+52061E+00	+16904E+01		
SE 83	+39556E+00	+22936E+00	+19110E+00	+23809E+00	+12658E+00	+15126E+00	+81324E+00	+60424E+00	+12532E+01		
BR 83	+53111E+00	+29413E+00	+23523E+00	+39405E+00	+15214E+00	+19190E+00	+12240E+00	+60424E+00	+12532E+01		
KR 83	+53111E+00	+48699E+00	+37626E+00	+63269E+00	+29594E+00	+39470E+00	+20491E+00	+10176E+01	+20365E+01		
KR 83M	+53111E+00	+48699E+00	+37626E+00	+63269E+00	+29606E+00	+35479E+00	+20491E+00	+10177E+01	+20365E+01		
BR 83	+43724E-09	+10393E-09	+25598E-11	+62370E-11	+57793E-07	+13590E-07	+83739E-10	+12699E-07	+87300E-10		
SR 83	0.	0.	0.	0.	0.	0.	0.	0.	0.		
ZN 84	+12407E-07	+83742E-07	+93091E-06	+92856E-06	+14898E-11	+13790E-09	+19409E-07	+25299E-08	+12900E-05		
GA 84	+4236E-04	+20094E-03	+57184E-03	+10304E-02	+81893E-06	+88288E-05	+55345E-04	+20601E-04	+20463E-02		
GE 84	+16029E-01	+49838E-01	+11020E+00	+12363E+00	+13516E-02	+23671E-02	+16229E-01	+16639E-01	+34508E+00		
AS 84	+30346E+00	+40803E+00	+49311E+00	+57664E+00	+58186E-01	+81140E-01	+15244E+00	+37321E+00	+20805E+01		
SE 84	+54848E+00	+86684E+00	+73636E+00	+87937E+00	+39649E+00	+46231E+00	+33964E+00	+15441E+01	+36358E+01		
BR 84	+96673E+00	+10306E+00	+73906E+00	+88292E+00	+43563E+00	+49985E+00	+34488E+00	+16213E+01	+36610E+01		
BR 84M	+19303E-01	+10314E-01	+27038E-02	+35483E-02	+60928E-01	+37561E-01	+52444E-02	+77222E-01	+25112E-01		
KR 84	+98633E+00	+88923E+00	+74178E+00	+88649E+00	+48001E+00	+53954E+00	+35218E+00	+17014E+01	+36863E+01		

337 127

TABLE V (continued)

NUCLIDE	U235(I)	U235(F)	U235(H)	U238(F)	U238(H)	PU238(I)	PU238(F)	PU239(F)	PU241(I)	L233(I)	IN232(F)
RB 84	-19040E-07	-23755E-07	-11097E-07	-62844E-09	-83560E-09	-21097E-05	-11981E-05	-89641E-08	-89641E-08	-97545E-06	-13380E-07
RB 84M	-33218E-07	-22704E-07	-72849E-08	-42496E-09	-54974E-09	-14198E-05	-80541E-06	-6028E-08	-6028E-08	-65496E-06	-90200E-08
SR 84	-57347E-09	-10127E-08	-33292E-09	-18853E-10	-25068E-10	-63540E-07	-36054E-07	-26892E-09	-26892E-09	-29319E-07	-40140E-09
GA 85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
GE 85	-62304E-02	-77803E-02	-13688E-01	-24388E-01	-27742E-01	-16598E-03	-2783E-03	-2753E-02	-2753E-02	-18169E-02	-66928E-01
AS 85	-26446E+00	-22843E+00	-33480E+00	-26602E+00	-35288E+00	-21002E-01	-2598E-01	-7445E-01	-7445E-01	-14170E+00	-10956E+01
SE 85	-62338E+00	-6460E+00	-8320E+00	-4460E+00	-5835E+00	-18272E+00	-20128E+00	-1980E+00	-1980E+00	-82878E+00	-21176E+01
SE 85M	-45981E+00	-46182E+00	-56728E+00	-2864E+00	-3074E+00	-16592E+00	-18081E+00	-1387E+00	-1387E+00	-71542E+00	-12411E+01
BR 85	-12556E+01	-12887E+01	-15594E+01	-70447E+00	-93639E+00	-54655E+00	-59212E+00	-38023E+00	-38023E+00	-21262E+01	-35924E+01
KR 85	-27166E+00	-25913E+00	-33254E+00	-14953E+00	-21474E+00	-12497E+00	-13545E+00	-81289E-01	-81289E-01	-47620E+00	-76488E+01
KR 85M	-12704E+01	-12606E+01	-15610E+01	-70462E+00	-93660E+00	-5705E+00	-60119E+00	-38071E+00	-38071E+00	-21448E+01	-36007E+01
BR 85	-12657E+01	-12555E+01	-15539E+01	-70174E+00	-94794E+00	-56086E+00	-62673E+00	-37916E+00	-37916E+00	-21543E+01	-35821E+01
SR 85	-21646E-05	-11703E-09	-63996E-10	0.	0.	-15104E-07	-12289E-07	-25608E-10	-25608E-10	-11074E-07	-25224E-10
SR 85M	-11907E-09	-62110E-10	-33976E-10	0.	0.	-79589E-08	-67251E-08	-13606E-10	-13606E-10	-60397E-08	-13400E-10
Y 85	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ZN 86	-63335E-11	-74312E-11	-17288E-10	-26998E-09	-32485E-09	0.	0.	-30914E-11	-30914E-11	0.	-30700E-09
GA 86	-27716E-06	-29406E-06	-55463E-06	-36999E-05	-4313E-05	-86088E-09	-16992E-08	-11506E-06	-11506E-06	-12699E-07	-62803E-05
GE 86	-11434E-02	-11025E-02	-16904E-02	-49382E-02	-5956E-02	-14499E-04	-17888E-04	-14401E-03	-14401E-03	-14401E-03	-12365E-01
AS 86	-11532E+00	-10480E+00	-12848E+00	-17493E+00	-19287E+00	-5637E-02	-66850E-02	-35027E-01	-35027E-01	-38239E-01	-62600E+00
SE 86	-12998E+01	-12989E+01	-13905E+01	-10130E+01	-10939E+01	-25603E+00	-29386E+00	-42514E+00	-42514E+00	-12280E+01	-48389E+01
ER 86	-93774E+00	-9323E+00	-94763E+00	-59176E+00	-63646E+00	-32518E+00	-36616E+00	-3010E+00	-3010E+00	-12952E+01	-30104E+01
KR 86M	-52423E+00	-53233E+00	-94763E+00	-59194E+00	-63643E+00	-32518E+00	-36644E+00	-3010E+00	-3010E+00	-12952E+01	-30099E+01
KR 86	-19477E+01	-19070E+01	-19267E+01	-11887E+01	-12780E+01	-75749E+00	-64877E+00	-61259E+00	-61259E+00	-29566E+01	-66697E+01
BR 86	-11E-04	-88714E-04	-65335E-03	-37697E-05	-37182E-05	-58092E-03	-9782E-03	-2441E-04	-2441E-04	-6083E-02	-12330E-02
BR 86M	-11E-04	-44307E-04	-23784E-04	-18798E-05	-18591E-05	-68893E-03	-97917E-03	-12206E-04	-12206E-04	-58797E-02	-3880E-03
SE 87	-68742E+00	-52270E+00	-75775E+00	-96017E+00	-10444E+01	-29952E+00	-10678E+00	-75580E+00	-75580E+00	-74468E-02	-16283E+00
BR 87	-21710E+01	-21285E+01	-15444E+01	-14574E+01	-15121E+01	-77474E+00	-57556E+00	-67295E+00	-67295E+00	-23067E+01	-60810E+01
KR 87	-2703E+01	-2357E+01	-2365E+01	-14676E+01	-15688E+01	-8994E+00	-92252E+00	-73787E+00	-73787E+00	-39281E+01	-62850E+01
SR 87	-24730E+01	-23569E+01	-23665E+01	-14677E+01	-15669E+01	-93019E+00	-10960E+01	-73841E+00	-73841E+00	-39521E+01	-62863E+01
SR 87M	-10105E-05	-78913E-06	-24283E-06	-26598E-08	-12394E-07	-14798E-04	-16086E-04	-17408E-06	-17408E-06	-27499E-04	-27400E-06
Y 87	-42323E-10	-25604E-10	-59559E-11	0.	-12394E-07	-20897E-08	-2780E-08	-5957E-11	-5957E-11	-27998E-08	-45000E-11
ZR 87	-21512E-10	-12602E-10	-29380E-11	0.	0.	-10399E-08	-13790E-08	-30214E-11	-30214E-11	-13899E-08	-22900E-11
GE 88	-88810E-05	-33505E-05	-60958E-05	-47696E-04	-49776E-04	-21797E-07	-13190E-07	-11005E-05	-11005E-05	-42498E-07	-40000E-04
AS 88	-24472E-02	-36400E-02	-51985E-02	-17941E-01	-16617E-01	-98608E-04	-62967E-04	-18877E-02	-18877E-02	-19503E-03	-24208E-01
SE 88	-24074E+00	-47539E+00	-48785E+00	-7913E+00	-65806E+00	-4507E-01	-36372E-01	-13849E+00	-13849E+00	-11047E+00	-16517E+01
BR 88	-2197E+01	-23122E+01	-19513E+01	-19711E+01	-15443E+01	-61985E+00	-43680E+00	-64522E+00	-64522E+00	-25042E+01	-53491E+01
KR 88	-34768E+01	-34462E+01	-32048E+01	-21952E+01	-20706E+01	-12969E+01	-12841E+01	-93705E+00	-93705E+00	-51962E+01	-65745E+01
KR 88M	-35091E+01	-34769E+01	-32248E+01	-21978E+01	-20725E+01	-13405E+01	-13572E+01	-94434E+01	-94434E+01	-53780E+01	-65939E+01
SR 88	-35092E+01	-34770E+01	-32219E+01	-21978E+01	-20725E+01	-13411E+01	-13580E+01	-94435E+00	-94435E+00	-53795E+01	-65939E+01
Y 88	-2533E-08	-56609E-08	-15489E-08	-44096E-10	-25488E-10	-12409E-06	-19586E-06	-10605E-08	-10605E-08	-25599E-06	-86000E-09
ZR 88	0.	0.	0.	0.	0.	-31796E-11	-52662E-11	0.	0.	-47697E-11	0.
AS 89	-19411E-03	-29705E-03	-31278E-03	-20598E-02	-23429E-02	-37593E-05	-28279E-05	-99146E-04	-99146E-04	-84595E-05	-24070E-02
SE 89	-88461E-01	-12441E+00	-10098E+00	-31070E+00	-28139E+00	-56750E-02	-46504E-02	-37867E-01	-37867E-01	-15927E-01	-52653E+00

337 120

TABLE V (continued)

NUCLIDE	U235(T)	U235(F)	U235(H)	U238(F)	U238(H)	PU239(T)	PU239(F)	PU241(T)	U233(T)	TM232(F)
BR 89	-15804E+01	-10324E+01	-10324E+01	-17333E+01	-13252E+01	-22474E+00	-19899E+00	-44524E+00	-11662E+01	-39188E+01
BR 89	-42165E+01	-26213E+01	-26213E+01	-27347E+01	-26196E+01	-14163E+01	-13391E+01	-1127E+01	-52957E+01	-73105E+01
BR 89	-44183E+01	-38001E+01	-38001E+01	-28105E+01	-26423E+01	-18807E+01	-17922E+01	-11740E+01	-61356E+01	-74648E+01
SM 89	-46747E+01	-38696E+01	-38696E+01	-28106E+01	-26450E+01	-18895E+01	-18028E+01	-11744E+01	-61557E+01	-74656E+01
Y 89	-44202E+01	-38696E+01	-38696E+01	-28106E+01	-26450E+01	-18895E+01	-18028E+01	-11744E+01	-61557E+01	-74656E+01
Y 89M	-44225E+03	-38705E+03	-38705E+03	-28106E+03	-26450E+03	-17269E+03	-18491E+03	-11748E+03	-62218E+03	-74660E+03
ZR 89	-10479E+10	-31288E+11	-31288E+11	0.	0.	-6406E+09	-77679E+09	0.	-85983E+09	0.
ZR 89M	-55409E+11	0.	-16489E+11	0.	0.	-33695E+09	-39371E+09	0.	-45198E+09	0.
NB 89	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NB 89M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AS 9C	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
BR 9C	-33847E+01	-20988E+01	-27863E+01	-73621E+01	-92454E+01	-57792E+03	-44368E+03	-76422E+02	-12806E+02	-12980E+00
BR 9C	-13467E+01	-7667E+00	-75930E+00	-10634E+01	-10168E+01	-75417E+01	-64742E+01	-23639E+00	-67458E+00	-19632E+01
BR 9C	-45818E+01	-45461E+01	-35232E+01	-30459E+01	-28063E+01	-12907E+01	-12203E+01	-12938E+01	-44982E+01	-71160E+01
RB 9C	-46152E+01	-43246E+01	-36342E+01	-26768E+01	-24665E+01	-14788E+01	-14584E+01	-12066E+01	-48966E+01	-63682E+01
RB 9CM	-11660E+01	-11211E+01	-89544E+00	-57686E+00	-51376E+00	-58059E+00	-59916E+00	-31121E+00	-1745E+01	-14969E+01
SR 9C	-57518E+01	-54135E+01	-45058E+01	-32268E+01	-29891E+01	-21083E+01	-21202E+01	-15086E+01	-67142E+01	-77324E+01
Y 9C	-57520E+01	-54138E+01	-45058E+01	-32268E+01	-29891E+01	-21083E+01	-21202E+01	-15086E+01	-67146E+01	-77324E+01
Y 90M	-12707E+04	-10302E+04	-38473E+05	-23498E+06	-79662E+07	-99286E+04	-13390E+03	-21010E+05	-14999E+03	-18200E+05
ZR 9C	-53520E+01	-54802E+01	-45058E+01	-32268E+01	-29891E+01	-21083E+01	-21202E+01	-15086E+01	-67146E+01	-77324E+01
ZR 90M	-51868E+07	-41961E+07	-115590E+07	-94650E+09	-32023E+09	-43134E+06	-58737E+06	-85459E+08	-63697E+06	-73571E+08
NB 9C	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NB 9CM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PC 9C	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SE 91	-34479E+02	-16633E+02	-86140E+04	-11854E+01	-2731E+01	-8095E+04	-27680E+04	-77836E+03	-19799E+03	-10236E+01
BR 91	-42536E+00	-18257E+00	-47569E+01	-48214E+00	-77981E+00	-16156E+01	-15163E+01	-80434E+01	-6802E+01	-61357E+00
RR 91	-34917E+01	-26933E+01	-19711E+01	-31045E+01	-28464E+01	-79699E+00	-71933E+00	-11266E+01	-22286E+01	-54292E+01
RB 91	-57292E+01	-48737E+01	-38113E+01	-38181E+01	-35551E+01	-21105E+01	-20371E+01	-17737E+01	-56317E+01	-69831E+01
SR 91	-58890E+01	-55794E+01	-47954E+01	-38406E+01	-35753E+01	-24851E+01	-24638E+01	-18256E+01	-65092E+01	-70617E+01
Y 91	-58896E+01	-55787E+01	-47986E+01	-38406E+01	-35754E+01	-24947E+01	-24683E+01	-18258E+01	-65151E+01	-70618E+01
Y 91M	-33423E+01	-32117E+01	-27640E+01	-21222E+01	-20594E+01	-14355E+01	-14214E+01	-10517E+01	-27520E+01	-40876E+01
ZR 91	-58896E+01	-55787E+01	-47986E+01	-38406E+01	-35754E+01	-24947E+01	-24683E+01	-18259E+01	-65151E+01	-70618E+01
NB 91	0.	0.	0.	0.	0.	-95596E+10	-14248E+09	0.	-59797E+10	0.
NB 91M	0.	0.	0.	0.	0.	-49693E+10	-73946E+10	0.	-29998E+10	0.
PC 91	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PC 91M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SE 92	-44824E+04	-69411E+04	-51164E+06	-14829E+02	-17582E+02	-17698E+05	-11392E+05	-64430E+04	-69196E+05	-81200E+03
BR 92	-18108E+01	-25405E+01	-93686E+03	-17594E+00	-15279E+00	-23584E+02	-17589E+02	-21484E+01	-72685E+02	-15401E+00
RR 92	-15407E+01	-10864E+01	-15400E+01	-27724E+01	-19519E+01	-33616E+00	-28768E+00	-84522E+00	-62688E+00	-36410E+01
RB 92	-48185E+01	-4137E+01	-39508E+01	-38164E+01	-33035E+01	-18353E+01	-17261E+01	-19949E+01	-43142E+01	-66943E+01
SR 92	-58462E+01	-56026E+01	-51122E+01	-41505E+01	-38589E+01	-29849E+01	-29552E+01	-22699E+01	-65440E+01	-71378E+01
Y 92	-59540E+01	-57188E+01	-51194E+01	-41632E+01	-38590E+01	-30164E+01	-29939E+01	-22719E+01	-65916E+01	-71398E+01
ZR 92	-59540E+01	-57188E+01	-51194E+01	-41632E+01	-38590E+01	-30164E+01	-29941E+01	-22719E+01	-65918E+01	-71398E+01
NB 92	-78343E+10	-67211E+10	-42043E+11	0.	0.	-40194E+08	-66851E+08	-14207E+10	-37298E+08	-40900E+11
NB 92M	-78343E+10	-67211E+10	-42043E+11	0.	0.	-40194E+08	-66851E+08	-14207E+10	-37298E+08	-40900E+11
PC 92	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PC 92M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SE 93	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
BR 93	-56808E+02	-22204E+02	-39073E+03	-35253E+01	-15926E+01	-18097E+03	-14889E+03	-32885E+02	-62798E+03	-24638E+01
RR 93	-53568E+00	-29138E+00	-22975E+00	-15172E+01	-83712E+00	-60141E+01	-75994E+01	-40634E+00	-16436E+00	-17800E+01

337 129

TABLE V (continued)

MUCLIDE	U235(I1)	U235(I2)	U235(H)	U238(F1)	U238(H)	PU239(I1)	PU239(F1)	PU239(I2)	U233(I1)	U233(F1)	U233(I2)
RR 93	35821E+01	30573E+01	-28066E+01	39425E+01	-31019E+01	-12274E+01	-11478E+01	19628E+01	-22395E+01	-59262E+01	
SR 93	61917E+01	59781E+01	50933E+01	47240E+01	42959E+01	36863E+01	-35291E+01	-28942E+01	66849E+01	-75741E+01	
Y 93	62956E+01	60374E+01	51514E+01	47310E+01	43085E+01	38769E+01	37423E+01	29194E+01	-65649E+01	-75988E+01	
ZR 93	62956E+01	60375E+01	51575E+01	47310E+01	43085E+01	38788E+01	37448E+01	29195E+01	69675E+01	-75989E+01	
RR 94	62956E+01	60375E+01	51575E+01	47310E+01	43085E+01	38788E+01	37448E+01	29195E+01	69675E+01	-75989E+01	
SR 94	62956E+01	60375E+01	51575E+01	47310E+01	43085E+01	38788E+01	37448E+01	29195E+01	69675E+01	-75989E+01	
RR 95	59800E+01	57151E+01	48996E+01	44944E+01	40931E+01	36849E+01	-35576E+01	-27735E+01	-66191E+01	-72184E+01	
MC 93	0	0	0	0	0	0	0	0	0	0	
MC 94	0	0	0	0	0	0	0	0	0	0	
MC 95	0	0	0	0	0	0	0	0	0	0	
TC 93	0	0	0	0	0	0	0	0	0	0	
TC 94	0	0	0	0	0	0	0	0	0	0	
TC 95	0	0	0	0	0	0	0	0	0	0	
SE 96	45125E-07	97416E-07	42092E-06	31497E-09	12094E-09	78689E-09	-43568E-09	66531E-07	-11899E-08	-80700E-06	
RR 94	3162E-03	9316E-03	4491E-03	37648E-02	15966E-02	11499E-04	74050E-05	25819E-03	-17500E-04	-17438E-02	
RR 94	2308E+00	16861E+00	16600E+00	47820E+00	15122E+00	16376E+01	-12167E-01	10149E+00	24961E-01	39247E+00	
RR 94	17185E+01	21427E+01	19262E+01	23508E+01	21502E+01	61379E+00	52070E+00	12740E+01	93816E+00	29918E+01	
SR 94	5858E+01	56600E+01	47635E+01	41900E+01	37198E+01	36843E+01	34792E+01	31175E+01	56442E+01	56069E+01	
Y 94	62191E+01	59391E+01	49686E+01	42445E+01	37774E+01	35212E+01	41476E+01	32602E+01	66705E+01	57319E+01	
ZR 94	62229E+01	59418E+01	49703E+01	42446E+01	37779E+01	35212E+01	41732E+01	32615E+01	67024E+01	57321E+01	
RR 94	5095E-06	62048E-06	36538E-06	77815E-06	36314E-06	16631E-04	23599E-04	27985E-06	25673E-04	-7722E-01	
RR 94M	45725E-06	31008E-06	16167E-06	38696E-08	28886E-08	83088E-05	11791E-04	14006E-06	12799E-04	-38800E-07	
MC 94	91052E-06	62111E-06	36575E-06	77893E-08	58372E-08	16649E-04	23585E-04	28013E-06	25701E-04	-77600E-07	
Y 95	53557E-09	30734E-08	49371E-09	52225E-07	38168E-07	54755E-11	41134E-11	98317E-09	15951E-11	0	
ZR 95	57892E-05	18177E-04	40949E-04	27804E-03	32115E-03	28912E-06	26434E-06	14217E-04	80655E-07	0	
RR 95	50650E+00	42860E+00	19476E-01	12395E+00	14835E+00	11938E-02	13320E-02	16675E-01	32098E-03	-60335E-01	
RR 95	50650E+00	42860E+00	19476E-01	12395E+00	14835E+00	11938E-02	13320E-02	16675E-01	32098E-03	-60335E-01	
SR 95	54192E+01	53588E+01	42384E+01	49825E+01	48406E+01	30885E+01	17295E+01	59114E+01	11980E+01	12860E+01	
Y 95	63702E+01	62905E+01	49715E+01	52147E+01	50665E+01	47647E+01	45663E+01	34090E+01	39875E+01	49566E+01	
ZR 95	6399E+01	63188E+01	49944E+01	52167E+01	50688E+01	49090E+01	47266E+01	39868E+01	60145E+01	54271E+01	
RR 95	6401E+01	63189E+01	49945E+01	52167E+01	50688E+01	49090E+01	47266E+01	39868E+01	60145E+01	54271E+01	
RR 95M	76945E-01	75837E-01	59942E-01	62601E-01	60823E-01	49105E+01	47300E+01	40036E+01	62405E+01	54350E+01	
MC 95	6401E+01	63189E+01	49945E+01	52167E+01	50688E+01	49105E+01	47300E+01	40036E+01	62405E+01	54350E+01	
TC 95	0	0	0	0	0	0	0	0	0	0	
TC 95M	0	0	0	0	0	0	0	0	0	0	
RU 95	0	0	0	0	0	0	0	0	0	0	
SE 96	56431E-11	11202E-10	-60944E-11	14999E-08	10095E-08	98865E-08	56858E-08	-93443E-11	0	10700E-09	
RR 96	30217E-06	40073E-06	40073E-06	19300E-04	14194E-04	98865E-08	56858E-08	-93443E-11	0	10700E-09	
RR 96	15602E-02	24069E-02	-18711E-02	24296E-01	19569E-01	15299E-03	95236E-04	18763E-02	-13600E-03	-66377E-02	
RR 96	19280E+00	26410E+00	-21253E+00	81469E+00	71251E+00	47862E-01	36769E-01	19940E+00	48337E-01	40903E+00	
SR 96	3725E+01	38833E+01	32204E+01	44919E+01	41591E+01	18944E+01	16376E+01	28526E+01	22505E+01	36791E+01	
Y 96	6010E+01	58768E+01	49255E+01	51684E+01	48916E+01	44695E+01	42026E+01	42765E+01	49284E+01	47812E+01	
ZR 96	62276E+01	60526E+01	50803E+01	51883E+01	49134E+01	50871E+01	48926E+01	43979E+01	56632E+01	48372E+01	
RR 96	59933E-03	43907E-03	37814E-02	14099E-04	10695E-03	37765E-02	59806E-02	12957E-01	67966E-02	-7676E-04	
MC 96	14202E-03	43988E-03	37814E-02	14100E-04	10695E-03	37802E-02	59826E-02	12957E-01	68017E-02	-7610E-04	
Y 96	20014E-04	14202E-03	-11192E-03	81992E-03	22339E-02	17690E-05	54367E-05	12957E-01	68017E-02	-7610E-04	
RR 97	34434E-01	50382E-01	7728E-01	7728E-01	7728E-01	37087E-02	53346E-02	43266E-01	42998E-03	43700E-03	
SR 97	19096E+01	20994E+01	-17767E+01	32024E+01	33757E+01	80425E+00	67447E+00	1752E+01	52610E-02	85375E-01	
Y 97	50481E+01	43996E+01	43996E+01	53624E+01	50720E+01	36878E+01	33422E+01	42038E+01	69047E+00	2076E+01	
ZR 97	50581E+01	43996E+01	43996E+01	53624E+01	50720E+01	36878E+01	33422E+01	42038E+01	69047E+00	2076E+01	
RR 97	58727E+01	58660E+01	-53840E+01	54251E+01	51337E+01	55379E+01	-51703E+01	47486E+01	59952E+01	40401E+01	

337 130

TABLE V (continued)

NUCLIDE	U235(T)	U235(F)	U235(H)	U238(F)	U238(H)	PU239(T)	PU239(F)	PU241(T)	U233(T)	TH232(F)
NB 97M	.50535E+C1	.50175E+01	.43237E+01	.46659E+01	.44269E+01	.47056E+01	.44401E+01	.40866E+01	.46054E+01	.34821E+01
MC 97	.58727E+01	.58661E+01	.53840E+01	.54251E+01	.51370E+01	.55380E+01	.51712E+01	.47428E+01	.53953E+01	.40401E+01
TC 97	.14168E-09	.10772E-09	.98731E-10	0.	0.	.56892E-08	.87436E-08	.69932E-10	.92395E-C8	.53800E-11
TC 97M	.72139E-1C	.51408E-1C	.50265E-10	0.	0.	.29096E-08	.42269E-08	.35616E-10	.47297E-C8	.25600E-11
RU 97	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR 98	.40622E-C5	.54839E-05	.44769E-05	.26498E-03	.13693E-03	.18897E-06	.12291E-06	.53825E-05	.72196E-07	.21500E-04
RB 98	.51218E-02	.62875E-02	.51609E-02	.71717E-01	.47129E-01	.62910E-03	.45879E-03	.59751E-02	.30906E-C3	.13405E-01
SR 98	.69139E+CC	.77675E+00	.64123E+00	.23366E+C1	.19052E+01	.21407E+00	.17460E+00	.71547E+00	.13345E+CC	.93686E+00
Y 98	.35922E+C1	.37842E+01	.31369E+01	.49887E+01	.45941E+01	.22979E+01	.20571E+01	.34080E+01	.17495E+C1	.30965E+01
ZR 98	.56835E+01	.57968E+01	.48156E+01	.54964E+01	.51846E+01	.55450E+01	.53303E+01	.51590E+01	.48113E+C1	.34630E+01
NB 98	.47826E-01	.24347E-01	.20371E-01	.14219E-02	.21930E-02	.19528E+00	.11273E+00	.20533E-01	.21578E+00	.51950E-02
NB 98M	.57111E+01	.58211E+01	.48360E+01	.54980E+01	.51871E+01	.56477E+01	.54429E+01	.51796E+01	.49314E+C1	.36900E+01
MC 98	.57594E+C1	.58456E+01	.48565E+01	.54994E+C1	.51893E+C1	.58445E+01	.55976E+01	.52002E+01	.51496E+01	.39742E+01
TC 98	.86747E-0E	.86214E-08	.73149E-08	.30597E-10	.77263E-10	.29996E-06	.41370E-06	.68131E-08	.57097E-06	.62200E-C9
RU 98	.86747E-0E	.86214E-08	.73149E-08	.30597E-10	.77263E-10	.29996E-06	.41371E-06	.68131E-08	.57098E-06	.62200E-C9
KR 99	.92194E-07	.77919E-07	.39720E-07	.54872E-C5	.30412E-C5	.27718E-08	.22723E-08	.16071E-06	.12507E-08	0.
RB 99	.40922E-03	.38630E-03	.27371E-03	.81558E-02	.50126E-02	.33394E-04	.29760E-04	.61752E-03	.17211E-C4	.10000E-C2
SR 99	.15310E+00	.16075E+00	.15644E+00	.10759E+01	.72912E+00	.32790E-01	.31691E-01	.20117E+00	.19232E-01	.20981E+00
Y 99	.20129E+01	.20057E+01	.18667E+01	.44113E+C1	.36468E+01	.10176E+01	.97812E+00	.23258E+01	.70478E+CC	.15389E+C1
ZR 99	.57558E+01	.53747E+01	.48179E+01	.60425E+C1	.55186E+01	.53131E+01	.50797E+01	.58749E+01	.41960E+01	.28989E+01
NB 99	.58948E+01	.54990E+01	.49223E+01	.60593E+01	.55433E+01	.56992E+01	.54450E+01	.59962E+01	.46288E+C1	.29275E+C1
NB 99M	.15291E+00	.12309E+00	.10456E+00	.16700E-01	.24731E-01	.38668E+00	.36848E+00	.12155E+00	.27916E+00	.28561E-01
MC 99	.60508E+01	.56244E+01	.50287E+01	.60760E+01	.55682E+01	.61055E+01	.58321E+01	.61198E+01	.49305E+01	.29563E+01
TC 99	.60508E+01	.56248E+01	.50287E+01	.60760E+01	.55682E+01	.61055E+01	.58321E+01	.61198E+01	.49305E+01	.29563E+01
TC 99M	.52217E+C1	.48539E+01	.43398E+01	.52436E+01	.48053E+01	.52691E+01	.50331E+01	.52814E+01	.42550E+C1	.25513E+01
RU 99	.15609E-10	.80613E-09	.77946E-11	0.	0.	.78989E-09	.74945E-09	.79136E-11	.13099E-08	0.
RH 99	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RH 99M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PD 99	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
KR10C	.11006E-C8	.17503E-08	.90137E-09	.36697E-06	.97553E-07	.27196E-10	.33076E-10	.31114E-08	.60196E-11	.61080E-08
RB10C	.16210E-04	.22606E-04	.13292E-04	.10143E-02	.38991E-03	.10699E-05	.12191E-05	.34319E-04	.38299E-06	.37406E-04
SR10C	.23119E-01	.28504E-01	.18994E-01	.28916E+00	.15796E+00	.40295E-02	.42871E-02	.37127E-01	.17323E-02	.22894E-01
Y 10C	.86990E+00	.95863E+00	.71668E+00	.26794E+C1	.19600E+01	.37199E+00	.37161E+00	.10871E+01	.19065E+00	.40424E+00
ZR10C	.53254E+01	.53722E+01	.43965E+01	.59590E+C1	.52781E+01	.47605E+01	.45082E+01	.54715E+01	.28346E+01	.13922E+01
NB10C	.58007E+01	.57970E+01	.47902E+01	.60453E+C1	.53983E+01	.57941E+01	.54311E+01	.58425E+01	.35581E+01	.14436E+01
NB10CM	.47530E+00	.42480E+00	.39370E+00	.86300E-C1	.12020E+00	.10336E+01	.92290E+00	.37100E+00	.72350E+00	.51400E-01
MC10C	.63055E+01	.62452E+01	.52082E+01	.61328E+01	.55205E+01	.69824E+01	.64843E+01	.62311E+01	.44094E+01	.14965E+01
TC10C	.23813E-04	.16703E-04	.19786E-04	.17498E-06	.49876E-06	.32395E-03	.25481E-03	.10805E-04	.31998E-C3	.48800E-06
RU10C	.23815E-C4	.16704E-04	.19788E-04	.17499E-C6	.49877E-06	.32402E-03	.25486E-03	.10806E-04	.32006E-03	.48802E-06
RB101	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SR101	.28896E-02	.35386E-02	.10942E-02	.50539E-01	.22241E-01	.25996E-03	.27480E-03	.45261E-02	.96895E-C4	.18860E-02
Y 101	.26765E+00	.30855E+00	.14791E+00	.12950E+01	.81036E+00	.72747E-01	.72571E-01	.37166E+00	.31562E-01	.90362E-01
ZR101	.34336E+01	.37613E+01	.26269E+01	.58817E+01	.48333E+01	.24600E+01	.23140E+01	.43067E+01	.12233E+01	.67065E+00
NB10E	.49309E+C1	.53094E+01	.42419E+01	.65652E+C1	.56680E+C1	.53206E+01	.52740E+01	.59823E+01	.28435E+01	.82459E+00
MC101	.50433E+01	.54193E+01	.44146E+01	.65794E+C1	.56930E+01	.59078E+01	.65445E+C1	.60946E+01	.32230E+01	.83069E+00
TC101	.50435E+01	.54196E+01	.44151E+01	.65794E+C1	.56930E+01	.59115E+01	.65483E+01	.60948E+01	.32258E+01	.83070E+00
RU101	.50435E+01	.54196E+01	.44151E+01	.65794E+C1	.56930E+01	.59115E+01	.65483E+01	.60948E+01	.32258E+01	.83070E+00
RH101	0.	0.	0.	0.	0.	.22447E-10	.21334E-10	0.	.22689E-10	0.
RH101M	0.	0.	0.	0.	0.	.20497E-10	.19486E-10	0.	.20699E-10	0.

TABLE V (continued)

NUCLIDE	U235(T)	U235(F)	U235(H)	U238(F)	U238(H)	PU239(T)	PU239(F)	PU241(T)	U233(T)	TH232(F)
PD101	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SR102	.14711E-03	.20203E-03	.33477E-04	.50435E-02	.23999E-02	.17598E-04	.18187E-04	.41319E-03	.24799E-05	.97500E-04
Y 102	.53659E-C1	.56519E-01	.17641E-01	.41417E+00	.25520E+00	.13634E-01	.14431E-01	.99513E-01	.27683E-02	.13420E-01
ZR102	.17716E+01	.19113E+01	.10599E+01	.47993E+C1	.36834E+C1	.11692E+01	.12657E+C1	.29397E+01	.33411E+00	.24197E+00
NB102	.37895E+C1	.41341E+01	.31746E+01	.66665E+01	.55051E+01	.44047E+01	.48408E+01	.59418E+01	.15969E+01	.39231E+00
MO102	.41966E+01	.45905E+01	.39221E+01	.67917E+C1	.56610E+01	.59819E+01	.66121E+01	.64415E+01	.24297E+01	.40872E+00
TC102	.41979E+01	.45919E+01	.39259E+01	.67918E+01	.56611E+01	.59951E+01	.66273E+01	.64828E+01	.24395E+01	.40874E+00
TC102M	.12537E-02	.14502E-02	.43540E-02	.11599E-C3	.18791E-C3	.13186E-01	.15201E-01	.14797E-02	.97395E-C2	.25800E-C4
RU102	.41992E+01	.45934E+01	.39303E+01	.67919E+C1	.56613E+01	.60083E+01	.66426E+01	.64843E+01	.24493E+01	.40877E+00
RH102	.16109E-C8	.15803E-10	.15090E-09	0.	0.	.11398E-08	.13890E-08	.10305E-10	.17299E-08	0.
RH102M	.11306E-10	.19803E-10	.15090E-09	0.	0.	.11398E-08	.13890E-08	.10305E-10	.17299E-C8	0.
PD102	.25774E-09	.25284E-11	.24143E-10	0.	0.	.18237E-09	.22224E-09	.16488E-11	.27679E-09	0.
RB102	.12208E-09	.80068E-10	.18621E-10	.10096E-07	.47420E-08	.38986E-11	.25780E-11	.57067E-09	.47104E-10	0.
SR103	.49281E-C5	.39788E-05	.28094E-06	.16881E-C3	.83560E-C4	.47291E-06	.35534E-06	.18776E-04	.27675E-05	0.
Y 103	.52619E-02	.53019E-02	.11112E-02	.78048E-01	.40644E-01	.15098E-02	.12861E-02	.16740E-01	.24409E-C2	.11950E-C2
ZR103	.53137E+00	.53883E+00	.22555E+00	.26415E+C1	.16582E+01	.38426E+00	.34470E+00	.13180E+01	.26327E+00	.55663E-01
NB103	.22078E+01	.22786E+01	.15929E+01	.97052E+C1	.39575E+01	.32474E+01	.30391E+01	.46870E+01	.11606E+01	.14240E+00
MO103	.31197E+01	.32704E+01	.30317E+01	.63323E+01	.45229E+01	.64210E+01	.65347E+01	.62374E+01	.16954E+C1	.16666E+00
TC103	.31374E+C1	.32899E+01	.30860E+01	.63363E+C1	.45273E+01	.69902E+01	.67093E+01	.62610E+01	.17066E+01	.16688E+00
RU103	.31374E+01	.32899E+01	.30862E+01	.63363E+01	.45273E+01	.69912E+01	.67104E+01	.62611E+01	.17066E+C1	.16688E+00
RH103	.31374E+C1	.32900E+01	.30863E+01	.63363E+C1	.45273E+01	.69912E+01	.67104E+01	.62611E+01	.17066E+01	.16688E+00
RH103M	.31061E+01	.32571E+01	.30554E+01	.62729E+01	.44820E+01	.69213E+01	.66433E+01	.61985E+01	.16895E+01	.16521E+00
PD103	0.	0.	0.	0.	0.	.16798E-11	.20185E-11	0.	0.	0.
AG103	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AG103M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SR104	.83645E-C7	.74712E-07	.64355E-08	.73293E-C5	.35483E-05	.71690E-08	.60756E-08	.10105E-05	.26799E-07	.80700E-07
Y 104	.25522E-03	.24912E-03	.43776E-04	.74246E-C2	.43085E-02	.61998E-04	.57364E-04	.21240E-02	.95322E-04	.94781E-04
ZR104	.79844E-01	.84896E-01	.29603E-01	.81818E+C0	.56310E+00	.52954E-01	.53232E-01	.46586E+00	.34552E-01	.12011E-01
NB104	.79883E+00	.91107E+00	.57100E+00	.36651E+C1	.28916E+01	.12545E+01	.13596E+01	.34905E+01	.39033E+C1	.59450E-01
MO104	.17701E+01	.22297E+01	.21004E+01	.53995E+C1	.44695E+01	.53727E+01	.57899E+01	.68379E+01	.98823E+00	.91799E-C1
TC104	.18238E+C1	.23112E+01	.36E+01	.54366E+01	.49104E+01	.59424E+01	.64857E+01	.69757E+01	.10273E+01	.92599E-01
RU104	.18242E+01	.23118E+01	.22762E+01	.54367E+C1	.49105E+01	.59533E+01	.64983E+01	.69764E+01	.10276E+01	.92601E-01
RH104	.65069E-07	.12070E-06	.97931E-06	.50044E-08	.79281E-08	.53040E-05	.63688E-05	.79155E-07	.65532E-07	.14575E-09
RH104M	.33418E-07	.59910E-07	.50365E-06	.25998E-08	.40581E-08	.26196E-05	.32776E-05	.40619E-07	.32398E-07	.74300E-10
PD104	.65058E-07	.12068E-06	.97917E-06	.50035E-08	.79266E-08	.53031E-05	.63680E-05	.79141E-07	.65518E-C7	.14572E-09
SR105	.74023E-C9	.36552E-07	.27031E-08	.96125E-07	.27198E-07	.62122E-10	.39622E-10	.14086E-07	.37779E-09	0.
Y 105	.73242E-05	.12811E-03	.31439E-04	.37621E-C3	.15109E-03	.20563E-05	.14088E-05	.10980E-03	.38639E-05	0.
ZR105	.2674E-02	.38258E-01	.28909E-01	.12488E+00	.70204E-01	.54102E-02	.39751E-02	.70741E-02	.32378E-02	.99400E-03
NB105	.18466E+00	.41179E+00	.47830E+00	.14773E+01	.10673E+01	.38644E+00	.31633E+00	.14662E+01	.88012E-C1	.12639E-C1
MO105	.91255E+C0	.10728E+01	.17044E+01	.40389E+C1	.33157E+01	.39832E+01	.35700E+01	.56826E+01	.41809E+00	.34614E-01
TC105	.10179E+C1	.11098E+01	.18303E+01	.42078E+01	.35159E+01	.53398E+01	.49185E+01	.62097E+01	.47011E+00	.36239E-01
RU105	.10205E+01	.11100E+01	.18317E+01	.42099E+01	.35183E+01	.54193E+01	.50062E+01	.62183E+01	.47126E+00	.36255E-01
RH105	.10205E+01	.11522E+01	.18331E+01	.42099E+01	.35183E+01	.54194E+01	.50063E+01	.62183E+01	.47126E+00	.36255E-01
RH105M	.26329E+00	.28639E+00	.47259E+00	.10862E+01	.90771E+00	.13983E+01	.12917E+01	.16043E+01	.12158E+00	.93537E-C2
PD105	.10205E+C1	.11522E+01	.18331E+01	.42105E+C1	.35183E+01	.54194E+01	.50063E+01	.62183E+01	.47126E+00	.36255E-01
AG105	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AG105M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CD105	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Y 106	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

54

337 132

TABLE V (continued)

NUCLIDE	U235(T)	U235(F)	U235(H)	U238(F)	U238(H)	P239(T)	P239(F)	P241(T)	U233(T)	TH232(F)
ZR106	.23023E-02	.37176E-02	.31938E-02	.96651E-02	.54654E-02	.75696E-03	.25182E-03	.78986E-02	.27199E-03	.16700E-03
NB106	.67825E-01	.10351E+00	.15908E+00	.37202E+00	.72625E+00	.60161E-01	.64255E-01	.50234E+00	.18918E-01	.62510E-02
MD106	.34332E+00	.50942E+00	.12190E+01	.23169E+01	.19537E+01	.17354E+01	.19963E+01	.47013E+01	.19085E+00	.37688E-01
TC106	.39018E+00	.57384E+00	.15170E+01	.27389E+01	.24107E+01	.34673E+01	.41054E+01	.61318E+01	.25429E+00	.44387E-01
RU106	.39124E+00	.57529E+00	.15290E+01	.27524E+01	.24286E+01	.42749E+01	.45267E+01	.62068E+01	.25793E+00	.44595E-01
RH106	.39124E+00	.57529E+00	.15290E+01	.27524E+01	.24286E+01	.42759E+01	.45278E+01	.62069E+01	.25793E+00	.44595E-01
RH106M	.34614E-06	.43807E-06	.67753E-06	.59895E-06	.10295E-04	.49193E-03	.10952E-02	.52624E-04	.21199E-04	.81500E-07
PD106	.39124E+00	.57529E+00	.15290E+01	.27524E+01	.24286E+01	.42764E+01	.45289E+01	.62069E+01	.25795E+00	.44595E-01
AG106	0.	0.	0.	0.	0.	.71590E-11	.85937E-11	0.	0.	0.
AG106M	0.	0.	0.	0.	0.	.71590E-11	.85937E-11	0.	0.	0.
CD106	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
Y 107	.34038E-07	.61597E-07	.16739E-07	.15634E-06	.49014E-07	.10576E-09	.30823E-09	.33626E-07	.90531E-09	0.
ZR107	.10203E-03	.23918E-03	.16841E-03	.46441E-03	.31124E-03	.41596E-05	.83980E-05	.33212E-03	.84349E-05	0.
NB107	.91390E-02	.27338E-01	.47716E-01	.41241E-01	.56760E-01	.44044E-02	.62314E-02	.92449E-01	.22199E-02	.18350E-02
MD107	.11287E+00	.27882E+00	.83234E+00	.79066E+00	.10331E+01	.38891E+00	.56281E+00	.25350E+01	.56599E-01	.30916E-01
TC107	.15954E+00	.37140E+00	.13311E+01	.12209E+01	.16778E+01	.14923E+01	.21941E+01	.49331E+01	.10643E+00	.48771E-01
RU107	.16286E+00	.37668E+00	.13829E+01	.12721E+01	.17483E+01	.32089E+01	.30267E+01	.53319E+01	.11413E+00	.50562E-01
RH107	.16287E+00	.37669E+00	.13831E+01	.12723E+01	.17485E+01	.32355E+01	.30413E+01	.53339E+01	.11417E+00	.50567E-01
PD107	.16287E+00	.37669E+00	.13831E+01	.12723E+01	.17485E+01	.32355E+01	.30413E+01	.53339E+01	.11417E+00	.50567E-01
PD107M	.70038E-09	.67511E-09	.21785E-07	.23798E-07	.33284E-07	.18397E-04	.12891E-04	.47622E-06	.79396E-08	.70400E-09
AG107	.16287E+00	.37669E+00	.13831E+01	.12723E+01	.17485E+01	.32355E+01	.30413E+01	.53339E+01	.11417E+00	.50567E-01
AC107	0.	0.	0.	0.	0.	.85088E-09	.61255E-09	.58227E-11	0.	0.
CD107	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
IN107	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
ZR108	.14508E-05	.10602E-04	.20886E-04	.23298E-03	.53075E-03	.19697E-06	.13390E-06	.24011E-05	.27299E-06	.17300E-06
NB108	.54975E-03	.27971E-02	.83921E-02	.26205E-01	.58092E-01	.48313E-03	.36886E-03	.31969E-02	.18226E-03	.12917E-03
MD108	.24369E-01	.89696E-01	.39408E+00	.39743E+00	.85948E+00	.17281E+00	.10488E+00	.45510E+00	.13647E-01	.10738E-01
TC108	.61182E-01	.18900E+00	.10193E+01	.60395E+00	.12958E+01	.10379E+01	.96959E+00	.24547E+01	.46959E-01	.39550E-01
RU108	.70985E-01	.20833E+00	.11951E+01	.62265E+00	.13342E+01	.21798E+01	.21470E+01	.39772E+01	.61271E-01	.53197E-01
RH108	.71026E-01	.20839E+00	.11959E+01	.62267E+00	.13342E+01	.22069E+01	.21780E+01	.39981E+01	.61376E-01	.53307E-01
RH108M	.41423E-04	.57909E-04	.79245E-03	.23998E-04	.47677E-04	.27047E-01	.31056E-01	.20886E-01	.10499E-03	.11000E-03
PD108	.71068E-01	.20845E+00	.11967E+01	.62270E+00	.13342E+01	.22343E+01	.22095E+01	.40191E+01	.61481E-01	.53418E-01
AG108	0.	0.	.17220E-10	0.	0.	.21529E-07	.25738E-07	.49773E-08	.64386E-11	.84852E-11
AG108M	0.	0.	.15989E-10	0.	0.	.19897E-07	.35276E-07	.46121E-08	.59597E-11	.78600E-11
CD108	0.	0.	.16824E-10	0.	0.	.21034E-07	.34986E-07	.48628E-08	.62905E-11	.82901E-11
ZR109	.95452E-08	.41362E-07	.24524E-06	.21993E-04	.36057E-04	.35159E-07	.99866E-07	.20919E-07	.47775E-08	0.
NB109	.14921E-04	.78665E-04	.63871E-03	.50335E-02	.13177E-01	.13761E-03	.27734E-03	.10028E-03	.12105E-04	0.
MD109	.22982E-02	.13132E-01	.14369E+00	.12045E+00	.47801E+00	.45677E-02	.66327E-01	.47859E-01	.26529E-02	.28290E-02
TC109	.15837E-01	.70989E-01	.77996E+00	.25669E+00	.10767E+01	.52754E+00	.67495E+00	.70799E-01	.20959E-01	.26237E-01
RU109	.29442E-01	.11518E+00	.12681E+01	.28388E+00	.12092E+01	.13555E+01	.15942E+01	.21567E+01	.42426E-01	.58232E-01
RH109	.29948E-01	.11639E+00	.12816E+01	.28405E+00	.12101E+01	.14109E+01	.16479E+01	.22822E+01	.43358E-01	.59914E-01
RH109M	.14974E-01	.58195E-01	.64080E+00	.14203E+00	.60507E+00	.70543E+00	.82394E+00	.11411E+01	.21679E-01	.29957E-01
PD109	.29951E-01	.11640E+00	.12816E+01	.28405E+00	.12101E+01	.14113E+01	.16483E+01	.22836E+01	.43363E-01	.59925E-01
PD109M	.14975E-01	.58197E-01	.64082E+00	.14203E+00	.60507E+00	.70567E+00	.82413E+00	.11418E+01	.21681E-01	.29963E-01
AG109	.29951E-01	.11640E+00	.12816E+01	.28405E+00	.12101E+01	.14113E+01	.16483E+01	.22836E+01	.43363E-01	.59925E-01
AG109M	.29946E-01	.11638E+00	.12814E+01	.28401E+00	.12100E+01	.14111E+01	.16480E+01	.22832E+01	.43356E-01	.59915E-01
CD109	0.	0.	0.	0.	0.	.19897E-11	.10093E-11	.12106E-10	0.	0.
IN109	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
IN109M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

55

337 135

TABLE V (continued)

NCLLIDE	U235(I)	U235(F)	U235(H)	U238(F)	U238(H)	PU239(T)	PU239(L)	PU241(T)	U233(T)	TH232(L)
ZR110	-12107E-09	-38206E-09	-13990E-07	-21598E-06	-23889E-05	-59386E-10	-97729E-10	-27213E-09	-15499E-10	-12300E-04
MB11C	-68149E-06	-22107E-05	-61771E-04	-20319E-03	-20224E-02	-48999E-05	-15090E-05	-37420E-05	-15101E-06	-93812E-06
MO110	-38385E-03	-12834E-02	-27569E-01	-21178E-01	-18815E+00	-21772E-02	-22719E-02	-69900E-02	-18418E-03	-70894E-03
TC11C	-63211E-02	-21689E-01	-37173E+00	-91166E-01	-74911E+00	-83966E-01	-89283E-01	-17578E-01	-48769E-02	-14976E-01
PU11C	-20951E-01	-7230E-01	-10610E+01	-13144E+00	-10432E+00	-52261E+00	-55750E+00	-10314E+01	-22580E-01	-58681E-01
RH11C	-21649E-01	-74633E-01	-10681E+01	-13186E+00	-10459E+01	-57059E+00	-61066E+00	-11177E+01	-23943E-01	-61119E-01
RU11C	-69338E-03	-25074E-02	-27111E-01	-41096E-03	-26657E-02	-80399E-01	-53394E-01	-86371E-01	-13889E-02	-27390E-02
PO11C	-28366E-01	-77203E-01	-11157E-01	-14227E+00	-10485E+01	-62169E+00	-66756E+00	-12091E+01	-29376E-01	-64251E-01
AG11C	-26609E-08	-10011E-07	-63716E-07	-48298E-10	-24365E-09	-11576E-05	-15396E-05	-17374E-05	-15023E-07	-18376E-07
AG11M	-29215E-08	-10702E-07	-68552E-07	-50195E-10	-25488E-09	-12698E-05	-14789E-05	-19009E-05	-15999E-07	-19700E-07
CO110	-54390E-08	-26533E-07	-13112E-06	-97846E-10	-49403E-09	-74064E-05	-30134E-05	-36067E-05	-30755E-07	-37747E-07
NO111	-10306E-07	-15059E-07	-83638E-06	-19561E-04	-17276E-03	-15881E-07	-22283E-07	-77584E-07	-32985E-08	0
MO111	-25406E-04	-43927E-04	-20834E-02	-38540E-02	-45628E-01	-82153E-04	-11215E-03	-28780E-03	-10163E-04	0
TC111	-13770E-02	-38366E-02	-15686E+00	-30572E-01	-46098E+00	-12325E-01	-16391E-01	-31506E-01	-93395E-01	-81850E-02
RU111	-15225E-01	-34350E-01	-96200E+00	-78493E-01	-98508E+00	-17833E+00	-23598E+00	-38319E+00	-13213E-01	-66311E-01
PH111	-19566E-01	-42477E-01	-11342E+01	-81691E-01	-10104E+01	-26674E+00	-35210E+00	-56140E+00	-19651E-01	-84311E-01
PD111	-19706E-01	-46601E-01	-11371E+01	-81602E-01	-10091E+01	-27274E+00	-35987E+00	-57004E+00	-60129E-01	-84750E-01
AG111	-18269E-03	-43730E-03	-75012E-02	-38567E-03	-44201E-02	-49369E-02	-64810E-02	-79476E-02	-20248E-03	-64767E-03
AG11M	-19605E-01	-44742E-01	-11395E+01	-81719E-01	-10105E+01	-27434E+00	-36196E+00	-57261E+00	-20268E-01	-84960E-01
CO111	-19605E-01	-44742E-01	-11395E+01	-81719E-01	-10105E+01	-27434E+00	-36196E+00	-57261E+00	-20268E-01	-84960E-01
CO11M	-14808E-10	-46508E-10	-18687E-09	0	-10105E+01	-20897E-08	-36977E-08	-20009E-08	-14199E-09	-38000E-10
IN111	0	0	0	0	0	0	0	0	0	0
IN11M	0	0	0	0	0	0	0	0	0	0
SN111	0	0	0	0	0	0	0	0	0	0
SN11M	0	0	0	0	0	0	0	0	0	0
AB112	0	0	0	0	0	0	0	0	0	0
MO112	-17600E-05	-72612E-05	-33077E-03	-30697E-03	-89077E-02	-38995E-05	-57858E-05	-20910E-04	-32298E-06	-36300E-04
RU112	-25992E-03	-11394E-02	-38703E-01	-97471E-02	-20520E+00	-11947E-02	-17605E-02	-43519E-02	-14302E-03	-36113E-02
TC112	-68215E-02	-22648E-01	-60629E+00	-43260E-01	-86092E+00	-43763E-01	-64227E-01	-11274E-01	-50810E-02	-57421E-01
PH112	-20121E-01	-36074E-01	-94802E+00	-50929E-01	-94908E+00	-93689E-01	-17851E+00	-21395E+00	-12514E-01	-87535E-01
PD112	-12661E-01	-37990E-01	-97856E+00	-51313E-01	-95071E+00	-10695E+00	-19647E+00	-22994E+00	-14598E-01	-90587E-01
AG112	-12661E-01	-37995E-01	-10319E+01	-51313E-01	-95079E+00	-10703E+00	-19666E+00	-23001E+00	-14602E-01	-90594E-01
CO112	-12605E-01	-37995E-01	-10319E+01	-51313E-01	-95079E+00	-10703E+00	-19666E+00	-23001E+00	-14602E-01	-90594E-01
IN112	0	0	0	0	0	0	0	0	0	0
IN11M	0	0	0	0	0	0	0	0	0	0
SN112	0	0	0	0	0	0	0	0	0	0
SN11M	0	0	0	0	0	0	0	0	0	0
MO113	-16664E-06	-32454E-06	-11652E-04	-45778E-04	-61228E-03	-91274E-07	-33877E-12	-14479E-05	-28704E-07	0
TC113	-18014E-04	-19016E-03	-68289E-02	-35093E-02	-56683E-01	-10949E-03	-27811E-03	-79977E-03	-21723E-04	0
RU113	-35399E-02	-10880E-01	-38038E+00	-33307E-01	-62737E-01	-11887E-01	-21133E-01	-41944E-01	-15309E-02	-23833E-01
PH113	-10169E-01	-33790E-01	-94455E+00	-46624E-01	-87719E+00	-52346E-01	-88367E+00	-12335E+00	-81206E-02	-53697E-01
PD113	-12330E-01	-33794E-01	-10941E+01	-47543E-01	-86901E+00	-77608E-01	-12892E+00	-15661E+00	-13019E-01	-61200E-01
AG113	-11108E-01	-30641E-01	-98260E+00	-42789E-01	-80012E+00	-70101E-01	-16392E+00	-13932E+00	-11783E-01	-54130E-01
AG11M	-12444E-02	-34063E-02	-10971E+00	-47553E-02	-88910E-01	-80118E-02	-13240E-01	-15629E-01	-13679E-02	-60335E-02
CO113	-12152E-01	-33299E-01	-10746E+01	-46775E-01	-76643E-01	-12752E+00	-18245E+00	-18245E+00	-12937E-01	-59189E-01
CO11M	-27434E-03	-54904E-03	-17711E-01	-77024E-03	-14403E-01	-12744E-02	-21094E-02	-25146E-02	-21495E-03	-97521E-03
IN113	-27407E-03	-54849E-03	-17694E-01	-76947E-03	-14386E-01	-12712E-02	-21073E-02	-25121E-02	-21473E-03	-97423E-03
IN11M	0	0	-10093E-10	0	0	0	0	-58277E-11	-14299E-10	0
SN113	0	0	0	0	0	0	0	0	0	0
SN11M	0	0	0	0	0	0	0	0	0	0

337 124

TABLE V (continued)

NUCLIDE	U235(I1)	U235(F)	U235(H)	U238(F)	U238(H)	PU239(T)	PU239(F)	PU241(I1)	L233(I1)	IN232(F)
SB113	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MO114	-65636E-08	-23604E-07	-11592E-05	-26198E-05	-64909E-04	-13698E-08	-51862E-08	-49623E-07	-39199E-09	-27300E-06
TC114	-89913E-05	-29278E-04	-12563E-02	-63056E-03	-13507E-01	-47207E-05	-16695E-04	-6399E-04	-79615E-06	-19272E-03
RU114	-12985E-02	-4034E-02	-14781E+00	-18621E-01	-34994E+00	-16555E-02	-43106E-02	-88580E-02	-33781E-03	-15920E-01
PH114	-68155E-02	-20744E-01	-69362E+00	-37638E-01	-66332E+00	-18208E-01	-46811E-01	-46778E-01	-42726E-02	-5763E-01
PD114	-11337E-01	-32905E-01	-10467E+01	-4102E-01	-71288E+00	-65051E-01	-91746E-01	-7479E-01	-11705E-01	-76898E-01
AG114	-11254E-01	-3222E-01	-10548E+01	-41071E-01	-71311E+00	-66769E-01	-94506E-01	-75512E-01	-12263E-01	-77000E-01
CO114	-11254E-01	-3222E-01	-10548E+01	-41071E-01	-71311E+00	-66769E-01	-94506E-01	-75512E-01	-12263E-01	-77001E-01
IN114	-26842E-10	-6349E-10	-11913E-08	0.	-71311E+00	-24863E-08	-30328E-08	-15869E-09	-11645E-08	-20047E-10
IN114M	-13507E-10	-31405E-10	-59659E-09	0.	0.	-12398E-08	-13689E-08	-79637E-10	-38297E-09	-10100E-10
SN114	-26305E-10	-6224E-10	-11675E-08	0.	0.	-24365E-08	-25722E-08	-15531E-09	-11412E-08	-19446E-10
MO115	-16372E-09	-46923E-09	-22082E-07	-15229E-06	-43722E-05	-29931E-10	-16089E-09	-10315E-08	-25779E-11	0.
TC115	-72668E-06	-2215E-05	-10232E-03	-11700E-03	-29193E-02	-32463E-06	-87608E-06	-40369E-05	-35040E-07	0.
RU115	-27158E-03	-88514E-03	-39935E-01	-83612E-02	-18304E+00	-29796E-03	-62654E-03	-13726E-02	-38698E-04	-59280E-02
PH115	-34809E-02	-10767E-01	-42147E+00	-31132E-01	-65029E+00	-71970E-02	-16013E-01	-16245E-01	-16046E-02	-44814E-01
PD115	-95782E-02	-28699E-01	-10208E+01	-41935E-01	-86824E+00	-33173E-01	-66666E-01	-4385E-01	-3232E-02	-85623E-01
AG115	-73723E-02	-21579E-01	-76329E+00	-30700E-01	-63534E+00	-26048E-01	-55034E-01	-32910E-01	-76989E-02	-63230E-01
CO115	-28373E-02	-8377E-02	-2936E+00	-18410E-01	-23544E+00	-10764E-01	-23049E-01	-12734E-01	-34112E-02	-24054E-01
CD115	-89077E-02	-25866E-01	-91296E+00	-38420E-01	-75365E+00	-31733E-01	-67488E-01	-39421E-01	-95950E-02	-75696E-01
CO115M	-13595E-02	-41054E-01	-14431E+00	-56904E-02	-11772E+00	-51570E-02	-10988E-01	-62434E-02	-16002E-02	-11899E-01
IN115	-9932E-02	-29015E-01	-10235E+01	-40763E-01	-84647E+00	-35715E-01	-75979E-01	-42406E-01	-10840E-01	-84794E-01
IN115M	-89078E-02	-25867E-01	-91298E+00	-38421E-01	-75676E+00	-31732E-01	-67489E-01	-39422E-01	-55951E-02	-75697E-01
SN115	-10415E-01	-30308E-01	-10691E+01	-42584E-01	-88430E+00	-37301E-01	-79353E-01	-46177E-01	-11320E-01	-88579E-01
TE115	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MO116	-26114E-11	-12202E-10	-62157E-09	-41196E-08	-79962E-07	0.	0.	-16908E-10	-20899E-09	-31300E-09
TC116	-34922E-07	-14904E-06	-65161E-05	-94932E-05	-17899E-04	-15698E-07	-21684E-07	-18110E-06	-84016E-06	-18603E-05
RU116	-45660E-04	-17618E-03	-66979E-02	-22713E-02	-4152E-01	-40910E-04	-61577E-04	-18927E-03	-34282E-03	-11049E-02
PH116	-5774E-02	-5618E-02	-18733E+00	-18280E-01	-32650E+00	-26849E-02	-43694E-02	-54017E-02	-42696E-02	-19005E-01
PD116	-90805E-02	-30176E-01	-91110E+00	-37117E-01	-65510E+00	-27575E-01	-44824E-01	-26453E-01	-11522E-01	-63718E-01
AG116	-53892E-02	-17682E-01	-52439E+00	-19363E-01	-34143E+00	-17264E-01	-30801E-01	-15279E-01	-61456E-02	-34838E-01
CO116	-52746E-02	-1733E-01	-51410E+00	-18984E-01	-33473E+00	-16925E-01	-30006E-01	-14980E-01	-60251E-02	-34155E-01
CO116M	-3062E-01	-24788E-01	-10309E+01	-37972E-01	-66954E+00	-34287E-01	-6082E-01	-30041E-01	-12055E-01	-68372E-01
IN116	-15508E-07	-39406E-07	-77546E-06	-29997E-09	-47777E-06	-31996E-06	-70449E-06	-24111E-07	-55597E-09	-10300E-07
IN116M	-15508E-07	-39406E-07	-77546E-06	-29997E-09	-47777E-06	-31996E-06	-70449E-06	-24111E-07	-55597E-09	-10300E-07
SN116	-31019E-07	-78818E-07	-15510E-05	-59924E-09	-95546E-08	-64000E-06	-14092E-05	-4825E-07	-11119E-08	-20600E-07
TC117	-7039E-08	-1722E-07	-84402E-06	-40330E-06	-74942E-05	-34697E-09	-61028E-09	-6379E-08	-89698E-10	0.
RU117	-30226E-04	-81336E-04	-35047E-02	-35270E-03	-59306E-02	-30494E-05	-59090E-05	-19713E-04	-66592E-06	0.
PH117	-38008E-02	-11316E-01	-42683E+00	-89452E-02	-15574E+00	-75889E-03	-1205E-02	-18188E-02	-14099E-03	-70090E-02
PD117	-10300E-01	-29062E-01	-10159E+01	-3265E-01	-63365E+00	-17758E-01	-30348E-01	-19130E-01	-46397E-02	-48300E-01
AG117	-38669E-02	-15125E-01	-52528E+00	-18041E-01	-34565E+00	-16097E-01	-28429E-01	-12905E-01	-49567E-02	-29139E-01
CO117M	-53849E-02	-15125E-01	-52528E+00	-18041E-01	-34565E+00	-16097E-01	-28430E-01	-12905E-01	-49567E-02	-29139E-01
CD117	-70026E-02	-19688E-01	-68299E+00	-23476E-01	-44995E+00	-21954E-01	-38991E-01	-16977E-01	-89272E-02	-38058E-01
CO117M	-37716E-02	-10593E-01	-36782E+00	-12651E-01	-24233E+00	-12934E-01	-21934E-01	-92342E-02	-39987E-02	-20574E-01
IN117	-64431E-02	-18095E-01	-62839E+00	-21605E-01	-41399E+00	-20567E-01	-36005E-01	-15690E-01	-60069E-02	-35076E-01
IN117M	-64431E-02	-18095E-01	-62839E+00	-21605E-01	-41399E+00	-20567E-01	-36005E-01	-15690E-01	-60069E-02	-35076E-01
SN117	-10774E-01	-30260E-01	-10508E+01	-42127E-01	-69228E+00	-54258E-01	-60943E-01	-26212E-01	-10978E-01	-58632E-01

337 135

TABLE V (continued)

NUCLIDE	U235(T)	U235(F)	U235(H)	U238(F)	U238(H)	PU239(T)	PU239(F)	PU241(T)	U233(T)	TH232(F)
SN117M	0.	0.	0.	0.	.80462E-11	.17798E-08	.41270E-08	.51124E-10	.19899E-08	.14200E-10
SB117	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TE117	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
YC118	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RU118	.37821E-06	.17503E-05	.94235E-04	.24768E-02	.42245E-01	.22997E-06	.39071E-06	.24411E-05	.37098E-07	.22200E-04
RH118	.10644E-03	.46283E-03	.19750E-01	.18254E-01	.32587E+00	.13221E-03	.22922E-03	.49367E-03	.27936E-04	.25622E-02
PD118	.35933E-02	.14825E-01	.51571E+00	.35128E-01	.64551E+00	.85530E-02	.15217E-01	.12456E-01	.23348E-02	.39738E-01
AG118	.91119E-02	.22785E-01	.71737E+00	.26141E-01	.48113E+00	.19623E-01	.35402E-01	.17058E-01	.63134E-02	.44495E-01
AG118M	.38918E-02	.15606E-01	.49135E+00	.17905E-01	.32954E+00	.13440E-01	.24247E-01	.11683E-01	.43242E-02	.30476E-01
CD118	.12080E-01	.34406E-01	.10570E+01	.35813E-01	.65916E+00	.33797E-01	.61071E-01	.25043E-01	.11649E-01	.62914E-01
IN118	.12083E-01	.34416E-01	.10571E+01	.35813E-01	.65916E+00	.33841E-01	.61154E-01	.25047E-01	.11674E-01	.62917E-01
IN118M	.27515E-05	.95816E-05	.17788E-03	.17798E-09	.39381E-08	.43894E-04	.83139E-04	.38618E-05	.24499E-04	.25800E-05
IN118M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SN118	.12086E-01	.34426E-01	.10573E+01	.35813E-01	.65916E+00	.33885E-01	.61277E-01	.25051E-01	.11698E-01	.62919E-01
SB118	0.	0.	0.	0.	0.	.18397E-11	.41869E-11	0.	.17899E-11	0.
SB118M	0.	0.	0.	0.	0.	.18397E-11	.41869E-11	0.	.17999E-11	0.
TE118	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RU119	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RH119	.22612E-04	.80913E-04	.37924E-02	.10609E-02	.17042E-01	.80689E-03	.13590E-02	.12706E-03	.44098E-05	.69902E-03
PD119	.20547E-02	.67460E-02	.25451E+00	.20169E-01	.35893E+00	.18415E-01	.31651E-01	.71663E-02	.89136E-03	.23580E-01
AG119	.80595E-02	.24942E-01	.81678E+00	.33392E-01	.62112E+00	.32934E-01	.56901E-01	.20595E-01	.62831E-02	.50500E-01
CD119	.55703E-02	.16801E-01	.51837E+00	.17461E-01	.32734E+00	.17479E-01	.30265E-01	.12547E-01	.59144E-02	.28041E-01
CD119M	.55703E-02	.16801E-01	.51837E+00	.17461E-01	.32734E+00	.17479E-01	.30265E-01	.12547E-01	.59144E-02	.28041E-01
IN119	.32316E-02	.97342E-02	.29957E+00	.10043E-01	.18829E+00	.10055E-01	.17411E-01	.72404E-02	.35121E-02	.16142E-01
IN119M	.83828E-02	.25271E-01	.77898E+00	.26194E-01	.49107E+00	.26223E-01	.45406E-01	.18845E-01	.89776E-02	.42079E-01
SN119	.11195E-01	.33742E-01	.10396E+01	.34927E-01	.65480E+00	.34966E-01	.60546E-01	.25144E-01	.12042E-01	.56117E-01
SN119M	.16164E-03	.48684E-03	.14980E-01	.50214E-03	.94143E-02	.50274E-03	.87053E-03	.36205E-03	.17609E-03	.80712E-03
SB119	.47826E-11	.10102E-10	.12691E-09	0.	0.	0.	0.	.15107E-11	.99795E-10	0.
TE119	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TE119M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RU120	.12407E-08	.54909E-08	.20086E-06	.67394E-06	.85959E-05	.29496E-09	.47265E-09	.17308E-07	.12299E-09	.20800E-06
RH120	.28728E-05	.11107E-04	.38893E-03	.26065E-03	.38648E-02	.14701E-05	.24087E-05	.21627E-04	.59309E-06	.14621E-03
PD120	.69125E-03	.23825E-02	.78836E-01	.11833E-01	.20077E+00	.73337E-03	.12325E-02	.29120E-02	.28858E-03	.11489E-01
AG120	.55909E-02	.17526E-01	.55675E+00	.29997E-01	.55077E+00	.10877E-01	.18656E-01	.15060E-01	.41844E-02	.40781E-01
CD120	.11477E-01	.33840E-01	.10488E+01	.34925E-01	.65861E+00	.33041E-01	.57063E-01	.23760E-01	.12542E-01	.53843E-01
IN120	.12000E-01	.33600E-01	.74100E+00	.36700E-01	.63500E+00	.16200E-01	.53100E-01	.23700E-01	.26100E-01	.54600E-01
IN120M	.11000E-02	.35000E-02	.30600E+00	.39000E-03	.65700E-01	.53000E-02	.10100E-01	.13000E-02	.66000E-02	.12000E-02
SN120	.11741E-01	.34501E-01	.10678E+01	.34968E-01	.65969E+00	.35001E-01	.60574E-01	.23988E-01	.13262E-01	.54046E-01
SB120	.88748E-10	.17303E-09	.43870E-08	0.	.13693E-10	.28496E-08	.60955E-08	.22911E-10	.99795E-09	.63700E-11
SB120M	.88748E-10	.17303E-09	.43870E-08	0.	.13693E-10	.28496E-08	.60955E-08	.22911E-10	.99795E-09	.63700E-11
TE120	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RH121	.33018E-06	.10102E-05	.23584E-04	.49295E-04	.60771E-03	.86488E-07	.18886E-06	.30014E-05	.60097E-07	.23800E-04
PD121	.19744E-03	.58811E-03	.19038E-01	.54378E-02	.81817E-01	.12307E-03	.25900E-03	.96244E-03	.71556E-04	.43838E-02
AG121	.34312E-02	.99116E-02	.27531E+00	.24360E-01	.42308E+00	.46154E-02	.94123E-02	.98155E-02	.22844E-02	.28684E-01
CD121	.11614E-01	.32990E-01	.94640E+00	.35843E-01	.66973E+00	.31112E-01	.55287E-01	.23102E-01	.12298E-01	.51579E-01
IN121	.59444E-02	.28199E-01	.81369E+00	.29514E-01	.55239E+00	.28156E-01	.50133E-01	.19336E-01	.11002E-01	.42698E-01
IN121M	.28879E-02	.70865E-02	.20826E+00	.65747E-02	.12376E+00	.80697E-02	.14779E-01	.45505E-02	.31326E-02	.96872E-02
SN121	.12838E-01	.35301E-01	.10225E+01	.36089E-01	.67616E+00	.36304E-01	.65056E-01	.23889E-01	.14159E-01	.52387E-01

