LA-6116-MS
Informal Report
(ENDF-223)

UC-34c and UC-80
Reporting Date: September 1975
Issued: October 1975

ENDF/B-IV Fission-Product Files:
Summary of Major Nuclide Data

by

T. R. England
R. E. Schenter*

*Visiting Staff Member. Hanford Engineering Development Laboratory, Richland, WA 99352.

los alamos
scientific laboratory
of the University of California
LOS ALAMOS, NEW MEXICO 87545

An Affirmative Action/Equal Opportunity Employer

UNITED STATES
ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION
CONTRACT W-7405-ENG. 36

In the interest of prompt distribution, this report was not edited by the Technical Information staff.

Work supported by the U.S. Energy Research and Development Administration, Division of Reactor Research and Development, and the Nuclear Regulatory Commission, Office of Standards Development.

Printed in the United States of America. Available from
National Technical Information Service
US Department of Commerce
5285 Port Royal Road
Springfield, VA 22151
Price: Printed Copy $4.00 Microfiche $2.25

ENDF/B-IV FISSION-PRODUCT FILES: SUMMARY OF MAJOR NUCLIDE DATA

by

T. R. England and R. E. Schenter

ABSTRACT

The major fission-product parameters [σ_{th}, RI, $\tau_{1/2}$, $\overline{E}_\beta$, $\overline{E}_\gamma$, $\overline{E}_\alpha$, decay and (n,γ) branching, Q, and AWR] abstracted from ENDF/B-IV files for 824 nuclides are summarized. These data are most often requested by users concerned with reactor design, reactor safety, dose, and other sundry studies. The few known file errors are corrected to date. Tabular data are listed by increasing mass number.

I. INTRODUCTION

Two and one-half years ago, a large task force was organized to expand the ENDF/B fission-product data from a 55-nuclide cross-section data set to a comprehensive file which, at present, encompasses data on 824 nuclides; these data include cross sections, decay parameters, and yields. Approximately 30 people from various industrial and government laboratories have cooperated in this task. This ad hoc group of people was divided into several subcommittees working under the Cross Section Evaluation Working Group (CSEWG) Fission-Product Subcommittee Task Force to produce evaluated data for use in decay heat and burnup calculations as part of the general effort to produce an Evaluated Nuclear Data File (ENDF/B).

The motivation for an expanded file began with the need for a reference set of fission-product decay data for calculating decay heating during "loss-of-coolant accidents" (LOCA). However, the task force members recognized the need for expanded fission-product microscopic cross-section data, adequate for thermal and fast reactor analysis; improved fission yields; and detailed fission-product gamma "line" data for a number of applications, including absorption buildup, waste disposal and fuel management, shielding (spectra), fuel integrity (gas content), and the buildup of radiologically hazardous and toxic products.

A complete listing of the decay and cross-section files requires several thousand pages. In this report, we have listed the parameters of interest to many users in a compact, readable format requiring less than 30 pages. The format of this listing was originally designed as a quick reference to decay data in early versions of the file (457) for use in data testing and as an aid in forming the nuclide chains. However, this data listing has proven to be a useful reference for the occasional user unfamiliar with ENDF/B formats and for particular applications requiring subsets of these data, such as in dose studies. A more extensive, detailed data listing will likely be issued by Brookhaven National Laboratory (BNL) as part of the ENDF/B-IV documentation, organized for biomedical and reactor uses.

We have included thermal cross-section and resonance integral data derived from the ENDF/B-IV files and thermal capture branching data which are essential to the use of these cross sections but which are not in ENDF/B-IV. We have also included a list of internal conversion electron energies (as fractions of the transition energy), a comparison of average energies and Q values (calculated from the decay spectra) with the tabulated values in ENDF/B-IV, and a list of known file errors found to date. The yield data and decay spectra are not included in this report.

The summary data in Table VII form the core of this report.

II. ENDF/B-IV CONTENT

The ENDF/B-IV fission-product files contain appropriate data for 824 nuclides. Of these, 181 have cross-section evaluations (capture, elastic, inelastic, and total from 10^{-5} eV to 20 MeV). Thirty-six nuclides have other cross-section evaluations such as (n,2n), (n,t), (n,n'p), (n,d), etc. The radiative capture cross sections were identified as being sufficiently comprehensive for detailed estimates of absorption buildup in any contemporary reactor. One hundred eighty nuclides have experimental data on β^- end-point energies and γ "line" data (energies and intensities).[1] Some of these nuclides have several hundred resolved gamma lines, but the average number per nuclide is 31 gamma energies and 9 beta end-point energies. All radioactive nuclides (711) have evaluated data for the average β^-energy ($\overline{E}_\beta$), total γ energy ($\overline{E}_\gamma$), half-lives, branching, and other data. These data should be adequate for summation calculations of decay heat and, probably, the γ spectral shape.[2-4] These files contain approximately 300 000 data entries. In addition, there are ten sets of direct fission yields for six fissionable nuclides for one or more neutron fission energies (~12 000 entries). Each set contains more than 1100 yields and appears with the cross sections of the fissionable nuclides in the "General Purpose File."

Tables I and II summarize the number of nuclides having data of various types; the summary of fission yield types in Table II is included for completeness.

It should be noted that isomeric states, but <u>not</u> ground states, in ENDF/B-IV files do <u>not</u> include states having half-lives <0.1 s.

Table VII contains the summary of fission product parameters (σ's, $\tau_{1/2}$, $\overline{E}_\beta$, $\overline{E}_\gamma$, branching fractions, etc.) in the format described in the following section. In this table, the nuclides are grouped by mass number, A, beginning with the smallest value, and by increasing Z value for a given value of A. (This is not the same as the "MAT" ordering as given on the ENDF/B-IV files which are ordered on Z then A.) In the table, any isomeric states follow the ground state for a given Z, A.

In these tables, we have included the resonance integrals (E_{cut} = 0.5 eV and T = 0°K) and the thermal radiative capture cross sections at 0.0253 eV for the 181 nuclides having cross-section data. These values appear in (File 1) comments in ENDF/B-IV. For four nuclides, ^{87}Sr, ^{113}In, ^{115}In, and ^{123}Te, we have used subsequent, more accurate calculations of their resonance integrals. In most cases, the resonance parameters are taken from the BNL report BNL-325 (June 1973) with adjustments in background, consistent with experimental uncertainties, to give experimental thermal values and resonance integrals (1 σ). For most users (thermal reactors), these are the cross sections most often requested; these values are sufficient for determining the importance of (n,γ) coupling in forming nuclide chains.

In addition to the thermal and resonance integral cross sections, branching cross sections are given. These are needed for those cases where the (n,γ) reaction could create an isomeric state. These data are not included in ENDF/B-IV. The fractional amounts of thermal and resonance capture leading to isomeric states are essentially identical. Therefore, we have incorporated a preliminary compilation of branching cross sections into Table VII in the form of (n,γ) branching fractions where the branching could produce isomeric states.

The remaining data in Table VII were processed directly from the six ENDF/B-IV tapes except for corrections noted in Sec. V of this report. Corrected data are flagged in Table VII to indicate differences from ENDF/B-IV values.

The total gamma energies listed in the ENDF/B-IV files (and Table VII) are actually transition energies and therefore include any internal conversion energy. This is discussed in Sec. VI.

III. FORMAT OF DATA INCLUDED IN TABLE VII

The column headings of Table VII apply to the first line of data for each nuclide; if there is more than one decay mode, or if capture cross sections are in the files, two or more data lines are used. The listed data per line is:

Line 1:

<u>Symbol</u> - charge, chemical symbol, mass, and state identifier (blank for ground state, M,N for first and second isomeric states).

<u>ZZAAAS</u> - numeric ID = 10000*Z+10*A+S, where S = state (0,1,2,... for ground, first, and second isomeric states).

<u>Half-life</u> - decay half-life in seconds.

E-Beta - average beta energy per decay in eV.

E-Gamma - total gamma energy per decay in eV. (Includes internal conversion energy; see Sec. VI.)

E-Alpha - average alpha energy per decay in eV. (Includes recoil.)

RTYP - type of decay (defined below).

RFS - state of daughter (0.0 for ground state, 1.0 for first isomeric state, etc.)

Q - Q value in eV for the decay mode.

Branching - branching fraction for decay mode.

AWR - atomic weight ratio.

NDK - number of decay modes.

NSP - number of *types* of spectra.

MAT - material number running from 1 to 825 (MAT 251 removed from files).

Line 2, ...:

If there is more than one decay mode (NDK > 1) the RTYP, RFS, Q-value, and Branching are listed (one line per mode).

Last line:

(n,γ) cross section [$\sigma_{th} = \sigma$ (E=0.0253 eV)], resonance integral, and (n,γ) "branchings" are listed. (One hundred eighty-one of the nuclides have cross sections in various detail. For these, the cross sections at 0.0253 eV and resonance integrals are listed under the E-Beta and E-Gamma columns. In addition, the suggested (n,γ) branchings to the ground, first, and second isomeric states are listed, as described in Sec. II.)

The RTYP decay mode identifier has the following meanings:

RTYP	Mode of Decay
1.0	β^-
2.0	β^+ or EC
3.0	Isomeric transition
4.0	α
5.0	Delayed neutron (β^-,n)
6.0	Spontaneous fission

IV. COMPARISON OF CALCULATED ENERGIES USING ENDF/B-IV SPECTRAL DATA WITH ENDF/B-IV TABULATED VALUES

ENDF/B-IV files contain beta end-point energies (E_{β_i}) and relative intensities (I_{β_i}), gamma energies (E_{γ_i}) and relative intensitities (I_{γ_i}), and other, limited spectral data for 180 of the 711 radioactive nuclides.[1] Each such spectra also contains a normalization factor (F). The average beta and total gamma energies tabulated in the files for these 180 nuclides are calculated from Eqs. (1)-(3):

$$\overline{E}_{\gamma_c} = \frac{F_\gamma}{100} \sum_i E_{\gamma_i} I_{\gamma_i} \quad , \tag{1}$$

$$\overline{E}_{\beta_c} = \frac{F_\beta}{100} \sum_i E_{\beta_i} I_{\beta_i} f_i (E_{\beta_i}) \quad , \tag{2}$$

$$f_i(E_{\beta_i}) = \frac{1}{4} \frac{2W_0^2 + 8W_0 + 10}{W_0^2 + 5W_0 + 10} \quad , \tag{3}$$

where

$$W_0 \equiv \frac{E_{\beta_i}}{0.511 \times 10^6}$$

is the beta end-point energy in m_0c^2 units and $f_i(E_{\beta_i})$ is the approximate ratio of the average beta energy to the beta end-point energy, as derived in Ref. 5 and later reduced to the simpler form of Eq. (3). As noted in Ref. 1, the simple form of Eq. (3) agrees with an exact averaging for allowed and first forbidden energies within a few percent (<3) for the fission-product nuclides and decay energies of interest here. (For a few cases of first forbidden, unique transitions, the f_i values obtained from Ref. 6 were used.)

In a few cases (38), the files contain internal conversion coefficients (C_{γ_i}) which can be used to calculate the internal conversion energy in Eq. (4)

$$\overline{E}_{Icc} = \frac{F_\gamma}{100} \sum E_{\gamma_i} I_{\gamma_i} C_{\gamma_i} \quad . \tag{4}$$

For ENDF/B-IV, the listed value for the total gamma energy, $\overline{E}_\gamma$, includes $\overline{E}_{Icc}$.

As a partial check on the final ENDF/B-IV files, we have computed the averages of $\overline{E}_{\beta_c}$ and $\overline{E}_{\gamma_c}$ (and the $\overline{E}_{Icc}$ component) along with the average neutrino energy [obtained by replacing f_i with $(1 - f_i)$ in Eq. (2)]. In addition, the Q value was calculated using Eq. (5)

$$Q_c = \overline{E}_{\beta_c} + \overline{E}_{\gamma_c} + \overline{E}_{\nu_c} \quad . \tag{5}$$

The spectral data in ENDF/B-IV are not separated on the basis of the decay modes; therefore, Eq. (5) is the total energy per decay. If there was more than one decay mode, the values from Eq. (5) were compared with Q values weighted by the decay branching fractions. The Q values in ENDF/B-IV were generally obtained from mass law compilations,[7,8] not the spectra data, and a comparison with the calculated values serves as a check on the self-consistency and possible source of error in the Q values or spectral data.

The comparisons of $\overline{E}_\beta$ and $\overline{E}_\gamma$ show that the calculations differ from ENDF/B-IV values by >0.01% in only 23 cases, and by >1% for 10 nuclides. For the three nuclides ^{85}Kr, ^{90}Sr, and ^{90m}Y, the $\overline{E}_\beta$ differences are -10.1, -12.9, and -10.6%, respectively; these three nuclides required first forbidden unique shape corrections to the calculated $\overline{E}_\beta$. Except for ^{104m}Rh, only these three nuclides show differences exceeding 5%. The ^{104m}Rh nuclide is a special case; the normalization factor given in ENDF/B-IV is zero and there are typographical errors in the gamma intensity data. In order to force agreement with the total gamma energy, after correcting the typographical errors in the spectra, the value of F should be 0.018535.

In Table III, the percent differences of the calculated $\overline{E}_\beta$, $\overline{E}_\gamma$, and Q_c from the ENDF/B-IV values are listed for 69 nuclides; of the 180 nuclides having spectral data, only these differed by more than 1% in one or more of the three calculated energies; the majority are due to Q differences.

The calculated Q_c values using Eq. (5) are compared with ENDF/B-IV Q values (weighted by branching fractions) in Table IV.

Thirty-one of the 180 nuclides having spectral data have calculated Q_c values which differ from the tabulated vales by $\geq$ 3%. (Approximately 158 of the 180 nuclides have tabulated uncertainties in the ENDF/B-IV files; for 63 of these, the calculated Q is outside the ENDF/B-IV uncertainty. These are identified with an asterisk (*) in Table IV.) The Q difference exceeds 5% in only 12 cases and 10% for the following 5 nuclides: ^{130m}Sb, ^{133}Sb, ^{129m}Te, ^{136}Cs, and ^{152m}Pm. Except for ^{136}Cs, these have been corrected for this report (Table VII) as noted in Sec. V. The last nuclide, ^{152m}Pm, was particularly discrepant (~34%). The beta spectra for this nuclide is not well known and the files list only the most significant transitions. The $\overline{E}_\beta$ should be ~0.9 MeV, or larger, rather than ~0.4 MeV.

V. FILE ERRORS

Some corrections have already been made in the first issue of ENDF/B-IV. Comparisons of decay energies and Q values, as in the previous section, resulted in an additional 13 nuclides still requiring file corrections. These are listed in Table V along with corrections.

Twelve of the thirteen corrections are incorporated into the data summary in Table VII. Table VII values differing from ENDF/B-IV are flagged.

VI. INTERNAL CONVERSION ENERGIES

The ENDF/B-IV fission-product data were compiled for use in calculating total decay heating and absorption. Neutron cross sections, fission-product yields, and the average absorbable decay energies were therefore emphasized. Other applications, such as dose and the analysis of some decay heat experiments now in progress that separate the beta and gamma heating, may require more detailed decay data. In particular, as noted in Ref. 1, there is a need to expand the internal conversion coefficients, and this is expected for Version V in addition to other increased detail on decay data. ENDF/B-IV files now have coefficients for 38 nuclides; more information is needed.

As noted in Sec. IV, the total gamma energy in Table VII is actually a transition energy; it includes any internal conversion energy. In order to extend the usefulness of Table VII and to provide the user with some guidance on internal conversion energies, we have tabulated in Table VI the fraction of $\overline{E}_\gamma$ which is actually internal conversion energy. Most of this table is abstracted from Ref. 9. Fractions for the 38 nuclides having coefficients in ENDF/B-IV have been calculated and included; these are identified in Table VI. The conversion energies generally include the associated x rays.

The internal conversion and total gamma energies Tobias[9] tabulates are calculated using his compilation of transition energies and intensities and the conversion coefficients of Ref. 10. Although Tobias' internal conversion energies are more complete than values in ENDF/B-IV, the actual energies in his com-

pilation are not necessarily consistent with ENDF/B-IV energies. Of the 154 nuclides listed in Table VI, 6 are not included in ENDF/B-IV (^{102}Rh, ^{102m}Rh, ^{103}Pd, ^{126}I, ^{132}Cs, and ^{146}Pm) and, as is evident from blank columns in Table VII, 13 of the ENDF/B-IV values are not included in Tobias' listing. Eight of the remaining nuclides have transition energies which differ by an order of magnitude, or more, from ENDF/B-IV (^{113}Ag, ^{113m}Cd, ^{118m}In, ^{119m}In, ^{121m}In, ^{124m}Sb, ^{124n}Sb, ^{166}Ho), and an additional 18 differ by a factor of two to ten. Most of the remaining nuclide transition energies are in reasonably good agreement, and the fractional values of Table VI should therefore be adequate for most users.

VII. CONCLUSION

This report was prepared for use as a convenient reference to a comprehensive set of data for nuclides which are generally classed as fission products ($29 \leq Z \leq 68$). It contains an abstract (Table VII) of the nuclide parameters most often requested by users, and should be of utility as a guide to many users desiring more detail for particular nuclides from ENDF/B-IV files. The general content of ENDF/B-IV has been summarized in Tables I and II. Table VII identifies modes of decay and those nuclides having spectral data, in addition to listing nuclide decay and cross-section data. This table is complete for the types of data summarized (i.e., if no cross sections are listed, there are no cross-section data for the nuclide in ENDF/B-IV). File errors noted in Sec. V have been corrected in preparing Table VII.

Two types of data not given or incomplete in ENDF/B-IV have been included. As an aid to the user, the (n,γ) branching fractions are listed in Table VII, and the conversion electron energies are tabulated in Table VI as a fraction of the gamma (transition) energy.