58

337 136

TABLE V (continued)

NUCLIDE	U235(T)	U235(F)	U235(H)	U238(F)	U238(H)	P0239(T)	P0239(F)	P0241(T)	U233(T)	IM232(F)
SN12M	.59532E-05	.15102E-04	.54362E-03	.30297E-06	.97154E-05	.34495E-04	.14306E-03	.28813E-05	.20798E-04	.16906E-05
SB121	.12866E-01	.25316E-01	.10230E+01	.36090E-01	.67617E+00	.36367E-01	.65200E-01	.23892E-01	.14190E-01	.52388E-01
TE121	0.	0.	.13663E-10	0.	0.	.11365E-10	.17181E-10	0.	0.	0.
TE12M	0.	0.	.73749E-11	0.	0.	.61291E-11	.92532E-11	0.	0.	0.
I 121	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RU122	.25814E-11	.74912E-11	.42471E-10	.29897E-08	.21190E-07	0.	0.	.40018E-10	0.	.54600E-09
RH122	.36822E-07	.10620E-06	.93639E-06	.75323E-05	.72487E-04	.53292E-08	.13090E-07	.31519E-06	.57897E-08	.23906E-05
PD122	.50804E-04	.14713E-03	.19836E-02	.19674E-02	.25351E-01	.20802E-01	.45780E-04	.26543E-03	.18105E-04	.10534E-02
AG122	.18628E-02	.83560E-02	.10737E+00	.16904E-01	.27809E+00	.19593E-02	.19719E-02	.93498E-02	.14140E-02	.14052E-01
CO122	.11275E-01	.32029E-01	.87983E+00	.35887E-01	.68748E+00	.25640E-01	.47424E-01	.21522E-01	.15666E-01	.39344E-01
EN122	.12244E-01	.34796E-01	.99431E+00	.36352E-01	.70053E+00	.31341E-01	.57183E-01	.27558E-01	.18567E-01	.40347E-01
IN122M	.96783E-03	.27665E-02	.11444E+00	.46496E-03	.13051E-01	.57292E-02	.98648E-02	.10355E-02	.26088E-02	.10040E-02
SN122	.13205E-01	.37729E-01	.11190E+01	.36823E-01	.71139E+00	.37952E-01	.68454E-01	.23630E-01	.21847E-01	.41372E-01
SB122	.44524E-07	.12662E-06	.11892E-04	.80822E-09	.39281E-07	.18477E-05	.27580E-05	.15507E-07	.63497E-06	.50800E-08
SB122M	.22812E-07	.64911E-07	.61158E-05	.39366E-09	.20090E-07	.94987E-06	.13590E-05	.79337E-08	.32598E-06	.24800E-08
TE122	.43192E-07	.12283E-06	.11536E-04	.78466E-09	.38103E-07	.17272E-05	.26758E-05	.15042E-07	.61603E-06	.45276E-08
RH123	.34115E-08	.12402E-07	.36375E-07	.98691E-06	.59172E-05	.45094E-09	.10792E-08	.15107E-07	.36698E-09	.11400E-06
PD123	.11310E-04	.38919E-04	.22388E-03	.60493E-03	.86742E-02	.39799E-05	.88846E-05	.35732E-04	.31802E-05	.15111E-03
AG123	.53681E-03	.30244E-02	.32986E-01	.10714E-01	.14918E+00	.82986E-03	.17366E-02	.21497E-02	.64012E-03	.53351E-02
CO123	.10435E-01	.33478E-01	.63210E+00	.36902E-01	.69008E+00	.21953E-01	.42594E-01	.19193E-01	.16236E-01	.30416E-01
EN123	.10078E-01	.31964E-01	.69679E+00	.19840E-01	.38739E+00	.22021E-01	.42140E-01	.17500E-01	.16369E-01	.17875E-01
IN123M	.43456E-02	.13887E-01	.35545E+00	.58593E-02	.20013E+00	.14666E-01	.27931E-01	.18085E-02	.10881E-01	.95993E-02
SN123	.69225E-02	.23202E-01	.55045E+00	.19840E-01	.38739E+00	.22021E-01	.42140E-01	.17500E-01	.16369E-01	.17875E-01
SB123	.74007E-02	.23202E-01	.55045E+00	.19840E-01	.38739E+00	.22021E-01	.42140E-01	.17500E-01	.16369E-01	.17875E-01
TE123	.16330E-01	.46641E-01	.11010E+01	.39681E-01	.77477E+00	.44056E-01	.84302E-01	.25000E-01	.22768E-01	.35749E-01
TE123M	.98894E-10	.23604E-09	.51162E-07	0.	.49176E-10	.70790E-08	.11422E-07	.74222E-10	.48297E-08	.86400E-11
I 123	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
RU124	.27115E-09	.11102E-08	.80544E-09	.87892E-11	.12994E-10	0.	0.	0.	0.	.11300E-11
RH124	.22615E-05	.61724E-05	.15990E-04	.12400E-06	.36384E-06	.40494E-10	.74346E-10	.16191E-08	.17599E-10	.25301E-07
AG124	.44550E-03	.14294E-02	.72350E-02	.62266E-02	.65537E-01	.31873E-03	.65198E-03	.15197E-02	.22641E-03	.30096E-02
CO124	.11004E-01	.31769E-01	.37891E+00	.36891E-01	.64281E+00	.17161E-01	.33777E-01	.19874E-01	.13922E-01	.24997E-01
EN124	.20540E-01	.56271E-01	.10445E+01	.43225E-01	.84783E+00	.46135E-01	.90648E-01	.28597E-01	.42195E-01	.31542E-01
SN124	.21956E-01	.59580E-01	.12488E+01	.43417E-01	.85928E+00	.54923E-01	.10909E+00	.29276E-01	.5233E-01	.31843E-01
SB124	.61734E-05	.13242E-04	.21005E-02	.14959E-06	.17202E-04	.86288E-04	.18063E-04	.14537E-05	.12279E-03	.36500E-06
TE124	.29516E-05	.66111E-05	.10473E-02	.74693E-07	.85959E-05	.43094E-04	.18063E-04	.14537E-05	.12279E-03	.36500E-06
SB124M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TE124	.61763E-05	.13242E-04	.21005E-02	.14960E-06	.17202E-04	.86379E-04	.18087E-03	.14540E-05	.12295E-03	.36504E-06
PD125	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
AG125	.89649E-04	.47005E-03	.62443E-03	.32937E-02	.10386E-01	.12698E-03	.23083E-03	.75435E-03	.46298E-04	.10760E-02
CO125	.52254E-02	.13272E-01	.32830E-01	.38166E-01	.62936E+00	.14834E-01	.26886E-01	.20074E-01	.88348E-02	.17685E-01
IN125	.87276E-02	.36982E-01	.41905E+00	.34100E-01	.7477E+00	.37628E-01	.67975E-01	.23305E-01	.31824E-01	.17362E-01
IN125M	.66384E-02	.17448E-01	.30597E+00	.18874E-01	.30699E+00	.31736E-01	.57217E-01	.15276E-01	.27990E-01	.10294E-01
SN125	.14010E-01	.39422E-01	.43115E+00	.12240E-01	.38379E+00	.51785E-01	.56357E-01	.97123E-02	.36508E-01	.14303E-01
SN125M	.16206E-01	.57601E-01	.90620E+00	.41760E-01	.63949E+00	.73054E-01	.13159E+00	.31865E-01	.72630E-01	.22109E-01

337 137

TABLE V (continued)

NUCLIDE	U235(Y)	U235(F)	U235(H)	U238(F)	U238(H)	PU239(T)	PU239(F)	PU241(T)	U233(T)	TM232(F)
58125	.29666E-01	.7143E-01	.1354E-01	.54012E-01	.10235E+01	.12559E+00	.18936E+00	.41502E-01	.11094E+00	.36415E-01
58125	.30259E-01	.78695E-01	.13813E-01	.55072E-01	.10440E+01	.12811E+00	.19315E+00	.42624E-01	.11316E+00	.37143E-01
58125M	.68232E-02	.17743E-01	.31154E+00	.12423E-01	.23540E+00	.28887E-01	.43555E-01	.95661E-02	.25519E-01	.83754E-02
58125	.19010E-11	.36206E-11	.48765E-08	0.	0.	.80189E-10	.24182E-09	0.	.74196E-09	0.
58125C	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
58125M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
60126	.25814E-07	.12302E-06	.18787E-07	.63794E-05	.97623E-09	.10699E-07	.13990E-07	.67431E-06	.14599E-08	.18600E-05
60126	.40148E-04	.1415E-03	.85459E-04	.14253E-02	.51003E-02	.30708E-04	.40984E-04	.35184E-03	.80110E-05	.54986E-03
60126	.66407E-02	.18590E-01	.39306E-01	.34366E-01	.30390E+00	.90404E-02	.12334E-01	.20962E-01	.43868E-02	.19512E-01
58126	.40674E-01	.92203E-01	.54309E+00	.64954E-01	.90563E+00	.85998E-01	.11958E+00	.62468E-01	.70408E-01	.43272E-01
58126	.86217E-02	.20755E-01	.15754E+01	.69820E-01	.11166E+00	.19364E+00	.26776E+00	.76958E-01	.22581E+00	.48369E-01
58126M	.97009E-01	.14177E+00	.16172E+01	.69831E-01	.11179E+00	.19658E+00	.27203E+00	.10870E-01	.40033E-01	.67911E-02
58126	.93448E-02	.22196E-01	.28797E+00	.10486E-01	.17779E+00	.32470E-01	.45153E-01	.11641E-01	.42550E-01	.48386E-01
1126	.9351E-06	.22204E-09	.20386E-06	0.	.83040E-10	.58892E-08	.10392E-07	.58027E-11	.51457E-07	.72750E-02
58126	.40947E-06	.67596E-10	.89703E-07	0.	.36547E-10	.25912E-08	.43727E-08	.25532E-11	.22660E-07	0.
60127	.33668E-02	.92645E-02	.40932E-02	.33545E-01	.12597E+00	.48303E-02	.51113E-02	.26142E-01	.16969E-02	.19004E-01
60127	.22543E-01	.56206E-01	.10775E+00	.51706E-01	.42246E+00	.54260E-01	.86641E-01	.70499E-01	.38743E-01	.35311E-01
60127M	.22622E-01	.56207E-01	.10776E+00	.51725E-01	.42242E+00	.54261E-01	.86649E-01	.70500E-01	.38751E-01	.35312E-01
58127	.83185E-01	.20512E+00	.97088E+00	.11599E+00	.12009E+01	.27732E+00	.30359E+00	.18385E+00	.31528E+00	.82546E-01
58127M	.41832E-01	.93083E-01	.75611E+00	.12898E-01	.35021E+00	.16916E+00	.18669E+00	.4330E-01	.23807E+00	.12212E-01
58127	.33014E+00	.38132E+00	.21613E+01	.12927E+00	.15763E+01	.49097E+00	.54003E+00	.22999E+00	.67405E+00	.92916E-01
58127	.12972E+00	.31024E+00	.2195E+01	.12878E+00	.15704E+00	.48989E+00	.53887E+00	.22911E+00	.67563E+00	.94798E-01
58127M	.20883E-01	.49871E-01	.35516E+00	.20684E-01	.25227E+00	.78957E-01	.86868E-01	.36801E-01	.10996E+00	.15226E-01
1127	.12698E+00	.31064E+00	.21744E+01	.12894E+00	.15728E+01	.49091E+00	.53956E+00	.22940E+00	.67652E+00	.94720E-01
58127C	0.	0.	.24183E-08	0.	0.	.15548E-10	.20055E-10	0.	.40198E-09	0.
58127M	0.	0.	.12381E-08	0.	0.	.78989E-11	.97630E-11	0.	.26499E-09	0.
60128	.85941E-10	.21704E-09	.14306E-09	.13199E-06	.37882E-08	.20497E-10	.17487E-10	.77836E-08	0.	.27600E-07
60128	.19077E-05	.27207E-05	.27982E-05	.23014E-03	.28890E-04	.50895E-06	.44569E-06	.29221E-04	.46498E-07	.57928E-04
60128	.15921E-02	.33283E-02	.52562E-02	.42449E-01	.21806E-01	.12103E-02	.10847E-02	.11170E-01	.25203E-03	.12664E-01
58128	.66717E-01	.10891E+00	.25445E+00	.27840E+00	.46344E+00	.72919E-01	.66819E-01	.13191E+00	.33024E-01	.94880E-01
58128	.3181E+00	.59538E+00	.19025E+01	.69775E+00	.18251E+01	.65201E+00	.66874E+00	.33932E+00	.57006E+00	.18226E+00
58128	.11045E-01	.49845E-01	.22116E+00	.39356E-02	.85154E-01	.94274E-01	.89927E-01	.72553E-02	.17037E+00	.18600E-02
58128M	.33835E+00	.64121E+00	.21235E+01	.50169E+00	.19104E+01	.74617E+00	.69766E+00	.34659E+00	.73985E+00	.18412E+00
58128	.34961E+00	.68952E+00	.23623E+01	.50566E+00	.19984E+01	.84983E+00	.79676E+00	.33397E+00	.94523E+00	.18600E+00
1128	.13207E-04	.13303E-05	.16688E-04	.34497E-08	.11095E-05	.11198E-03	.12691E-04	.28013E-07	.64497E-04	.23300E-08
58128	.13496E-04	.14340E-05	.15639E-04	.32324E-08	.10396E-05	.11489E-03	.12080E-04	.26248E-07	.10413E-03	.21832E-08
60129	.67472E-07	.79933E-07	.23896E-07	.23709E-04	.30026E-04	.40509E-07	.40939E-07	.30034E-05	.13046E-08	0.
60129	.28688E-03	.37045E-03	.22264E-03	.14057E-01	.21729E-01	.26278E-03	.25756E-03	.35784E-02	.23203E-04	0.
58129	.38149E-01	.50066E-01	.58935E-01	.28535E+00	.52665E+00	.48912E-01	.46561E-01	.13254E+00	.11387E-01	.97512E-01
58129	.20268E+00	.34302E+00	.57448E+00	.50223E+00	.97604E+00	.44147E+00	.1807E+00	.33593E+00	.26623E+00	.17518E+00
58129M	.34992E+00	.3477E+00	.57586E+00	.51223E+00	.96561E+00	.44320E+00	.41976E+00	.34059E+00	.26664E+00	.17861E+00
58129	.64411E+00	.10124E+01	.10954E+01	.10954E+01	.20964E+01	.14407E+01	.13606E+01	.77165E+00	.13768E+01	.38142E+00
58129	.59776E+00	.94504E+00	.26679E+01	.10029E+01	.19220E+01	.13638E+01	.12877E+01	.70579E+00	.14493E+01	.34824E+00
58129M	.16336E+00	.25616E+00	.65325E+00	.26780E+00	.50463E+00	.37617E+00	.35504E+00	.18637E+00	.44877E+00	.91737E+00
1129	.65757E+00	.10389E+01	.29876E+01	.11009E+01	.21171E+01	.15017E+01	.14178E+01	.77400E+00	.16156E+01	.38181E+00
58129	.65757E+00	.10389E+01	.29877E+01	.11009E+01	.21171E+01	.15017E+01	.14178E+01	.77400E+00	.16156E+01	.38181E+00

337 130

TABLE V (continued)

NUCLIDE	U235(F)	U235(H)	U238(F)	U238(H)	PU239(F)	PU239(H)	PU241(F)	U233(F)	U233(H)	IH232(F)
HE129M	.51278E-08	.12791E-06	.72493E-11	.21890E-10	.26381E-07	.78396E-07	.42620E-10	.93095E-06	.42398E-10	.22600E-11
CS129	0.	.20955E-11	0.	0.	0.	0.	0.	0.	0.	0.
BA129	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
BA129M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PO130	.50227E-11	.95519E-11	.88892E-08	.63869E-10	0.	0.	.94744E-11	0.	0.	.47000E-10
AG130	.19911E-06	.25085E-08	.51404E-04	.16793E-05	.28296E-07	.43868E-07	.34017E-06	.40998E-08	0.	.53705E-06
CO130	.75161E-03	.12526E-02	.43772E-04	.29683E-01	.42347E-02	.24299E-03	.11609E-02	.61301E-04	0.	.17899E-02
IN130	.69483E-01	.10918E+00	.49902E+00	.26918E+00	.4977E-01	.55685E-01	.98089E-01	.21192E-01	0.	.87818E-01
SR130	.88819E+00	.13260E+01	.10397E+01	.18369E+01	.12408E+01	.12294E+01	.11599E+01	.86586E+00	0.	.66132E+00
SR130M	.20599E+00	.40653E+00	.10179E+01	.22117E+00	.63423E+00	.64979E+00	.34810E+00	.69052E+00	0.	.14487E+00
TE130	.14437E+01	.19127E+01	.18497E+01	.15306E+01	.26399E+01	.16625E+01	.12768E+01	.13832E+01	0.	.67356E+00
I 130	.23521E-03	.70867E-04	.34313E+01	.17933E+01	.33143E+01	.24988E+01	.16573E+01	.27662E+01	0.	.82484E+00
I 130M	.74240E-04	.38306E-04	.28760E-02	.45136E-06	.52707E-04	.58821E-02	.56451E-04	.38733E-02	0.	.64010E-05
HE130	.24637E-03	.76628E-04	.48797E-06	.24398E-06	.28480E-04	.12738E-02	.30514E-04	.14299E-02	0.	.34600E-05
CO131	.65238E-04	.13202E-03	.13194E-05	.60914E-02	.28686E-03	.14198E-04	.13909E-03	.24799E-05	0.	.25000E-03
IN131	.93581E+00	.13202E+01	.25041E+01	.36361E+00	.65101E-01	.10019E+01	.38960E-01	.30273E-02	0.	.39853E-01
SR131	.25286E+01	.28927E+01	.31543E+01	.18185E+01	.18185E+01	.78909E+00	.13108E+01	.39765E+00	0.	.81234E+00
TE131	.25321E+01	.29281E+01	.30948E+01	.29946E+01	.36210E+01	.31974E+01	.28497E+01	.25160E+01	0.	.13589E+01
IE131M	.36290E+00	.26236E+00	.99142E+00	.22819E+00	.57696E+00	.64948E+00	.34840E+00	.11370E+01	0.	.10970E+00
I 131	.32336E+01	.32283E+01	.40363E+01	.31817E+01	.60925E+01	.37420E+01	.31374E+01	.35086E+01	0.	.14491E+01
HE131	.28265E+01	.32315E+01	.40406E+01	.31855E+01	.40999E+01	.37457E+01	.31409E+01	.35122E+01	0.	.14505E+01
IE131M	.19836E+01	.22599E+01	.28341E+01	.22272E-01	.28670E-01	.22202E-01	.27819E-01	.24602E-01	0.	.10144E-01
CS131	.24013E-10	.21804E-10	.16589E-07	0.	.11694E-10	.59992E-09	.18440E-10	.53397E-08	0.	0.
BA131	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
BA131M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CO132	.62234E-05	.57209E-05	.20886E-07	.60494E-03	.11595E-04	.34395E-06	.74234E-05	.48597E-07	0.	.21600E-04
IN132	.62369E-02	.12194E-02	.11177E+00	.18177E+00	.94791E-02	.92621E-03	.70777E-02	.31803E-03	0.	.11983E-01
SR132	.58227E+00	.68067E+00	.70945E-01	.26102E+01	.85723E+00	.25714E+00	.73707E+00	.11961E+00	0.	.70753E+00
SR132M	.18410E+01	.18991E+01	.63643E+00	.36685E+01	.21026E+01	.12949E+01	.19549E+01	.76563E+00	0.	.14242E+01
IE132	.10513E+01	.12185E+01	.56546E+00	.10583E+01	.12453E+01	.10377E+01	.12178E+01	.64602E+00	0.	.71672E+00
I 132	.42309E+01	.46220E+01	.40262E+01	.50275E+01	.47936E+01	.51228E+01	.45955E+01	.45243E+01	0.	.26555E+01
I 132M	.44747E+01	.46535E+01	.46216E+01	.50287E+01	.49521E+01	.52862E+01	.46410E+01	.46015E+01	0.	.26615E+01
HE132	.42480E+01	.46535E+01	.46260E+01	.50287E+01	.49522E+01	.52862E+01	.46411E+01	.46015E+01	0.	.26615E+01
IE132M	.36622E+01	.43707E-08	.14090E-05	.49195E-11	.24788E-08	.12298E-06	.82640E-07	.5897E-06	0.	.21300E-09
BA132	.16575E-08	.56186E-10	.31040E-07	.10823E-12	.54534E-10	.27075E-08	.38618E-08	.5897E-06	0.	0.
IN133	.38821E-03	.45407E-03	.47067E-02	.18020E-01	.67668E-03	.32395E-04	.47465E-04	.84959E-10	0.	.46860E-11
SR133	.16812E+00	.18468E+00	.96740E-02	.13806E+01	.22988E+00	.36210E-01	.46747E-01	.21967E+00	0.	.36900E-02
SR133M	.22508E+01	.22974E+01	.50927E+00	.48200E+01	.24608E+01	.10927E+01	.12592E+01	.94450E-02	0.	.25330E+00
TE133	.38282E+01	.44886E+01	.44886E+01	.44886E+01	.44886E+01	.44886E+01	.44886E+01	.44886E+01	0.	.13394E+01
I 133	.62822E+01	.20055E+01	.17986E+01	.65811E+00	.18314E+01	.22917E+01	.20381E+01	.30392E+01	0.	.89171E+00
I 133M	.67870E+01	.64651E+01	.52988E+01	.63553E+01	.62458E+01	.69228E+01	.67388E+01	.59744E+01	0.	.36575E+01
HE133	.14902E+00	.12027E+00	.51510E+00	.97061E-02	.10982E+00	.33360E+00	.65266E+00	.11214E+00	0.	.29174E+01
IE133M	.67896E+01	.64712E+01	.54771E+01	.63571E+01	.62659E+01	.69663E+01	.67225E+01	.47163E+00	0.	.36579E+01
IE133M	.94209E+00	.88021E+00	.88021E+00	.88021E+00	.88887E+00	.10031E+01	.97782E+00	.94450E+00	0.	.51222E+00
CS133	.62896E+01	.64712E+01	.54771E+01	.63571E+01	.62659E+01	.69663E+01	.67225E+01	.47163E+00	0.	.36579E+01
BA133	.17810E-10	.11602E-00	0.	0.	.65169E-11	.82088E-09	.79136E-11	.33398E-08	0.	0.
BA133M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

337 139

TABLE V (continued)

NUCLIDE	U235(T)	U235(F)	U235(H)	U235(C)	U238(H)	PU239(T)	PU239(F)	PU241(T)	U233(T)	TH232(F)
LA133	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
IN134	.58132E-05	.15303E-04	.58959E-07	.12589E-02	.18791E-04	.66591E-06	.11192E-05	.17908E-04	.10699E-06	.52500E-04
SN134	.1C237E-01	.23874E-01	.50871E-01	.34853E+00	.25883E-01	.29073E-02	.41861E-02	.27772E-01	.78606E-03	.44519E-01
SB134	.23886E+00	.49845E+00	.51980E-01	.17511E+01	.48413E+00	.15609E+00	.19421E+00	.5774E+00	.69224E-01	.54682E+00
SB134M	.22863E+00	.47457E+00	.51515E-01	.14026E+01	.45825E+00	.15325E+00	.19005E+00	.51977E+00	.68526E-01	.50232E+00
TE134	.67763E+01	.63425E+01	.26354E+01	.69042E+01	.56280E+01	.39160E+01	.48926E+01	.67885E+01	.3C753E+01	.45544E+01
I 134	.76311E+01	.75756E+01	.59175E+01	.70965E+01	.66179E+01	.72022E+01	.7C037E+01	.80660E+01	.58512E+01	.48644E+01
I 134M	.4270E+00	.61654E+00	.11623E+01	.96167E-01	.48432E+00	.11120E+01	.10569E+01	.63886E+00	.10849E+01	.23604E+00
XE134	.76804E+01	.76171E+01	.62775E+01	.70977E+01	.66457E+01	.73924E+01	.71613E+01	.81077E+01	.61289E+01	.48735E+01
XE134M	.23695E-01	.20767E-01	.17998E+00	.60994E-03	.13248E-01	.95047E-01	.78773E-01	.20865E-01	.12811E+00	.44900E-02
CS134	.35719E-07	.36606E-04	.16728E-02	.18498E-06	.22589E-04	.46093E-03	.32776E-03	.35416E-04	.11969E-02	.43C00E-C5
CS134M	.25914E-C4	.18303E-04	.83642E-03	.91892E-C7	.11295E-04	.23097E-03	.16383E-03	.17708E-04	.59797E-03	.21500E-05
BA134	.35755E-04	.36609E-04	.16737E-02	.18409E-06	.22591E-04	.46105E-03	.32783E-03	.35419E-04	.11974E-02	.43002E-05
SN135	.12367E-02	.12882E-02	.64255E-05	.47931E-C1	.15892E-02	.10799E-02	.22584E-03	.17168E-02	.22099E-C4	.28430E-02
SB135	.19884E+00	.18892E+00	.63051E-02	.12614E+01	.20096E+00	.40678E-01	.72768E-01	.23690E+00	.14761E-01	.22626E+00
TE135	.32595E+01	.35870E+01	.88510E+00	.57460E+01	.33514E+01	.17963E+01	.27919E+01	.42636E+01	.11027E+01	.25353E+01
I 135	.63334E+01	.59404E+01	.35542E+01	.64469E+01	.53287E+01	.62999E+01	.64691E+01	.69311E+01	.48585E+01	.34997E+01
XE135	.65879E+01	.62604E+01	.53242E+01	.64619E+01	.56666E+01	.74516E+01	.73240E+01	.71603E+01	.61959E+01	.48282E+01
XE135M	.10924E+01	.10781E+01	.15631E+01	.95417E+00	.97913E+00	.16020E+01	.14478E+01	.11528E+01	.15127E+01	.17589E+01
CS135	.65893E+01	.62613E+01	.53745E+01	.64619E+01	.56673E+01	.74596E+01	.73287E+01	.71611E+01	.62170E+01	.48284E+01
CS135M	.60533E-03	.45907E-03	.12621E-01	.26898E-C5	.31785E-03	.37085E-02	.21824E-02	.39518E-03	.1C518E-C1	.932C0E-C4
BA135	.65893E+01	.62614E+01	.53745E+01	.64619E+01	.56673E+01	.74596E+01	.73287E+01	.71611E+01	.62170E+01	.48284E+01
BA135M	.23613E-06	.16503E-06	.23684E-04	.11399E-C9	.95354E-07	.34995E-05	.13390E-05	.15207E-06	.15199E-04	.17400E-07
LA135	.35419E-11	.26304E-11	.20686E-08	0.	.12894E-11	.14898E-09	.48864E-10	.22610E-11	.11699E-08	0.
CE135	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
CD136	0.	0.	0.	.49495E-10	0.	0.	0.	0.	0.	0.
IN136	.22C12E-C8	.26304E-08	.37774E-11	.16199E-05	.51775E-08	.65991E-10	.14290E-09	.38818E-08	.53197E-11	.21200E-C7
SN136	.53932E-04	.58612E-04	.42571E-06	.50452E-02	.92661E-04	.39695E-05	.70750E-05	.81141E-04	.59797E-06	.24602E-03
SB136	.30046E-01	.29780E-01	.10517E-02	.39121E+00	.38087E-01	.52922E-02	.78204E-02	.38715E-01	.14725E-02	.66406E-01
TE136	.19038E+01	.17310E+01	.26898E+00	.43190E+01	.18228E+01	.75557E+00	.93574E+00	.21242E+01	.37516E+00	.21751E+01
I 136	.30214E+01	.33971E+01	.12751E+01	.50913E+01	.32857E+01	.24159E+01	.26857E+01	.40618E+01	.21288E+01	.33910E+01
I 136M	.19934E+01	.16748E+01	.10074E+01	.79634E+00	.14720E+01	.16641E+01	.17547E+01	.19482E+01	.14025E+01	.12268E+01
XE136	.62623E+01	.62204E+01	.47887E+01	.59888E+01	.55996E+01	.66193E+01	.67376E+01	.72765E+01	.67915E+01	.51059E+01
CS136	.53079E-02	.15451E-01	.22079E+00	.82292E-C3	.24031E-01	.10529E+00	.14843E+00	.17448E-01	.11255E+00	.12600E-03
BA136	.53150E-02	.15666E-01	.22169E+00	.82301E-03	.24048E-04	.10552E+00	.14871E+00	.17466E-01	.11308E+00	.17950E-C3
BA136M	.84926E-C3	.25C41E-C2	.35327E-01	.13167E-C3	.38449E-02	.16847E-01	.23749E-01	.27917E-02	.18007E-01	.20160E-04
SN137	.10506E-05	.163C3E-05	.42171E-08	.39196E-03	.29486E-05	.87988E-07	.16288E-06	.20910E-05	.89795E-07	.12900E-04
SB137	.20322E-C2	.28541E-02	.37878E-04	.94464E-01	.39291E-02	.37504E-03	.57374E-03	.34347E-02	.82905E-04	.11941E-01
TE137	.41094E+00	.51281E+00	.33551E-01	.27905E+01	.55935E+00	.16175E+00	.20588E+00	.59788E+00	.75355E-01	.12059E+01
I 137	.32607E+01	.32942E+01	.82074E+00	.56551E+01	.30139E+01	.21141E+01	.23072E+01	.37484E+01	.18876E+01	.50736E+01
XE137	.59815E+01	.57561E+01	.38809E+01	.58587E+01	.45543E+01	.57945E+01	.56915E+01	.63978E+01	.60041E+01	.66981E+01
CS137	.60900E+01	.59785E+01	.48599E+01	.58747E+01	.49362E+01	.65763E+01	.62608E+01	.64926E+01	.68866E+01	.67388E+01
BA137	.61574E+01	.60446E+01	.49231E+01	.59393E+01	.49909E+01	.66517E+01	.63325E+01	.65644E+01	.67739E+01	.68130E+01
BA137M	.57613E+01	.56558E+01	.46024E+01	.55575E+01	.46697E+01	.62277E+01	.61422E+01	.61422E+01	.63324E+01	.63750E+01
LA137	.49627E-07	.32801E-07	.43372E-05	.19998E-10	.13993E-07	.66192E-06	.41970E-06	.31114E-07	.63100E-05	.39700E-08
CE137	0.	0.	.22219E-09	0.	0.	.15960E-10	.76511E-11	0.	.33200E-09	0.
CE137M	0.	0.	.10992E-09	0.	0.	.79189E-11	.38772E-11	0.	.16399E-C9	0.
SN138	.18710E-07	.28805E-07	.89438E-10	.18998E-04	.79162E-07	.17598E-08	.35774E-09	.35917E-07	.84395E-10	.27900E-06
SB138	.12704E-03	.17206E-03	.25283E-05	.14255E-01	.33692E-03	.17299E-04	.38775E-05	.20113E-03	.26099E-05	.87028E-03

TABLE V (continued)

NUCLIDE	U235(I)	U235(II)	U235(H)	U238(F)	U238(H)	P0239(IT)	P0239(F)	P0241(T)	U233(T)	TH232(F)
TE138	.8533E-01	.10289E+00	.6828E-02	.1189E+01	.1446E+00	.2314E-01	.4814E-02	.1130E+00	.7694E-02	.2780E+00
TE138	.1642E+01	.1779E+01	.4630E+00	.4374E+01	.8946E+01	.8220E+00	.9816E+00	.1851E+01	.5664E+00	.2829E+01
KE138	.6213E+C1	.60C6E+01	.3088E+01	.5779E+C1	.4763E+C1	.4947E+01	.4447E+01	.5990E+01	.4394E+C1	.6617E+01
CS138	.6523E+C1	.62C2E+01	.4496E+01	.5037E+01	.6691E+01	.5258E+01	.5936E+01	.6190E+01	.5037E+C1	.6729E+01
CS138M	.2524E+0C	.2147E+00	.5210E+00	.1056E-C1	.1164E+00	.4101E+00	.3592E+00	.2023E+00	.7447E+00	.1118E+01
BA138	.6783E+C1	.6423E+01	.5076E+01	.5850E+C1	.4810E+C1	.5693E+01	.6309E+01	.6398E+01	.5872E+01	.6843E+01
LA138	.6324E-04	.4880E-04	.7804E-04	.1719E-08	.5707E-06	.1879E-04	.9902E-05	.1700E-05	.1309E-C3	.2430E-C6
CE138	.1897E-C4	.5641E-05	.2342E-04	.5199E-C9	.1712E-06	.5640E-05	.2971E-C5	.5102E-06	.3932E-04	.7830E-07
SB139	.5893E-05	.9881E-05	.4207E-06	.1118E-02	.1931E-04	.7828E-06	.9373E-06	.7563E-05	.1519E-C6	.4500E-C4
TE139	.1325E-01	.1164E-01	.3854E-02	.3003E+C0	.2752E-01	.3216E-02	.3492E-02	.1407E-01	.1473E-02	.4241E-01
KE139	.7555E+00	.5929E+00	.8321E+00	.2698E+C0	.1030E+01	.3233E+00	.3206E+00	.6757E+00	.3346E+00	.1205E+01
ME139	.5086E+01	.4566E+01	.2370E+01	.5477E+01	.3304E+01	.3286E+01	.4658E+01	.4959E+01	.3129E+C1	.5814E+C1
CS139	.6347E+01	.6214E+01	.4392E+01	.5843E+C1	.6629E+C1	.5237E+01	.5610E+01	.6114E+01	.5833E+01	.6590E+01
BA139	.6410E+01	.6267E+01	.6739E+01	.5842E+C1	.4889E+01	.5609E+01	.5728E+01	.6160E+01	.6347E+01	.6608E+01
LA139	.6410E+C1	.6267E+01	.4741E+01	.5842E+C1	.4889E+01	.5609E+01	.5730E+01	.6260E+01	.6351E+01	.6608E+01
CE139	.9515E-08	.6641E-08	.8614E-06	.1119E-11	.1296E-08	.7858E-07	.4216E-07	.5092E-08	.1397E-05	.5940E-09
CE139M	.4872E-08	.3230E-08	.4207E-06	.9893E-11	.6616E-09	.4029E-07	.2158E-07	.2481E-08	.6829E-C6	.3030E-09
PR139	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
TE140	.1247E-02	.5104E-03	.2648E-04	.4599E-01	.2406E-02	.1619E-03	.2188E-03	.1121E-02	.2305E-C4	.5237E-02
KE140	.2264E+00	.1457E+00	.2114E-01	.1147E+01	.2872E+00	.4957E-01	.6275E-01	.1689E+00	.1685E-C1	.4541E+00
ME140	.3638E+01	.2951E+01	.9187E+00	.4740E+01	.2747E+01	.1799E+01	.2147E+01	.3241E+01	.1365E+C1	.5363E+01
CS140	.5826E+01	.4316E+01	.3316E+01	.5509E+C1	.4371E+01	.4713E+01	.4743E+C1	.5757E+01	.4753E+C1	.7668E+C1
BA140	.6247E+C1	.5964E+01	.4389E+01	.5521E+01	.4519E+01	.5434E+01	.5270E+01	.5834E+01	.6404E+01	.7768E+01
LA140	.6235E+01	.5972E+01	.4422E+01	.5521E+01	.4524E+01	.5591E+01	.5290E+01	.5839E+01	.6427E+01	.7768E+01
CE140	.6235E+01	.5972E+01	.4422E+01	.5521E+01	.4524E+01	.5591E+01	.5292E+01	.5839E+01	.6427E+01	.7768E+01
PR140	.6033E-11	.3980E-11	.9143E-09	.5521E+01	.4524E+01	.6069E-10	.4208E-10	.2861E-11	.1879E-C8	.0
NO140	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
SB141	.1665E-C8	.7878E-C9	.3059E-11	.5798E-06	.2268E-08	.6477E-10	.1341E-09	.1681E-08	.3401E-11	.0
TE141	.4577E-04	.2119E-04	.4882E-06	.2342E-02	.7081E-04	.3159E-05	.6381E-05	.3817E-04	.4068E-C6	.0
KE141	.3374E-01	.1554E-01	.2040E-02	.2779E+00	.5998E-01	.4134E-02	.8150E-02	.2372E-01	.1251E-C2	.9467E-01
ME141	.1221E+01	.9280E+00	.2582E+00	.3072E+01	.1246E+01	.4440E+00	.8706E+00	.1337E+01	.3287E-C2	.3184E+01
CS141	.4470E+01	.4470E+01	.2257E+01	.5010E+C1	.3633E+01	.3251E+01	.3818E+01	.3860E+01	.3643E+01	.6881E+01
BA141	.5819E+C1	.5974E+01	.4480E+01	.5103E+01	.4407E+01	.5318E+01	.5523E+01	.6437E+01	.6432E+01	.7628E+01
LA141	.5817E+01	.5989E+01	.4567E+01	.5103E+01	.4413E+01	.5357E+01	.5559E+01	.6419E+01	.6419E+01	.7630E+01
CE141	.5831E+01	.5989E+01	.4567E+01	.5103E+C1	.4413E+01	.5357E+01	.5559E+01	.6419E+01	.6419E+01	.7630E+01
PR141	.5831E+01	.5989E+01	.4567E+01	.5103E+01	.4413E+01	.5357E+01	.5559E+01	.6419E+01	.6419E+01	.7630E+01
NO141	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
NO141M	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
PM141	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
TE142	.7233E-06	.1390E-05	.4818E-07	.3097E-C3	.4218E-05	.7390E-07	.1598E-06	.1500E-07	.8465E-08	.1180E-04
KE142	.2209E-02	.2448E-02	.1199E-03	.7248E-C1	.5804E-02	.2470E-03	.5287E-C3	.2468E-02	.7360E-C4	.1085E-C1
ME142	.3735E+C0	.4524E+C0	.7856E-01	.2141E-C1	.5112E+C0	.8398E-01	.1791E+C0	.4297E+00	.6279E-01	.1095E-01
CS142	.2825E+01	.2971E+01	.1271E+01	.4316E+C1	.2691E+C1	.1366E+01	.1912E+C1	.2694E+01	.1427E+C1	.4609E+01
BA142	.5821E+C1	.5366E+01	.4505E+01	.4908E+01	.4362E+01	.4828E+01	.4648E+01	.4738E+01	.5986E+01	.6584E+01
LA142	.5422E+01	.5450E+01	.4868E+01	.4910E+01	.4416E+01	.5010E+01	.4817E+01	.4806E+01	.6614E+01	.6623E+01
CE142	.5923E+01	.5450E+01	.4673E+01	.4910E+01	.4416E+01	.5010E+01	.4817E+01	.4806E+01	.6614E+01	.6623E+01
PR142	.5763E-07	.3500E-07	.1995E-05	.1784E-10	.1393E-07	.2629E-06	.2448E-06	.2481E-07	.6029E-C5	.4450E-C8
PR142M	.2814E-07	.1750E-07	.9073E-06	.8842E-11	.6986E-08	.1309E-06	.1219E-C6	.1240E-07	.3019E-05	.2230E-08
NO142	.5763E-C7	.3500E-07	.1995E-05	.1784E-10	.1393E-07	.2629E-06	.2448E-06	.2481E-07	.6030E-05	.4450E-C8

TABLE V (continued)

Nuclide	U235(IT)	U235(F)	U235(M)	U238(F)	U238(M)	U238(IT)	U239(F)	PU241(IT)	L233(IT)	14232(F)
TE143	+12963E-07	+84680E-07	+75374E-10	+60800E-05	+18126E-07	+9987E-09	+20595E-08	+29241E-07	+5566E-10	0.
I 143	+8932E-04	+10337E-03	+2781E-05	+6153E-02	+13999E-03	+12295E-04	+25865E-04	+16792E-03	+17204E-05	0.
XE143	+51089E-01	+60363E-01	+81413E-02	+7597E+00	+89788E-01	+12256E-01	+26497E-01	+80177E-01	+42348E-02	+29387E+00
CS143	+15487E+C1	+13375E+01	+40943E+00	+26764E+C1	+12587E+01	+60387E+00	+77417E+00	+12817E+01	+36896E+00	+29244E+01
BA143	+8264E+01	+52696E+01	+31016E+01	+47709E+C1	+36046E+01	+39464E+01	+38387E+01	+42061E+01	+42594E+01	+67304E+01
LA143	+59222E+C1	+56768E+01	+38988E+01	+7986E+C1	+38045E+01	+45408E+01	+33502E+01	+44831E+01	+57846E+01	+69499E+01
CE143	+42661E+01	+56818E+01	+38933E+01	+4592E+C1	+38045E+01	+45539E+01	+43622E+01	+44864E+01	+58766E+01	+69514E+01
PR143	+59541E+01	+56878E+01	+3894E+01	+4798E+01	+38045E+01	+45540E+01	+43622E+01	+44864E+01	+58768E+C1	+69514E+01
ND143	+56541E+C1	+56878E+01	+3894E+01	+4798E+C1	+38045E+C1	+45540E+01	+43622E+01	+44864E+01	+58768E+01	+69514E+01
PM143	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SM143	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SM143M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TE144	+13547E-09	+19521E-09	+43708E-12	+17595E-C6	+21452E-09	+82711E-11	+15415E-10	+31812E-09	+45366E-12	0.
I 144	+21465E-C5	+50713E-C5	+62610E-07	+30773E-03	+56954E-05	+34269E-06	+66297E-06	+62705E-05	+56807E-07	0.
XE144	+60432E-02	+10529E-01	+69452E-01	+13733E+C0	+12078E-01	+11428E-02	+22514E-02	+99436E-02	+44198E-03	+54559E-01
CS144	+28776E+C0	+3625E+00	+99591E-01	+17638E+C1	+66492E+00	+16071E+00	+20089E+00	+66451E+00	+75825E+C1	+15111E+01
BA144	+42693E+01	+17691E+01	+18592E+01	+45932E+C1	+28904E+01	+25955E+01	+24948E+01	+3317E+01	+22335E+C1	+72633E+01
LA144	+53903E+01	+21803E+01	+30932E+01	+47307E+C1	+34190E+01	+37532E+01	+35444E+01	+41220E+01	+42287E+C1	+81765E+C1
CE144	+5453E+C1	+52613E+01	+32272E+01	+47316E+01	+34398E+01	+38357E+01	+36179E+01	+41513E+01	+46472E+01	+81955E+C1
PR144	+5453E+C1	+52613E+01	+32272E+01	+47316E+01	+34398E+01	+38357E+01	+36179E+01	+41513E+01	+46472E+01	+81955E+C1
PM144	+6550E-01	+63200E-01	+39000E-01	+5680E-01	+41200E-01	+46100E-01	+43500E-01	+49800E-01	+56500E-01	+98400E-01
ND144	+54545E+01	+52618E+01	+32279E+01	+47316E+01	+34358E+01	+38360E+01	+36181E+01	+41513E+01	+46487E+C1	+81955E+01
SM144	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SM144C	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
I 145	+8044E-04	+63110E-03	+38773E-04	+21594E-C1	+13354E-02	+13998E-03	+13290E-03	+64930E-03	+82246E-05	+39930E-02
XE145	+6803E-01	+10097E+00	+17603E-01	+58266E+00	+14203E+00	+39250E-01	+36904E-01	+95003E-01	+67899E-C2	+33648E+C0
CS145	+19257E+C1	+20737E+01	+92115E+00	+34762E+C1	+20437E+01	+13261E+01	+12398E+01	+18023E+01	+61729E+00	+36699E+01
BA145	+36954E+01	+35983E+01	+23406E+01	+39621E+01	+30583E+01	+2727E+01	+2709E+01	+30593E+01	+24209E+C1	+55496E+01
CE145	+39303E+01	+37436E+01	+30449E+01	+39720E+C1	+31454E+01	+30744E+01	+30250E+01	+32000E+01	+33481E+01	+56895E+01
LA145	+39312E+01	+37442E+01	+30500E+01	+39720E+C1	+31453E+01	+30764E+01	+30269E+01	+32005E+01	+33645E+01	+56587E+01
PR145	+39312E+01	+37442E+01	+30500E+01	+39720E+C1	+31453E+01	+30764E+01	+30269E+01	+32005E+01	+33645E+01	+56587E+01
PM145	+3620E-11	+23208E-11	+12991E-09	+0.	+0.	+16698E-10	+20985E-10	+13700E-11	+15899E-08	+0.
SM145	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TE146	+12207E-04	+25104E-04	+10493E-05	+14579E-02	+83360E-04	+37095E-05	+40770E-05	+25912E-04	+10999E-06	+20100E-03
XE146	+74252E-02	+13130E-01	+19370E-02	+12674E+00	+26998E-01	+36532E-02	+38743E-02	+13140E-01	+33609E-03	+57645E-01
CS146	+6854E+C0	+78404E+00	+24042E+00	+23919E+C1	+10397E+01	+39230E+00	+42188E+C0	+76120E+00	+1651E+C0	+19892E+C1
BA146	+22344E+C1	+13919E+01	+23414E+01	+35290E+C1	+24110E+01	+17264E+01	+17283E+01	+22314E+01	+10507E+C1	+43531E+01
CE146	+29836E+01	+28887E+01	+23430E+01	+36053E+01	+27307E+01	+25209E+01	+24818E+01	+27300E+01	+24563E+C1	+48398E+01
LA146	+29244E+01	+28951E+01	+23716E+01	+36055E+C1	+27330E+01	+25375E+01	+25073E+01	+27366E+01	+23677E+C1	+48430E+01
PR146	+29244E+01	+28951E+01	+23716E+01	+36055E+C1	+27330E+01	+25375E+01	+25073E+01	+27366E+01	+23677E+C1	+48430E+01
ND146	+40822E-09	+24804E-09	+76747E-08	+0.	+29926E-10	+22997E-08	+20318E-08	+20610E-09	+16299E-06	+37500E-10
PM146	+14288E-09	+66814E-10	+26861E-08	+0.	+10495E-10	+80495E-09	+70648E-09	+72133E-10	+36050E-07	+13125E-10
SM146	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SM146C	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TE147	+2357E-06	+16517E-06	+16767E-08	+777E-03	+10495E-10	+80495E-09	+70648E-09	+72133E-10	+36050E-07	+13125E-10
XE147	+6004E-C3	+53620E-03	+26936E-04	+39807E-01	+11042E-02	+11446E-03	+20319E-03	+85322E-03	+16746E-C4	0.
CS147	+12019E+C0	+14883E+00	+35000E-01	+10569E+C1	+25798E+00	+9737E-01	+70488E-01	+15988E+00	+10121E-C1	+43361E+00
BA147	+16646E+C1	+10993E+01	+52270E+00	+13145E+C1	+17878E+00	+79251E+00	+79251E+00	+30641E+00	+21162E+01	+32404E+01
CE147	+22158E+01	+23267E+01	+16383E+01	+27084E+01	+20687E+01	+19936E+01	+19855E+01	+22160E+01	+15591E+01	+32404E+01
PR147	+22158E+01	+23267E+01	+16383E+01	+27084E+01	+20687E+01	+19936E+01	+19855E+01	+22160E+01	+15591E+01	+32404E+01
PM147	+22158E+01	+23267E+01	+16383E+01	+27084E+01	+20687E+01	+19936E+01	+19855E+01	+22160E+01	+15591E+01	+32404E+01
ND147	+22158E+01	+23267E+01	+16383E+01	+27084E+01	+20687E+01	+19936E+01	+19855E+01	+22160E+01	+15591E+01	+32404E+01

337 142

TABLE V (continued)

NUCLIDE	U235(T)	U235(F)	U235(H)	U238(F)	U238(H)	PU239(F)	PU239(H)	PU239(F)	PU241(F)	U233(T)	TH232(F)
ND147	-22713E+01	-23695E+01	-17367E+01	-27105E+01	-20876E+01	-20727E+01	-20876E+01	-20639E+01	-22601E+01	-17753E+01	-32674E+01
ND148	-22713E+01	-23695E+01	-17367E+01	-27105E+01	-20876E+01	-20727E+01	-20876E+01	-20639E+01	-22601E+01	-17753E+01	-32674E+01
ND149	-22713E+01	-23695E+01	-17367E+01	-27105E+01	-20876E+01	-20727E+01	-20876E+01	-20639E+01	-22601E+01	-17753E+01	-32674E+01
ND150	-20111E-08	-28205E-08	-81044E-10	-27897E-05	-49291E-07	-53193E-09	-49291E-07	-60955E-09	-60619E-08	-55897E-11	-34100E-07
ND151	-17512E-04	-22306E-04	-15790E-05	-29115E-02	-70076E-04	-66696E-05	-70076E-04	-73792E-05	-30018E-04	-21499E-06	-14003E-03
ND152	-14949E-01	-17371E-01	-29615E-02	-33003E+00	-42282E-01	-81535E-02	-42282E-01	-71900E-02	-21993E-01	-78517E-03	-58243E-01
ND153	-35508E+00	-38008E+00	-14336E+00	-15084E+00	-59462E+00	-26685E+00	-59462E+00	-21545E+00	-45531E+00	-76643E-01	-73903E+00
ND154	-15291E+01	-15343E+01	-10736E+01	-22431E+01	-17461E+01	-14639E+01	-17461E+01	-21742E+01	-17642E+01	-88455E+00	-20136E+01
ND155	-16907E+01	-16848E+01	-13321E+01	-22593E+01	-18410E+01	-16884E+01	-18410E+01	-16877E+01	-19231E+01	-12593E+01	-21083E+01
ND156	-57781E-05	-60430E-06	-56035E-05	-12613E-06	-44091E-06	-22151E-05	-44091E-06	-20019E-05	-57372E-06	-26219E-05	-11024E-06
ND157	-74941E-06	-57009E-06	-52863E-05	-11899E-08	-13294E-06	-20897E-05	-13294E-06	-18886E-05	-54129E-06	-27899E-04	-10400E-06
ND158	-64826E-05	-11402E-05	-10574E-04	-23798E-08	-26588E-06	-41797E-05	-26588E-06	-37775E-05	-10825E-05	-28864E-04	-20801E-06
ND159	-90145E-03	-81282E-02	-81592E-03	-52590E-01	-37142E-02	-52693E-03	-37142E-02	-64433E-03	-18869E-02	-36798E-04	-34940E-02
ND160	-70330E-01	-78161E-01	-19469E-01	-63805E+00	-16412E+00	-54639E-01	-16412E+00	-64502E-01	-12001E+00	-10023E-01	-13056E+00
ND161	-78054E+00	-79429E+00	-41223E+00	-16906E+01	-11414E+01	-77132E+00	-11414E+01	-88403E+00	-11232E+01	-33091E+00	-79347E+00
ND162	-10707E+01	-10761E+01	-71688E+00	-17657E+01	-13824E+01	-12301E+01	-13824E+01	-12920E+01	-14454E+01	-69368E+00	-93405E+00
ND163	-10887E+01	-10911E+01	-75608E+00	-17654E+01	-13912E+01	-12611E+01	-13912E+01	-13254E+01	-14635E+01	-76875E+00	-93837E+00
ND164	-10911E+01	-10911E+01	-75623E+00	-17654E+01	-13912E+01	-12612E+01	-13912E+01	-13255E+01	-14635E+01	-76923E+00	-93838E+00
ND165	-39241E-08	-70311E-08	-14890E-09	-30099E-05	-34284E-07	-15598E-08	-34284E-07	-22584E-08	-12406E-07	-29469E-10	-23300E-07
ND166	-40626E-04	-62117E-04	-35477E-05	-45356E-02	-21593E-03	-23998E-04	-21593E-03	-31479E-04	-10908E-03	-11602E-05	-11402E-03
ND167	-98285E-02	-12950E-01	-19252E-02	-17933E+00	-32464E-01	-81188E-02	-32464E-01	-10184E-01	-27636E-01	-95507E-03	-13598E-01
ND168	-29187E+00	-33642E+00	-11888E+00	-11411E+01	-63326E+00	-35698E+00	-63326E+00	-39037E+00	-58643E+00	-89390E-01	-21621E+00
ND169	-59210E+00	-63921E+00	-36051E+00	-13533E+01	-10601E+01	-86586E+00	-10601E+01	-90093E+00	-11128E+01	-35721E+00	-33241E+00
ND170	-64620E+00	-68717E+00	-44831E+00	-13624E+01	-11105E+01	-98438E+00	-11105E+01	-10209E+01	-11960E+01	-49846E+00	-34369E+00
ND171	-54129E-03	-22804E-03	-10573E-02	-59695E-05	-17392E-03	-17008E-02	-17392E-03	-87036E-03	-39418E-03	-25729E-02	-35500E-04
ND172	-54129E-03	-22804E-03	-10573E-02	-59700E-05	-17398E-03	-17016E-02	-17398E-03	-87104E-03	-39438E-03	-25782E-02	-30506E-04
ND173	-83045E-03	-13722E-02	-15689E-03	-32337E-01	-34024E-02	-67390E-03	-34024E-02	-11272E-02	-26292E-02	-37598E-04	-13740E-02
ND174	-73289E-01	-49650E-01	-27637E-01	-53427E+00	-20319E+00	-90973E-01	-20319E+00	-12409E-01	-19584E-01	-12406E-01	-60619E-01
ND175	-29618E+00	-33620E+00	-17456E+00	-82398E+00	-66494E+00	-47146E+00	-66494E+00	-55455E+00	-68213E+00	-12024E+00	-15111E+00
ND176	-41847E+00	-43549E+00	-30769E+00	-85345E+00	-84402E+00	-77035E+00	-84402E+00	-81195E+00	-89942E+00	-31102E+00	-17496E+00
ND177	-42028E+00	-43899E+00	-31218E+00	-85354E+00	-84565E+00	-77555E+00	-84565E+00	-81733E+00	-90238E+00	-32215E+00	-17516E+00
ND178	-42028E+00	-43899E+00	-31220E+00	-85354E+00	-84626E+00	-77558E+00	-84626E+00	-81755E+00	-90238E+00	-32223E+00	-17516E+00
ND179	-42034E+00	-43689E+00	-31220E+00	-85354E+00	-84626E+00	-77558E+00	-84626E+00	-81755E+00	-90238E+00	-32223E+00	-17516E+00
ND180	-42034E+00	-43689E+00	-31220E+00	-85354E+00	-84626E+00	-77558E+00	-84626E+00	-81755E+00	-90238E+00	-32223E+00	-17516E+00
ND181	-17910E-07	-29005E-07	-10593E-08	-14599E-04	-21096E-06	-55792E-08	-21096E-06	-26980E-07	-85539E-07	-50595E-10	-58100E-07
ND182	-47423E-04	-69140E-04	-61668E-05	-50311E-02	-32708E-03	-26902E-04	-32708E-03	-84265E-04	-19117E-03	-14600E-05	-72586E-04
ND183	-13456E-01	-17088E-01	-35937E-02	-20467E+00	-53780E-01	-13037E-01	-53780E-01	-26908E-01	-44425E-01	-11640E-02	-97266E-02
ND184	-11961E+00	-14108E+00	-60874E+00	-48701E+00	-32274E+00	-18951E+00	-48701E+00	-27376E+00	-34935E+00	-35211E-01	-50189E-01
ND185	-26352E+00	-29195E+00	-20213E+00	-56658E+00	-55303E+00	-56427E+00	-55303E+00	-64299E+00	-70159E+00	-16165E+00	-78950E-01

337 113

TABLE V (continued)

NUCLIDE	U235(F)	U235(H)	U238(F)	U238(H)	PU239(F)	PU241(F)	L233(F)	TM232(F)
PM152	.26723E+00	.29544E+00	.55685E+00	.55670E+00	.58070E+00	.70927E+00	.19443E+00	.79329E-01
PM152M	.36896E-02	.36816E-02	.26998E-03	.36483E-02	.15935E-01	.76835E-02	.12776E-01	.37900E-03
PM152N	0.	0.	0.	0.	0.	0.	0.	0.
SM152	.27095E+00	.29896E+00	.55742E+00	.56037E+00	.59449E+00	.71704E+00	.20784E+00	.79710E-01
EU152	.33018E-08	.27805E-08	.45496E-11	.10995E-08	.49793E-07	.54225E-08	.20199E-06	.86000E-10
EU152M	.33018E-08	.27805E-08	.45496E-11	.10995E-08	.49793E-07	.54225E-08	.20199E-06	.86000E-10
EU152N	0.	0.	0.	0.	0.	0.	0.	0.
GD152	.34665E-08	.29195E-08	.47773E-11	.11544E-08	.57285E-07	.56936E-08	.21211E-06	.90300E-10
LA153	.83702E-05	.21303E-05	.63698E-03	.10929E-04	.68990E-06	.42438E-05	.14599E-07	.21100E-05
CE153	.12471E-02	.81644E-02	.66384E-01	.82362E-02	.11055E-02	.60450E-02	.56712E-04	.87811E-03
PR153	.31246E-01	.43032E-01	.28795E+00	.12496E+00	.46344E-01	.84905E-01	.54024E-02	.11145E-01
ND153	.84777E+00	.80918E+00	.40926E+00	.37993E+00	.30877E+00	.48374E+00	.71137E-01	.30290E-01
PM153	.16179E+00	.20039E+00	.41183E+00	.39222E+00	.37055E+00	.27742E+00	.10375E+00	.31721E-01
SM153	.15211E+00	.20077E+00	.41184E+00	.39951E+00	.37269E+00	.28155E+00	.10620E+00	.31735E-01
EU153	.16248E+00	.20077E+00	.41184E+00	.39951E+00	.37269E+00	.28155E+00	.10620E+00	.31735E-01
GD153	.93231E-11	.77713E-11	.10887E-09	.19091E-11	.16198E-09	.24282E-10	.13799E-08	0.
TR153	0.	0.	0.	0.	0.	0.	0.	0.
RA154	.13202E-11	.13202E-11	.10199E-07	.27287E-10	0.	.69498E-11	0.	.22300E-11
LA154	.28315E-07	.37207E-07	.30907E-04	.49081E-06	.11298E-07	.22911E-06	.10799E-09	.30502E-07
CE154	.78571E-04	.69753E-04	.96240E-02	.72111E-03	.65022E-04	.83186E-03	.14800E-05	.46331E-04
PR154	.54769E-02	.67318E-02	.95809E-01	.30112E-01	.90189E-02	.26591E-01	.46746E-03	.14356E-02
ND154	.55359E-01	.66013E-01	.22234E+00	.19942E+00	.16340E+00	.24049E+00	.17629E-01	.82616E-02
PM154	.65433E-01	.77754E-01	.22633E+00	.22135E+00	.21982E+00	.33775E+00	.30143E-01	.90273E-02
PM154M	.41766E-02	.10676E-01	.36277E-02	.19971E-01	.51300E-01	.35823E-01	.11379E-01	.69700E-03
SM154	.74728E-01	.88547E-01	.22957E+00	.24071E+00	.27219E+00	.31569E+00	.45860E-01	.96952E-02
EU154	.16359E-05	.17903E-05	.87992E-08	.12494E-05	.35395E-04	.49864E-05	.37198E-04	.30500E-07
GD154	.16331E-05	.17906E-05	.87992E-08	.12495E-05	.35396E-04	.49870E-05	.37266E-04	.30502E-07
LA155	0.	0.	0.	0.	0.	0.	0.	0.
CE155	.32318E-05	.39306E-05	.13059E-02	.69267E-04	.23997E-05	.34416E-04	.28199E-07	.26000E-05
PR155	.65956E-03	.82108E-03	.29302E-01	.71549E-02	.10483E-02	.88191E-02	.28727E-04	.28260E-03
ND155	.16640E-01	.26572E-01	.12033E+00	.10075E+00	.53104E-01	.12789E+00	.31856E-02	.33836E-02
PM155	.30693E-01	.33042E-01	.13236E+00	.14925E+00	.14318E+00	.20746E+00	.14326E-01	.49236E-02
SM155	.32933E-01	.57699E-01	.13258E+00	.15329E+00	.17045E+00	.21697E+00	.21106E-01	.50446E-02
EU155	.32933E-01	.57724E-01	.13258E+00	.15330E+00	.17072E+00	.21697E+00	.21253E-01	.50449E-02
GD155	.22963E-01	.27724E-01	.13258E+00	.15330E+00	.17072E+00	.21697E+00	.21253E-01	.50449E-02
TR155	0.	0.	0.	0.	0.	0.	0.	0.
CE156	.79233E-07	.10302E-06	.13199E-03	.69276E-05	.12598E-06	.21810E-05	.45898E-09	.15100E-06
PR156	.48048E-04	.68914E-04	.68774E-02	.37763E-02	.13610E-03	.88163E-03	.14404E-05	.38351E-04
ND156	.32222E-02	.51397E-02	.56797E-01	.66422E-01	.16410E-01	.55827E-01	.65942E-03	.11914E-02
PM156	.10263E-01	.18384E-01	.68577E-01	.10050E+00	.78273E-01	.12435E+00	.47712E-02	.24474E-02
SM156	.13477E-01	.24241E-01	.54164E-01	.11154E+00	.11892E+00	.14295E+00	.11349E-01	.26884E-02
EU156	.13515E-01	.24319E-01	.69119E-01	.11161E+00	.11987E+00	.14308E+00	.11734E-01	.26898E-02
GD156	.13515E-01	.26170E-01	.69119E-01	.11161E+00	.11987E+00	.14308E+00	.11734E-01	.26898E-02
TR156	0.	0.	0.	0.	0.	0.	0.	0.
RA156M	.85157E-11	.85157E-11	.21285E-09	0.	.11338E-09	.11287E-11	.35798E-09	0.
EU156M	0.	0.	0.	0.	0.	0.	0.	0.
GD156	.30705E-11	.30705E-11	.14390E-09	0.	.74789E-10	.11791E-11	.23599E-09	0.
CE157	.14768E-08	.33505E-08	.10899E-04	.34184E-06	.40894E-08	.66340E-07	.57597E-11	.41500E-08

337 144

TABLE V (continued)

NUCLIDE	U235(I)	U235(II)	U235(III)	U238(I)	U238(II)	Pu239(II)	(F)	P	V	L233(II)	IM232(II)
PR157	26829E-05	6254E-05	11294E-05	13758E-02	2332E-03	11702E-04	1114E-03	54903E-07	2984E-05		
NO157	50794E-03	12249E-02	6767E-03	23064E-01	17871E-01	34462E-02	15416E-01	51352E-04	24098E-03		
PM157	3423E-02	8418E-02	11173E-01	36326E-01	62396E-01	32760E-01	81409E-01	13223E-02	87098E-03		
SM157	63561E-02	15613E-01	30746E-01	37667E-01	81923E-01	74093E-01	13029E+00	65600E-02	11600E-02		
EU157	6492E-02	15860E-01	39224E-01	37671E-01	82219E-01	76294E-01	13152E+00	67600E-02	11646E-02		
GO157	6463E-02	15881E-01	39256E-01	37671E-01	82219E-01	76309E-01	13153E+00	67747E-02	11646E-02		
IB157	5530E-10	11802E-09	93235E-08	0.	17392E-10	27497E-08	27613E-09	71896E-08	0.		
DI157	0.	0.	0.	0.	0.	0.	0.	0.	0.		
CE158	19311E-10	34206E-10	0.	34397E-06	19990E-08	76889E-10	13790E-08	12196E-11	72400E-10		
PR158	1060E-06	21107E-06	18587E-07	12933E-03	58892E-05	58799E-06	53175E-05	13101E-07	16607E-06		
NO158	57638E-04	12923E-03	40590E-04	57058E-02	17790E-02	44551E-03	20848E-02	13812E-04	39666E-04		
PM158	9304E-03	2299E-02	22631E-02	14213E-01	17295E-01	94933E-02	25371E-01	30411E-01	31867E-03		
SM158	30246E-02	79395E-02	18978E-01	16470E-01	39539E-01	37382E-01	64986E-01	12647E-02	64367E-03		
EU158	32187E-02	85256E-02	24011E-01	16489E-01	40775E-01	40866E-01	67891E-01	22237E-02	65837E-03		
GO158	3211E-02	85338E-02	24245E-01	16489E-01	40784E-01	40946E-01	67918E-01	22298E-02	65845E-03		
IB158	7294E-09	27805E-08	27981E-08	0.	13883E-08	24897E-07	88441E-08	35498E-08	10630E-10		
TR158M	3722E-09	14202E-08	14390E-06	0.	70866E-09	12798E-07	43220E-08	18099E-08	5170E-11		
CY158	1167E-09	4487E-09	44804E-07	0.	22213E-09	39845E-08	14151E-08	56797E-09	17008E-11		
PR159	17005E-08	18503E-08	20586E-09	54995E-05	16992E-06	13898E-07	14507E-06	28998E-11	20400E-08		
NO159	29033E-05	44026E-05	15691E-05	82942E-03	17309E-03	32009E-04	19323E-03	37301E-07	15420E-05		
PM159	12897E-03	26545E-03	28437E-03	46681E-02	47979E-02	18758E-02	68473E-02	10837E-04	32642E-04		
SM159	8436E-03	23508E-02	65310E-02	76168E-02	22860E-01	16403E-01	39867E-01	37822E-03	12874E-03		
EU159	10355E-02	30249E-02	11702E-01	77058E-02	25804E-01	11012E-01	46546E-01	82779E-03	14064E-03		
GO159	10355E-02	30249E-02	12432E-01	77061E-02	25811E-01	11235E-01	46741E-01	92249E-03	14085E-03		
IB159	40399E-02	30593E-02	12432E-01	77061E-02	25811E-01	11235E-01	46741E-01	92311E-03	14085E-03		
DI159	54609E-11	11992E-08	0.	0.	19691E-11	35295E-10	10309E-10	40598E-09	0.		
HC159	0.	0.	0.	0.	0.	0.	0.	0.	0.		
HO159M	0.	0.	0.	0.	0.	0.	0.	0.	0.		
CE160	37520E-04	12102E-08	30879E-11	51395E-10	0.	0.	0.	0.	0.		
NO160	74678E-06	2516E-05	69155E-07	83197E-04	10398E-04	20101E-05	18909E-08	52700E-10	12805E-06		
PM160	28067E-04	13757E-03	35345E-04	10331E-02	85699E-03	29497E-03	87362E-03	49046E-06	79081E-05		
SM160	29021E-03	11197E-02	20669E-02	27650E-02	94937E-02	36282E-02	12630E-01	45848E-04	73108E-04		
EU160	37145E-03	14078E-02	60722E-02	28909E-02	13774E-01	93067E-02	24088E-01	19383E-03	93108E-04		
GO160	37453E-03	14207E-02	74402E-02	28921E-02	14033E-01	97346E-02	24751E-01	27644E-03	94188E-04		
IB160	32618E-07	15303E-07	20386E-07	26298E-09	21000E-04	44398E-05	12908E-05	16699E-05	14800E-08		
DI160	32618E-07	15304E-07	20405E-04	26298E-09	21000E-04	44403E-05	12909E-05	16737E-05	14800E-08		
NO161	83207E-08	56709E-08	12691E-08	86492E-05	58372E-06	11788E-07	23411E-06	73596E-11	33000E-08		
PM161	58662E-06	24861E-05	23197E-05	26193E-03	13752E-03	33677E-04	77970E-04	20506E-07	62530E-06		
SM161	27775E-04	12591E-03	44401E-03	12638E-02	39537E-02	16175E-02	30874E-02	58702E-05	14925E-04		
EU161	74101E-04	29962E-02	29962E-02	14418E-02	78648E-02	42341E-02	90109E-02	54668E-04	27325E-04		
GO161	87708E-04	40535E-03	34965E-02	14461E-02	85545E-02	49850E-02	10195E-02	12226E-03	29125E-04		
IB161	67388E-04	40598E-03	35875E-02	14461E-02	85582E-02	49919E-02	10163E-02	12582E-03	29133E-04		
DI161	67634E-04	40598E-03	35879E-02	14461E-02	85582E-02	49919E-02	10163E-02	12585E-03	29133E-04		
HC161	0.	0.	39772E-10	0.	0.	0.	0.	0.	0.		
HO161M	0.	0.	20186E-10	0.	0.	0.	0.	0.	0.		
EP161	0.	0.	0.	0.	0.	0.	0.	0.	0.		
NO162	16705E-10	15303E-09	110093E-09	40096E-07	35983E-07	17398E-09	28379E-09	78413E-08	68300E-10		

337 145

TABLE V (continued)