ACKNOWLEDGMENTS

As noted at the beginning of this report, 30 or more experts from various industrial and government laboratories have directly contributed in differing degrees to the 2-year task force effort. While it is not appropriate to attempt a documentation of particular contributions or data sources in this abridged data report, it would be an injustice if at least the following individuals were not acknowledged: C. W. Reich and coworkers at the Aerojet Nuclear Company; F. Schmittroth at Hanford Engineering Development Laboratory; S. Pearlstein, O. Ozer, (currently at Electric Power Research Institute), N. E. Holden, and coworkers at Brookhaven National Laboratory. The yield evaluations were essential to development of the fission-product files, but acknowledgment of the several individuals concerned primarily with yields properly belongs in another report.

We wish to acknowledge P. B. Hemmig, U. S. Energy Research and Development Administration, and S. Pearlstein, Brookhaven National Laboratory, for their support and encouragement in developing the ENDF/B-IV fission-product files.

In addition, R. B. Minogue and S. H. Weiss of the Office of Standards Development of the Nuclear Regulatory Commission provided part of the support needed in producing this report.

We would also like to thank N. L. Whittemore for assistance in preparing tabular data.

REFERENCES

1. C. W. Reich, R. G. Helmer, and M. H. Putnam, "Radioactive-Nuclide Decay Data for ENDF/B," Aerojet Nuclear Company report ANCR-1157 (ENDF-120) (August 1974).

2. R. E. Schenter and F. Schmittroth, "Radioactive Decay Heat Analysis," Conf. on Nuclear Cross Sections and Tech., Washington, D.C. (March 1975).

3. R. E. Schenter and T. R. England, "Nuclear Data for Calculations of Radioactivity Effects," Trans. Am. Nucl. Soc. 21, 517 (June 1975).

4. M. G. Stamatelatos and T. R. England, "Fission-Product Gamma Ray and Photoneutron Spectra," Conf. on Nuclear Cross Sections and Tech., Washington D. C. (March 1975).

5. T. R. England, "An Investigation of Fission Product Behavior in Nuclear Reactors," Ph.D. Thesis, U. of Wisconsin (1969).

6. L. T. Dillman, J. Nuclear Medicine, Supplement No. 2, Vol. 10 (March 1969), pamphlet No. 4, p. 5.

7. G. T. Garvey, W. J. Gerace, R. L. Jaffe, I. Talmi, and I. Kelson, "Set of Nuclear-Mass Relations and a Resultant Mass Table," Rev. Mod. Phys. 41, No. 4, Part II, S1 (October 1969).

8. A. H. Wapstra and N. B. Gove, Nucl. Data Tables A9, Nos. 4-5, 265 (1971).

9. A. Tobias, "Data for the Calculation of Gamma Radiation Spectra and Beta Heating from Fission Products (Revision 3)," Central Electricity Generating Board Research Department, Berkeley Nuclear Laboratories report RD/B/M2669 CNDC(73)P4 (June 1973).

10. R. S. Hager and E. C. Seltzer, "Internal Conversion Tables. Part I: K-, L-, M-Shell Conversion Coefficients for Z = 30 to Z = 103," Nucl. Data A, Vol. 4, Nos. 1 and 2 (Feb. 1968).

TABLE I

FISSION PRODUCT FILES: GENERAL CONTENT

Number	Type, Comment
824	Total nuclides in the Decay/Absorption File (stable + unstable)
	of these
711	Unstable
113	Stable
701	Ground states
117	1st excited state ($\tau_{1/2} \geq 0.1$ s)
6	2nd excited state ($\tau_{1/2} \geq 0.1$ s)
57	Delayed neutron precursors (have P_n values)
6	α decay ($\tau_{1/2} > 10^{10}$ yr)
17	β+ decay
180	Line data (γ energies, intensities, and β end point energies)
181	$\sigma(E)$ 10^{-5} eV → 20 MeV

Total γ-decay, average β and α energies, and branching fractions are given for all unstable nuclides.

TABLE II

ENDF/B-IV FISSION YIELD CONTENT
(MASSES 72 → 167, CHARGES 26 → 70)

Independent yields are given for each of the following ten cases:

No. of Yields	Fissionable Nuclide	Thermal	Fast	14 MeV
1130	^{235}U	X	X	X
1130	^{238}U		X	X
1146	^{239}Pu	X	X	
1146	^{241}Pu	X		
1097	^{233}U	X		
1130	^{232}Th		X	

NOTE: Yields are in the General Purpose File with the cross-section data for each fissionable nuclide. Decay and cross-section files for the fission products appear together on six magnetic tapes. The General Purpose File also contains decay data for 18 nonfission products, 16 being actinides.

TABLE III

PERCENT DIFFERENCE OF CALCULATED AND ENDF/B-IV ENERGIES

NUCLIDE	BETA	GAMMA	Q	MAT
32-GE- 79	2.7448E-04	1.9892E-03	4.7759E+00	58
33-AS- 80	4.0677E-05	-3.7192E-03	2.2196E+00	73
33-AS- 82M	7.2115E-05	2.2451E-04	-1.4771E+00	76
34-SE- 83	-2.9167E-04	5.9450E-04	4.6531E+00	95
36-KR- 85	-1.0136E+01	3.0188E-02	-1.2631E-05	138
36-KR- 90	3.0660E-04	7.9469E-04	3.6924E+00	144
36-KR- 91	-6.8009E-06	6.8135E-04	3.9607E+00	145
36-KR- 92	1.2599E-04	6.1166E-04	1.2635E+00	146
37-RB- 89	4.2654E-04	8.2531E-04	1.2009E+00	158
37-RB- 90	-1.4766E-04	5.7360E-04	1.4906E+00	159
37-RB- 90M	3.7578E-05	7.6329E-05	1.9734E+00	160
37-RB- 91	-7.7900E-05	3.2563E-04	2.4179E+00	161
38-SR- 89	-2.6695E+00	0.	0.	176
37-RB- 92	-4.1619E-05	9.0829E-04	1.2436E+00	162
38-SR- 90	-1.2880E+01	0.	0.	177
39- Y- 90M	-1.0602E+01	7.4495E-04	9.9419E-03	195
39- Y- 91	-2.6235E+00	-9.0226E-02	-6.2550E-02	196
39- Y- 97	2.8741E-04	0.	2.2500E+00	204
40-ZR- 97	2.7685E-05	1.7076E-04	-2.9961E+00	223
41-NB-100	2.7847E-05	4.8797E-04	3.4366E+00	249
42-MO- 99	-4.0978E-04	-1.6590E-03	1.4811E+00	269
42-MO-101	-4.3919E-04	2.2581E-03	3.4777E+00	271
43-TC-102	-1.7668E-04	-9.9914E-02	-5.2810E+00	290
43-TC-102M	-2.9572E-05	2.9894E-04	-1.8667E+00	291
44-RU-105	1.0703E-03	1.1740E-03	2.4885E+00	314
44-RU-106	3.8099E-03	0.	-1.0152E+00	315
45-RH-104M	GAMMA NORMALIZATION = 0			333
45-RH-107	4.1832E-04	1.6172E-02	-2.5466E+00	338
45-RH-108	3.4277E-04	3.9059E-03	7.3451E+00	339
46-PD-109	8.2231E-04	1.0792E+00	-1.7634E-03	364
46-PD-111M	2.1737E-04	1.1616E-03	-1.1504E+00	368
49-IN-120	3.9735E-04	6.5366E-05	4.8483E+00	461
50-SN-125M	5.9857E-04	8.5709E-04	-2.4605E+00	497
50-SN-128	4.5987E-05	4.8951E-04	-4.3679E+00	501
51-SB-125	-2.6452E+00	3.5411E-05	4.6129E-01	518
51-SB-128	2.8998E-04	2.8423E-04	-1.7217E+00	522
51-SB-129	1.1731E-03	7.7591E-04	-2.7130E+00	524
51-SB-130M	-1.1613E-04	2.8220E-04	-1.3559E+01	526
51-SB-131	-6.8157E-05	1.6601E-04	3.3769E+00	527
51-SB-132	1.0107E-04	-2.9851E-02	-2.7614E+00	528
51-SB-132M	1.9474E-04	8.3391E-04	-3.1042E+00	529
51-SB-133	-3.1393E-05	-9.1311E-04	1.5971E+01	530
52-TE-129M	-2.1712E-03	5.4827E-01	-1.0196E+01	549
52-TE-131	1.7740E-05	1.1748E-02	-4.8915E+00	551
52-TE-132	-1.1752E-03	1.7694E-03	-4.2367E+00	553
52-TE-133	6.8036E-04	3.8290E-04	1.8239E+00	554
52-TE-134	2.1995E-03	-1.9244E-04	-6.1786E+00	556
53- I-132	8.4542E-05	3.0953E-04	1.1408E+00	571
53- I-133	7.0722E-04	7.8874E-03	1.0093E+00	572
53- I-134	-2.5812E-05	1.8022E-03	4.7493E+00	574
53- I-135	1.2609E-03	3.0077E-03	-3.6846E+00	576
54-XE-131M	0.	-2.1129E-03	2.2000E+00	593
54-XE-139	4.8673E-04	3.4517E-03	1.6416E+00	604
55-CS-136	3.8841E-03	3.4464E-04	1.3737E+01	618
55-CS-138M	1.1397E-04	6.6677E-05	-9.9627E+00	621
55-CS-140	4.2475E-05	2.4339E-03	2.4425E+00	623
56-BA-141	7.7233E-04	2.1252E-03	3.3463E+00	644
57-LA-140	1.0555E-03	4.1911E-04	-5.1363E+00	658
57-LA-142	4.0828E-04	9.3736E-04	7.3065E+00	660
58-CE-145	2.4325E-04	4.2966E-03	-4.5409E+00	679
58-CE-146	-1.5781E-03	1.2829E-03	-3.3052E+00	680
59-PR-144M	-1.5544E+00	-7.3665E-03	-1.9835E-03	697
59-PR-146	4.6263E-04	2.2564E-03	-4.7779E+00	699
60-ND-147	-1.3405E-03	-3.6071E-03	-5.9412E+00	718
60-ND-149	1.0383E-03	1.7705E-03	-4.0023E+00	720
61-PM-147	4.7086E-03	-2.6400E+00	8.9087E-02	733
61-PM-148	-2.1991E-04	8.0112E-04	1.0602E+00	734
61-PM-151	-9.6493E-04	1.8540E-04	1.6248E+00	738
61-PM-152M	-3.9179E-04	-2.8464E-05	-3.4860E+01	740

TABLE IV

COMPARISON OF CALCULATED Q-VALUES vs ENDF/B-IV TABULATIONS

	MAT	NUCLIDE	Q-CAL.	Q	PCT. DIF.
1	* 58	32-GE- 79	4.5054E+06	4.3000E+06	4.7759E+00
2	73	33-AS- 80	6.1332E+06	6.0000E+06	2.2196E+00
3	74	33-AS- 81	3.8000E+06	3.8000E+06	0.
4	75	33-AS- 82	7.2001E+06	7.2000E+06	1.2254E-03
5	76	33-AS- 82M	7.0936E+06	7.2000E+06	-1.4771E+00
6	* 95	34-SE- 83	3.7445E+06	3.5780E+06	4.6531E+00
7	* 96	34-SE- 83M	3.9495E+06	3.9200E+06	7.5291E-01
8	97	34-SE- 84	1.8177E+06	1.8100E+06	4.2541E-01
9	116	35-BR- 84	4.6670E+06	4.6700E+06	-6.3954E-02
10	117	35-BR- 84M	4.9684E+06	4.9700E+06	-3.2274E-02
11	118	35-BR- 85	2.4715E+06	2.4950E+06	-9.4190E-01
12	119	35-BR- 86	7.3187E+06	7.3000E+06	2.5619E-01
13	121	35-BR- 87	6.4613E+06	6.5264E+06	-9.9693E-01
14	138	36-KR- 85	6.8720E+05	6.8720E+05	-1.2631E-05
15	139	36-KR- 85M	8.4569E+05	8.4601E+05	-3.7012E-02
16	141	36-KR- 87	3.8907E+06	3.8910E+06	-8.4690E-03
17	142	36-KR- 88	2.9316E+06	2.9300E+06	5.4478E-02
18	143	36-KR- 89	4.9626E+06	4.9300E+06	6.6215E-01
19	*144	36-KR- 90	4.5552E+06	4.3930E+06	3.6924E+00
20	*145	36-KR- 91	6.3624E+06	6.1200E+06	3.9607E+00
21	146	36-KR- 92	6.0430E+06	5.9676E+06	1.2635E+00
22	157	37-RB- 88	5.3003E+06	5.3000E+06	5.8734E-03
23	*158	37-RB- 89	4.5399E+06	4.4860E+06	1.2009E+00
24	*159	37-RB- 90	6.4142E+06	6.3200E+06	1.4906E+00
25	*160	37-RB- 90M	6.2306E+06	6.1100E+06	1.9734E+00
26	*161	37-RB- 91	5.8173E+06	5.6800E+06	2.4179E+00
27	162	37-RB- 92	7.6733E+06	7.5791E+06	1.2436E+00
28	176	38-SR- 89	1.4894E+06	1.4894E+06	0.
29	177	38-SR- 90	5.4600E+05	5.4600E+05	0.
30	*178	38-SR- 91	2.3536E+06	2.3626E+06	-3.8033E-01
31	179	38-SR- 92	1.9300E+06	1.9300E+06	-1.7837E-03
32	180	38-SR- 93	4.1500E+06	4.1500E+06	8.2120E-06
33	181	38-SR- 94	3.3829E+06	3.3500E+06	9.8185E-01
34	194	39- Y- 90	2.2794E+06	2.2795E+06	-3.0901E-03
35	195	39- Y- 90M	6.8489E+05	6.8482E+05	9.9419E-03
36	196	39- Y- 91	1.5440E+06	1.5450E+06	-6.2550E-02
37	197	39- Y- 91M	5.5515E+05	5.5557E+05	-7.5405E-02
38	198	39- Y- 92	3.6229E+06	3.6230E+06	-2.5954E-03
39	199	39- Y- 93	2.8908E+06	2.8900E+06	2.6491E-02
40	*201	39- Y- 94	4.9055E+06	4.8600E+06	9.3708E-01
41	202	39- Y- 95	4.4297E+06	4.4300E+06	-6.7720E-03
42	204	39- Y- 97	5.7350E+06	5.6088E+06	2.2500E+00
43	*216	40-ZR- 90M	2.3148E+06	2.3187E+06	-1.6777E-01
44	221	40-ZR- 95	1.1236E+06	1.1209E+06	2.4369E-01
45	*223	40-ZR- 97	1.9714E+06	2.0323E+06	-2.9961E+00
46	225	40-ZR- 99	4.4937E+06	4.5000E+06	-1.4000E-01
47	240	41-NB- 95	9.2584E+05	9.2560E+05	2.5929E-02
48	241	41-NB- 95M	2.3546E+05	2.3560E+05	-6.0000E-02
49	243	41-NB- 97	1.9448E+06	1.9330E+06	6.1002E-01
50	244	41-NB- 97M	7.4270E+05	7.4300E+05	-4.0000E-02
51	245	41-NB- 98	4.3417E+06	4.3000E+06	9.6939E-01
52	246	41-NB- 98M	4.5758E+06	4.6000E+06	-5.2622E-01
53	247	41-NB- 99	3.6997E+06	3.7000E+06	-6.9634E-03
54	248	41-NB- 99M	4.3000E+06	4.3000E+06	-7.6297E-04
55	*249	41-NB-100	6.5165E+06	6.3000E+06	3.4366E+00
56	252	41-NB-101	4.6000E+06	4.6000E+06	-1.3043E-04
57	*269	42-MO- 99	1.2518E+06	1.2335E+06	1.4811E+00
58	*271	42-MO-101	2.9212E+06	2.8230E+06	3.4777E+00
59	272	42-MO-102	9.0000E+05	9.0000E+05	0.
60	*287	43-TC- 99M	1.4274E+05	1.4263E+05	7.6294E-02
61	289	43-TC-101	1.6312E+06	1.6320E+06	-5.0324E-02
62	*290	43-TC-102	3.9308E+06	4.1500E+06	-5.2810E+00
63	291	43-TC-102M	4.3669E+06	4.4500E+06	-1.8667E+00
64	293	43-TC-104	4.2510E+06	4.2500E+06	2.3933E-02
65	*312	44-RU-103	7.2639E+05	7.2200E+05	6.0746E-01