MUCLIDE	U235(T)	U235(F)	U235(H)	U238(F)	U238(H)	PU239(T)	PU239(F)	PU241(T)	U233(T)	TM232(F)
PM162	22745E-07	2119E-06	32987E-06	8593E-05	21625E-04	55411E-06	85866E-06	30543E-05	62897E-09	41268E-07
SM162	32642E-05	31016E-04	10925E-03	2287E-03	14779E-02	12244E-03	20667E-03	35622E-03	3461E-06	28273E-05
EU162	17812E-04	17104E-03	11535E-02	4395E-03	48013E-02	10853E-02	26459E-02	16618E-02	46844E-05	91413E-05
GO162	28318E-04	28066E-03	27834E-02	47365E-03	61237E-02	23451E-02	60145E-02	24902E-02	14294E-04	11631E-04
TR162	27601E-03	27772E-02	27772E-02	46426E-03	60100E-02	23297E-02	59939E-02	24499E-02	1442E-04	11415E-04
TR162M	71544E-06	7151E-05	10813E-03	55862E-05	13128E-03	78498E-04	22022E-03	59268E-04	705E-06	24933E-06
OY162	28618E-04	28317E-03	28631E-02	47381E-03	61413E-02	24086E-02	62156E-02	25092E-02	131E-04	11665E-04
HO162M	0	0	65155E-10	0	0	27096E-10	12891E-09	15807E-11	1289E-11	0
ER162	0	0	0	0	0	0	0	0	0	0
NO163	0	0	0	0	0	0	0	0	0	0
PM163	55303E-09	32205E-08	97632E-08	48296E-09	61071E-09	11698E-11	18986E-11	24311E-10	0	12200E-11
SM163	24688E-06	14735E-05	10303E-04	25228E-04	29009E-03	86690E-05	18705E-04	30900E-04	20912E-01	23912E-08
EU163	32963E-05	20277E-04	29710E-03	88222E-04	17934E-02	20564E-03	50435E-03	34705E-03	87787E-06	7444E-05
GO163	54297E-05	58283E-04	14743E-02	11882E-03	34116E-02	88055E-03	23830E-02	87029E-03	58676E-05	7444E-05
TR163	59079E-05	61365E-04	16692E-02	11623E-03	34749E-02	97373E-03	26758E-02	90470E-03	7037E-05	6784E-05
OY163	59128E-05	61395E-04	16738E-02	11623E-03	34752E-02	97522E-03	26822E-02	90499E-03	70785E-05	6784E-05
HO163	0	63113E-11	26881E-08	0	32584E-10	84188E-09	35074E-08	57526E-10	36598E-10	0
HO163M	0	40907E-11	13691E-08	0	16592E-10	42994E-09	17887E-08	28113E-10	18599E-10	0
ER163	0	0	0	0	0	0	0	0	0	0
NO164	0	0	0	0	0	0	0	0	0	0
PM164	70838E-11	6010E-10	20386E-09	45296E-11	66468E-11	14098E-09	42169E-09	13706E-08	0	63000E-10
SM164	10113E-07	8794E-07	70372E-06	23499E-05	28230E-04	39109E-06	13844E-05	15721E-05	66496E-09	40863E-07
EU164	38031E-06	33885E-05	59963E-04	18448E-04	52699E-03	27187E-04	10727E-03	48494E-04	84560E-07	76086E-06
GO164	2314E-05	21091E-04	71651E-03	36947E-04	18913E-02	27315E-03	12125E-02	25359E-03	14245E-05	27099E-05
TR164	2786E-05	24922E-04	10023E-02	37759E-04	20403E-02	36314E-03	16571E-02	29010E-03	2475E-05	29149E-05
OY164	27715E-05	25086E-04	10224E-02	37763E-04	20425E-02	36831E-03	16869E-02	29104E-03	23312E-05	29180E-05
HO164	50427E-11	49308E-10	18387E-07	0	38582E-09	38295E-08	25381E-07	31014E-09	11699E-09	0
HO164M	5128E-11	51208E-10	19287E-07	0	40181E-09	40094E-08	26681E-07	30214E-09	12060E-09	0
ER164	26372E-11	26133E-10	87527E-08	0	20448E-09	20399E-08	13462E-07	16438E-09	62007E-10	0
NO165	0	0	0	0	0	0	0	0	0	0
PM165	50127E-09	33105E-08	28581E-07	16221E-06	20100E-05	11800E-07	52655E-07	52838E-07	12999E-10	88400E-09
SM165	5682E-07	38437E-06	75933E-05	34359E-05	10796E-03	25214E-05	13645E-04	48651E-05	52227E-08	47284E-07
EU165	8627E-06	59953E-05	24443E-03	13325E-04	88039E-03	67312E-04	41335E-03	6202E-04	24421E-06	38428E-06
GO165	13215E-05	52058E-04	1624E-03	14825E-04	11075E-02	12950E-03	4604E-03	8904E-04	63119E-06	48308E-06
TR165	13457E-05	53870E-04	26238E-03	14363E-04	11036E-02	13786E-03	91401E-03	89887E-04	73044E-06	48137E-06
OY165M	66137E-06	47529E-05	28480E-03	72724E-05	55878E-03	69801E-04	46279E-03	45512E-04	36989E-06	2437E-06
OY165N	0	0	0	0	0	0	0	0	0	0
HO165	13622E-05	55039E-05	56954E-03	14538E-04	11170E-02	13958E-03	9256E-03	90984E-04	74029E-06	48723E-06
ER165	0	0	19187E-09	0	13394E-11	23997E-10	24882E-09	0	0	0
NO165	0	0	0	0	0	0	0	0	0	0
SM166	11907E-10	1302E-09	61657E-09	74293E-08	10095E-06	89196E-09	17587E-08	25012E-08	0	31000E-10
EU166	424E-08	47438E-07	52625E-06	44639E-06	16593E-04	19326E-06	13907E-05	71983E-06	37498E-09	5091CE-08
GO166	1732E-06	20378E-05	49392E-04	39861E-05	34943E-03	14791E-04	12230E-03	2491E-04	5222E-07	10709E-06
TR166	5651E-06	50182E-05	1972E-03	1360E-05	6051E-03	1786E-04	46705E-03	54645E-04	2726E-06	18499E-06
OY166	6045E-06	57894E-05	27574E-03	51929E-05	63800E-03	68184E-04	43793E-03	60868E-04	44525E-06	19492E-06
HO166	60108E-06	57925E-05	27645E-03	51930E-05	63806E-03	68306E-04	63940E-03	60888E-04	44750E-06	19494E-06
HO166M	31805E-08	31805E-08	71550E-06	37997E-10	6131E-07	82198E-06	14689E-05	20309E-07	22490E-08	18660E-10
ER166	66146E-06	5797E-05	27717E-03	51930E-05	63812E-03	68428E-04	64087E-05	60908E-04	44977E-06	19496E-06

TABLE V (continued)

MUCLIDE	U235(F)	U235(H)	U238(F)	U238(H)	FU239(F)	FU239(H)	PU241(F)	PU241(H)	U233(F)	U233(H)	TM232(F)
TM166	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
YB166	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SR167	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
EUI67	3632CE-09	-27728E-08	-34182E-07	-31789E-07	-32684E-08	-18698E-09	-18698E-09	-18698E-09	-18698E-09	-18698E-09	-18698E-09
G0167	45088E-07	-35283E-06	-91255E-05	-91255E-05	-10166E-03	-79911E-06	-79911E-06	-79911E-06	-79911E-06	-79911E-06	-79911E-06
T0167	22018E-06	-17531E-05	-85173E-04	-85173E-04	-30250E-03	-14471E-05	-14471E-05	-14471E-05	-14471E-05	-14471E-05	-14471E-05
DY167	23925E-06	-27172E-05	-19010E-03	-19010E-03	-37293E-03	-15390E-05	-15390E-05	-15390E-05	-15390E-05	-15390E-05	-15390E-05
H0167	34209E-06	-27411E-05	-19568E-03	-19568E-03	-37374E-03	-15394E-05	-15394E-05	-15394E-05	-15394E-05	-15394E-05	-15394E-05
ER167	3421CE-06	-27412E-05	-19571E-03	-19571E-03	-37374E-03	-15394E-05	-15394E-05	-15394E-05	-15394E-05	-15394E-05	-15394E-05
ER167M	37108E-07	-13709E-06	-98022E-05	-98022E-05	-18684E-04	-76972E-07	-76972E-07	-76972E-07	-76972E-07	-76972E-07	-76972E-07
TM167	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
YB167	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SR168	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
EUI68	62534E-11	-53709E-10	-97732E-09	-97732E-09	-58072E-10	-41596E-11	-41596E-11	-41596E-11	-41596E-11	-41596E-11	-41596E-11
G0168	24076E-08	-21157E-07	-89036E-06	-89036E-06	-17690E-04	-16243E-06	-16243E-06	-16243E-06	-16243E-06	-16243E-06	-16243E-06
T0168	28522E-07	-25720E-06	-22376E-04	-22376E-04	-11324E-03	-51940E-06	-51940E-06	-51940E-06	-51940E-06	-51940E-06	-51940E-06
DY168	75147E-07	-68026E-06	-10022E-03	-10022E-03	-20180E-03	-20180E-03	-20180E-03	-20180E-03	-20180E-03	-20180E-03	-20180E-03
H0168	78329E-07	-71027E-06	-11161E-03	-11161E-03	-20483E-03	-65738E-06	-65738E-06	-65738E-06	-65738E-06	-65738E-06	-65738E-06
ER168	78357E-07	-71034E-06	-11185E-03	-11185E-03	-20483E-03	-65918E-06	-65918E-06	-65918E-06	-65918E-06	-65918E-06	-65918E-06
TM168	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
YB168	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SR169	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
EUI69	85308E-09	-76612E-09	-50257E-08	-50257E-08	-40581E-08	-80393E-10	-80393E-10	-80393E-10	-80393E-10	-80393E-10	-80393E-10
G0169	50257E-08	-25770E-07	-54197E-05	-54197E-05	-37256E-04	-16268E-06	-16268E-06	-16268E-06	-16268E-06	-16268E-06	-16268E-06
T0169	2638E-07	-14499E-06	-57384E-04	-57384E-04	-12102E-03	-14625E-05	-14625E-05	-14625E-05	-14625E-05	-14625E-05	-14625E-05
DY169	319CC8E-07	-16759E-06	-77570E-04	-77570E-04	-13066E-03	-18834E-05	-18834E-05	-18834E-05	-18834E-05	-18834E-05	-18834E-05
H0169	32015E-07	-16823E-06	-78799E-04	-78799E-04	-13017E-03	-19044E-05	-19044E-05	-19044E-05	-19044E-05	-19044E-05	-19044E-05
ER169	32015E-07	-16823E-06	-78799E-04	-78799E-04	-13017E-03	-19044E-05	-19044E-05	-19044E-05	-19044E-05	-19044E-05	-19044E-05
TM169	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
YB169	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SR169M	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
TM170	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
YB170	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SR170	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
G0170	34019E-11	-24104E-10	-24683E-08	-24683E-08	-81461E-10	-15199E-11	-15199E-11	-15199E-11	-15199E-11	-15199E-11	-15199E-11
TM170	33358E-09	-24245E-08	-56508E-06	-56508E-06	-17461E-07	-96243E-09	-96243E-09	-96243E-09	-96243E-09	-96243E-09	-96243E-09
DY170	44958E-08	-33430E-07	-15954E-04	-15954E-04	-6157E-07	-6397E-07	-6397E-07	-6397E-07	-6397E-07	-6397E-07	-6397E-07
H0170	55264E-08	-41261E-07	-23719E-04	-23719E-04	-5521E-05	-40941E-05	-40941E-05	-40941E-05	-40941E-05	-40941E-05	-40941E-05
ER170M	10306E-08	-78713E-08	-78046E-05	-78046E-05	-55873E-05	-11798E-05	-11798E-05	-11798E-05	-11798E-05	-11798E-05	-11798E-05
TM170	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
YB170	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SR170	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
G0171	34219E-10	-17203E-09	-68831E-07	-68831E-07	-75064E-08	-35297E-10	-35297E-10	-35297E-10	-35297E-10	-35297E-10	-35297E-10
DY171	12645E-08	-65031E-08	-38242E-05	-38242E-05	-19758E-04	-47100E-07	-47100E-07	-47100E-07	-47100E-07	-47100E-07	-47100E-07
H0171	28558E-08	-14884E-07	-13917E-04	-13917E-04	-32452E-04	-15109E-06	-15109E-06	-15109E-06	-15109E-06	-15109E-06	-15109E-06
ER171	20994E-08	-16795E-07	-18624E-04	-18624E-04	-33871E-04	-19138E-06	-19138E-06	-19138E-06	-19138E-06	-19138E-06	-19138E-06
TM171	32095E-08	-16795E-07	-18624E-04	-18624E-04	-33871E-04	-19190E-06	-19190E-06	-19190E-06	-19190E-06	-19190E-06	-19190E-06

337 147

TABLE V (continued)

ALCULE	U235(E)	U235(F)	U235(H)	U238(F)	U238(H)	P0239(T)	P0239(F)	P0241(T)	U233(E)	TM232(F)
Y8171	.32095E-08	.16795E-07	.18624E-04	.18473E-07	.33871E-04	.19190E-06	.27355E-05	.29054E-06	.53627E-09	0.
G0172	0.		.16389E-11	.41496E-09	.28187E-09	0.	0.	0.	0.	0.
I8172	.15709E-11	.61610E-11	.39289E-08	.66209E-07	.12622E-06	.20797E-10	.31784E-09	.20910E-09	0.	0.
CY172	.16966E-09	.68277E-09	.97725E-06	.13561E-05	.65831E-05	.41902E-08	.50381E-07	.18418E-07	.57957E-11	0.
HC172	.74898E-09	.30627E-08	.81023E-05	.23280E-05	.17978E-04	.29487E-07	.39513E-06	.70542E-07	.67296E-10	0.
ER172	.1097E-08	.45129E-08	.46836E-04	.24490E-05	.21526E-04	.55183E-07	.79104E-06	.96453E-07	.17329E-09	0.
TM172	.1097E-08	.45129E-08	.16136E-04	.24490E-05	.21526E-04	.56372E-07	.80913E-06	.96900E-07	.17329E-09	0.
Y8172	.1097E-08	.45129E-08	.16836E-04	.24490E-05	.21526E-04	.56376E-07	.80922E-06	.96900E-07	.17329E-09	0.

337 148

TABLE VI

NEUTRON CAPTURE CROSS-SECTIONAL DATA FOR EACH FISSION-PRODUCT NUCLIDE

NEUTRON CAPTURE CROSS SECTION FOR SE 79			0.			0.			0.		
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
C.	C.	C.	C.	C.	C.	C.	C.	C.	C.	C.	C.
NEUTRON CAPTURE CROSS SECTION FOR KR 85											
18268E-02	-2118E-02	46429E-02	53517E-02	49745E-02	66906E-02	99142E-02	14635E-01	23501E-01	42425E-01		
78946E-01	14074E+00	26159E+00	39971E+00	26805E+00	14941E-01	71939E-01	32171E-01	47248E-01	69376E-01		
10173E+00	14941E+00	21939E+00	32170E+00	47248E+00	18000E+01	16600E+01					
NEUTRON CAPTURE CROSS SECTION FOR SR 90											
2594E-03	1818E-02	33612E-02	55981E-02	22848E-02	89759E-02	88944E-02	89707E-02	10015E-01	14806E-01		
30207E+00	45200E+00	74362E+00	11054E+01	17385E+01	20461E+01	31763E+02	37424E+00	76871E-01	37612E-01		
55194E-01	81004E-01	11894E+00	17441E+00	25616E+00	90000E+00	80000E+00					
NEUTRON CAPTURE CROSS SECTION FOR ZR 93											
12986E-02	66571E-02	43895E-01	56197E-01	64400E-01	41364E-01	45209E-01	60648E-01	95648E-01	17179E+00		
60533E+00	69587E+00	12543E+01	19856E+01	28545E+01	27064E+01	16504E+01	16504E+01	16504E+01	74551E-01		
10127E+01	13735E+01	19543E+01	28273E+01	41269E+01	33000E+02	13400E+02					
NEUTRON CAPTURE CROSS SECTION FOR MO 95											
31093E-02	11128E-01	21249E-01	35209E-01	8877E-01	82807E-01	91779E-01	13420E+00	21619E+00	37278E+00		
60533E+00	69587E+00	12543E+01	19856E+01	28545E+01	27064E+01	16504E+01	16504E+01	16504E+01	88874E+00		
10127E+01	13735E+01	19543E+01	28273E+01	41269E+01	33000E+02	13400E+02					
NEUTRON CAPTURE CROSS SECTION FOR MO 97											
15348E-02	6283E-02	16138E-01	27246E-01	96030E-01	84727E-01	94170E-01	12523E+00	20072E+00	34899E+00		
62202E+00	10724E+00	18437E+01	21830E+01	36140E+01	35984E+01	37201E+00	71081E+01	69839E-01	13496E+00		
13541E+00	19775E+00	28925E+00	42368E+00	62192E+00	13000E+02	20000E+02					
NEUTRON CAPTURE CROSS SECTION FOR IC 99											
50033E-02	2020E-01	41631E-01	95314E-01	15463E+00	14544E+00	17023E+00	27259E+00	45920E+00	73997E+00		
10904E+01	14558E+01	19177E+01	28338E+01	42449E+01	86650E+01	13932E+02	24845E+01	30347E+01	35080E+02		
17055E+03	40682E+02	41631E+01	43462E+01	55605E+01	34000E+03	17700E+02					
NEUTRON CAPTURE CROSS SECTION FOR RU100											
25422E-02	15629E-01	28202E-01	45754E-01	44266E-01	46208E-01	58998E-01	65333E-01	97507E-01	16661E+00		
28007E+00	42025E+00	58781E+00	81038E+00	95973E+00	12190E+01	81994E-01	11289E+00	16533E+00	24254E+00		
35954E+00	52209E+00	76656E+00	11240E+01	16508E+01	11200E+02	58000E+02					
NEUTRON CAPTURE CROSS SECTION FOR RU101											
52798E-02	23721E-01	51332E-01	67067E-01	82749E-01	13811E+00	27317E+00	44114E+00	71114E+00	10688E+01		
14466E+01	17954E+01	22317E+01	29828E+01	38431E+01	97352E+01	90476E+01	23145E+02	21572E+02	58427E+02		
55204E+00	42225E+00	52007E+00	70359E+00	99712E+00	85000E+02	33400E+02					

337 149

TABLE VI (continued)

NEUTRON CAPTURE CROSS SECTION FOR RH102											
-43667E-02	-22552E-01	-56034E-01	-71223E-01	-75420E-01	-89181E-01	-10984E+00	-12338E+00	-25499E-01	-18138E+00	-30559E+00	
-49247E+00	-21706E+00	-95908E+00	-10259E+01	-83864E-02	-39856E+00	-14720E+00	-25499E-01	-18138E+00	-30559E+00		
-80408E-01	-11807E+00	-17336E+00	-25423E+00	-37338E+00	-41000E+01	-13000E+01					
NEUTRON CAPTURE CROSS SECTION FOR RH103											
-28324E-02	-13751E-01	-31828E-01	-66272E-01	-89600E-01	-12763E+00	-27230E+00	-41655E+00	-20778E+01	-64196E+00	-95902E+00	
-12898E+01	-15854E+01	-20862E+01	-29089E+01	-41013E+01	-10212E+02	-96867E+01	-20778E+01	-21950E+00	-21950E+00	-79418E-01	
-57454E+00	-84523E+01	-11449E+04	-16777E+03	-72360E+02	-11000E+04	-14600E+03					
NEUTRON CAPTURE CROSS SECTION FOR RH104											
-23618E-02	-14127E-01	-33094E-01	-36257E-01	-34528E-01	-39486E-01	-64278E-01	-73024E-01	-10083E+00	-12325E-01	-17244E+00	
-29436E+00	-42263E+00	-64863E+00	-12338E+01	-18400E+01	-48295E+01	-20876E-01	-91617E-02	-12325E-01	-12325E-01	-17578E-01	
-25467E-01	-37213E-01	-54510E-01	-79850E-01	-11721E+00	-46000E+01	-47000E+00					
NEUTRON CAPTURE CROSS SECTION FOR RH104											
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NEUTRON CAPTURE CROSS SECTION FOR RH105											
-28588E-02	-28783E-01	-65695E-01	-96988E-01	-11858E+00	-15905E+00	-23984E+00	-38156E+00	-97199E+01	-60436E+00	-26234E+00	
-11313E+01	-13779E+01	-16579E+01	-21667E+01	-30377E+01	-47908E+01	-66025E+01	-97199E+01	-97199E+01	-14535E+02	-21125E+02	
-30505E+02	-41511E+02	-10341E+05	-10143E+05	-67090E+03	-15820E+05	-16000E+05					
NEUTRON CAPTURE CROSS SECTION FOR PD105											
-44802E-02	-23882E-01	-54718E-01	-82778E-01	-98607E-01	-15913E+00	-34624E+00	-51785E+00	-79891E+00	-11483E+01		
-15229E+01	-18638E+01	-23051E+01	-30761E+01	-44125E+01	-60664E+01	-62439E+01	-22849E+02	-18461E+02	-55447E+02		
-13534E+01	-13874E+01	-19176E+01	-27545E+01	-40120E+01	-90000E+02	-14000E+02					
NEUTRON CAPTURE CROSS SECTION FOR PD106											
-93594E-03	-77344E-02	-22352E-01	-24933E-01	-17012E-01	-20086E-01	-30832E-01	-66687E-01	-20305E-02	-59968E-01	-10131E+00	
-17993E+00	-29765E+00	-45069E+00	-63208E+00	-78896E+00	-13147E-02	-19403E-02	-22849E+02	-20305E-02	-41571E-02	-61039E-02	
-69495E-02	-13145E-01	-19301E-01	-28302E-01	-41567E-01	-26000E+01	-14600E+00					
NEUTRON CAPTURE CROSS SECTION FOR PD107											
-27889E-02	-18366E-01	-56113E-01	-79620E-01	-87538E-01	-12637E+00	-32772E+00	-50041E+00	-15437E+02	-77542E+00	-11362E+01	
-15052E+01	-18456E+01	-23079E+01	-31062E+01	-44894E+01	-67397E+01	-10221E+02	-15437E+02	-23285E+02	-23285E+02	-34888E+02	
-46108E+02	-60039E+00	-13215E+01	-19379E+01	-28462E+01	-12000E+03	-10000E+02					
NEUTRON CAPTURE CROSS SECTION FOR PD108											
-38370E-02	-14826E-01	-26901E-01	-42784E-01	-55359E-01	-52659E-01	-70500E-01	-74018E-01	-10764E+00	-10764E+00	-18059E+00	
-29496E+00	-43266E+00	-55981E+00	-80110E+00	-11759E+01	-26540E+01	-22741E+00	-435E+01	-23127E+03	-23127E+03	-11788E+01	
-79443E+00	-92214E+01	-17665E+01	-24371E+01	-35141E+01	-25600E+03	-12200E+02					
NEUTRON CAPTURE CROSS SECTION FOR AG109											
-38178E-02	-24381E-01	-66190E-01	-14261E+00	-14244E+00	-23129E+00	-41152E+00	-58983E+00	-65547E+00	-65547E+00	-11881E+01	
-14992E+01	-17898E+01	-22215E+01	-30169E+01	-60947E+01	-70068E+01	-18207E+02	-3381E+02	-4752E+02	-4752E+02	-17731E+01	
-10610E+04	-68814E+02	-23397E+02	-23015E+02	-28905E+02	-14500E+04	-91000E+02					

337 110

TABLE VI (continued)

NEUTRON CAPTURE CROSS SECTION FOR CD113									
-6803E-02	-1072E-01	-18982E-01	-34757E-01	-66537E-01	-10851E+00	-12951E+00	-15898E+00	-22914E+00	-39242E+00
-77245E+00	-12702E+01	-15965E+01	-22894E+01	-47127E+01	-10223E+02	-10368E+02	-18142E+02	-54923E+01	-27342E+01
-89096E+00	-63580E+01	-51043E+02	-56835E+03	-11123E+03	-3656CE+03	-19910E+03			
NEUTRON CAPTURE CROSS SECTION FOR IN115									
-2703E-02	-19139E-01	-63449E-01	-12659E+00	-17974E+00	-18684E+00	-19519E+00	-25551E+00	-38719E+00	-58647E+00
-96745E+00	-10697E+01	-13717E+01	-18832E+01	-26680E+01	-62995E+01	-62733E+01	-54013E+01	-18318E+02	-29504E+01
-56546E+02	-78613E+02	-39508E+04	-15094E+03	-92639E+02	-33000E+04	-20200E+03			
NEUTRON CAPTURE CROSS SECTION FOR SB121									
-58627E-02	-24420E-01	-67907E-01	-11422E+00	-15571E+00	-13777E+00	-17620E+00	-24213E+00	-41565E+00	-69428E+00
-96745E+00	-12627E+01	-16822E+01	-17997E+01	-32735E+01	-31148E+01	-11285E+02	-94422E+01	-15057E+02	-72642E+02
-14220E+03	-20652E+01	-12759E+01	-14514E+01	-19211E+01	-26000E+03	-62550E+01			
NEUTRON CAPTURE CROSS SECTION FOR SB123									
-21961E-02	-93925E-02	-26640E-01	-48946E-01	-77566E-01	-79313E-01	-92139E-01	-17962E+00	-20147E+00	-32773E+00
-51533E+00	-76672E+00	-11433E+01	-14562E+01	-19493E+01	-28550E+01	-90716E+01	-57467E+01	-24666E+02	-11621E+03
-49368E+00	-49924E+00	-63486E+00	-87791E+00	-12564E+01	-14000E+03	-43300E+01			
NEUTRON CAPTURE CROSS SECTION FOR I 127									
-28404E-02	-9707E-02	-31713E-01	-58374E-01	-80644E-01	-11927E+00	-16396E+00	-24716E+00	-42850E+00	-67637E+00
-97601E+00	-14023E+01	-20983E+01	-33244E+01	-56879E+01	-85281E+01	-12719E+02	-21252E+02	-12624E+03	-93048E+01
-48939E+00	-6176CE+00	-85986E+00	-12250E+01	-17798E+01	-14700E+03	-62000E+01			
NEUTRON CAPTURE CROSS SECTION FOR I 129									
-12795E-02	-8063E-02	-25332E-01	-60468E-01	-80828E-01	-11840E+00	-13959E+00	-14489E+00	-27790E+00	-47402E+00
-75453E+00	-11402E+01	-18605E+01	-31687E+01	-56059E+01	-99518E+01	-12719E+02	-68245E+01	-77870E+00	-11374E+01
-18658E+01	-24454E+01	-38901E+01	-52643E+01	-77313E+01	-36000E+02	-27000E+02			
NEUTRON CAPTURE CROSS SECTION FOR M131									
-88129E-03	-55287E-02	-16092E-01	-29840E-01	-42473E-01	-7180E-01	-12969E+00	-11033E+00	-26878E+00	-44418E+00
-63126E+00	-96760E+00	-15775E+01	-27502E+01	-35672E+01	-53531E+01	-29754E+02	-70173E+01	-17816E+02	-10496E+04
-18368E+02	-11873E+02	-13738E+02	-18350E+02	-25874E+02	-87000E+03	-90000E+02			
NEUTRON CAPTURE CROSS SECTION FOR M113									
-19468E-02	-24320E-02	-34109E-02	-56202E-02	-86678E-02	-13031E-01	-22205E-01	-34112E-01	-49293E-01	-76980E-01
-13618E+00	-22824E+00	-36724E+00	-61174E+00	-15670E+01	-35519E+01	-19629E+02	-69145E+02	-18444E+03	-83039E+02
-23955E+02	-17884E+02	-25089E+02	-36796E+02	-54590E+02	-32250E+02	-19000E+03			
NEUTRON CAPTURE CROSS SECTION FOR CS133									
-80663E-03	-51803E-02	-15146E-01	-32379E-01	-57444E-01	-11218E+00	-14574E+00	-20620E+00	-32885E+00	-50677E+00
-77378E+00	-12101E+01	-20302E+01	-34526E+01	-50555E+01	-12077E+02	-16474E+02	-27555E+02	-32734E+02	-17302E+01
-39404E+03	-56920E+01	-34597E+01	-64472E+01	-87431E+01	-41500E+03	-79000E+02			
NEUTRON CAPTURE CROSS SECTION FOR CS134									
-21679E-02	-30695E-02	-53966E-02	-11149E-01	-21406E-01	-48185E-01	-11033E+00	-20820E+00	-34293E+00	-56922E+00
-95229E+00	-15932E+01	-26178E+01	-44994E+01	-72207E+01	-10888E+02	-16415E+02	-26450E+02	-45269E+02	-77444E+02
-25453E+02	-12601E+02	-18502E+02	-27132E+02	-39846E+02	-87970E+02	-14000E+03			

337 150

TABLE VI (continued)

NEUTRON CAPTURE CROSS SECTION FOR RE135									
.1639E-02	.1332E-02	.47449E-03	.3948E-03	.2137E-03	.90647E-03	.1865E-02	.1833E-02	.2816E-02	.48285E-02
.8292E-02	.1450E-01	.2798E-01	.5070E-01	.7965E-01	.1186E+00	.1810E+00	.3313E+00	.8188E+00	.3163E+01
.2682E+02	.1649E+03	.1344E+04	.1064E+05	.1018E+06	.7634E+07	.2650E+07			
NEUTRON CAPTURE CROSS SECTION FOR CS135									
.6132E-03	.2722E-02	.7080E-02	.2715E-01	.5056E-01	.6729E-01	.6661E-01	.1204E+00	.1711E+00	.2688E+00
.4243E+00	.6778E+00	.1129E+01	.2019E+01	.3774E+01	.7146E+01	.1342E+02	.2476E+02	.2232E+02	.3633E+00
.5350E+00	.7827E+00	.1149E+01	.1685E+01	.2479E+01	.6200E+02	.8700E+01			
NEUTRON CAPTURE CROSS SECTION FOR CS137									
.2059E-03	.7252E-03	.2765E-02	.8987E-02	.7340E-02	.6087E-02	.6563E-02	.8781E-02	.1344E-01	.2174E-01
.3664E-01	.6450E-01	.1181E+00	.1881E+00	.2356E+00	.9903E+00	.1493E+01	.2131E+01	.3131E+01	.4974E+01
.6741E-02	.5902E-02	.1453E-01	.2131E-01	.3130E-01	.5900E+00	.1100E+00			
NEUTRON CAPTURE CROSS SECTION FOR LA139									
.1519E-02	.2124E-02	.3208E-02	.4413E-02	.9853E-02	.1019E-01	.1191E-01	.1846E-01	.2880E-01	.4696E-01
.8092E-01	.1096E+00	.1604E+00	.2652E+00	.2985E+00	.2148E+01	.1112E+01	.1077E+01	.8228E+01	.2033E+00
.3968E+00	.6918E+00	.1114E+01	.2048E+01	.2932E+01	.1220E+02	.9000E+01			
NEUTRON CAPTURE CROSS SECTION FOR BA140									
.1158E-02	.1194E-02	.1932E-02	.1866E-02	.1527E-02	.1384E-02	.1663E-02	.2291E-02	.3477E-02	.5618E-02
.9142E-02	.1488E-01	.2427E-01	.3957E-01	.7724E+00	.1403E+02	.7781E+00	.3048E-01	.4484E-01	.6596E-01
.9086E-01	.1423E+00	.2096E+00	.3079E+00	.4529E+00	.1360E+02	.1800E+01			
NEUTRON CAPTURE CROSS SECTION FOR CE141									
.2884E-02	.1367E-01	.3317E-01	.5351E-01	.5248E-01	.4578E-01	.4953E-01	.6529E-01	.9583E-01	.1512E+00
.2453E+00	.4010E+00	.6286E+00	.7728E+00	.1139E+01	.2233E+01	.4373E+01	.5871E+01	.8254E+01	.1212E+01
.1772E+01	.2610E+01	.3832E+01	.5620E+01	.8254E+01	.4800E+02	.2900E+02			
NEUTRON CAPTURE CROSS SECTION FOR PR141									
.2952E-02	.5350E-02	.7034E-01	.2728E-01	.3768E-01	.2869E-01	.3271E-01	.6007E-01	.9601E-01	.1314E+00
.2554E+00	.4307E+00	.9148E+00	.7832E+00	.2503E+01	.1101E+02	.5144E+00	.2617E+01	.3308E+01	.4848E+00
.7074E+00	.1036E+01	.1521E+01	.2229E+01	.3277E+01	.1410E+02	.1150E+02			
NEUTRON CAPTURE CROSS SECTION FOR PR143									
.2100E-02	.7251E-02	.2390E-01	.5070E-01	.7138E-01	.7846E-01	.9737E-01	.1335E+00	.2060E+00	.3297E+00
.5156E+00	.8544E+00	.1475E+01	.2742E+01	.5201E+01	.9489E+01	.1917E+02	.4047E+02	.9254E+02	.3202E+02
.9454E+01	.8080E+01	.1176E+02	.1724E+02	.2533E+02	.1900E+03	.8900E+02			
NEUTRON CAPTURE CROSS SECTION FOR ND143									
.2023E-03	.2383E-02	.5546E-01	.1213E+00	.1130E+00	.8979E-01	.9388E-01	.1178E+00	.1594E+00	.2186E+00
.3752E+00	.6025E+00	.9692E+00	.2299E+01	.378E+01	.9738E+01	.3233E+02	.2510E+02	.4710E+02	.2122E+01
.5665E+01	.1403E+02	.2420E+02	.5217E+02	.87410E+02	.1400E+03	.3250E+03			
NEUTRON CAPTURE CROSS SECTION FOR CE144									
.7414E-03	.3960E-02	.1017E-01	.1931E-01	.15834E-01	.2049E-01	.3577E-01	.4104E-01	.5165E-01	.6463E-01
.8971E-01	.1481E+00	.1993E+00	.3103E+00	.4832E+00	.9003E+02	.1321E+01	.1937E-01	.2846E-01	.4179E-01
.6128E-01	.5004E-01	.13210E+00	.1937E+00	.2846E+00	.2600E+01	.1300E+01			

337 152

TABLE VI (continued)

NEUTRON CAPTURE CROSS SECTION FOR MO144									
-2020E-03	-2310E-02	-1642E-01	-3650E-01	-4280E-01	-4995E-01	-6467E-01	-50920E-01	-61446E-01	-7634E-01
-1059E+00	-1965E+00	-1653E+00	-6720E+00	-1044E+01	-2996E+01	-9829E+01	-6918E+01	-11277E+00	-15608E+00
-2230E+00	-3237E+00	-4728E+00	-6918E+00	-1014E+01	-5000E+01	-3600E+01			
NEUTRON CAPTURE CROSS SECTION FOR MO145									
-1083E-03	-1154E-02	-5714E-02	-3979E-01	-9039E-01	-8323E-01	-9245E-01	-1241E+00	-1013E+00	-29420E+00
-4601E+00	-7591E+00	-1397E+01	-3091E+01	-6911E+01	-1075E+02	-2977E+02	-7202E+02	-68567E+02	-18180E+01
-3982E+01	-1583E+03	-6397E+01	-8479E+01	-12120E+02	-24600E+03	-42000E+02			
NEUTRON CAPTURE CROSS SECTION FOR MO146									
-2888E-02	-1473E-01	-6273E-01	-6712E-01	-5481E-01	-5363E-01	-78140E-01	-9477E-01	-1193E+00	-1542E+00
-20270E+00	-2661E+00	-2620E+00	-50790E+00	-5839E+00	-10590E+01	-19100E-01	-27460E-01	-40054E-01	-58646E-01
-85890E-01	-1267E+00	-18507E+00	-2713E+00	-39850E+00	-32000E+01	-14000E+01			
NEUTRON CAPTURE CROSS SECTION FOR PM147									
-1112E-02	-889E-02	-511E-02	-2707E-01	-2019E+00	-3273E+00	-3727E+00	-4483E+00	-6226E+00	-9228E+00
-1513E+01	-2644E+01	-4462E+01	-9243E+01	-1699E+02	-2690E+02	-4080E+02	-6967E+02	-8321E+02	-4411E+02
-2457E+04	-64800E+02	-2529E+02	-3168E+02	-4772E+02	-23000E+04	-18200E+03			
NEUTRON CAPTURE CROSS SECTION FOR SM147									
-5046E-03	-511E-02	-2707E-01	-1060E+00	-2901E+00	-3711E+00	-40030E+00	-4968E+00	-6021E+00	-9844E+00
-1659E+01	-5657E+01	-5967E+01	-1047E+02	-1890E+02	-2850E+02	-5524E+02	-7466E+02	-1837E+03	-3392E+03
-2758E+01	-2981E+03	-54050E+01	-7271E+01	-1285E+02	-71400E+03	-68200E+02			
NEUTRON CAPTURE CROSS SECTION FOR PM148									
-5447E-02	-6429E-01	-2376E+00	-49270E+00	-7644E+00	-9943E+00	-1231E+01	-1632E+01	-2369E+01	-3721E+01
-6062E+01	-1008E+02	-1681E+02	-2740E+02	-3702E+02	-4212E+02	-4791E+02	-54480E+02	-6197E+02	-7056E+02
-80160E+02	-5188E+02	-2594E+03	-2771E+03	-3220E+04	-43980E+04	-2000E+04			
NEUTRON CAPTURE CROSS SECTION FOR SM148									
-3913E-02	-525E-01	-1873E+00	-24699E+00	-2108E+00	-1869E+00	-2135E+00	-2160E+00	-23759E+00	-29658E+00
-4077E+00	-6356E+00	-1659E+01	-16319E+01	-28659E+01	-5678E+01	-11243E+02	-9530E+01	-76849E-01	-11284E+00
-16547E+00	-2430E+00	-35683E+00	-5232E+00	-76849E+00	-2700E+02	-27000E+01			
NEUTRON CAPTURE CROSS SECTION FOR PM149									
-3510E-02	-528E-01	-2304E+00	-5649E+00	-7730E+00	-8764E+00	-1092E+01	-14034E+01	-1954E+01	-3006E+01
-4892E+01	-8246E+01	-1401E+02	-236	-3891E+02	-627E+02	-1010E+03	-1188E+03	-10397E+03	-9093E+02
-44230E+02	-7459E+02	-13562E+03	-2461	-39847E+03	-92700E+03	-14000E+04			
NEUTRON CAPTURE CROSS SECTION FOR SM149									
-5868E-02	-278E-01	-1219E+00	-25250E+00	-4019E+00	-5376E+00	-6318E+00	-7735E+00	-10179E+01	-16357E+01
-2472E+01	-3310E+01	-9282E+01	-17109E+02	-2990E+02	-5127E+02	-7502E+02	-2502E+03	-26601E+03	-12247E+03
-57518E+03	-2112E+02	-16277E+03	-29734E+04	-2190E+04	-34540E+04	-41500E+03			
NEUTRON CAPTURE CROSS SECTION FOR SM150									
-3688E-02	-2910E-01	-14624E+00	-14030E+00	-16190E+00	-1958E+00	-2124E+00	-2566E+00	-27429E+00	-23819E+00
-46910E+00	-7538E+00	-13107E+01	-24852E+01	-50446E+01	-1736E+02	-6306E+02	-3338E+02	-60896E+02	-3271E+03
-1579E+01	-3147E+01	-70487E+01	-14043E+02	-2464E+02	-31000E+03	-10200E+03			

337 158

TABLE VI (continued)

NEUTRON CAPTURE CROSS SECTION FOR SM151									
.46759E+02	.35756E-01	.13131E+00	.25206E+00	.29188E+00	.31462E+00	.39637E+00	.58691E+00	.10585E+01	.17925E+01
.31139E+01	.58159E+01	.18137E+02	.19633E+02	.33602E+C2	.56342E+02	.92329E+02	.14774E+C3	.23230E+03	.65233E+03
.53764E+03	.46206E+03	.22399E+04	.84933E+03	.11058E+04	.33000E+04	.15000E+05			
NEUTRON CAPTURE CROSS SECTION FOR EU151									
.56480E+02	.21732E-01	.15554E+00	.41599E+00	.67884E+00	.79353E+00	.10690E+01	.14128E+01	.19346E+01	.34405E+01
.61176E+01	.11244E+02	.18003E+02	.29791E+02	.48240E+02	.76698E+02	.11971E+03	.15475E+03	.22544E+03	.21829E+03
.32120E+03	.55443E+03	.54251E+C3	.37699E+04	.76228E+04	.13000E+04	.92000E+04			
NEUTRON CAPTURE CROSS SECTION FOR SM152									
.23209E+02	.10301E-01	.35029E-01	.73685E-01	.11504E+00	.13050E+00	.11794E+00	.22532E+00	.33591E+00	.43938E+00
.60736E+01	.83860E+01	.11994E+01	.20913E+01	.48627E+01	.11849E+02	.12479E+02	.40560E+02	.10622E+01	.28770E+02
.36703E+04	.53225E+02	.41504E+02	.47706E+02	.63304E+02	.30000E+04	.20600E+03			
NEUTRON CAPTURE CROSS SECTION FOR EU153									
.27668E-02	.25720E-01	.12280E+00	.31784E+00	.44910E+00	.47637E+00	.53514E+00	.86413E+00	.15613E+01	.25166E+01
.43257E+01	.76178E+01	.11967E+02	.19234E+02	.31237E+02	.43276E+02	.49283E+02	.12907E+03	.10913E+03	.24001E+03
.19516E+03	.46218E+03	.11763E+03	.90896E+02	.13503E+03	.16350E+04	.39000E+03			
NEUTRON CAPTURE CROSS SECTION FOR EU154									
.10540E-01	.47502E-02	.26051E-01	.58010E-01	.15538E+00	.38037E+00	.93862E+00	.13715E+01	.19420E+01	.28880E+01
.46233E+01	.80853E+01	.12783E+02	.20919E+02	.33931E+02	.52845E+02	.81885E+02	.13246E+03	.20003E+03	.24852E+03
.29766E+03	.99552E+02	.18264E+04	.32182E+03	.10322E+03	.12400E+04	.15000E+04			
NEUTRON CAPTURE CROSS SECTION FOR EU155									
.15980E-02	.13522E-01	.66137E-01	.34870E+00	.50768E+00	.45274E+00	.52080E+00	.73057E+00	.11562E+01	.18516E+01
.31782E+01	.56905E+01	.10281E+02	.18351E+02	.32046E+02	.54823E+02	.91571E+02	.14912E+03	.23818E+03	.37477E+03
.57606E+03	.87967E+03	.16605E+04	.78299E+03	.11500E+04	.32180E+04	.10400E+04			
NEUTRON CAPTURE CROSS SECTION FOR EU156									
.18810E-02	.11957E-01	.17678E-03	.26146E-03	.65533E-03	.22987E-02	.67579E-02	.12034E-01	.25941E-01	.65662E-01
.12081E+01	.18426E+01	.31258E+01	.53003E+01	.89715E+01	.15219E+01	.25807E+01	.43682E+01	.74100E+01	.43630E+01
.48000E+03	.48000E+03	.44766E+03	.93771E+02	.13759E+00	.12580E+04	.48100E+03			
NEUTRON CAPTURE CROSS SECTION FOR G0158									
.24679E-02	.54326E-02	.26201E-01	.47576E-01	.71443E-01	.84452E-01	.10066E+00	.13168E+00	.20402E+00	.28680E+00
.39528E+01	.55354E+01	.93810E+01	.22061E+01	.43912E+01	.94671E+01	.54679E+01	.44247E-01	.60628E+02	.14813E+01
.22698E+01	.26095E+01	.35119E+01	.49756E-01	.71988E+00	.61000E+02	.25000E+01			
NEUTRON CAPTURE CROSS SECTION FOR TB159									
.39269E-02	.37900E-01	.73040E-01	.90302E-01	.11917E+00	.21151E+00	.33037E+00	.45673E+00	.70326E+00	.11672E+01
.20013E+01	.37140E+01	.70414E+01	.13241E+02	.24022E+02	.42544E+02	.75311E+02	.48143E+02	.58194E+02	.20793E+03
.11033E+02	.10419E+03	.47267E+01	.55007E+01	.75573E+01	.43000E+03	.25400E+02			

337 154

TABLE VI (continued)

```

INEL SCCPE 2.1.5 242D 18/26/78 C4.43.31. 03/17/79 79076
SYS DEVICES 819/ 4/PF FLS*200K FLL*8750K MYS*161K MWL*1316K MIB*1316B

HM-MM-SS CPU SECOND ORIGIN
16.30.46.PFA **
08.41.03 CC00C.C06 PFZ.
08.41.03 00000.007 PFZ.
08.41.04 00000.022 JCB.
08.41.04 00000.023 JCB.
08.41.04 00000.024 LCC.
08.41.08 CC00C.385 USR.
08.41.08 00000.285 LCD.
08.42.51 CC00C.473 PFZ.
08.42.51 00000.474 PFZ.
08.42.51 CC00C.474 USR.
08.42.51 CC00C.475 PFZ.
08.43.00 PFA.
08.43.00 PFA.
08.43.01 PFA.
08.43.01 PFA.
08.43.26 CC002.115 LSR.
08.43.26 00002.115 USR.
08.43.26 CC002.116 PFZ.
08.43.26 CC002.117 PFZ.
08.43.26 00002.117 PFZ.
08.43.26 CC002.117 PFZ.
08.43.26 CC002.117 PFZ.
08.43.26 00002.117 PFZ.
08.43.26 CC002.118 PFZ.
08.43.26 00002.118 PFZ.
08.43.26 CC002.118 PFZ.
08.43.26 CC002.118 PFZ.
08.43.26 CC002.119 PFZ.
08.43.26 00002.119 PFZ.
08.43.26 CC002.119 PFZ.
08.43.26 CC002.119 PFZ.
08.43.26 00002.119 PFZ.

```

```

INEL NOS/BE 3 L401J 03/08/79 04/05/77
-KATDCH2*150*5M*STMFZ*P5*SP.
ACCOUNT(16120*581651018*1AS)
-DISPUSE*CLUTPUT*PR=C24.
-ATTACH(TAPEL*EMDFLIB4*ID*KAT*ST=MFA)
-FTN. -358 CP SECONDS COMPILATION TIME

-LGO.
L6610 - FLS REQUIRED TO LOAD - 001156 CU.CDG
L6603 - EXECUTION INITIATED 05.EXP
FCBTRAK LIBRARY 452 C4/01/78
JP262 - STAGE PF ST=MFA LFN=TAPEL
08.43.01.5P-ATTACHING PFN=EMDFLIB4
08.43.01.PF CYCLE NO. = 006
08.43.03.ND. WORDS = 50900 ND. OF EOR = 0
JP511 WORDS READ= 1433248
STOP
1.540 CP SECONDS EXECUTION TIME
RM770 - MAXIMUM ACTIVE FILES 3
RM771 - OPEN/CLOSE CALLS 22
RM772 - DATA TRANSFER CALLS 6,005
RM773 - CONTROL/POSITIONING CALLS 16
RM774 - BM DATA TRANSFER CALLS 431
RM775 - BM CONTROL/POSITIONING CALLS 51
RM776 - QUEUE MANAGER CALLS 90
RM777 - RECALL CALLS 57
SCM 14.077 KMS
LCM 91.128 KMS
I/O 0.099 MM
RMS 0.116 MMS
USER 1.935 SEC
JCB 2.121 SEC
SS COST 6.740
DATE 0.263 $
03/17/79
SC090 - 000056 SC/LC SWAPS

```

```

***** KATDCL /// END OF LIST ///
***** KATDCXL /// END OF LIST ///

```

337 155

If there is more than one mode for the formation of the nuclide, M.NUCL, DTYP, and BRANCHING are listed repeatedly (one line per one mode).

The DTYP decay mode identifier has following meanings:

DTYP	Decay Mode
1	β^- decay
2	Isometric transition
3	Neutron reaction
4	β^+ and/or EC decay
5	α decay
6	Delayed neutron emission

Table V shows fission yield data. Ten sets of different cumulative fission yields are given for six fissionable nuclides and three neutron energies. The ten sets are:

- (1) ^{235}U , thermal neutron fission
- (2) ^{235}U , fission spectrum neutron fission
- (3) ^{235}U , 14-MeV neutron fission
- (4) ^{238}U , fission spectrum neutron fission
- (5) ^{238}U , 14-MeV neutron fission
- (6) ^{239}Pu , thermal neutron fission
- (7) ^{239}Pu , fission spectrum neutron fission
- (8) ^{241}Pu , thermal neutron fission
- (9) ^{233}U , thermal neutron fission
- (10) ^{232}Th , fission spectrum neutron fission.

Table VI gives neutron reaction cross-sectional data of each fission-product nuclide. Twenty-seven group neutron capture cross sections are given for the 58 nuclides. As mentioned before, Groups 1 to 25, shown in Table III, are for fast reactor calculations. Groups 26 and 27 are for thermal reactor calculations. The resonance capture integral is given in Group 26. Lower limit energy for the resonance integral is 0.5 eV. Thermal neutron capture cross section is given in Group 27 for 2200 m/s neutrons.

337 156

III. COMPARISON OF CALCULATED AND EXPERIMENTAL DECAY POWERS

Decay powers of fission products were calculated by the DCHAIN¹⁶ code using the revised nuclear data library of fission products described in Section II for the thermal neutron fission of ²³⁵U for the irradiation periods of 1, 10, 100, 2×10^4 s, 1, 4, 22.35 h, and 1 day. The results are compared with the latest decay power experiments at ORNL⁴, LASL⁵, IRT Corporation⁶, and UCB⁷ for the qualification of the revised nuclear data library.

The computer code DCHAIN is a one-point depletion code which solves the coupled equations of radioactive growth and decay for a large number of nuclides by the Bateman method¹⁷. The Bateman method surpasses the matrix exponential method in computational accuracies and in saving computer storage for the code. However, most existing computer codes based on the Bateman method have shown serious drawbacks in treating cyclic chains and more than a few specific types of decay chains. The author has surmounted these drawbacks by improving the code FP-S¹⁸, and the DCHAIN5 code has the following characteristics:

- (1) The code DCHAIN5 can treat any type of transmutation through decays or neutron-induced reactions.
- (2) The code constructs the decay scheme of each nuclide in the code and breaks it into linear chains. Nuclide names, decay types, and branching ratios of mother nuclides are necessary as the input data for each nuclide. The order of nuclides in the library is arbitrary because each nuclide is distinguished by its nuclide name.
- (3) The code can treat cyclic chains by an approximation.
- (4) The code performs the calculations exactly even if two nuclides with equal decay constants exist in a chain.
- (5) Cumulative fission yield is used for the top nuclide in each linear chain so that the abundance of each nuclide can be calculated accurately even if the chain length is limited.
- (6) Power, neutron flux, neutron spectrum, fission ratio, and fission energy of each fissile nuclide can be varied for each time step.
- (7) Abundances can be calculated for the selected nuclides in the nuclear data library.
- (8) The code uses variable dimension arrays and limitation is small in number of nuclides or length of a chain.

1. COMPARISON WITH ORNL EXPERIMENT

Dickens et al⁴ at ORNL measured the decay power of fission products for thermal neutron fission of ²³⁵U. Samples of mass 1 to 10 μ g were irradiated for 1 to 100 s using the fast pneumatic-tube facility at the Oak Ridge Research Reactor. The resulting beta- and gamma-ray emissions were counted for times-after-fission between 2 and 14000 s. The data were obtained for beta and gamma rays separately as spectral distributions, $N(E_\gamma)$ versus E_γ and $N(E_\beta)$ versus E_β . For the gamma-ray data, the spectra were obtained using a NaI detector; and for the beta-ray data, the spectra were obtained using an NE-110 detector with an anticoincidence mantle. The raw data were unfolded to provide spectral distributions of modest resolution. These distributions were integrated over E_γ and E_β to provide total yield and energy integrals as a function of time after fission. For most of integrals, the uncertainties (1σ) are less than 4%.

337 157

The results of the calculation are compared with experimental results for the irradiation of 1, 10, and 100 s in Figure 6 where the ratios of experimental values to calculated values are given as a function of cooling time after irradiation. The horizontal axis is the equivalent cooling time t after the instantaneous fission pulse and defined as

$$t = t_w + 0.5 (t_r + t_m) \quad (18)$$

where

- t_w = waiting time
- t_r = irradiation time
- t_m = measuring time.

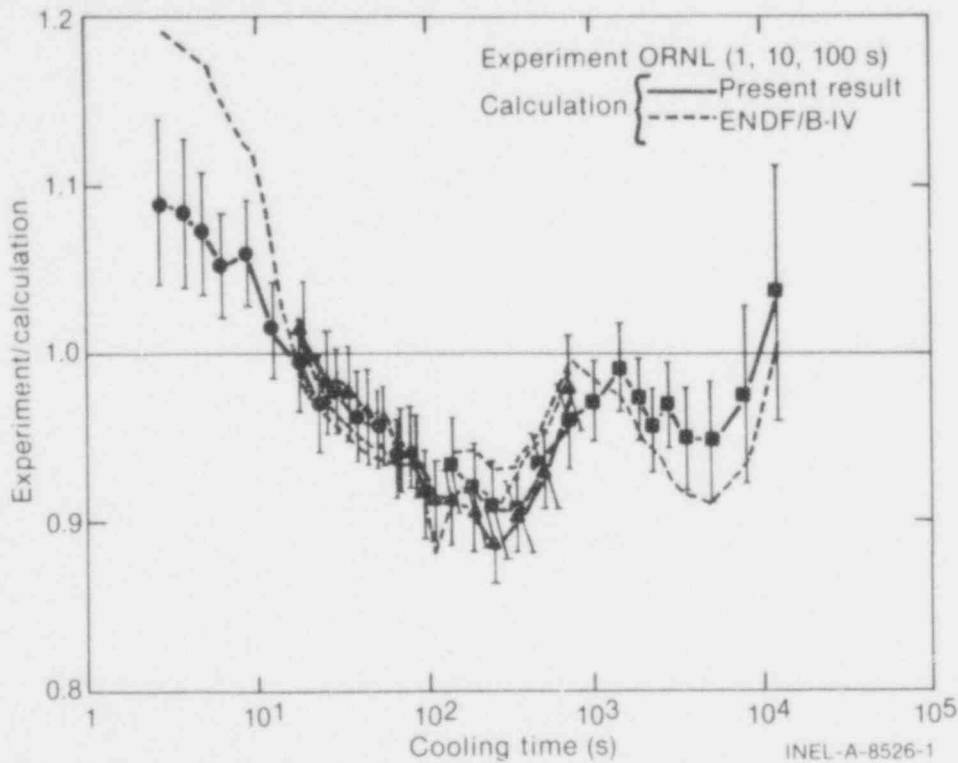


Fig. 6 Comparison of calculated decay power with experiment at ORNL for irradiations of 1, 10, and 100 s.

In Figure 6, the present results are shown to agree with ORNL experimental results within the errors of $\pm 10\%$. The deviation between calculation and experiment is larger than the experimental uncertainty (1σ) of 4%. Systematic trends exist in the deviations between calculation and experiment. At cooling times less than 10 s, experimental values are larger than calculated values, and the deviation decreases with the increase in cooling time. Over 10 s of cooling time, experimental values are smaller than calculated values, and the deviation has two valleys around 200 s ($\sim 10\%$) and 5000 s ($\sim 5\%$).

In Figure 6, calculated values obtained at ORNL⁴ by using the ENDF/B-IV nuclear data library¹⁹ are also compared with experimental values. The calculated results are obtained from Reference 4. In Figure 6, the present calculation is shown to agree better with the ORNL experiment than does the calculation using ENDF/B-IV.

337 150

The improvement is especially remarkable at cooling times less than 10 s after irradiation. This improvement is due to the difference in the correlations for estimating unknown nuclear data of short-lived nuclides. The present library considers many more short-lived nuclides than are included in ENDF/B-IV. The total number of nuclides considered in the present library is 1170 and 824 in the ENDF/B-IV library; the difference comes from the number of short-lived nuclides considered.

The unknown nuclides have larger Q values on the average than do the known nuclides, as is seen in Figure 5. The larger Q value on the average corresponds to larger decay constant or shorter half-life as shown from the correlation between the decay constant λ and Q value in Equations (5) through (10). Therefore, the correspondence, existing between unknown and short-lived nuclides, comes from the fact that the shorter the half-life, the more difficult the measurement of the decay energy. Contributions of unknown nuclides to the decay powers of fission products are shown in Figure 7. The unknown nuclide is defined here as the nuclide without the measured data for beta- and gamma-decay energies. In Figure 7, the unknown nuclides have a large contribution to the decay power at a short cooling time after irradiation. The shorter the irradiation time is, the larger the contribution of unknown nuclides. For the burst irradiation, the contribution of unknown nuclides amounts to almost 80% at 1 s after fission. The contribution of unknown nuclides decreases with the increase in cooling time; however, the unknown nuclides still contribute about 10% at 10^2 s of cooling time. After 10^4 s, the contribution of unknown nuclides becomes negligible.

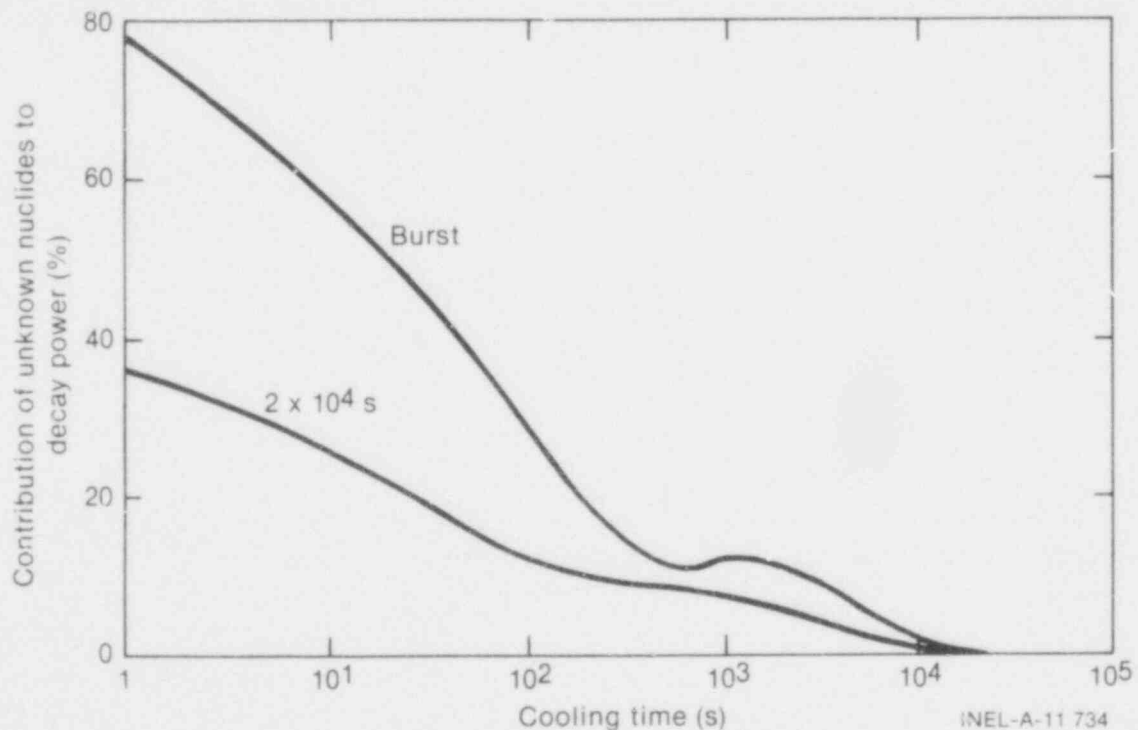


Fig. 7 Contribution of unknown nuclides to decay power of fission products.

Between 10 and 10^3 s, the differences between the present calculation and the calculation using ENDF/B-IV are small. However, if examined in detail, the present calculation agrees better with the experimental data between the cooling time from 10 to 10^2 s compared with the calculation using ENDF/B-IV; and the ENDF/B-IV calculation agrees better with the experimental data between the cooling time from 10^2 and 10^3 s compared with the present calculation. Between 10^2 and 10^3 s, ^{96}Y has a large contribution, up to 10%, to the decay power of fission products (see Section IV.1, Figure 15). The difference in the decay energy of ^{96}Y between the present evaluation and ENDF/B-IV is considered to be the

principal reason for the differences between the two calculations from 10^2 to 10^3 s of cooling time after fission burst. The sensitivity of decay power to the decay energy of ^{96}Y is shown in Figure 8. In Figure 8, the decay power ratio between Cases A and B is shown as a function of cooling time. Case A uses the decay energy of ^{96}Y from the present evaluation based on Nuclear Data Sheets²⁰, and Case B uses the decay energy of ^{96}Y from ENDF/B-IV library^a. The present evaluation of total sensible decay energy of ^{96}Y is about 35% larger than that of ENDF/B-IV. This difference results in the decay power difference of as much as 3% around 300 s for the burst fission of ^{235}U as is seen in Figure 8. The sensitivity of decay power to the decay energy of ^{96}Y becomes negligible after 10^3 s of cooling time.

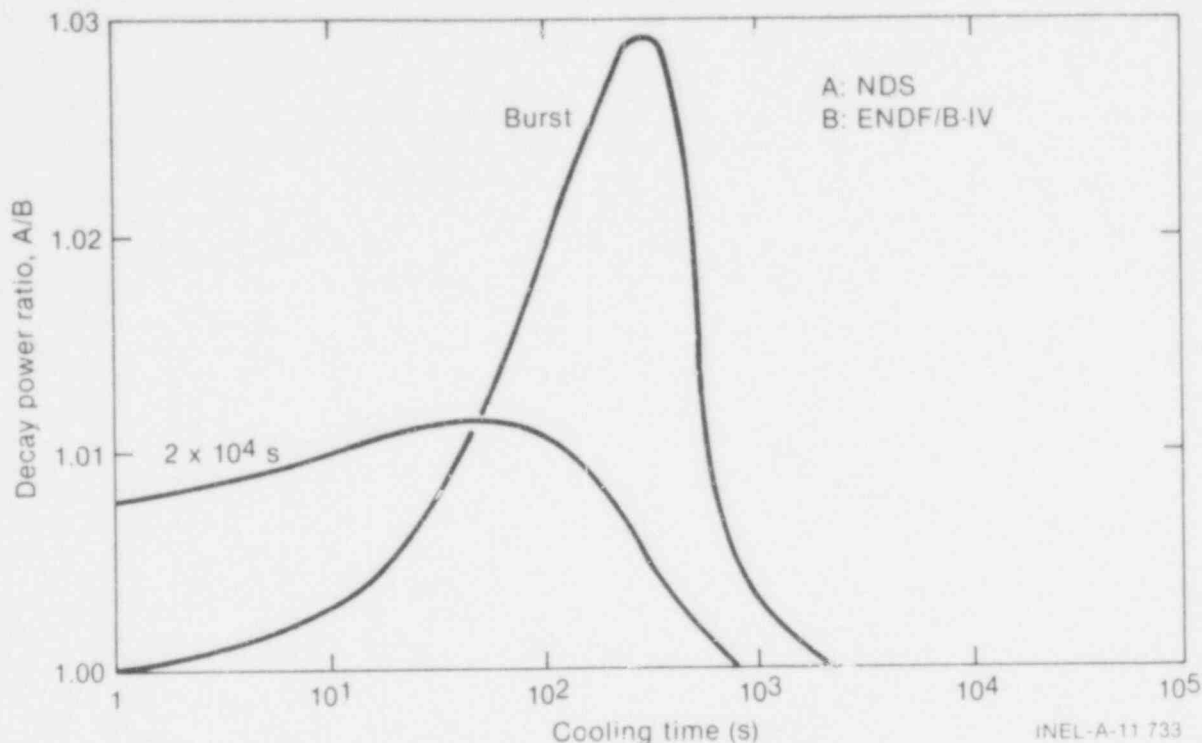


Fig. 8 Sensitivity of decay power to uncertainty of decay energy of ^{96}Y .

Over 10^3 s, the present results are smaller than the results calculated with ENDF/B-IV and agree better with the experiments (see Figure 6); this is due mainly to the fact that the decay energies of ^{134}I and ^{142}La in ENDF/B-IV are larger than the present evaluation based on the data of Nuclear Data Sheets. Present evaluations of decay energies of ^{134}I and ^{142}La are based on the data of Nuclear Data Sheets^{21,22} and compared with ENDF/B-IV evaluations in Table VII. Between 10^3 and 10^4 s of cooling time, ^{138}Cs , ^{134}I , and ^{142}La have large contributions to the decay power (see Section IV.1, Figure 15). The maximum contributions are 15, 20, and 13% for ^{138}Cs , ^{134}I , and ^{142}La , respectively. However, the present evaluation of ^{138}Cs decay energy is quite close to that of ENDF/B-IV. Sensitivity of decay power after burst fission for decay energies of ^{134}I and ^{142}La is shown in Figure 9. Figure 9 shows that the present calculation of decay power becomes smaller than that using ENDF/B-IV as much as 2% at 10^4 s by the difference in the decay energies of ^{134}I and ^{142}La .

Dickens et al⁴ at ORNL measured beta- and gamma-decay power of fission products separately, and the results are compared with the calculation using the present nuclear data library and also with the calculation using ENDF/B-IV library in Figure 10. In Figure 10, the experimental data are converted to the

a. Two activities are now known for ^{96}Y . (Private Communication from C. W. Reich.)

337 160

TABLE VII
COMPARISON OF DECAY ENERGIES OF ^{134}I and ^{142}La

Nuclide	Decay Type	Present Evaluation (MeV)	ENDF/B-IV (MeV)
^{134}I	E_{β}	0.619	0.691
	E_{γ}	2.531	2.593
	$E_{\beta} + E_{\gamma}$	3.150	3.284
	Q	4.150	4.150
^{142}La	E_{β}	0.847	0.947
	E_{γ}	2.394	2.565
	$E_{\beta} + E_{\gamma}$	3.241	3.512
	Q	4.517	4.517

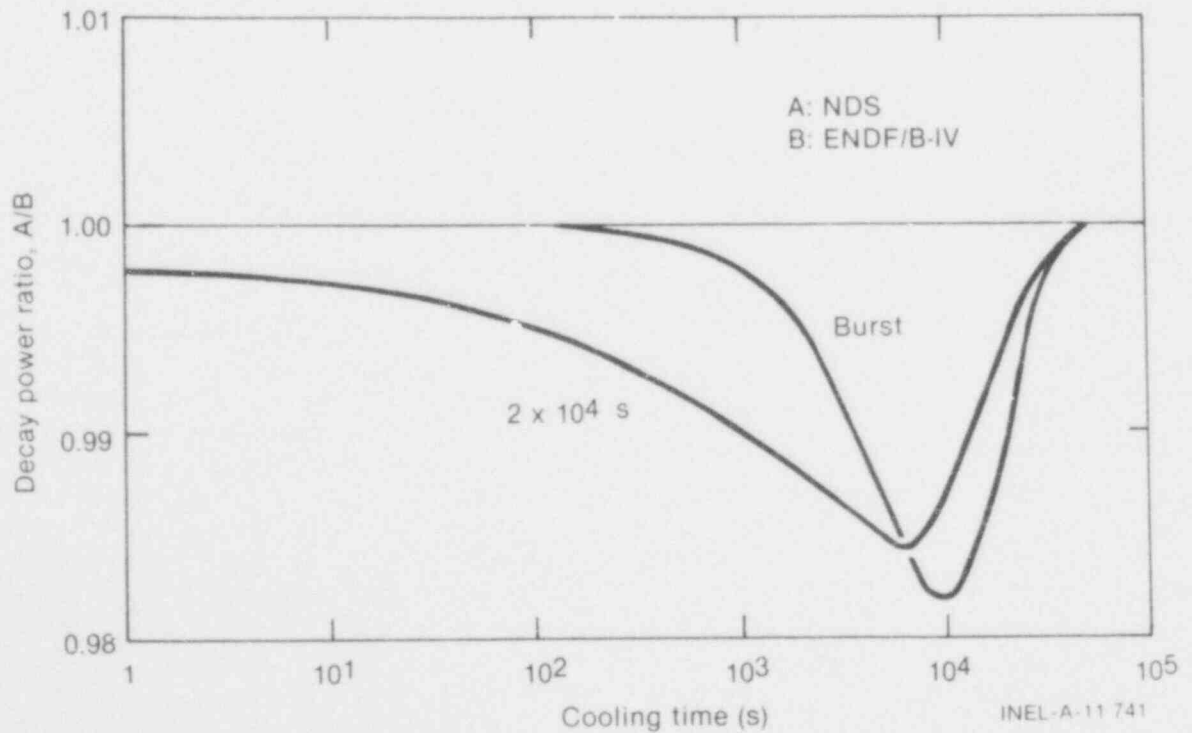


Fig. 9 Sensitivity of decay power to uncertainties of decay energies of ^{134}I and ^{142}La .

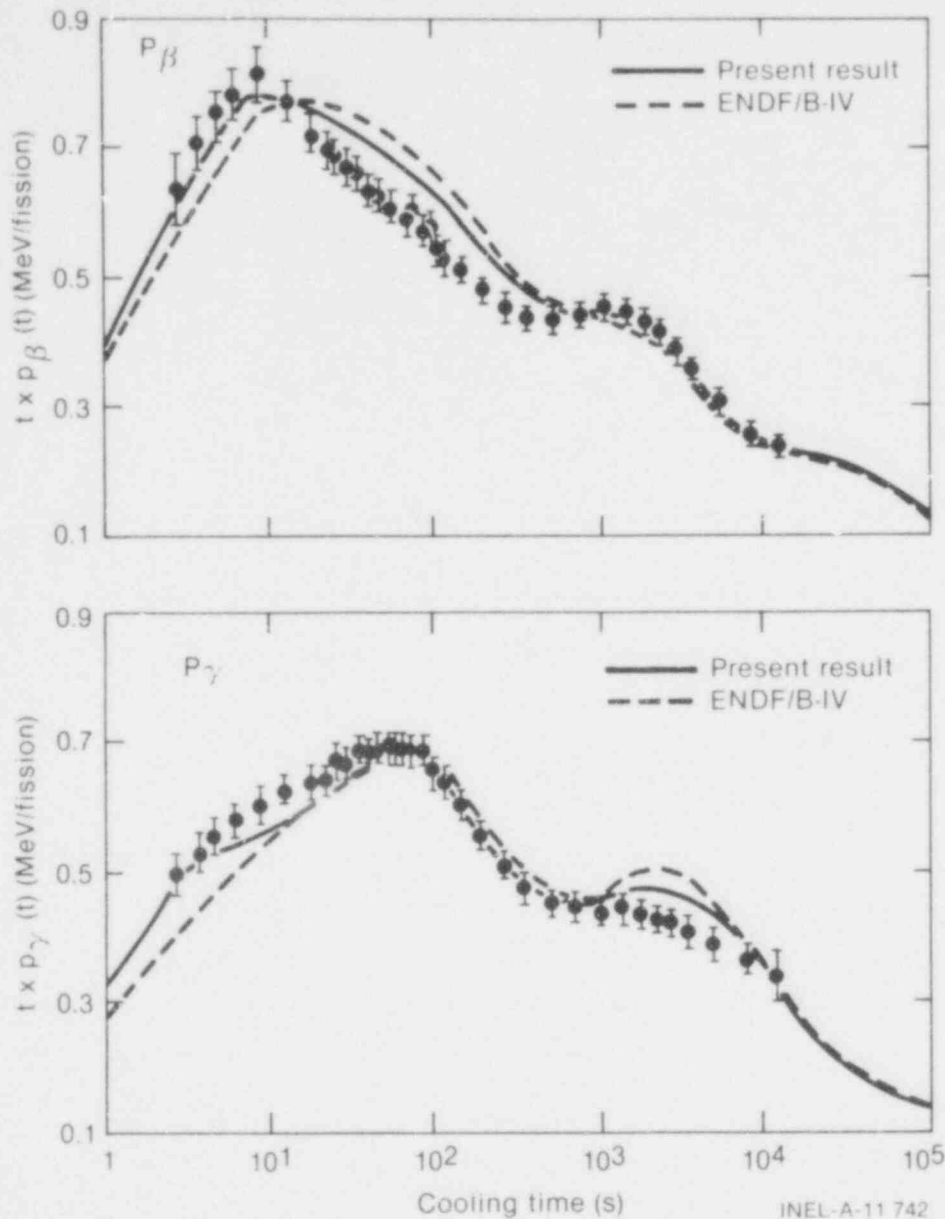


Fig. 10 Separate comparison of calculated beta- and gamma-decay powers with ORNL experiment.

equivalent decay power $P(t)$ after an instantaneous pulse of one fission. The horizontal axis is the equivalent cooling time defined in Equation (18). The vertical axis is the product of decay power $P(t)$ and cooling time t . This presentation has the advantage of expressing the $t P(t)$ axis on linear graphics because the function $P(t)$ decreases with t roughly as t^{-1} . The present calculation agrees better with the experimental data for beta-decay power than does the calculation using ENDF/B-IV. The agreement is especially good at short cooling times (less than 10 s) and at long cooling times (over 10^3 s); however, the agreement between calculation and experiment is not too good between 10 and 10^3 s after fission.