	MAT	NUCLIDE	Q-CAL.	Q	PCT. DIF.
66	*314	44-RU-105	1.9302E+06	1.8833E+06	2.4885E+00
67	*315	44-RU-106	3.9000E+04	3.9400E+04	-1.0152E+00
68	316	44-RU-107	3.1630E+06	3.1500E+06	4.1182E-01
69	317	44-RU-108	1.3186E+06	1.3200E+06	-1.0606E-01
70	331	45-RH-103M	3.9780E+04	3.9780E+04	0.
71	332	45-RH-104	2.4370E+06	2.4430E+06	-2.4605E-01
72	333	45-RH-104M	GAMMA NORMALIZATION = 0		
73	334	45-RH-105	5.6458E+05	5.6550E+05	-1.6266E-01
74	335	45-RH-105M	1.2970E+05	1.2970E+05	0.
75	336	45-RH-106	3.5400E+06	3.5400E+06	-7.1544E-04
76	337	45-RH-106M	3.6300E+06	3.6300E+06	1.0058E-03
77	338	45-RH-107	1.4715E+06	1.5100E+06	-2.5466E+00
78	339	45-RH-108	4.8305E+06	4.5000E+06	7.3451E+00
79	340	45-RH-108M	4.4300E+06	4.4300E+06	-1.0279E-04
80	343	45-RH-110	5.3999E+06	5.4000E+06	-2.3631E-03
81	344	45-RH-110M	5.5006E+06	5.5000E+06	1.0364E-02
82	*364	46-PD-109	1.0273E+06	1.0273E+06	-1.7634E-03
83	365	46-PD-109M	1.8800E+05	1.8800E+05	0.
84	367	46-PD-111	2.1415E+06	2.1404E+06	5.0540E-02
85	368	46-PD-111M	8.5099E+05	8.6090E+05	-1.1504E+00
86	388	47-AG-109M	8.7700E+04	8.7700E+04	0.
87	*391	47-AG-111	1.0311E+06	1.0280E+06	2.9785E-01
88	392	47-AG-111M	6.5000E+04	6.5000E+04	0.
89	393	47-AG-112	3.9599E+06	3.9580E+06	4.8930E-02
90	456	49-IN-118	4.2001E+06	4.2000E+06	1.6151E-03
91	457	49-IN-118M	4.2336E+06	4.2000E+06	8.0040E-01
92	*461	49-IN-120	5.5570E+06	5.3000E+06	4.8483E+00
93	462	49-IN-120M	5.6002E+06	5.6000E+06	4.2857E-03
94	496	50-SN-125	2.3625E+06	2.3630E+06	-2.3119E-02
95	*497	50-SN-125M	2.3302E+06	2.3890E+06	-2.4605E+00
96	499	50-SN-127	3.0976E+06	3.0900E+06	2.4591E-01
97	500	50-SN-127M	3.1940E+06	3.2000E+06	-1.8750E-01
98	501	50-SN-128	1.2432E+06	1.3000E+06	-4.3679E+00
99	506	50-SN-132	3.0185E+06	3.0200E+06	-4.9880E-02
100	*518	51-SB-125	7.3603E+05	7.3265E+05	4.6129E-01
101	*521	51-SB-127	1.5559E+06	1.5668E+06	-6.9260E-01
102	522	51-SB-128	4.2240E+06	4.2980E+06	-1.7217E+00
103	523	51-SB-128M	4.2930E+06	4.2610E+06	7.5089E-01
104	*524	51-SB-129	2.2870E+06	2.3508E+06	-2.7130E+00
105	*525	51-SB-130	5.0999E+06	5.0500E+06	9.8827E-01
106	526	51-SB-130M	5.1000E+06	5.9000E+06	-1.3559E+01
107	*527	51-SB-131	3.5020E+06	3.3876E+06	3.3769E+00
108	528	51-SB-132	5.9121E+06	6.0800E+06	-2.7614E+00
109	529	51-SB-132M	5.8913E+06	6.0800E+06	-3.1042E+00
110	*530	51-SB-133	4.5722E+06	3.9425E+06	1.5971E+01
111	531	51-SB-134	8.4000E+06	8.4000E+06	0.
112	532	51-SB-134M	8.4905E+06	8.4832E+06	8.6420E-02
113	*543	52-TE-125M	1.4375E+05	1.4473E+05	-6.7479E-01
114	545	52-TE-127	6.9539E+05	6.9300E+05	3.4460E-01
115	*548	52-TE-129	1.4875E+06	1.5020E+06	-9.6749E-01
116	*549	52-TE-129M	5.8859E+05	6.5541E+05	-1.0196E+01
117	*551	52-TE-131	2.1390E+06	2.2490E+06	-4.8915E+00
118	552	52-TE-131M	2.0263E+06	2.0263E+06	1.7236E-03
119	*553	52-TE-132	4.8360E+05	5.0500E+05	-4.2367E+00
120	554	52-TE-133	3.0140E+06	2.9600E+06	1.8239E+00
121	555	52-TE-133M	3.2842E+06	3.2842E+06	3.7500E-04
122	556	52-TE-134	1.3135E+06	1.4000E+06	-6.1786E+00
123	*570	53- I-131	9.6864E+05	9.6944E+05	-8.2142E-02
124	*571	53- I-132	3.6208E+06	3.5800E+06	1.1408E+00
125	572	53- I-133	1.7448E+06	1.7274E+06	1.0093E+00
126	*574	53- I-134	4.3471E+06	4.1500E+06	4.7493E+00
127	575	53- I-134M	3.1570E+05	3.1570E+05	0.
128	*576	53- I-135	2.5405E+06	2.6377E+06	-3.6846E+00
129	577	53- I-136	6.3000E+06	6.3000E+06	-8.4235E-05
130	578	53- I-136M	6.2734E+06	6.3000E+06	-4.2159E-01
131	*593	54-XE-131M	1.6754E+05	1.6393E+05	2.2000E+00
132	595	54-XE-133	4.2691E+05	4.2730E+05	-9.1602E-02
133	596	54-XE-133M	2.3269E+05	2.3290E+05	-9.0000E-02
134	599	54-XE-135	1.1579E+06	1.1580E+06	-1.0564E-02

	MAT	NUCLIDE	Q-CAL.	Q	PCT. DIF.
135	*600	54-XE-135M	5.2682E+05	5.2662E+05	3.8400E-02
136	602	54-XE-137	4.3419E+06	4.3470E+06	-1.1684E-01
137	603	54-XE-138	2.8463E+06	2.8300E+06	5.7757E-01
138	*604	54-XE-139	4.9601E+06	4.8800E+06	1.6416E+00
139	*614	55-CS-134	2.0788E+06	2.0585E+06	9.8424E-01
140	615	55-CS-134M	1.3760E+05	1.3760E+05	-1.1628E-03
141	*618	55-CS-136	2.5521E+06	2.2439E+06	1.3737E+01
142	619	55-CS-137	5.4769E+05	5.4733E+05	6.7163E-02
143	620	55-CS-138	5.2928E+06	5.2800E+06	2.4181E-01
144	*621	55-CS-138M	4.8260E+06	5.3600E+06	-9.9627E+00
145	622	55-CS-139	4.2975E+06	4.2900E+06	1.7525E-01
146	*623	55-CS-140	6.4539E+06	6.3000E+06	2.4425E+00
147	*640	56-BA-137M	6.6217E+05	6.6164E+05	8.0000E-02
148	642	56-BA-139	2.2554E+06	2.2540E+06	6.3383E-02
149	643	56-BA-140	1.0326E+06	1.0350E+06	-2.3421E-01
150	*644	56-BA-141	3.1314E+06	3.0300E+06	3.3463E+00
151	645	56-BA-142	2.1798E+06	2.2000E+06	-9.1761E-01
152	*658	57-LA-140	3.5771E+06	3.7708E+06	-5.1363E+00
153	659	57-LA-141	2.4299E+06	2.4300E+06	-3.1723E-03
154	*660	57-LA-142	4.8470E+06	4.5170E+06	7.3065E+00
155	675	58-CE-141	5.8100E+05	5.8090E+05	1.8063E-02
156	677	58-CE-143	1.4470E+06	1.4440E+06	2.0868E-01
157	678	58-CE-144	3.1580E+05	3.1479E+06	3.1990E-01
158	*679	58-CE-145	2.3769E+06	2.4900E+06	-4.5409E+00
159	680	58-CE-146	1.0443E+06	1.0800E+06	-3.3052E+00
160	695	59-PR-143	9.3100E+05	9.3120E+05	-2.1478E-02
161	696	59-PR-144	2.9960E+06	2.9966E+06	-1.9933E-02
162	697	59-PR-144M	6.0497E+04	6.0498E+04	-1.9835E-03
163	698	59-PR-145	1.8051E+06	1.8050E+06	3.3111E-03
164	*699	59-PR-146	3.8851E+06	4.0800E+06	-4.7779E+00
165	700	59-PR-147	2.7001E+06	2.7000E+06	3.3125E-03
166	701	59-PR-148	4.8600E+06	4.8600E+06	0.
167	702	59-PR-149	2.9993E+06	3.0000E+06	-2.4500E-02
168	*718	60-ND-147	8.4136E+05	8.9450E+05	-5.9412E+00
169	*720	60-ND-149	1.6128E+06	1.6800E+06	-4.0023E+00
170	*722	60-ND-151	2.4844E+06	2.4690E+06	6.2325E-01
171	733	61-PM-147	2.2470E+05	2.2450E+05	8.9087E-02
172	*734	61-PM-148	2.4911E+06	2.4650E+06	1.0602E+00
173	*735	61-PM-148M	2.4784E+06	2.4541E+06	9.9036E-01
174	*736	61-PM-149	1.0700E+06	1.0724E+06	-2.2500E-01
175	*738	61-PM-151	1.2073E+06	1.1880E+06	1.6248E+00
176	739	61-PM-152	3.6070E+06	3.6000E+06	1.9448E-01
177	*740	61-PM-152M	2.3450E+06	3.6000E+06	-3.4860E+01
178	742	61-PM-153	1.9004E+06	1.8000E+06	2.4570E-02
179	*759	62-SM-153	8.0251E+05	8.0860E+05	-7.5351E-01
180	*779	63-EU-156	2.4348E+06	2.4530E+06	-7.4349E-01

*CALCULATED Q DIFFERENCE EXCEEDS UNCERTAINITY

TABLE V

NUCLIDES HAVING TYPOGRAPHICAL OR SUSPECTED ERRORS IN ENDF/B-IV FISSION-PRODUCT FILES

Nuclide	Corrected in Table VII	Comments
^{97}Y	yes	$\bar{E}_\gamma = 9.35 \times 10^5$ eV.
^{104m}Rh	yes	Normalization factor (F) = 0 (F should be 1.8535×10^{-2}), and typographical errors in spectra.
^{126}Sn	yes	$\tau_{1/2} = 3.15569 \times 10^{12}$ s.
^{129m}Te	yes	Internal conversion energy of 0.6682×10^5 eV added to $\bar{E}_\gamma$.
^{130m}Sb	yes	$\bar{E}_\gamma$ too small ($E_\gamma \cong 3.04 \times 10^6$ eV). Change normalization to 1.17717.
^{131}Sb	yes	$\bar{E}_\gamma = 1.7025 \times 10^6$ eV.
^{133}Sb	yes	$\bar{E}_\gamma$ too large ($E_\gamma \cong 2.5 \times 10^6$ eV). Change normalization to 3.87351×10^{-1}.
^{136}Cs	no	$\bar{E}_\gamma$ includes some γ energy from ^{136}Ba.
^{138m}Cs	yes	$\bar{E}_\gamma$ too small ($\bar{E}_\gamma \cong 2.6 \times 10^6$ eV). Change normalization to 1.23827.
^{140}La	yes	$\bar{E}_\gamma$ too small ($\bar{E}_\gamma \cong 2.3$ v 10^6 eV). Change normalization to 1.03275.
^{142}La	yes	$\bar{E}_\gamma$ too large ($E_\gamma \cong 2.4 \times 10^6$ eV). Change normalization to 0.96470.
^{152m}Pm	yes	$\bar{E}_\beta$ too small ($\bar{E}_\beta \cong 0.9 \times 10^6$ eV) and beta intensities do not sum to 1.0. Change normalization to 2.14551.
^{166}Er	yes	σ(0.0253 eV) too large ($\sigma \cong 20$ b).

TABLE VI

INTERNAL CONVERSION ENERGIES (EXPRESSED AS FRACTIONS OF TRANSITION ENERGY)

ZZAAAS	NUCLIDE	REF(9) E(ICC)/E(GAMMA)	ENDF/B-4 E(ICC)/E(GAMMA)
320731	GE073M	0.9283	
320751	GE075M	0.6001	
320750	GE075	0.0084	
320771	GE077M	0.2431	
340771	SE077M	0.4799	
340791	SE079M	0.9100	
350801	BR080M	0.8304	
350800	BR080	0.6754	
340811	SE081M	0.9106	
350821	BR082M	0.9542	
360831	KR083M	0.9879	
360851	KR085M	0.1587	(0.1467)
370861	RB086M	0.0178	
390891	Y 089M	0.0100	
370901	RB090M	0.0016	(0.0014)
390901	Y 090M	0.0712	(0.0725)
390900	Y 090		(1.0000)
400901	ZR090M	0.0032	(0.0071)
400900	ZR095		(0.0017)
390911	Y 091M	0.0500	(0.0512)
320930	Y 093		(0.0051)
380930	SR093	0.0018	
410931	NB093M	1.0000	
410941	NB094M	0.9600	
410951	NB095M	0.7439	(0.7368)
410950	NB095	0.0020	
410971	NB097M	0.0199	(0.0196)
410980	NB098	0.3031	
410991	NB099M	0.0080	
410990	NB099	0.2395	
420990	MO099	0.0023	(0.0333)
430991	TC099M	0.1242	(0.1275)
421010	MO101	0.0171	
431010	TC101	0.0117	
451021	RH102M	0.0014	
451020	RH102	0.0026	
441030	RU103		(0.0008)
451031	RH103M	1.0000	
461030	PD103	0.6291	
451041	RH104M	0.7680	

ZZAAAS	NUCLIDE	REF(9) E(ICC) / E(GAMMA)	ENDF/B-4 E(ICC) / E(GAMMA)
451040	RH104	0.0853	
441050	RU105		(0.0034)
451051	RH105M	0.7535	(0.8000)
451050	RH105	0.0140	
451060	RH106	0.0393	
461071	PD107M	0.4200	
461091	PD109M	0.3798	
471091	AG109M	0.9613	
461111	PD111M	0.2186	(0.1846)
461110	PD111	0.3185	(0.0249)
471111	AG111M	0.9972	
461120	PD112	0.7944	
471131	AG113M	0.6990	
471130	AG113	0.0530	
481131	CD113M	1.0000	
471150	AG115	0.0042	
481150	CD115	0.0074	
491151	IN115M	0.5051	
491161	IN116M	0.0049	
491160	IN116	0.1508	
491171	IN117M	0.4536	
491170	IN117	0.0283	
501171	SN117M	0.5557	
491182	IN118N	0.5557	
491181	IN118M	0.0009	
491191	IN119M	0.1326	
501191	SN119M	0.9573	
491201	IN120M	0.0180	
491200	IN120	0.0068	
491211	IN121M	0.1900	
501211	SN121M	0.9027	
511221	SB122M	0.6926	
501231	SN123M	0.1730	
521231	TE123M	0.4632	
511242	SB124N	1.0000	
511241	SB124M	0.0212	
511240	SB124	0.0103	
501251	SN125M		(0.0233)
511250	SB125	0.0589	(0.0549)
521251	TE125M	0.7555	(0.9815)
511260	SB126	0.0098	
531260	I 126	0.0085	
521271	TE127M	0.9955	
531280	I 128	0.3261	
521291	TE129M	0.6883	
521290	TE129	0.2387	
531290	I 129	0.9625	
531300	I 130M	0.1446	
531300	I 130	0.0109	
521311	TE131M	0.2604	
521310	TE131	0.0573	
531311	I 131M		(0.9804)
531310	I 131	0.0104	
541311	XE131M	0.9835	
501320	SN132	0.0232	(0.0358)
511321	SB132M	0.0097	
511320	SB132	0.0050	
521320	TE132	0.1597	(0.2365)
551320	CS132	0.0429	
511330	SB133	0.0012	
521330	TE133M	0.4330	(0.8969)
541331	XE133M	0.9119	
541330	XE133	0.4512	(0.6275)
511341	SB134M		(0.0326)
521340	TE134		(0.0520)
531341	I 134M	0.4349	
531350	I 135	0.0236	
541351	XE135M	0.1999	(0.1883)
541350	XE135		(0.0614)
561351	BA135M	0.8403	
551360	CS136	0.0344	
541370	XE137		(0.0092)
561371	BA137M	0.1504	(0.1007)
541380	XE138	0.0008	
551381	CS138M	0.8338	
561390	BA139		(0.1788)
561400	BA140	0.1667	(0.1741)
581410	CE141	0.2327	
581430	CE143	0.1833	(0.1839)
581440	CE144	0.2979	(0.4457)
581450	CE145	0.0168	
581460	CE146	0.2311	
611460	PM146	0.0044	
591470	PR147	0.0296	
601470	ND147	0.3559	
611481	PM148M	0.0363	
591490	PR149	0.0563	
601490	ND149	0.1852	
611490	PM149	0.1655	
601510	ND151		(0.0372)
611510	PM151	0.2533	
621510	SM151	1.0000	
601520	PM152	0.0088	
631522	EU152N	0.2598	
631521	EU152M	0.0369	
631520	EU152	0.0364	
611530	PM153	0.3597	(0.3309)
621530	SM153	0.6683	(0.6620)
611541	PM154M	0.0389	
611540	PM154	0.0394	
631540	EU154	0.0287	
621550	SM155	0.1938	
631550	EU155	0.2344	
621560	SM156	0.3645	
631560	EU156	0.0287	
631570	EU157	0.0355	
631580	EU158	0.0264	
631590	EU159	0.1333	
641590	GD159	0.3314	
631600	EU160	0.0503	
651600	TB160	0.0604	
641610	GD161	0.0921	
651610	TB161	0.7098	
661660	DY166	0.6938	
671660	HO166	0.6655	

TABLE VII

SUMMARY OF ENDF/B-IV FISSION-PRODUCT DATA

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
27-CO- 72	270720	1.2266E-01	5.7309E+06	2.8481E+06	0.	1.0	0.0	1.4310E+07	1.0000E+00	7.1339E+01	1	0	1
28-NI- 72	280720	2.4193E+00	2.0044E+06	1.2028E+06	0.	1.0	0.0	5.6100E+06	1.0000E+00	7.1324E+01	1	0	5
29-CU- 72	290720	6.0022E+00	3.3422E+06	1.3489E+06	0.	1.0	0.0	8.3300E+06	1.0000E+00	6.3615E+09	1	0	12
30-ZN- 72	300720	1.6740E+05	8.6000E+04	1.4400E+05	0.	1.0	0.0	4.5700E+05	1.0000E+00	7.1309E+01	1	0	22
31-GA- 72	310720	5.0760E+04	5.0100E+05	2.7200E+06	0.	1.0	0.0	3.9900E+06	1.0000E+00	7.1309E+01	1	0	34
32-GE- 72	320720	INF	0.	0.	0.	STABLE		0.	0.	7.1304E+01	0	0	48
SIGMA(,0253), RI, B1, B2, B3			9.8002E-01	1.1392E+00				1.00000	0.00000	0.00000			
27-CO- 73	270730	1.1551E-01	4.7759E+06	2.8483E+06	0.	1.0	0.0	1.2400E+07	1.0000E+00	7.2333E+01	1	0	2
28-NI- 73	280730	3.9355E-01	3.4868E+06	1.8886E+06	0.	1.0	0.0	9.0600E+06	1.0000E+00	7.2320E+01	1	0	6
29-CU- 73	290730	3.9480E+00	2.2723E+06	1.1862E+06	0.	1.0	0.0	6.1500E+06	1.0000E+00	7.3952E+09	1	0	13
30-ZN- 73	300730	2.3500E+01	1.7102E+06	7.4507E+05	0.	1.0	0.0	4.5500E+06	1.0000E+00	7.2303E+01	1	0	23
31-GA- 73	310730	1.7568E+04	4.4400E+05	3.1900E+05	0.	1.0	1.0	1.4930E+06	1.0000E+00	7.2299E+01	1	0	35
32-GE- 73	320730	INF	0.	0.	0.	STABLE		0.	0.	7.2297E+01	0	0	49
SIGMA(,0253), RI, B1, B2, B3			1.5000E+01	6.9915E+01				1.00000	0.00000	0.00000			
32-GE- 73M	320731	5.3000E-01	0.	6.7000E+04	0.	3.0	0.0	6.7000E+04	1.0000E+00	7.2297E+01	1	0	50
27-CO- 74	270740	1.0752E-01	6.2027E+06	3.3346E+06	0.	1.0	0.0	1.5740E+07	1.0000E+00	7.3329E+01	1	0	3
28-NI- 74	280740	6.4833E-01	2.5730E+06	1.6770E+06	0.	1.0	0.0	7.1400E+06	1.0000E+00	3.6923E+08	1	0	7
29-CU- 74	290740	5.7315E-01	3.8117E+06	1.7945E+06	0.	1.0	0.0	9.6000E+06	1.0000E+00	1.9581E+10	1	0	14
30-ZN- 74	300740	9.8000E+01	7.6051E+05	4.3026E+05	0.	1.0	0.0	2.2100E+06	1.0000E+00	7.3294E+01	1	0	24
31-GA- 74	310740	4.9200E+02	1.0700E+06	3.0400E+06	0.	1.0	0.0	5.5000E+06	1.0000E+00	7.3292E+01	1	0	36
32-GE- 74	320740	INF	0.	0.	0.	STABLE		0.	0.	7.3286E+01	0	0	51
SIGMA(,0253), RI, B1, B2, B3			3.8301E-01	6.1100E-01				.62700	.37300	0.00000			
27-CO- 75	270750	8.0160E-02	5.2117E+06	3.3565E+06	0.	1.0	0.0	1.3780E+07	1.0000E+00	7.4323E+01	1	0	4
28-NI- 75	280750	1.7963E-01	4.0509E+06	2.3682E+06	0.	1.0	0.0	1.0470E+07	1.0000E+00	1.0224E+09	1	0	8
29-CU- 75	290750	7.6657E-01	2.8650E+06	1.6407E+06	0.	1.0	0.0	7.6900E+06	1.0000E+00	7.4297E+01	1	0	15
30-ZN- 75	300750	9.0000E+00	2.1744E+06	1.1041E+06	0.	1.0	0.0	5.8500E+06	1.0000E+00	7.4289E+01	1	0	25
31-GA- 75	310750	1.1400E+02	1.3600E+06	2.0900E+04	0.	1.0	0.0	3.3000E+06	9.6000E-01	7.4283E+01	2	0	37
						1.0	1.0	3.1610E+06	4.0000E-02				
32-GE- 75	320750	4.9680E+03	4.3000E+05	3.5900E+04	0.	1.0	0.0	1.1900E+06	1.0000E+00	7.4279E+01	1	0	52
32-GE- 75M	320751	4.8900E+01	0.	1.3900E+05	0.	3.0	0.0	1.3900E+05	1.0000E+00	7.4280E+01	1	0	53
33-AS- 75	330750	INF	0.	0.	0.	STABLE		0.	0.	7.4278E+01	0	0	68
SIGMA(,0253), RI, B1, B2, B3			4.2997E+00	6.1754E+01				1.00000	0.00000	0.00000			
28-NI- 76	280760	2.6838E-01	3.0966E+06	2.1756E+06	0.	1.0	0.0	8.5200E+06	1.0000E+00	5.4930E+08	1	0	9
29-CU- 76	290760	2.2110E-01	4.3807E+06	2.2486E+06	0.	1.0	0.0	1.1010E+07	1.0000E+00	7.5292E+01	1	0	16
30-ZN- 76	300760	5.4000E+00	1.3576E+06	8.4130E+05	0.	1.0	0.0	3.9100E+06	1.0000E+00	7.5280E+01	1	0	26
31-GA- 76	310760	2.7100E+01	1.6800E+06	2.8100E+06	0.	1.0	0.0	6.5000E+06	1.0000E+00	7.5276E+01	1	0	38
32-GE- 76	320760	INF	0.	0.	0.	STABLE		0.	0.	7.5269E+01	0	0	54
SIGMA(,0253), RI, B1, B2, B3			1.4197E-01	1.3452E+00				.35200	.64800	0.00000			
33-AS- 76	330760	9.4680E+04	1.1367E+06	3.5294E+05	0.	1.0	0.0	2.9800E+06	1.0000E+00	7.5270E+01	1	0	69
34-SE- 76	340760	INF	0.	0.	0.	STABLE		0.	0.	7.5267E+01	0	0	85
SIGMA(,0253), RI, B1, B2, B3			8.5001E+01	4.4510E+01				.80200	.19800	0.00000			
28-NI- 77	280770	1.0281E-01	4.5103E+06	2.8794E+06	0.	1.0	0.0	1.1900E+07	1.0000E+00	4.0751E+09	1	0	10

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
29-CU- 77	290770	2.9458E-01	3.4033E+06	2.1185E+06	0.	1.0	0.0	9.0600E+06	1.0000E+00	7.6285E+01	1	0	17
30-ZN- 77	300770	1.4000E+00	2.7225E+06	1.5047E+06	0.	1.0	0.0	7.2300E+06	1.0000E+00	7.6276E+01	1	0	27
31-GA- 77	310770	1.3000E+01	1.6813E+06	8.7746E+05	0.	1.0	0.0	4.7500E+06	1.2000E-01	7.6268E+01	2	0	39
						1.0	1.0	4.5910E+06	8.8000E-01				
32-GE- 77	320770	4.0680E+04	6.4800E+05	1.1600E+06	0.	1.0	0.0	2.7600E+06	1.0000E+00	7.6263E+01	1	0	55
32-GE- 77M	320771	5.4300E+01	9.5000E+05	8.3900E+04	0.	1.0	0.0	2.9090E+06	7.9000E-01	7.6263E+01	2	0	56
						3.0	0.0	1.5900E+05	2.1000E-01				
33-AS- 77	330770	1.3968E+05	2.4103E+05	1.0296E+05	0.	1.0	0.0	6.9000E+05	9.9700E-01	7.6260E+01	2	0	70
						1.0	1.0	4.4000E+05	3.0000E-03				
34-SE- 77	340770	INF	0.	0.	0.	STABLE		0.	0.	2.9071E+07	0	0	86
SIGMA(.0253), RI, B1, B2, B3		4.2000E+01	3.6538E+01					1.00000	0.00000	0.00000			
34-SE- 77M	340771	1.7500E+01	0.	2.5000E+05	0.	3.0	0.0	2.5000E+05	1.0000E+00	7.6259E+01	1	0	87
28-NI- 78	280780	1.3765E-01	3.5967E+06	2.7066E+06	0.	1.0	0.0	9.9000E+06	1.0000E+00	4.7295E+08	1	0	11
29-CU- 78	290780	1.2063E-01	4.8486E+06	2.7427E+06	0.	1.0	0.0	1.2440E+07	1.0000E+00	7.7281E+01	1	0	18
30-ZN- 78	300780	2.4295E+00	1.8495E+06	1.2442E+06	0.	1.0	0.0	5.2800E+06	1.0000E+00	7.7268E+01	1	0	28
31-GA- 78	310780	4.9000E+00	3.1288E+06	1.4553E+06	0.	1.0	0.0	7.9400E+06	1.0000E+00	7.7262E+01	1	0	40
32-GE- 78	320780	5.2200E+03	2.3800E+05	2.7700E+05	0.	1.0	0.0	9.8000E+05	1.0000E+00	3.1804E+09	1	0	57
33-AS- 78	330780	5.4540E+03	1.4000E+06	1.0300E+06	0.	1.0	0.0	4.2700E+06	1.0000E+00	7.7253E+01	1	0	71
34-SE- 78	340780	INF	0.	0.	0.	STABLE		0.	0.	7.7248E+01	0	0	88
SIGMA(.0253), RI, B1, B2, B3		4.0000E-01	4.5759E+00					.54800	.45200	0.00000			
29-CU- 79	290790	1.4744E-01	3.9117E+06	2.6266E+06	0.	1.0	0.0	1.0450E+07	1.0000E+00	7.8274E+01	1	0	19
30-ZN- 79	300790	3.8214E-01	3.2708E+06	1.9901E+06	0.	1.0	0.0	8.6600E+06	1.0000E+00	2.7691E+07	1	0	29
31-GA- 79	310790	2.8600E+00	2.2258E+06	1.2759E+06	0.	1.0	0.0	6.0600E+06	9.9860E-01	7.8254E+01	2	0	41
						5.0	0.0	2.8572E+05	1.4000E-03				
32-GE- 79	320790	4.3000E+01	1.8926E+06	2.5136E+05	0.	1.0	0.0	4.3000E+06	1.0000E+00	2.9908E+08	1	2	58
33-AS- 79	330790	5.4000E+02	8.6100E+05	1.8000E+04	0.	1.0	1.0	1.9800E+06	1.0000E+00	7.8243E+01	1	0	72
34-SE- 79	340790	2.0498E+12	4.2000E+04	1.0000E+02	0.	1.0	0.0	1.5400E+05	1.0000E+00	7.8241E+01	1	0	89
34-SE- 79M	340791	2.3340E+02	1.0000E+02	9.5000E+04	0.	3.0	0.0	2.5000E+05	1.0000E+00	5.2117E+08	1	0	90
35-BR- 79	350790	INF	0.	0.	0.	STABLE		0.	0.	7.8240E+01	0	0	108
SIGMA(.0253), RI, B1, B2, B3		1.1100E+01	1.3663E+02					.76600	.23400	0.00000			
35-BR- 79M	350791	4.8600E+00	0.	2.1000E+05	0.	3.0	0.0	2.1000E+05	1.0000E+00	7.8241E+01	1	0	109
29-CU- 80	290800	9.1104E-02	5.8122E+06	3.7255E+06	0.	1.0	0.0	1.5350E+07	1.0000E+00	7.9272E+01	1	0	20
30-ZN- 80	300800	7.1135E-01	2.3570E+06	1.7083E+06	0.	1.0	0.0	6.6700E+06	1.0000E+00	7.9256E+01	1	0	30
31-GA- 80	310800	1.7000E+00	3.7005E+06	1.9223E+06	0.	1.0	0.0	9.4400E+06	9.9140E-01	7.9248E+01	2	0	42
						5.0	0.0	9.3612E+05	8.6000E-03				
32-GE- 80	320800	2.4000E+01	6.2705E+05	4.0163E+05	0.	1.0	0.0	1.8600E+06	1.0000E+00	7.2459E+09	1	0	59
33-AS- 80	330800	1.6500E+01	2.5226E+06	6.0660E+05	0.	1.0	0.0	6.0000E+06	1.0000E+00	7.9236E+01	1	2	73
34-SE- 80	340800	INF	0.	0.	0.	STABLE		0.	0.	7.9230E+01	0	0	91
SIGMA(.0253), RI, B1, B2, B3		6.1000E-01	1.0803E+00					.86900	.13100	0.00000			
35-BR- 80	350800	1.0440E+03	7.1829E+05	2.5290E+05	0.	1.0	0.0	2.0100E+06	9.1400E-01	7.9232E+01	2	0	110
						2.0	0.0	1.8700E+06	8.6000E-02				
35-BR- 80M	350801	1.5912E+04	0.	8.6000E+04	0.	3.0	0.0	8.6000E+04	1.0000E+00	7.9232E+01	1	0	111
36-KR- 80	360800	INF	0.	0.	0.	STABLE		0.	0.	7.9230E+01	0	0	131
SIGMA(.0253), RI, B1, B2, B3		1.4303E+01	6.2628E+01					.75500	.24500	0.00000			

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
29-CU- 81	290810	7.4469E-02	5.2984E+06	3.8132E+06	0.	1.0	0.0	1.4410E+07	1.0000E+00	8.0269E+01	1	0	21
30-ZN- 81	300810	1.2937E-01	4.3006E+06	2.9658E+06	0.	1.0	0.0	1.1580E+07	1.0000E+00	8.0253E+01	1	0	31
31-GA- 81	310810	7.0528E-01	2.7593E+06	1.7208E+06	0.	1.0	0.0	7.4400E+06	1.0000E+00	8.0241E+01	1	0	43
32-GE- 81	320810	1.0100E+01	2.0596E+06	1.1870E+06	0.	1.0	0.0	5.6500E+06	1.0000E+00	4.0798E+08	1	0	60
33-AS- 81	330810	3.2000E+01	1.6694E+06	0.	0.	1.0	0.0	3.8000E+06	1.0000E+00	8.0227E+01	1	1	74
34-SE- 81	340810	1.1100E+03	6.0500E+05	7.6000E+03	0.	1.0	0.0	1.5800E+06	1.0000E+00	8.0223E+01	1	0	92
34-SE- 81M	340811	3.4380E+03	0.	1.0300E+05	0.	3.0	0.0	1.0300E+05	1.0000E+00	8.0223E+01	1	0	93
35-BR- 81	350810	INF	0.	0.	0.	STABLE		0.	0.	8.0221E+01	0	0	112
SIGMA(.0253): RI, B1, B2, B3		2.6900E+00	5.0199E+01					.09700	.90300	0.00000			
36-KR- 81	360810	6.6226E+12	0.	1.4000E+05	0.	2.0	0.0	3.0000E+05	1.0000E+00	8.0222E+01	1	0	132
36-KR- 81M	360811	1.3300E+01	0.	1.9000E+05	0.	3.0	0.0	1.9000E+05	1.0000E+00	8.0222E+01	1	0	133
30-ZN- 82	300820	1.3526E-01	3.7891E+06	2.9402E+06	0.	1.0	0.0	1.0630E+07	1.0000E+00	8.1249E+01	1	0	32
31-GA- 82	310820	1.5376E-01	4.7596E+06	2.8307E+06	0.	1.0	0.0	1.2350E+07	1.0000E+00	8.1237E+01	1	0	44
32-GE- 82	320820	4.6000E+00	1.2179E+06	8.4633E+05	0.	1.0	0.0	3.5800E+06	1.0000E+00	8.1224E+01	1	0	61
33-AS- 82	330820	1.9000E+01	3.2109E+06	2.8809E+05	0.	1.0	0.0	7.2000E+06	1.0000E+00	8.1220E+01	1	2	75
33-AS- 82M	330821	1.3300E+01	1.8192E+06	2.9946E+06	0.	1.0	0.0	7.2000E+06	1.0000E+00	8.1221E+01	1	2	76
34-SE- 82	340820	INF	0.	0.	0.	STABLE		0.	0.	8.1213E+01	0	0	94
SIGMA(.0253): RI, B1, B2, B3		4.5002E-02	9.3362E-02					.87100	.12900	0.00000			
35-BR- 82	350820	1.2744E+05	1.4000E+05	2.6500E+06	0.	1.0	0.0	3.0900E+06	1.0000E+00	8.1213E+01	1	0	113
35-BR- 82M	350821	3.6600E+02	2.7424E+04	5.5881E+04	0.	1.0	0.0	3.1360E+06	2.4000E-02	4.5325E+09	2	0	114
						3.0	0.0	4.6000E+04	9.7600E-01				
36-KR- 82	360820	INF	0.	0.	0.	STABLE		0.	0.	8.1210E+01	0	0	134
SIGMA(.0253): RI, B1, B2, B3		3.0162E+01	1.8578E+02					.55600	.44400	0.00000			
30-ZN- 83	300830	8.3858E-02	4.6943E+06	3.5314E+06	0.	1.0	0.0	1.2920E+07	1.0000E+00	3.9417E+05	1	0	33
31-GA- 83	310830	1.4771E-01	4.2669E+06	2.8726E+06	0.	1.0	0.0	1.1410E+07	1.0000E+00	8.2233E+01	1	0	45
32-GE- 83	320830	1.9000E+00	3.0366E+06	2.0042E+06	0.	1.0	0.0	8.4900E+06	9.9840E-01	2.0012E+08	2	0	62
						5.0	0.0	3.7501E+05	1.6000E-03				
33-AS- 83	330830	1.3500E+01	1.6763E+06	9.8446E+05	0.	1.0	0.0	4.8300E+06	3.6000E-01	8.2212E+01	2	0	77
						1.0	1.0	4.5800E+06	6.4000E-01				
34-SE- 83	340830	1.3500E+03	4.4186E+05	2.5592E+06	0.	1.0	0.0	3.5780E+06	1.0000E+00	8.2207E+01	1	2	95
34-SE- 83M	340831	7.0000E+01	1.3017E+06	9.0933E+05	0.	1.0	0.0	3.9500E+06	1.0000E+00	8.2207E+01	1	2	96
35-BR- 83	350830	8.6400E+03	3.2400E+05	7.3000E+03	0.	1.0	1.0	9.1820E+05	1.0000E+00	8.2203E+01	1	0	115
36-KR- 83	360830	INF	0.	0.	0.	STABLE		0.	0.	8.2202E+01	0	0	135
SIGMA(.0253): RI, B1, B2, B3		2.0763E+02	1.9166E+02					1.00000	0.00000	0.00000			
36-KR- 83M	360831	6.6960E+03	0.	4.1800E+04	0.	3.0	0.0	4.1800E+04	1.0000E+00	8.2202E+01	1	0	136
31-GA- 84	310840	9.8873E-02	5.1650E+06	3.3800E+06	0.	1.0	0.0	1.3710E+07	1.0000E+00	8.3230E+01	1	0	46
32-GE- 84	320840	1.2000E+00	2.4212E+06	1.9135E+06	0.	1.0	0.0	7.5400E+06	9.0400E-01	8.3215E+01	2	0	63
						5.0	0.0	3.3864E+06	9.6000E-02				
33-AS- 84	330840	5.8000E+00	3.7612E+06	2.1036E+06	0.	1.0	0.0	9.9900E+06	9.9870E-01	8.3207E+01	2	0	78
						5.0	0.0	6.7577E+05	1.3000E-03				
34-SE- 84	340840	1.9800E+02	5.3084E+05	4.0770E+05	0.	1.0	0.0	1.8100E+06	1.0000E+00	8.3197E+01	1	2	97
35-BR- 84	350840	1.9080E+03	1.2557E+06	1.7527E+06	0.	1.0	0.0	4.6700E+06	1.0000E+00	4.5087E+08	1	2	116
35-BR- 84M	350841	3.6000E+02	8.9554E+05	2.7684E+06	0.	1.0	0.0	4.9700E+06	1.0000E+00	2.3289E+08	1	2	117