The present calculation for gamma-decay power also agrees better with the experimental data than does the calculation using ENDF/B-IV. The improvement in the agreement is remarkable at short cooling times (less than 10 s) and at long cooling times (over 10^3 s). Between 10 and 10^3 s, the calculation using ENDF/B-IV agrees better with the experimental data than does the present calculation although the differences between the two calculations are small. For times greater than 10^4 s, the differences between the two calculations become very small.

337 162

2. COMPARISON WITH LASL EXPERIMENT

Yarnell and Bendt at LASL⁵ used a cryogenic boil-off calorimeter to measure the decay power of fission products from thermal neutron fission of ^{235}U . Data are presented for cooling times between 10 and 10^5 s following a 2×10^4 -s irradiation at constant thermal neutron flux. The experimental uncertainty (1σ) in these measurements was $\approx 2\%$, except for the shortest cooling times where it rose to $\approx 4\%$. The beta and gamma energy from an irradiated ^{235}U sample was absorbed in a thermally isolated 52-kg copper block that was held at 4 K by an internal liquid helium from the reservoir, and a hot-film anemometer flowmeter recorded the evolution rate of the boil-off gas. The decay power was calculated from the gas flow rate using the heat of vaporization of helium. The calorimeter had a thermal time constant of 0.85 s. The energy loss caused by gamma leakage from the absorber was $\leq 3\%$; a correction was made by Monte Carlo calculations based on experimentally determined gamma spectra.

The LASL experimental values for the 2×10^4 -s irradiation is compared with the present calculation in Figure 11. In Figure 11, the calculation is shown to agree with the experiment within 2σ ($\pm 4\%$) of the experimental uncertainty. The deviation between calculation results and experimental data is much smaller than the deviations from the ORNL experiment for short-period irradiation of less than 100 s. The present calculation is smaller than the experiment at LASL except for a few points at long cooling time.

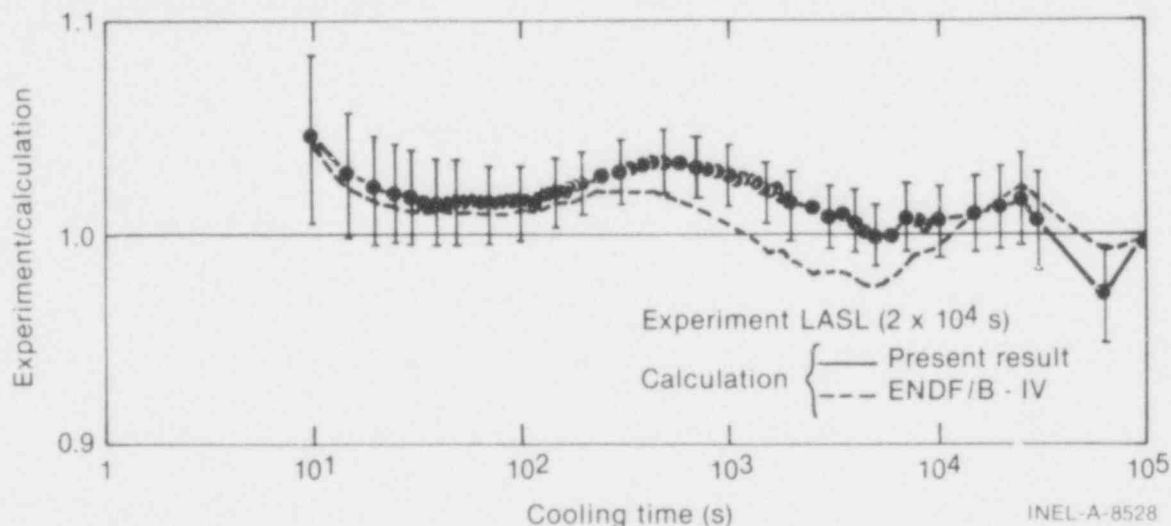


Fig. 11 Comparison of calculated decay power with experiment at LASL for irradiation of 2×10^4 s.

The difference between the present calculation and the calculation⁵ using ENDF/B-IV is small especially at a short cooling time less than 10^2 s. At this short cooling time, the calculation using ENDF/B-IV agrees slightly better with the experimental data than the present calculation does. Between 10^2 and 10^3 s, the calculation using ENDF/B-IV agrees better with the experimental values; and between 10^3 and 10^4 s, the present calculation agrees better with experimental values. The differences between 10^2 and 10^3 s are considered to be due to the differences of decay energies of ^{134}I and ^{142}La as seen in Figure 9. Compared with the ENDF/B-IV library, the present library has smaller decay powers by 1 to 1.6% due to the differences in decay energies of ^{134}I and ^{142}La for the cooling time range 10^3 to 10^4 s after the 2×10^4 -s irradiation. At cooling times less than 10^3 s, the sensitivity of decay power to ^{96}Y decay energy cancels with the sensitivity to decay energies of ^{134}I and ^{142}La as shown by comparing the results in Figures 8 and 9. Therefore, the differences of decay powers between the two calculations should be due to other differences in nuclear data between the two libraries.

337 163

3. COMPARISON WITH IRT EXPERIMENT

Friesenhahn et al at IRT Corporation⁶ measured the decay power of fission products from thermal neutron fission of ^{235}U in the 1 to 10^5 -s time range for a 1-day (86,400-s) irradiation time. The systematic uncertainty of the measurement is 2.4%, with statistical uncertainties of 2% at 1 s, increasing to 4% at 10^5 s. The measurements were made using a "nuclear calorimeter", based on a large (4000-l) liquid scintillator. The uranium irradiations were made in a water-moderated ^{252}Cf source with a rapid pneumatic system to transfer the irradiated sample to the scintillator.

The IRT experiment for the irradiation of ^{235}U for 1 day is compared with the present calculation in Figure 12. In Figure 12, the present results are in good agreement with the IRT experimental data within one standard deviation (1σ) of 2% of the measurement for the cooling time range of 1 to 10^3 s. This point is important for the analysis of a loss-of-coolant accident (LOCA). At cooling times longer than 10^3 s, the systematic error becomes large in the measurement of gamma-ray decay power at IRT. This point is clearly seen in Figure 13 where the beta- and gamma-decay powers are separately compared with the calculation. The measured values of beta-decay powers are in agreement with the present calculation within one standard deviation (1σ) of the experimental data, whereas the measured gamma-decay power deviates from the calculation systematically; the deviation becomes especially large at cooling times over 10^3 s. The absorption of soft gamma rays by the window material of the gamma-ray detector may be considered for the systematic deviation, because the absorption by the window material increases with cooling time due to the increase in the soft gamma-ray component. The ratio of measured gamma-decay power to calculation decreases with cooling time.

The present calculation results agree better with the experimental data at cooling times less than 10 s than does the calculation⁶ using ENDF/B-IV; whereas, the calculation using ENDF/B-IV agrees better with the experimental data for the cooling time between 10 to 10^3 s. However, there seems to be some discrepancy between the calculations using ENDF/B-IV because the results are larger than the present calculation for the irradiation of 2×10^4 s and the relation becomes vice versa for the irradiation of 1 day.

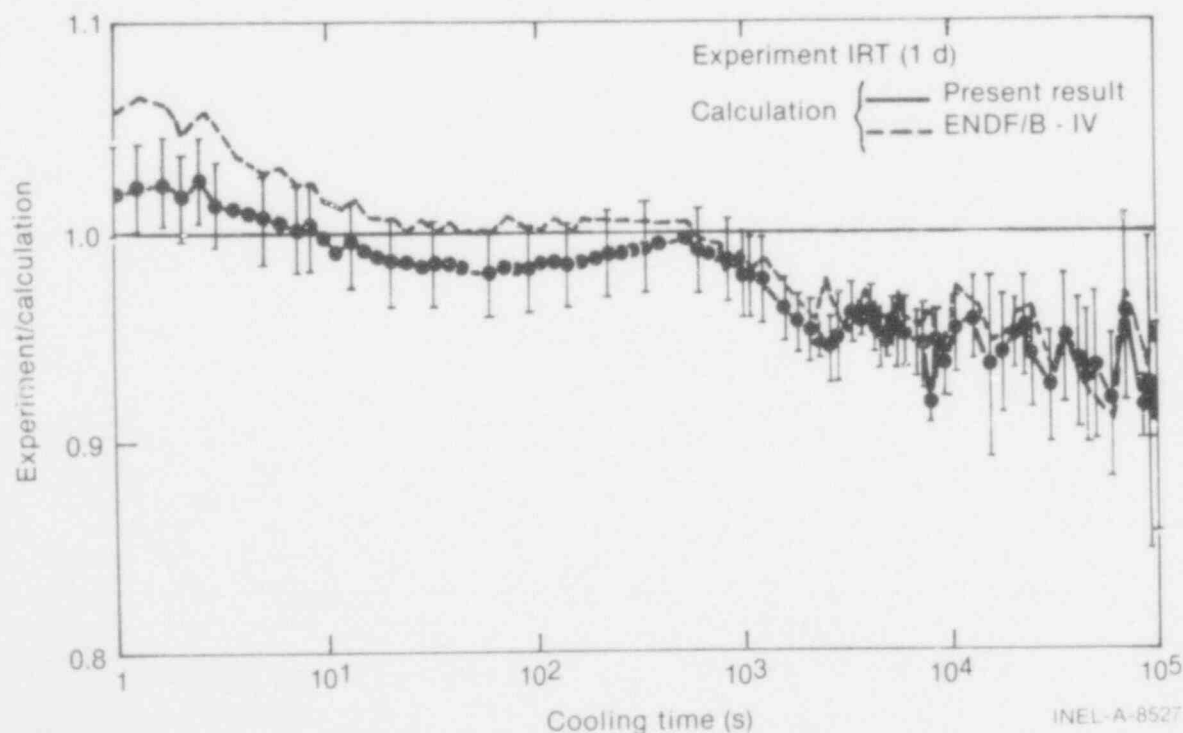


Fig. 12 Comparison of calculated decay power with experiment at IRT Corporation for irradiation of 1 day.

337 164

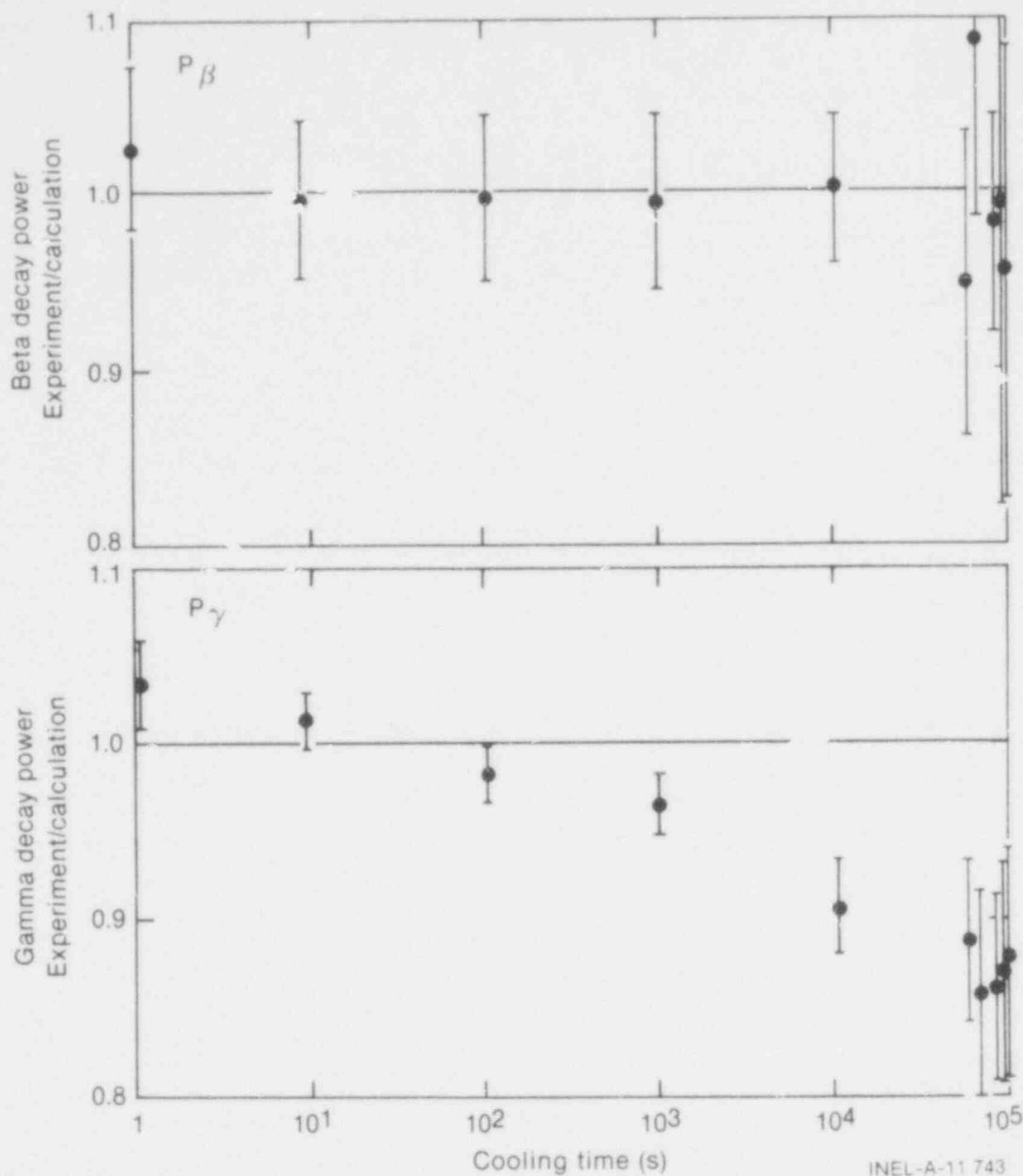


Fig. 13 Separate comparison of calculated beta- and gamma-decay powers with experiment at IRT Corporation for irradiation of 1 day.

The decay power changes little between irradiation of 2×10^4 s and 1 day for the cooling time range less than 10^3 s. The calculations of decay power using ENDF/B-IV were obtained from the report of each experiment; therefore, some nuclear data of fission products could be changed from calculation to calculation.

4. COMPARISON WITH UCB EXPERIMENT

Schrock et al⁷ at the University of California, Berkeley measured decay power of fission products of ^{235}U irradiated for 1, 4, and 22.35 h using a fast-response calorimeter in the cooling time range from 10 to 10^5 s. The calorimeter is based on measurement of the rate of change of energy stored in a mercury absorber together with measurement of heat flow through a thermopile. The uncertainty (1σ) of measurement is 23% at 11 s and drops to 3.4% at 400 s and remains constant at this value until 10^4 s. For longer cooling times, the uncertainty rises rather sharply due to the small magnitude of the decay power.

337 165

The decay power of ^{235}U fission products was calculated using the revised nuclear data library and compared with the UCB experiment. The results for the irradiation of 22.35 h are shown in Figure 14 where the present calculation is shown to agree with the experimental data in the cooling time range from 600 to 10^4 s within the experimental standard deviation of 3.4%. At earlier times, the measured results are systematically higher than predicted up to 29%. Also, the deviation between two runs (Runs 6 and 8) increases. This increased deviation is due to the reduction in accuracy of the measurement, particularly during the first 100 s due to the change of the volume of the mercury vessel of the calorimeter induced by thermal strains⁷. Even in this cooling time range, the calculation agrees with experimental data within two sigmas. The problem is the measurement uncertainty is too large to assess the predictability of the summation calculation at short cooling times.

For cooling times larger than 10^4 s, the agreement between calculation results and experimental data again becomes poor and the ratio of experimental data to calculation starts random oscillation. The results are not considered significant because the accuracy of the experimental data deteriorates rapidly over 10^4 s due to the small magnitude of the decay power and poor statistics, as mentioned in Reference 7.

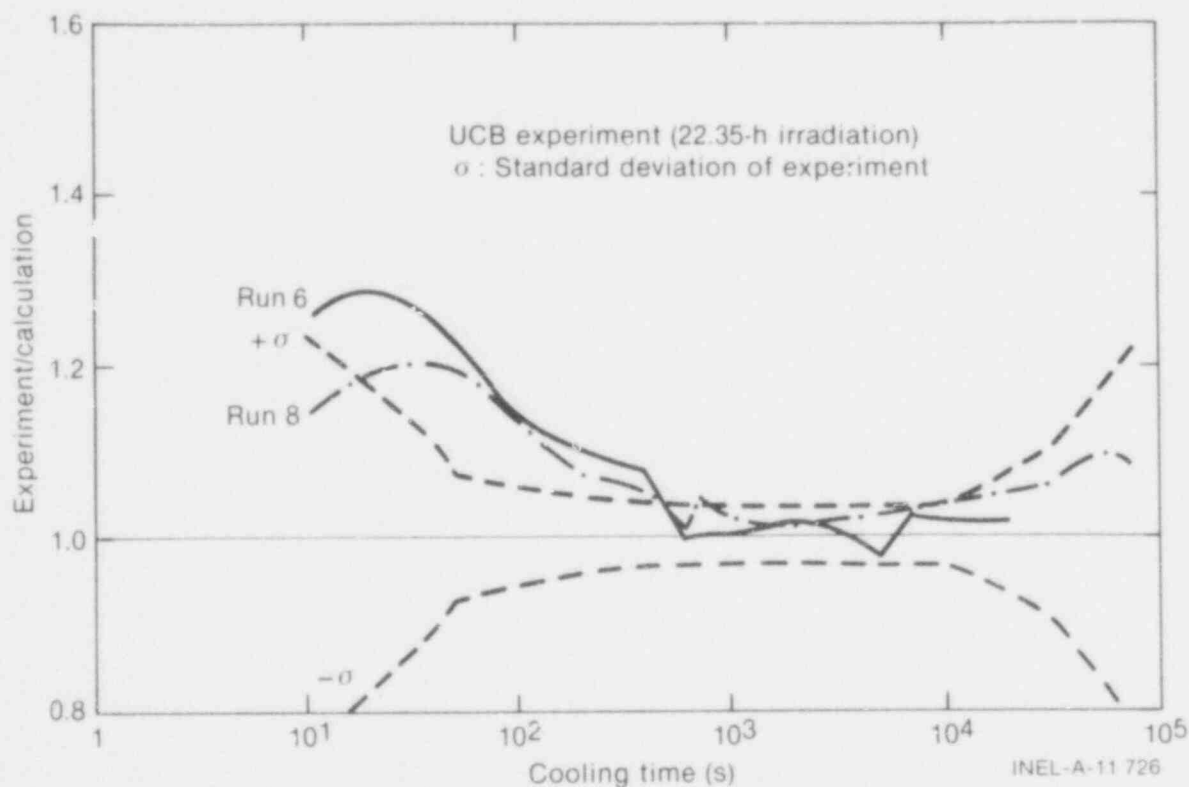


Fig. 14 Comparison of calculated decay power with experiment at University of California, Berkeley for irradiation of 22.354 h.

337 160

IV. SENSITIVITY ANALYSIS

Results of sensitivity calculation of decay power to the decay data of ^{96}Y , ^{134}I , and ^{142}La were given in Section III.1. In this section, some additional sensitivity analysis of decay power is given concerning the uncertainties of nuclear data of fission products. Decay power of fission products was calculated for each case by the summation method code DCHAIN using the revised nuclear data library which follows the changes in nuclear data due to uncertainties and differences of correlations for estimating the unknown nuclear data. The results were compared with the standard case without the change of nuclear data library to examine the sensitivity for the change.

1. CONTRIBUTION

The contributions of important nuclides to the decay power of fission products are shown in Figures 15 and 16 for the thermal neutron fission of ^{235}U for the instantaneous irradiation and 2×10^4 -s irradiation, respectively. The results are shown also in Section V for the burst fission, 1-yr irradiation and infinite irradiation (1×10^{13} s), respectively. If some nuclide has a large contribution to decay power, the uncertainties of the nuclear data of the nuclide also have a large contribution to the uncertainty of decay power. Therefore, the contribution of each nuclide shows the sensitivity of decay power to the uncertainties of nuclear data of each nuclide.

Figure 15 shows that ^{100}Nb (half-life, $T_{1/2} = 1.5$ s), ^{96}Y ($T_{1/2} = 138$ s), ^{138}Cs ($T_{1/2} = 1.9 \times 10^3$ s), ^{134}I ($T_{1/2} = 3.2 \times 10^3$ s), and ^{142}La ($T_{1/2} = 5.6 \times 10^3$ s) have large contributions for the burst fission around cooling times of 10, 200, 5×10^3 , 10^4 , and 10^4 s, respectively. Except for ^{100}Nb , the peak contribution of each nuclide occurs at a cooling time between two and three times the half-life of the nuclide. After the peak, the contribution of each nuclide decreases rapidly following the decay of the nuclide. In the case of ^{100}Nb , the peak contribution occurs at 10 s, approximately seven times the half-life. The precursor, ^{100}Zr , of ^{100}Nb has a longer half-life, 7.1 s; and compared with this half-life, 10 s is less than two times the half-life. The decay of ^{100}Nb is controlled by both half-lives; at short cooling times, the initial accumulation of ^{100}Nb decays with its own half-life (1.5 s), and at cooling times of about three times the 1.5-s half-life, the ^{100}Nb activity becomes in transient equilibrium with the activity of ^{100}Zr and decays with the 7.1-s half-life of ^{100}Zr .

When the irradiation time is increased to 2×10^4 s, the importance of long-lived nuclides increases; and the nuclides have large contributions also at short cooling times after irradiation, as seen in Figure 16, because the longer the irradiation time the more the accumulation of long-lived nuclides. Therefore, this tendency will be amplified with increasing irradiation time. In Figure 16, ^{96}Y is a quite important nuclide for the accurate calculation of decay power for the cooling time up to 100 s for the irradiation of 2×10^4 s. ^{138}Cs , ^{134}I , and ^{142}La are also very important for the accurate calculation of decay power over 100 s of cooling time.

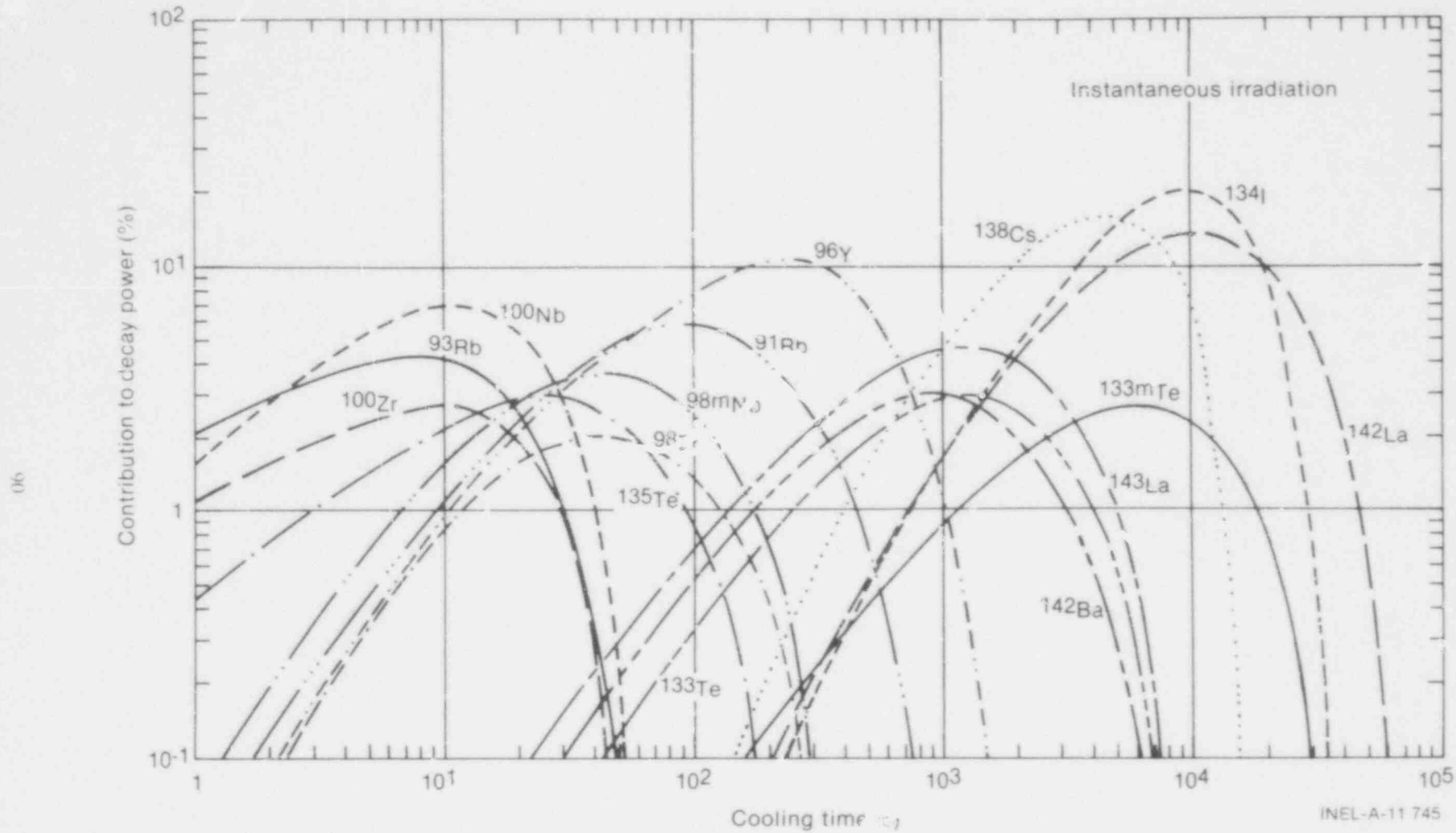


Fig. 15 Contribution of each important nuclide to decay power of fission products for burst fission.

337 100

337 159

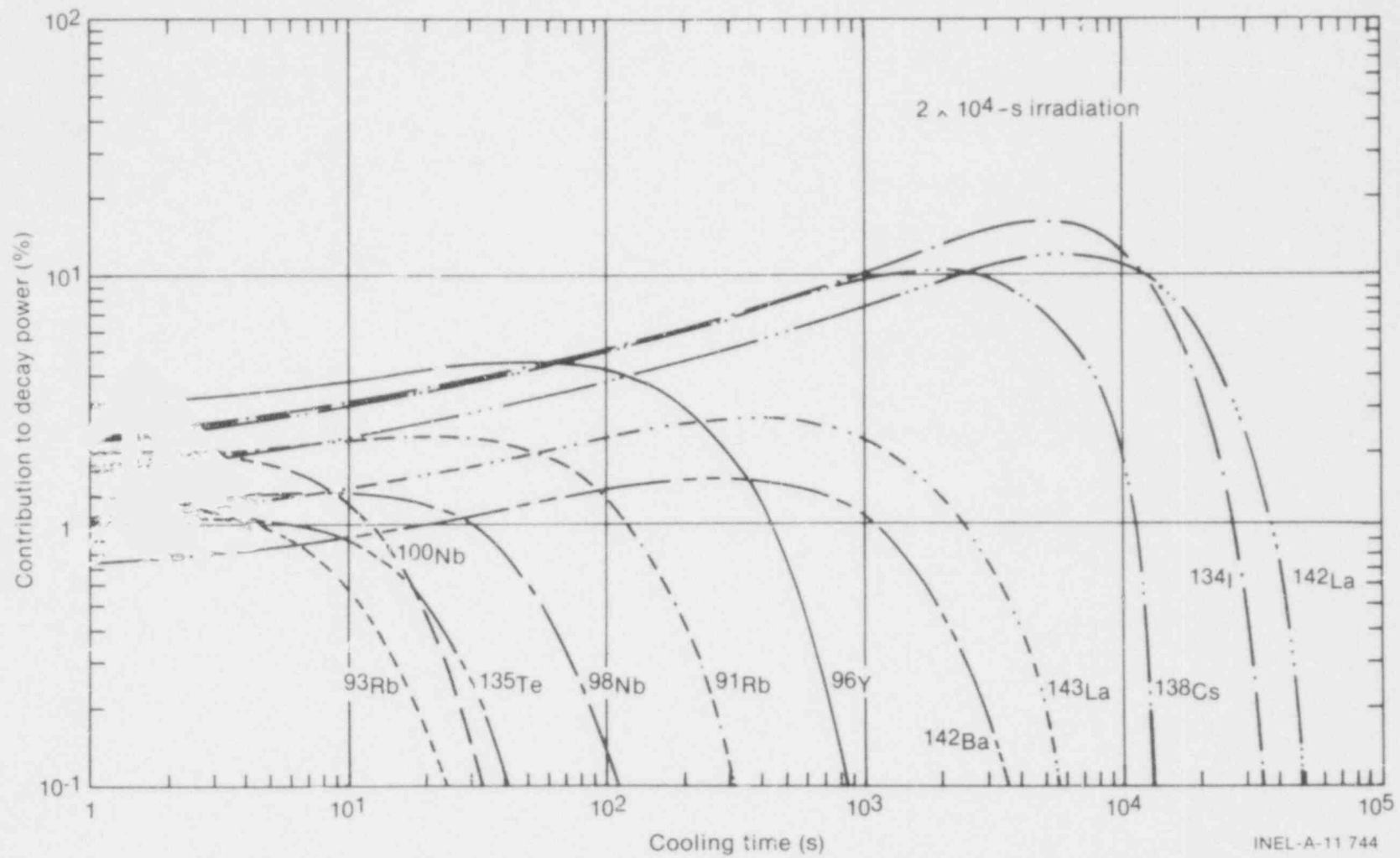


Fig. 16 Contribution of each important nuclide to decay power of fission products for irradiation of 2×10^4 s.

2. SENSITIVITY TO CORRELATIONS ESTIMATING UNKNOWN DECAY ENERGIES

In the present report, unknown beta- and gamma-decay energies of a nuclide were estimated from its Q value using the correlations between (E_β/Q) and Q , and between (E_γ/Q) and Q , as described in Section II. In this section, the sensitivity of decay power to the changes in the correlations estimating unknown decay energies is examined.

2.1 Changes in (E_γ/Q) for Q greater than 0.5 MeV

First, the ratio (E_γ/Q) in the correlation between (E_γ/Q) and Q was changed in this section parametrically for $Q \geq 0.5$ MeV as 0.28, 0.30, and 0.32 within the standard deviation of experimental values, and the correlation between (E_β/Q) and Q was calculated by the same method described in Section II for each case. The sensitivities of decay power to the changes in the correlations were studied; and the results are shown in Figure 17 for the burst fission.

Figure 17 shows that a good linearity exists about the sensitivity of decay power to the variations of the ratio (E_γ/Q) . The results for $(E_\gamma/Q) = 0.28$ show mirror images of the results for $(E_\gamma/Q) = 0.32$ when the results are normalized for $(E_\gamma/Q) = 0.30$. In Figure 17, the sensitivity of beta-decay power is about one-third the sensitivity of gamma-decay power and opposite in sign, because $E_{\beta\max}$ varies by the same amount but in the opposite direction as the variation in E_γ , and the ratio of $(E_\beta/E_{\beta\max})$ is approximately one-third. The sensitivity of total sensible decay power is also about one-third of the sensitivity of gamma-decay power because the sensitivity of total sensible decay power is given as follows:

$$\begin{aligned} \frac{\Delta P_\beta + \Delta P_\gamma}{P_\beta + P_\gamma} &= \frac{-\frac{1}{3} \Delta P_\gamma + \Delta P_\gamma}{P_\beta + P_\gamma}, \quad (\because \Delta P_\beta \doteq -\frac{1}{3} \Delta P_\gamma) \\ &= \frac{\frac{2}{3} \Delta P_\gamma}{2 P_\gamma}, \quad (\because P_\beta \approx P_\gamma) \\ &= \frac{1}{3} \frac{\Delta P_\gamma}{P_\gamma} \quad \text{q.e.d.} \end{aligned} \quad (19)$$

The sensitivity of gamma-decay power is approximately proportional to the variation of (E_γ/Q) at 1 s of cooling time after burst fission because the unknown nuclides have a large contribution (about 80%) to decay power at a short cooling time after burst fission (see Figure 7). When (E_γ/Q) is changed to 0.32 from 0.30, the change ΔE_γ in E_γ is 6.6%. When this value is multiplied by the contribution (78%) of unknown nuclides at 1 s after burst fission, it results in the sensitivity of 5.1%. This value agrees approximately with the sensitivity 5.6% of gamma-decay power by the direct summation calculation (see Figure 17). The sensitivity decreases with cooling time in the same manner as the contribution decreases, as seen from the comparison of Figures 7 and 17. Therefore, the sensitivity of decay power for the irradiation of 2×10^4 s is expected to be about one-half of the results for the burst fission because the contribution of unknown nuclides to decay power for the irradiation of 2×10^4 s is about one-half that for the burst fission (see Figure 7).

The correlation $(E_\gamma/Q) = 0.30$ for $Q \geq 0.5$ MeV gave the best agreement of calculated beta- and gamma-decay power with experimental values at ORNL⁴; therefore, (E_γ/Q) was fixed at 0.30 in the present evaluation of unknown decay energies.

337 170

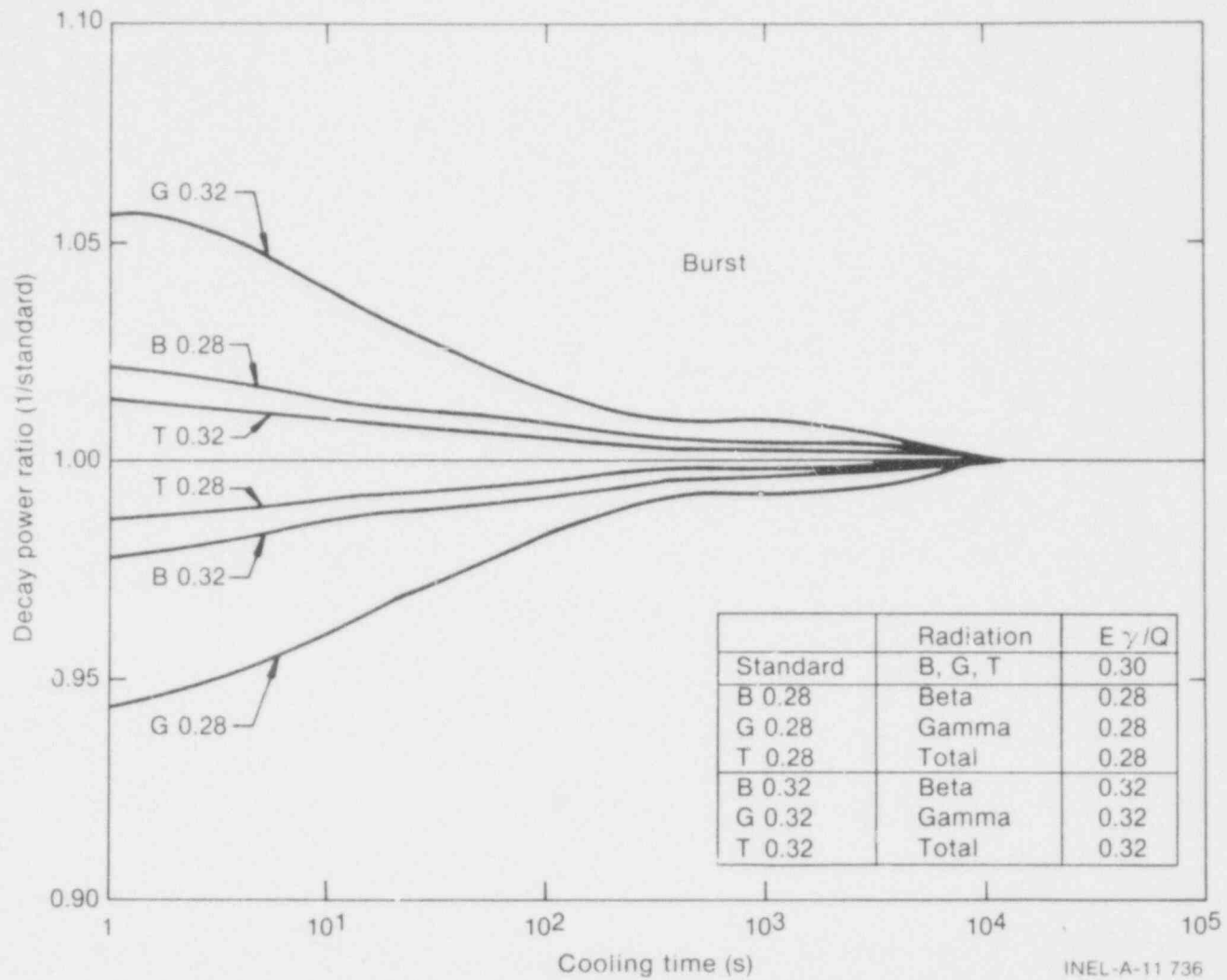


Fig. 17 Sensitivity of decay power to correlations estimating unknown decay energies for changes of (E_γ/Q) as 0.28, 0.30, and 0.32 for Q greater than 0.5 MeV.

337 171

2.2 Constant or Linear Function for (E_γ/Q) in the Range $0.5 \text{ MeV} \leq Q \leq 3.8 \text{ MeV}$.

The correlation between (E_γ/Q) and Q was changed for $0.5 \text{ MeV} \leq Q \leq 3.8 \text{ MeV}$ from a constant value of 0.30 to the linear interpolation between $(E_\gamma/Q) = 0.133$ at $Q = 0.5 \text{ MeV}$ and $(E_\gamma/Q) = 0.30$ at $Q = 3.8 \text{ MeV}$. The new correlation for (E_γ/Q) agreed better with experimental values (see Figure 1), although both correlations agree within one standard deviation of the experimental values. The correlation between (E_β/Q) and Q was obtained for $0.5 \text{ MeV} \leq Q \leq 3.8 \text{ MeV}$ by the method described in Section II following the change in the correlation between (E_γ/Q) and Q . The sensitivity of decay power to these changes in the correlations is shown in Figure 18.

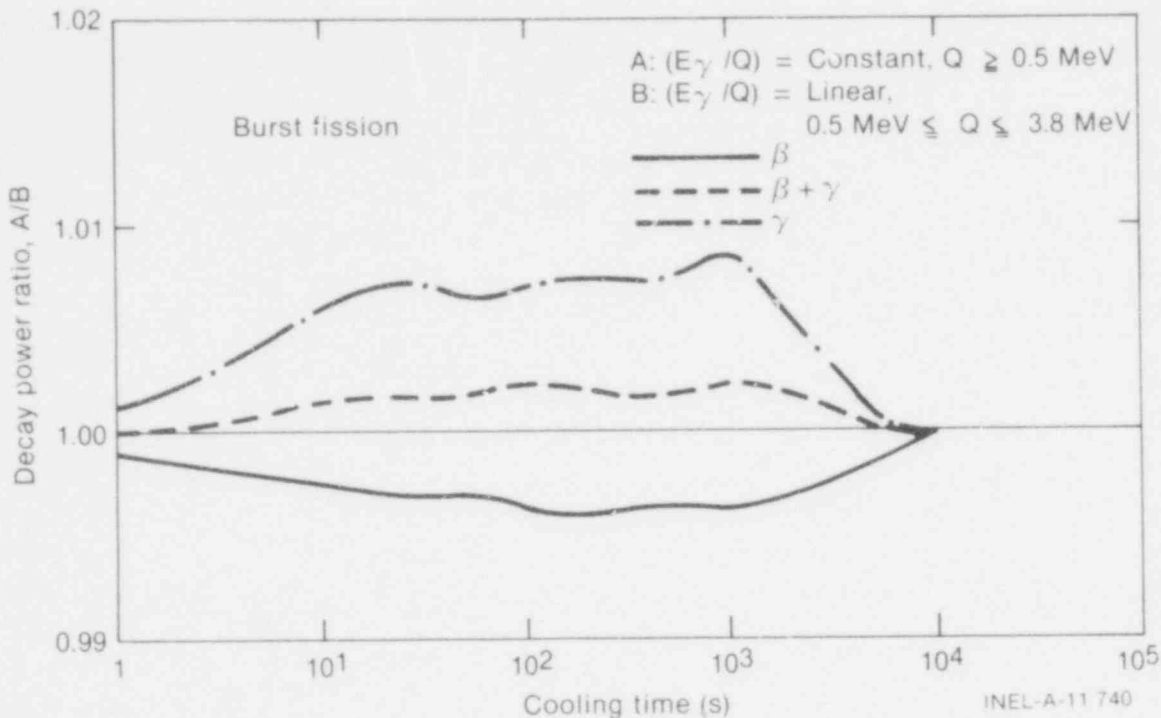


Fig. 18 Sensitivity of decay power to correlations estimating unknown decay energies for change of (E_γ/Q) from constant 0.30 to linear function with Q for Q from 0.5 to 3.8 MeV.

In Figure 18, the sensitivity of decay power to these changes of correlations is very small, less than 1%, because the unknown nuclides usually have short half-lives and large Q values (see Figure 5) and changes in correlations for (E_γ/Q) and (E_β/Q) for the small Q region $0.5 \text{ MeV} \leq Q \leq 3.8 \text{ MeV}$ have little effect on the decay power. The sensitivity is very small at short cooling time and increases with cooling time for the same reason mentioned, since the present modification of the correlations mainly changed the unknown decay data of relatively long-lived nuclides. Over 10^3 s , the sensitivity decreases rapidly and becomes negligible at 10^4 s following the decrease of the contribution of unknown nuclides to the decay power (see Figure 7).

In Figure 18, the sensitivities of beta-decay power and total decay power are much smaller, approximately one-third compared with the sensitivity of gamma-decay power. The reason is the same in the discussion of the previous section.

2.3 Changes of Correlations (E_β/Q) and (E_γ/Q) with Q to a Constant Value 0.29.

The sensitivity of decay power to the change in the correlations between (E_β/Q) and Q and between (E_γ/Q) and Q from the old correlations⁸ before revision to the present correlations (see Figures 1 and 4) was analyzed by the summation method using the DCHAIN code. In the old correlations, (E_β/Q) and

337

(E_γ/Q) were fixed at 0.29. The results of the analysis, shown in Figure 19, show both beta- and gamma-decay powers have increased by revising the correlations for estimating E_β and E_γ . The increase in beta-decay power is larger than the gamma-decay power to 100 s of cooling time, and the sensitivity of gamma-decay power becomes larger than the sensitivity of beta-decay power after 100 s. The sensitivity of total sensible decay power is about the average of beta- and gamma-decay powers. The sensitivities of beta-, gamma-, and total decay powers at 1 s are 5.6, 2.9, and 4.4%, respectively, for the burst fission.

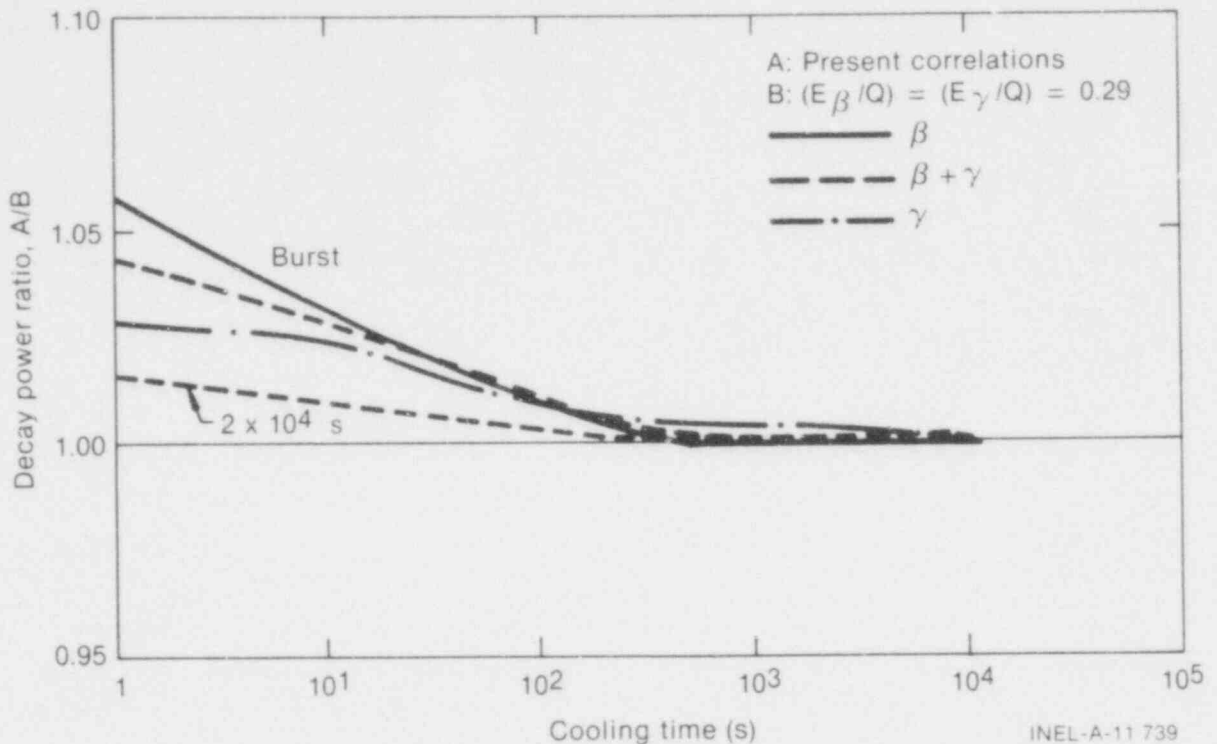


Fig. 19 Sensitivity of decay power to correlations estimating unknown decay energies for change from present ones to constant correlations (E_β/Q) = (E_γ/Q) = 0.29.

The sensitivity decreases in the same manner as the decay of contribution of unknown nuclides and becomes very small after 200 s of cooling time, as seen in Section IV.2.1. As the irradiation time is increased to 2×10^4 s, the sensitivity decreases following the decrease in the contribution of unknown nuclides (see Figure 7), and the sensitivity becomes one-half compared with the burst fission case.

3. SENSITIVITY TO DECAY DATA OF ^{100}Nb AND $^{100\text{m}}\text{Nb}$

The nuclide ^{100}Nb has a large contribution to the decay power at cooling times less than several tens of seconds after irradiation, as seen in Figures 15 and 16. However, the decay data of ^{100}Nb and $^{100\text{m}}\text{Nb}$ are not fixed yet. Therefore, the sensitivity of decay power to the decay data of ^{100}Nb and $^{100\text{m}}\text{Nb}$ is examined here.

The decay data of ^{100}Nb and $^{100\text{m}}\text{Nb}$ in the present evaluation are based on the data of the Nuclear Data Sheets²³ and differ considerably from the data in ENDF/B-IV, as seen in Table VIII. The sensitivity of decay power to this difference is shown in Figure 20. In Figure 20, the decay power changes considerably (as much as 1.8%) for the burst fission by the changes in the decay data of ^{100}Nb and $^{100\text{m}}\text{Nb}$. However, the sensitivity becomes very small, less than 0.2%, for the longer irradiation of 2×10^4 s, which is closer to the actual situation in a reactor. In Figure 20, gamma-decay power has a larger sensitivity to the decay data of ^{100}Nb and $^{100\text{m}}\text{Nb}$ than does beta- or total decay power.

TABLE VIII

COMPARISON OF DECAY DATA OF ^{100}Nb AND $^{100\text{m}}\text{Nb}$ IN PRESENT LIBRARY AND IN ENDF/B-IV

Decay Data	Present Data		ENDF/B-IV	
	^{100}Nb	$^{100\text{m}}\text{Nb}$	^{100}Nb	$^{100\text{m}}\text{Nb}$
Mother Nuclide	^{100}Zr	--	^{100}Zr	^{100}Zr
Branching	1.0	--	0.5	0.5
Daughter Nuclide	^{100}Mo	^{100}Nb	^{100}Mo	^{100}Mo
Branching	1.0	1.0	1.0	1.0
Half-Life (s)	1.5	3.1	2.4	2.41
E_{β} (MeV)	2.04	2.04	2.06	2.12
E_{γ} (MeV)	1.95	1.95	1.92	1.37
$E_{\beta} + E_{\gamma}$ (MeV)	3.99	3.99	3.98	3.48
Q (MeV)	6.50	6.50	6.30	6.34

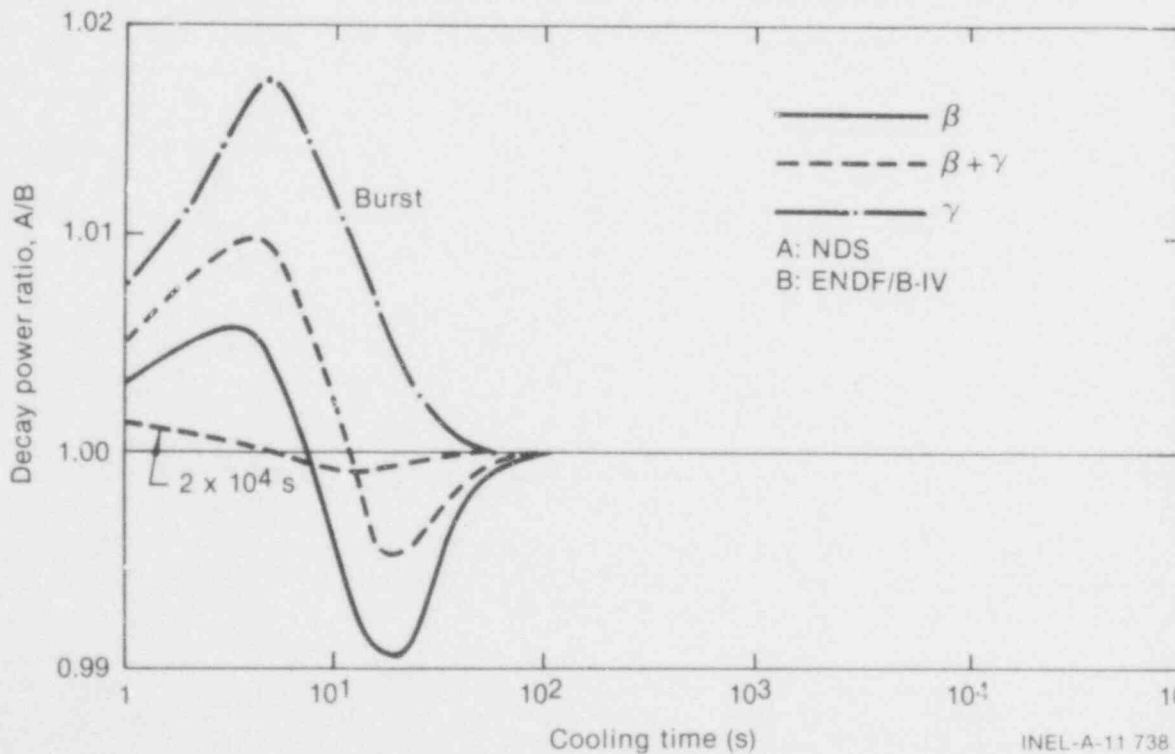


Fig. 20 Sensitivity of decay power to uncertainties of decay data of ^{100}Nb and $^{100\text{m}}\text{Nb}$.

In Figure 21, the sensitivity of decay power to the half-life of ^{100}Nb is shown for the burst fission and 2×10^4 -s irradiation. In Nuclear Data Sheets, a 3-min half-life of ^{100}Nb is also cited; and this value was adopted in the previous nuclear data library⁸ of fission products. The half-life of ^{100}Nb was changed from 1.5 s to 3 min, and the sensitivity to the decay power was examined. As seen in Figure 21, the decay power has a large sensitivity to the half-life of ^{100}Nb , $\pm 8\%$ for the burst fission and as much as -4% for a 2×10^4 -s irradiation. For the longer irradiation time, the present evaluation of the half-life of ^{100}Nb always results in smaller decay power compared with the results for a 3-min half-life. The sensitivity becomes negligible after 10^3 s of cooling time. The sensitivities of beta- or gamma-decay power were almost the same as the sensitivity of total decay power because decay energies were not changed in this case; only the half-life of ^{100}Nb was changed.

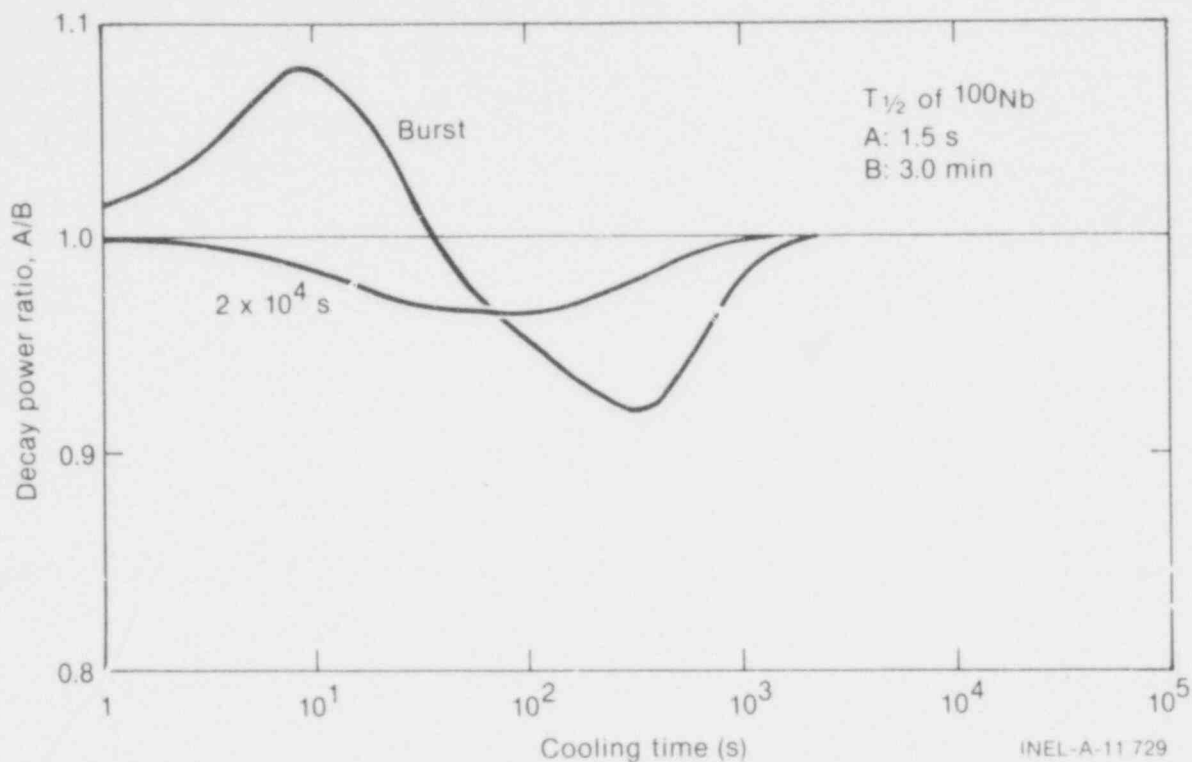


Fig. 21 Sensitivity of decay power to half-life of ^{100}Nb .

4. SENSITIVITY TO DECAY ENERGY OF ^{96}Y

The nuclide ^{96}Y has a contribution of greater than 1% to the decay power of fission products in the cooling time range 10 to 10^3 s for the burst fission and in the cooling range 0 to 400 s for 2×10^4 -s irradiation, as shown in Figures 15 and 16. The maximum contribution is 11 and 4.5% for the burst fission and 2×10^4 -s irradiation, respectively. However, the decay energy of ^{96}Y has not been accurately measured. Only the maximum observed beta-ray energy (3.5 MeV) is given in Nuclear Data Sheets²⁰. Only one beta ray was assumed in the present evaluation and its maximum energy $E_{\beta\text{max}}$ was changed parametrically as 3.5, 2.75, and 1.75 MeV. The average beta-ray energy $E_{\beta\text{av}}$ was calculated from the ratio R between the average and maximum beta-ray energies obtained by using Fermi formula for allowed transitions. The average beta-ray energy is equal to the beta-decay energy E_{β} of ^{96}Y in this case because only one beta ray was assumed. The gamma-decay energy E_{γ} is given as the difference between Q value and the maximum beta-ray energy $E_{\beta\text{max}}$. The results are shown in Table IX.

The results of the sensitivity analysis of decay power to the decay energy of ^{96}Y are shown in Figures 22 through 25. Figures 22 and 23 give the sensitivities to the change of the maximum beta-ray energy $E_{\beta\text{max}}$ of ^{96}Y from 2.75 (Case A) to 1.75 MeV (Case B) for the instantaneous irradiation and 2×10^4 -s irradiation, respectively. Figures 24 and 25 give the sensitivities to the change of $E_{\beta\text{max}}$ from 2.75 (Case A) to

3.5 MeV (Case C) for the instantaneous irradiation and 2×10^4 -s irradiation, respectively. It is seen in these figures that gamma-decay power is the most sensitive to the change in $E_{\beta\text{max}}$; total decay power is the least sensitive; and beta-decay power sensitivity is between the sensitivities of gamma- and total decay powers. Total decay power has the same sign of sensitivity as the gamma-decay power, and the beta-decay power has the opposite sensitivity.

TABLE IX
COMPARISON OF DECAY ENERGIES OF ^{96}Y

Decay Energies (MeV)	$E_{\beta,\text{max}}$ (MeV)			ENDF/B-IV
	1.75	2.75	3.50	
E_{β}	0.69	1.16	1.51	2.41
E_{γ}	5.05	4.05	3.30	1.46
$E_{\beta} + E_{\gamma}$	5.74	5.21	4.81	3.87
Q	6.8	6.8	6.8	6.9

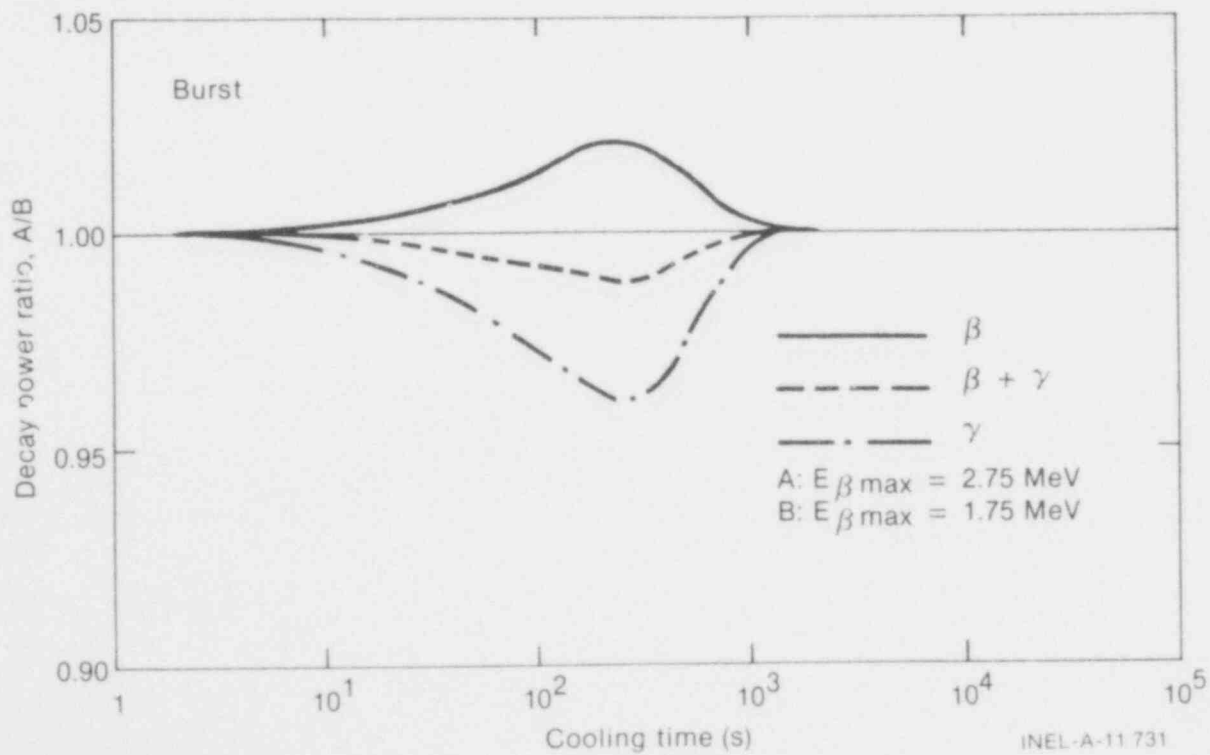


Fig. 22 Sensitivity of decay power for burst fission to change of maximum beta-ray energy $E_{\beta\text{max}}$ of ^{96}Y from 2.75 to 1.75 MeV.

337 176

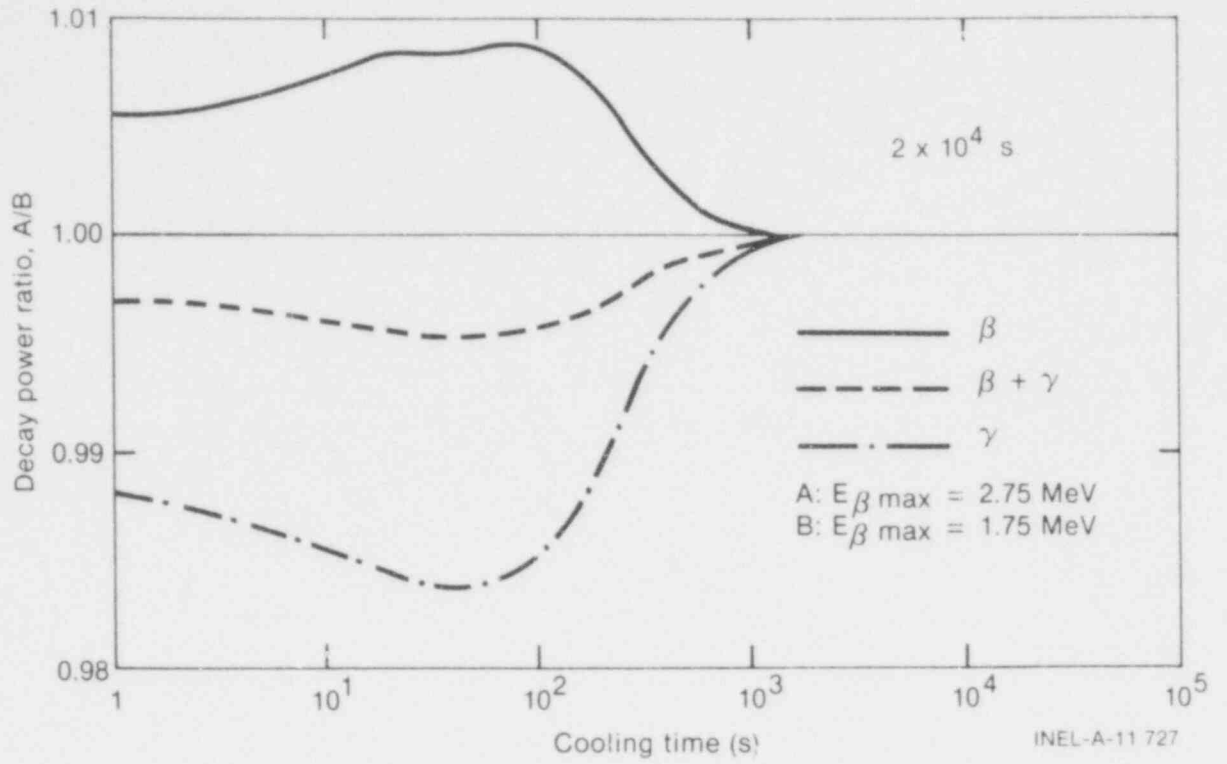


Fig. 23 Sensitivity of decay power for 2×10^4 -s irradiation to change of maximum beta-ray energy $E_{\beta \text{ max}}$ from 2.75 to 1.75 MeV.

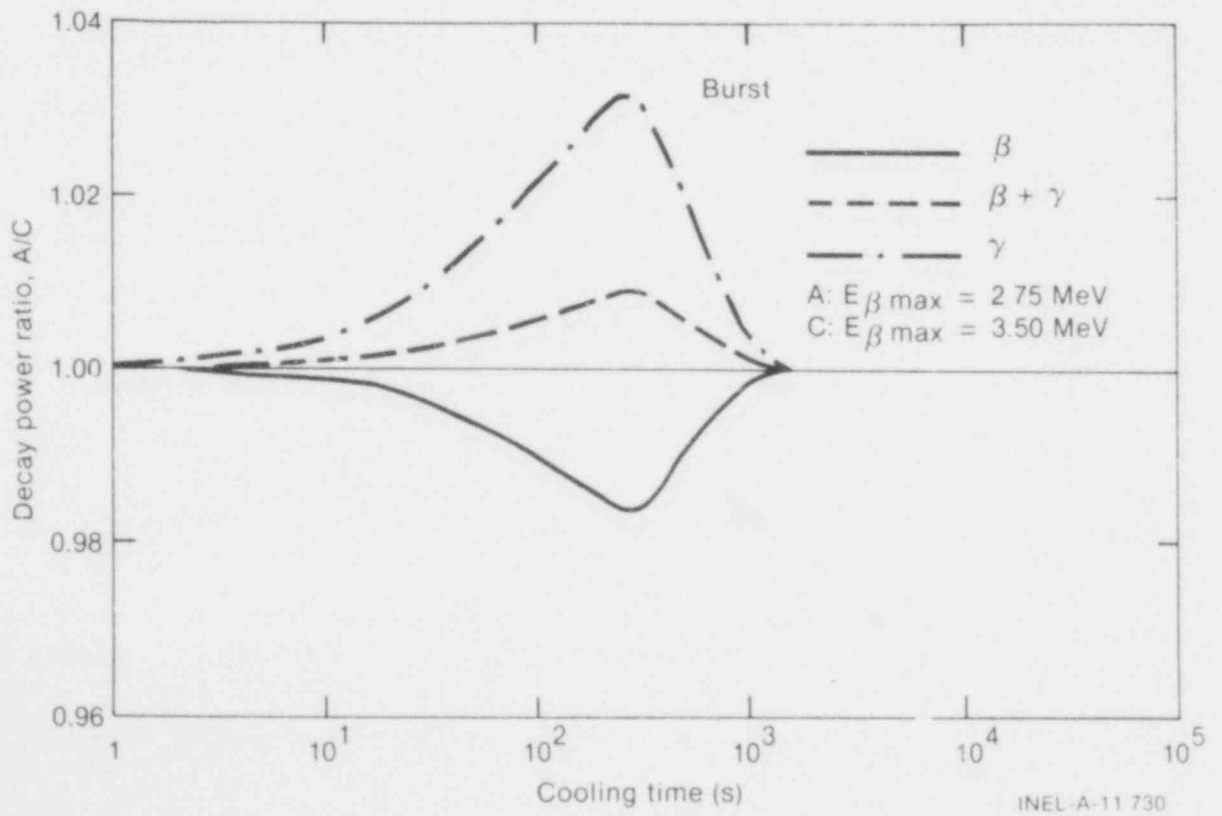


Fig. 24 Sensitivity of decay power for burst fission to change of maximum beta-ray energy $E_{\beta \text{ max}}$ from 2.75 to 3.5 MeV.

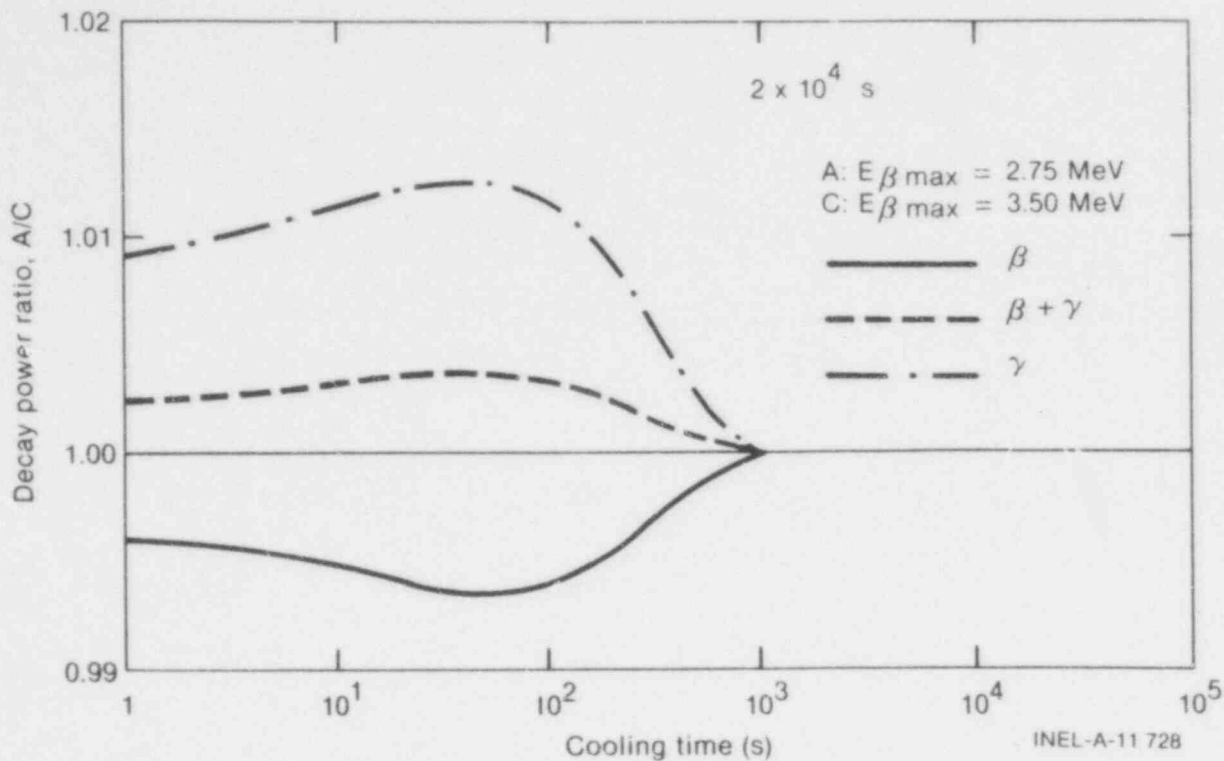


Fig. 25 Sensitivity of decay power for 2×10^4 -s irradiation to change of maximum beta-ray energy $E_{\beta\max}$ from 2.75 to 3.5 MeV.

The absolute values of sensitivities of beta- and total decay powers are about one-half and one-fourth that of gamma-decay power, respectively. The change ΔE_{γ} in the gamma-decay energy of ^{96}Y is same as the change $\Delta E_{\beta\max}$ in the maximum beta-ray energy, whereas the change ΔE_{β} in the beta-decay energy is about 40% of $\Delta E_{\beta\max}$; therefore, the sensitivity of beta-decay power becomes about one-half of that of gamma-decay power. The sensitivity of total decay power is one-half of the sum of sensitivities of beta- and gamma-decay powers because the magnitude of beta- and gamma-decay powers is approximately the same and total decay power is the sum of beta- and gamma-decay powers.