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
36-KR- 84	360840	INF	0.	0.	0.	STABLE		0.	0.	8.3191E+01	0	0	137
SIGMA(.0253), RI, B1, B2, B3			8.2861E-02	3.5324E+00				.31800	.68200	0.00000			
31-GA- 85	310850	9.1971E-02	4.6913E+06	3.3873E+06	0.	1.0	0.0	1.2770E+07	1.0000E+00	8.4226E+01	1	0	47
32-GE- 85	320850	2.3416E-01	3.5186E+06	2.5505E+06	0.	1.0	0.0	9.8400E+06	1.0000E+00	8.4213E+01	1	0	64
33-AS- 85	330850	2.0300E+00	2.8684E+06	2.1690E+06	0.	1.0	0.0	9.0500E+06	8.0000E-01	8.4202E+01	2	0	79
						5.0	0.0	4.9456E+06	2.0000E-01				
34-SE- 85	340850	3.9000E+01	2.0600E+06	1.2937E+06	0.	1.0	0.0	5.9700E+06	1.0000E+00	8.4192E+01	1	0	98
34-SE- 85M	340851	1.9000E+01	2.1463E+06	1.3478E+06	0.	1.0	0.0	6.2200E+06	1.0000E+00	8.4193E+01	1	0	99
35-BR- 85	350850	1.7220E+02	9.9491E+05	6.4680E+04	0.	1.0	1.0	2.4950E+06	1.0000E+00	8.4186E+01	1	2	118
36-KR- 85	360850	3.3861E+08	2.5059E+05	2.2300E+03	0.	1.0	0.0	6.8720E+05	1.0000E+00	8.4183E+01	1	2	138
SIGMA(.0253), RI, B1, B2, B3			1.6600E+00	1.6670E+00				1.00000	0.00000	0.00000			
36-KR- 85M	360851	1.6128E+04	2.2608E+05	1.8322E+05	0.	1.0	0.0	9.9170E+05	7.8800E-01	8.4183E+01	2	2	139
						3.0	0.0	3.0447E+05	2.1200E-01				
37-RB- 85	370850	INF	0.	0.	0.	STABLE		0.	0.	8.4182E+01	0	0	153
SIGMA(.0253), RI, B1, B2, B3			4.6002E-01	5.9629E+00				.89100	.10900	0.00000			
32-GE- 86	320860	2.5887E-01	3.0862E+06	2.4713E+06	0.	1.0	0.0	8.9100E+06	1.0000E+00	7.4806E+09	1	0	65
33-AS- 86	330860	9.0000E-01	4.1577E+06	2.6479E+06	0.	1.0	0.0	1.1350E+07	9.6200E-01	8.5198E+01	2	0	80
						5.0	0.0	5.1252E+06	3.8000E-02				
34-SE- 86	340860	1.6600E+01	1.4196E+06	1.0198E+06	0.	1.0	0.0	4.8000E+06	5.0000E-01	8.5186E+01	2	0	100
						1.0	1.0	3.8000E+06	5.0000E-01				
35-BR- 86	350860	5.5000E+01	1.7752E+06	3.3178E+06	0.	1.0	0.0	7.3000E+06	1.0000E+00	1.9353E+09	1	2	119
35-BR- 86M	350861	4.5000E+00	3.0855E+06	1.6661E+06	0.	1.0	0.0	8.5900E+06	1.0000E+00	3.4796E+05	1	0	120
36-KR- 86	360860	INF	0.	0.	0.	STABLE		0.	0.	8.5173E+01	0	0	140
SIGMA(.0253), RI, B1, B2, B3			6.1442E-02	1.4135E-01				1.00000	0.00000	0.00000			
37-RB- 86	370860	1.6114E+06	6.7000E+05	9.4300E+04	0.	1.0	0.0	1.7700E+06	1.0000E+00	8.5173E+01	1	0	154
SIGMA(.0253), RI, B1, B2, B3			4.9000E+00	2.3930E+01				1.00000	0.00000	0.00000			
37-RB- 86M	370861	6.1080E+01	0.	5.6000E+05	0.	3.0	0.0	5.6000E+05	1.0000E+00	8.5173E+01	1	0	155
38-SR- 86	380860	INF	0.	0.	0.	STABLE		0.	0.	8.5171E+01	0	0	172
SIGMA(.0253), RI, B1, B2, B3			2.8400E+00	5.1734E+00				.70400	.29600	0.00000			
32-GE- 87	320870	1.2551E-01	4.0749E+06	3.0501E+06	0.	1.0	0.0	1.1200E+07	1.0000E+00	8.6204E+01	1	0	66
33-AS- 87	330870	3.0000E-01	3.1113E+06	2.7857E+06	0.	1.0	0.0	1.0410E+07	6.9000E-01	8.6193E+01	2	0	81
						5.0	0.0	6.3057E+06	3.1000E-01				
34-SE- 87	340870	5.6000E+00	2.4998E+06	1.7385E+06	0.	1.0	0.0	7.2700E+06	9.9820E-01	8.6181E+01	2	0	101
						5.0	0.0	6.9551E+05	1.8000E-03				
35-BR- 87	350870	5.5800E+01	2.1356E+06	1.7263E+06	0.	1.0	0.0	6.6800E+06	9.7700E-01	8.6174E+01	2	2	121
						5.0	0.0	0.	2.3000E-02				
36-KR- 87	360870	4.5600E+03	1.3345E+06	7.9260E+05	0.	1.0	0.0	3.8910E+06	1.0000E+00	8.6167E+01	1	2	141
37-RB- 87	370870	1.4822E+18	9.2194E+04	4.8572E+04	0.	1.0	0.0	2.8000E+05	1.0000E+00	8.6163E+01	1	0	156
SIGMA(.0253), RI, B1, B2, B3			1.2000E-01	2.0880E+00				1.00000	0.00000	0.00000			
38-SR- 87	380870	INF	0.	0.	0.	STABLE		0.	0.	8.6162E+01	0	0	173
SIGMA(.0253), RI, B1, B2, B3			1.6000E+01	1.1530E+02				1.00000	0.00000	0.00000			
38-SR- 87M	380871	1.0116E+04	1.0531E+02	3.8688E+05	0.	2.0	0.0	1.0800E+05	3.0000E-03	8.6163E+01	2	0	174
						3.0	0.0	3.8800E+05	9.9700E-01				
32-GE- 88	320880	1.4271E-01	3.5086E+06	2.9903E+06	0.	1.0	0.0	1.0040E+07	1.0000E+00	8.7200E+01	1	0	67

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
33-AS- 88	330880	1.2993E-01	4.8035E+06	3.1029E+06	0.	1.0	0.0	1.2710E+07	1.0000E+00	8.7189E+01	1	0	82
34-SE- 88	340880	1.5000E+00	2.1005E+06	1.6264E+06	0.	1.0	0.0	6.3300E+06	9.9500E-01	8.7175E+01	2	0	102
						5.0	0.0	1.4756E+06	5.0000E-03				
35-BR- 88	350880	1.5900E+01	3.0672E+06	1.8811E+06	0.	1.0	0.0	8.9100E+06	9.5400E-01	3.0664E+09	2	0	122
						5.0	0.0	1.6852E+06	4.6000E-02				
36-KR- 88	360880	1.0080E+04	2.4858E+05	2.2118E+06	0.	1.0	0.0	2.9300E+06	1.0000E+00	8.7159E+01	1	2	142
37-RB- 88	370880	1.0620E+03	2.0826E+06	6.7392E+05	0.	1.0	0.0	5.3000E+06	1.0000E+00	8.7156E+01	1	2	157
38-SR- 88	380880	INF	0.	0.	0.	STABLE		0.	0.	8.7151E+01	0	0	175
SIGMA(.0253), RI, B1, B2, B3		5.7996E-03	1.1860E-02					1.00000	0.00000	0.00000			
33-AS- 89	330890	1.2942E-01	4.2163E+06	3.1174E+06	0.	1.0	0.0	1.1550E+07	1.0000E+00	1.4300E+08	1	0	83
34-SE- 89	340890	4.1000E-01	2.9381E+06	2.1571E+06	0.	1.0	0.0	8.6300E+06	9.5000E-01	8.8171E+01	2	0	103
						5.0	0.0	2.4766E+06	5.0000E-02				
35-BR- 89	350890	4.5000E+00	2.8150E+06	1.9821E+06	0.	1.0	0.0	8.6800E+06	9.1400E-01	8.8162E+01	2	0	123
						5.0	0.0	2.7557E+06	8.6000E-02				
36-KR- 89	360890	1.8960E+02	1.2412E+06	2.0630E+06	0.	1.0	0.0	4.9300E+06	1.0000E+00	8.8153E+01	1	2	143
37-RB- 89	370890	9.1200E+02	9.2934E+05	2.2890E+06	0.	1.0	0.0	4.4860E+06	1.0000E+00	8.8148E+01	1	2	158
38-SR- 89	380890	4.4928E+06	5.8200E+05	0.	0.	1.0	0.0	1.4894E+06	1.0000E+00	8.8144E+01	1	1	176
SIGMA(.0253), RI, B1, B2, B3		4.2000E-01	5.2730E-01					1.00000	0.00000	0.00000			
39- Y- 89	390890	INF	0.	0.	0.	STABLE		0.	0.	2.3136E+10	0	0	192
SIGMA(.0253), RI, B1, B2, B3		1.2805E+00	9.8434E-01					.99900	.00100	0.00000			
39- Y- 89M	390891	1.5700E+01	0.	9.1000E+05	0.	3.0	0.0	9.1000E+05	1.0000E+00	8.8142E+01	1	0	193
33-AS- 90	330900	9.0087E-02	5.3628E+06	3.6645E+06	0.	1.0	0.0	1.4390E+07	1.0000E+00	8.9181E+01	1	0	84
34-SE- 90	340900	5.5451E-01	2.5121E+06	2.0776E+06	0.	1.0	0.0	7.4700E+06	1.0000E+00	8.9166E+01	1	0	104
35-BR- 90	350900	1.6000E+00	3.3583E+06	2.3157E+06	0.	1.0	0.0	9.9100E+06	8.8000E-01	1.3704E+08	2	0	124
						5.0	0.0	4.7558E+06	1.2000E-01				
36-KR- 90	360900	3.2300E+01	1.1870E+06	1.7491E+06	0.	1.0	0.0	4.4100E+06	8.4000E-01	2.0500E+08	2	2	144
						1.0	1.0	4.3040E+06	1.6000E-01				
37-RB- 90	370900	1.6200E+02	1.6586E+06	2.6604E+06	0.	1.0	0.0	6.3200E+06	1.0000E+00	8.9142E+01	1	2	159
37-RB- 90M	370901	2.5680E+02	1.1063E+06	3.6159E+06	0.	1.0	0.0	6.4260E+06	9.5000E-01	8.9143E+01	2	2	160
						3.0	0.0	1.0640E+05	5.0000E-02				
38-SR- 90	380900	8.8677E+08	1.9800E+05	0.	0.	1.0	0.0	5.4600E+05	1.0000E+00	8.9135E+01	1	1	177
SIGMA(.0253), RI, B1, B2, B3		9.0000E-01	5.1040E-01					1.00000	0.00000	0.00000			
39- Y- 90	390900	2.3069E+05	9.3100E+05	2.8000E+02	0.	1.0	0.0	2.2795E+06	1.0000E+00	8.1567E+09	1	2	194
SIGMA(.0253), RI, B1, B2, B3		3.5000E+00	4.7600E+00					.50000	.50000	0.00000			
39- Y- 90M	390901	1.1160E+04	8.8000E+02	6.8246E+05	0.	1.0	1.0	6.3800E+05	3.8000E-03	3.4417E+09	2	2	195
						3.0	0.0	6.8500E+05	9.9620E-01				
40-ZR- 90	400900	INF	0.	0.	0.	STABLE		0.	0.	8.9132E+01	0	0	215
SIGMA(.0253), RI, B1, B2, B3		1.0000E-01	3.5885E-01					1.00000	0.00000	0.00000			
40-ZR- 90M	400901	8.3000E-01	0.	2.3148E+06	0.	3.0	0.0	2.3187E+06	1.0000E+00	8.9133E+01	1	1	216
34-SE- 91	340910	1.8453E-01	3.7187E+06	2.8266E+06	0.	1.0	0.0	1.0310E+07	1.0000E+00	9.0163E+01	1	0	105
35-BR- 91	350910	6.0000E-01	3.0651E+06	2.3268E+06	0.	1.0	0.0	9.1800E+06	9.3000E-01	2.1678E+10	2	0	125
						5.0	0.0	4.1862E+06	7.0000E-02				
36-KR- 91	360910	8.7000E+00	2.5778E+06	7.2356E+05	0.	1.0	0.0	6.1200E+06	1.0000E+00	9.0142E+01	1	2	145
37-RB- 91	370910	5.8200E+01	1.3342E+06	2.7331E+06	0.	1.0	0.0	5.6800E+06	1.0000E+00	9.0135E+01	1	2	161

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
38-SR- 91	380910	3.4128E+04	6.5229E+05	6.9540E+05	0.	1.0	0.0	2.6840E+06	4.2400E-01	9.0129E+01	2	2	178
						1.0	1.0	2.1260E+06	5.7600E-01				
39- Y- 91	390910	5.0630E+06	6.0600E+05	2.6600E+03	0.	1.0	0.0	1.5450E+06	1.0000E+00	9.0126E+01	1	2	196
SIGMA(,0253): RI, B1, B2, B3		1.4000E+00	1.6700E+00					1.00000	0.00000	0.00000			
39- Y- 91M	390911	2.9820E+03	0.	5.5515E+05	0.	3.0	0.0	5.5557E+05	1.0000E+00	2.1765E+10	1	1	197
40-ZR- 91	400910	INF	0.	0.	0.	STABLE		0.	0.	2.4450E+09	0	0	217
SIGMA(,0253): RI, B1, B2, B3		1.0300E+00	5.8375E+00					1.00000	0.00000	0.00000			
34-SE- 92	340920	2.4777E-01	2.9628E+06	2.6068E+06	0.	1.0	0.0	8.7300E+06	1.0000E+00	9.1157E+01	1	0	106
35-BR- 92	350920	3.0000E-01	3.7044E+06	2.9855E+06	0.	1.0	0.0	1.2010E+07	7.4000E-01	9.1148E+01	2	0	126
						5.0	0.0	5.7953E+06	2.6000E-01				
36-KR- 92	360920	1.8400E+00	2.4032E+06	7.5184E+05	0.	1.0	0.0	5.9700E+06	9.9960E-01	9.1135E+01	2	2	146
						5.0	0.0	0.	4.0000E-04				
37-RB- 92	370920	4.5300E+00	3.4593E+06	2.6136E+05	0.	1.0	0.0	7.5800E+06	9.9988E-01	9.1130E+01	2	2	162
						5.0	0.0	0.	1.2000E-04				
38-SR- 92	380920	9.7560E+03	1.9229E+05	1.3388E+06	0.	1.0	0.0	1.9300E+06	1.0000E+00	9.1121E+01	1	2	179
39- Y- 92	390920	1.2708E+04	1.4642E+06	2.4821E+05	0.	1.0	0.0	3.6230E+06	1.0000E+00	9.1119E+01	1	2	198
40-ZR- 92	400920	INF	0.	0.	0.	STABLE		0.	0.	6.6591E+08	0	0	218
SIGMA(,0253): RI, B1, B2, B3		2.6005E-01	8.6203E-01					1.00000	0.00000	0.00000			
34-SE- 93	340930	1.0677E-01	4.0956E+06	3.4188E+06	0.	1.0	0.0	1.1610E+07	1.0000E+00	9.2155E+01	1	0	107
35-BR- 93	350930	2.0121E-01	3.6872E+06	2.8772E+06	0.	1.0	0.0	1.0430E+07	1.0000E+00	9.2143E+01	1	0	127
36-KR- 93	360930	1.2700E+00	2.7578E+06	2.0396E+06	0.	1.0	0.0	8.1500E+06	9.6800E-01	9.2132E+01	2	0	147
						5.0	0.0	2.0160E+06	3.2000E-02				
37-RB- 93	370930	5.8000E+00	2.0274E+06	1.4146E+06	0.	1.0	0.0	6.0700E+06	9.8380E-01	9.2123E+01	2	0	163
						5.0	0.0	1.4662E+06	1.6200E-02				
38-SR- 93	380930	4.5000E+02	1.1610E+06	1.3950E+06	0.	1.0	0.0	4.1500E+06	1.0000E+00	9.2117E+01	1	2	180
39- Y- 93	390930	3.6720E+04	1.1845E+06	8.9570E+04	0.	1.0	0.0	2.8900E+06	1.0000E+00	9.2111E+01	1	2	199
39- Y- 93M	390931	4.3800E+02	0.	2.5000E+05	0.	3.0	0.0	2.5000E+05	1.0000E+00	9.2112E+01	1	0	200
40-ZR- 93	400930	2.9959E+13	1.2539E+04	7.4158E+03	0.	1.0	0.0	7.0000E+04	5.0000E-02	9.2108E+01	2	0	219
						1.0	1.0	3.9600E+04	9.5000E-01				
SIGMA(,0253): RI, B1, B2, B3		2.5000E+00	2.8170E+01					1.00000	0.00000	0.00000			
41-NB- 93	410930	INF	0.	0.	0.	STABLE		0.	0.	9.2105E+01	0	0	236
SIGMA(,0253): RI, B1, B2, B3		1.1501E+00	8.8804E+00					1.00000	0.00000	0.00000			
41-NB- 93M	410931	3.7843E+08	0.	3.0400E+04	0.	3.0	0.0	3.0400E+04	1.0000E+00	6.7882E+08	1	0	237
35-BR- 94	350940	1.1050E-01	4.8544E+06	3.6012E+06	0.	1.0	0.0	1.3310E+07	1.0000E+00	9.3140E+01	1	0	128
36-KR- 94	360940	2.1000E-01	2.0703E+06	1.7980E+06	0.	1.0	0.0	6.5600E+06	9.5600E-01	1.3329E+07	2	0	148
						5.0	0.0	2.2256E+06	4.4000E-02				
37-RB- 94	370940	2.9900E+00	3.0098E+06	1.9810E+06	0.	1.0	0.0	9.1800E+06	8.8900E-01	9.3118E+01	2	0	164
						5.0	0.0	1.7360E+06	1.1100E-01				
38-SR- 94	380940	1.5600E+01	8.6964E+05	1.2424E+06	0.	1.0	0.0	3.3500E+06	1.0000E+00	1.3232E+08	1	2	181
39- Y- 94	390940	1.1400E+03	1.7174E+06	9.8613E+05	0.	1.0	0.0	4.8600E+06	1.0000E+00	9.3105E+01	1	2	201
40-ZR- 94	400940	INF	0.	0.	0.	STABLE		0.	0.	9.3100E+01	0	0	220
SIGMA(,0253): RI, B1, B2, B3		5.6004E-02	3.5634E-01					1.00000	0.00000	0.00000			
41-NB- 94	410940	6.3072E+11	1.9100E+05	1.5600E+06	0.	1.0	0.0	2.0500E+06	1.0000E+00	7.3127E+06	1	0	238
SIGMA(,0253): RI, B1, B2, B3		1.3600E+01	1.1736E+02					1.00000	0.00000	0.00000			

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
41-NB- 94M	410941	3.7560E+02	1.3488E+03	4.1276E+04	0.	1.0	0.0	2.1007E+06	2.0000E-03	9.3101E+01	2	0	239
						3.0	0.0	4.0700E+04	9.9800E-01				
42-MO- 94	420940	INF	0.	0.	0.	STABLE		0.	0.	9.3098E+01	0	0	264
SIGMA(.0253), RI, B1, B2, B3		1.6000E-02	9.0271E-01					1.00000	0.00000	0.00000			
35-BR- 95	350950	1.1662E-01	4.0940E+06	3.4021E+06	0.	1.0	0.0	1.1590E+07	1.0000E+00	9.4134E+01	1	0	129
36-KR- 95	360950	5.0000E-01	3.2546E+06	2.6344E+06	0.	1.0	0.0	9.4500E+06	1.0000E+00	9.4122E+01	1	0	149
37-RB- 95	370950	3.6000E-01	2.5500E+06	1.9721E+06	0.	1.0	0.0	7.8700E+06	9.2900E-01	9.4112E+01	2	0	165
						5.0	0.0	2.9559E+06	7.1000E-02				
38-SR- 95	380950	2.6000E+01	1.9393E+06	1.3614E+06	0.	1.0	0.0	5.8000E+06	1.0000E+00	5.3566E+09	1	0	182
39- Y- 95	390950	6.3000E+02	1.7457E+06	4.8831E+05	0.	1.0	0.0	4.4300E+06	1.0000E+00	9.4097E+01	1	2	202
40-ZR- 95	400950	5.6592E+06	1.1629E+05	7.3609E+05	0.	1.0	0.0	1.1237E+06	9.8800E-01	9.4093E+01	2	2	221
						1.0	1.0	8.8810E+05	1.2000E-02				
SIGMA(.0253), RI, B1, B2, B3		4.9000E-01	5.3560E+00					1.00000	0.00000	0.00000			
41-NB- 95	410950	3.0326E+06	4.3560E+04	7.6584E+05	0.	1.0	0.0	9.2560E+05	1.0000E+00	9.0704E+08	1	2	240
SIGMA(.0253), RI, B1, B2, B3		1.5000E+00	2.1910E+01					1.00000	0.00000	0.00000			
41-NB- 95M	410951	3.1190E+05	0.	2.3546E+05	0.	3.0	0.0	2.3560E+05	1.0000E+00	1.7696E+09	1	1	241
42-MO- 95	420950	INF	0.	0.	0.	STABLE		0.	0.	3.1925E+08	0	0	265
SIGMA(.0253), RI, B1, B2, B3		1.4468E+01	1.1326E+02					1.00000	0.00000	0.00000			
35-BR- 96	350960	8.3793E-02	5.2912E+06	4.0776E+06	0.	1.0	0.0	1.4660E+07	1.0000E+00	9.5132E+01	1	0	130
36-KR- 96	360960	4.4038E-01	2.5422E+06	2.3111E+06	0.	1.0	0.0	7.7500E+06	1.0000E+00	9.5116E+01	1	0	150
37-RB- 96	370960	2.0700E-01	3.5110E+06	2.6604E+06	0.	1.0	0.0	1.0760E+07	8.7300E-01	9.5108E+01	2	0	166
						5.0	0.0	4.1355E+06	1.2700E-01				
38-SR- 96	380960	4.0000E+00	1.3524E+06	1.1196E+06	0.	1.0	0.0	4.3200E+06	1.0000E+00	1.5549E+09	1	0	183
39- Y- 96	390960	1.3800E+02	2.4083E+06	1.4605E+06	0.	1.0	0.0	6.9000E+06	1.0000E+00	9.5092E+01	1	0	203
40-ZR- 96	400960	INF	0.	0.	0.	STABLE		0.	0.	9.5084E+01	0	0	222
SIGMA(.0253), RI, B1, B2, B3		1.7000E-02	5.2919E+00					1.00000	0.00000	0.00000			
41-NB- 96	410960	8.4240E+04	2.4900E+05	2.4600E+06	0.	1.0	0.0	3.1900E+06	1.0000E+00	9.5084E+01	1	0	242
42-MO- 96	420960	INF	0.	0.	0.	STABLE		0.	0.	9.5081E+01	0	0	266
SIGMA(.0253), RI, B1, B2, B3		1.0000E+00	1.9455E+01					1.00000	0.00000	0.00000			
36-KR- 97	360970	1.4852E-01	3.8044E+06	3.1913E+06	0.	1.0	0.0	1.0800E+07	1.0000E+00	9.6113E+01	1	0	151
37-RB- 97	370970	1.7000E-01	2.7269E+06	2.5040E+06	0.	1.0	0.0	9.0300E+06	7.9000E-01	9.6102E+01	2	0	167
						5.0	0.0	5.1064E+06	2.1000E-01				
38-SR- 97	380970	2.0000E-01	2.3497E+06	1.8378E+06	0.	1.0	0.0	7.1000E+06	9.9905E-01	9.6092E+01	2	0	184
						5.0	0.0	3.9569E+05	9.5000E-04				
39- Y- 97	390970	1.1100E+00	2.1621E+06	*9.3500E+05	0.	1.0	0.0	5.7000E+06	9.8400E-01	9.6085E+01	2	2	204
						5.0	0.0	0.	1.6000E-02				
40-ZR- 97	400970	6.0480E+04	7.0712E+05	1.8175E+05	0.	1.0	0.0	2.6710E+06	1.3800E-01	9.6079E+01	2	2	223
						1.0	1.0	1.9300E+06	8.6200E-01				
41-NB- 97	410970	4.4160E+03	4.6794E+05	6.7703E+05	0.	1.0	0.0	1.9330E+06	1.0000E+00	3.3439E+09	1	2	243
41-NB- 97M	410971	5.4000E+01	0.	7.4270E+05	0.	3.0	0.0	7.4300E+05	1.0000E+00	9.6076E+01	1	1	244
42-MO- 97	420970	INF	0.	0.	0.	STABLE		0.	0.	2.2642E+08	0	0	267
SIGMA(.0253), RI, B1, B2, B3		2.1739E+00	1.6070E+01					1.00000	0.00000	0.00000			
36-KR- 98	360980	2.2430E-01	2.9084E+06	2.7986E+06	0.	1.0	0.0	8.7500E+06	1.0000E+00	9.7108E+01	1	0	152

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
37-RB- 98	370980	1.4000E-01	3.6421E+06	3.1631E+06	0.	1.0	0.0	1.2110E+07	7.4000E-01	9.7098E+01	2	0	168
						5.0	0.0	5.7154E+06	2.6000E-01				
38-SR- 98	380980	8.5000E-01	1.6901E+06	1.4960E+06	0.	1.0	0.0	5.3700E+06	9.9500E-01	9.7861E+09	2	0	185
						5.0	0.0	7.0585E+05	5.0000E-03				
39- Y- 98	390980	3.0000E-01	2.8449E+06	1.9426E+06	0.	1.0	0.0	8.2600E+06	9.9520E-01	9.7080E+01	2	0	205
						5.0	0.0	1.1053E+06	4.8000E-03				
40-ZR- 98	400980	3.1000E+01	9.0200E+05	1.0000E+03	0.	1.0	1.0+	1.2500E+06	1.0000E+00	9.7071E+01	1	0	224
41-NB- 98	410980	2.8000E+00	1.8653E+06	1.4023E+05	0.	1.0	0.0	4.3000E+06	1.0000E+00	5.0851E+08	1	2	245
41-NB- 98M	410981	3.0600E+03	8.4811E+05	2.5149E+06	0.	1.0	0.0	4.6000E+06	1.0000E+00	1.5198E+10	1	2	246
42-MO- 98	420980	INF	0.	0.	0.	STABLE		0.	0.	1.9158E+08	0	0	268
SIGMA(.0253), RI, B1, B2, B3		1.3000E-01	6.8754E+00					1.00000	0.00000	0.00000			
37-RB- 99	370990	7.6000E-02	2.8515E+06	3.1705E+06	0.	1.0	0.0	1.0070E+07	6.3000E-01	9.8093E+01	2	0	169
						5.0	0.0	6.9758E+06	3.7000E-01				
38-SR- 99	380990	5.6003E-01	2.8700E+06	2.3342E+06	0.	1.0	0.0	8.4500E+06	1.0000E+00	2.5759E+09	1	0	186
39- Y- 99	390990	8.0000E-01	2.0916E+06	1.6465E+06	0.	1.0	0.0	6.5100E+06	9.6200E-01	9.8073E+01	2	0	206
						5.0	0.0	2.0856E+06	3.8000E-02				
40-ZR- 99	400990	2.4000E+00	1.6205E+06	7.9370E+05	0.	1.0	0.0	4.5000E+06	1.0000E+00	9.8066E+01	1	2	225
41-NB- 99	410990	1.4000E+01	1.5225E+06	1.9974E+05	0.	1.0	0.0	3.7000E+06	1.0000E+00	9.8061E+01	1	2	247
41-NB- 99M	410991	1.5000E+02	9.5364E+05	1.9943E+06	0.	1.0	0.0	4.3000E+06	1.0000E+00	4.0733E+09	1	2	248
42-MO- 99	420990	2.3767E+05	3.8474E+05	1.8606E+05	0.	1.0	0.0	1.3566E+06	1.3700E-01	9.8058E+01	2	2	269
						1.0	1.0	1.2140E+06	8.6300E-01				
SIGMA(.0253), RI, B1, B2, B3		1.7000E+00	2.7340E+01					1.00000	0.00000	0.00000			
43-TC-99	430990	INF	0.	0.	0.	STABLE		0.	0.	9.8150E+01	0	0	286
SIGMA(.0253), RI, B1, B2, B3		1.9013E+01	3.4235E+02					1.00000	0.00000	0.00000			
43-TC- 99M	430991	2.1672E+04	0.	1.4274E+05	0.	3.0	0.0	1.4263E+05	1.0000E+00	9.8057E+01	1	1	287
44-RU- 99	440990	INF	0.	0.	0.	STABLE		0.	0.	9.8056E+01	0	0	308
SIGMA(.0253), RI, B1, B2, B3		5.0000E+00	1.3773E+02					1.00000	0.00000	0.00000			
37-RB-100	371000	1.0056E-01	4.7305E+06	3.7290E+06	0.	1.0	0.0	1.3190E+07	1.0000E+00	9.9090E+01	1	0	170
38-SR-100	381000	1.0456E+00	2.0430E+06	1.9208E+06	0.	1.0	0.0	6.4000E+06	1.0000E+00	9.9075E+01	1	0	187
39- Y-100	391000	7.5635E-01	3.3979E+06	2.4279E+06	0.	1.0	0.0	9.5900E+06	1.0000E+00	9.9069E+01	1	0	207
40-ZR-100	401000	7.1000E+00	7.3699E+05	6.3230E+05	0.	1.0	0.0	2.6200E+06	5.0000E-01	9.9059E+01	2	0	226
						1.0	1.0	2.3700E+06	5.0000E-01				
41-NB-100	411000	2.4000E+00	2.0596E+06	1.9205E+06	0.	1.0	0.0	6.3000E+06	1.0000E+00	2.1306E+10	1	2	249
41-NB-100M	411001	2.4100E+00	2.1186E+06	1.3656E+06	0.	1.0	0.0	6.3400E+06	1.0000E+00	9.9056E+01	1	0	250
42-MO-100	421000	INF	0.	0.	0.	STABLE		0.	0.	4.6164E+09	0	0	270
SIGMA(.0253), RI, B1, B2, B3		1.9901E-01	3.8470E+00					1.00000	0.00000	0.00000			
43-TC-100	431000	1.6000E+01	1.4000E+06	7.8000E+04	0.	1.0	0.0	3.3700E+06	1.0000E+00	1.4954E+09	1	0	288
44-RU-100	441000	INF	0.	0.	0.	STABLE		0.	0.	9.9046E+01	0	0	309
SIGMA(.0253), RI, B1, B2, B3		5.8001E+00	9.7951E+00					1.00000	0.00000	0.00000			
37-RB-101	371010	1.1330E-01	3.8753E+06	3.4993E+06	0.	1.0	0.0	1.1250E+07	1.0000E+00	1.0008E+02	1	0	171
38-SR-101	381010	2.5190E-01	3.2679E+06	2.8266E+06	0.	1.0	0.0	9.5300E+06	1.0000E+00	2.6069E+10	1	0	188
39- Y-101	391010	9.7617E-01	2.5209E+06	2.0918E+06	0.	1.0	0.0	7.5500E+06	1.0000E+00	1.0006E+02	1	0	208
40-ZR-101	401010	3.3000E+00	2.4000E+06	3.5290E+05	0.	1.0	0.0	6.5000E+06	1.0000E+00	1.0005E+02	1	0	227
41-NB-101	411010	7.0000E+00	1.9005E+06	3.2999E+05	0.	1.0	0.0	4.6000E+06	1.0000E+00	1.0005E+02	1	2	252