The sensitivity for the burst fission is much larger than that of the 2×10^4 -s irradiation case and peaks around 250 s of cooling time (see Figure 22). Peak sensitivities are about -4, +2, and -1% for the gamma-, beta-, and total decay powers, respectively, when Case A is compared with Case B. The fractional change $\Delta E_{\beta\max}$ of $E_{\beta\max}$ between Cases C and A is +27%, whereas $\Delta E_{\beta\max}$ between Cases B and A is -36%. Therefore, when Case A is compared with Case C (see Figure 24), the sensitivity has a different sign from the comparison between Cases A and B and about 75% in magnitude. The sensitivity becomes negligibly small at cooling times less than 10 s and greater than 10^3 s for the burst fission. When irradiation time is increased to 2×10^4 s, the peak sensitivity becomes smaller compared with the instantaneous irradiation, but the sensitivity at short cooling time increases and becomes rather flat with respect to cooling time.

Case A showed best agreement with beta- and gamma-decay power measurements at ORNL⁴; therefore, the decay energies of ^{96}Y in Case A were adopted in the present fission-product data library.

The sensitivity of decay power to the differences of decay energies of ^{96}Y between present evaluation (Case A) and ENDF/B-IV has already been given in Section III (see Figure 8).

337 178

5. SENSITIVITY TO DECAY ENERGIES OF ^{134}I AND ^{142}La

The sensitivity of the decay power to the decay energies of ^{134}I and ^{142}La has been examined in Section III.1 (see Figure 9). The differences of decay energies of ^{134}I and ^{142}La between ENDF/B-IV data and present evaluations based upon the data of Nuclear Data Sheets^{21,22} are shown in Table VII. In this section, the differences of sensitivity between beta- and gamma-decay powers were examined. The results are shown in Figure 26. Figure 26 shows there is very little difference in sensitivities of beta- and gamma-decay powers. The sensitivities are 1.9, 1.7, and 1.8% for the beta-, gamma-, and total decay powers, respectively, at the peak at 10^4 s for the burst fission.

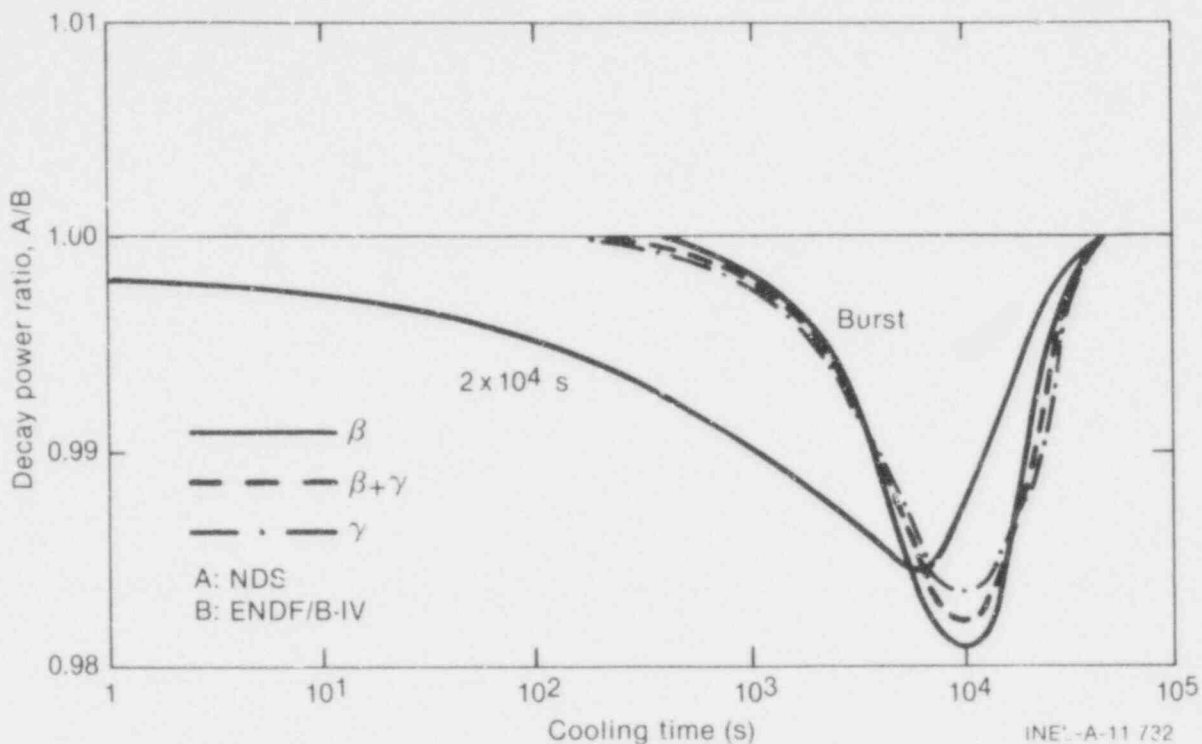


Fig. 26 Sensitivity of beta- and gamma-decay powers to uncertainties of decay energies of ^{134}I and ^{142}La .

6. COMPARISON OF DECAY POWER WITH ENDF/B-IV RESULTS

In the preceding sections, the sensitivity of decay power to the differences of decay data of each nuclide was examined. In this section, the sensitivity of decay power to the nuclear data library is examined. For this purpose, the decay power of fission products was calculated by DCHAIN code using ENDF/B-IV library¹⁹, and the results are compared with the present results in Figures 27 and 28 for the burst fission and 2×10^4 -s irradiation, respectively. The present nuclear data library differs from ENDF/B-IV library in the nuclear data of many nuclides, especially of short-lived nuclides whose unknown data were estimated by using the different correlations described in Section II.

There are large differences in decay powers calculated for the burst fission by using the present library and ENDF/B-IV library, especially at cooling times less than 10 s as in Figure 27. The maximum differences amount to 20, 7, and 13% for the gamma-, beta-, and total decay powers, respectively. The present library gives larger decay power at short cooling times. The difference of decay power at short cooling times is due to the differences in the correlations in estimating unknown nuclear data of short-lived nuclides. Shown in Figure 27, there are cyclic oscillations in the differences of decay power; and the differences of two calculations become very small at cooling times of about 15, 10^3 , 4×10^4 , and 10^5 s. The

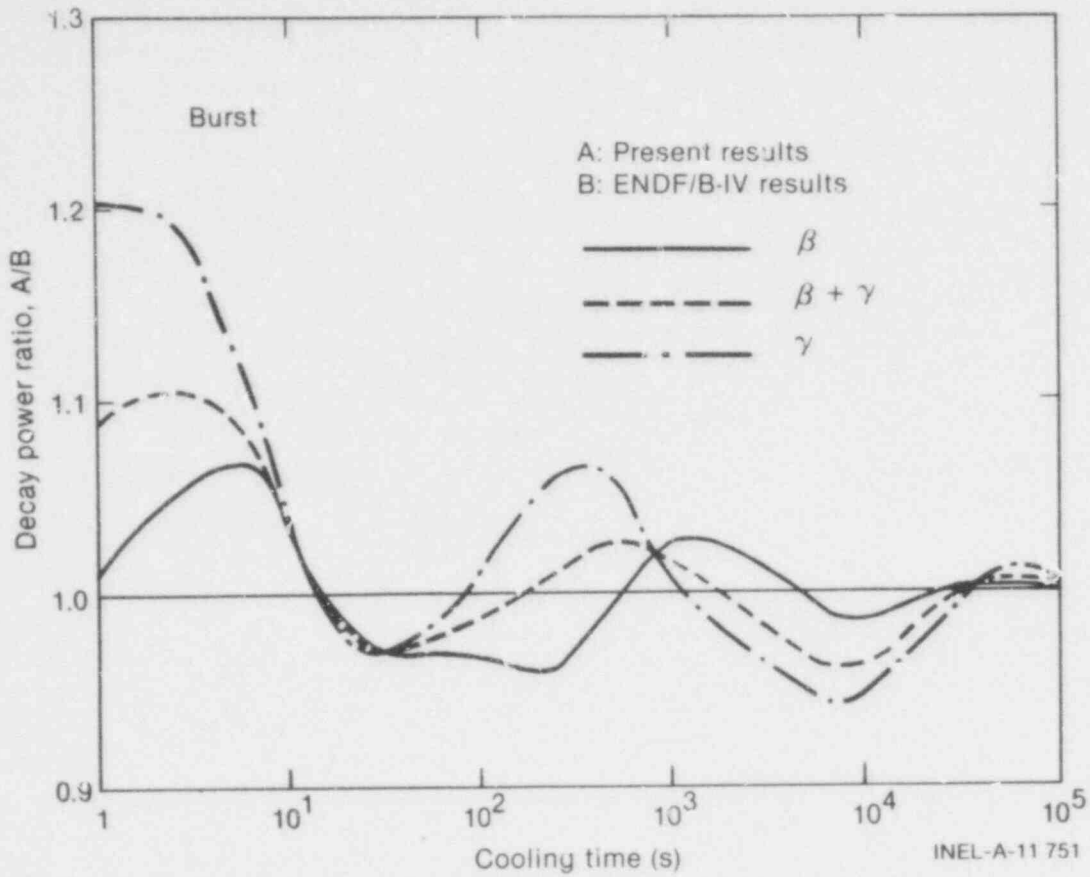


Fig. 27 Comparison of calculated decay powers using present library and ENDF/B-IV library for burst fission.

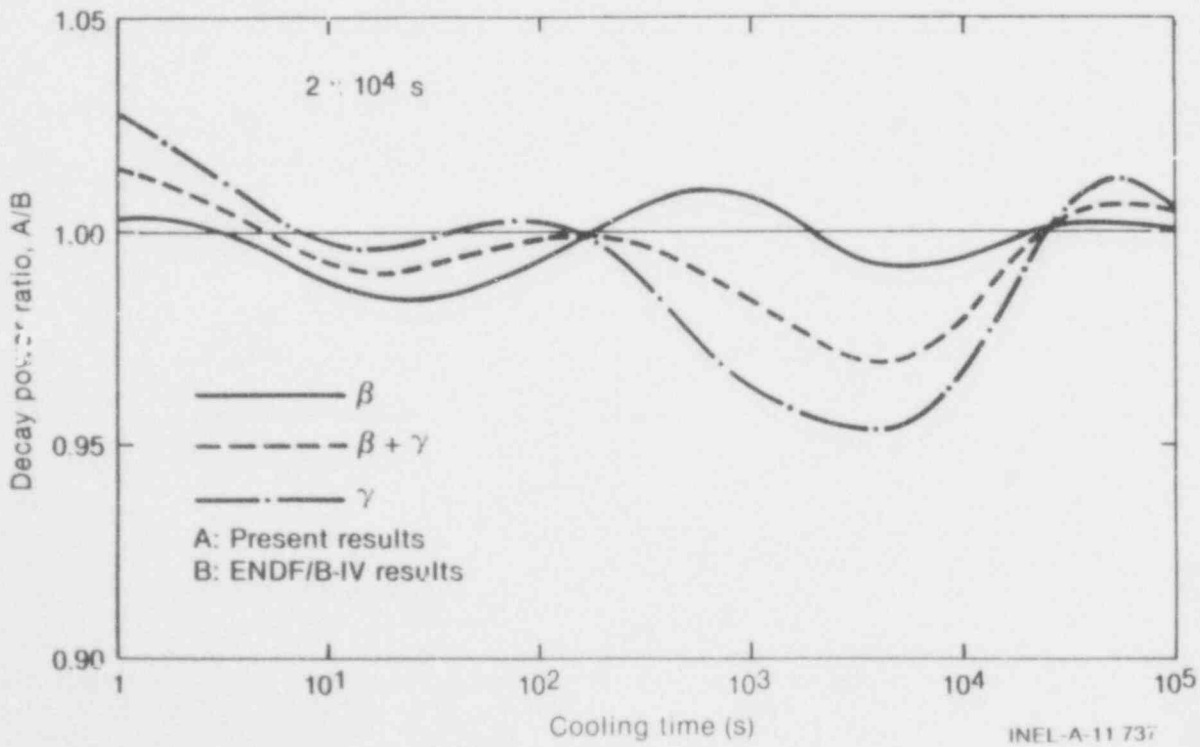


Fig. 28 Comparison of calculated decay powers using present library and ENDF/B-IV library for irradiation of 2×10^4 s.

337 180

differences of the two calculations are limited to ± 7 , ± 4 , and $\pm 4\%$ over 10 s after burst fission for the gamma-, beta-, and total decay powers, respectively. The gamma-decay power is about two times more sensitive to the nuclear data library differences compared with beta- or total decay power. The differences between the two calculations for the cooling time range 10^2 to 10^3 s are due to the difference in the decay energies of ^{96}Y in the two libraries, as is known from the comparison of Figures 8 and 27. The differences of decay data of ^{134}I and ^{142}La have an important contribution to the differences of two calculations after 10^3 s of cooling time (see Figure 26).

When irradiation time is increased to 2×10^4 s, the sensitivity of decay power to the nuclear data library becomes small (see Figure 28) compared with the results for the burst fission in Figure 27. The smaller sensitivity is especially true at cooling times less than 10 s where the differences became less than 3, 2, and 2% for the gamma-, beta-, and total decay powers, respectively. For times greater than 10 s, the differences become larger but smaller than the results for the burst fission; $\pm 5\%$ for gamma-decay power, $\pm 2\%$ for beta-decay power, and $\pm 3\%$ for total decay power. The tendency of the sensitivity for 2×10^4 -s irradiation is similar to the results for the burst fission. However, the behavior at longer cooling times becomes more important and cooling times of small sensitivities are shifted to 10, 150, 2.5×10^4 , and 10^5 s.

7. SENSITIVITY OF DECAY POWER TO DELAYED NEUTRON CAPTURED GAMMA RAYS

In the measurement of decay power of fission products, the possibility exists that the delayed neutron emitted from the sample makes fission in the sample or is absorbed by the surrounding materials and emits captured gamma radiations; this may affect the measurement of the decay power. The importance of the effect depends upon the measuring technique (for example, calorimeter or beta and gamma spectroscopy) and upon the configuration and materials of the measuring system around the sample.

In this section, the sensitivity of decay power to delayed neutron captured gamma rays, neglecting the fission by delayed neutrons, is examined. To determine the upper bound of the effect, the assumption was made that 100% of the captured gammas are detected by the measuring system. The energy of captured gamma rays changes appreciably with the material which absorbs the neutron, but the energy was fixed at 6 MeV for simplicity. The results of the analysis are shown in Figure 29. The ratio of decay powers with and without the consideration of captured gammas is shown as a function of cooling time. As seen in Figure 29, the decay power could be increased appreciably by the captured gammas at short cooling times after irradiation. The sensitivity of total decay power amounts to about 4 and 1% at 1 s of cooling time for the burst fission and 2×10^4 -s irradiation, respectively. The beta-decay power is not affected, of course, by the consideration of captured gammas. The sensitivity of total decay power is about one-half of the sensitivity for gamma-decay power because only gamma-decay power is sensitive to captured gammas and the total decay power is about twice the gamma-decay power. In Figure 29, the sensitivity decreases rapidly with cooling time and becomes negligible over 500 s due to the decay of delayed neutron precursors.

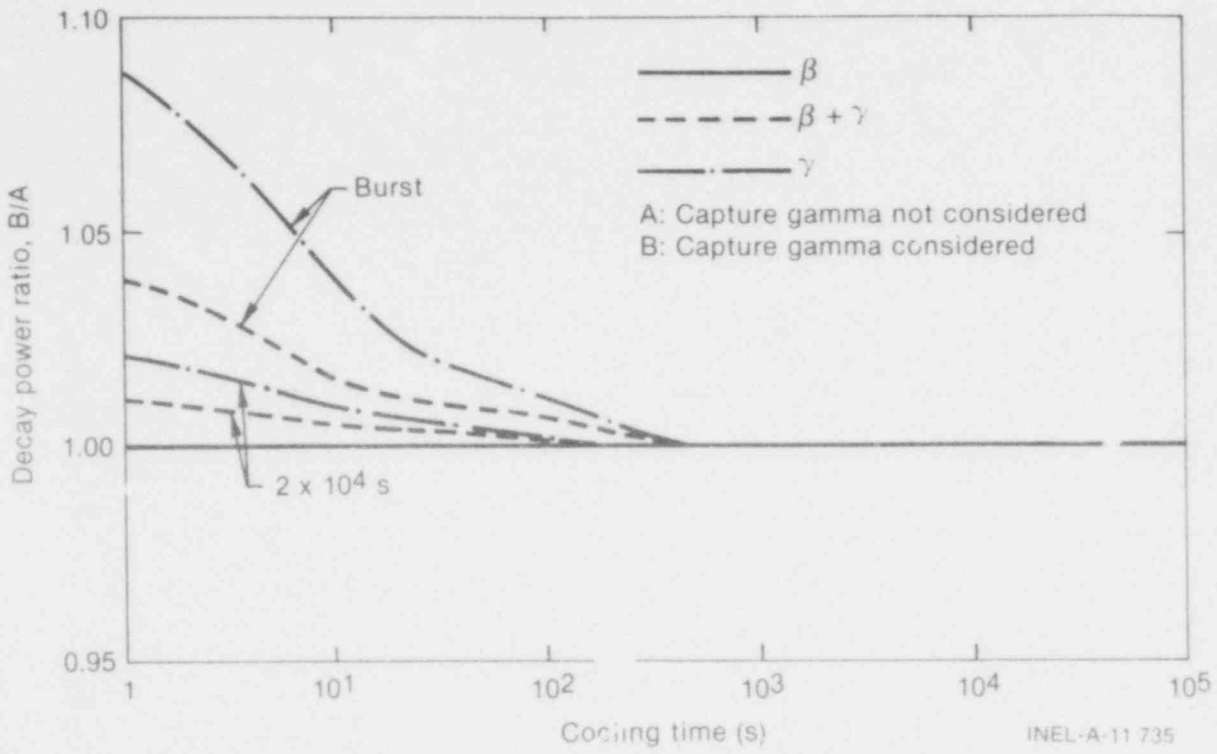


Fig. 29 Sensitivity of decay power to consideration of delayed neutron capture gamma rays.

337 182

V. CALCULATION OF DECAY POWER OF FISSION PRODUCTS

The decay power of fission products has been calculated by the DCHAIN code using the revised nuclear data library described in Section II for the instantaneous fission pulse, 1-yr irradiation and the infinite irradiation. One-year irradiation is considered to be a typical average irradiation time in a light water reactor operation. Thermal neutron fission of ^{235}U and ^{239}Pu and fast neutron fission of ^{238}U were considered in the analysis. Neutron capture transformations of fission products during operation were neglected in the calculation. The cooling time after irradiation ranges from 0 to 10^{13} s.

The purpose of the calculation of decay power in this section is to enable the comparison of the present calculation with other evaluations and also to apply the the present results for the best-estimate calculation of a LOCA. Contributions of important nuclides to the decay power are given for the thermal neutron fission of ^{235}U for the comparison of calculations and the sensitivity study.

Calculated results of decay powers for the instantaneous burst fission, 1-yr irradiation, and the infinite irradiation are shown in Tables X, XI, and XII, respectively. Contribution of each fission-product nuclide to the decay power is shown for the thermal neutron fission of ^{235}U in Tables XIII, XIV, and XV, respectively, for the instantaneous fission, 1-yr irradiation, and the infinite irradiation.

Methods given in Reference 1 are summarized subsequently for obtaining the decay power $P(t,T)$ for an arbitrary reactor power history without neutron capture in fission products. Neutron capture in fission products has only a small effect upon decay power for the cooling time less than 10^3 s²⁴. However, the direct summation calculation becomes necessary for the accurate evaluation of decay power, especially for long cooling times after long-term and high-neutron flux irradiation.

The decay power $P(t,T)$ for an arbitrary irradiation history $P_0(T)$ can be obtained either from the results, $f(t)$, for the instantaneous fission or the results $F(t)$ for the infinite irradiation. From $f(t)$, the decay power $P(t,T)$ can be calculated as

$$P(t,T) = \int_0^T \frac{P_0(T')}{Q} f(t + T - T') dT' \quad (20)$$

where

- t = cooling time after irradiation (s)
- T = total irradiation time (s)
- P_0 = reactor power (MeV/s)
- Q = fission energy (MeV/fission)
- $f(t)$ = decay power after one fission [(MeV/s)/fission].

From $F(t)$, $P(t,T)$ can be calculated as:

$$P(t,T) = \sum_{m=1}^N \frac{P_0^m}{Q} F(t_m, T_m) \quad (21)$$

TABLE XI

DECAY POWER AFTER IRRADIATION FOR ONE YEAR
AT CONSTANT RATE OF 1 FISSION/S

TC (SEC)	TOTAL DECAY POWER			BETA DECAY POWER			GAMMA DECAY POWER		
	U235T	PU239T	U238F	U235T	PU239T	U238F	U235T	PU239T	U238F
0	0	0	0	0	0	0	0	0	0
0.01	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0.05	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0.1	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0.2	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0.3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0.5	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0.7	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1.5	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
5	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
7	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
10	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
15	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
30	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
50	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
70	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
100	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
150	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
200	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
300	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
500	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
700	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1500	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
5000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
7000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
10000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

337 185

TABLE XII

DECAY POWER AFTER INFINITE IRRADIATION
AT CONSTANT RATE OF 1 FISSION/S

TC (SEC)	TOTAL DECAY POWER			BETA DECAY POWER			GAMMA DECAY POWER		
	U235T	PU239T	U238F	U235T	PU239T	U238F	U235T	PU239T	U238F
0	1.274	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
1	1.174	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
2	1.074	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
3	0.974	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
4	0.874	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
5	0.774	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
6	0.674	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
7	0.574	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
8	0.474	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
9	0.374	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
10	0.274	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
11	0.174	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
12	0.074	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
13	0.024	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
14	0.004	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
15	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
16	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
17	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
18	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
19	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
20	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
21	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
22	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
23	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
24	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
25	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
26	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
27	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
28	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
29	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
30	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
31	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
32	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
33	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
34	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
35	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
36	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
37	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
38	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
39	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
40	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
41	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
42	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
43	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
44	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
45	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
46	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
47	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
48	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
49	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983
50	0.000	9.894	1.649	4.877	4.988	8.509	248	4.930	7.983

337 186

TABLE XIII

CONTRIBUTION OF EACH IMPORTANT NUCLIDE TO DECAY POWER FOR BURST
THERMAL NEUTRON FISSION OF ²³⁵U AS A FUNCTION OF COOLING TIME

AN(N) = Number of Atoms
C(N) = Activity (C_i)
B(N)/TOTB = Contribution to Beta Decay Power
G(N)/TOTG = Contribution to Gamma Decay Power
BG(N)/TOTBG = Contribution to Total Sensible
Decay Power

**OUTPUT TIME --- C.	-DAY J.	-HOUR O.	-MIN O.	-SEC	(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION					.954729E+00	0.	.322847E+00	.870348E+00
GAMMA EMISSION					.846905E+00	0.	.286385E+00	.928098E+00
(BETA+GAMMA)					.180163E+01	0.	.609232E+00	.897495E+00
TOTAL EMISSION					.295722E+01	0.	.100000E+01	.885979E+00

ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
AS 86	.71276E+10	.22377E+01	.44307E-01	.62587E-01	.52900E-01
BR 90	.81955E+11	.89785E+00	.14012E-01	.19793E-01	.16729E-01
BR 91	.26339E+11	.78321E+00	.10260E-01	.14493E-01	.12249E-01
KR 92	.95346E+11	.97075E+00	.16079E-01	.50121E-02	.10877E-01
RB 92	.20466E+12	.85583E+00	.19644E-01	.12818E-02	.11012E-01
KR 94	.14724E+11	.13792E+01	.15374E-01	.21717E-01	.18356E-01
RB 94	.93246E+11	.64939E+00	.19602E-01	.69487E-02	.11534E-01
RB 95	.6099E+11	.29193E+01	.37315E-01	.52710E-01	.44552E-01
RB 96	.11938E+11	.10804E+01	.16960E-01	.23956E-01	.20249E-01
SR 97	.11752E+12	.11006E+02	.11598E+00	.16326E+00	.13799E+00
Y 97	.19604E+12	.33085E+01	.25267E-01	.35691E-01	.30167E-01
Y 98	.19131E+12	.11322E+02	.13559E+00	.19153E+00	.16189E+00
Y 99	.11610E+12	.27183E+01	.26382E-01	.37269E-01	.31498E-01
ZR 99	.23843E+12	.18611E+01	.12803E-01	.18085E-01	.15286E-01
Y 100	.52863E+11	.90776E+00	.12704E-01	.17945E-01	.15167E-01
ZR101	.19764E+12	.11220E+01	.18069E-01	.60066E-02	.12409E-01
ZR102	.10724E+12	.25113E+01	.16842E-01	.23791E-01	.20109E-01
NB102	.12597E+12	.81376E+00	.84665E-02	.11959E-01	.10108E-01
CS142	.15321E+12	.16883E+01	.20009E-01	.29586E-01	.24511E-01
CS143	.93524E+11	.10429E+01	.96133E-02	.13575E-01	.11474E-01
TOTAL	.21713E+13	.50078E+02	.59090E+00	.75719E+00	.66907E+00

109

337
187

TABLE XIII (continued)

ELEMENT	AN (N)	-DAY 0.	-HOUR 0. (WATT)	-MIN 1.000E+00-SEC (I/OP.POWER)	(I/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION	71943E+00					71943E+00
GAMMA EMISSION	83974E+00					83974E+00
BETA+GAMMA	77398E+00					77398E+00
TOTAL EMISSION	100000E+01					100000E+01
BETA EMISSION	327067E+00					327067E+00
GAMMA EMISSION	268809E+00					268809E+00
BETA+GAMMA	595895E+00					595895E+00
TOTAL EMISSION	1000000E+01					1000000E+01

EL 2	432	1	427	1	1603	1
BR 1	273	1	268	1	949	1
BR 2	335	1	263	1	1355	1
KR 1	621	1	621	1	1959	1
KR 2	603	1	550	1	2193	1
KR 3	292	1	280	1	1812	1
KR 4	823	1	580	1	1855	1
SR 1	155	1	420	1	1244	1
SR 2	179	1	361	1	1756	1
SR 3	107	1	301	1	1406	1
SR 4	98	1	422	1	1462	1
Y 1	19	1	184	1	3969	1
Y 2	5	1	124	1	4169	1
Y 3	5	1	185	1	2240	1
Z 1	25	1	722	1	1105	1
Z 2	40	1	507	1	1058	1
BR 1	14	1	108	1	2374	1
BR 2	4	1	95	1	3409	1
CS 1	14	1	52	1	1597	1
CS 2	6	1	21	1	2597	1
TOTAL	23617E+13		21069E+02		65531E+00	

337 183

TABLE XIII (continued)

**OUTPUT TIME --- 0.		-DAY 0.	-HOUR 0.	-MIN 1.000E+01-SEC		
		(WATT)	(1/JP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.	
BETA EMISSION		.774978E-01	0.	.333709E+00	.509561E+00	
GAMMA EMISSION		.566716E-01	0.	.244030E+00	.678287E+00	
(BETA+GAMMA)		.134169E+00	0.	.577739E+00	.580828E+00	
TOTAL EMISSION		.232232E+00	0.	.100000E+01	.551742E+00	
ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG	
SR87	.18764	.60606E-01	.99837E-02	.15212E-01	.12192E-01	
BR88	.10418	.11973E+00	.23282E-01	.32735E-01	.27275E-01	
BR89	.26341	.10893E+00	.17272E-01	.26316E-01	.21092E-01	
KR90	.23433	.13583E+00	.13553E-01	.19085E-01	.15889E-01	
KR91	.98366	.21427E+00	.33694E-01	.10570E-01	.23927E-01	
RB91	.23617	.76283E-01	.89221E-02	.13594E-01	.10896E-01	
RB92	.74841	.31296E+00	.88495E-01	.70049E-02	.54074E-01	
RB93	.70499	.22771E+00	.34370E-01	.52368E-01	.41972E-01	
RB94	.82463	.57429E-01	.16998E-01	.91833E-02	.13697E-01	
SB95	.26090	.18798E+00	.23651E-01	.36036E-01	.28882E-01	
SR96	.41414	.19396E+00	.16464E-01	.25085E-01	.20105E-01	
Y96	.32133	.43624E-01	.38501E-02	.18478E-01	.10029E-01	
Y98M	.25555	.17100E+00	.25960E-01	.20725E-02	.15870E-01	
ZR99	.23570	.18398E+00	.17534E-01	.26717E-01	.21413E-01	
NB99	.24851	.32556E+00	.37601E-01	.80553E-02	.25119E-01	
ZR100	.12899	.34028E+00	.21721E-01	.33096E-01	.26526E-01	
NB100	.33643	.42017E+00	.56238E-01	.85688E-01	.68677E-01	
ZR101	.27271	.15481E+00	.30748E-01	.12386E-01	.22992E-01	
NB101	.13601	.36398E+00	.51423E-01	.15227E-01	.36134E-01	
NB102	.25685	.16592E+00	.23916E-01	.36441E-01	.29207E-01	
NB103	.79510	.12502E+00	.14177E-01	.21601E-01	.17322E-01	
IF132	.13902	.14468E+00	.17875E-01	.27236E-01	.21829E-01	
I137	.15283	.11591E+00	.13843E-01	.21093E-01	.16905E-01	
I138	.95174	.10296E+00	.25768E-01	.84205E-02	.18440E-01	
XE139	.27067	.12677E+00	.16957E-01	.11000E-01	.14400E-01	
XE140	.13718	.18897E+00	.12732E-01	.26877E-01	.18707E-01	
CS141	.21116	.15926E+00	.16364E-01	.24933E-01	.19983E-01	
BA143	.23839	.22329E+00	.16093E-01	.24520E-01	.19652E-01	
BA144	.14979	.23581E+00	.14081E-01	.21455E-01	.17196E-01	
LA144	.16569	.76267E-01	.88074E-02	.15474E-01	.11623E-01	
BA145	.40463	.12226E+00	.14127E-01	.21526E-01	.17252E-01	
LA145	.15770	.98475E-01	.79830E-02	.15654E-01	.11223E-01	
LA146	.68947	.14678E+00	.19041E-01	.29012E-01	.23252E-01	
TOTAL	.39916E+13	.57315E+01	.75352E+00	.75413E+00	.75378E+00	

111

337 189

TABLE XIII (continued)

**OUTPUT TIME --- 0.		-DAY 0.	-HOUR 0.	-MIN 1.000E+02-SEC	UNKNOWN NUCL. CONTR.	
		(WATT)	(1/OP. POWER)	(1/TOTAL EMISSION)		
BETA EMISSION		.631010E-02	0.	.295840E+00	.291155E+00	
GAMMA EMISSION		.656024E-02	0.	.307567E+00	.279943E+00	
(BETA+GAMMA)		.128703E-01	0.	.603407E+00	.28740E+00	
TOTAL EMISSION		.213294E-01	0.	.100000E+01	.26700E+00	
ELEMENT	AN(N)	C(N) CURIF	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG	
BR 86	.20724E+11	.71897E-02	.13185E-01	.18989E-01	.16141E-01	
BR 87	.41149E+11	.13840E-01	.27761E-01	.21588E-01	.24613E-01	
KR 89	.20202E+12	.20547E-01	.24318E-01	.36412E-01	.30738E-01	
KR 90	.34211E+11	.19830E-01	.24301E-01	.24010E-01	.24183E-01	
RB 90	.18768E+12	.22980E-01	.33800E-01	.55233E-01	.45706E-01	
RB 91	.11987E+12	.38718E-01	.99961E-01	.59690E-01	.57690E-01	
SR 93	.34539E+12	.14189E-01	.15458E-01	.17244E-01	.16367E-01	
SR 94	.15342E+12	.36847E-01	.30097E-01	.41360E-01	.35838E-01	
SR 95	.23683E+11	.17064E-01	.26368E-01	.28339E-01	.27333E-01	
Y 95	.34657E+12	.10113E-01	.16843E-01	.36719E-02	.10129E-01	
Y 96	.23162E+12	.31453E-01	.34682E-01	.11505E+00	.75353E-01	
ZR 98	.38814E+11	.23455E-01	.13387E-01	.14244E-01	.13773E-01	
NB 98M	.38538E+10	.25785E-01	.48076E-01	.26997E-02	.24947E-01	
MO103	.71973E+11	.22472E-01	.25008E-01	.26799E-01	.25920E-01	
TC103	.63561E+11	.23819E-01	.13350E-01	.14200E-01	.13734E-01	
SR133	.91672E+11	.10601E-01	.10724E-01	.11499E-01	.11116E-01	
I 136	.93419E+11	.21085E-01	.48602E-01	.41399E-01	.41596E-01	
I 136M	.27578E+11	.11231E-01	.23911E-01	.19343E-01	.21435E-01	
I 137	.12556E+11	.95228E-02	.13968E-01	.14970E-01	.14479E-01	
XE137	.26228E+12	.23012E-01	.38928E-01	.37749E-02	.21010E-01	
XE139	.57433E+11	.26898E-01	.44189E-01	.20164E-01	.31944E-01	
CS140	.14172E+12	.41680E-01	.64212E-01	.70594E-01	.67440E-01	
CS141	.17405E+11	.13095E-01	.16523E-01	.17711E-01	.17130E-01	
LA144	.80377E+11	.36997E-01	.52472E-01	.64844E-01	.58778E-01	
LA145	.26085E+11	.16289E-01	.16218E-01	.22369E-01	.19353E-01	
CE145	.17065E+12	.17760E-01	.10206E-01	.14009E-01	.12144E-01	
CF147	.56218E+11	.15045E-01	.12176E-01	.13049E-01	.12621E-01	
TOTAL	.29419E+13	.57150E+00	.74848E+00	.79358E+00	.77147E+00	

112

337 190

TABLE XIII (continued)

**OUTPUT TIME	---	0.	-DAY 0.	-HOUR 0.	(KATT)	-MIN 1.00E+04-SEC	(1/JP*POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION					239602E-04			251540E+00	1590E-01
GAMMA EMISSION					345148E-04	0.		362343E+00	1129E-01
(BETA+GAMMA)					584751E-04	0.		618883E+00	1131E-01
TOTAL EMISSION					952542E-04	0.		100003E+01	1135E-01
ELEMENT					CIN) CURIE	BIN) /DTIB	GIN) /DTIG	BGIN) /DTIBG	
KR88	+				1712E-03	18860E-01	17621E-01	1992E-01	
Rb88	+				1204E-03	12190E-01	1294E-01	2766E-01	
KR90	+				2361E-03	12757E-01	12953E-01	2244E-01	
Sr90	+				3548E-03	17537E-01	17253E-01	5544E-01	
Y90	+				2108E-03	7560E-01	7288E-01	2517E-01	
Y91	+				1397E-03	5774E-01	5509E-01	2314E-01	
Y92	+				6260E-03	2752E-01	2550E-01	1020E-01	
Zr92	+				2330E-03	2131E-01	2030E-01	7027E-01	
Nb93	+				1915E-03	9331E-01	9530E-01	3295E-01	
Mo93	+				4053E-03	8491E-01	8671E-01	3231E-01	
Mo94	+				4707E-03	11279E-01	10944E-01	4110E-01	
TOTAL					42480E-02	8674E+00	8755E+00	8722E+00	

**OUTPUT TIME	---	0.	-DAY 0.	-HOUR 0.	(KATT)	-MIN 1.00E+05-SEC	(1/OP*POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION					14042E-05	0.		25608E+00	29502E-03
GAMMA EMISSION					13631E-05	0.		28198E+00	26820E-03
(BETA+GAMMA)					26674E-05	0.		53796E+00	26116E-03
TOTAL EMISSION					46452E-05	0.		100000E+01	25219E-03
ELEMENT					CIN) CURIE	BIN) /DTIB	GIN) /DTIG	BGIN) /DTIBG	
Y91	+				2608E-04	8338E-01	7920E-01	1099E-01	
Y92	+				1907E-04	5760E-01	5071E-01	8120E-01	
Zr92	+				3144E-04	17745E-01	17104E-01	2083E-01	
Nb92	+				3629E-04	12403E-01	12225E-01	1285E-01	
Mo92	+				3234E-04	8265E-01	7255E-01	1027E-01	
Mo93	+				1374E-04	1853E-01	1040E-01	2088E-01	
Mo94	+				4316E-04	3109E-01	3388E-01	1880E-01	
Y93	+				1604E-04	5107E-01	5090E-01	880E-01	
X93	+				2205E-04	6481E-01	6443E-01	718E-01	
Y93	+				8620E-04	2281E-01	2247E-01	215E-01	
TOTAL					39994E-03	91134E+00	9125E+00	9119E+00	

337 192

TABLE XIII (continued)

**OUTPUT TIME --- 0.	-DAY 0.	-HOUR 0.	-MIN 1.000E+06-SEC	UNKNOWN NUCL. CONTR.	
(WATT)			(1/OP.POWER)	(1/TOTAL EMISSION)	
BETA EMISSION		.566946E-07	0.	.214276E+00	.258536E-07
GAMMA EMISSION		.103940E-06	0.	.392839E+00	.158734E-07
(BETA+GAMMA)		.160635E-06	0.	.607114E+00	.193958E-07
TOTAL EMISSION		.264587E-06	0.	.100000E+01	.208033E-07

ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
SR 89	.25767E+12	.11052E-05	.66171E-01	.54423E-06	.23355E-01
Y 91	.32317E+12	.11976E-05	.75871E-01	.18165E-03	.26895E-01
ZR 95	.35384E+12	.11991E-05	.15108E-01	.50321E-01	.37893E-01
MC 99	.20447E+11	.16117E-05	.66333E-01	.15623E-01	.33521E-01
RU103	.15974E+12	.88021E-06	.70521E-02	.25632E-01	.19074E-01
I 131	.66957E+11	.18057E-05	.35370E-01	.40496E-01	.38687E-01
TE132	.22529E+11	.14992E-05	.10655E-01	.23765E-01	.19138E-01
I 132	.68268E+09	.15446E-05	.79381E-01	.19907E+00	.15683E+00
XE133	.11846E+12	.48553E-05	.53676E-01	.22577E-01	.33593E-01
BA140	.20856E+12	.35359E-05	.10801E+00	.37551E-01	.62418E-01
LA140	.30962E+11	.40060E-05	.23075E+00	.52082E+00	.41844E+00
CE141	.28881E+12	.19268E-05	.30509E-01	.11152E-01	.17984E-01
PR143	.22815E+12	.36427E-05	.12335E+00	0.	.43536E-01
PR144	.13978E+08	.25256E-06	.32320E-01	.43467E-03	.11688E-01
ND147	.68706E+11	.13469E-05	.33884E-01	.13655E-01	.20795E-01
TOTAL	.21487E+13	.30410E-04	.96844E+00	.96127E+00	.96380E+00

**OUTPUT TIME --- 0.	-DAY 0.	-HOUR 0.	-MIN 1.000E+07-SEC	UNKNOWN NUCL. CONTR.	
(WATT)			(1/OP.POWER)	(1/TOTAL EMISSION)	
BETA EMISSION		.465604E-08	0.	.265832E+00	.432336E-06
GAMMA EMISSION		.512909E-08	0.	.292840E+00	.408894E-08
(BETA+GAMMA)		.978513E-08	0.	.558673E+00	.420048E-08
TOTAL EMISSION		.175150E-07	0.	.100000E+01	.423737E-08

ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
SR 89	.61766E+11	.26493E-06	.19314E+00	.26437E-05	.91903E-01
Y 91	.94082E+11	.34865E-06	.26895E+00	.10717E-02	.12853E+00
ZR 95	.11447E+12	.38793E-06	.59515E-01	.32990E+00	.20124E+00
NB 95	.89689E+11	.55323E-06	.33281E-01	.48919E+00	.27226E+00
RU103	.25500E+11	.14051E-06	.13708E-01	.82916E-01	.49985E-01
RH106	.18461E+05	.11567E-07	.21095E-01	.25186E-02	.11358E-01
LA140	.11110E+09	.14375E-07	.10082E-01	.37873E-01	.24649E-01
CE141	.31317E+11	.20893E-06	.40283E-01	.24505E-01	.32012E-01
CE144	.5689E+12	.19591E-06	.21584E-01	.69860E-02	.13932E-01
PR144	.10843E+08	.19592E-06	.30528E+00	.68330E-02	.14884E+00
TOTAL	67323E+12	.23220E-05	.96692E+00	.98180E+00	.97472E+00

115

337 195

TABLE XIII (continued)

**OUTPUT TIME ---	0.	DAY 0.	-HOUR 0. (WATT)	-MIN 1.00E+03-SEC (1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION						.519255E-07
GAMMA EMISSION						.298168E-06
(BETA+GAMMA)						.888455E-07
TOTAL EMISSION						.705689E-07
ELEMENT	AN(N)	CU(N)	CO(N)	B(N)/TOTB	G(N)/T.TG	BG(N)/TOTBG
90	.3423E+12	.69422E-08	.19314E-09	.3783E-01	0.	.366202E+00
90	.85535E+08	.69422E-08	.34212E-10	.1980E+00	0.	.645088E-01
Y	.35579E+04	.16277E-08	.32812E-09	.71237E-01	0.	.430811E+01
137	.35585E+12	.10066E-08	.32812E-09	.37357E-01	0.	.100606E+01
137M	.54176E+11	.62878E-07	.32812E-09	0.	0.	.31755E+01
144	.20268E+11	.15458E-07	.32812E-09	.40890E-01	0.	.171503E+00
144	.85550E+11	.14054E-07	.32812E-09	.57834E+00	0.	.471373E+01
147	.62064E+11	.14054E-07	.32812E-09	.29168E-01	0.	.503733E+01
TOTAL	.77250E+12	.74118E-07	.32812E-09	.99307E+00	0.	.548330E-01
				.97744E+00	0.	.99072E+00

**OUTPUT TIME ---	0.	-DAY 0.	-HOUR 0. (WATT)	-MIN 1.00E+09-SEC (1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION						.102940E-06
GAMMA EMISSION						.207290E-06
(BETA+GAMMA)						.137867E-06
TOTAL EMISSION						.122067E-06
ELEMENT	AN(N)	CU(N)	CO(N)	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
90	.16736E+12	.3472E-08	.26893E-10	.3674E+00	0.	.90973E-01
90	.42891E+08	.3472E-08	.13515E-10	.1647E+00	0.	.47674E+00
Y	.18472E+12	.3472E-08	.40318E-10	.7164E+00	0.	.93128E-01
137M	.28123E+05	.34407E-08	.84078E-10	.13998E+00	0.	.33442E+00
TOTAL	.35212E+12	.14031E-07	.26893E-10	.99316E+00	0.	.99943E+00
				.99943E+00	0.	.99526E+00

337 19.

TABLE XIII (continued)

**OUTPUT TIME --- 0.		-DAY 0.	-HOUR 0. (WATT)	-MIN 1.000E+10-SEC (1/OP.POWER) (1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION					
GAMMA EMISSION					
(BETA + GAMMA)					
TOTAL EMISSION					
305578E-13			0.	296661E+00	250192E-06
194263E-13			0.	188594E+00	444013E-06
499841E-13			0.	485254E+00	325527E-06
103006E-12			0.	100000E+01	279667E-06
EL ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	(N)/TOTG	BG(N)/TOTBG
ZR 90	.16588E+09	.34455E-11	.11915E+00	0.	.72640E-01
Y 90	.42452E+08	.34464E-11	.62424E+00	.21290E-03	.38171E+00
TC 99	.17734E+12	.10524E-11	.17962E-01	0.	.10981E-01
CS 137	.26240E+09	.51867E-11	.17481E+00	0.	.10687E+00
SM 137M	.39949E+02	.48667E-11	0.	.98744E+00	.38377E+00
SM 151	.22220E+10	.15062E-10	.56967E-01	.18382E-02	.35541E-01
TOTAL	.36005E+12	.33061E-10	.99312E+00	.98949E+00	.99171E+00
**OUTPUT TIME --- 0.		-DAY 0.	-HOUR 0. (WATT)	-MIN 1.000E+11-SEC (1/OP.POWER) (1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION					
GAMMA EMISSION					
(BETA + GAMMA)					
TOTAL EMISSION					
750943E-15			0.	293203E+00	101520E-04
200720E-15			0.	783702E+00	428589E-04
951668E-15			0.	371573E+00	170503E-04
2561E-14			0.	100000E+01	112156E-04
EL ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	(N)/TOTG	BG(N)/TOTBG
ZR 93	.40499E+12	.17247E-12	.23807E-01	0.	.18786E-01
MC 99	.30176E+07	.14938E-12	0.	.13409E+00	.28282E+00
TC 99	.37385E+12	.10426E-11	.72417E+00	0.	.57143E+00
SM 126	.34703E+10	.20615E-11	.11389E-01	.30314E-01	.15387E-01
SM 126M	.12846E+03	.28864E-11	.81548E-02	.22754E+00	.54427E+00
SP 126	.12846E+01	.20615E-11	.16329E+00	.60582E+00	.25663E+00
CS 135	.41155E+12	.10643E-12	.58223E-01	.31387E-03	.46009E-01
TOTAL	.11939E+13	.14997E-11	.98903E+00	.99608E+00	.99094E+00

337 195

TABLE XIII (continued)

**OUTPUT TIME --- 0.		-DAY 0.	-HOUR 0.	-MIN 1.000E+12-SEC	UNKNOWN NUCL. CONTR.	
		(WATT)	(1/JP.POWER)	(1/TOTAL EMISSION)		
BETA EMISSION		.675432E-15	0.	.293166E+03	.112769E-04	
GAMMA EMISSION		.169250E-15	0.	.734616E-01	.508086E-04	
(BETA+GAMMA)		.844682E-15	0.	.366627E+00	.191979E-04	
TOTAL EMISSION		.230393E-14	0.	.100000E+01	.124571E-04	
ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG	
ZR 93	.39979E+12	.155222E-12	.26128E-01	0.	.20893E-01	
NB 93M	.29788E+07	.14746E-12	0.	.15698E+00	.31455E-01	
TC 99	.34069E+12	.95016E-12	.73372E+00	0.	.58670E+00	
SN126	.28475E+10	.16015E-13	.10390E-01	.29499E-01	.14219E-01	
SB126	.13543E+03	.23691E-14	.74393E-02	.22142E+00	.50314E-01	
SB126M	.10293E+01	.16915E-13	.14896E+00	.58952E+00	.23724E+00	
CS135	.40F03E+12	.10539E-12	.64178E-01	.36904E-03	.51392E-01	
TOTAL	.11514E+13	.13944E-11	.99082E+03	.99778E+00	.99221E+00	

**OUTPUT TIME --- 0.		-DAY 0.	-HOUR 0.	-MIN 1.000E+13-SEC	UNKNOWN NUCL. CONTR.	
		(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)		
BETA EMISSION		.267402E-15	0.	.289974E+00	.284225E-04	
GAMMA EMISSION		.43454E-16	0.	.471127E-01	.197753E-03	
(BETA+GAMMA)		.310847E-15	0.	.337086E+00	.520888E-04	
TOTAL EMISSION		.922160E-15	0.	.100000E+01	.310570E-04	
ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG	
ZR 93	.35130E+12	.13640E-12	.57994E-01	0.	.49888E-01	
NB 93M	.26175E+07	.12958E-12	0.	.53739E+00	.75107E-01	
TC 99	.13459E+12	.37537E-12	.73217E+03	0.	.62984E+00	
SB126	.18733E+02	.32757E-15	.25992E-02	.11931E+00	.18912E-01	
SB126M	.14238E+00	.23398E-14	.52047E-01	.31767E+00	.89171E-01	
CS135	.37440E+12	.96700E-13	.14875E+03	.13192E-02	.12814E+00	
TOTAL	.86030E+12	.74771E-12	.99356E+03	.97569E+00	.99106E+00	

118

337 196

TABLE XIV

CONTRIBUTION TO EACH IMPORTANT NUCLIDE TO DECAY POWER AS A FUNCTION OF COOLING TIME FOR IRRADIATION OF ONE YEAR OF ²³⁵U BY THERMAL NEUTRONS

AN(N) = Number of Atoms

C(N) = Activity (C_i)

B(N)/TOTB = Contribution to Beta Decay Power

G(N)/TOTG = Contribution to Gamma Decay Power

BG(N)/TOTBG = Contribution to Total Sensible Decay Power

**OUTPUT TIME --- 3.650E+02-DAY 0.

-HOUR 0.

-MIN 0.

-SEC

(WATT)

(1/OP.POWER)

(1/TOTAL EMISSION)

UNKNOWN NUCL. CONTR.

BETA EMISSION
GAMMA EMISSION
(BETA+GAMMA)
TOTAL EMISSION

.637447E+01
.620453E+01
.125790E+02
.212806E+02

.316037E-01
.307612E-01
.623649E-01
.105506E+00

.299544E+00
.291558E+00
.591103E+00
.100000E+01

.354005E+00
.353224E+00
.354606E+00
.345228E+00

ELEMENT	AN(N)	C(N) CURSE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
RR 88	.37055E+13	.42587E+01	.30068E-01	.10629E-01	.10348E-01
RR 89	.77446E+14	.78760E+01	.22282E-02	.14961E-01	.12056E-01
RB 69	.40227E+15	.81598E+01	.70126E-02	.17550E-01	.12210E-01
KB 90	.63945E+14	.78293E+01	.12074E-01	.19618E-01	.15633E-01
KB 91	.29955E+14	.96753E+01	.13758E-01	.15749E-01	.14740E-01
RB 92	.19511E+13	.81539E+01	.18048E-01	.16680E-02	.15036E-01
RB 93	.18768E+13	.60613E+01	.11122E-01	.12732E-01	.11917E-01
SR 93	.26225E+15	.10786E+02	.11631E-01	.13858E-01	.12730E-01
Y 94	.64853E+15	.10602E+02	.16665E-01	.10099E-01	.13426E-01
SR 95	.12747E+14	.91847E+01	.14049E-01	.16082E-01	.15052E-01
Y 95	.36997E+15	.10789E+02	.17780E-01	.41415E-02	.11057E-01
Y 96	.74811E+14	.10156E+02	.10897E-01	.39290E-01	.24902E-01
Y 97	.50514E+12	.85254E+01	.10966E-01	.12554E-01	.11749E-01
Y 98	.97065E+11	.60613E+01	.10276E-01	.13996E-01	.13099E-01
ZR 99	.12441E+13	.97113E+01	.18222E-01	.12881E-01	.12056E-01
NB100	.78335E+12	.97871E+01	.15920E-01	.18231E-01	.17063E-01
NB102	.98974E+12	.63937E+01	.18264E-01	.12826E-01	.12004E-01
I 134	.21736E+16	.12902E+02	.74274E-02	.31197E-01	.19151E-01
I 136	.22260E+14	.51013E+01	.10011E-01	.10590E-01	.10297E-01
CS138	.11488E+16	.11113E+02	.12558E-01	.25145E-01	.18767E-01
XE139	.18586E+14	.87047E+01	.14155E-01	.68989E-02	.10576E-01
CS139	.32486E+15	.10824E+02	.17248E-01	.31703E-02	.10304E-01
CS140	.33454E+14	.98387E+01	.15004E-01	.17607E-01	.16288E-01
LA140	.81648E+17	.10564E+02	.54120E-02	.23008E-01	.14091E-01
LA142	.29759E+16	.10023E+02	.78924E-02	.22926E-01	.15308E-01
LA144	.19770E+14	.90997E+01	.12776E-01	.16863E-01	.14792E-01
TOTAL	.90319E+17	.23220E+03	.32640E+00	.40456E+00	.36495E+00

337 197

TABLE XIV (continued)

ELEMENT	AN(N)	BETA EMISSION (GAMMA+EMMA)	TOTAL EMISSION	-HOUR 0.		-MIN 1.000E+00-SEC		UNKNOWN NUCL. CONTR.
				(WATT)	(I / OP. POWER)	(I / TOTAL EMISSION)	(I / TOTAL EMISSION)	
37	372260	1.45	1.45	28315E+01	297336E+00	311672E+00		
38	783200	1.45	1.45	28315E+01	297336E+00	311672E+00		
39	138800	1.45	1.45	57264E+01	590114E+00	310998E+00		
40	274660	1.45	1.45	11544E+02	100000E+01	311337E+00		
41	162370	1.45	1.45	19550E+02	90660E+01	303511E+00		
42	144320	1.45	1.45	10771E+02	50750E+01			
43	126000	1.45	1.45	10200E+02	46000E+01			
44	126000	1.45	1.45	10200E+02	46000E+01			
45	174650	1.45	1.45	10771E+02	50750E+01			
46	140200	1.45	1.45	10200E+02	46000E+01			
47	144320	1.45	1.45	10771E+02	50750E+01			
48	174650	1.45	1.45	10771E+02	50750E+01			
49	108100	1.45	1.45	9345E+02	40000E+01			
50	174650	1.45	1.45	10771E+02	50750E+01			
51	135240	1.45	1.45	10200E+02	46000E+01			
52	124800	1.45	1.45	10200E+02	46000E+01			
53	135240	1.45	1.45	10200E+02	46000E+01			
54	174650	1.45	1.45	10771E+02	50750E+01			
55	174650	1.45	1.45	10771E+02	50750E+01			
56	174650	1.45	1.45	10771E+02	50750E+01			
57	174650	1.45	1.45	10771E+02	50750E+01			
58	174650	1.45	1.45	10771E+02	50750E+01			
59	174650	1.45	1.45	10771E+02	50750E+01			
60	174650	1.45	1.45	10771E+02	50750E+01			
61	174650	1.45	1.45	10771E+02	50750E+01			
62	174650	1.45	1.45	10771E+02	50750E+01			
63	174650	1.45	1.45	10771E+02	50750E+01			
64	174650	1.45	1.45	10771E+02	50750E+01			
65	174650	1.45	1.45	10771E+02	50750E+01			
66	174650	1.45	1.45	10771E+02	50750E+01			
67	174650	1.45	1.45	10771E+02	50750E+01			
68	174650	1.45	1.45	10771E+02	50750E+01			
69	174650	1.45	1.45	10771E+02	50750E+01			
70	174650	1.45	1.45	10771E+02	50750E+01			
71	174650	1.45	1.45	10771E+02	50750E+01			
72	174650	1.45	1.45	10771E+02	50750E+01			
73	174650	1.45	1.45	10771E+02	50750E+01			
74	174650	1.45	1.45	10771E+02	50750E+01			
75	174650	1.45	1.45	10771E+02	50750E+01			
76	174650	1.45	1.45	10771E+02	50750E+01			
77	174650	1.45	1.45	10771E+02	50750E+01			
78	174650	1.45	1.45	10771E+02	50750E+01			
79	174650	1.45	1.45	10771E+02	50750E+01			
80	174650	1.45	1.45	10771E+02	50750E+01			
81	174650	1.45	1.45	10771E+02	50750E+01			
82	174650	1.45	1.45	10771E+02	50750E+01			
83	174650	1.45	1.45	10771E+02	50750E+01			
84	174650	1.45	1.45	10771E+02	50750E+01			
85	174650	1.45	1.45	10771E+02	50750E+01			
86	174650	1.45	1.45	10771E+02	50750E+01			
87	174650	1.45	1.45	10771E+02	50750E+01			
88	174650	1.45	1.45	10771E+02	50750E+01			
89	174650	1.45	1.45	10771E+02	50750E+01			
90	174650	1.45	1.45	10771E+02	50750E+01			
91	174650	1.45	1.45	10771E+02	50750E+01			
92	174650	1.45	1.45	10771E+02	50750E+01			
93	174650	1.45	1.45	10771E+02	50750E+01			
94	174650	1.45	1.45	10771E+02	50750E+01			
95	174650	1.45	1.45	10771E+02	50750E+01			
96	174650	1.45	1.45	10771E+02	50750E+01			
97	174650	1.45	1.45	10771E+02	50750E+01			
98	174650	1.45	1.45	10771E+02	50750E+01			
99	174650	1.45	1.45	10771E+02	50750E+01			
100	174650	1.45	1.45	10771E+02	50750E+01			
TOTAL	10727E+18	2.7480E+03	3.9667E+00	4.7314E+00	4.3461E+00			

337 10

TABLE XIV (continued)

EL ELEMENT	AN (M)	BETA EMISSION	GAMMA EMISSION	TOTAL EMISSION	3.650E+02-DAY 0.	-HOUR 0.	(WATT)	-MIN 1.000E+01-SEC	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
KR 88	14	14	14	14	41289E+01	21878E+01	21878E+01	28709E+00	16221E+00	16221E+00	20207E+00
KR 89	14	14	14	14	46608E+01	23107E+01	23107E+01	30384E+00	16221E+00	16221E+00	20749E+00
KR 90	14	14	14	14	90735E+01	44985E+01	44985E+01	59154E+00	16221E+00	16221E+00	21389E+00
KR 91	14	14	14	14	15338E+02	76047E+01	76047E+01	10000E+01	16221E+00	16221E+00	21051E+00
Y 92	14	14	14	14							
Y 93	14	14	14	14							
Y 94	14	14	14	14							
Y 95	14	14	14	14							
SR 95	14	14	14	14							
SR 96	14	14	14	14							
SR 98	14	14	14	14							
NR 00	14	14	14	14							
NR 01	14	14	14	14							
NR 02	14	14	14	14							
NR 03	14	14	14	14							
NR 04	14	14	14	14							
NR 05	14	14	14	14							
NR 06	14	14	14	14							
NR 07	14	14	14	14							
NR 08	14	14	14	14							
NR 09	14	14	14	14							
NR 10	14	14	14	14							
NR 11	14	14	14	14							
NR 12	14	14	14	14							
NR 13	14	14	14	14							
NR 14	14	14	14	14							
NR 15	14	14	14	14							
NR 16	14	14	14	14							
NR 17	14	14	14	14							
NR 18	14	14	14	14							
NR 19	14	14	14	14							
NR 20	14	14	14	14							
NR 21	14	14	14	14							
NR 22	14	14	14	14							
NR 23	14	14	14	14							
NR 24	14	14	14	14							
NR 25	14	14	14	14							
NR 26	14	14	14	14							
NR 27	14	14	14	14							
NR 28	14	14	14	14							
NR 29	14	14	14	14							
NR 30	14	14	14	14							
NR 31	14	14	14	14							
NR 32	14	14	14	14							
NR 33	14	14	14	14							
NR 34	14	14	14	14							
NR 35	14	14	14	14							
NR 36	14	14	14	14							
NR 37	14	14	14	14							
NR 38	14	14	14	14							
NR 39	14	14	14	14							
NR 40	14	14	14	14							
NR 41	14	14	14	14							
NR 42	14	14	14	14							
NR 43	14	14	14	14							
NR 44	14	14	14	14							
NR 45	14	14	14	14							
NR 46	14	14	14	14							
NR 47	14	14	14	14							
NR 48	14	14	14	14							
NR 49	14	14	14	14							
NR 50	14	14	14	14							
NR 51	14	14	14	14							
NR 52	14	14	14	14							
NR 53	14	14	14	14							
NR 54	14	14	14	14							
NR 55	14	14	14	14							
NR 56	14	14	14	14							
NR 57	14	14	14	14							
NR 58	14	14	14	14							
NR 59	14	14	14	14							
NR 60	14	14	14	14							
NR 61	14	14	14	14							
NR 62	14	14	14	14							
NR 63	14	14	14	14							
NR 64	14	14	14	14							
NR 65	14	14	14	14							
NR 66	14	14	14	14							
NR 67	14	14	14	14							
NR 68	14	14	14	14							
NR 69	14	14	14	14							
NR 70	14	14	14	14							
NR 71	14	14	14	14							
NR 72	14	14	14	14							
NR 73	14	14	14	14							
NR 74	14	14	14	14							
NR 75	14	14	14	14							
NR 76	14	14	14	14							
NR 77	14	14	14	14							
NR 78	14	14	14	14							
NR 79	14	14	14	14							
NR 80	14	14	14	14							
NR 81	14	14	14	14							
NR 82	14	14	14	14							
NR 83	14	14	14	14							
NR 84	14	14	14	14							
NR 85	14	14	14	14							
NR 86	14	14	14	14							
NR 87	14	14	14	14							
NR 88	14	14	14	14							
NR 89	14	14	14	14							
NR 90	14	14	14	14							
NR 91	14	14	14	14							
NR 92	14	14	14	14							
NR 93	14	14	14	14							
NR 94	14	14	14	14							
NR 95	14	14	14	14							
NR 96	14	14	14	14							
NR 97	14	14	14	14							
NR 98	14	14	14	14							
NR 99	14	14	14	14							
NR 100	14	14	14	14							
TOTAL	12169E+18	30167E+03	49390E+00	57354E+00	53481E+00						

337 199

TABLE XIV (continued)

ELEMENT	BETA EMISSION	3.650E+02-DAY 0.	-HOUR 0.	-MIN 1.000E+02-SEC	UNKNOWN NUCL. CONTR.
	CASCADE+GAMMA	(WATT)	(L/OP.POWER)	(1/TOTAL EMISSION)	
	TOTAL EMISSION				
AL	33373E+01	61198E+01	47395E+01	27337E+00	101033E+00
AR	35675E+01	54601E+01	14820E+01	319409E+00	890233E+01
AS	48434E+01	89340E+01	21888E+01	502786E+00	945620E+01
AT	18145E+01	32417E+01	14020E+01	106000E+01	947820E+01
AU	22520E+01	10072E+01	45525E+01	27337E+00	101033E+00
BA	22721E+01	93349E+01	13209E+01	319409E+00	890233E+01
BB	21443E+01	10370E+01	37761E+01	502786E+00	945620E+01
BC	54214E+01	10007E+01	92564E+01	27337E+00	101033E+00
BD	49166E+01	94454E+01	10158E+01	319409E+00	890233E+01
BE	37207E+01	79454E+01	18337E+01	502786E+00	945620E+01
BF	18177E+01	67162E+01	10702E+01	27337E+00	101033E+00
BG	24770E+01	11451E+01	16373E+01	319409E+00	890233E+01
BH	49200E+01	11815E+01	17353E+01	502786E+00	945620E+01
BI	11550E+01	10640E+01	8208E+01	27337E+00	101033E+00
BJ	75222E+01	77537E+01	19007E+01	319409E+00	890233E+01
BK	10244E+01	10931E+01	3088E+01	502786E+00	945620E+01
BL	30725E+01	38681E+01	6646E+01	27337E+00	101033E+00
BM	15164E+01	14515E+01	2500E+01	319409E+00	890233E+01
BN	50355E+01	88515E+01	1820E+01	502786E+00	945620E+01
BO	30735E+01	10015E+01	4722E+01	27337E+00	101033E+00
BP	22160E+01	5040E+01	1902E+01	319409E+00	890233E+01
BR	3865E+01	30569E+01	63803E+01	502786E+00	945620E+01
TOTAL	21739E+18	30569E+03	63803E+00	67578E+00	

337 200

TABLE XIV (continued)

OUTPUT TIME	3.650E+02-DAY Q.	-HOUR Q. (WATT)	-MIN 1.000E+03-SEC (I/OP, POWER)	(I/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
ELEMENT	AM(N)	C(N)	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
K	15	3757	19450	3365	13000
R	11	5074	4630	1169	2749
B	17	9407	5318	2073	1735
S	7	1082	5488	7603	2887
Y	9	6102	3973	4056	9140
Y	5	3709	2702	5382	5091
Z	9	1030	4705	3728	5091
N	7	4030	1615	2957	1357
N	7	8040	1615	9770	5574
M	5	7407	3570	1880	2323
E	6	7407	1306	5027	2323
H	7	1102	1306	1088	1493
H	7	8040	1306	2889	5472
X	5	1020	2148	8050	2747
C	2	1020	1143	1009	3032
S	6	3005	2254	7083	1767
B	7	3005	2143	4036	2689
A	7	3005	2143	4036	2689
J	4	2803	3445	1236	1511
L	3	2502	3445	6837	1305
J	3	3005	4702	1133	1388
P	3	5470	1600	8337	1129
TOTAL	51577E+19	27707E+03	74051E+00	82314E+00	78631E+00
BETA EMISSION		159345E+01	79010E+02	61935E+00	48814E+01
GAMMA EMISSION		198481E+01	98255E+02	32577E+00	40897E+01
(BETA+GAMMA)		35782E+01	17236E+01	58770E+00	44424E+01
TOTAL EMISSION		60833E+01	301605E+01	100000E+01	44411E+01

337 201

TABLE XIV (continued)

**OUTPUT TIME	---	3.650E+02-DAY	0.	-HOUR	0.	(WATT)	--MIN 1.000E+04-SEC	(1/3P-POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION				79317E+00					256727E+00	
GAMMA EMISSION				90079E+00					310964E+00	
TOTAL EMISSION				17893E+01					567721E+01	122433E-02
				30893E+01					100000E+01	122847E-02
AM(N)										
AN(N)										
AV(N)										
AW(N)										
AX(N)										
AY(N)										
AZ(N)										
BX(N)										
BY(N)										
BZ(N)										
CX(N)										
CY(N)										
CZ(N)										
DX(N)										
DY(N)										
DZ(N)										
EX(N)										
EY(N)										
EZ(N)										
FX(N)										
FY(N)										
FZ(N)										
GX(N)										
GY(N)										
GZ(N)										
HX(N)										
HY(N)										
HZ(N)										
IX(N)										
IY(N)										
IZ(N)										
JX(N)										
JY(N)										
JZ(N)										
KX(N)										
KY(N)										
KZ(N)										
LX(N)										
LY(N)										
LZ(N)										
MX(N)										
MY(N)										
MZ(N)										
NX(N)										
NY(N)										
NZ(N)										
OX(N)										
OY(N)										
OX(N)										
OY(N)										
OZ(N)										
PX(N)										
PY(N)										
PZ(N)										
QX(N)										
QY(N)										
QZ(N)										
RX(N)										
RY(N)										
RZ(N)										
SX(N)										
SY(N)										
SZ(N)										
TX(N)										
TY(N)										
TZ(N)										
UX(N)										
UY(N)										
UZ(N)										
VX(N)										
VY(N)										
VZ(N)										
WX(N)										
WY(N)										
WZ(N)										
XX(N)										
XY(N)										
XZ(N)										
YX(N)										
YY(N)										
YZ(N)										
ZX(N)										
ZY(N)										
ZZ(N)										
TOTAL				21872E+03					87285E+00	87579E+00

337 202

TABLE XIV (continued)

ELEMENT	AN(N)	BETA EMISSION	GAMMA EMISSION	TOTAL EMISSION	3.650E+02-DAY C.	- HOUR C.	(WATT)	-MIN 1.000E+05-SEC	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL.	CONTR.
ALUMINUM	18007	3E+01	1E+00	1E+00	0	337577E+00	167366E-02	238367E+00	86143E-06	337577E+00	1E+00	499475E-04
ARGON	36014	1E+00	1E+00	1E+00	0	474098E+00	235051E-02	234766E+00	12752E-03	474098E+00	1E+00	356538E-04
BARIUM	56028	1E+00	1E+00	1E+00	0	811675E+00	402417E-02	573133E+00	19350E-02	811675E+00	1E+00	412980E-04
BISMUTH	83008	1E+00	1E+00	1E+00	0	141621E+01	702135E-02	100000E+01	16606E-02	141621E+01	1E+00	397857E-04
CAESIUM	133001	1E+00	1E+00	1E+00	0	979795E+01	103926E+00	979795E+01	94709E-02	979795E+01	1E+00	1E+00
COBALT	60059	1E+00	1E+00	1E+00	0	171422E+01	862240E-01	171422E+01	28669E-02	171422E+01	1E+00	1E+00
CURIE	242009	1E+00	1E+00	1E+00	0	372700E+01	52719E-01	372700E+01	26099E-02	372700E+01	1E+00	1E+00
FRANCIUM	87008	1E+00	1E+00	1E+00	0	127854E+01	69627E-02	127854E+01	16206E-02	127854E+01	1E+00	1E+00
GADOLINIUM	153005	1E+00	1E+00	1E+00	0	558255E+01	44427E-02	558255E+01	33562E-02	558255E+01	1E+00	1E+00
GERMANIUM	76003	1E+00	1E+00	1E+00	0	272292E+01	19652E-01	272292E+01	19254E-02	272292E+01	1E+00	1E+00
INDIUM	115004	1E+00	1E+00	1E+00	0	469777E+02	3740E-01	469777E+02	11191E-02	469777E+02	1E+00	1E+00
IRIDIUM	203008	1E+00	1E+00	1E+00	0	323033E+02	203819E-01	323033E+02	11781E-02	323033E+02	1E+00	1E+00
LEAD	208008	1E+00	1E+00	1E+00	0	104233E+01	180855E-01	104233E+01	39281E-02	104233E+01	1E+00	1E+00
LITHIUM	70007	1E+00	1E+00	1E+00	0	174383E+01	109088E+00	174383E+01	2922E-02	174383E+01	1E+00	1E+00
MANGANESE	55005	1E+00	1E+00	1E+00	0	564833E+01	408618E-01	564833E+01	19137E-02	564833E+01	1E+00	1E+00
NICKEL	58009	1E+00	1E+00	1E+00	0	55671E+01	15677E-01	55671E+01	20413E-02	55671E+01	1E+00	1E+00
PLUTONIUM	239010	1E+00	1E+00	1E+00	0	15299E+03	94174E+00	15299E+03	94292E+00	15299E+03	1E+00	94243E+00
TOTAL	13831E+20											

337 203

TABLE XIV (continued)

**OUTPUT TIME --- 3.650E+02-DAY 0. -HOUR 0. -MIN 1.000E+06-SEC

(WATT) (1/OP.POWER) (1/TOTAL EMISSION) UNKNOWN NUCL. CONTR.

BETA EMISSION .172960E+00 .857513E-03 .249978E+00 .160459E-07
 GAMMA EMISSION .222516E+00 .110320E-02 .321600E+00 .138309E-07
 (BETA+GAMMA) .395476E+00 .196072E-02 .571579E+00 .147996E-07
 TOTAL EMISSION .641902E+00 .343035E-02 .100000E+01 .150165E-07

ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
SR 89	.16127E+19	.69174E+01	.13575E+00	.15911E-05	.59372E-01
Y 91	.23258E+19	.86188E+01	.17898E+00	.61065E-03	.78619E-01
ZR 95	.27678E+19	.93798E+01	.38738E-01	.18387E+00	.12039E+00
NB 95	.16703E+19	.10303E+02	.16685E-01	.21000E+00	.12545E+00
RU103	.78226E+18	.43104E+01	.11320E-01	.58632E-01	.37940E-01
IL 131	.67140E+17	.19107E+01	.11626E-01	.18968E-01	.15757E-01
IL 133	.27727E+19	.67733E+00	.10568E-01	.37767E-01	.25871E-01
BA140	.33247E+18	.56777E+01	.56438E-01	.27962E-01	.40416E-01
LA140	.50034E+17	.64735E+01	.12223E+00	.39313E+00	.27463E+00
CE141	.11695E+19	.78025E+01	.40496E-01	.21094E-01	.29279E-01
PR143	.38805E+18	.61958E+01	.68772E-01	.47403E-02	.30077E-01
PR144	.29191E+15	.52745E+01	.22125E+00	.87435E-02	.93147E-01
ND147	.94719E+17	.18569E+01	.15312E-01	.0	.11644E-01
TOTAL	.11261E+20	.75208E+02	.92816E+00	.96507E+00	.94693E+00

**OUTPUT TIME --- 3.650E+02-DAY 0. -HOUR 0. -MIN 1.000E+07-SEC

(WATT) (1/OP.POWER) (1/TOTAL EMISSION) UNKNOWN NUCL. CONTR.

BETA EMISSION .558816E-01 .277053E-03 .296285E+00 .717808E-08
 GAMMA EMISSION .435871E-01 .216099E-03 .231100E+00 .932554E-08
 (BETA+GAMMA) .994687E-01 .493152E-03 .527385E+00 .811910E-08
 TOTAL EMISSION .188607E+00 .935089E-03 .100000E+01 .784688E-08

ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
SR 89	.38657E+18	.16581E+01	.10072E+00	.19470E-05	.56584E-01
Y 90	.28558E+16	.23185E+00	.22964E-01	.63833E-05	.12904E-01
Y 91	.67707E+18	.25091E+01	.16127E+00	.90754E-03	.90997E-01
ZR 95	.89540E+18	.30345E+01	.38788E-01	.30366E+00	.15488E+00
NB 95	.87367E+18	.53893E+01	.27011E-01	.56075E+00	.26090E+00
RU103	.72487E+18	.68807E+00	.55930E-02	.47781E-01	.24080E-01
RH106	.42109E+12	.26383E+00	.40090E-01	.67599E-02	.23485E-01
CE141	.12681E+18	.84604E+00	.13591E-01	.11677E-01	.12752E-01
CE144	.53673E+19	.40914E+01	.37557E-01	.17168E-01	.86233E-01
PR144	.22644E+15	.40915F+01	.53120E+00	.16792E-01	.30579E+00
TOTAL	.84522E+19	.22804E+02	.97078E+00	.96551E+00	.97297E+00

337 201

TABLE XIV (continued)

**OUTPUT TIME --- 3.650E+02-DAY 0. -HOUR 0. -MIN 1.000E+08-SEC

	(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION	.467095E-02	.231579E-04	.359699E+00	.664278E-07
GAMMA EMISSION	.989594E-03	.490627E-05	.762063E-01	.317538E-06
(BETA+GAMMA)	.566054E-02	.280642E-04	.435905E+00	.110336E-06
TOTAL EMISSION	.129857E-01	.643814E-04	.100000E+01	.886767E-07

ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
SR 90	.10414E+20	.21630E+00	.48932E-01	0.	.40378E-01
Y 90	.26650E+16	.21633E+00	.25637E+00	.26237E-03	.21160E+00
RH106	.59256E+11	.37127E-01	.67494E-01	.41899E-01	.63019E-01
CS137	.11094E+20	.21844E+00	.48351E-01	0.	.39898E-01
BA137M	.16890E+13	.20665E+00	0.	.81953E+00	.14327E+00
CE144	.42328E+18	.32281E+00	.35451E-01	.59661E-01	.39684E-01
PR144	.17866E+14	.32282E+00	.50142E+00	.58355E-01	.42396E+00
PM147	.17200E+19	.38948E+00	.33559E-01	.23327E-03	.27733E-01
TOTAL	.23654E+20	.19300E+01	.99157E+00	.994E+00	.98954E+00

**OUTPUT TIME --- 3.650E+02-DAY 0. -HOUR 0. -MIN 1.000E+09-SEC

	(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION	.836934E-03	.414940E-05	.319468E+00	.101877E-06
GAMMA EMISSION	.421350E-03	.208879E-05	.160834E+00	.205019E-06
(BETA+GAMMA)	.125828E-02	.623840E-05	.480302E+00	.136415E-06
TOTAL EMISSION	.261978E-02	.129885E-04	.100000E+01	.120794E-06

ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
SR 90	.52145E+19	.10831E+00	.13675E+00	0.	.90957E-01
Y 90	.13345E+16	.10834E+00	.71647E+00	.30856E-03	.47665E+00
CS137	.57589E+19	.11339E+00	.14098E+00	0.	.93170E-01
BA137M	.87676E+12	.10727E+00	0.	.99914E+00	.33457E+00
TOTAL	.10975E+20	.43731E+00	.99329E+00	.99945E+00	.79535E+00

127

337
205

TABLE XIV (continued)

**OUTPUT TIME --- 3.650E+02-DAY 0.		- HOUR 0.	- MIN 1.000E+10-SEC	UNKNOWN NUCL. CONTR.	
		(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	
BETA EMISSION		.952929E-06	.472449E-08	.296605E+00	.253007E-06
GAMMA EMISSION		.605725E-06	.300310E-08	.188536E+00	.449064E-06
(BETA+GAMMA)		.153889E-05	.772759E-08	.485141E+00	.329199E-06
TOTAL EMISSION		.321278E-05	.159285E-07	.100000E+01	.282741E-06
ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
SR 90	.51683E+15	.10735E-03	.11904E+00	0.	.72779E-01
Y 90	.13227E+13	.10738E-03	.62369E+00	.21274E-03	.38139E+00
TC 99	.11900E+20	.33187E-04	.18165E-01	0.	.11105E-01
CS137	.81808E+16	.16108E-03	.17476E+00	0.	.10685E+00
RA137M	.12455E+10	.15236E-03	0.	.98730E+00	.38369E+00
SM151	.71688E+17	.47317E-03	.57388E-01	.18520E-02	.35806E-01
TOTAL	.11985E+20	.10345E-02	.99304E+00	.98937E+00	.99161E+00

**OUTPUT TIME --- 3.650E+02-DAY 0.		- HOUR 0.	- MIN 1.000E+11-SEC	UNKNOWN NUCL. CONTR.	
		(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	
BETA EMISSION		.236817E-07	.117410E-09	.293203E+00	.101520E-04
GAMMA EMISSION		.632987E-08	.313826E-10	.783791E-01	.428590E-04
(BETA+GAMMA)		.300116E-07	.148793E-09	.371573E+00	.170504E-04
TOTAL EMISSION		.607689E-07	.400441E-09	.100000E+01	.112156E-04
ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
ZR 93	.12772E+20	.49588E-05	.23907E-01	0.	.18786E-01
NB 93M	.95162E+14	.47109E-05	0.	.13409E+00	.28282E-01
TC 99	.11790E+20	.32880E-04	.72417E+00	0.	.57143E+00
JM126	.10944E+18	.65011E-06	.11389E-01	.30314E-01	.15381E-01
CB126	.52051E+10	.91016E-07	.81548E-02	.22754E+00	.54427E-01
SB126M	.39561E+08	.65011E-06	.16329E+00	.60582E+00	.25663E+00
CS135	.12979E+20	.33521E-05	.58223E-01	.31387E-03	.46009E-01
TOTAL	.37650E+20	.47293E-04	.98903E+00	.99808E+00	.99094E+00

128

337 206

TABLE XIV (continued)

**OUTPUT TIME --- 3.650E+02-DAY 0. -HOUR 0. -MIN 1.000E+12-SEC

	(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION	.213004E-07	.105604E-09	.293166E+00	.112769E-04
GAMMA EMISSION	.533745E-08	.264623E-10	.734615E-01	.508087E-04
(BETA+GAMMA)	.266378E-07	.132067E-09	.366627E+00	.191980E-04
TOTAL EMISSION	.726565E-07	.360220E-09	.100000E+01	.124571E-04

ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
ZR 93	.12608E+20	.48951E-05	.26129E-01	0.	.20893E-01
NB 93M	.93939E+14	.46504E-05	0.	.15698E+00	.31455E-01
YC 99	.10744E+20	.29964E-04	.73372E+00	0.	.58670E+00
SN126	.89797E+17	.53343E-06	.10390E-01	.29499E-01	.14219E-01
SB126	.42709E+10	.74680E-07	.74392E-02	.22142E+00	.50314E-01
SB126M	.32461E+08	.53343E-06	.14896E+00	.58951E+00	.23724E+00
CS135	.12866E+20	.33234E-05	.64178E-01	.36904E-03	.51392E-01
TOTAL	.36309E+20	.43975E-04	.99082E+00	.99778E+00	.99221E+00

**OUTPUT TIME --- 3.650E+02-DAY 0. -HOUR 0. -MIN 1.000E+13-SEC

	(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION	.843278E-08	.418085E-10	.289974E+00	.284225E-04
GAMMA EMISSION	.137009E-08	.679272E-11	.471126E-01	.197753E-03
(BETA+GAMMA)	.980287E-08	.486012E-10	.337086E+00	.520889E-04
TOTAL EMISSION	.290812E-07	.144180E-09	.100000E+01	.310570E-04

ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
ZR 93	.11079E+20	.43014E-05	.57994E-01	0.	.49888E-01
NB 93M	.82546E+14	.40864E-05	0.	.53739E+00	.75107E-01
YC 99	.42445E+19	.11898E-04	.73217E+00	0.	.62984E+00
SB126	.59077E+09	.10330E-07	.25992E-02	.11931E+00	.18912E-01
SB126M	.44901E+07	.73786E-07	.52046E-01	.31767E+00	.89171E-01
CS135	.11807E+20	.30495E-05	.14875E+00	.13102E-02	.12814E+00
TOTAL	.27130E+20	.23359E-04	.99356E+00	.97569E+00	.99106E+00

129

337 207

TABLE XV

CONTRIBUTION TO EACH IMPORTANT NUCLIDE TO DECAY POWER AS A FUNCTION OF COOLING TIME FOR INFINITE IRRADIATION OF ²³⁵U BY THERMAL NEUTRONS

AN(N) = Number of Atoms
 C(N) = Activity (C_i)
 B(N)/TOTB = Contribution to Beta Decay Power
 G(N)/TOTG = Contribution to Gamma Decay Power
 BG(N)/TOTBG = Contribution to Total Sensible Decay Power

**OUTPUT TIME --- 1.157E+06-DAY 0.		-HOUR 0.	-MIN 0.	-SEC	UNKNOWN NUCL. CONTR.	
		(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)		
BETA EMISSION		.648738E+01	.321635E-01	.300062E+00	.347844E+00	
GAMMA EMISSION		.624796E+01	.309765E-01	.288988E+00	.352755E+00	
(BETA+GAMMA)		.127353E+02	.631430E-01	.589349E+00	.350253E+00	
TOTAL EMISSION		.216202E+02	.107190E+00	.100000E+01	.339806E+00	
ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG	
BR 86	.37055E+13	.42587E+01	.98927E-02	.10561E-01	.10222E-01	
KP 89	.77446E+14	.78764E+01	.90676E-02	.14897E-01	.11900E-01	
RB 89	.40227E+15	.81558E+01	.68906E-02	.17428E-01	.12006E-01	
RB 90	.63945E+14	.78295E+01	.11864E-01	.19759E-01	.15738E-01	
RB 91	.29955E+14	.96753E+01	.13518E-01	.15640E-01	.14533E-01	
RB 92	.19511E+13	.81589E+01	.27560E-01	.16564E-02	.14833E-01	
RB 93	.16766E+13	.60613E+01	.10929E-01	.12664E-01	.11770E-01	
SR 93	.26255E+15	.10786E+02	.11429E-01	.13762E-01	.12557E-01	
Y 94	.64853E+15	.10602E+02	.16374E-01	.10028E-01	.13261E-01	
SR 95	.12747E+14	.91847E+01	.13804E-01	.15970E-01	.14886E-01	
Y 95	.36974E+15	.10789E+02	.17479E-01	.41127E-02	.10092E-01	
Y 96	.74811E+14	.10156E+02	.10707E-01	.39017E-01	.24596E-01	
Y 97	.50514E+12	.65254E+01	.10775E-01	.12466E-01	.11603E-01	
Y 98	.97065E+11	.60613E+01	.12014E-01	.13899E-01	.12938E-01	
ZR 99	.12441E+13	.97113E+01	.11057E-01	.12791E-01	.11698E-01	
NB100	.78365E+12	.97871E+01	.15649E-01	.18104E-01	.16883E-01	
NB102	.98974E+12	.63937E+01	.11009E-01	.12737E-01	.11887E-01	
I 134	.21736E+16	.12902E+02	.72981E-02	.30980E-01	.18916E-01	
I 136	.22601E+14	.51013E+01	.98371E-02	.10516E-01	.10170E-01	
CS138	.11482E+16	.11134E+02	.12339E-01	.24971E-01	.18536E-01	
XE139	.18586E+14	.57047E+01	.13909E-01	.6851E-02	.10446E-01	
CS139	.32586E+15	.10824E+02	.16948E-01	.31483E-02	.10178E-01	
CS140	.33454E+14	.98387E+01	.14743E-01	.17485E-01	.16008E-01	
LA140	.81648E+17	.10564E+02	.53178E-02	.22848E-01	.13918E-01	
LA142	.29779E+16	.10023E+02	.77550E-02	.22767E-01	.15120E-01	
LA144	.19770E+14	.90997E+01	.12553E-01	.16746E-01	.14610E-01	
TOTAL	.90319E+17	.23220E+03	.32072E+00	.40175E+00	.36047E+00	

130

337 200

TABLE XV (continued)

**OUTPUT TIME --- 1.157E+08-DAY 0.		-HOUR 0.	-MIN 1.000E+00-SEC		
		(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION		.592821E+01	.293912E-01	.297936E+00	.305736E+00
GAMMA EMISSION		.576959E+01	.266040E-01	.289964E+00	.308657E+00
(BETA+GAMMA)		.116978E+02	.579950E-01	.587900E+00	.307177E+00
TOTAL EMISSION		.198976E+02	.986495E-01	.100000E+01	.298331E+00
ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
BR 68	.35680E+13	.41007E+01	.10424E-01	.11012E-01	.10714E-01
KR 89	.77266E+14	.78582E+01	.98998E-02	.16052E-01	.12934E-01
RB 89	.40222E+15	.81555E+01	.75403E-02	.18873E-01	.13130E-01
RR 90	.13200E+14	.76514E+01	.99805E-02	.10560E-01	.10266E-01
RB 90	.63899E+14	.78239E+01	.12974E-01	.21382E-01	.17121E-01
RB 91	.29808E+14	.56280E+01	.14721E-01	.16853E-01	.15773E-01
RB 92	.17461E+13	.73016E+01	.26991E-01	.16053E-02	.14470E-01
RB 93	.16889E+13	.54549E+01	.10763E-01	.12322E-01	.11532E-01
SR 93	.26237E+15	.10779E+02	.12498E-01	.14893E-01	.13679E-01
SR 94	.41312E+14	.99221E+01	.86267E-02	.12664E-01	.10618E-01
Y 94	.64851E+15	.10601E+02	.17918E-01	.10859E-01	.14437E-01
SR 95	.12463E+14	.89600E+01	.14737E-01	.16872E-01	.15790E-01
Y 95	.36968E+15	.10787E+02	.19124E-01	.44530E-02	.11888E-01
Y 96	.74651E+14	.10134E+02	.11692E-01	.42161E-01	.26720E-01
NB 98M	.14557E+13	.97397E+01	.19330E-01	.11595E-02	.10368E-01
ZR 99	.10027E+13	.78265E+01	.97511E-02	.11144E-01	.10448E-01
NB100	.74816E+12	.93438E+01	.16349E-01	.18717E-01	.17517E-01
NB102	.84479E+12	.54573E+01	.10283E-01	.11773E-01	.11010E-01
I 134	.21736E+16	.12902E+02	.79864E-02	.33548E-01	.20594E-01
I 135	.13594E+17	.10702E+02	.41076E-02	.17480E-01	.10703E-01
I 136	.22529E+14	.50851E+01	.10731E-01	.11352E-01	.11037E-01
XE137	.12446E+15	.10147E+02	.18270E-01	.18925E-02	.13192E-01
CS136	.11468E+16	.11134E+02	.13503E-01	.27041E-01	.20180E-01
XE139	.18390E+14	.85737E+01	.14992E-01	.73074E-02	.11202E-01
CS139	.32578E+15	.10821E+02	.18542E-01	.34084E-02	.11078E-01
CS140	.33313E+14	.97972E+01	.16066E-01	.18854E-01	.17441E-01
LA140	.81648E+17	.10564E+02	.58194E-02	.24742E-01	.15300E-01
CS141	.97003E+13	.72981E+01	.98032E-02	.11223E-01	.10504E-01
LA142	.29719E+16	.10023E+02	.84865E-02	.24654E-01	.16461E-01
LA144	.19493E+14	.90644E+01	.13684E-01	.18064E-01	.15845E-01
TOTAL	.10410E+18	.26764E+03	.38559E+00	.45294E+00	.41881E+00

131

337 209

TABLE XV (continued)

**OUTPUT TIME --- 1.157E+08-DAY 0.		- HOUR 0.	-MIN 1.000E+01-SEC		UNKNOWN NUCL. CONTR.
		(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	
BETA EMISSION		.432580E+01	.224383E-01	.288665E+00	.214714E+00
GAMMA EMISSION		.170411E+01	.253223E-01	.300038E+00	.205930E+00
(BETA+GAMMA)		.922291E+01	.457605E-01	.588703E+00	.210237E+00
TOTAL EMISSION		.156784E+02	.777312E-01	.100000E+01	.205956E+00
ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
RB88	.353997E+15	.620899E+01	.169699E-01	.501499E-02	.108777E-01
RB89	.751167E+14	.764466E+01	.126157E-01	.191533E-01	.159477E-01
RB90	.402122E+15	.815288E+01	.987366E-02	.231400E-01	.166355E-01
RB90	.109899E+14	.636933E+01	.108833E-01	.107811E-01	.108331E-01
RB90	.632997E+14	.775033E+01	.168344E-01	.259788E-01	.214955E-01
RB91	.279993E+14	.904177E+01	.161088E-01	.194122E-01	.187733E-01
Y92	.692039E+14	.101733E+02	.193611E-01	.322622E-02	.111138E-01
Y93	.259994E+15	.106799E+02	.162200E-01	.180977E-01	.171766E-01
Y94	.383864E+14	.921888E+01	.104999E-01	.144311E-01	.125503E-01
Y94	.648177E+15	.105966E+02	.234588E-01	.133122E-01	.182884E-01
Y95	.978662E+13	.705133E+01	.151911E-01	.162855E-01	.197488E-01
Y95	.368875E+15	.107600E+02	.249877E-01	.544766E-02	.150288E-01
Y96	.722222E+13	.980455E+01	.148177E-01	.500300E-01	.327664E-01
Z98M	.127622E+15	.853884E+01	.221977E-01	.124677E-02	.115199E-01
NB100	.992222E+15	.439944E+01	.100833E-01	.178099E-01	.104553E-01
MO101	.397677E+15	.849277E+01	.640488E-02	.143207E-01	.104922E-01
TC102	.199110E+15	.706466E+01	.162077E-01	.436744E-02	.101733E-01
TC102	.316107E+15	.716711E+01	.461422E-02	.204100E-01	.126655E-01
TC102	.211733E+15	.129001E+02	.104600E-01	.411422E-01	.260977E-01
TC102	.133599E+15	.107000E+02	.537966E-02	.214355E-01	.135633E-01
TC102	.211733E+15	.491022E+01	.135722E-01	.134445E-01	.135507E-01
TC102	.122666E+15	.999700E+01	.235788E-01	.238700E-02	.127277E-01
XC103	.476677E+15	.105334E+02	.912811E-02	.151799E-01	.122122E-01
XC103	.111488E+15	.111132E+02	.176844E-01	.331600E-01	.235722E-01
XC103	.157455E+15	.737977E+01	.169033E-01	.771433E-02	.122200E-01
CS139	.324499E+15	.107990E+02	.242188E-01	.416833E-02	.150999E-01
CS140	.316492E+15	.932004E+01	.200200E-01	.219999E-01	.210299E-01
LA140	.811646E+15	.105566E+02	.762227E-02	.303477E-01	.192044E-01
CS141	.761656E+15	.575388E+01	.101132E-01	.108622E-01	.105044E-01
BA141	.579755E+15	.988227E+01	.112339E-01	.103899E-01	.108066E-01
LA142	.297755E+15	.100222E+02	.111116E-01	.302238E-01	.208622E-01
LA143	.447433E+15	.116855E+01	.116855E-01	.125226E-01	.121133E-01
LA144	.185228E+15	.852711E+01	.168622E-01	.208433E-01	.188911E-01
TOTAL	.11640E+18	.29151E+03	.47892E+03	.55118E+00	.51575E+00

132

337 210

TABLE XV (continued)

**OUTPUT TIME --- 1.157E+08-DAY 0.		-HOUR 0.	-MIN 1.000E+02-SEC	UNKNOWN NUCL. CONTR.	
		(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	
BETA EMISSION		.286447E+01	.142016E-01	.275306E+00	.970511E-01
GAMMA EMISSION		.325831E+01	.161543E-01	.313158E+00	.878369E-01
(BETA+GAMMA)		.612278E+01	.303559E-01	.588464E+00	.921477E-01
TOTAL EMISSION		.104047E+02	.515849E-01	.100000E+01	.916895E-01
ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
KR 88	.33399E+16	.61198E+01	.45527E-02	.21772E-01	.13716E-01
RB 88	.33373E+15	.62048E+01	.26794E-01	.72354E-02	.16386E-01
KR 89	.33687E+14	.54601E+01	.14233E-01	.19750E-01	.17170E-01
RB 89	.35675E+15	.80444E+01	.15392E-01	.32962E-01	.24742E-01
RB 90	.46434E+14	.59300E+01	.20353E-01	.28699E-01	.24794E-01
KR 91	.10036E+14	.32417E+01	.10258E-01	.10048E-01	.10146E-01
KR 91	.16169E+17	.49388E+01	.13486E-01	.12419E-01	.12918E-01
SR 92	.52255E+16	.10099E+02	.41717E-02	.24478E-01	.14978E-01
Y 92	.62201E+16	.10179E+02	.30589E-01	.46577E-02	.16789E-01
CR 93	.22722E+15	.93344E+01	.22401E-01	.22838E-01	.22634E-01
Y 93	.21271E+17	.10959E+02	.26780E-01	.17835E-02	.13478E-01
Y 94	.63434E+15	.10370E+02	.36273E-01	.18809E-01	.26979E-01
Y 95	.34293E+15	.10000E+02	.36714E-01	.73144E-02	.21069E-01
Y 96	.46114E+14	.62660E+01	.14947E-01	.46118E-01	.31535E-01
NB 97	.22966E+16	.99453E+01	.97492E-02	.12042E-01	.10969E-01
MO101	.37204E+15	.79454E+01	.94673E-02	.19325E-01	.14713E-01
TC102	.18209E+13	.64606E+01	.23417E-01	.57661E-02	.14024E-01
I 132	.31677E+16	.71666E+01	.72901E-02	.29465E-01	.19091E-01
TF133	.24774E+15	.62122E+01	.10367E-01	.10507E-01	.10441E-01
I 133	.45770E+17	.11459E+02	.97663E-02	.12227E-01	.11076E-01
TF134	.14926E+16	.11149E+02	.35275E-02	.18629E-01	.11564E-01
I 134	.21700E+16	.12891E+02	.16501E-01	.59307E-01	.39281E-01
I 135	.13559E+17	.10675E+02	.84795E-02	.30874E-01	.20397E-01
I 136	.11700E+14	.26409E+01	.11533E-01	.10439E-01	.10951E-01
XE137	.97529E+14	.79593E+01	.29626E-01	.26258E-02	.15258E-01
XF138	.44322E+15	.97937E+01	.13408E-01	.20373E-01	.17115E-01
CS138	.11448E+16	.11111E+02	.27863E-01	.47741E-01	.38441E-01
CS139	.30245E+15	.10042E+02	.39626E-01	.56031E-02	.19649E-01
CS140	.13115E+14	.13127E+01	.13127E-01	.13182E-01	.13156E-01
LA140	.81644E+17	.10581E+02	.12044E-01	.43812E-01	.28950E-01
BA141	.55303E+15	.94513E+01	.16498E-01	.14344E-01	.15579E-01
BA142	.36335E+15	.88567E+01	.10859E-01	.10633E-01	.10737E-01
LA142	.29733E+16	.10015E+02	.17549E-01	.43620E-01	.31423E-01
LA143	.42168E+15	.94042E+01	.17349E-01	.17043E-01	.17210E-01
PR144	.50961E+15	.92080E+01	.23324E-01	.50553E-03	.11180E-01
PR146	.38897E+15	.50404E+01	.11445E-01	.11222E-01	.11332E-01
TOTAL	.21493E+18	.30396E+03	.61631E+00	.69817E+00	.65987E+00

337 211

TABLE XV (continued)

**OUTPUT TIME --- 1.157E+08-DAY 0.		-HOUR 0.	-MIN 1.000E+03-SEC	UNKNOWN NUCL. CONTR.	
		(WATT)	(1/DP.POWER)	(1/TOTAL EMISSION)	
BE ⁻ EMISSION		.170635E+01	.845985E-02	.265665E+00	.455820E-01
GAMMA EMISSION		.202523E+01	.100408E-01	.315312E+00	.400210E-01
(BETA+GAMMA)		.373158E+01	.185007E-01	.580977E+00	.425639E-01
TOTAL EMISSION		.642294E+01	.318440E-01	.100000E+01	.420637E-01
ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
KR 87	.92842E+15	.379422E+01	.161633E-01	.775177E-02	.125133E-01
KR 88	.314423E+16	.575777E+01	.719044E-02	.329555E-01	.211744E-01
RB 88	.346554E+15	.607888E+01	.440644E-01	.114044E-01	.263388E-01
RB 89	.233385E+15	.474122E+01	.152299E-01	.312557E-01	.239288E-01
Y 90	.120165E+18	.575522E+01	.316443E-01	.578066E-05	.144733E-01
SR 91	.178255E+17	.976399E+01	.222442E-01	.196300E-01	.208255E-01
SR 92	.493011E+16	.946699E+01	.656933E-02	.369422E-01	.230553E-01
Y 92	.690722E+16	.101554E+02	.512544E-01	.747955E-02	.274977E-01
Y 93	.107877E+17	.105399E+02	.445944E-01	.284333E-02	.219133E-01
Y 94	.378799E+15	.619222E+01	.363366E-01	.180700E-01	.264334E-01
Y 95	.130133E+15	.379722E+01	.233387E-01	.446555E-02	.131188E-01
ZR 95	.319833E+19	.108399E+02	.453373E-02	.233344E-01	.147444E-01
NB 95	.175722E+19	.177922E+02	.177922E-02	.242274E-01	.139888E-01
ZR 97	.320466E+17	.988999E+01	.244300E-01	.680337E-02	.148644E-01
NB 97	.229444E+16	.943444E+01	.163499E-01	.193333E-01	.179799E-01
MO 101	.182700E+15	.390166E+01	.780466E-02	.152688E-01	.118555E-01
I 132	.316655E+16	.716444E+01	.122344E-01	.473899E-01	.313133E-01
TF 133M	.744811E+15	.419777E+01	.122004E-01	.106511E-01	.113611E-01
I 133	.456799E+17	.114222E+02	.163622E-01	.196322E-01	.181377E-01
TF 134	.156399E+16	.869444E+01	.461777E-02	.233371E-01	.147966E-01
I 134	.208299E+16	.123366E+02	.265889E-01	.915888E-01	.610666E-01
I 135	.132099E+17	.103399E+02	.138866E-01	.483877E-01	.326022E-01
BA 137M	.799844E+14	.978333E+01	.189633E-01	.189633E-01	.102922E-01
XE 138	.212333E+15	.469222E+01	.107844E-01	.157044E-01	.134544E-01
CS 138	.102244E+16	.991344E+01	.417711E-01	.685922E-01	.563288E-01
CS 139	.101222E+15	.336330E+01	.200200E-01	.301777E-02	.107922E-01
BA 139	.282055E+16	.105373E+02	.316887E-01	.151299E-02	.153111E-01
LA 140	.816448E+17	.105366E+02	.202188E-01	.704877E-01	.475000E-01
BA 141	.313441E+15	.933566E+01	.161566E-01	.130788E-01	.144866E-01
LA 141	.741455E+16	.981777E+01	.327311E-01	.122999E-02	.156355E-01
LA 142	.283448E+16	.954888E+01	.280866E-01	.669077E-01	.491555E-01
LA 143	.200800E+15	.447888E+01	.139099E-01	.130577E-01	.134477E-01
CE 143	.636255E+17	.100333E+02	.143588E-01	.795711E-02	.108844E-01
PR 144	.509955E+15	.900000E+01	.391477E-01	.813266E-03	.183422E-01
PR 146	.339688E+15	.440666E+01	.168133E-01	.157833E-01	.162544E-01
TOTAL	.53933E+19	.28147E+03	.72710E+03	.79997E+00	.76665E+00

134

337 212

TABLE XV (continued)

**OUTPUT TIME --- 1.157E+08-DAY 0.		-HOUR 0.	-MIN 1.000E+04-SEC		UNKNOWN NUCL. CONTR.
		(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	
BETA EMISSION		.906019E+00	.449191E-02	.264229E+00	.127346E-02
GAMMA EMISSION		.100420E+01	.497807E-02	.292862E+00	.117149E-02
(BETA+GAMMA)		.191022E+01	.947058E-02	.557090E+00	.121985E-02
TOTAL EMISSION		.342892E+01	.170031E-01	.100000E+01	.114361E-02
ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
KR 88	.17071E+16	.31279E+01	.73569E-02	.36107E-01	.22471E-01
RB 88	.19906E+15	.34918E+01	.47671E-01	.13211E-01	.29556E-01
R 89	.18998E+19	.81490E+01	.30529E-01	.41533E-06	.14480E-01
Y 90	.12016E+18	.97552E+01	.59595E-01	.11658E-04	.28272E-01
SR 91	.14685E+17	.81359E+01	.34905E-01	.32989E-01	.33898E-01
Y 91	.26833E+19	.99459E+01	.39428E-01	.15615E-03	.18783E-01
SR 92	.26011E+16	.49947E+01	.65275E-02	.39307E-01	.23760E-01
Y 92	.60280E+16	.88611E+01	.84243E-01	.13164E-01	.46877E-01
Y 93	.17803E+17	.91726E+01	.70865E-01	.48436E-01	.36158E-01
ZR 95	.31948E+19	.10827E+02	.85361E-02	.47029E-01	.28772E-01
NB 95	.17572E+19	.10840E+02	.33599E-02	.48954E-01	.27325E-01
ZR 97	.28940E+17	.88588E+01	.41551E-01	.2392E-01	.26222E-01
NR 97	.21688E+16	.93918E+01	.29198E-01	.36897E-01	.33203E-01
NB 97M	.24481E+14	.76438E+01	0.	.33507E-01	.17614E-01
MD 99	.12581E+18	.99167E+01	.25539E-01	.99495E-02	.17343E-01
I 132	.31368E+16	.70987E+01	.22823E-01	.94670E-01	.60593E-01
I 133	.42745E+17	.10663E+02	.28836E-01	.37050E-01	.33154E-01
I 134	.60268E+15	.35775E+01	.14489E-01	.53445E-01	.34968E-01
I 135	.10163E+17	.80006E+01	.20093E-01	.75081E-01	.49000E-01
XE135	.18820E+17	.10782E+02	.22447E-01	.154E-01	.18750E-01
BA137M	.79984E+14	.97857E+01	0.	.3824E-01	.20105E-01
BA 40	.61867E+18	.10489E+02	.20049E-01	.11530E-01	.15570E-01
LA 40	.61633E+17	.10562E+02	.38070E-01	.14213E+00	.92775E-01
LA141	.49882E+16	.66050E+01	.41472E-01	.16687E-02	.20548E-01
LA142	.96577E+15	.32529E+01	.18020E-01	.45969E-01	.32713E-01
CF143	.60562E+17	.9550E+01	.25739E-01	.15275E-01	.20238E-01
PR143	.62943E+18	.10050E+02	.21295E-01	0.	.10100E-01
PR144	.50939E+15	.92041E+01	.71703E-01	.16396E-02	.35820E-01
PR145	.55790E+16	.48549E+01	.21797E-01	.44569E-03	.10573E-01
TOTAL	.11334E+20	.23762E+03	.85804E+00	.86108E+00	.85964E+00

135

337 213

TABLE XV (continued)

**OUTPUT TIME --- 1.157E+08-DAY 0.		-HOOR 0.	-MIN 1.000E+05-SEC		UNKNOWN NUCL. CONTR.
		(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	
BETA EMISSION		.450372E+00	.223248E-02	.256555E+00	.376243E-04
GAMMA EMISSION		.517478E+00	.256555E-02	.294782E+00	.328462E-04
(BETA+GAMMA)		.967849E+00	.479846E-02	.551337E+00	.350696E-04
TOTAL EMISSION		.175546E+01	.870331E-02	.100000E+01	.322765E-04
ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
SR 89	.18729E+19	.80334E+01	.60545E-01	.79454E-06	.28174E-01
SR 90	.46961E+21	.97540E+01	.22886E-01	0.	.10650E-01
Y 90	.12076E+18	.97550E+01	.11989E+00	.22623E-04	.95799E-01
SR 91	.23967E+16	.13129E+01	.11331E-01	.10330E-01	.10796E-01
Y 91	.26640E+19	.98722E+01	.78730E-01	.30077E-03	.36797E-01
Y 93	.32016E+16	.16496E+01	.25637E-01	.16903E-02	.12834E-01
ZR 95	.31590E+19	.10706E+02	.16980E-01	.90238E-01	.56148E-01
NB 95	.17570E+19	.10838E+02	.67401E-02	.94986E-01	.53922E-01
ZR 97	.10443E+17	.31966E+01	.30162E-01	.86770E-02	.18679E-01
NB 97	.79497E+15	.34426E+01	.21464E-01	.26246E-01	.24021E-01
NB 97M	.88338E+13	.27582E+01	0.	.23462E-01	.12944E-01
MD 99	.96763E+17	.76270E+01	.39516E-01	.14850E-01	.26328E-01
RU 103	.94133E+18	.51869E+01	.52313E-02	.30338E-01	.18655E-01
I 131	.16261E+18	.43854E+01	.10814E-01	.19754E-01	.15394E-01
TE 132	.83905E+17	.55835E+01	.49957E-02	.17778E-01	.11830E-01
I 132	.25426E+16	.57526E+01	.37217E-01	.14892E+00	.96940E-01
I 133	.18635E+17	.46621E+01	.25290E-01	.31344E-01	.28227E-01
XE 133	.26782E+18	.10977E+02	.15277E-01	.10253E-01	.12591E-01
XE 135	.56383E+16	.32303E+01	.13529E-01	.89619E-02	.11087E-01
CS 137	.52533E+21	.10344E+02	.23745E-01	0.	.11049E-01
BA 137M	.79978E+14	.97851E+01	0.	.74211E-01	.39678E-01
BA 140	.58471E+18	.99133E+01	.38119E-01	.21146E-01	.29044E-01
LA 140	.80594E+17	.10428E+02	.75611E-01	.27230E+00	.18078E+00
CE 141	.14610E+19	.97472E+01	.19428E-01	.11331E-01	.15099E-01
CE 143	.35822E+17	.56488E+01	.30627E-01	.17533E-01	.23626E-01
PR 143	.62088E+18	.99133E+01	.42258E-01	0.	.19564E-01
PR 144	.50810E+15	.91906E+01	.14789E+00	.31737E-02	.70517E-01
TOTAL	.10089E+22	.19368E+03	.92391E+00	.93785E+00	.93136E+00

136

337 214

TABLE XV (continued)

**OUTPUT TIME --- 1.157E+08-DAY 0.		-MIN 1.000E+06-SEC	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION		(1/OP.POWER) (WATT)		
ELEMENT	AN(N)	CURIE	GM(TOTG)	BG(N)
90	1622368E+00	96473E+00	0.1342E-05	42920E+00
90	49288E+00	97473E+00	0.0000E+00	27182E+00
90	129170E+00	97345E+00	5.180E-03	10085E+00
90	28218E+00	85630E+00	1.570E+00	58225E+00
90	17850E+00	10774E+00	1.820E+00	93209E+00
90	10904E+00	6450E+00	1.920E+00	27297E+00
90	27209E+00	18133E+00	2.710E-01	11323E+00
90	52027E+00	10738E+00	3.110E-01	11922E+00
90	32034E+00	10778E+00	0.450E+00	19077E+00
90	50700E+00	56367E+00	1.930E+00	19077E+00
90	18059E+00	78057E+00	3.200E-01	21973E+00
90	18059E+00	89502E+00	0.0000E+00	22161E+00
90	49536E+00	89502E+00	0.0000E+00	22161E+00
TOTAL	10175E+22	12699E+03	9.6728E+00	95807E+00
BETA EMISSION		1.197E-02	27694E+00	303916E-06
GAMMA EMISSION		1.716E+00	25820E+00	364710E-06
TOTAL EMISSION		2.728E+00	35148E+00	33248E-06
TOTAL		5.098E+01	10000E+01	316669E-06

337 215

TABLE XV (continued)

**OUTPUT TIME	---	1.157E+08-DAY 0.	-HOUR 0.	(WATT)	-MIN 1.000E+07-SEC	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL.	CONTR.
BETA EMISSION			159627E+00				317903E+00		526705E-06
GAMMA EMISSION			841806E-01				791407E-03		11738E-03
(BETA+GAMMA)			243807E+00				791407E-03		730644E-06
TOTAL EMISSION			502124E+00				248946E-02		630019E-06
ELEMENT			C(N)	CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG		
SR 89		AM(N)	166933E+01		35497E-01	0.	232452E-01		
Y 90			96801E+01		34081E-01	0.	41952E-01		
Y 91			96826E+01		33574E+00	13803E-03	21988E+00		
ZR 95			25438E+01		57214E-01	17621E-03	37621E-01		
TC 99			30938E+01		12854E-02	29703E+00	49057E+00		
RCS 107			35200E+01		28574E-01	0.	14057E-01		
BA 137M			53717E+02		24710E-01	70429E-02	20927E-01		
CE 144			10265E+01		66513E-01	0.	43548E+00		
PRI 144			97148E+01		2331E-01	5231E+00	15987E-01		
TOTAL			69432E+01		31357E+00	94811E+00	21171E+00		
			73161E+02		97016E+00		96255E+00		
**OUTPUT TIME	---	1.157E+08-DAY 0.	-HOUR 0.	(WATT)	-MIN 1.000E+08-SEC	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL.	CONTR.
BETA EMISSION			802846E-01				20373E+00		103453E-05
GAMMA EMISSION			370769E-01				147924E+00		250905E-05
(BETA+GAMMA)			117361E+00				468327E+00		150036E-05
TOTAL EMISSION			250597E+00				100000E+01		124732E-05
ELEMENT			C(N)	CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG		
SR 90		AM(N)	90332E+01		1889E+00	0.	8133E-01		
Y 90			90355E+01		6292E+00	0.	4262E-01		
TC 99			65710E+01		42689E-01	0.	26473E-01		
CS 137M			90982E+01		12385E+00	0.	30475E+00		
PRI 144			54781E+00		49504E-01	96305E+00	34700E-01		
TOTAL			43903E+02		95786E+00	96599E+00	96043E+00		

337

TABLE XV (continued)

**OUTPUT TIME --- 1.157E+08-DAY 0. -HOUR 0. -MIN 1.000E+09-SEC

	(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION	.397348E-01	.197000E-03	.313568E+00	.196255E-05
GAMMA EMISSION	.195169E-01	.967619E-04	.154018E+00	.450314E-05
(BETA+GAMMA)	.592517E-01	.293762E-03	.467586E+00	.279939E-05
TOTAL EMISSION	.126718E+00	.628252E-03	.100000E+01	.231804E-05

ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
Z 90	.21777E+21	.45233E+01	.12029E+03	0.	.80669E-01
C 90	.55732E+17	.45249E+01	.63024E+00	.27820E-03	.42274E+00
TC 99	.23559E+25	.55704E+01	.86248E-01	0.	.57837E-01
SB126M	.51854E+13	.85212E-01	.12758E-01	.25754E-01	.17037E-01
CS137	.25355E+21	.49924E+01	.12990E+00	0.	.87113E-01
BA137M	.38602E+14	.47228E+01	0.	.94970E+00	.31282E+00
TOTAL	.23564E+25	.25419E+02	.97944E+00	.97574E+00	.97822E+00

**OUTPUT TIME --- 1.157E+08-DAY 0. -HOUR 0. -MIN 1.000E+10-SEC

	(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION	.464593E-02	.230339E-04	.292335E+00	.163717E-04
GAMMA EMISSION	.996970E-03	.494284E-05	.627321E-01	.862045E-04
(BETA+GAMMA)	.564290E-02	.279767E-04	.355067E+00	.287096E-04
TOTAL EMISSION	.158925E-01	.787927E-04	.100000E+01	.180346E-04

ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
ZR 93	.37773E+25	.14666E+01	.35890E-01	0.	.29549E-01
NB 93M	.28145E+20	.13933E+01	0.	.25180E+00	.44487E-01
TC 99	.23537E+25	.65643E+01	.73694E+00	0.	.60674E+00
SN126	.14316E+23	.85044E-01	.75944E-02	.25178E-01	.10701E-01
SB126	.68090E+15	.11906E-01	.54376E-02	.18899E+00	.37866E-01
SB126M	.51752E+13	.85044E-01	.10388E+00	.50317E+00	.17854E+00
CS135	.39284E+25	.10146E+01	.89824E-01	.60318E-03	.74065E-01
TOTAL	.10074E+26	.10621E+02	.98457E+00	.96973E+00	.98195E+00

139

337 217

TABLE XV (continued)

**OUTPUT TIME --- 1.157E+08-DAY 0. -HOUR 0. -MIN 1.000E+11-SEC

	(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.	
BETA EMISSION	.455791E-02	.225975E-04	.292340E+00	.166874E-04	
GAMMA EMISSION	.956154E-03	.474048E-05	.613267E-01	.898830E-04	
(BETA+GAMMA)	.551407E-02	.273380E-04	.353666E+00	.293797E-04	
TOTAL EMISSION	.155712E-01	.772987E-04	.100000E+01	.183826E-04	
ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
ZR 93	.37724E+25	.14647E+01	.36536E-01	0.	.30201E-01
NB 93M	.29108E+20	.13915E+01	0.	.26221E+00	.45468E-01
TC 99	.23320E+25	.65037E+01	.74423E+00	0.	.61518E+00
SN126	.14036E+23	.83378E-01	.75895E-02	.25738E-01	.10737E-01
SP126	.66756E+15	.11673E-01	.54341E-02	.19319E+00	.37992E-01
SB126M	.50738E+13	.83378E-01	.10881E+00	.51437E+00	.17914E+00
CS135	.39250E+25	.10137E+01	.91485E-01	.62839E-03	.75730E-01
TOTAL	.10043E+26	.10552E+02	.99408E+00	.99614E+00	.99444E+00

**OUTPUT TIME --- 1.157E+08-DAY 0. -HOUR 0. -MIN 1.000E+12-SEC

	(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.	
BETA EMISSION	.414587E-02	.205547E-04	.292058E+00	.183416E-04	
GAMMA EMISSION	.827074E-03	.410052E-05	.581636E-01	.103901E-03	
(B+GAMMA)	.497295E-02	.246552E-04	.350321E+00	.325713E-04	
TOTAL EMISSION	.141954E-01	.703787E-04	.100000E+01	.201854E-04	
ELEMENT	AN(N)	C(N) CURIE	B(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
ZR 93	.37240E+25	.14459E+01	.39651E-01	0.	.33057E-01
NB 93M	.27747E+20	.13736E+01	0.	.29924E+00	.49767E-01
TC 99	.21251E+25	.59269E+01	.74563E+00	0.	.62162E+00
SB126	.54775E+15	.95779E-02	.49019E-02	.18326E+00	.34565E-01
SB126M	.41632E+13	.68414E-01	.98155E-01	.48792E+00	.16298E+00
CS135	.38914E+25	.10051E+01	.99716E-01	.72024E-03	.83252E-01
TOTAL	.97405E+25	.98295E+01	.98805E+00	.97113E+00	.93524E+00

337 218

TABLE XV (continued)

**CUTPUT TIME --- 1.157E+08-DAY 0.		-HOUR 0.	-MIN 1.000E+13-SEC		
		(WATT)	(1/OP.POWER)	(1/TOTAL EMISSION)	UNKNOWN NUCL. CONTR.
BETA EMISSION		.181360E-02	.899158E-05	.286745E+00	.419043E-04
GAMMA EMISSION		.301231E-03	.149346E-05	.476271E-01	.285204E-03
(BETA+GAMMA)		.211483E-02	.104850E-04	.334372E+00	.765593E-04
TOTAL EMISSION		.632478E-02	.313574E-04	.100000E+01	.422787E-04
ELEMENT	AN(N)	C(N) CURIE	R(N)/TOTB	G(N)/TOTG	BG(N)/TOTBG
ZR 93	.32723E+25	.12705E+01	.79650E-01	0.	.68304E-01
NB 93M	.24362E+20	.12070E+01	0.	.72195E+00	.10283E+00
TC 99	.83956E+24	.23415E+01	0.	.67338E+00	.57747E+00
SB126	.75767E+14	.13249E-02	.15500E-02	.69599E-01	.11243E-01
SB126M	.57586E+12	.94632E-02	.31037E-01	.18531E+00	.53011E-01
CS135	.35707E+25	.92224E+00	.20916E+00	.18146E-02	.17963E+00
TOTAL	.76826E+25	.57520E+01	.99478E+00	.97867E+00	.99249E+00

1:1

337 219

where

P_0^m = reactor power for time interval m

t_m = t (for $m = 1$)

t_m = $t + \sum_{n=1}^{m-1} T_n$ (for $m \geq 2$)

T = $\sum_{m=1}^N T_m$

$F(t_m, T_m)$ = $F(t_m) - F(t_m + T_m)$

$F(t)$ = decay power after infinite irradiation [(MeV/s)/(fission/s)]

representing the reactor operating history by a histogram of N time intervals, with constant power P_0^m assigned to the time interval m .

For the case of a mixture of three fissionable nuclides ^{235}U , ^{238}U , and ^{239}Pu , Equation (20) or (21) should be evaluated for each fissionable nuclide, changing Q , $P_0(t)$, $f(t)$, P_0^m , and $F(t)$ for each fissionable nuclide and then sum the results for the three fissionable nuclides.



337 220

VI. CONCLUSIONS

The nuclear data library of fission products has been revised including the new decay data in Nuclear Data Sheets including 1977. Unknown decay data for short-lived nuclides were estimated statistically. The decay constant λ was estimated using the correlation between λ and Q value. Beta- and gamma-decay energies were estimated from the Q value by using the correlations between (E_{β}/Q) and Q and between (E_{γ}/Q) and Q .

The decay power of fission products was calculated by the summation method¹⁶ using the revised nuclear data library and compared with experimental values from recent decay power experiments at ORNL⁴, LASL⁵, IRT Corporation⁶, and UCB⁷. The following conclusions have been obtained from the comparison of calculated and experimental decay powers and the sensitivity analysis:

- (1) The present revision of the nuclear data library improved the agreement between calculated and experimental decay powers, especially at cooling times less than 10 s. The calculated decay power agreed with recent experiments within about two sigmas of each experiment.
- (2) Compared with the decay power calculated using the ENDF/B-IV library¹⁹, the present calculation is larger by 10% at cooling times less than 10 s for the burst fission of ²³⁵U. After 10 s, the present results agreed with ENDF/B-IV results within $\pm 4\%$. For the finite irradiation (longer than 2×10^4 s), the two calculations agreed within $\pm 3\%$ for cooling time from 1 to 10^5 s.
- (3) Decay power is sensitive to the estimation of unknown decay data for short-lived nuclides at cooling times less than 10^2 s.
- (4) Accurate measurement of the decay energies of ⁹⁶Y is recommended from the sensitivity analysis of decay power. ⁹⁶Y has a large contribution (up to 10%) to the decay power of fission products at cooling times less than 10^3 s.
- (5) Delayed neutron captured gammas could affect the measurement of decay power of fission products at cooling times less than 10^3 s depending upon the measuring technique and configuration.

Useful information can be obtained for the revision of the nuclear data library of fission products through the comparison of calculated and experimental decay powers with the back-up of sensitivity analysis of decay power to uncertainties of nuclear data of important nuclides. The present revision showed reasonable agreement between calculated and experimental decay powers.

337 221

VII. REFERENCES

1. American Nuclear Society, *Proposed ANS Standard Decay Energy Release Rates Following Shutdown of Uranium-Fueled Thermal Reactors, Draft Standard ANS 5.1*, Approved by Subcommittee. ANS-5 of the ANS Standards Committee (October 1971); Revised (1973).
2. K. Shure, *Fission Product Decay Energy*, USAEC Report WAPD-BT-24 (1971).
3. NRC Rules and Regulations, 10 CFR Part 50, *Licensing of Production and Utilization Facilities*, Appendix K "ECCS Evaluation Models" (January 1974).
4. J. K. Dickens et al, *Fission-Product Energy Release for Times Following Thermal-Neutron Fission of ^{235}U Between 2 and 14000 Seconds*, ORNL/NUREG-14 (1977).
5. J. L. Yarnell and P. J. Bendt, *Decay Heat from Products of ^{235}U Thermal Fission by Fast-Response Boil-Off Calorimetry*, LA-NUREG-6713 (1977).
6. S. J. Friesenhahn et al, *^{235}U Fission Product Decay Heat from 1 to 10^5 Seconds*, EPRI NP-180 (1976).
7. V. E. Schrock et al, *A Calorimetric Measurement of Decay Heat From ^{235}U Fission Products From 10 to 10^5 Seconds*, EPRI NP-616, Volume 1 (1978).
8. K. Tasaka and N. Sasamoto, "Calculation of the Decay Power of Fission Products," *Nuclear Science and Engineering*, 54, (1974) pp 177-189.
9. Nuclear Data Sheets, Academic Press.
10. M. E. Meek and B. F. Rider, *Compilation of Fission Product Yields*, USAEC Report NEDO-12154-1 (1974).
11. W. D. Myers and W. J. Swiatecki, *Nuclear Physics*, 81, 1 (1966).
12. F. C. Maienschein et al, "Gamma Rays Associated with Fission," *Proceedings of the International Conference on Peaceful Uses of Atomic Energy*, 15, Geneva, 1959, p 366.
13. R. Q. Wright et al, *SUFERTO*, ORNL-TM-2679 (1969).
14. Y. Kikuchi et al, *Fission Product Fast Reactor Constants System of JNDC*, JAERI-1248 (1976).
15. S. F. Mughabghab and D. I. Garber, *Neutron Cross-Sections*, BNL-325 (1973).
16. K. Tasaka, *CHAIN: Code for Analysis of Build-up and Decay of Nuclides*, JAERI-1250 (1977).
17. H. Bateman, *Proceedings of Cambridge Phil. Society* 15, 1910, p 423.
18. K. Tasaka and N. Sasamoto, *FP-S: Program for Calculation of Atomic Density for Each Fission Product Nuclide*, JAERI-1198 (1971).
19. T. R. England and R. E. Schenter, *ENDF/B-IV Fission Product Files: Summary of Major Nuclide Data*, USAEC Report LA-6116-MS (1975).
20. L. R. Medsker, "Nuclear Data for A = 96 Isobars," *Nuclear Data Sheets*, B8 (1972) p 599.

21. E. A. Henry, "Nuclear Data Sheets for A = 134," *Nuclear Data Sheets*, 15 (1975) p 203.
22. J. F. Lemming and S. Raman, "Nuclear Data Sheets for A = 142," *Nuclear Data Sheets*, 10 (1973) p 309.
23. D. C. Kocher, "Nuclear Data Sheets for A = 100," *Nuclear Data Sheets*, 11 (1974) p 279.
24. K. Tasaka, "Effects of Neutron Capture Transformations on the Decay Power of Fission Products," *Nuclear Science and Engineering*, 62 (1977) pp 167-174

337 223

APPENDIX A

COMPUTER PROGRAM STEB FOR CALCULATION
OF CORRELATION BETWEEN (E_{β}/Q) AND Q

337 224

APPENDIX A

COMPUTER PROGRAM STEB FOR CALCULATION OF CORRECTION BETWEEN (E_{β}/Q) AND Q

Computer program STEB is used to calculate the correlation between (E_{β}/Q) and Q , where E_{β} is sensible beta-decay energy of the nucleus and Q is the total decay energy by the beta decay of the nucleus. The method of calculating the correlation between (E_{β}/Q) and Q from the given correlation between (E_{γ}/Q) and Q was shown in Section II. The correlations between (E_{β}/Q) and Q and between (E_{γ}/Q) and Q are used to estimate unknown decay energies of short-lived nuclides.

The FORTRAN listing and output data of the program STEB are shown in Tables A-I and A-II, respectively. No input data are necessary for the program. The data for the correlation between (E_{γ}/Q) and Q are given in the DATA STATEMENT in the program.

337 225

TABLE A-I

FORTRAN LISTING OF PROGRAM STEB

PROGRAM STEB	76/76	OPT=1	FTN 4-64452	03/16/76	17.54.12	PAGE / 1
1	0	0	0	0	0	0
5	200	210	220	230	240	250
10	260	270	280	290	300	310
15	320	330	340	350	360	370
20	380	390	400	410	420	430
25	440	450	460	470	480	490
30	500	510	520	530	540	550
35	560	570	580	590	600	610
40	620	630	640	650	660	670
45	680	690	700	710	720	730
50	740	750	760	770	780	790
55	800	810	820	830	840	850

337 225

TABLE A-I (continued)

```

SUBROUTINE GAMMA      76/76   OPT=1                      FTN 4.6+452    03/16/79 17.54.12    PAGE 1
  1      SUBROUTINE GAMMA(XX,GR,IER)
  2      F(XX)=0.716064
  3      IERR=2
  4      RETURN
  5      IERR=1
  6      F(XX)=1.675
  7      RETURN
  8      IERR=0
  9      F(XX)=1.0E-6
10      IERR=0
11      V=1.0
12      F(XX)=0.0150,50,15
13      F(XX)=0.0111,110,15
14      X=1.0
15      IERR=0
16      DD TO 10
17      F(XX)=0.0100,120,110
18      F(XX)=0.0080,160,80
19      F(XX)=0.0060,200,80
20      F(XX)=0.0040,240,130,04
21      F(XX)=0.0020,280,130,70
22      F(XX)=0.0010,320,110
23      X=1.0
24      DD TO 20
25      F(XX)=1.0+Y*(0.5771017+Y*(0.9858540+Y*(-0.9764218+Y*(+0.8326212+
  Y*(-0.2084729+Y*(+0.2548205+Y*(-0.05149930))))))))
26      GY=X*GY
27      RETURN
28      IERR=1
29      RETURN
30      END
  
```

```

SUBROUTINE LOGGAM     76/76   OPT=1                      FTN 4.6+452    03/16/79 17.54.12    PAGE 1
  1      SUBROUTINE LOGGAM(X,U,V)
  2      COMPLEX Z, LNCAM
  3      Z=LNCAM(CMPLX(X,Y))
  4      U=REAL(Z)
  5      V=AIMAG(Z)
  6      RETURN
  7      END
  
```

```

SUBROUTINE LABRT      76/76   OPT=1                      FTN 4.6+452    03/16/79 17.54.12    PAGE 1
  1      SUBROUTINE LABRT(IISW,LHOL,INX)
  2      DIMENSION LHOL(5)
  3      LOGICAL PS,TS
  4      IF(IISW.EQ.0) OR (IISW.GT.5)) RETURN
  5      GO TO(1,2,3,4,5),IISW
  6      DATA NP,ND,PS,T,UC,TS,/,FALSE,/
  7      IF(IISW.EQ.0) PRINT *,LHOL,INX
  8      FORMAT(1H0,9X,5A10,3X,00)
  9      NP=NP-1
10      IF(TS) CALLEXIT
11      RETURN
12      PS=/.FALSE./
13      RETURN
14      NP=NP-1
15      RETURN
16      TS=/.TRUE./
17      RETURN
18      TS=/.FALSE./
19      RETURN
20      END
  
```

152

337 223

TABLE A-I (continued)

FUNCTION	LNCAH	76/76	DPT=1	FTN	4,6+422	03/16/79	17,24,12	PAGE	1
1		<pre> FUNCTION LNCAH(AZ) COMPLEX A,Z DIMENSION MS(8),AC(7) DATA MS(1),MS(2),MS(3),MS(4),MS(5),MS(6),MS(7),MS(8) DATA AC(1),AC(2),AC(3),AC(4),AC(5),AC(6),AC(7) Z = Z**MS(1) AC(1) = AC(1)*Z AC(2) = AC(2)*Z AC(3) = AC(3)*Z AC(4) = AC(4)*Z AC(5) = AC(5)*Z AC(6) = AC(6)*Z AC(7) = AC(7)*Z RETURN </pre>							
5		<pre> FUNCTION LNCAH(AZ) COMPLEX A,Z DIMENSION MS(8),AC(7) DATA MS(1),MS(2),MS(3),MS(4),MS(5),MS(6),MS(7),MS(8) DATA AC(1),AC(2),AC(3),AC(4),AC(5),AC(6),AC(7) Z = Z**MS(1) AC(1) = AC(1)*Z AC(2) = AC(2)*Z AC(3) = AC(3)*Z AC(4) = AC(4)*Z AC(5) = AC(5)*Z AC(6) = AC(6)*Z AC(7) = AC(7)*Z RETURN </pre>							
10		<pre> FUNCTION LNCAH(AZ) COMPLEX A,Z DIMENSION MS(8),AC(7) DATA MS(1),MS(2),MS(3),MS(4),MS(5),MS(6),MS(7),MS(8) DATA AC(1),AC(2),AC(3),AC(4),AC(5),AC(6),AC(7) Z = Z**MS(1) AC(1) = AC(1)*Z AC(2) = AC(2)*Z AC(3) = AC(3)*Z AC(4) = AC(4)*Z AC(5) = AC(5)*Z AC(6) = AC(6)*Z AC(7) = AC(7)*Z RETURN </pre>							
15		<pre> FUNCTION LNCAH(AZ) COMPLEX A,Z DIMENSION MS(8),AC(7) DATA MS(1),MS(2),MS(3),MS(4),MS(5),MS(6),MS(7),MS(8) DATA AC(1),AC(2),AC(3),AC(4),AC(5),AC(6),AC(7) Z = Z**MS(1) AC(1) = AC(1)*Z AC(2) = AC(2)*Z AC(3) = AC(3)*Z AC(4) = AC(4)*Z AC(5) = AC(5)*Z AC(6) = AC(6)*Z AC(7) = AC(7)*Z RETURN </pre>							
20	C 10	<pre> FUNCTION LNCAH(AZ) COMPLEX A,Z DIMENSION MS(8),AC(7) DATA MS(1),MS(2),MS(3),MS(4),MS(5),MS(6),MS(7),MS(8) DATA AC(1),AC(2),AC(3),AC(4),AC(5),AC(6),AC(7) Z = Z**MS(1) AC(1) = AC(1)*Z AC(2) = AC(2)*Z AC(3) = AC(3)*Z AC(4) = AC(4)*Z AC(5) = AC(5)*Z AC(6) = AC(6)*Z AC(7) = AC(7)*Z RETURN </pre>							
25	9*	<pre> FUNCTION LNCAH(AZ) COMPLEX A,Z DIMENSION MS(8),AC(7) DATA MS(1),MS(2),MS(3),MS(4),MS(5),MS(6),MS(7),MS(8) DATA AC(1),AC(2),AC(3),AC(4),AC(5),AC(6),AC(7) Z = Z**MS(1) AC(1) = AC(1)*Z AC(2) = AC(2)*Z AC(3) = AC(3)*Z AC(4) = AC(4)*Z AC(5) = AC(5)*Z AC(6) = AC(6)*Z AC(7) = AC(7)*Z RETURN </pre>							
30	2	<pre> FUNCTION LNCAH(AZ) COMPLEX A,Z DIMENSION MS(8),AC(7) DATA MS(1),MS(2),MS(3),MS(4),MS(5),MS(6),MS(7),MS(8) DATA AC(1),AC(2),AC(3),AC(4),AC(5),AC(6),AC(7) Z = Z**MS(1) AC(1) = AC(1)*Z AC(2) = AC(2)*Z AC(3) = AC(3)*Z AC(4) = AC(4)*Z AC(5) = AC(5)*Z AC(6) = AC(6)*Z AC(7) = AC(7)*Z RETURN </pre>							
35	101	<pre> FUNCTION LNCAH(AZ) COMPLEX A,Z DIMENSION MS(8),AC(7) DATA MS(1),MS(2),MS(3),MS(4),MS(5),MS(6),MS(7),MS(8) DATA AC(1),AC(2),AC(3),AC(4),AC(5),AC(6),AC(7) Z = Z**MS(1) AC(1) = AC(1)*Z AC(2) = AC(2)*Z AC(3) = AC(3)*Z AC(4) = AC(4)*Z AC(5) = AC(5)*Z AC(6) = AC(6)*Z AC(7) = AC(7)*Z RETURN </pre>							

337 229

TABLE A-II

OUTPUT DATA LISTING OF PROGRAM STEB

ATOMIC NO. = 40

NO	Q(MEV)	(B/Q)MAX	(B/Q)MIN	(B/Q)AV	NO OF DAT
1	.20000E+02	.33251E+00	.333610E+00	.333376E+00	2601
2	.19500E+02	.33221E+00	.333358E+00	.333349E+00	2601
3	.19000E+02	.33189E+00	.333355E+00	.333320E+00	2601
4	.18500E+02	.33156E+00	.333354E+00	.333290E+00	2601
5	.18000E+02	.33121E+00	.333351E+00	.333259E+00	2601
6	.17500E+02	.33084E+00	.333348E+00	.333226E+00	2601
7	.17000E+02	.33045E+00	.333346E+00	.333191E+00	2601
8	.16500E+02	.33006E+00	.333343E+00	.333154E+00	2601
9	.16000E+02	.32965E+00	.333339E+00	.333114E+00	2601
10	.15500E+02	.32914E+00	.333336E+00	.333073E+00	2601
11	.15000E+02	.32863E+00	.333333E+00	.333029E+00	2601
12	.14500E+02	.32813E+00	.333329E+00	.332982E+00	2601
13	.14000E+02	.32757E+00	.333325E+00	.332933E+00	2601
14	.13500E+02	.32698E+00	.333320E+00	.332878E+00	2601
15	.13000E+02	.32634E+00	.333316E+00	.332821E+00	2601
16	.12500E+02	.32566E+00	.333311E+00	.332760E+00	2601
17	.12000E+02	.32493E+00	.333305E+00	.332694E+00	2601
18	.11500E+02	.32413E+00	.333299E+00	.332622E+00	2601
19	.11000E+02	.32328E+00	.333293E+00	.332545E+00	2601
20	.10500E+02	.32235E+00	.333286E+00	.332461E+00	2601
21	.10000E+02	.32133E+00	.333279E+00	.332370E+00	2601
22	.95000E+01	.32022E+00	.333270E+00	.332270E+00	2601
23	.90000E+01	.31901E+00	.333261E+00	.332161E+00	2601
24	.85000E+01	.31767E+00	.333251E+00	.332040E+00	2601
25	.80000E+01	.31618E+00	.333240E+00	.331906E+00	2601
26	.75000E+01	.31453E+00	.333227E+00	.331757E+00	2601
27	.70000E+01	.31268E+00	.333213E+00	.331590E+00	2601
28	.65000E+01	.31060E+00	.333197E+00	.331402E+00	2601
29	.60000E+01	.30823E+00	.333178E+00	.331187E+00	2601
30	.55000E+01	.30553E+00	.333157E+00	.330942E+00	2601
31	.50000E+01	.30241E+00	.333132E+00	.330657E+00	2601
32	.45000E+01	.29876E+00	.333102E+00	.330323E+00	2601
33	.40000E+01	.29444E+00	.333067E+00	.329930E+00	2601
34	.35000E+01	.28933E+00	.333024E+00	.329456E+00	2601
35	.30000E+01	.28309E+00	.332970E+00	.328876E+00	2601
36	.25000E+01	.27533E+00	.332901E+00	.328150E+00	2601
37	.20000E+01	.26556E+00	.332810E+00	.327221E+00	2601
38	.15000E+01	.25314E+00	.332686E+00	.325994E+00	2601
39	.10000E+01	.23669E+00	.332510E+00	.324320E+00	2601
40	.90000E+00	.22281E+00	.332466E+00	.323914E+00	2601
41	.80000E+00	.20873E+00	.332418E+00	.323480E+00	2601
42	.70000E+00	.19446E+00	.332366E+00	.323010E+00	2601
43	.60000E+00	.18000E+00	.332310E+00	.322520E+00	2601
44	.50000E+00	.16563E+00	.332279E+00	.322024E+00	2601
45	.40000E+00	.15100E+00	.332218E+00	.321505E+00	2601
46	.30000E+00	.13600E+00	.332163E+00	.320968E+00	2601
47	.20000E+00	.12079E+00	.332122E+00	.320408E+00	2601
48	.10000E+00	.10583E+00	.332081E+00	.319820E+00	2601
49	.90000E-01	.9063E+00	.332045E+00	.319204E+00	2601
50	.80000E-01	.7532E+00	.332017E+00	.318560E+00	2601
51	.70000E-01	.6090E+00	.331990E+00	.317889E+00	2601
52	.60000E-01	.4721E+00	.331965E+00	.317191E+00	2601
53	.50000E-01	.3425E+00	.331940E+00	.316466E+00	2601
54	.40000E-01	.2205E+00	.331915E+00	.315714E+00	2601
55	.30000E-01	.1065E+00	.331890E+00	.314935E+00	2601
56	.20000E-01	.572E+00	.331864E+00	.314129E+00	2601
57	.10000E-01	.222E+00	.331838E+00	.313296E+00	2601
58	0.	0.	0.	0.	0

APPENDIX B

COMPUTER PROGRAM RRR FOR CALCULATION OF RATIO
($E_{\beta\text{av}}/E_{\beta\text{max}}$)
BETWEEN AVERAGE AND MAXIMUM BETA-RAY ENERGIES FOR
ALLOWED BETA-DECAY TRANSITIONS

337 231

APPENDIX B

COMPUTER PROGRAM RRR FOR CALCULATION OF RATIO ($E_{\beta av}/E_{\beta max}$) BETWEEN AVERAGE AND MAXIMUM BETA-RAY ENERGIES FOR ALLOWED BETA-DECAY TRANSITIONS

Computer program RRR is used for calculating the ratio ($E_{\beta av}/E_{\beta max}$) between average and the maximum beta-ray energies for allowed transitions. The formulis is given

$$\begin{aligned}
 R(Z, W) &= \left(\frac{E_{\beta av}}{E_{\beta max}} \right) \\
 &= \frac{\int_1^{W_0} W \, d\lambda}{(W_0 - 1) \int_1^{W_0} d\lambda} \\
 &= \frac{\int_1^{W_0} F_p W^2 (W_0 - W)^2 \, dW}{(W_0 - 1) \int_1^{W_0} F_p W (W_0 - W)^2 \, dW}
 \end{aligned}$$

where

$$W_0 = [M(Z) - M(Z + 1)] c^2$$

$$W = (c^2 p^2 + m^2 c^4)^{1/2}$$

m = electron mass

$$F(Z, W) = 2(1 + \gamma_0) \frac{2pR}{\hbar}^{-2(1 - \gamma_0)} e^{\pi v} \frac{|\Gamma(\gamma_0 + i v)|^2}{[\Gamma(2\gamma_0 + 1)]^2}$$

$$\gamma_0 = [1 - (\alpha Z)^2]^{1/2}$$

337 232

$$\alpha = \frac{e^2}{\hbar c} = 7.29728 \times 10^{-3}$$

$$v = \frac{\alpha Z W}{cp}$$

e = electron charge

p = electron kinetic momentum.

The FORTRAN listing and output data of the program RRR are given in Tables B-I and B-II, respectively. No input data are necessary for the program. Ratio R is calculated for every increment of five in atomic number Z for the fixed energy interval $mc^2 \leq W_0 \leq 40 mc^2$. Between 1 and 1.1 mc^2 , W_0 is varied by each increment of 0.01 mc^2 , between 1.1 and 2.0 mc^2 by each increment of 0.1 mc^2 , and above 2 mc^2 , by each increment of mc^2 . It is quite easy to modify the program RRR to calculate the ratio R for arbitrary atomic number Z and the maximum beta-ray energy W_0 when it is needed.