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
42-MO-101	421010	8.7600E+02	5.9499E+05	1.3862E+06	0.	1.0	0.0	2.8230E+06	1.0000E+00	1.0004E+02	1	2	271
43-TC-101	431010	8.5200E+02	4.7996E+05	3.3625E+05	0.	1.0	0.0	1.6320E+06	1.0000E+00	1.5971E+08	1	2	289
44-RU-101	441010	INF	0.	0.	0.	STABLE		0.	0.	1.0004E+02	0	0	310
SIGMA(.0253), RI, B1, B2, B3			3.1000E+00	9.5189E+01				1.00000	0.00000	0.00000			
38-SR-102	381020	4.1475E-01	2.4463E+06	2.4334E+06	0.	1.0	0.0	7.5900E+06	1.0000E+00	1.0107E+02	1	0	189
39- Y-102	391020	2.7263E-01	3.8153E+06	2.9186E+06	0.	1.0	0.0	1.0670E+07	1.0000E+00	1.0106E+02	1	0	209
40-ZR-102	401020	2.8622E+01	1.1324E+06	1.0375E+06	0.	1.0	0.0	3.7000E+06	1.0000E+00	1.0105E+02	1	0	228
41-NB-102	411020	3.0000E+00	2.4870E+06	1.6885E+06	0.	1.0	0.0	7.2600E+06	1.0000E+00	2.7748E+12	1	0	253
42-MO-102	421020	6.6600E+02	3.1112E+05	0.	0.	1.0	0.0	9.0000E+05	1.0000E+00	1.0103E+02	1	1	272
43-TC-102	431020	5.3000E+00	1.5088E+06	4.6380E+05	0.	1.0	0.0	4.1500E+06	1.0000E+00	1.0103E+02	1	2	290
43-TC-102M	431021	2.5800E+02	7.1948E+05	2.5466E+06	0.	1.0	0.0	4.4500E+06	1.0000E+00	1.0471E+09	1	2	291
44-RU-102	441020	INF	0.	0.	0.	STABLE		0.	0.	1.0103E+02	0	0	311
SIGMA(.0253), RI, B1, B2, B3			1.3001E+00	4.0086E+00				1.00000	0.00000	0.00000			
38-SR-103	381030	1.3859E-01	3.6477E+06	3.3747E+06	0.	1.0	0.0	1.0670E+07	1.0000E+00	1.0206E+02	1	0	190
39- Y-103	391030	3.6600E-01	2.9418E+06	2.5975E+06	0.	1.0	0.0	8.7300E+06	1.0000E+00	2.5737E+08	1	0	210
40-ZR-103	401030	1.7703E+00	2.2488E+06	1.8884E+06	0.	1.0	0.0	6.8200E+06	1.0000E+00	1.0204E+02	1	0	229
41-NB-103	411030	1.5669E+01	1.7364E+06	1.3823E+06	0.	1.0	0.0	5.3900E+06	1.0000E+00	1.0203E+02	1	0	254
42-MO-103	421030	6.0000E+01	1.3065E+06	9.8750E+05	0.	1.0	0.0	4.1700E+06	1.0000E+00	1.0203E+02	1	0	273
43-TC-103	431030	5.0000E+01	7.1887E+05	5.0825E+05	0.	1.0	0.0	2.3500E+06	1.0000E+00	3.8976E+07	1	0	292
44-RU-103	441030	3.4214E+06	6.7530E+04	4.9002E+05	0.	1.0	1.0	7.2200E+05	1.0000E+00	1.0202E+02	1	2	312
SIGMA(.0253), RI, B1, B2, B3			7.7000E+00	6.9560E+01				1.00000	0.00000	0.00000			
45-RH-103	451030	INF	0.	0.	0.	STABLE		0.	0.	1.0202E+02	0	0	330
SIGMA(.0253), RI, B1, B2, B3			1.4810E+02	1.0222E+03				.92700	.07300	0.00000			
45-RH-103M	451031	3.3600E+03	0.	3.9780E+04	0.	3.0	0.0	3.9780E+04	1.0000E+00	1.0202E+02	1	1	331
38-SR-104	381040	1.9250E-01	2.9155E+06	3.0561E+06	0.	1.0	0.0	8.9600E+06	1.0000E+00	2.6905E+10	1	0	191
39- Y-104	391040	1.4422E-01	4.1835E+06	3.4430E+06	0.	1.0	0.0	1.1810E+07	1.0000E+00	1.0305E+02	1	0	211
40-ZR-104	401040	3.7834E+00	1.5086E+06	1.4683E+06	0.	1.0	0.0	4.8800E+06	1.0000E+00	1.0303E+02	1	0	230
41-NB-104	411040	1.0000E+00	2.9430E+06	2.1525E+06	0.	1.0	0.0	8.5100E+06	1.0000E+00	1.0303E+02	1	0	255
42-MO-104	421040	9.6000E+01	5.4772E+05	4.8751E+05	0.	1.0	0.0	1.8700E+06	1.0000E+00	1.0302E+02	1	0	274
43-TC-104	431040	1.0800E+03	1.1929E+06	1.4481E+06	0.	1.0	0.0	4.2500E+06	1.0000E+00	1.0302E+02	1	2	293
44-RU-104	441040	INF	0.	0.	0.	STABLE		0.	0.	1.0247E+08	0	0	313
SIGMA(.0253), RI, B1, B2, B3			4.3685E-01	6.5276E+00				1.00000	0.00000	0.00000			
45-RH-104	451040	4.2000E+01	1.0030E+06	1.1490E+04	0.	1.0	0.0	2.4460E+06	9.9879E-01	1.0301E+02	2	2	332
						2.0	0.0	0.	1.2100E-03				
45-RH-104M	451041	2.6100E+02	5.8000E+02	1.3220E+05	0.	1.0	0.0	2.5750E+06	2.0000E-03	1.0301E+02	2	2	333
						3.0	0.0	1.2900E+05	9.9800E-01				
46-PD-104	461040	INF	0.	0.	0.	STABLE		0.	0.	-7.5498E+08	0	0	358
SIGMA(.0253), RI, B1, B2, B3			3.8694E-01	1.7925E+01				1.00000	0.00000	0.00000			
39- Y-105	391050	1.7362E-01	3.4346E+06	3.2119E+06	0.	1.0	0.0	1.0100E+07	1.0000E+00	1.0404E+02	1	0	212
40-ZR-105	401050	5.5859E-01	2.6338E+06	2.3767E+06	0.	1.0	0.0	7.9600E+06	1.0000E+00	1.0403E+02	1	0	231
41-NB-105	411050	1.8000E+00	2.1368E+06	1.8195E+06	0.	1.0	0.0	6.5700E+06	1.0000E+00	1.0402E+02	1	0	256
42-MO-105	421050	5.4000E+01	1.7190E+06	1.3965E+06	0.	1.0	0.0	5.4300E+06	1.0000E+00	1.0402E+02	1	0	275
43-TC-105	431050	4.8000E+02	1.0536E+06	8.0733E+05	0.	1.0	0.0	3.4100E+06	1.0000E+00	1.1132E+10	1	0	294

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
44-RU-105	441050	1.5984E+04	4.1264E+05	7.8767E+05	0.	1.0	0.0	1.9168E+06	7.4200E-01	4.2975E+07	2	2	314
						1.0	1.0	1.7871E+06	2.5800E-01				
SIGMA(.0253): RI, B1, B2, B3			2.0000E-01	7.3730E+00				1.00000	0.00000	0.00000			
45-RH-105	451050	1.2780E+05	1.5228E+05	7.8770E+04	0.	1.0	0.0	5.6550E+05	1.0000E+00	1.5241E+09	1	2	334
SIGMA(.0253): RI, B1, B2, B3			1.6000E+04	1.5850E+04				.70500	.29500	0.00000			
45-RH-105M	451051	3.7000E+01	0.	1.2970E+05	0.	3.0	0.0	1.2970E+05	1.0000E+00	4.3677E+08	1	1	335
46-PD-105	461050	INF	0.	0.	0.	STABLE		0.	0.	1.0400E+02	0	0	359
SIGMA(.0253): RI, B1, B2, B3			1.4000E+01	9.1759E+01				1.00000	0.00000	0.00000			
39- Y-106	391060	9.2921E-02	4.5497E+06	3.9106E+06	0.	1.0	0.0	1.3010E+07	1.0000E+00	4.0509E+08	1	0	213
40-ZR-106	401060	9.8013E-01	1.9514E+06	2.0085E+06	0.	1.0	0.0	6.2500E+06	1.0000E+00	1.0503E+02	1	0	232
41-NB-106	411060	5.3521E-01	3.3517E+06	2.6529E+06	0.	1.0	0.0	9.6600E+06	1.0000E+00	1.0502E+02	1	0	257
42-MO-106	421060	9.0000E+00	9.2050E+05	8.7447E+05	0.	1.0	0.0	3.1100E+06	1.0000E+00	3.2271E+11	1	0	276
43-TC-106	431060	3.7000E+01	2.2854E+06	1.6023E+06	0.	1.0	0.0	6.8700E+06	1.0000E+00	3.0721E+07	1	0	295
44-RU-106	441060	3.1882E+07	9.9700E+03	0.	0.	1.0	0.0	3.9400E+04	1.0000E+00	1.0500E+02	1	1	315
SIGMA(.0253): RI, B1, B2, B3			1.4600E-01	2.0800E+00				1.00000	0.00000	0.00000			
45-RH-106	451060	2.9900E+01	1.4457E+06	1.9944E+05	0.	1.0	0.0	3.5400E+06	1.0000E+00	1.0500E+02	1	2	336
45-RH-106M	451061	7.8480E+03	3.4866E+05	2.6452E+06	0.	1.0	0.0	3.6300E+06	1.0000E+00	1.1442E+10	1	2	337
46-PD-106	461060	INF	0.	0.	0.	STABLE		0.	0.	1.0499E+02	0	0	360
SIGMA(.0253): RI, B1, B2, B3			2.3809E-01	7.1852E+00				.95700	.04300	0.00000			
39- Y-107	391070	1.0463E-01	3.7637E+06	3.7126E+06	0.	1.0	0.0	1.1240E+07	1.0000E+00	7.5829E+08	1	0	214
40-ZR-107	401070	2.4847E-01	3.0916E+06	2.9075E+06	0.	1.0	0.0	9.1700E+06	1.0000E+00	1.0602E+02	1	0	233
41-NB-107	411070	6.6943E-01	2.6068E+06	2.3615E+06	0.	1.0	0.0	7.9400E+06	1.0000E+00	1.0601E+02	1	0	258
42-MO-107	421070	6.3912E+00	1.9666E+06	1.7262E+06	0.	1.0	0.0	6.1900E+06	1.0000E+00	1.0600E+02	1	0	277
43-TC-107	431070	2.9000E+01	1.5354E+06	1.2656E+06	0.	1.0	0.0	4.9200E+06	1.0000E+00	1.0600E+02	1	0	296
44-RU-107	441070	2.5200E+02	1.2375E+06	2.5137E+05	0.	1.0	0.0	3.1500E+06	1.0000E+00	4.6652E+08	1	2	316
45-RH-107	451070	1.3020E+03	4.2119E+05	3.1220E+05	0.	1.0	0.0	1.5100E+06	1.0000E+00	1.0599E+02	1	2	338
46-PD-107	461070	2.0498E+14	1.0300E+04	1.0000E+02	0.	1.0	0.0	3.5000E+04	1.0000E+00	1.0599E+02	1	0	361
SIGMA(.0253): RI, B1, B2, B3			1.0000E+01	6.9900E+01				1.00000	0.00000	0.00000			
46-PD-107M	461071	2.1300E+01	0.	2.1000E+05	0.	3.0	0.0	2.1000E+05	1.0000E+00	1.0599E+02	1	0	362
47-AG-107	471070	INF	0.	0.	0.	STABLE		0.	0.	1.0599E+02	0	0	384
SIGMA(.0253): RI, B1, B2, B3			3.6843E+01	1.1630E+02				.91900	.08100	0.00000			
40-ZR-108	401080	4.0762E-01	2.3301E+06	2.5262E+06	0.	1.0	0.0	7.3900E+06	1.0000E+00	1.0702E+02	1	0	234
41-NB-108	411080	2.2202E-01	3.8326E+06	3.1804E+06	0.	1.0	0.0	1.0850E+07	1.0000E+00	1.0701E+02	1	0	259
42-MO-108	421080	1.5000E+00	1.3398E+06	1.3514E+06	0.	1.0	0.0	4.4800E+06	1.0000E+00	1.0700E+02	1	0	278
43-TC-108	431080	5.2000E+00	2.6203E+06	2.0011E+06	0.	1.0	0.0	7.8500E+06	1.0000E+00	2.2596E+10	1	0	297
44-RU-108	441080	2.7000E+02	4.7006E+05	4.6200E+04	0.	1.0	0.0	1.3200E+06	1.0000E+00	1.0698E+02	1	2	317
45-RH-108	451080	1.7000E+01	1.8280E+06	7.0850E+05	0.	1.0	0.0	4.5000E+06	1.0000E+00	1.2388E+09	1	2	339
45-RH-108M	451081	3.5400E+02	8.0406E+05	2.4395E+06	0.	1.0	0.0	4.4300E+06	1.0000E+00	1.0698E+02	1	2	340
46-PD-108	461080	INF	0.	0.	0.	STABLE		0.	0.	1.0698E+02	0	0	363
SIGMA(.0253): RI, B1, B2, B3			1.2200E+01	2.2436E+02				.98400	.01600	0.00000			
47-AG-108	471080	1.4460E+02	5.0127E+05	2.8406E+05	0.	1.0	0.0	1.6400E+06	9.7700E-01	1.0698E+02	2	0	385
						2.0	0.0	1.9100E+06	2.3000E-02				
47-AG-108M	471081	4.0997E+09	0.	9.0000E+05	0.	2.0	0.0	2.0200E+06	9.2300E-01	1.0698E+02	2	0	386
						3.0	0.0	1.1000E+05	7.7000E-02				

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
48-CD-108	481080	INF	0.	0.	0.	STABLE		0.	0.	1.6655E+09	0	0	415
SIGMA(,0253), RI, B1, B2, B3			1.1000E+00	4.2930E+00				1.00000	0.00000	0.00000			
40-ZR-109	401090	1.3868E-01	3.4192E+06	3.4415E+06	0.	1.0	0.0	1.0280E+07	1.0000E+00	1.0801E+02	1	0	235
41-NB-109	411090	2.8607E-01	3.0091E+06	2.8865E+06	0.	1.0	0.0	9.0800E+06	1.0000E+00	1.0800E+02	1	0	260
42-MO-109	421090	1.0328E+00	2.3942E+06	2.1975E+06	0.	1.0	0.0	7.3900E+06	1.0000E+00	1.0799E+02	1	0	279
43-TC-109	431090	5.0000E+01	1.9792E+06	1.7440E+06	0.	1.0	0.0	6.2800E+06	1.0000E+00	1.0798E+02	1	0	298
44-RU-109	441090	3.5000E+01	1.2867E+06	1.0949E+06	0.	1.0	0.0	4.3500E+06	5.0000E-01	1.3126E+09	2	0	318
						1.0	1.0	4.1000E+06	5.0000E-01				
45-RH-109	451090	9.0000E+01	7.1285E+05	5.6227E+05	0.	1.0	0.0	2.5000E+06	5.0000E-01	1.8760E+10	2	0	341
						1.0	1.0	2.2500E+06	5.0000E-01				
45-RH-109M	451091	5.0000E+01	0.	2.5000E+05	0.	3.0	0.0	2.5000E+05	1.0000E+00	1.0797E+02	1	0	342
46-PD-109	461090	4.8456E+04	3.6411E+05	2.1000E+02	0.	1.0	0.0	1.1760E+06	1.6000E-04	1.0797E+02	2	2	364
						1.0	1.0	1.0273E+06	9.9984E-01				
46-PD-109M	461091	2.8140E+02	0.	1.8800E+05	0.	3.0	0.0	1.8800E+05	1.0000E+00	1.0797E+02	1	1	365
47-AG-109	471090	INF	0.	0.	0.	STABLE		0.	0.	1.0797E+02	0	0	387
SIGMA(,0253), RI, B1, B2, B3			9.1773E+01	1.4666E+03				.95200	.04800	0.00000			
47-AG-109M	471091	3.9600E+01	0.	8.7700E+04	0.	3.0	0.0	8.7700E+04	1.0000E+00	1.0797E+02	1	1	388
48-CD-109	481090	3.9200E+07	2.4645E+04	1.5991E+04	0.	2.0	1.0	9.0000E+04	1.0000E+00	1.0723E+08	1	0	416
41-NB-110	411100	1.2584E-01	4.1377E+06	3.6946E+06	0.	1.0	0.0	1.1970E+07	1.0000E+00	1.0900E+02	1	0	261
42-MO-110	421100	1.8921E+00	1.6981E+06	1.8104E+06	0.	1.0	0.0	5.6500E+06	1.0000E+00	1.0899E+02	1	0	280
43-TC-110	431100	8.3000E-01	3.1253E+06	2.5126E+06	0.	1.0	0.0	9.1900E+06	1.0000E+00	2.6288E+03	1	0	299
44-RU-110	441100	1.6000E+01	7.7479E+05	7.6407E+05	0.	1.0	0.0	2.7100E+06	1.0000E+00	4.3644E+10	1	0	319
45-RH-110	451100	2.9000E+01	1.3457E+06	2.2677E+06	0.	1.0	0.0	5.4000E+06	1.0000E+00	2.4118E+09	1	2	343
45-RH-110M	451101	3.0000E+00	2.4812E+06	5.6070E+04	0.	1.0	0.0	5.5000E+06	1.0000E+00	1.0897E+02	1	2	344
46-PD-110	461100	INF	0.	0.	0.	STABLE		0.	0.	1.0896E+02	0	0	366
SIGMA(,0253), RI, B1, B2, B3			2.2000E-01	7.0660E+00				.90900	.09100	0.00000			
47-AG-110	471100	2.1773E+07	1.1800E+06	4.1600E+04	0.	1.0	0.0	2.8900E+06	9.9700E-01	1.0896E+02	2	0	389
						2.0	0.0	8.7000E+05	3.0000E-03				
47-AG-110M	471101	2.4600E+01	6.8000E+04	2.7900E+06	0.	1.0	0.0	2.9860E+06	9.8600E-01	1.0896E+02	2	0	390
						3.0	0.0	1.1600E+05	1.4000E-02				
48-CD-110	481100	INF	0.	0.	0.	STABLE		0.	0.	4.0075E+09	0	0	417
SIGMA(,0253), RI, B1, B2, B3			1.1103E+01	4.2705E+01				.99100	.00900	0.00000			
41-NB-111	411110	1.5608E-01	3.3670E+06	3.4061E+06	0.	1.0	0.0	1.0140E+07	1.0000E+00	1.0999E+02	1	0	262
42-MO-111	421110	3.9174E-01	2.7577E+06	2.7207E+06	0.	1.0	0.0	8.5100E+06	1.0000E+00	1.0998E+02	1	0	281
43-TC-111	431110	1.3358E+00	2.3581E+06	2.2095E+06	0.	1.0	0.0	7.4100E+06	1.0000E+00	1.0997E+02	1	0	300
44-RU-111	441110	1.5421E+01	1.7126E+06	1.5298E+06	0.	1.0	0.0	5.5100E+06	1.0000E+00	1.0997E+02	1	0	320
45-RH-111	451110	6.3000E+01	1.2308E+06	1.0440E+06	0.	1.0	0.0	4.0600E+06	9.9570E-01	1.0996E+02	2	0	345
						1.0	1.0	3.8100E+06	4.3000E-03				
46-PD-111	461110	1.3200E+03	8.4418E+05	5.2880E+04	0.	1.0	0.0	2.2000E+06	7.5000E-03	1.0995E+02	2	2	367
						1.0	1.0	2.1400E+06	9.9250E-01				
46-PD-111M	461111	1.9800E+04	1.6711E+05	4.2139E+05	0.	1.0	0.0	2.3720E+06	6.6000E-02	1.0995E+02	3	2	368
						1.0	1.0	2.3120E+06	2.5400E-01				
						3.0	0.0	1.7220E+05	6.8000E-01				
47-AG-111	471110	6.4541E+05	3.5476E+05	2.6970E+04	0.	1.0	0.0	1.0280E+06	1.0000E+00	1.0995E+02	1	2	391
SIGMA(,0253), RI, B1, B2, B3			3.0000E+00	1.0300E+02				1.00000	0.00000	0.00000			