337 253

TABLE B-1

FORTRAN LISTING OF PROGRAM RRR

PROGRAM PRR	76776	OPT=1	FTN 4-6++52	03/17/79	08.06.26	PAGE	1
3	<pre> PROGRAM RRR(INPUT,OUTPUT,TAPE5=INPUT,TAPE6=OUTPUT) CALL RBETA(NZ,WZ,R) STOP END</pre>						
	SUBROUTINE RBETA	76776	OPT=1	FTN 4-6++52	03/17/79	08.06.26	PAGE
							1
1	<pre> SUBROUTINE RBETA(NZ,WZ,R) 200 FORMAT(10X,14HENRGEY(RC*2))=,1PE12.5,5X,THE(HEV),EPE12.5,5X, 3 3H R=,E12.5) 210 FORMAT(14H1,10X,14HATOMIC NUMBER=,I3,/) 5 ALPHA=7.29728E-3 KMAX=20 KMAX=100 XKMAX=KMAX DO 600 IK=1,20 1Z=IK*5 WRITE(6,210) IZ Z=IZ GZ=(1.0-(ALPH*Z)**2)**0.5 XG=GZ*0.1,0 CALL GAMMA(XG,GX,IER) VZ=1.139ALPH**2*Z**1.3333 DO 700 IE=1,58 IF(IE.GE.40) GO TO 310 WZ=41-IE GO TO 350 310 IF(IE.GE.49) GO TO 320 WZ=IE-39 WZ=2.0-WZ*0.1 GO TO 350 320 WZ=IE-48 WZ=1.1-WZ*0.01 350 CONTINUE SUPA=0.0 SUPB=0.0 DO 800 N=1,KMAX KK=N W=1.0+VZ*KK/(KKMAX-1.0)*(WZ-1.0-VZ)-VZ IF(K=EQ.1) GO TO 500 IF(K=EQ.KMAX) GO TO 500 IF(M=LE.1.0) GO TO 500 AML=ALPH*Z**2/(M**2-1.0)**0.5 UU=2.0*U YU=EXP(UU) XP=ANU*3.14159265 YP=EXP(YP) XX=2.0*(1.0-GZ)/Z,0 YX=(M**2-1.0)**XX FZ=X*Y*YP*YU/GX**2</pre>						

337 234

TABLE B-I (continued)

```

SUBROUTINE RBETA      76/76  OPT=1                FTN 4.6+452      01/17/79  08.06.26      PAGE 1
[CONTINUED]

45      W=b+VZ
        FZb=FZW*(( (b-VZ)**2-1.0)/(W**2-1.0) )**0.5*(W-VZ)/W
        Y=FZW*(b**2-1.0)**0.5*W*(WZ-W)**2
        SUPA=SUPA+Y*W
        JMB=SUMB+Y

50      500 CONTINUE
        RR=1.0
        IF(SUMB.NE.0) RR=SUMA/SUMB
        IF(WZ.NE.1.0)
          *R=(RR-1.0)/(bZ-1.0)
          EWZ=(WZ-1.0)*0.510976
          WRITE(6,200) WZ,EWZ,R
        700 CONTINUE

60      600 CONTINUE
        RETURN
        END
    
```

```

SUBROUTINE GAMMA      76/76  OPT=1                FTN 4.6+452      03/17/79  08.06.26      PAGE 1

1      SUBROUTINE GAMMA(XX,GX,IER)
        IF(XX-57.16)6,4
4      IER=2
        GX=1.E75
        RETURN

5      6 X=XX
        ERR=1.0E-6
        IER=0
        GX=1.0
        IF(X-2.0)90,50,15
10     IF(X-2.0)110,110,15
15     X=X-1.0
        GX=GX*X
        GO TO 10

15     90 IF(X-1.0)60,120,7.0
        60 IF(X-ERR)62,62,50
        62 Y=PL^AT(INT(Y),-X
            IF(ABS(Y)-ERR)130,130,64
        64 IF(1.0-Y-ERR)130,130,70
18     70 IF(X-1.0)80,80,110
20     80 GX=GX/X
        X=X+1.0
        GO TO 70
110    Y=X-1.0
25     GY=1.0+Y*(-0.5771017+Y*(+0.9858540+Y*(-0.8764218+Y*(+0.8328212+
        IY*(-0.5684729+Y*(+0.2548205+Y*(-0.05149930))))))
        GX=GX*GY
120    RETURN
130    IER=1
30     RETURN
        END
    
```

160

337 2-11

TABLE B-I (continued)

SUBROUTINE	LCCGM	76/76	DPT=1	FTN 4-6452	03/17/79	08.06.26	PAGE
1	SUBROUTINE LCCGM	76/76	DPT=1	FTN 4-6452	03/17/79	08.06.26	PAGE 1
5	1	<pre> SUBROUTINE LCCGM(X,Y,U,V) COMPLEX Z,LNGAM Z=LNGAMCPLX(X,Y) U=REAL(Z) V=AIMAG(Z) RETURN END </pre>					
10	SUBROUTINE LABR1	76/76	OPT=1	FTN 4-6452	03/17/79	08.06.26	PAGE 1
15	1	<pre> SUBROUTINE LABR1(ISM,LHOL,INX) DIMENSION LHCLS) LOGICAL PS,TS IF((ISM.EQ.C)-OR.(ISM.GT.5))RETURN GOTD(1+2+3+4+5)*ISM DATA NP/107,PS/.TRUE./,TS/.FALSE./ 1 IF(PS.AND.(NP.GT.0)) PRINT 27,LHOL,INX 27 FORMAT(1H0,9X,5A10,3X,06) NP=NP-1 IF(TS)GOTO 1 RETURN 2 PS=.FALSE. RETURN 3 PS=.TRUE. NP=INX RETURN 4 TS=.TRUE. RETURN 5 TS=.FALSE. RETURN END </pre>					

337 236

TABLE B-I (continued)

```

1  COMPLEX FUNCTION LNCAMIAZ)
   COMPLEX Z=CP*CF+AZ*YAR
   DIMENSION MSG(8),A(7)
   DATA(A(1),A(2),A(3),A(4),A(5),A(6),A(7)) / 2.694889742049,1.5174736691932,
11.0119230681268,5.2560646902699,2.25238095238095,
2.43333333333333,0.0833333333333337
   Z=AZ
   X=REAL(Z)
   Y=AIMAG(Z)
   CP=(0.,0.)
   IF((X.GT.0.).OR.(X.LE.AINT(X)).OR.(Y.NE.0.)) GO TO 10
   CALL LABRTEL(MSG,I)
   LNCAM=CPPLX(CVN,-PI/2.)
   RETURN
15  DATA(MSG(1),I=8)/48
   IMLNGAM IMAG(Z),EQ.0 AND REAL(Z) INTEGRAL.LE.0. /
   DATA(OVN2),E308/
   DATAPI/3.1415926535898/
   RECURSION
10  IF(REAL(Z).GT.1.)GO TO 3
   YAR=CLOG(Z)
   IF((AIMAG(YAR).GT.-PI/2.).AND.(AIMAG(YAR).LT.3.*PI/2.)) GO TO 94
   SAL=AIMAG(YAR)-SIGN(2.*PI,AIMAG(YAR))
   YAR=CMPLX(REAL(YAR),SAL)
   CP=CP*YAR
25  Z=1.+Z
   GO TO 10
   3  Z=CMPLX(REAL(Z)+ABS(Y))
   C  CONTINUED FRACTION
   100 CF=Z
   DO100 I=1,7
   CF=CMPLX(A(I),0.)/CF+Z
101 CONTINUE
35  LNCAM =CF-2.*Z+(.9889385332047,0.)*Z-(-.5+0.)*CLOG(Z)
   IF(Y.LT.0.) LNCAM=CMPLX(REAL(LNCAM),-AIMAG(LNCAM))
   LNCAM=LNCAM-CP
   RETURN
   ENC

```

337 277

TABLE B-II

OUTPUT DATA LISTING OF PROGRAM RRR

ATOMIC NUMBER= 5

ENERGY(MC**2)= 4.00000E+01	E(MEV)= 1.99281E+C1	R= 4.8780E-01
ENERGY(MC**2)= 3.90000E+01	E(MEV)= 1.94171E+01	R= 4.87508E-01
ENERGY(MC**2)= 3.80000E+01	E(MEV)= 1.89061E+01	R= 4.87194E-01
ENERGY(MC**2)= 3.70000E+01	E(MEV)= 1.83951E+01	R= 4.86863E-01
ENERGY(MC**2)= 3.60000E+01	E(MEV)= 1.78842E+01	R= 4.86515E-01
ENERGY(MC**2)= 3.50000E+01	E(MEV)= 1.73732E+01	R= 4.86148E-01
ENERGY(MC**2)= 3.40000E+01	E(MEV)= 1.68622E+01	R= 4.85760E-01
ENERGY(MC**2)= 3.30000E+01	E(MEV)= 1.63512E+01	R= 4.85349E-01
ENERGY(MC**2)= 3.20000E+01	E(MEV)= 1.58403E+01	R= 4.84914E-01
ENERGY(MC**2)= 3.10000E+01	E(MEV)= 1.53293E+01	R= 4.84452E-01
ENERGY(MC**2)= 3.00000E+01	E(MEV)= 1.48183E+01	R= 4.83961E-01
ENERGY(MC**2)= 2.90000E+01	E(MEV)= 1.43073E+01	R= 4.83438E-01
ENERGY(MC**2)= 2.80000E+01	E(MEV)= 1.37964E+01	R= 4.82879E-01
ENERGY(MC**2)= 2.70000E+01	E(MEV)= 1.32854E+01	R= 4.82281E-01
ENERGY(MC**2)= 2.60000E+01	E(MEV)= 1.27744E+01	R= 4.81639E-01
ENERGY(MC**2)= 2.50000E+01	E(MEV)= 1.22634E+01	R= 4.80949E-01
ENERGY(MC**2)= 2.40000E+01	E(MEV)= 1.17524E+01	R= 4.80205E-01
ENERGY(MC**2)= 2.30000E+01	E(MEV)= 1.12415E+01	R= 4.79401E-01
ENERGY(MC**2)= 2.20000E+01	E(MEV)= 1.07305E+01	R= 4.78528E-01
ENERGY(MC**2)= 2.10000E+01	E(MEV)= 1.02195E+01	R= 4.77578E-01
ENERGY(MC**2)= 2.00000E+01	E(MEV)= 9.70854E+00	R= 4.76539E-01
ENERGY(MC**2)= 1.90000E+01	E(MEV)= 9.19757E+00	R= 4.75399E-01
ENERGY(MC**2)= 1.80000E+01	E(MEV)= 8.68659E+00	R= 4.74144E-01
ENERGY(MC**2)= 1.70000E+01	E(MEV)= 8.17562E+00	R= 4.72752E-01
ENERGY(MC**2)= 1.60000E+01	E(MEV)= 7.66464E+00	R= 4.71203E-01
ENERGY(MC**2)= 1.50000E+01	E(MEV)= 7.15366E+00	R= 4.69468E-01
ENERGY(MC**2)= 1.40000E+01	E(MEV)= 6.64269E+00	R= 4.67510E-01
ENERGY(MC**2)= 1.30000E+01	E(MEV)= 6.13171E+00	R= 4.65284E-01
ENERGY(MC**2)= 1.20000E+01	E(MEV)= 5.62074E+00	R= 4.62733E-01
ENERGY(MC**2)= 1.10000E+01	E(MEV)= 5.10976E+00	R= 4.59779E-01
ENERGY(MC**2)= 1.00000E+01	E(MEV)= 4.59878E+00	R= 4.56319E-01
ENERGY(MC**2)= 9.00000E+00	E(MEV)= 4.08781E+00	R= 4.52214E-01
ENERGY(MC**2)= 8.00000E+00	E(MEV)= 3.57683E+00	R= 4.47264E-01
ENERGY(MC**2)= 7.00000E+00	E(MEV)= 3.06586E+00	R= 4.41184E-01
ENERGY(MC**2)= 6.00000E+00	E(MEV)= 2.55488E+00	R= 4.33540E-01
ENERGY(MC**2)= 5.00000E+00	E(MEV)= 2.04390E+00	R= 4.23646E-01
ENERGY(MC**2)= 4.00000E+00	E(MEV)= 1.53293E+00	R= 4.10348E-01
ENERGY(MC**2)= 3.00000E+00	E(MEV)= 1.02195E+00	R= 3.91503E-01
ENERGY(MC**2)= 2.00000E+00	E(MEV)= 5.10976E-C1	R= 3.62329E-01
ENERGY(MC**2)= 1.90000E+00	E(MEV)= 4.59878E-C1	R= 3.58430E-01
ENERGY(MC**2)= 1.80000E+00	E(MEV)= 4.08781E-01	R= 3.54256E-01
ENERGY(MC**2)= 1.70000E+00	E(MEV)= 3.57683E-01	R= 3.49758E-01
ENERGY(MC**2)= 1.60000E+00	E(MEV)= 3.06586E-01	R= 3.44866E-01
ENERGY(MC**2)= 1.50000E+00	E(MEV)= 2.55488E-01	R= 3.39474E-01
ENERGY(MC**2)= 1.40000E+00	E(MEV)= 2.04390E-01	R= 3.33408E-01
ENERGY(MC**2)= 1.30000E+00	E(MEV)= 1.53293E-01	R= 3.26338E-01
ENERGY(MC**2)= 1.20000E+00	E(MEV)= 1.02195E-01	R= 3.17534E-01
ENERGY(MC**2)= 1.10000E+00	E(MEV)= 5.10976E-02	R= 3.04858E-01
ENERGY(MC**2)= 1.09000E+00	E(MEV)= 4.59878E-02	R= 3.03167E-01
ENERGY(MC**2)= 1.08000E+00	E(MEV)= 4.08781E-02	R= 3.01357E-01
ENERGY(MC**2)= 1.07000E+00	E(MEV)= 3.57683E-02	R= 2.99416E-01
ENERGY(MC**2)= 1.06000E+00	E(MEV)= 3.06586E-02	R= 2.97338E-01
ENERGY(MC**2)= 1.05000E+00	E(MEV)= 2.55488E-02	R= 2.95140E-01
ENERGY(MC**2)= 1.04000E+00	E(MEV)= 2.04390E-02	R= 2.92912E-01
ENERGY(MC**2)= 1.03000E+00	E(MEV)= 1.53293E-02	R= 2.90990E-01
ENERGY(MC**2)= 1.02000E+00	E(MEV)= 1.02195E-02	R= 2.90758E-01
ENERGY(MC**2)= 1.01000E+00	E(MEV)= 5.10976E-C3	R= 3.00859E-01
ENERGY(MC**2)= 1.00000E+00	E(MEV)= 0.	R= 3.00859E-01

TABLE B-II (continued)

ATOMIC NUMBER= 10

ENERGY(MC**2)= 4.0C000E+01	E(MEV)= 1.99281E+01	R= 4.87405E-01
ENERGY(MC**2)= 3.9C000E+01	E(MEV)= 1.94171E+01	R= 4.87103E-01
ENERGY(MC**2)= 3.8C000E+01	E(MEV)= 1.89061E+01	R= 4.86785E-01
ENERGY(MC**2)= 3.7C000E+01	E(MEV)= 1.83951E+01	R= 4.86450E-01
ENERGY(MC**2)= 3.6C000E+01	E(MEV)= 1.78842E+01	R= 4.86098E-01
ENERGY(MC**2)= 3.5C000E+01	E(MEV)= 1.73732E+01	R= 4.85726E-01
ENERGY(MC**2)= 3.4C000E+01	E(MEV)= 1.68622E+01	R= 4.85333E-01
ENERGY(MC**2)= 3.3C000E+01	E(MEV)= 1.63512E+01	R= 4.84917E-01
ENERGY(MC**2)= 3.2C000E+01	E(MEV)= 1.58403E+01	R= 4.84476E-01
ENERGY(MC**2)= 3.1C000E+01	E(MEV)= 1.53293E+01	R= 4.84007E-01
ENERGY(MC**2)= 3.0C000E+01	E(MEV)= 1.48183E+01	R= 4.83509E-01
ENERGY(MC**2)= 2.9C000E+01	E(MEV)= 1.43073E+01	R= 4.82978E-01
ENERGY(MC**2)= 2.8C000E+01	E(MEV)= 1.37964E+01	R= 4.82410E-01
ENERGY(MC**2)= 2.7C000E+01	E(MEV)= 1.32854E+01	R= 4.81802E-01
ENERGY(MC**2)= 2.6C000E+01	E(MEV)= 1.27744E+01	R= 4.81150E-01
ENERGY(MC**2)= 2.5C000E+01	E(MEV)= 1.22634E+01	R= 4.80448E-01
ENERGY(MC**2)= 2.4C000E+01	E(MEV)= 1.17524E+01	R= 4.79691E-01
ENERGY(MC**2)= 2.3C000E+01	E(MEV)= 1.12415E+01	R= 4.78871E-01
ENERGY(MC**2)= 2.2C000E+01	E(MEV)= 1.07305E+01	R= 4.77981E-01
ENERGY(MC**2)= 2.1C000E+01	E(MEV)= 1.02195E+01	R= 4.77012E-01
ENERGY(MC**2)= 2.0C000E+01	E(MEV)= 9.70854E+00	R= 4.75951E-01
ENERGY(MC**2)= 1.9C000E+01	E(MEV)= 9.19757E+00	R= 4.74786E-01
ENERGY(MC**2)= 1.8C000E+01	E(MEV)= 8.68659E+00	R= 4.73501E-01
ENERGY(MC**2)= 1.7C000E+01	E(MEV)= 8.17562E+00	R= 4.72076E-01
ENERGY(MC**2)= 1.6C000E+01	E(MEV)= 7.66464E+00	R= 4.70487E-01
ENERGY(MC**2)= 1.5C000E+01	E(MEV)= 7.15366E+00	R= 4.68704E-01
ENERGY(MC**2)= 1.4C000E+01	E(MEV)= 6.64269E+00	R= 4.66684E-01
ENERGY(MC**2)= 1.3C000E+01	E(MEV)= 6.13171E+00	R= 4.64395E-01
ENERGY(MC**2)= 1.2C000E+01	E(MEV)= 5.62074E+00	R= 4.61759E-01
ENERGY(MC**2)= 1.1C000E+01	E(MEV)= 5.10976E+00	R= 4.58700E-01
ENERGY(MC**2)= 1.0C000E+01	E(MEV)= 4.59878E+00	R= 4.55107E-01
ENERGY(MC**2)= 9.0C000E+00	E(MEV)= 4.08701E+00	R= 4.50829E-01
ENERGY(MC**2)= 8.0C000E+00	E(MEV)= 3.57683E+00	R= 4.45652E-01
ENERGY(MC**2)= 7.0C000E+00	E(MEV)= 3.06586E+00	R= 4.39261E-01
ENERGY(MC**2)= 6.0C000E+00	E(MEV)= 2.55488E+00	R= 4.31176E-01
ENERGY(MC**2)= 5.0C000E+00	E(MEV)= 2.04390E+00	R= 4.20631E-01
ENERGY(MC**2)= 4.0C000E+00	E(MEV)= 1.53293E+00	R= 4.06301E-01
ENERGY(MC**2)= 3.0C000E+00	E(MEV)= 1.02195E+00	R= 3.85660E-01
ENERGY(MC**2)= 2.0C000E+00	E(MEV)= 5.10976E-01	R= 3.52757E-01
ENERGY(MC**2)= 1.9C000E+00	E(MEV)= 4.59879E-01	R= 3.48256E-01
ENERGY(MC**2)= 1.8C000E+00	E(MEV)= 4.08781E-01	R= 3.43408E-01
ENERGY(MC**2)= 1.7C000E+00	E(MEV)= 3.57683E-01	R= 3.38151E-01
ENERGY(MC**2)= 1.6C000E+00	E(MEV)= 3.06586E-01	R= 3.32400E-01
ENERGY(MC**2)= 1.5C000E+00	E(MEV)= 2.55488E-01	R= 3.26033E-01
ENERGY(MC**2)= 1.4C000E+00	E(MEV)= 2.04390E-01	R= 3.18865E-01
ENERGY(MC**2)= 1.3C000E+00	E(MEV)= 1.53293E-01	R= 3.10604E-01
ENERGY(MC**2)= 1.2C000E+00	E(MEV)= 1.02195E-01	R= 3.00798E-01
ENERGY(MC**2)= 1.1C000E+00	E(MEV)= 5.10976E-02	R= 2.89401E-01
ENERGY(MC**2)= 1.09000E+00	E(MEV)= 4.59878E-02	R= 2.88361E-01
ENERGY(MC**2)= 1.08000E+00	E(MEV)= 4.08781E-02	R= 2.87452E-01
ENERGY(MC**2)= 1.07000E+00	E(MEV)= 3.57683E-02	R= 2.86772E-01
ENERGY(MC**2)= 1.06000E+00	E(MEV)= 3.06586E-02	R= 2.86490E-01
ENERGY(MC**2)= 1.05000E+00	E(MEV)= 2.55488E-02	R= 2.86930E-01
ENERGY(MC**2)= 1.04000E+00	E(MEV)= 2.04390E-02	R= 2.88765E-01
ENERGY(MC**2)= 1.03000E+00	E(MEV)= 1.53293E-02	R= 2.93610E-01
ENERGY(MC**2)= 1.02000E+00	E(MEV)= 1.02195E-02	R= 3.06390E-01
ENERGY(MC**2)= 1.01000E+00	E(MEV)= 5.10976E-03	R= 3.51723E-01
ENERGY(MC**2)= 1.0C000E+00	E(MEV)= 0.	R= 3.51723E-01

TABLE B-II (continued)

ATOMIC NUMBER = 15

ENERGY(MC**2) = 4.00000E+01	E(MEV) = 1.99281E+01	R = 4.86780E-01
ENERGY(MC**2) = 3.90000E+01	E(MEV) = 1.94171E+01	R = 4.86475E-01
ENERGY(MC**2) = 3.80000E+01	E(MEV) = 1.89061E+01	R = 4.86153E-01
ENERGY(MC**2) = 3.70000E+01	E(MEV) = 1.83951E+01	R = 4.85815E-01
ENERGY(MC**2) = 3.60000E+01	E(MEV) = 1.78842E+01	R = 4.85458E-01
ENERGY(MC**2) = 3.50000E+01	E(MEV) = 1.73732E+01	R = 4.85082E-01
ENERGY(MC**2) = 3.40000E+01	E(MEV) = 1.68622E+01	R = 4.84684E-01
ENERGY(MC**2) = 3.30000E+01	E(MEV) = 1.63512E+01	R = 4.84263E-01
ENERGY(MC**2) = 3.20000E+01	E(MEV) = 1.58403E+01	R = 4.83816E-01
ENERGY(MC**2) = 3.10000E+01	E(MEV) = 1.53293E+01	R = 4.83342E-01
ENERGY(MC**2) = 3.00000E+01	E(MEV) = 1.48183E+01	R = 4.82837E-01
ENERGY(MC**2) = 2.90000E+01	E(MEV) = 1.43073E+01	R = 4.82298E-01
ENERGY(MC**2) = 2.80000E+01	E(MEV) = 1.37964E+01	R = 4.81722E-01
ENERGY(MC**2) = 2.70000E+01	E(MEV) = 1.32854E+01	R = 4.81106E-01
ENERGY(MC**2) = 2.60000E+01	E(MEV) = 1.27744E+01	R = 4.80443E-01
ENERGY(MC**2) = 2.50000E+01	E(MEV) = 1.22634E+01	R = 4.79730E-01
ENERGY(MC**2) = 2.40000E+01	E(MEV) = 1.17524E+01	R = 4.78960E-01
ENERGY(MC**2) = 2.30000E+01	E(MEV) = 1.12414E+01	R = 4.78127E-01
ENERGY(MC**2) = 2.20000E+01	E(MEV) = 1.07305E+01	R = 4.77221E-01
ENERGY(MC**2) = 2.10000E+01	E(MEV) = 1.02195E+01	R = 4.76233E-01
ENERGY(MC**2) = 2.00000E+01	E(MEV) = 9.70854E+00	R = 4.75152E-01
ENERGY(MC**2) = 1.90000E+01	E(MEV) = 9.19757E+00	R = 4.73963E-01
ENERGY(MC**2) = 1.80000E+01	E(MEV) = 8.68659E+00	R = 4.72651E-01
ENERGY(MC**2) = 1.70000E+01	E(MEV) = 8.17562E+00	R = 4.71194E-01
ENERGY(MC**2) = 1.60000E+01	E(MEV) = 7.66464E+00	R = 4.69567E-01
ENERGY(MC**2) = 1.50000E+01	E(MEV) = 7.15366E+00	R = 4.67740E-01
ENERGY(MC**2) = 1.40000E+01	E(MEV) = 6.64269E+00	R = 4.65672E-01
ENERGY(MC**2) = 1.30000E+01	E(MEV) = 6.13171E+00	R = 4.63314E-01
ENERGY(MC**2) = 1.20000E+01	E(MEV) = 5.62074E+00	R = 4.60600E-01
ENERGY(MC**2) = 1.10000E+01	E(MEV) = 5.10976E+00	R = 4.57444E-01
ENERGY(MC**2) = 1.00000E+01	E(MEV) = 4.59878E+00	R = 4.53728E-01
ENERGY(MC**2) = 9.00000E+00	E(MEV) = 4.08781E+00	R = 4.49291E-01
ENERGY(MC**2) = 8.00000E+00	E(MEV) = 3.57683E+00	R = 4.43904E-01
ENERGY(MC**2) = 7.00000E+00	E(MEV) = 3.06585E+00	R = 4.37228E-01
ENERGY(MC**2) = 6.00000E+00	E(MEV) = 2.55488E+00	R = 4.28744E-01
ENERGY(MC**2) = 5.00000E+00	E(MEV) = 2.04390E+00	R = 4.17611E-01
ENERGY(MC**2) = 4.00000E+00	E(MEV) = 1.53293E+00	R = 4.02372E-01
ENERGY(MC**2) = 3.00000E+00	E(MEV) = 1.02195E+00	R = 3.80218E-01
ENERGY(MC**2) = 2.00000E+00	E(MEV) = 5.10976E-01	R = 3.44590E-01
ENERGY(MC**2) = 1.90000E+00	E(MEV) = 4.59878E-01	R = 3.39719E-01
ENERGY(MC**2) = 1.80000E+00	E(MEV) = 4.08781E-01	R = 3.34489E-01
ENERGY(MC**2) = 1.70000E+00	E(MEV) = 3.57683E-01	R = 3.28846E-01
ENERGY(MC**2) = 1.60000E+00	E(MEV) = 3.06585E-01	R = 3.22724E-01
ENERGY(MC**2) = 1.50000E+00	E(MEV) = 2.55488E-01	R = 3.16039E-01
ENERGY(MC**2) = 1.40000E+00	E(MEV) = 2.04390E-01	R = 3.08698E-01
ENERGY(MC**2) = 1.30000E+00	E(MEV) = 1.53293E-01	R = 3.00631E-01
ENERGY(MC**2) = 1.20000E+00	E(MEV) = 1.02195E-01	R = 2.92054E-01
ENERGY(MC**2) = 1.10000E+00	E(MEV) = 5.10976E-02	R = 2.85939E-01
ENERGY(MC**2) = 1.09000E+00	E(MEV) = 4.59878E-02	R = 2.86107E-01
ENERGY(MC**2) = 1.08000E+00	E(MEV) = 4.08781E-02	R = 2.86689E-01
ENERGY(MC**2) = 1.07000E+00	E(MEV) = 3.57683E-02	R = 2.87887E-01
ENERGY(MC**2) = 1.06000E+00	E(MEV) = 3.06585E-02	R = 2.90036E-01
ENERGY(MC**2) = 1.05000E+00	E(MEV) = 2.55488E-02	R = 2.93745E-01
ENERGY(MC**2) = 1.04000E+00	E(MEV) = 2.04390E-02	R = 3.00232E-01
ENERGY(MC**2) = 1.03000E+00	E(MEV) = 1.53293E-02	R = 3.12325E-01
ENERGY(MC**2) = 1.02000E+00	E(MEV) = 1.02195E-02	R = 3.38451E-01
ENERGY(MC**2) = 1.01000E+00	E(MEV) = 5.10976E-03	R = 4.20357E-01
ENERGY(MC**2) = 1.00000E+00	E(MEV) = 0.	R = 4.20357E-01

TABLE B-II (continued)

ATOMIC NUMBER= 20

ENERGY(MC**2)= 4.00000E+01	E(MEV)= 1.99281E+01	R= 4.65928E-01
ENERGY(MC**2)= 3.90000E+01	E(MEV)= 1.94171E+01	R= 4.85619E-01
ENERGY(MC**2)= 3.80000E+01	E(MEV)= 1.89061E+01	R= 4.85294E-01
ENERGY(MC**2)= 3.70000E+01	E(MEV)= 1.83951E+01	R= 4.84953E-01
ENERGY(MC**2)= 3.60000E+01	E(MEV)= 1.78842E+01	R= 4.84592E-01
ENERGY(MC**2)= 3.50000E+01	E(MEV)= 1.73732E+01	R= 4.84212E-01
ENERGY(MC**2)= 3.40000E+01	E(MEV)= 1.68622E+01	R= 4.83809E-01
ENERGY(MC**2)= 3.30000E+01	E(MEV)= 1.63512E+01	R= 4.83383E-01
ENERGY(MC**2)= 3.20000E+01	E(MEV)= 1.58403E+01	R= 4.82931E-01
ENERGY(MC**2)= 3.10000E+01	E(MEV)= 1.53293E+01	R= 4.82451E-01
ENERGY(MC**2)= 3.00000E+01	E(MEV)= 1.48183E+01	R= 4.81940E-01
ENERGY(MC**2)= 2.90000E+01	E(MEV)= 1.43073E+01	R= 4.81394E-01
ENERGY(MC**2)= 2.80000E+01	E(MEV)= 1.37964E+01	R= 4.80810E-01
ENERGY(MC**2)= 2.70000E+01	E(MEV)= 1.32854E+01	R= 4.80185E-01
ENERGY(MC**2)= 2.60000E+01	E(MEV)= 1.27744E+01	R= 4.79513E-01
ENERGY(MC**2)= 2.50000E+01	E(MEV)= 1.22634E+01	R= 4.78790E-01
ENERGY(MC**2)= 2.40000E+01	E(MEV)= 1.17524E+01	R= 4.78008E-01
ENERGY(MC**2)= 2.30000E+01	E(MEV)= 1.12415E+01	R= 4.77161E-01
ENERGY(MC**2)= 2.20000E+01	E(MEV)= 1.07305E+01	R= 4.76241E-01
ENERGY(MC**2)= 2.10000E+01	E(MEV)= 1.02195E+01	R= 4.75236E-01
ENERGY(MC**2)= 2.00000E+01	E(MEV)= 9.70854E+00	R= 4.74136E-01
ENERGY(MC**2)= 1.90000E+01	E(MEV)= 9.19757E+00	R= 4.72925E-01
ENERGY(MC**2)= 1.80000E+01	E(MEV)= 8.68659E+00	R= 4.71587E-01
ENERGY(MC**2)= 1.70000E+01	E(MEV)= 8.17562E+00	R= 4.70101E-01
ENERGY(MC**2)= 1.60000E+01	E(MEV)= 7.66464E+00	R= 4.68440E-01
ENERGY(MC**2)= 1.50000E+01	E(MEV)= 7.15366E+00	R= 4.66571E-01
ENERGY(MC**2)= 1.40000E+01	E(MEV)= 6.64269E+00	R= 4.64455E-01
ENERGY(MC**2)= 1.30000E+01	E(MEV)= 6.13171E+00	R= 4.62038E-01
ENERGY(MC**2)= 1.20000E+01	E(MEV)= 5.62074E+00	R= 4.59252E-01
ENERGY(MC**2)= 1.10000E+01	E(MEV)= 5.10976E+00	R= 4.56006E-01
ENERGY(MC**2)= 1.00000E+01	E(MEV)= 4.59878E+00	R= 4.52178E-01
ENERGY(MC**2)= 9.00000E+00	E(MEV)= 4.08781E+00	R= 4.47597E-01
ENERGY(MC**2)= 8.00000E+00	E(MEV)= 3.57683E+00	R= 4.42020E-01
ENERGY(MC**2)= 7.00000E+00	E(MEV)= 3.06586E+00	R= 4.35089E-01
ENERGY(MC**2)= 6.00000E+00	E(MEV)= 2.55488E+00	R= 4.26250E-01
ENERGY(MC**2)= 5.00000E+00	E(MEV)= 2.04390E+00	R= 4.14607E-01
ENERGY(MC**2)= 4.00000E+00	E(MEV)= 1.53293E+00	R= 3.98602E-01
ENERGY(MC**2)= 3.00000E+00	E(MEV)= 1.02195E+00	R= 3.75255E-01
ENERGY(MC**2)= 2.00000E+00	E(MEV)= 5.10976E-01	R= 3.37892E-01
ENERGY(MC**2)= 1.90000E+00	E(MEV)= 4.59878E-01	R= 3.32858E-01
ENERGY(MC**2)= 1.80000E+00	E(MEV)= 4.08781E-01	R= 3.27492E-01
ENERGY(MC**2)= 1.70000E+00	E(MEV)= 3.57683E-01	R= 3.21760E-01
ENERGY(MC**2)= 1.60000E+00	E(MEV)= 3.06586E-01	R= 3.15630E-01
ENERGY(MC**2)= 1.50000E+00	E(MEV)= 2.55488E-01	R= 3.09083E-01
ENERGY(MC**2)= 1.40000E+00	E(MEV)= 2.04390E-01	R= 3.02143E-01
ENERGY(MC**2)= 1.30000E+00	E(MEV)= 1.53293E-01	R= 2.95003E-01
ENERGY(MC**2)= 1.20000E+00	E(MEV)= 1.02195E-01	R= 2.88580E-01
ENERGY(MC**2)= 1.10000E+00	E(MEV)= 5.10976E-02	R= 2.88670E-01
ENERGY(MC**2)= 1.00000E+00	E(MEV)= 4.59878E-02	R= 2.90095E-01
ENERGY(MC**2)= 1.08000E+00	E(MEV)= 4.08781E-02	R= 2.92195E-01
ENERGY(MC**2)= 1.07000E+00	E(MEV)= 3.57683E-02	R= 2.95269E-01
ENERGY(MC**2)= 1.06000E+00	E(MEV)= 3.06586E-02	R= 2.99813E-01
ENERGY(MC**2)= 1.05000E+00	E(MEV)= 2.55488E-02	R= 3.06713E-01
ENERGY(MC**2)= 1.04000E+00	E(MEV)= 2.04390E-02	R= 3.17739E-01
ENERGY(MC**2)= 1.03000E+00	E(MEV)= 1.53293E-02	R= 3.36990E-01
ENERGY(MC**2)= 1.02000E+00	E(MEV)= 1.02195E-02	R= 3.76705E-01
ENERGY(MC**2)= 1.01000E+00	E(MEV)= 5.10976E-03	R= 4.97868E-01
ENERGY(MC**2)= 1.00000E+00	E(MEV)= 0.	R= 4.97868E-01

337 217

TABLE B-II (continued)

ATOMIC NUMBER = 25

ENERGY(MC**2) = 4.00000E+01	E(MEV) = 1.99281E+01	R = 4.84842E-01
ENERGY(MC**2) = 3.90000E+01	E(MEV) = 1.94171E+01	R = 4.84530E-01
ENERGY(MC**2) = 3.80000E+01	E(MEV) = 1.89061E+01	R = 4.84202E-01
ENERGY(MC**2) = 3.70000E+01	E(MEV) = 1.83951E+01	R = 4.83857E-01
ENERGY(MC**2) = 3.60000E+01	E(MEV) = 1.78842E+01	R = 4.83493E-01
ENERGY(MC**2) = 3.50000E+01	E(MEV) = 1.73732E+01	R = 4.83109E-01
ENERGY(MC**2) = 3.40000E+01	E(MEV) = 1.68622E+01	R = 4.82702E-01
ENERGY(MC**2) = 3.30000E+01	E(MEV) = 1.63512E+01	R = 4.82271E-01
ENERGY(MC**2) = 3.20000E+01	E(MEV) = 1.58403E+01	R = 4.81814E-01
ENERGY(MC**2) = 3.10000E+01	E(MEV) = 1.53293E+01	R = 4.81329E-01
ENERGY(MC**2) = 3.00000E+01	E(MEV) = 1.48183E+01	R = 4.80811E-01
ENERGY(MC**2) = 2.90000E+01	E(MEV) = 1.43073E+01	R = 4.80259E-01
ENERGY(MC**2) = 2.80000E+01	E(MEV) = 1.37964E+01	R = 4.79668E-01
ENERGY(MC**2) = 2.70000E+01	E(MEV) = 1.32854E+01	R = 4.79035E-01
ENERGY(MC**2) = 2.60000E+01	E(MEV) = 1.27744E+01	R = 4.78354E-01
ENERGY(MC**2) = 2.50000E+01	E(MEV) = 1.22634E+01	R = 4.77621E-01
ENERGY(MC**2) = 2.40000E+01	E(MEV) = 1.17524E+01	R = 4.76828E-01
ENERGY(MC**2) = 2.30000E+01	E(MEV) = 1.12415E+01	R = 4.75969E-01
ENERGY(MC**2) = 2.20000E+01	E(MEV) = 1.07305E+01	R = 4.75034E-01
ENERGY(MC**2) = 2.10000E+01	E(MEV) = 1.02195E+01	R = 4.74014E-01
ENERGY(MC**2) = 2.00000E+01	E(MEV) = 9.70854E+00	R = 4.72896E-01
ENERGY(MC**2) = 1.90000E+01	E(MEV) = 9.19757E+00	R = 4.71665E-01
ENERGY(MC**2) = 1.80000E+01	E(MEV) = 8.68659E+00	R = 4.70304E-01
ENERGY(MC**2) = 1.70000E+01	E(MEV) = 8.17562E+00	R = 4.68790E-01
ENERGY(MC**2) = 1.60000E+01	E(MEV) = 7.66464E+00	R = 4.67097E-01
ENERGY(MC**2) = 1.50000E+01	E(MEV) = 7.15366E+00	R = 4.65191E-01
ENERGY(MC**2) = 1.40000E+01	E(MEV) = 6.64269E+00	R = 4.63030E-01
ENERGY(MC**2) = 1.30000E+01	E(MEV) = 6.13171E+00	R = 4.60560E-01
ENERGY(MC**2) = 1.20000E+01	E(MEV) = 5.62074E+00	R = 4.57708E-01
ENERGY(MC**2) = 1.10000E+01	E(MEV) = 5.10976E+00	R = 4.54382E-01
ENERGY(MC**2) = 1.00000E+01	E(MEV) = 4.59878E+00	R = 4.50453E-01
ENERGY(MC**2) = 9.00000E+00	E(MEV) = 4.08781E+00	R = 4.45743E-01
ENERGY(MC**2) = 8.00000E+00	E(MEV) = 3.57683E+00	R = 4.39998E-01
ENERGY(MC**2) = 7.00000E+00	E(MEV) = 3.06586E+00	R = 4.32843E-01
ENERGY(MC**2) = 6.00000E+00	E(MEV) = 2.55488E+00	R = 4.23699E-01
ENERGY(MC**2) = 5.00000E+00	E(MEV) = 2.04390E+00	R = 4.11628E-01
ENERGY(MC**2) = 4.00000E+00	E(MEV) = 1.53293E+00	R = 3.95008E-01
ENERGY(MC**2) = 3.00000E+00	E(MEV) = 1.02195E+00	R = 3.70786E-01
ENERGY(MC**2) = 2.00000E+00	E(MEV) = 5.10976E-01	R = 3.32535E-01
ENERGY(MC**2) = 1.90000E+00	E(MEV) = 4.59878E-01	R = 3.27493E-01
ENERGY(MC**2) = 1.80000E+00	E(MEV) = 4.08781E-01	R = 3.22166E-01
ENERGY(MC**2) = 1.70000E+00	E(MEV) = 3.57683E-01	R = 3.16548E-01
ENERGY(MC**2) = 1.60000E+00	E(MEV) = 3.06586E-01	R = 3.10643E-01
ENERGY(MC**2) = 1.50000E+00	E(MEV) = 2.55488E-01	R = 3.04498E-01
ENERGY(MC**2) = 1.40000E+00	E(MEV) = 2.04390E-01	R = 2.98258E-01
ENERGY(MC**2) = 1.30000E+00	E(MEV) = 1.53293E-01	R = 2.92364E-01
ENERGY(MC**2) = 1.20000E+00	E(MEV) = 1.02195E-01	R = 2.88366E-01
ENERGY(MC**2) = 1.10000E+00	E(MEV) = 5.10976E-02	R = 2.94629E-01
ENERGY(MC**2) = 1.09000E+00	E(MEV) = 4.59878E-02	R = 2.97265E-01
ENERGY(MC**2) = 1.08000E+00	E(MEV) = 4.08781E-02	R = 3.00827E-01
ENERGY(MC**2) = 1.07000E+00	E(MEV) = 3.57683E-02	R = 3.05712E-01
ENERGY(MC**2) = 1.06000E+00	E(MEV) = 3.06586E-02	R = 3.12581E-01
ENERGY(MC**2) = 1.05000E+00	E(MEV) = 2.55488E-02	R = 3.22615E-01
ENERGY(MC**2) = 1.04000E+00	E(MEV) = 2.04390E-02	R = 3.38174E-01
ENERGY(MC**2) = 1.03000E+00	E(MEV) = 1.53293E-02	R = 3.64741E-01
ENERGY(MC**2) = 1.02000E+00	E(MEV) = 1.02195E-02	R = 4.18739E-01
ENERGY(MC**2) = 1.01000E+00	E(MEV) = 5.10976E-03	R = 5.82238E-01
ENERGY(MC**2) = 1.00000E+00	E(MEV) = 0.	R = 5.82238E-01

TABLE B-II (continued)

ATOMIC NUMBER = 30

ENERGY(MC**2) = 4.00000E+01	E(MEV) = 1.99281E+01	R = 4.83514E-01
ENERGY(MC**2) = 3.90000E+01	E(MEV) = 1.94171E+01	R = 4.83200E-01
ENERGY(MC**2) = 3.80000E+01	E(MEV) = 1.89061E+01	R = 4.82869E-01
ENERGY(MC**2) = 3.70000E+01	E(MEV) = 1.83951E+01	R = 4.82521E-01
ENERGY(MC**2) = 3.60000E+01	E(MEV) = 1.78842E+01	R = 4.82153E-01
ENERGY(MC**2) = 3.50000E+01	E(MEV) = 1.73732E+01	R = 4.81765E-01
ENERGY(MC**2) = 3.40000E+01	E(MEV) = 1.68622E+01	R = 4.81354E-01
ENERGY(MC**2) = 3.30000E+01	E(MEV) = 1.63512E+01	R = 4.80919E-01
ENERGY(MC**2) = 3.20000E+01	E(MEV) = 1.58403E+01	R = 4.80457E-01
ENERGY(MC**2) = 3.10000E+01	E(MEV) = 1.53293E+01	R = 4.79966E-01
ENERGY(MC**2) = 3.00000E+01	E(MEV) = 1.48183E+01	R = 4.79443E-01
ENERGY(MC**2) = 2.90000E+01	E(MEV) = 1.43073E+01	R = 4.78885E-01
ENERGY(MC**2) = 2.80000E+01	E(MEV) = 1.37964E+01	R = 4.78287E-01
ENERGY(MC**2) = 2.70000E+01	E(MEV) = 1.32854E+01	R = 4.77646E-01
ENERGY(MC**2) = 2.60000E+01	E(MEV) = 1.27744E+01	R = 4.76958E-01
ENERGY(MC**2) = 2.50000E+01	E(MEV) = 1.22634E+01	R = 4.76215E-01
ENERGY(MC**2) = 2.40000E+01	E(MEV) = 1.17524E+01	R = 4.75412E-01
ENERGY(MC**2) = 2.30000E+01	E(MEV) = 1.12415E+01	R = 4.74541E-01
ENERGY(MC**2) = 2.20000E+01	E(MEV) = 1.07305E+01	R = 4.73594E-01
ENERGY(MC**2) = 2.10000E+01	E(MEV) = 1.02195E+01	R = 4.72559E-01
ENERGY(MC**2) = 2.00000E+01	E(MEV) = 9.70854E+00	R = 4.71425E-01
ENERGY(MC**2) = 1.90000E+01	E(MEV) = 9.19757E+00	R = 4.70175E-01
ENERGY(MC**2) = 1.80000E+01	E(MEV) = 8.68659E+00	R = 4.68792E-01
ENERGY(MC**2) = 1.70000E+01	E(MEV) = 8.17562E+00	R = 4.67254E-01
ENERGY(MC**2) = 1.60000E+01	E(MEV) = 7.66464E+00	R = 4.65532E-01
ENERGY(MC**2) = 1.50000E+01	E(MEV) = 7.15366E+00	R = 4.63592E-01
ENERGY(MC**2) = 1.40000E+01	E(MEV) = 6.64269E+00	R = 4.61391E-01
ENERGY(MC**2) = 1.30000E+01	E(MEV) = 6.13171E+00	R = 4.58872E-01
ENERGY(MC**2) = 1.20000E+01	E(MEV) = 5.62074E+00	R = 4.55962E-01
ENERGY(MC**2) = 1.10000E+01	E(MEV) = 5.10976E+00	R = 4.52564E-01
ENERGY(MC**2) = 1.00000E+01	E(MEV) = 4.59873E+00	R = 4.48545E-01
ENERGY(MC**2) = 9.00000E+00	E(MEV) = 4.08781E+00	R = 4.43723E-01
ENERGY(MC**2) = 8.00000E+00	E(MEV) = 3.57683E+00	R = 4.37834E-01
ENERGY(MC**2) = 7.00000E+00	E(MEV) = 3.06586E+00	R = 4.30489E-01
ENERGY(MC**2) = 6.00000E+00	E(MEV) = 2.55488E+00	R = 4.21092E-01
ENERGY(MC**2) = 5.00000E+00	E(MEV) = 2.04390E+00	R = 4.08676E-01
ENERGY(MC**2) = 4.00000E+00	E(MEV) = 1.53293E+00	R = 3.91588E-01
ENERGY(MC**2) = 3.00000E+00	E(MEV) = 1.02195E+00	R = 3.66786E-01
ENERGY(MC**2) = 2.00000E+00	E(MEV) = 5.10976E-01	R = 3.28321E-01
ENERGY(MC**2) = 1.90000E+00	E(MEV) = 4.59878E-01	R = 3.23377E-01
ENERGY(MC**2) = 1.80000E+00	E(MEV) = 4.08781E-01	R = 3.18208E-01
ENERGY(MC**2) = 1.70000E+00	E(MEV) = 3.57683E-01	R = 3.12830E-01
ENERGY(MC**2) = 1.60000E+00	E(MEV) = 3.06586E-01	R = 3.07287E-01
ENERGY(MC**2) = 1.50000E+00	E(MEV) = 2.55488E-01	R = 3.01684E-01
ENERGY(MC**2) = 1.40000E+00	E(MEV) = 2.04390E-01	R = 2.96277E-01
ENERGY(MC**2) = 1.30000E+00	E(MEV) = 1.53293E-01	R = 2.91731E-01
ENERGY(MC**2) = 1.20000E+00	E(MEV) = 1.02195E-01	R = 2.90170E-01
ENERGY(MC**2) = 1.10000E+00	E(MEV) = 5.10976E-02	R = 3.02381E-01
ENERGY(MC**2) = 1.00000E+00	E(MEV) = 4.59878E-02	R = 3.06192E-01
ENERGY(MC**2) = 0.98000E+00	E(MEV) = 4.08781E-02	R = 3.11181E-01
ENERGY(MC**2) = 1.07000E+00	E(MEV) = 3.57683E-02	R = 3.17851E-01
ENERGY(MC**2) = 1.06000E+00	E(MEV) = 3.06586E-02	R = 3.27036E-01
ENERGY(MC**2) = 1.05000E+00	E(MEV) = 2.55488E-02	R = 3.40237E-01
ENERGY(MC**2) = 1.04000E+00	E(MEV) = 2.04390E-02	R = 3.60447E-01
ENERGY(MC**2) = 1.03000E+00	E(MEV) = 1.53293E-02	R = 3.94646E-01
ENERGY(MC**2) = 1.02000E+00	E(MEV) = 1.02195E-02	R = 4.63766E-01
ENERGY(MC**2) = 1.01000E+00	E(MEV) = 5.10976E-03	R = 6.72480E-01
ENERGY(MC**2) = 1.00000E+00	E(MEV) = 0.	R = 6.72480E-01

TABLE B-II (continued)

ATOMIC NUMBER = 35		
ENERGY(MC**2) = 4.00000E+01	E(MEV) = 1.99281E+C1	R = 4.81936E-01
ENERGY(MC**2) = 3.90000E+01	E(MEV) = 1.94171E+01	R = 4.81619E-01
ENERGY(MC**2) = 3.80000E+01	E(MEV) = 1.89061E+01	R = 4.81285E-01
ENERGY(MC**2) = 3.70000E+01	E(MEV) = 1.83951E+01	R = 4.80934E-01
ENERGY(MC**2) = 3.60000E+01	E(MEV) = 1.78842E+01	R = 4.80563E-01
ENERGY(MC**2) = 3.50000E+01	E(MEV) = 1.73732E+01	R = 4.80171E-01
ENERGY(MC**2) = 3.40000E+01	E(MEV) = 1.68622E+01	R = 4.79756E-01
ENERGY(MC**2) = 3.30000E+01	E(MEV) = 1.63512E+01	R = 4.79317E-01
ENERGY(MC**2) = 3.20000E+01	E(MEV) = 1.58403E+01	R = 4.78851E-01
ENERGY(MC**2) = 3.10000E+01	E(MEV) = 1.53293E+01	R = 4.78355E-01
ENERGY(MC**2) = 3.00000E+01	E(MEV) = 1.48183E+01	R = 4.77827E-01
ENERGY(MC**2) = 2.90000E+01	E(MEV) = 1.43073E+01	R = 4.77267E-01
ENERGY(MC**2) = 2.80000E+01	E(MEV) = 1.37964E+01	R = 4.76658E-01
ENERGY(MC**2) = 2.70000E+01	E(MEV) = 1.32854E+01	R = 4.76011E-01
ENERGY(MC**2) = 2.60000E+01	E(MEV) = 1.27744E+01	R = 4.75314E-01
ENERGY(MC**2) = 2.50000E+01	E(MEV) = 1.22634E+01	R = 4.74563E-01
ENERGY(MC**2) = 2.40000E+01	E(MEV) = 1.17524E+01	R = 4.73751E-01
ENERGY(MC**2) = 2.30000E+01	E(MEV) = 1.12415E+01	R = 4.72869E-01
ENERGY(MC**2) = 2.20000E+01	E(MEV) = 1.07305E+01	R = 4.71910E-01
ENERGY(MC**2) = 2.10000E+01	E(MEV) = 1.02195E+01	R = 4.70862E-01
ENERGY(MC**2) = 2.00000E+01	E(MEV) = 9.70854E+00	R = 4.69713E-01
ENERGY(MC**2) = 1.90000E+01	E(MEV) = 9.19757E+00	R = 4.68446E-01
ENERGY(MC**2) = 1.80000E+01	E(MEV) = 8.68659E+00	R = 4.67043E-01
ENERGY(MC**2) = 1.70000E+01	E(MEV) = 8.17562E+00	R = 4.65482E-01
ENERGY(MC**2) = 1.60000E+01	E(MEV) = 7.66464E+00	R = 4.63734E-01
ENERGY(MC**2) = 1.50000E+01	E(MEV) = 7.15366E+00	R = 4.61764E-01
ENERGY(MC**2) = 1.40000E+01	E(MEV) = 6.64269E+00	R = 4.59527E-01
ENERGY(MC**2) = 1.30000E+01	E(MEV) = 6.13171E+00	R = 4.56965E-01
ENERGY(MC**2) = 1.20000E+01	E(MEV) = 5.62074E+00	R = 4.54004E-01
ENERGY(MC**2) = 1.10000E+01	E(MEV) = 5.10976E+00	R = 4.50544E-01
ENERGY(MC**2) = 1.00000E+01	E(MEV) = 4.59878E+00	R = 4.46448E-01
ENERGY(MC**2) = 9.00000E+00	E(MEV) = 4.08781E+00	R = 4.41530E-01
ENERGY(MC**2) = 8.00000E+00	E(MEV) = 3.57683E+00	R = 4.35519E-01
ENERGY(MC**2) = 7.00000E+00	E(MEV) = 3.06586E+00	R = 4.28019E-01
ENERGY(MC**2) = 6.00000E+00	E(MEV) = 2.55488E+00	R = 4.18420E-01
ENERGY(MC**2) = 5.00000E+00	E(MEV) = 2.04390E+00	R = 4.05742E-01
ENERGY(MC**2) = 4.00000E+00	E(MEV) = 1.53293E+00	R = 3.88327E-01
ENERGY(MC**2) = 3.00000E+00	E(MEV) = 1.02195E+00	R = 3.63204E-01
ENERGY(MC**2) = 2.00000E+00	E(MEV) = 5.10976E-01	R = 3.25043E-01
ENERGY(MC**2) = 1.90000E+00	E(MEV) = 4.59878E-01	R = 3.20269E-01
ENERGY(MC**2) = 1.80000E+00	E(MEV) = 4.08781E-01	R = 3.15332E-01
ENERGY(MC**2) = 1.70000E+00	E(MEV) = 3.57683E-01	R = 3.10270E-01
ENERGY(MC**2) = 1.60000E+00	E(MEV) = 3.06586E-01	R = 3.05160E-01
ENERGY(MC**2) = 1.50000E+00	E(MEV) = 2.55488E-01	R = 3.00165E-01
ENERGY(MC**2) = 1.40000E+00	E(MEV) = 2.04390E-01	R = 2.95637E-01
ENERGY(MC**2) = 1.30000E+00	E(MEV) = 1.53293E-01	R = 2.92444E-01
ENERGY(MC**2) = 1.20000E+00	E(MEV) = 1.02195E-01	R = 2.93243E-01
ENERGY(MC**2) = 1.10000E+00	E(MEV) = 5.10976E-02	R = 3.11223E-01
ENERGY(MC**2) = 1.09000E+00	E(MEV) = 4.59878E-02	R = 3.16197E-01
ENERGY(MC**2) = 1.08000E+00	E(MEV) = 4.08781E-02	R = 3.22611E-01
ENERGY(MC**2) = 1.07000E+00	E(MEV) = 3.57683E-02	R = 3.31079E-01
ENERGY(MC**2) = 1.06000E+00	E(MEV) = 3.06586E-02	R = 3.42623E-01
ENERGY(MC**2) = 1.05000E+00	E(MEV) = 2.55488E-02	R = 3.59081E-01
ENERGY(MC**2) = 1.04000E+00	E(MEV) = 2.04390E-02	R = 3.84125E-01
ENERGY(MC**2) = 1.03000E+00	E(MEV) = 1.53293E-02	R = 4.26327E-01
ENERGY(MC**2) = 1.02000E+00	E(MEV) = 1.02195E-02	R = 5.11397E-01
ENERGY(MC**2) = 1.01000E+00	E(MEV) = 5.10976E-03	R = 7.67919E-01
ENERGY(MC**2) = 1.00000E+00	E(MEV) = 0.	R = 7.67919E-01

337 244

TABLE B-II (continued)

ATOMIC NUMBER= 40

ENERGY(MC**2)= 4.00000E+01	E(MEV)= 1.99281E+C1	R= 4.80095E-01
ENERGY(MC**2)= 3.90000E+01	E(MEV)= 1.94171E+01	R= 4.79775E-01
ENERGY(MC**2)= 3.80000E+01	E(MEV)= 1.89061E+C1	R= 4.79439E-01
ENERGY(MC**2)= 3.70000E+01	E(MEV)= 1.83951E+01	R= 4.79084E-01
ENERGY(MC**2)= 3.60000E+01	E(MEV)= 1.78842E+01	R= 4.78710E-01
ENERGY(MC**2)= 3.50000E+01	E(MEV)= 1.73732E+01	R= 4.78315E-01
ENERGY(MC**2)= 3.40000E+01	E(MEV)= 1.68622E+01	R= 4.77897E-01
ENERGY(MC**2)= 3.30000E+01	E(MEV)= 1.63512E+01	R= 4.77454E-01
ENERGY(MC**2)= 3.20000E+01	E(MEV)= 1.58403E+C1	R= 4.76983E-01
ENERGY(MC**2)= 3.10000E+01	E(MEV)= 1.53293E+01	R= 4.76483E-01
ENERGY(MC**2)= 3.00000E+01	E(MEV)= 1.48183E+01	R= 4.75949E-01
ENERGY(MC**2)= 2.90000E+01	E(MEV)= 1.43073E+C1	R= 4.75380E-01
ENERGY(MC**2)= 2.80000E+01	E(MEV)= 1.37964E+01	R= 4.74770E-01
ENERGY(MC**2)= 2.70000E+01	E(MEV)= 1.32854E+01	R= 4.74116E-01
ENERGY(MC**2)= 2.60000E+01	E(MEV)= 1.27744E+01	R= 4.73412E-01
ENERGY(MC**2)= 2.50000E+01	E(MEV)= 1.22634E+01	R= 4.72653E-01
ENERGY(MC**2)= 2.40000E+01	E(MEV)= 1.17524E+01	R= 4.71832E-01
ENERGY(MC**2)= 2.30000E+01	E(MEV)= 1.12415E+C1	R= 4.70941E-01
ENERGY(MC**2)= 2.20000E+01	E(MEV)= 1.07305E+01	R= 4.69971E-01
ENERGY(MC**2)= 2.10000E+01	E(MEV)= 1.02195E+01	R= 4.68911E-01
ENERGY(MC**2)= 2.00000E+01	E(MEV)= 9.70854E+00	R= 4.67748E-01
ENERGY(MC**2)= 1.90000E+01	E(MEV)= 9.19757E+00	R= 4.66466E-01
ENERGY(MC**2)= 1.80000E+01	E(MEV)= 8.68659E+00	R= 4.65046E-01
ENERGY(MC**2)= 1.70000E+01	E(MEV)= 8.17562E+00	R= 4.63464E-01
ENERGY(MC**2)= 1.60000E+01	E(MEV)= 7.66464E+00	R= 4.61693E-01
ENERGY(MC**2)= 1.50000E+01	E(MEV)= 7.15366E+00	R= 4.59696E-01
ENERGY(MC**2)= 1.40000E+01	E(MEV)= 6.64269E+00	R= 4.57428E-01
ENERGY(MC**2)= 1.30000E+01	E(MEV)= 6.13171E+00	R= 4.54829E-01
ENERGY(MC**2)= 1.20000E+01	E(MEV)= 5.62074E+00	R= 4.51824E-01
ENERGY(MC**2)= 1.10000E+01	E(MEV)= 5.10976E+00	R= 4.48310E-01
ENERGY(MC**2)= 1.00000E+01	E(MEV)= 4.59878E+00	R= 4.44151E-01
ENERGY(MC**2)= 9.00000E+00	E(MEV)= 4.08781E+00	R= 4.39153E-01
ENERGY(MC**2)= 8.00000E+00	E(MEV)= 3.57683E+00	R= 4.33045E-01
ENERGY(MC**2)= 7.00000E+00	E(MEV)= 3.06586E+00	R= 4.25423E-01
ENERGY(MC**2)= 6.00000E+00	E(MEV)= 2.55488E+00	R= 4.15672E-01
ENERGY(MC**2)= 5.00000E+00	E(MEV)= 2.04390E+00	R= 4.02811E-01
ENERGY(MC**2)= 4.00000E+00	E(MEV)= 1.53293E+00	R= 3.85200E-01
ENERGY(MC**2)= 3.00000E+00	E(MEV)= 1.02195E+00	R= 3.59983E-01
ENERGY(MC**2)= 2.00000E+00	E(MEV)= 5.10976E-01	R= 3.22515E-01
ENERGY(MC**2)= 1.90000E+00	E(MEV)= 4.59878E-01	R= 3.17958E-01
ENERGY(MC**2)= 1.80000E+00	E(MEV)= 4.08781E-01	R= 3.13298E-01
ENERGY(MC**2)= 1.70000E+00	E(MEV)= 3.57683E-C1	R= 3.08593E-01
ENERGY(MC**2)= 1.60000E+00	E(MEV)= 3.06586E-01	R= 3.03952E-01
ENERGY(MC**2)= 1.50000E+00	E(MEV)= 2.55488E-01	R= 2.99587E-01
ENERGY(MC**2)= 1.40000E+00	E(MEV)= 2.04390E-01	R= 2.95940E-01
ENERGY(MC**2)= 1.30000E+00	E(MEV)= 1.53293E-01	R= 2.94067E-01
ENERGY(MC**2)= 1.20000E+00	E(MEV)= 1.02195E-01	R= 2.97141E-01
ENERGY(MC**2)= 1.10000E+00	E(MEV)= 5.10976E-C2	R= 3.20799E-01
ENERGY(MC**2)= 1.09000E+00	E(MEV)= 4.59878E-02	R= 3.26946E-01
ENERGY(MC**2)= 1.08000E+00	E(MEV)= 4.08781E-02	R= 3.34807E-01
ENERGY(MC**2)= 1.07000E+00	E(MEV)= 3.57683E-02	R= 3.45114E-01
ENERGY(MC**2)= 1.06000E+00	E(MEV)= 3.06586E-02	R= 3.59087E-01
ENERGY(MC**2)= 1.05000E+00	E(MEV)= 2.55488E-02	R= 3.78920E-01
ENERGY(MC**2)= 1.04000E+00	E(MEV)= 2.04390E-02	R= 4.09003E-01
ENERGY(MC**2)= 1.03000E+00	E(MEV)= 1.53293E-02	R= 4.59576E-01
ENERGY(MC**2)= 1.02000E+00	E(MEV)= 1.02195E-02	R= 5.61371E-01
ENERGY(MC**2)= 1.01000E+00	E(MEV)= 5.10976E-C3	R= 8.68051E-01
ENERGY(MC**2)= 1.00000E+00	E(MEV)= 0.	R= 8.68051E-01

337-215

TABLE B-II (continued)

ATOMIC NUMBER = 45

ENERGY(MC**2) = 4.00000E+01	E(MEV) = 1.99281E+C1	R = 4.77977E-01
ENERGY(MC**2) = 3.90000E+01	E(MEV) = 1.94171E+01	R = 4.77655E-01
ENERGY(MC**2) = 3.80000E+01	E(MEV) = 1.89061E+01	R = 4.77316E-01
ENERGY(MC**2) = 3.70000E+01	E(MEV) = 1.83951E+01	R = 4.76959E-01
ENERGY(MC**2) = 3.60000E+01	E(MEV) = 1.78842E+01	R = 4.76582E-01
ENERGY(MC**2) = 3.50000E+01	E(MEV) = 1.73732E+01	R = 4.76184E-01
ENERGY(MC**2) = 3.40000E+01	E(MEV) = 1.68622E+01	R = 4.75762E-01
ENERGY(MC**2) = 3.30000E+01	E(MEV) = 1.63512E+01	R = 4.75315E-01
ENERGY(MC**2) = 3.20000E+01	E(MEV) = 1.58403E+01	R = 4.74841E-01
ENERGY(MC**2) = 3.10000E+01	E(MEV) = 1.53293E+01	R = 4.74336E-01
ENERGY(MC**2) = 3.00000E+01	E(MEV) = 1.48183E+01	R = 4.73798E-01
ENERGY(MC**2) = 2.90000E+01	E(MEV) = 1.43073E+01	R = 4.73223E-01
ENERGY(MC**2) = 2.80000E+01	E(MEV) = 1.37964E+01	R = 4.72608E-01
ENERGY(MC**2) = 2.70000E+01	E(MEV) = 1.32854E+01	R = 4.71947E-01
ENERGY(MC**2) = 2.60000E+01	E(MEV) = 1.27744E+01	R = 4.71237E-01
ENERGY(MC**2) = 2.50000E+01	E(MEV) = 1.22634E+01	R = 4.70471E-01
ENERGY(MC**2) = 2.40000E+01	E(MEV) = 1.17524E+01	R = 4.69642E-01
ENERGY(MC**2) = 2.30000E+01	E(MEV) = 1.12415E+01	R = 4.68751E-01
ENERGY(MC**2) = 2.20000E+01	E(MEV) = 1.07305E+01	R = 4.67762E-01
ENERGY(MC**2) = 2.10000E+01	E(MEV) = 1.02195E+01	R = 4.66692E-01
ENERGY(MC**2) = 2.00000E+01	E(MEV) = 9.70854E+00	R = 4.65516E-01
ENERGY(MC**2) = 1.90000E+01	E(MEV) = 9.19757E+00	R = 4.64220E-01
ENERGY(MC**2) = 1.80000E+01	E(MEV) = 8.68659E+00	R = 4.62785E-01
ENERGY(MC**2) = 1.70000E+01	E(MEV) = 8.17562E+00	R = 4.61186E-01
ENERGY(MC**2) = 1.60000E+01	E(MEV) = 7.66464E+00	R = 4.59395E-01
ENERGY(MC**2) = 1.50000E+01	E(MEV) = 7.15366E+00	R = 4.57375E-01
ENERGY(MC**2) = 1.40000E+01	E(MEV) = 6.64269E+00	R = 4.55079E-01
ENERGY(MC**2) = 1.30000E+01	E(MEV) = 6.13171E+00	R = 4.52449E-01
ENERGY(MC**2) = 1.20000E+01	E(MEV) = 5.62074E+00	R = 4.49408E-01
ENERGY(MC**2) = 1.10000E+01	E(MEV) = 5.10976E+00	R = 4.45851E-01
ENERGY(MC**2) = 1.00000E+01	E(MEV) = 4.59878E+00	R = 4.41640E-01
ENERGY(MC**2) = 9.00000E+00	E(MEV) = 4.08781E+00	R = 4.36580E-01
ENERGY(MC**2) = 8.00000E+00	E(MEV) = 3.57683E+00	R = 4.30398E-01
ENERGY(MC**2) = 7.00000E+00	E(MEV) = 3.06586E+00	R = 4.22688E-01
ENERGY(MC**2) = 6.00000E+00	E(MEV) = 2.55488E+00	R = 4.12834E-01
ENERGY(MC**2) = 5.00000E+00	E(MEV) = 2.04390E+00	R = 3.99865E-01
ENERGY(MC**2) = 4.00000E+00	E(MEV) = 1.53293E+00	R = 3.82177E-01
ENERGY(MC**2) = 3.00000E+00	E(MEV) = 1.02195E+00	R = 3.57060E-01
ENERGY(MC**2) = 2.00000E+00	E(MEV) = 5.10976E-01	R = 3.20577E-01
ENERGY(MC**2) = 1.90000E+00	E(MEV) = 4.59878E-C1	R = 3.16265E-01
ENERGY(MC**2) = 1.80000E+00	E(MEV) = 4.08781E-01	R = 3.11908E-01
ENERGY(MC**2) = 1.70000E+00	E(MEV) = 3.57683E-01	R = 3.07582E-01
ENERGY(MC**2) = 1.60000E+00	E(MEV) = 3.06586E-C1	R = 3.03424E-01
ENERGY(MC**2) = 1.50000E+00	E(MEV) = 2.55488E-01	R = 2.99690E-01
ENERGY(MC**2) = 1.40000E+00	E(MEV) = 2.04390E-01	R = 2.96907E-01
ENERGY(MC**2) = 1.30000E+00	E(MEV) = 1.53293E-C1	R = 2.96313E-01
ENERGY(MC**2) = 1.20000E+00	E(MEV) = 1.02195E-01	R = 3.01594E-01
ENERGY(MC**2) = 1.10000E+00	E(MEV) = 5.10976E-C2	R = 3.30924E-01
ENERGY(MC**2) = 1.09000E+00	E(MEV) = 4.59878E-C2	R = 3.38267E-01
ENERGY(MC**2) = 1.08000E+00	E(MEV) = 4.08781E-02	R = 3.47610E-01
ENERGY(MC**2) = 1.07000E+00	E(MEV) = 3.57683E-C2	R = 3.59811E-01
ENERGY(MC**2) = 1.06000E+00	E(MEV) = 3.06586E-C2	R = 3.76296E-01
ENERGY(MC**2) = 1.05000E+00	E(MEV) = 2.55488E-02	R = 3.99632E-01
ENERGY(MC**2) = 1.04000E+00	E(MEV) = 2.04390E-C2	R = 4.34956E-01
ENERGY(MC**2) = 1.03000E+00	E(MEV) = 1.53293E-C2	R = 4.94255E-01
ENERGY(MC**2) = 1.02000E+00	E(MEV) = 1.02195E-02	R = 6.13489E-01
ENERGY(MC**2) = 1.01000E+00	E(MEV) = 5.10976E-03	R = 9.72478E-01
ENERGY(MC**2) = 1.00000E+00	E(MEV) = 0.	R = 9.72478E-01

TABLE B-II (continued)

ATOMIC NUMBER = 50

ENERGY(MC**2) = 4.00000E+01	E(MEV) = 1.99281E+01	R = 4.75566E-01
ENERGY(MC**2) = 3.90000E+01	E(MEV) = 1.94171E+01	R = 4.75242E-01
ENERGY(MC**2) = 3.80000E+01	E(MEV) = 1.89061E+01	R = 4.74900E-01
ENERGY(MC**2) = 3.70000E+01	E(MEV) = 1.83951E+01	R = 4.74540E-01
ENERGY(MC**2) = 3.60000E+01	E(MEV) = 1.78842E+01	R = 4.74160E-01
ENERGY(MC**2) = 3.50000E+01	E(MEV) = 1.73732E+01	R = 4.73759E-01
ENERGY(MC**2) = 3.40000E+01	E(MEV) = 1.68622E+01	R = 4.73334E-01
ENERGY(MC**2) = 3.30000E+01	E(MEV) = 1.63512E+01	R = 4.72884E-01
ENERGY(MC**2) = 3.20000E+01	E(MEV) = 1.58403E+01	R = 4.72406E-01
ENERGY(MC**2) = 3.10000E+01	E(MEV) = 1.53293E+01	R = 4.71897E-01
ENERGY(MC**2) = 3.00000E+01	E(MEV) = 1.48183E+01	R = 4.71355E-01
ENERGY(MC**2) = 2.90000E+01	E(MEV) = 1.43073E+01	R = 4.70775E-01
ENERGY(MC**2) = 2.80000E+01	E(MEV) = 1.37964E+01	R = 4.70155E-01
ENERGY(MC**2) = 2.70000E+01	E(MEV) = 1.32854E+01	R = 4.69489E-01
ENERGY(MC**2) = 2.60000E+01	E(MEV) = 1.27744E+01	R = 4.68773E-01
ENERGY(MC**2) = 2.50000E+01	E(MEV) = 1.22634E+01	R = 4.68000E-01
ENERGY(MC**2) = 2.40000E+01	E(MEV) = 1.17524E+01	R = 4.67164E-01
ENERGY(MC**2) = 2.30000E+01	E(MEV) = 1.12415E+01	R = 4.66256E-01
ENERGY(MC**2) = 2.20000E+01	E(MEV) = 1.07305E+01	R = 4.65268E-01
ENERGY(MC**2) = 2.10000E+01	E(MEV) = 1.02195E+01	R = 4.64187E-01
ENERGY(MC**2) = 2.00000E+01	E(MEV) = 9.70854E+00	R = 4.63001E-01
ENERGY(MC**2) = 1.90000E+01	E(MEV) = 9.19757E+00	R = 4.61694E-01
ENERGY(MC**2) = 1.80000E+01	E(MEV) = 8.68659E+00	R = 4.60245E-01
ENERGY(MC**2) = 1.70000E+01	E(MEV) = 8.17562E+00	R = 4.58631E-01
ENERGY(MC**2) = 1.60000E+01	E(MEV) = 7.66464E+00	R = 4.56823E-01
ENERGY(MC**2) = 1.50000E+01	E(MEV) = 7.15366E+00	R = 4.54784E-01
ENERGY(MC**2) = 1.40000E+01	E(MEV) = 6.64269E+00	R = 4.52466E-01
ENERGY(MC**2) = 1.30000E+01	E(MEV) = 6.13171E+00	R = 4.49811E-01
ENERGY(MC**2) = 1.20000E+01	E(MEV) = 5.62074E+00	R = 4.46740E-01
ENERGY(MC**2) = 1.10000E+01	E(MEV) = 5.10976E+00	R = 4.43150E-01
ENERGY(MC**2) = 1.00000E+01	E(MEV) = 4.59878E+00	R = 4.38900E-01
ENERGY(MC**2) = 9.00000E+00	E(MEV) = 4.08781E+00	R = 4.33796E-01
ENERGY(MC**2) = 8.00000E+00	E(MEV) = 3.57683E+00	R = 4.27563E-01
ENERGY(MC**2) = 7.00000E+00	E(MEV) = 3.06586E+00	R = 4.19797E-01
ENERGY(MC**2) = 6.00000E+00	E(MEV) = 2.55488E+00	R = 4.09889E-01
ENERGY(MC**2) = 5.00000E+00	E(MEV) = 2.04390E+00	R = 3.96882E-01
ENERGY(MC**2) = 4.00000E+00	E(MEV) = 1.53293E+00	R = 3.79225E-01
ENERGY(MC**2) = 3.00000E+00	E(MEV) = 1.02195E+00	R = 3.54375E-01
ENERGY(MC**2) = 2.00000E+00	E(MEV) = 5.10976E-01	R = 3.19096E-01
ENERGY(MC**2) = 1.90000E+00	E(MEV) = 4.59878E-01	R = 3.15048E-01
ENERGY(MC**2) = 1.80000E+00	E(MEV) = 4.08781E-01	R = 3.11008E-01
ENERGY(MC**2) = 1.70000E+00	E(MEV) = 3.57683E-01	R = 3.07070E-01
ENERGY(MC**2) = 1.60000E+00	E(MEV) = 3.06586E-01	R = 3.03395E-01
ENERGY(MC**2) = 1.50000E+00	E(MEV) = 2.55488E-01	R = 3.00285E-01
ENERGY(MC**2) = 1.40000E+00	E(MEV) = 2.04390E-01	R = 2.98345E-01
ENERGY(MC**2) = 1.30000E+00	E(MEV) = 1.53293E-01	R = 2.98992E-01
ENERGY(MC**2) = 1.20000E+00	E(MEV) = 1.02195E-01	R = 3.06437E-01
ENERGY(MC**2) = 1.10000E+00	E(MEV) = 5.10976E-02	R = 3.41496E-01
ENERGY(MC**2) = 1.09000E+00	E(MEV) = 4.59878E-02	R = 3.50056E-01
ENERGY(MC**2) = 1.08000E+00	E(MEV) = 4.08781E-02	R = 3.60936E-01
ENERGY(MC**2) = 1.07000E+00	E(MEV) = 3.57683E-02	R = 3.75091E-01
ENERGY(MC**2) = 1.06000E+00	E(MEV) = 3.06586E-02	R = 3.94174E-01
ENERGY(MC**2) = 1.05000E+00	E(MEV) = 2.55488E-02	R = 4.21140E-01
ENERGY(MC**2) = 1.04000E+00	E(MEV) = 2.04390E-02	R = 4.61901E-01
ENERGY(MC**2) = 1.03000E+00	E(MEV) = 1.53293E-02	R = 5.30255E-01
ENERGY(MC**2) = 1.02000E+00	E(MEV) = 1.02195E-02	R = 6.67593E-01
ENERGY(MC**2) = 1.01000E+00	E(MEV) = 5.10976E-03	R = 0.
ENERGY(MC**2) = 1.00000E+00	E(MEV) = 0.	R = 0.

357 217

TABLE B-II (continued)

ATOMIC NUMBER = 55		
ENERGY(MC**2) = 4.00000E+01	E(MEV) = 1.99281E+01	R = 4.72841E-01
ENERGY(MC**2) = 3.90000E+01	E(MEV) = 1.94171E	R = 4.72514E-01
ENERGY(MC**2) = 3.80000E+01	E(MEV) = 1.89061E+C1	R = 4.72170E-01
ENERGY(MC**2) = 3.70000E+01	E(MEV) = 1.83951E+01	R = 4.71808E-01
ENERGY(MC**2) = 3.60000E+01	E(MEV) = 1.78842E+C1	R = 4.71426E-01
ENERGY(MC**2) = 3.50000E+01	E(MEV) = 1.73732E+C1	R = 4.71022E-01
ENERGY(MC**2) = 3.40000E+01	E(MEV) = 1.68622E+01	R = 4.70594E-01
ENERGY(MC**2) = 3.30000E+01	E(MEV) = 1.63512E+01	R = 4.70140E-01
ENERGY(MC**2) = 3.20000E+01	E(MEV) = 1.58403E+C1	R = 4.69659E-01
ENERGY(MC**2) = 3.10000E+01	E(MEV) = 1.53293E+01	R = 4.69146E-01
ENERGY(MC**2) = 3.00000E+01	E(MEV) = 1.48183E+C1	R = 4.68600E-01
ENERGY(MC**2) = 2.90000E+01	E(MEV) = 1.43073E+C1	R = 4.68016E-01
ENERGY(MC**2) = 2.80000E+01	E(MEV) = 1.37964E+01	R = 4.67391E-01
ENERGY(MC**2) = 2.70000E+01	E(MEV) = 1.32854E+01	R = 4.66721E-01
ENERGY(MC**2) = 2.60000E+01	E(MEV) = 1.27744E+C1	R = 4.65999E-01
ENERGY(MC**2) = 2.50000E+01	E(MEV) = 1.22634E+01	R = 4.65221E-01
ENERGY(MC**2) = 2.40000E+01	E(MEV) = 1.17524E+01	R = 4.64378E-01
ENERGY(MC**2) = 2.30000E+01	E(MEV) = 1.12415E+C1	R = 4.63464E-01
ENERGY(MC**2) = 2.20000E+01	E(MEV) = 1.07305E+01	R = 4.62468E-01
ENERGY(MC**2) = 2.10000E+01	E(MEV) = 1.02195E+C1	R = 4.61379E-01
ENERGY(MC**2) = 2.00000E+01	E(MEV) = 9.70854E+CC	R = 4.60184E-01
ENERGY(MC**2) = 1.90000E+01	E(MEV) = 9.19757E+00	R = 4.58866E-01
ENERGY(MC**2) = 1.80000E+01	E(MEV) = 8.68659E+00	R = 4.57406E-01
ENERGY(MC**2) = 1.70000E+01	E(MEV) = 8.17562E+CC	R = 4.55780E-01
ENERGY(MC**2) = 1.60000E+01	E(MEV) = 7.66464E+00	R = 4.53959E-01
ENERGY(MC**2) = 1.50000E+01	E(MEV) = 7.15366E+CC	R = 4.51904E-01
ENERGY(MC**2) = 1.40000E+01	E(MEV) = 6.64269E+CC	R = 4.49569E-01
ENERGY(MC**2) = 1.30000E+01	E(MEV) = 6.13171E+00	R = 4.46895E-01
ENERGY(MC**2) = 1.20000E+01	E(MEV) = 5.62074E+00	R = 4.43803E-01
ENERGY(MC**2) = 1.10000E+01	E(MEV) = 5.10976E+CC	R = 4.40189E-01
ENERGY(MC**2) = 1.00000E+01	E(MEV) = 4.59878E+00	R = 4.35913E-01
ENERGY(MC**2) = 9.00000E+00	E(MEV) = 4.08781E+00	R = 4.30782E-01
ENERGY(MC**2) = 8.00000E+00	E(MEV) = 3.57683E+CC	R = 4.24522E-01
ENERGY(MC**2) = 7.00000E+00	E(MEV) = 3.06586E+00	R = 4.16733E-01
ENERGY(MC**2) = 6.00000E+00	E(MEV) = 2.55488E+00	R = 4.06816E-01
ENERGY(MC**2) = 5.00000E+00	E(MEV) = 2.04390E+CC	R = 3.93838E-01
ENERGY(MC**2) = 4.00000E+00	E(MEV) = 1.53293E+00	R = 3.76310E-01
ENERGY(MC**2) = 3.00000E+00	E(MEV) = 1.02195E+00	R = 3.51872E-01
ENERGY(MC**2) = 2.00000E+00	E(MEV) = 5.10976E-C1	R = 3.17963E-01
ENERGY(MC**2) = 1.90000E+00	E(MEV) = 4.59878E-01	R = 3.14189E-01
ENERGY(MC**2) = 1.80000E+00	E(MEV) = 4.08781E-C1	R = 3.10473E-01
ENERGY(MC**2) = 1.70000E+00	E(MEV) = 3.57683E-C1	R = 3.06976E-01
ENERGY(MC**2) = 1.60000E+00	E(MEV) = 3.06586E-01	R = 3.03732E-01
ENERGY(MC**2) = 1.50000E+00	E(MEV) = 2.55488E-C1	R = 3.01234E-01
ENERGY(MC**2) = 1.40000E+00	E(MEV) = 2.04390E-C1	R = 3.00117E-01
ENERGY(MC**2) = 1.30000E+00	E(MEV) = 1.53293E-01	R = 3.01478E-01
ENERGY(MC**2) = 1.20000E+00	E(MEV) = 1.02195E-C1	R = 3.11569E-01
ENERGY(MC**2) = 1.10000E+00	E(MEV) = 5.10976E-C2	R = 3.52456E-01
ENERGY(MC**2) = 1.05000E+00	E(MEV) = 4.59878E-02	R = 3.62288E-01
ENERGY(MC**2) = 1.08000E+00	E(MEV) = 4.08781E-C2	R = 3.74730E-01
ENERGY(MC**2) = 1.07000E+00	E(MEV) = 3.57683E-C2	R = 3.90902E-01
ENERGY(MC**2) = 1.06000E+00	E(MEV) = 3.06586E-02	R = 4.12668E-01
ENERGY(MC**2) = 1.05000E+00	E(MEV) = 2.55488E-02	R = 4.43385E-01
ENERGY(MC**2) = 1.04000E+00	E(MEV) = 2.04390E-C2	R = 4.89769E-01
ENERGY(MC**2) = 1.03000E+00	E(MEV) = 1.53293E-02	R = 5.67488E-01
ENERGY(MC**2) = 1.02000E+00	E(MEV) = 1.02195E-02	R = 7.23549E-01
ENERGY(MC**2) = 1.01000E+00	E(MEV) = 5.10976E-C3	R = 0.
ENERGY(MC**2) = 1.00000E+00	E(MEV) = 0.	R = 0.

TABLE B-II (continued)

ATOMIC NUMBER = 60

ENERGY(MC**2) = 4.00000E+01	E(MEV) = 1.99281E+C1	R = 4.69778E-01
ENERGY(MC**2) = 3.90000E+01	E(MEV) = 1.94171E+01	R = 4.69449E-01
ENERGY(MC**2) = 3.80000E+01	E(MEV) = 1.89061E+01	R = 4.69103E-01
ENERGY(MC**2) = 3.70000E+01	E(MEV) = 1.83951E+01	R = 4.68738E-01
ENERGY(MC**2) = 3.60000E+01	E(MEV) = 1.78842E+C1	R = 4.68353E-01
ENERGY(MC**2) = 3.50000E+01	E(MEV) = 1.73732E+C1	R = 4.67947E-01
ENERGY(MC**2) = 3.40000E+01	E(MEV) = 1.68622E+01	R = 4.67516E-01
ENERGY(MC**2) = 3.30000E+01	E(MEV) = 1.63512E+01	R = 4.67060E-01
ENERGY(MC**2) = 3.20000E+01	E(MEV) = 1.58403E+C1	R = 4.66575E-01
ENERGY(MC**2) = 3.10000E+01	E(MEV) = 1.53293E+01	R = 4.66059E-01
ENERGY(MC**2) = 3.00000E+01	E(MEV) = 1.48183E+01	R = 4.65510E-01
ENERGY(MC**2) = 2.90000E+01	E(MEV) = 1.43073E+C1	R = 4.64922E-01
ENERGY(MC**2) = 2.80000E+01	E(MEV) = 1.37964E+01	R = 4.64293E-01
ENERGY(MC**2) = 2.70000E+01	E(MEV) = 1.32854E+C1	R = 4.63618E-01
ENERGY(MC**2) = 2.60000E+01	E(MEV) = 1.27744E+C1	R = 4.62892E-01
ENERGY(MC**2) = 2.50000E+01	E(MEV) = 1.22634E+01	R = 4.62109E-01
ENERGY(MC**2) = 2.40000E+01	E(MEV) = 1.17524E+01	R = 4.61261E-01
ENERGY(MC**2) = 2.30000E+01	E(MEV) = 1.12415E+C1	R = 4.60341E-01
ENERGY(MC**2) = 2.20000E+01	E(MEV) = 1.07305E+01	R = 4.59338E-01
ENERGY(MC**2) = 2.10000E+01	E(MEV) = 1.02195E+C1	R = 4.58243E-01
ENERGY(MC**2) = 2.00000E+01	E(MEV) = 9.70854E+CC	R = 4.57040E-01
ENERGY(MC**2) = 1.90000E+01	E(MEV) = 9.19757E+00	R = 4.55715E-01
ENERGY(MC**2) = 1.80000E+01	E(MEV) = 8.68659E+00	R = 4.54246E-01
ENERGY(MC**2) = 1.70000E+01	E(MEV) = 8.17562E+CC	R = 4.52611E-01
ENERGY(MC**2) = 1.60000E+01	E(MEV) = 7.66464E+00	R = 4.50779E-01
ENERGY(MC**2) = 1.50000E+01	E(MEV) = 7.15366E+CC	R = 4.48713E-01
ENERGY(MC**2) = 1.40000E+01	E(MEV) = 6.64269E+CC	R = 4.46367E-01
ENERGY(MC**2) = 1.30000E+01	E(MEV) = 6.13171E+00	R = 4.43680E-01
ENERGY(MC**2) = 1.20000E+01	E(MEV) = 5.62074E+CC	R = 4.40574E-01
ENERGY(MC**2) = 1.10000E+01	E(MEV) = 5.10976E+CC	R = 4.36947E-01
ENERGY(MC**2) = 1.00000E+01	E(MEV) = 4.59878E+00	R = 4.32659E-01
ENERGY(MC**2) = 9.00000E+00	E(MEV) = 4.08781E+CC	R = 4.27518E-01
ENERGY(MC**2) = 8.00000E+00	E(MEV) = 3.57683E+CC	R = 4.21254E-01
ENERGY(MC**2) = 7.00000E+00	E(MEV) = 3.06586E+00	R = 4.13474E-01
ENERGY(MC**2) = 6.00000E+00	E(MEV) = 2.55488E+CC	R = 4.03592E-01
ENERGY(MC**2) = 5.00000E+00	E(MEV) = 2.04390E+CC	R = 3.90707E-01
ENERGY(MC**2) = 4.00000E+00	E(MEV) = 1.53293E+00	R = 3.73399E-01
ENERGY(MC**2) = 3.00000E+00	E(MEV) = 1.02195E+00	R = 3.49498E-01
ENERGY(MC**2) = 2.00000E+00	E(MEV) = 5.10976E-01	R = 3.17088E-01
ENERGY(MC**2) = 1.90000E+00	E(MEV) = 4.59878E-01	R = 3.13594E-01
ENERGY(MC**2) = 1.80000E+00	E(MEV) = 4.08781E-C1	R = 3.10207E-01
ENERGY(MC**2) = 1.70000E+00	E(MEV) = 3.57683E-C1	R = 3.07049E-01
ENERGY(MC**2) = 1.60000E+00	E(MEV) = 3.06586E-01	R = 3.04332E-01
ENERGY(MC**2) = 1.50000E+00	E(MEV) = 2.55488E-C1	R = 3.02436E-01
ENERGY(MC**2) = 1.40000E+00	E(MEV) = 2.04390E-C1	R = 3.02128E-01
ENERGY(MC**2) = 1.30000E+00	E(MEV) = 1.53293E-01	R = 3.05188E-01
ENERGY(MC**2) = 1.20000E+00	E(MEV) = 1.02195E-C1	R = 3.16928E-01
ENERGY(MC**2) = 1.10000E+00	E(MEV) = 5.10976E-C2	R = 3.63767E-01
ENERGY(MC**2) = 1.09000E+00	E(MEV) = 4.59878E-02	R = 3.74896E-01
ENERGY(MC**2) = 1.08000E+00	E(MEV) = 4.08781E-C2	R = 3.88957E-01
ENERGY(MC**2) = 1.07000E+00	E(MEV) = 3.57683E-C2	R = 4.07206E-01
ENERGY(MC**2) = 1.06000E+00	E(MEV) = 3.06586E-02	R = 4.31738E-01
ENERGY(MC**2) = 1.05000E+00	E(MEV) = 2.55488E-02	R = 4.66324E-01
ENERGY(MC**2) = 1.04000E+00	E(MEV) = 2.04390E-C2	R = 5.18505E-01
ENERGY(MC**2) = 1.03000E+00	E(MEV) = 1.53293E-02	R = 6.05881E-01
ENERGY(MC**2) = 1.02000E+00	E(MEV) = 1.02195E-C2	R = 7.81246E-01
ENERGY(MC**2) = 1.01000E+00	E(MEV) = 5.10976E-C3	R = 0.
ENERGY(MC**2) = 1.00000E+00	E(MEV) = 0.	R = 0.

TABLE B-II (continued)

ATOMIC NUMBER= 65

ENERGY(MC**2)= 4.00000E+01	E(MEV)= 1.99281E+01	R= 4.66347E-01
ENERGY(MC**2)= 3.90000E+01	E(MEV)= 1.94171E+01	R= 4.66017E-01
ENERGY(MC**2)= 3.80000E+01	E(MEV)= 1.89061E+01	R= 4.65669E-01
ENERGY(MC**2)= 3.70000E+01	E(MEV)= 1.83951E+01	R= 4.65302E-01
ENERGY(MC**2)= 3.60000E+01	E(MEV)= 1.78842E+01	R= 4.64915E-01
ENERGY(MC**2)= 3.50000E+01	E(MEV)= 1.73732E+01	R= 4.64506E-01
ENERGY(MC**2)= 3.40000E+01	E(MEV)= 1.68622E+01	R= 4.64073E-01
ENERGY(MC**2)= 3.30000E+01	E(MEV)= 1.63512E+01	R= 4.63614E-01
ENERGY(MC**2)= 3.20000E+01	E(MEV)= 1.58403E+01	R= 4.63126E-01
ENERGY(MC**2)= 3.10000E+01	E(MEV)= 1.53293E+01	R= 4.62608E-01
ENERGY(MC**2)= 3.00000E+01	E(MEV)= 1.48183E+01	R= 4.62055E-01
ENERGY(MC**2)= 2.90000E+01	E(MEV)= 1.43073E+01	R= 4.61464E-01
ENERGY(MC**2)= 2.80000E+01	E(MEV)= 1.37964E+01	R= 4.60832E-01
ENERGY(MC**2)= 2.70000E+01	E(MEV)= 1.32854E+01	R= 4.60153E-01
ENERGY(MC**2)= 2.60000E+01	E(MEV)= 1.27744E+01	R= 4.59423E-01
ENERGY(MC**2)= 2.50000E+01	E(MEV)= 1.22634E+01	R= 4.58636E-01
ENERGY(MC**2)= 2.40000E+01	E(MEV)= 1.17524E+01	R= 4.57783E-01
ENERGY(MC**2)= 2.30000E+01	E(MEV)= 1.12415E+01	R= 4.56859E-01
ENERGY(MC**2)= 2.20000E+01	E(MEV)= 1.07305E+01	R= 4.55852E-01
ENERGY(MC**2)= 2.10000E+01	E(MEV)= 1.02195E+01	R= 4.54751E-01
ENERGY(MC**2)= 2.00000E+01	E(MEV)= 9.70854E+00	R= 4.53543E-01
ENERGY(MC**2)= 1.90000E+01	E(MEV)= 9.19757E+00	R= 4.52211E-01
ENERGY(MC**2)= 1.80000E+01	E(MEV)= 8.68659E+00	R= 4.50737E-01
ENERGY(MC**2)= 1.70000E+01	E(MEV)= 8.17562E+00	R= 4.49095E-01
ENERGY(MC**2)= 1.60000E+01	E(MEV)= 7.66464E+00	R= 4.47256E-01
ENERGY(MC**2)= 1.50000E+01	E(MEV)= 7.15366E+00	R= 4.45184E-01
ENERGY(MC**2)= 1.40000E+01	E(MEV)= 6.64269E+00	R= 4.42831E-01
ENERGY(MC**2)= 1.30000E+01	E(MEV)= 6.13171E+00	R= 4.40139E-01
ENERGY(MC**2)= 1.20000E+01	E(MEV)= 5.62074E+00	R= 4.37029E-01
ENERGY(MC**2)= 1.10000E+01	E(MEV)= 5.10976E+00	R= 4.33399E-01
ENERGY(MC**2)= 1.00000E+01	E(MEV)= 4.59878E+00	R= 4.29112E-01
ENERGY(MC**2)= 9.00000E+00	E(MEV)= 4.08781E+00	R= 4.23979E-01
ENERGY(MC**2)= 8.00000E+00	E(MEV)= 3.57683E+00	R= 4.17734E-01
ENERGY(MC**2)= 7.00000E+00	E(MEV)= 3.06586E+00	R= 4.09994E-01
ENERGY(MC**2)= 6.00000E+00	E(MEV)= 2.55488E+00	R= 4.00192E-01
ENERGY(MC**2)= 5.00000E+00	E(MEV)= 2.04390E+00	R= 3.87459E-01
ENERGY(MC**2)= 4.00000E+00	E(MEV)= 1.53293E+00	R= 3.70457E-01
ENERGY(MC**2)= 3.00000E+00	E(MEV)= 1.02195E+00	R= 3.47204E-01
ENERGY(MC**2)= 2.00000E+00	E(MEV)= 5.10976E-01	R= 3.16396E-01
ENERGY(MC**2)= 1.90000E+00	E(MEV)= 4.59878E-01	R= 3.13188E-01
ENERGY(MC**2)= 1.80000E+00	E(MEV)= 4.08781E-01	R= 3.10131E-01
ENERGY(MC**2)= 1.70000E+00	E(MEV)= 3.57683E-01	R= 3.07363E-01
ENERGY(MC**2)= 1.60000E+00	E(MEV)= 3.06586E-01	R= 3.05118E-01
ENERGY(MC**2)= 1.50000E+00	E(MEV)= 2.55488E-01	R= 3.03817E-01
ENERGY(MC**2)= 1.40000E+00	E(MEV)= 2.04390E-01	R= 3.04309E-01
ENERGY(MC**2)= 1.30000E+00	E(MEV)= 1.53293E-01	R= 3.08563E-01
ENERGY(MC**2)= 1.20000E+00	E(MEV)= 1.02195E-01	R= 3.22471E-01
ENERGY(MC**2)= 1.10000E+00	E(MEV)= 5.10976E-02	R= 3.75403E-01
ENERGY(MC**2)= 1.09000E+00	E(MEV)= 4.59878E-02	R= 3.87867E-01
ENERGY(MC**2)= 1.08000E+00	E(MEV)= 4.08781E-02	R= 4.03592E-01
ENERGY(MC**2)= 1.07000E+00	E(MEV)= 3.57683E-02	R= 4.23977E-01
ENERGY(MC**2)= 1.06000E+00	E(MEV)= 3.06586E-02	R= 4.51354E-01
ENERGY(MC**2)= 1.05000E+00	E(MEV)= 2.55488E-02	R= 4.89018E-01
ENERGY(MC**2)= 1.04000E+00	E(MEV)= 2.04390E-02	R= 5.48062E-01
ENERGY(MC**2)= 1.03000E+00	E(MEV)= 1.53293E-02	R= 6.45369E-01
ENERGY(MC**2)= 1.02000E+00	E(MEV)= 1.02195E-02	R= 8.40586E-01
ENERGY(MC**2)= 1.01000E+00	E(MEV)= 5.10976E-03	R= 0.
ENERGY(MC**2)= 1.00000E+00	E(MEV)= 0.	R= 0.

TABLE B-II (continued)

ATOMIC NUMBER= 70

ENERGY(MC**2)= 4.00000E+01	E(MEV)= 1.99281E+01	R= 4.62515E-01
ENERGY(MC**2)= 3.90000E+01	E(MEV)= 1.94171E+01	R= 4.62182E-01
ENERGY(MC**2)= 3.80000E+01	E(MEV)= 1.89061E+01	R= 4.61832E-01
ENERGY(MC**2)= 3.70000E+01	E(MEV)= 1.83951E+01	R= 4.61464E-01
ENERGY(MC**2)= 3.60000E+01	E(MEV)= 1.78842E+01	R= 4.61075E-01
ENERGY(MC**2)= 3.50000E+01	E(MEV)= 1.73732E+01	R= 4.60664E-01
ENERGY(MC**2)= 3.40000E+01	E(MEV)= 1.68622E+01	R= 4.60229E-01
ENERGY(MC**2)= 3.30000E+01	E(MEV)= 1.63512E+01	R= 4.59767E-01
ENERGY(MC**2)= 3.20000E+01	E(MEV)= 1.58403E+01	R= 4.59278E-01
ENERGY(MC**2)= 3.10000E+01	E(MEV)= 1.53293E+01	R= 4.58756E-01
ENERGY(MC**2)= 3.00000E+01	E(MEV)= 1.48183E+01	R= 4.58201E-01
ENERGY(MC**2)= 2.90000E+01	E(MEV)= 1.43073E+01	R= 4.57608E-01
ENERGY(MC**2)= 2.80000E+01	E(MEV)= 1.37964E+01	R= 4.56973E-01
ENERGY(MC**2)= 2.70000E+01	E(MEV)= 1.32854E+01	R= 4.56291E-01
ENERGY(MC**2)= 2.60000E+01	E(MEV)= 1.27744E+01	R= 4.55558E-01
ENERGY(MC**2)= 2.50000E+01	E(MEV)= 1.22634E+01	R= 4.54768E-01
ENERGY(MC**2)= 2.40000E+01	E(MEV)= 1.17524E+01	R= 4.53912E-01
ENERGY(MC**2)= 2.30000E+01	E(MEV)= 1.12415E+01	R= 4.52984E-01
ENERGY(MC**2)= 2.20000E+01	E(MEV)= 1.07305E+01	R= 4.51974E-01
ENERGY(MC**2)= 2.10000E+01	E(MEV)= 1.02195E+01	R= 4.50869E-01
ENERGY(MC**2)= 2.00000E+01	E(MEV)= 9.70854E+00	R= 4.49658E-01
ENERGY(MC**2)= 1.90000E+01	E(MEV)= 9.19757E+00	R= 4.48323E-01
ENERGY(MC**2)= 1.80000E+01	E(MEV)= 8.68659E+00	R= 4.46845E-01
ENERGY(MC**2)= 1.70000E+01	E(MEV)= 8.17562E+00	R= 4.45201E-01
ENERGY(MC**2)= 1.60000E+01	E(MEV)= 7.66464E+00	R= 4.43359E-01
ENERGY(MC**2)= 1.50000E+01	E(MEV)= 7.15366E+00	R= 4.41286E-01
ENERGY(MC**2)= 1.40000E+01	E(MEV)= 6.64269E+00	R= 4.38932E-01
ENERGY(MC**2)= 1.30000E+01	E(MEV)= 6.13171E+00	R= 4.36241E-01
ENERGY(MC**2)= 1.20000E+01	E(MEV)= 5.62074E+00	R= 4.33135E-01
ENERGY(MC**2)= 1.10000E+01	E(MEV)= 5.10976E+00	R= 4.29514E-01
ENERGY(MC**2)= 1.00000E+01	E(MEV)= 4.59878E+00	R= 4.25243E-01
ENERGY(MC**2)= 9.00000E+00	E(MEV)= 4.08781E+00	R= 4.20136E-01
ENERGY(MC**2)= 8.00000E+00	E(MEV)= 3.57683E+00	R= 4.13935E-01
ENERGY(MC**2)= 7.00000E+00	E(MEV)= 3.06586E+00	R= 4.06267E-01
ENERGY(MC**2)= 6.00000E+00	E(MEV)= 2.55488E+00	R= 3.96587E-01
ENERGY(MC**2)= 5.00000E+00	E(MEV)= 2.04390E+00	R= 3.84066E-01
ENERGY(MC**2)= 4.00000E+00	E(MEV)= 1.53293E+00	R= 3.67447E-01
ENERGY(MC**2)= 3.00000E+00	E(MEV)= 1.02195E+00	R= 3.44942E-01
ENERGY(MC**2)= 2.00000E+00	E(MEV)= 5.10976E-01	R= 3.15827E-01
ENERGY(MC**2)= 1.90000E+00	E(MEV)= 4.59878E-01	R= 3.12908E-01
ENERGY(MC**2)= 1.80000E+00	E(MEV)= 4.08781E-01	R= 3.10183E-01
ENERGY(MC**2)= 1.70000E+00	E(MEV)= 3.57683E-01	R= 3.07806E-01
ENERGY(MC**2)= 1.60000E+00	E(MEV)= 3.06586E-01	R= 3.06031E-01
ENERGY(MC**2)= 1.50000E+00	E(MEV)= 2.55488E-01	R= 3.05323E-01
ENERGY(MC**2)= 1.40000E+00	E(MEV)= 2.04390E-01	R= 3.06613E-01
ENERGY(MC**2)= 1.30000E+00	E(MEV)= 1.53293E-01	R= 3.12066E-01
ENERGY(MC**2)= 1.20000E+00	E(MEV)= 1.02195E-01	R= 3.28173E-01
ENERGY(MC**2)= 1.10000E+00	E(MEV)= 5.10976E-02	R= 3.87346E-01
ENERGY(MC**2)= 1.09000E+00	E(MEV)= 4.59878E-02	R= 4.01178E-01
ENERGY(MC**2)= 1.08000E+00	E(MEV)= 4.08781E-02	R= 4.18612E-01
ENERGY(MC**2)= 1.07000E+00	E(MEV)= 3.57683E-02	R= 4.41190E-01
ENERGY(MC**2)= 1.06000E+00	E(MEV)= 3.06586E-02	R= 4.71486E-01
ENERGY(MC**2)= 1.05000E+00	E(MEV)= 2.55488E-02	R= 5.16134E-01
ENERGY(MC**2)= 1.04000E+00	E(MEV)= 2.04390E-02	R= 5.78398E-01
ENERGY(MC**2)= 1.03000E+00	E(MEV)= 1.53293E-02	R= 6.85897E-01
ENERGY(MC**2)= 1.02000E+00	E(MEV)= 1.02195E-02	R= 9.01487E-01
ENERGY(MC**2)= 1.01000E+00	E(MEV)= 5.10976E-03	R= 0.
ENERGY(MC**2)= 1.00000E+00	E(MEV)= 0.	R= 0.

337 251

TABLE B-II (continued)

ATOMIC NUMBER = 75		
ENERGY(MC**2) = 4.00000E+01	E(MEV) = 1.99281E+01	R = 4.58236E-01
ENERGY(MC**2) = 3.90000E+01	E(MEV) = 1.94171E+01	R = 4.57903E-01
ENERGY(MC**2) = 3.80000E+01	E(MEV) = 1.89061E+01	R = 4.57551E-01
ENERGY(MC**2) = 3.70000E+01	E(MEV) = 1.83951E+01	R = 4.57181E-01
ENERGY(MC**2) = 3.60000E+01	E(MEV) = 1.78842E+01	R = 4.56790E-01
ENERGY(MC**2) = 3.50000E+01	E(MEV) = 1.73732E+01	R = 4.56378E-01
ENERGY(MC**2) = 3.40000E+01	E(MEV) = 1.68622E+01	R = 4.55941E-01
ENERGY(MC**2) = 3.30000E+01	E(MEV) = 1.63512E+01	R = 4.55478E-01
ENERGY(MC**2) = 3.20000E+01	E(MEV) = 1.58403E+01	R = 4.54986E-01
ENERGY(MC**2) = 3.10000E+01	E(MEV) = 1.53293E+01	R = 4.54463E-01
ENERGY(MC**2) = 3.00000E+01	E(MEV) = 1.48183E+01	R = 4.53906E-01
ENERGY(MC**2) = 2.90000E+01	E(MEV) = 1.43073E+01	R = 4.53311E-01
ENERGY(MC**2) = 2.80000E+01	E(MEV) = 1.37964E+01	R = 4.52674E-01
ENERGY(MC**2) = 2.70000E+01	E(MEV) = 1.32854E+01	R = 4.51991E-01
ENERGY(MC**2) = 2.60000E+01	E(MEV) = 1.27744E+01	R = 4.51256E-01
ENERGY(MC**2) = 2.50000E+01	E(MEV) = 1.22634E+01	R = 4.50463E-01
ENERGY(MC**2) = 2.40000E+01	E(MEV) = 1.17524E+01	R = 4.49606E-01
ENERGY(MC**2) = 2.30000E+01	E(MEV) = 1.12415E+01	R = 4.48676E-01
ENERGY(MC**2) = 2.20000E+01	E(MEV) = 1.07305E+01	R = 4.47664E-01
ENERGY(MC**2) = 2.10000E+01	E(MEV) = 1.02195E+01	R = 4.46558E-01
ENERGY(MC**2) = 2.00000E+01	E(MEV) = 9.70854E+00	R = 4.45346E-01
ENERGY(MC**2) = 1.90000E+01	E(MEV) = 9.19757E+00	R = 4.44010E-01
ENERGY(MC**2) = 1.80000E+01	E(MEV) = 8.68659E+00	R = 4.42532E-01
ENERGY(MC**2) = 1.70000E+01	E(MEV) = 8.17562E+00	R = 4.40888E-01
ENERGY(MC**2) = 1.60000E+01	E(MEV) = 7.66464E+00	R = 4.39049E-01
ENERGY(MC**2) = 1.50000E+01	E(MEV) = 7.15366E+00	R = 4.36979E-01
ENERGY(MC**2) = 1.40000E+01	E(MEV) = 6.64269E+00	R = 4.34632E-01
ENERGY(MC**2) = 1.30000E+01	E(MEV) = 6.13171E+00	R = 4.31950E-01
ENERGY(MC**2) = 1.20000E+01	E(MEV) = 5.62074E+00	R = 4.28858E-01
ENERGY(MC**2) = 1.10000E+01	E(MEV) = 5.10976E+00	R = 4.25257E-01
ENERGY(MC**2) = 1.00000E+01	E(MEV) = 4.59878E+00	R = 4.21016E-01
ENERGY(MC**2) = 9.00000E+00	E(MEV) = 4.08781E+00	R = 4.15955E-01
ENERGY(MC**2) = 8.00000E+00	E(MEV) = 3.57683E+00	R = 4.09822E-01
ENERGY(MC**2) = 7.00000E+00	E(MEV) = 3.06586E+00	R = 4.02260E-01
ENERGY(MC**2) = 6.00000E+00	E(MEV) = 2.55488E+00	R = 3.92744E-01
ENERGY(MC**2) = 5.00000E+00	E(MEV) = 2.04390E+00	R = 3.80492E-01
ENERGY(MC**2) = 4.00000E+00	E(MEV) = 1.53293E+00	R = 3.64333E-01
ENERGY(MC**2) = 3.00000E+00	E(MEV) = 1.02195E+00	R = 3.42669E-01
ENERGY(MC**2) = 2.00000E+00	E(MEV) = 5.10976E-01	R = 3.15329E-01
ENERGY(MC**2) = 1.90000E+00	E(MEV) = 4.59878E-01	R = 3.12703E-01
ENERGY(MC**2) = 1.80000E+00	E(MEV) = 4.08781E-01	R = 3.10315E-01
ENERGY(MC**2) = 1.70000E+00	E(MEV) = 3.57683E-01	R = 3.08329E-01
ENERGY(MC**2) = 1.60000E+00	E(MEV) = 3.06586E-01	R = 3.07026E-01
ENERGY(MC**2) = 1.50000E+00	E(MEV) = 2.55488E-01	R = 3.06912E-01
ENERGY(MC**2) = 1.40000E+00	E(MEV) = 2.04390E-01	R = 3.09004E-01
ENERGY(MC**2) = 1.30000E+00	E(MEV) = 1.53293E-01	R = 3.15670E-01
ENERGY(MC**2) = 1.20000E+00	E(MEV) = 1.02195E-01	R = 3.34017E-01
ENERGY(MC**2) = 1.10000E+00	E(MEV) = 5.10976E-02	R = 3.99579E-01
ENERGY(MC**2) = 1.09000E+00	E(MEV) = 4.59878E-02	R = 4.14815E-01
ENERGY(MC**2) = 1.08000E+00	E(MEV) = 4.08781E-02	R = 4.33999E-01
ENERGY(MC**2) = 1.07000E+00	E(MEV) = 3.57683E-02	R = 4.58824E-01
ENERGY(MC**2) = 1.06000E+00	E(MEV) = 3.06586E-02	R = 4.92113E-01
ENERGY(MC**2) = 1.05000E+00	E(MEV) = 2.55488E-02	R = 5.38944E-01
ENERGY(MC**2) = 1.04000E+00	E(MEV) = 2.04390E-02	R = 6.09477E-01
ENERGY(MC**2) = 1.03000E+00	E(MEV) = 1.53293E-02	R = 7.27416E-01
ENERGY(MC**2) = 1.02000E+00	E(MEV) = 1.02195E-02	R = 9.63873E-01
ENERGY(MC**2) = 1.01000E+00	E(MEV) = 5.10976E-03	R = 0.
ENERGY(MC**2) = 1.00000E+00	E(MEV) = 0.	R = 0.

TABLE B-II (continued)

ATOMIC NUMBER= 80

ENERGY(MC**2)= 4.00000E+01	E(MEV)= 1.99281E+01	R= 4.53461E-01
ENERGY(MC**2)= 3.90000E+01	E(MEV)= 1.94171E+01	R= 4.53126E-01
ENERGY(MC**2)= 3.80000E+01	E(MEV)= 1.89061E+01	R= 4.52773E-01
ENERGY(MC**2)= 3.70000E+01	E(MEV)= 1.83951E+01	R= 4.52402E-01
ENERGY(MC**2)= 3.60000E+01	E(MEV)= 1.78842E+01	R= 4.52010E-01
ENERGY(MC**2)= 3.50000E+01	E(MEV)= 1.73732E+01	R= 4.51596E-01
ENERGY(MC**2)= 3.40000E+01	E(MEV)= 1.68622E+01	R= 4.51158E-01
ENERGY(MC**2)= 3.30000E+01	E(MEV)= 1.63512E+01	R= 4.50694E-01
ENERGY(MC**2)= 3.20000E+01	E(MEV)= 1.58403E+01	R= 4.50201E-01
ENERGY(MC**2)= 3.10000E+01	E(MEV)= 1.53293E+01	R= 4.49677E-01
ENERGY(MC**2)= 3.00000E+01	E(MEV)= 1.48183E+01	R= 4.49119E-01
ENERGY(MC**2)= 2.90000E+01	E(MEV)= 1.43073E+01	R= 4.48522E-01
ENERGY(MC**2)= 2.80000E+01	E(MEV)= 1.37964E+01	R= 4.47884E-01
ENERGY(MC**2)= 2.70000E+01	E(MEV)= 1.32854E+01	R= 4.47200E-01
ENERGY(MC**2)= 2.60000E+01	E(MEV)= 1.27744E+01	R= 4.46464E-01
ENERGY(MC**2)= 2.50000E+01	E(MEV)= 1.22634E+01	R= 4.45671E-01
ENERGY(MC**2)= 2.40000E+01	E(MEV)= 1.17524E+01	R= 4.44814E-01
ENERGY(MC**2)= 2.30000E+01	E(MEV)= 1.12415E+01	R= 4.43884E-01
ENERGY(MC**2)= 2.20000E+01	E(MEV)= 1.07305E+01	R= 4.42872E-01
ENERGY(MC**2)= 2.10000E+01	E(MEV)= 1.02195E+01	R= 4.41767E-01
ENERGY(MC**2)= 2.00000E+01	E(MEV)= 9.70854E+00	R= 4.40557E-01
ENERGY(MC**2)= 1.90000E+01	E(MEV)= 9.19757E+00	R= 4.39223E-01
ENERGY(MC**2)= 1.80000E+01	E(MEV)= 8.68659E+00	R= 4.37749E-01
ENERGY(MC**2)= 1.70000E+01	E(MEV)= 8.17562E+00	R= 4.36110E-01
ENERGY(MC**2)= 1.60000E+01	E(MEV)= 7.66464E+00	R= 4.34278E-01
ENERGY(MC**2)= 1.50000E+01	E(MEV)= 7.15366E+00	R= 4.32218E-01
ENERGY(MC**2)= 1.40000E+01	E(MEV)= 6.64269E+00	R= 4.29883E-01
ENERGY(MC**2)= 1.30000E+01	E(MEV)= 6.13171E+00	R= 4.27219E-01
ENERGY(MC**2)= 1.20000E+01	E(MEV)= 5.62074E+00	R= 4.24152E-01
ENERGY(MC**2)= 1.10000E+01	E(MEV)= 5.10976E+00	R= 4.20585E-01
ENERGY(MC**2)= 1.00000E+01	E(MEV)= 4.59878E+00	R= 4.16391E-01
ENERGY(MC**2)= 9.00000E+00	E(MEV)= 4.08781E+00	R= 4.11395E-01
ENERGY(MC**2)= 8.00000E+00	E(MEV)= 3.57683E+00	R= 4.05357E-01
ENERGY(MC**2)= 7.00000E+00	E(MEV)= 3.06586E+00	R= 3.97933E-01
ENERGY(MC**2)= 6.00000E+00	E(MEV)= 2.55488E+00	R= 3.88626E-01
ENERGY(MC**2)= 5.00000E+00	E(MEV)= 2.04390E+00	R= 3.76700E-01
ENERGY(MC**2)= 4.00000E+00	E(MEV)= 1.53293E+00	R= 3.61075E-01
ENERGY(MC**2)= 3.00000E+00	E(MEV)= 1.02195E+00	R= 3.40342E-01
ENERGY(MC**2)= 2.00000E+00	E(MEV)= 5.10976E-01	R= 3.14858E-01
ENERGY(MC**2)= 1.90000E+00	E(MEV)= 4.59878E-01	R= 3.12531E-01
ENERGY(MC**2)= 1.80000E+00	E(MEV)= 4.08781E-01	R= 3.10483E-01
ENERGY(MC**2)= 1.70000E+00	E(MEV)= 3.57683E-01	R= 3.08894E-01
ENERGY(MC**2)= 1.60000E+00	E(MEV)= 3.06586E-01	R= 3.08067E-01
ENERGY(MC**2)= 1.50000E+00	E(MEV)= 2.55488E-01	R= 3.08553E-01
ENERGY(MC**2)= 1.40000E+00	E(MEV)= 2.04390E-01	R= 3.11456E-01
ENERGY(MC**2)= 1.30000E+00	E(MEV)= 1.53293E-01	R= 3.19354E-01
ENERGY(MC**2)= 1.20000E+00	E(MEV)= 1.02195E-01	R= 3.39988E-01
ENERGY(MC**2)= 1.10000E+00	E(MEV)= 5.10976E-02	R= 4.12092E-01
ENERGY(MC**2)= 1.05000E+00	E(MEV)= 4.59878E-02	R= 4.28763E-01
ENERGY(MC**2)= 1.08000E+00	E(MEV)= 4.08781E-02	R= 4.49738E-01
ENERGY(MC**2)= 1.07000E+00	E(MEV)= 3.57683E-02	R= 4.76862E-01
ENERGY(MC**2)= 1.06000E+00	E(MEV)= 3.06586E-02	R= 5.13212E-01
ENERGY(MC**2)= 1.05000E+00	E(MEV)= 2.55488E-02	R= 5.64322E-01
ENERGY(MC**2)= 1.04000E+00	E(MEV)= 2.04390E-02	R= 6.41267E-01
ENERGY(MC**2)= 1.03000E+00	E(MEV)= 1.53293E-02	R= 7.69883E-01
ENERGY(MC**2)= 1.02000E+00	E(MEV)= 1.02195E-02	R= 0.
ENERGY(MC**2)= 1.01000E+00	E(MEV)= 5.10976E-03	R= 0.
ENERGY(MC**2)= 1.00000E+00	E(MEV)= 0.	R= 0.

337 253

TABLE B-II (continued)

ATOMIC NUMBER = 85

ENERGY(MC**2) = 4.00000E+01	E(MEV) = 1.99281E+C1	R = 4.48122E-01
ENERGY(MC**2) = 3.90000E+01	E(MEV) = 1.94171E+01	R = 4.47786E-01
ENERGY(MC**2) = 3.80000E+01	E(MEV) = 1.89061E+01	R = 4.47433E-01
ENERGY(MC**2) = 3.70000E+01	E(MEV) = 1.83951E+C1	R = 4.47061E-01
ENERGY(MC**2) = 3.60000E+01	E(MEV) = 1.78842E+01	R = 4.46669E-01
ENERGY(MC**2) = 3.50000E+01	E(MEV) = 1.73732E+01	R = 4.46254E-01
ENERGY(MC**2) = 3.40000E+01	E(MEV) = 1.68622E+C1	R = 4.45816E-01
ENERGY(MC**2) = 3.30000E+01	E(MEV) = 1.63512E+01	R = 4.45351E-01
ENERGY(MC**2) = 3.20000E+01	E(MEV) = 1.58403E+C1	R = 4.44858E-01
ENERGY(MC**2) = 3.10000E+01	E(MEV) = 1.53293E+C1	R = 4.44333E-01
ENERGY(MC**2) = 3.00000E+01	E(MEV) = 1.48183E+01	R = 4.43775E-01
ENERGY(MC**2) = 2.90000E+01	E(MEV) = 1.43073E+01	R = 4.43179E-01
ENERGY(MC**2) = 2.80000E+01	E(MEV) = 1.37964E+C1	R = 4.42541E-01
ENERGY(MC**2) = 2.70000E+01	E(MEV) = 1.32854E+01	R = 4.41857E-01
ENERGY(MC**2) = 2.60000E+01	E(MEV) = 1.27744E+01	R = 4.41122E-01
ENERGY(MC**2) = 2.50000E+01	E(MEV) = 1.22634E+C1	R = 4.40330E-01
ENERGY(MC**2) = 2.40000E+01	E(MEV) = 1.17524E+01	R = 4.39474E-01
ENERGY(MC**2) = 2.30000E+01	E(MEV) = 1.12415E+C1	R = 4.38546E-01
ENERGY(MC**2) = 2.20000E+01	E(MEV) = 1.07305E+C1	R = 4.37538E-01
ENERGY(MC**2) = 2.10000E+01	E(MEV) = 1.02195E+01	R = 4.36436E-01
ENERGY(MC**2) = 2.00000E+01	E(MEV) = 9.70854E+00	R = 4.35230E-01
ENERGY(MC**2) = 1.90000E+01	E(MEV) = 9.19757E+00	R = 4.33903E-01
ENERGY(MC**2) = 1.80000E+01	E(MEV) = 8.68659E+00	R = 4.32437E-01
ENERGY(MC**2) = 1.70000E+01	E(MEV) = 8.17562E+00	R = 4.30808E-01
ENERGY(MC**2) = 1.60000E+01	E(MEV) = 7.66464E+00	R = 4.28989E-01
ENERGY(MC**2) = 1.50000E+01	E(MEV) = 7.15366E+00	R = 4.26945E-01
ENERGY(MC**2) = 1.40000E+01	E(MEV) = 6.64269E+00	R = 4.24632E-01
ENERGY(MC**2) = 1.30000E+01	E(MEV) = 6.13171E+00	R = 4.21995E-01
ENERGY(MC**2) = 1.20000E+01	E(MEV) = 5.62074E+00	R = 4.18964E-01
ENERGY(MC**2) = 1.10000E+01	E(MEV) = 5.10976E+00	R = 4.15445E-01
ENERGY(MC**2) = 1.00000E+01	E(MEV) = 4.59878E+00	R = 4.11315E-01
ENERGY(MC**2) = 9.00000E+00	E(MEV) = 4.08781E+00	R = 4.06407E-01
ENERGY(MC**2) = 8.00000E+00	E(MEV) = 3.57683E+00	R = 4.00491E-01
ENERGY(MC**2) = 7.00000E+00	E(MEV) = 3.06586E+00	R = 3.93241E-01
ENERGY(MC**2) = 6.00000E+00	E(MEV) = 2.55488E+00	R = 3.84189E-01
ENERGY(MC**2) = 5.00000E+00	E(MEV) = 2.04390E+00	R = 3.72648E-01
ENERGY(MC**2) = 4.00000E+00	E(MEV) = 1.53293E+00	R = 3.57630E-01
ENERGY(MC**2) = 3.00000E+00	E(MEV) = 1.02195E+00	R = 3.37916E-01
ENERGY(MC**2) = 2.00000E+00	E(MEV) = 5.10976E-C1	R = 3.14374E-01
ENERGY(MC**2) = 1.90000E+00	E(MEV) = 4.59878E-C1	R = 3.12353E-01
ENERGY(MC**2) = 1.80000E+00	E(MEV) = 4.08781E-01	R = 3.10652E-01
ENERGY(MC**2) = 1.70000E+00	E(MEV) = 3.57683E-C1	R = 3.09467E-01
ENERGY(MC**2) = 1.60000E+00	E(MEV) = 3.06586E-01	R = 3.09124E-01
ENERGY(MC**2) = 1.50000E+00	E(MEV) = 2.55488E-01	R = 3.10220E-01
ENERGY(MC**2) = 1.40000E+00	E(MEV) = 2.04390E-01	R = 3.13950E-01
ENERGY(MC**2) = 1.30000E+00	E(MEV) = 1.53293E-C1	R = 3.2310
ENERGY(MC**2) = 1.20000E+00	E(MEV) = 1.02195E-01	R = 3.46076
ENERGY(MC**2) = 1.10000E+00	E(MEV) = 5.10976E-02	R = 4.24871E-01
ENERGY(MC**2) = 1.09000E+00	E(MEV) = 4.59878E-C2	R = 4.43010E-01
ENERGY(MC**2) = 1.08000E+00	E(MEV) = 4.08781E-02	R = 4.65815E-01
ENERGY(MC**2) = 1.07000E+00	E(MEV) = 3.57683E-C2	R = 4.95288E-01
ENERGY(MC**2) = 1.06000E+00	E(MEV) = 3.06586E-C2	R = 5.34764E-01
ENERGY(MC**2) = 1.05000E+00	E(MEV) = 2.55488E-02	R = 5.90246E-01
ENERGY(MC**2) = 1.04000E+00	E(MEV) = 2.04390E-02	R = 6.73740E-01
ENERGY(MC**2) = 1.03000E+00	E(MEV) = 1.53293E-02	R = 8.13259E-01
ENERGY(MC**2) = 1.02000E+00	E(MEV) = 1.02195E-02	R = 0.
ENERGY(MC**2) = 1.01000E+00	E(MEV) = 5.10976E-03	R = 0.
ENERGY(MC**2) = 1.00000E+00	E(MEV) = 0.	R = 0.

337 257

TABLE B-II (continued)

ATOMIC NUMBER = 90

ENERGY(MC**2) = 4.00000E+01	E(MEV) = 1.99281E+01	R = 4.42139E-01
ENERGY(MC**2) = 3.90000E+01	E(MEV) = 1.94171E+01	R = 4.41803E-01
ENERGY(MC**2) = 3.80000E+01	E(MEV) = 1.89061E+01	R = 4.41449E-01
ENERGY(MC**2) = 3.70000E+01	E(MEV) = 1.83951E+01	R = 4.41077E-01
ENERGY(MC**2) = 3.60000E+01	E(MEV) = 1.78842E+01	R = 4.40685E-01
ENERGY(MC**2) = 3.50000E+01	E(MEV) = 1.73732E+01	R = 4.40270E-01
ENERGY(MC**2) = 3.40000E+01	E(MEV) = 1.68622E+01	R = 4.39832E-01
ENERGY(MC**2) = 3.30000E+01	E(MEV) = 1.63512E+01	R = 4.39368E-01
ENERGY(MC**2) = 3.20000E+01	E(MEV) = 1.58403E+01	R = 4.38876E-01
ENERGY(MC**2) = 3.10000E+01	E(MEV) = 1.53293E+01	R = 4.38352E-01
ENERGY(MC**2) = 3.00000E+01	E(MEV) = 1.48183E+01	R = 4.37795E-01
ENERGY(MC**2) = 2.90000E+01	E(MEV) = 1.43073E+01	R = 4.37200E-01
ENERGY(MC**2) = 2.80000E+01	E(MEV) = 1.37964E+01	R = 4.36564E-01
ENERGY(MC**2) = 2.70000E+01	E(MEV) = 1.32854E+01	R = 4.35882E-01
ENERGY(MC**2) = 2.60000E+01	E(MEV) = 1.27744E+01	R = 4.35149E-01
ENERGY(MC**2) = 2.50000E+01	E(MEV) = 1.22634E+01	R = 4.34361E-01
ENERGY(MC**2) = 2.40000E+01	E(MEV) = 1.17524E+01	R = 4.33509E-01
ENERGY(MC**2) = 2.30000E+01	E(MEV) = 1.12415E+01	R = 4.32586E-01
ENERGY(MC**2) = 2.20000E+01	E(MEV) = 1.07305E+01	R = 4.31583E-01
ENERGY(MC**2) = 2.10000E+01	E(MEV) = 1.02195E+01	R = 4.30489E-01
ENERGY(MC**2) = 2.00000E+01	E(MEV) = 9.70854E+00	R = 4.29291E-01
ENERGY(MC**2) = 1.90000E+01	E(MEV) = 9.19757E+00	R = 4.27975E-01
ENERGY(MC**2) = 1.80000E+01	E(MEV) = 8.68659E+00	R = 4.26521E-01
ENERGY(MC**2) = 1.70000E+01	E(MEV) = 8.17562E+00	R = 4.24908E-01
ENERGY(MC**2) = 1.60000E+01	E(MEV) = 7.66464E+00	R = 4.23108E-01
ENERGY(MC**2) = 1.50000E+01	E(MEV) = 7.15366E+00	R = 4.21089E-01
ENERGY(MC**2) = 1.40000E+01	E(MEV) = 6.64269E+00	R = 4.18806E-01
ENERGY(MC**2) = 1.30000E+01	E(MEV) = 6.13171E+00	R = 4.16200E-01
ENERGY(MC**2) = 1.20000E+01	E(MEV) = 5.62074E+00	R = 4.13227E-01
ENERGY(MC**2) = 1.10000E+01	E(MEV) = 5.10976E+00	R = 4.09772E-01
ENERGY(MC**2) = 1.00000E+01	E(MEV) = 4.59878E+00	R = 4.05726E-01
ENERGY(MC**2) = 9.00000E+00	E(MEV) = 4.08781E+00	R = 4.00931E-01
ENERGY(MC**2) = 8.00000E+00	E(MEV) = 3.57683E+00	R = 3.95167E-01
ENERGY(MC**2) = 7.00000E+00	E(MEV) = 3.06586E+00	R = 3.88129E-01
ENERGY(MC**2) = 6.00000E+00	E(MEV) = 2.55488E+00	R = 3.79379E-01
ENERGY(MC**2) = 5.00000E+00	E(MEV) = 2.04390E+00	R = 3.68284E-01
ENERGY(MC**2) = 4.00000E+00	E(MEV) = 1.53293E+00	R = 3.53950E-01
ENERGY(MC**2) = 3.00000E+00	E(MEV) = 1.02195E+00	R = 3.35346E-01
ENERGY(MC**2) = 2.00000E+00	E(MEV) = 5.10976E-01	R = 3.13840E-01
ENERGY(MC**2) = 1.90000E+00	E(MEV) = 4.59878E-01	R = 3.12134E-01
ENERGY(MC**2) = 1.80000E+00	E(MEV) = 4.08781E-01	R = 3.10791E-01
ENERGY(MC**2) = 1.70000E+00	E(MEV) = 3.57683E-01	R = 3.10019E-01
ENERGY(MC**2) = 1.60000E+00	E(MEV) = 3.06586E-01	R = 3.10173E-01
ENERGY(MC**2) = 1.50000E+00	E(MEV) = 2.55488E-01	R = 3.11893E-01
ENERGY(MC**2) = 1.40000E+00	E(MEV) = 2.04390E-01	R = 3.16468E-01
ENERGY(MC**2) = 1.30000E+00	E(MEV) = 1.53293E-01	R = 3.26911E-01
ENERGY(MC**2) = 1.20000E+00	E(MEV) = 1.02195E-01	R = 3.52279E-01
ENERGY(MC**2) = 1.10000E+00	E(MEV) = 5.10976E-02	R = 4.37907E-01
ENERGY(MC**2) = 1.09000E+00	E(MEV) = 4.59878E-02	R = 4.57544E-01
ENERGY(MC**2) = 1.08000E+00	E(MEV) = 4.08781E-02	R = 4.82218E-01
ENERGY(MC**2) = 1.07000E+00	E(MEV) = 3.57683E-02	R = 5.14088E-01
ENERGY(MC**2) = 1.06000E+00	E(MEV) = 3.06586E-02	R = 5.56754E-01
ENERGY(MC**2) = 1.05000E+00	E(MEV) = 2.55488E-02	R = 6.16695E-01
ENERGY(MC**2) = 1.04000E+00	E(MEV) = 2.04390E-02	R = 7.06868E-01
ENERGY(MC**2) = 1.03000E+00	E(MEV) = 1.53293E-02	R = 8.57509E-01
ENERGY(MC**2) = 1.02000E+00	E(MEV) = 1.02195E-02	R = 0.
ENERGY(MC**2) = 1.01000E+00	E(MEV) = 5.10976E-03	R = 0.
ENERGY(MC**2) = 1.00000E+00	E(MEV) = 0.	R = 0.

TABLE B-II (continued)

ATOMIC NUMBER= 95		
ENERGY(MC**2)= 4.00000E+01	E(MEV)= 1.99281E+C1	R= 4.35404E-01
ENERGY(MC**2)= 3.90000E+01	E(MEV)= 1.94171E+01	R= 4.35069E-01
ENERGY(MC**2)= 3.80000E+01	E(MEV)= 1.89061E+C1	R= 4.34716E-01
ENERGY(MC**2)= 3.70000E+01	E(MEV)= 1.83951E+01	R= 4.34345E-01
ENERGY(MC**2)= 3.60000E+01	E(MEV)= 1.78842E+01	R= 4.33954E-01
ENERGY(MC**2)= 3.50000E+01	E(MEV)= 1.73732E+01	R= 4.33541E-01
ENERGY(MC**2)= 3.40000E+01	E(MEV)= 1.68622E+01	R= 4.33104E-01
ENERGY(MC**2)= 3.30000E+01	E(MEV)= 1.63512E+01	R= 4.32641E-01
ENERGY(MC**2)= 3.20000E+01	E(MEV)= 1.58403E+C1	R= 4.32151E-01
ENERGY(MC**2)= 3.10000E+01	E(MEV)= 1.53293E+01	R= 4.31630E-01
ENERGY(MC**2)= 3.00000E+01	E(MEV)= 1.48183E+01	R= 4.31075E-01
ENERGY(MC**2)= 2.90000E+01	E(MEV)= 1.43073E+C1	R= 4.30483E-01
ENERGY(MC**2)= 2.80000E+01	E(MEV)= 1.37964E+01	R= 4.29851E-01
ENERGY(MC**2)= 2.70000E+01	E(MEV)= 1.32854E+01	R= 4.29173E-01
ENERGY(MC**2)= 2.60000E+01	E(MEV)= 1.27744E+01	R= 4.28446E-01
ENERGY(MC**2)= 2.50000E+01	E(MEV)= 1.22634E+01	R= 4.27663E-01
ENERGY(MC**2)= 2.40000E+01	E(MEV)= 1.17524E+01	R= 4.26818E-01
ENERGY(MC**2)= 2.30000E+01	E(MEV)= 1.12415E+C1	R= 4.25903E-01
ENERGY(MC**2)= 2.20000E+01	E(MEV)= 1.07305E+01	R= 4.24909E-01
ENERGY(MC**2)= 2.10000E+01	E(MEV)= 1.02195E+01	R= 4.23826E-01
ENERGY(MC**2)= 2.00000E+01	E(MEV)= 9.70854E+00	R= 4.22642E-01
ENERGY(MC**2)= 1.90000E+01	E(MEV)= 9.19757E+00	R= 4.21342E-01
ENERGY(MC**2)= 1.80000E+01	E(MEV)= 8.68659E+00	R= 4.19907E-01
ENERGY(MC**2)= 1.70000E+01	E(MEV)= 8.17562E+00	R= 4.18317E-01
ENERGY(MC**2)= 1.60000E+01	E(MEV)= 7.66464E+00	R= 4.16545E-01
ENERGY(MC**2)= 1.50000E+01	E(MEV)= 7.15366E+00	R= 4.14559E-01
ENERGY(MC**2)= 1.40000E+01	E(MEV)= 6.64269E+00	R= 4.12319E-01
ENERGY(MC**2)= 1.30000E+01	E(MEV)= 6.13171E+00	R= 4.09773E-01
ENERGY(MC**2)= 1.20000E+01	E(MEV)= 5.62074E+00	R= 4.06856E-01
ENERGY(MC**2)= 1.10000E+01	E(MEV)= 5.10976E+00	R= 4.03484E-01
ENERGY(MC**2)= 1.00000E+01	E(MEV)= 4.59878E+00	R= 3.99545E-01
ENERGY(MC**2)= 9.00000E+00	E(MEV)= 4.08781E+00	R= 3.94889E-01
ENERGY(MC**2)= 8.00000E+00	E(MEV)= 3.57683E+00	R= 3.89312E-01
ENERGY(MC**2)= 7.00000E+00	E(MEV)= 3.06586E+00	R= 3.82527E-01
ENERGY(MC**2)= 6.00000E+00	E(MEV)= 2.55488E+00	R= 3.74131E-01
ENERGY(MC**2)= 5.00000E+00	E(MEV)= 2.04390E+00	R= 3.63548E-01
ENERGY(MC**2)= 4.00000E+00	E(MEV)= 1.53293E+00	R= 3.49979E-01
ENERGY(MC**2)= 3.00000E+00	E(MEV)= 1.02195E+00	R= 3.32582E-01
ENERGY(MC**2)= 2.00000E+00	E(MEV)= 5.10976E-C1	R= 3.13220E-01
ENERGY(MC**2)= 1.90000E+00	E(MEV)= 4.59878E-01	R= 3.11842E-01
ENERGY(MC**2)= 1.80000E+00	E(MEV)= 4.08781E-C1	R= 3.10868E-01
ENERGY(MC**2)= 1.70000E+00	E(MEV)= 3.57683E-C1	R= 3.10524E-01
ENERGY(MC**2)= 1.60000E+00	E(MEV)= 3.06586E-01	R= 3.11189E-01
ENERGY(MC**2)= 1.50000E+00	E(MEV)= 2.55488E-01	R= 3.13552E-01
ENERGY(MC**2)= 1.40000E+00	E(MEV)= 2.04390E-01	R= 3.16997E-01
ENERGY(MC**2)= 1.30000E+00	E(MEV)= 1.53293E-01	R= 3.30762E-01
ENERGY(MC**2)= 1.20000E+00	E(MEV)= 1.02195E-01	R= 3.58583E-01
ENERGY(MC**2)= 1.10000E+00	E(MEV)= 5.10976E-C2	R= 4.51191E-01
ENERGY(MC**2)= 1.05000E+00	E(MEV)= 4.59878E-02	R= 4.72356E-01
ENERGY(MC**2)= 1.08000E+00	E(MEV)= 4.08781E-02	R= 4.98934E-01
ENERGY(MC**2)= 1.07000E+00	E(MEV)= 3.57683E-02	R= 5.33248E-01
ENERGY(MC**2)= 1.06000E+00	E(MEV)= 3.06586E-02	R= 5.79165E-01
ENERGY(MC**2)= 1.05000E+00	E(MEV)= 2.55488E-02	R= 6.43650E-01
ENERGY(MC**2)= 1.04000E+00	E(MEV)= 2.04390E-02	R= 7.40629E-01
ENERGY(MC**2)= 1.03000E+00	E(MEV)= 1.53293E-02	R= 9.02600E-01
ENERGY(MC**2)= 1.02000E+00	E(MEV)= 1.02195E-02	R= 0.
ENERGY(MC**2)= 1.01000E+00	E(MEV)= 5.10976E-C3	R= 0.
ENERGY(MC**2)= 1.00000E+00	E(MEV)= 0.	R= 0.

TABLE B-II (continued)

ATOMIC NUMBER=100		
ENERGY(MC**2)= 4.00000E+01	E(MEV)= 1.99281E+C1	R= 4.27781E-01
ENERGY(MC**2)= 3.90000E+01	E(MEV)= 1.94171E+01	R= 4.27447E-01
ENERGY(MC**2)= 3.80000E+01	E(MEV)= 1.89061E+01	R= 4.27096E-01
ENERGY(MC**2)= 3.70000E+01	E(MEV)= 1.83951E+01	R= 4.26727E-01
ENERGY(MC**2)= 3.60000E+01	E(MEV)= 1.78842E+01	R= 4.26338E-01
ENERGY(MC**2)= 3.50000E+01	E(MEV)= 1.73732E+01	R= 4.25927E-01
ENERGY(MC**2)= 3.40000E+01	E(MEV)= 1.68622E+01	R= 4.25494E-01
ENERGY(MC**2)= 3.30000E+01	E(MEV)= 1.63512E+01	R= 4.25034E-01
ENERGY(MC**2)= 3.20000E+01	E(MEV)= 1.58403E+01	R= 4.24548E-01
ENERGY(MC**2)= 3.10000E+01	E(MEV)= 1.53293E+01	R= 4.24031E-01
ENERGY(MC**2)= 3.00000E+01	E(MEV)= 1.48183E+01	R= 4.23481E-01
ENERGY(MC**2)= 2.90000E+01	E(MEV)= 1.43073E+01	R= 4.22894E-01
ENERGY(MC**2)= 2.80000E+01	E(MEV)= 1.37964E+01	R= 4.22268E-01
ENERGY(MC**2)= 2.70000E+01	E(MEV)= 1.32854E+01	R= 4.21598E-01
ENERGY(MC**2)= 2.60000E+01	E(MEV)= 1.27744E+01	R= 4.20879E-01
ENERGY(MC**2)= 2.50000E+01	E(MEV)= 1.22634E+01	R= 4.20105E-01
ENERGY(MC**2)= 2.40000E+01	E(MEV)= 1.17524E+01	R= 4.19270E-01
ENERGY(MC**2)= 2.30000E+00	E(MEV)= 1.12415E+01	R= 4.18368E-01
ENERGY(MC**2)= 2.20000E+01	E(MEV)= 1.07305E+01	R= 4.17388E-01
ENERGY(MC**2)= 2.10000E+01	E(MEV)= 1.02195E+01	R= 4.16322E-01
ENERGY(MC**2)= 2.00000E+01	E(MEV)= 9.70854E+00	R= 4.15157E-01
ENERGY(MC**2)= 1.90000E+01	E(MEV)= 9.19757E+00	R= 4.13879E-01
ENERGY(MC**2)= 1.80000E+01	E(MEV)= 8.68659E+00	R= 4.12471E-01
ENERGY(MC**2)= 1.70000E+01	E(MEV)= 8.17562E+00	R= 4.10913E-01
ENERGY(MC**2)= 1.60000E+01	E(MEV)= 7.66464E+00	R= 4.09179E-01
ENERGY(MC**2)= 1.50000E+01	E(MEV)= 7.15366E+00	R= 4.07238E-01
ENERGY(MC**2)= 1.40000E+01	E(MEV)= 6.64269E+00	R= 4.05053E-01
ENERGY(MC**2)= 1.30000E+01	E(MEV)= 6.13171E+00	R= 4.02575E-01
ENERGY(MC**2)= 1.20000E+01	E(MEV)= 5.62074E+00	R= 3.99742E-01
ENERGY(MC**2)= 1.10000E+01	E(MEV)= 5.10976E+00	R= 3.96474E-01
ENERGY(MC**2)= 1.00000E+01	E(MEV)= 4.59878E+00	R= 3.92668E-01
ENERGY(MC**2)= 9.00000E+00	E(MEV)= 4.08781E+00	R= 3.88183E-01
ENERGY(MC**2)= 8.00000E+00	E(MEV)= 3.57683E+00	R= 3.82830E-01
ENERGY(MC**2)= 7.00000E+00	E(MEV)= 3.06586E+00	R= 3.76346E-01
ENERGY(MC**2)= 6.00000E+00	E(MEV)= 2.55488E+00	R= 3.68363E-01
ENERGY(MC**2)= 5.00000E+00	E(MEV)= 2.04390E+00	R= 3.58363E-01
ENERGY(MC**2)= 4.00000E+00	E(MEV)= 1.53293E+00	R= 3.45648E-01
ENERGY(MC**2)= 3.00000E+00	E(MEV)= 1.02195E+00	R= 3.29566E-01
ENERGY(MC**2)= 2.00000E+00	E(MEV)= 5.10976E-01	R= 3.12476E-01
ENERGY(MC**2)= 1.90000E+00	E(MEV)= 4.59878E-01	R= 3.11440E-01
ENERGY(MC**2)= 1.80000E+00	E(MEV)= 4.08781E-01	R= 3.10852E-01
ENERGY(MC**2)= 1.70000E+00	E(MEV)= 3.57683E-01	R= 3.10953E-01
ENERGY(MC**2)= 1.60000E+00	E(MEV)= 3.06586E-01	R= 3.12149E-01
ENERGY(MC**2)= 1.50000E+00	E(MEV)= 2.55488E-01	R= 3.15178E-01
ENERGY(MC**2)= 1.40000E+00	E(MEV)= 2.04390E-01	R= 3.21522E-01
ENERGY(MC**2)= 1.30000E+00	E(MEV)= 1.53293E-01	R= 3.34648E-01
ENERGY(MC**2)= 1.20000E+00	E(MEV)= 1.02195E-01	R= 3.64984E-01
ENERGY(MC**2)= 1.10000E+00	E(MEV)= 5.10976E-02	R= 4.64715E-01
ENERGY(MC**2)= 1.09000E+00	E(MEV)= 4.59878E-02	R= 4.87436E-01
ENERGY(MC**2)= 1.08000E+00	E(MEV)= 4.08781E-02	R= 5.15954E-01
ENERGY(MC**2)= 1.07000E+00	E(MEV)= 3.57683E-02	R= 5.52756E-01
ENERGY(MC**2)= 1.06000E+00	E(MEV)= 3.06586E-02	R= 6.01984E-01
ENERGY(MC**2)= 1.05000E+00	E(MEV)= 2.55488E-02	R= 6.71095E-01
ENERGY(MC**2)= 1.04000E+00	E(MEV)= 2.04390E-02	R= 7.75001E-01
ENERGY(MC**2)= 1.03000E+00	E(MEV)= 1.53293E-02	R= 9.48503E-01
ENERGY(MC**2)= 1.02000E+00	E(MEV)= 1.02195E-02	R= 0.
ENERGY(MC**2)= 1.01000E+00	E(MEV)= 5.10976E-03	R= 0.
ENERGY(MC**2)= 1.00000E+00	E(MEV)= 0.	R= 0.

357 257

DISTRIBUTION RECORD FOR NUREG/CR-0705
(TREE-1325)

Internal Distribution

- 1 - R. J. Beers, ID
- 2 - P. E. Litteneker
- 3-5 - INEL Technical Library
- 6-46 - Special Internal
- 47-50 - Author

External Distribution

- 51-52 - Saul Levine, Director
Office of Nuclear Regulatory Research, NRC
Washington, D.C. 20555
- 53-138 - Special External
- 139-427 - Distribution under R2, Water Reactor Safety Research -
Systems Engineering

337 258