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
47-AG-111M	471111	6.5000E+01	0.	6.5000E+04	0.	3.0	0.0	6.5000E+04	1.0000E+00	5.1574E+08	1	1	392
48-CD-111	481110	INF	0.	0.	0.	STABLE		0.	0.	6.0920E+07	0	0	418
SIGMA(.0253), RI, B1, B2, B3			2.4304E+01	5.4587E+01				1.00000	0.00000	0.00000			
48-CD-111M	481111	2.9220E+03	0.	3.9600E+05	0.	3.0	0.0	3.9600E+05	1.0000E+00	1.5382E+09	1	0	419
41-NB-112	411120	8.5105E-02	4.4453E+06	4.1593E+06	0.	1.0	0.0	1.3050E+07	1.0000E+00	1.1099E+02	1	0	263
42-MO-112	421120	6.8924E-01	2.0420E+06	2.2920E+06	0.	1.0	0.0	6.6900E+06	1.0000E+00	1.1098E+02	1	0	282
43-TC-112	431120	3.5534E-01	3.5035E+06	3.0463E+06	0.	1.0	0.0	1.0300E+07	1.0000E+00	4.0215E+10	1	0	301
44-RU-112	441120	7.0000E-01	1.0779E+06	1.1280E+06	0.	1.0	0.0	3.7300E+06	1.0000E+00	1.1096E+02	1	0	321
45-RH-112	451120	4.7000E+00	2.3003E+06	1.7730E+06	0.	1.0	0.0	7.0100E+06	1.0000E+00	1.1095E+02	1	0	346
46-PD-112	461120	7.2360E+04	7.9094E+04	7.6047E+04	0.	1.0	0.0	2.9000E+05	1.0000E+00	1.1095E+02	1	0	369
47-AG-112	471120	1.1268E+04	1.4289E+06	6.6375E+05	0.	1.0	0.0	3.9580E+06	1.0000E+00	2.0074E+08	1	2	393
48-CD-112	481120	INF	0.	0.	0.	STABLE		0.	0.	1.1094E+02	0	0	420
SIGMA(.0253), RI, B1, B2, B3			2.2003E+00	1.3814E+01				1.00000	0.00000	0.00000			
42-MO-113	421130	1.9715E-01	3.1558E+06	3.2562E+06	0.	1.0	0.0	9.6000E+06	1.0000E+00	1.1197E+02	1	0	283
43-TC-113	431130	4.5835E-01	2.7248E+06	2.7022E+06	0.	1.0	0.0	8.4800E+06	1.0000E+00	1.1196E+02	1	0	302
44-RU-113	441130	2.7661E+00	2.0581E+06	1.9860E+06	0.	1.0	0.0	6.6200E+06	1.0000E+00	1.1195E+02	1	0	322
45-RH-113	451130	9.0000E-01	1.5806E+06	1.4329E+06	0.	1.0	0.0	5.1600E+06	1.0000E+00	1.1195E+02	1	0	347
46-PD-113	461130	9.0000E+01	1.0641E+06	9.2212E+05	0.	1.0	0.0	3.6000E+06	9.0000E-01	1.1194E+02	2	0	370
						1.0	1.0	3.3500E+06	1.0000E-01				
47-AG-113	471130	1.9080E+04	5.7947E+05	4.7397E+05	0.	1.0	0.0	2.0000E+06	9.8700E-01	1.1194E+02	2	0	394
						1.0	1.0	1.7300E+06	1.3000E-02				
47-AG-113M	471131	6.6000E+01	6.4953E+05	5.3127E+05	0.	1.0	0.0	2.2500E+06	9.5500E-01	6.4163E+07	2	0	395
						1.0	1.0	1.9800E+06	4.5000E-02				
48-CD-113	481130	INF	0.	0.	0.	STABLE		0.	0.	2.4030E+09	0	0	421
SIGMA(.0253), RI, B1, B2, B3			1.9880E+04	4.0480E+02				1.00000	0.00000	0.00000			
48-CD-113M	481131	4.6043E+08	1.5843E+05	1.2539E+05	0.	1.0	0.0	5.7000E+05	9.9900E-01	1.1193E+02	2	0	422
						3.0	0.0	2.7000E+05	1.0000E-03				
49-IN-113	491130	INF	0.	0.	0.	STABLE		0.	0.	1.1193E+02	0	0	445
SIGMA(.0253), RI, B1, B2, B3			1.1400E+01	2.2412E+02				.34200	.38600	.27200			
49-IN-113M	491131	5.9688E+03	0.	3.9300E+05	0.	3.0	0.0	3.9300E+05	1.0000E+00	1.1193E+02	1	0	446
42-MO-114	421140	3.2152E-01	2.3863E+06	2.8103E+06	0.	1.0	0.0	7.7400E+06	1.0000E+00	1.1297E+02	1	0	284
43-TC-114	431140	1.7340E-01	3.9084E+06	3.5731E+06	0.	1.0	0.0	1.1390E+07	1.0000E+00	1.1296E+02	1	0	303
44-RU-114	441140	5.0528E+00	1.3990E+06	1.5467E+06	0.	1.0	0.0	4.7900E+06	1.0000E+00	1.1295E+02	1	0	323
45-RH-114	451140	1.7000E+00	2.6422E+06	2.2160E+06	0.	1.0	0.0	8.0500E+06	1.0000E+00	1.1294E+02	1	0	348
46-PD-114	461140	1.4400E+02	5.7923E+05	5.9369E+05	0.	1.0	0.0	2.1000E+06	1.0000E+00	1.1293E+02	1	0	371
47-AG-114	471140	4.6000E+00	2.1130E+06	8.7000E+04	0.	1.0	0.0	4.8500E+06	1.0000E+00	1.1293E+02	1	0	396
48-CD-114	481140	INF	0.	0.	0.	STABLE		0.	0.	1.1293E+02	0	0	423
SIGMA(.0253), RI, B1, B2, B3			3.3600E-01	1.9245E+01				.89300	.10700	0.00000			
49-IN-114	491140	7.1900E+01	1.0000E+06	3.8748E+05	0.	1.0	0.0	2.0000E+06	9.8000E-01	1.1293E+02	2	0	447
						2.0	0.0	1.4400E+06	2.0000E-02				
49-IN-114M	491141	4.2777E+06	1.6716E+04	1.9613E+05	0.	2.0	0.0	1.6316E+06	3.5000E-02	1.1293E+02	2	0	448
						3.0	0.0	1.9160E+05	9.6500E-01				
42-MO-115	421150	1.1596E-01	3.4922E+06	3.7255E+06	0.	1.0	0.0	1.0710E+07	1.0000E+00	1.1396E+02	1	0	285

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
43-TC-115	431150	2,2249E-01	3,0916E+06	3,2319E+06	0.	1.0	0.0	9,5300E+06	1,0000E+00	1,1395E+02	1	0	304
44-RU-115	441150	7,2941E-01	2,4299E+06	2,4600E+06	0.	1.0	0.0	7,7000E+06	1,0000E+00	1,1394E+02	1	0	324
45-RH-115	451150	6,0225E+00	1,9275E+06	1,8576E+06	0.	1.0	0.0	6,2300E+06	1,0000E+00	1,1393E+02	1	0	349
46-PD-115	461150	3,8000E+01	1,3286E+06	1,2508E+06	0.	1.0	0.0	4,5300E+06	7,3000E-01	1,1393E+02	2	0	372
						1.0	1.0	4,2800E+06	2,7000E-01				
47-AG-115	471150	1,2600E+03	9,5176E+05	8,3673E+05	0.	1.0	0.0	3,2400E+06	9,1500E-01	1,1392E+02	2	0	397
						1.0	1.0	3,0800E+06	8,5000E-02				
47-AG-115M	471151	1,7000E+01	1,0153E+06	8,9261E+05	0.	1.0	0.0	3,5100E+06	7,3000E-01	1,1392E+02	2	0	398
						1.0	1.0	3,3300E+06	2,7000E-01				
48-CD-115	481150	1,9260E+05	3,1721E+05	2,6562E+05	0.	1.0	1.0	1,1150E+06	1,0000E+00	1,1392E+02	1	0	424
48-CD-115M	481151	3,8534E+06	4,6372E+05	3,8830E+05	0.	1.0	0.0	1,6300E+06	9,9991E-01	1,1392E+02	2	0	425
						1.0	1.0	1,2950E+06	9,0000E-05				
SIGMA(,0253)+ RI+ B1+ B2+ B3			3,1000E+01	1,9580E+02				1,00000	0,00000	0,00000			
49-IN-115	491150	1,5768E+22	1,3430E+05	1,0758E+05	0.	1.0	0.0	4,9000E+05	1,0000E+00	1,1392E+02	1	0	449
SIGMA(,0253)+ RI+ B1+ B2+ B3			2,0200E+02	3,1805E+03				,22300	,32200	,45500			
49-IN-115M	491151	1,6200E+04	8,3661E+03	3,2931E+05	0.	1.0	0.0	8,2500E+05	3,7000E-02	1,1392E+02	2	0	450
						3.0	0.0	3,3500E+05	9,6300E-01				
50-SN-115	501150	INF	0.	0.	0.	STABLE		0.	0.	1,1392E+02	0	0	482
SIGMA(,0253)+ RI+ B1+ B2+ B3			4,9997E+01	2,3888E+01				1,00000	0,00000	0,00000			
43-TC-116	431160	1,0620E-01	4,2376E+06	4,0248E+06	0.	1.0	0.0	1,2500E+07	1,0000E+00	1,1495E+02	1	0	305
44-RU-116	441160	1,4049E+00	1,7237E+06	2,0053E+06	0.	1.0	0.0	5,8400E+06	1,0000E+00	1,1493E+02	1	0	325
45-RH-116	451160	8,3326E-01	3,0427E+06	2,6941E+06	0.	1.0	0.0	9,1400E+06	1,0000E+00	1,1493E+02	1	0	350
46-PD-116	461160	1,4000E+01	7,5165E+05	8,1708E+05	0.	1.0	0.0	2,8200E+06	5,0000E-01	1,1492E+02	2	0	373
						1.0	1.0	2,5700E+06	5,0000E-01				
47-AG-116	471160	1,6080E+02	2,1850E+06	7,0960E+05	0.	1.0	0.0	6,3000E+06	1,0000E+00	1,1492E+02	1	0	399
47-AG-116M	471161	8,7000E+00	1,9617E+06	1,5947E+06	0.	1.0	0.0	6,3500E+06	9,8000E-01	1,1492E+02	2	0	400
						3.0	0.0	2,5000E+05	2,0000E-02				
48-CD-116	481160	INF	0.	0.	0.	STABLE		0.	0.	1,1491E+02	0	0	426
SIGMA(,0253)+ RI+ B1+ B2+ B3			7,7004E-02	2,4275E+00				,64900	,35100	0,00000			
49-IN-116	491160	1,4200E+01	9,9266E+05	7,1468E+05	0.	1.0	0.0	3,3200E+06	1,0000E+00	1,1491E+02	1	0	451
49-IN-116M	491161	3,2520E+03	1,0106E+06	7,2759E+05	0.	1.0	0.0	3,3800E+06	1,0000E+00	1,1491E+02	1	0	452
49-IN-116N	491162	2,2000E+00	0.	2,5000E+05	0.	3.0	1.0	2,5000E+05	1,0000E+00	4,9934E+07	1	0	453
50-SN-116	501160	INF	0.	0.	0.	STABLE		0.	0.	1,1491E+02	0	0	483
SIGMA(,0253)+ RI+ B1+ B2+ B3			1,2041E-01	1,1736E+01				1,00000	0,00000	0,00000			
43-TC-117	431170	1,3523E-01	3,3472E+06	3,6756E+06	0.	1.0	0.0	1,0370E+07	1,0000E+00	1,1594E+02	1	0	306
44-RU-117	441170	3,0891E-01	2,8402E+06	2,9800E+06	0.	1.0	0.0	8,8200E+06	1,0000E+00	1,1593E+02	1	0	326
45-RH-117	451170	1,0761E+00	2,2717E+06	2,3166E+06	0.	1.0	0.0	7,2700E+06	1,0000E+00	1,1592E+02	1	0	351
46-PD-117	461170	5,0000E+00	1,6920E+06	1,6772E+06	0.	1.0	0.0	5,7200E+06	5,0000E-01	1,1281E+10	2	0	374
						1.0	1.0	5,4700E+06	5,0000E-01				
47-AG-117	471170	7,3200E+01	1,2785E+06	1,2006E+06	0.	1.0	0.0	4,3400E+06	8,0000E-01	1,1591E+02	2	0	401
						1.0	1.0	4,2070E+06	2,0000E-01				
47-AG-117M	471171	5,3000E+00	1,3408E+06	1,2591E+06	0.	1.0	0.0	4,5900E+06	5,0000E-01	1,1591E+02	2	0	402
						1.0	1.0	4,4570E+06	5,0000E-01				
48-CD-117	481170	9,3600E+03	6,3402E+05	5,8055E+05	0.	1.0	0.0	2,5200E+06	7,0000E-02	1,1590E+02	2	0	427
						1.0	1.0	2,2060E+06	9,3000E-01				

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
48-CD-117M	481171	1.2240E+04	7.1565E+05	6.5529E+05	0.	1.0	0.0	2.6530E+06	5.6000E-01	1.1590E+02	2	0	428
						1.0	1.0	2.3390E+06	4.4000E-01				
49-IN-117	491170	2.6400E+03	4.0742E+05	3.5285E+05	0.	1.0	0.0	1.4700E+06	1.0000E+00	1.2737E+09	1	0	454
49-IN-117M	491171	6.9840E+03	2.6206E+05	3.7454E+05	0.	1.0	0.0	1.7840E+06	5.3000E-01	1.6704E+05	2	0	455
						3.0	0.0	3.1400E+05	4.7000E-01				
50-SN-117	501170	INF	0.	0.	0.	STABLE		0.	0.	1.1590E+02	0	0	484
SIGMA(,0253): RI, B1, B2, B3			2.6002E+00	1.8576E+01				1.00000	0.00000	0.00000			
50-SN-117M	501171	1.2096E+06	0.	3.1700E+05	0.	3.0	0.0	3.1700E+05	1.0000E+00	1.1590E+02	1	0	485
43-TC-118	431180	7.7217E-02	4.4032E+06	4.5235E+06	0.	1.0	0.0	1.3330E+07	1.0000E+00	1.1694E+02	1	0	307
44-RU-118	441180	6.1633E-01	1.9952E+06	2.4341E+06	0.	1.0	0.0	6.6900E+06	1.0000E+00	1.1692E+02	1	0	327
45-RH-118	451180	2.9529E-01	3.4783E+06	3.2097E+06	0.	1.0	0.0	1.0250E+07	1.0000E+00	1.1692E+02	1	0	352
46-PD-118	461180	3.1000E+00	1.0504E+06	1.2056E+06	0.	1.0	0.0	3.8500E+06	5.0000E-01	2.2071E+08	2	0	375
						1.0	1.0	3.6000E+06	5.0000E-01				
47-AG-118	471180	2.0000E-01	2.3194E+06	1.9933E+06	0.	1.0	0.0	7.2500E+06	1.0000E+00	1.1690E+02	1	0	403
47-AG-118M	471181	4.0000E+00	1.2957E+06	1.2285E+06	0.	1.0	0.0	7.5000E+06	5.4000E-01	1.1690E+02	2	0	404
						3.0	0.0	2.5000E+05	4.6000E-01				
48-CD-118	481180	3.0180E+03	2.1260E+05	2.2678E+05	0.	1.0	0.0	8.0000E+05	1.0000E+00	1.1689E+02	1	0	429
49-IN-118	491180	2.6400E+02	6.2946E+05	2.5759E+06	0.	1.0	0.0	4.2000E+06	1.0000E+00	5.1743E+07	1	2	456
49-IN-118M	491181	5.0000E+00	1.7758E+06	2.1812E+05	0.	1.0	0.0	4.2000E+06	1.0000E+00	4.5199E+05	1	2	457
49-IN-118N	491182	8.5000E+00	0.	2.5000E+05	0.	3.0	1.0	2.5000E+05	1.0000E+00	1.3678E+07	1	0	458
50-SN-118	501180	INF	0.	0.	0.	STABLE		0.	0.	1.1689E+02	0	0	486
SIGMA(,0253): RI, B1, B2, B3			8.2911E-02	6.2539E+00				.80700	.19300	0.00000			
44-RU-119	441190	1.7711E-01	3.0752E+06	3.4896E+06	0.	1.0	0.0	9.6400E+06	1.0000E+00	1.1792E+02	1	0	328
45-RH-119	451190	4.4774E-01	2.5624E+06	2.7537E+06	0.	1.0	0.0	8.1200E+06	1.0000E+00	1.1791E+02	1	0	353
46-PD-119	461190	1.7116E+00	2.1095E+06	2.1730E+06	0.	1.0	0.0	6.8300E+06	1.0000E+00	6.7099E+09	1	0	376
47-AG-119	471190	6.0000E+00	1.5918E+06	1.5883E+06	0.	1.0	0.0	5.4400E+06	5.0000E-01	1.1789E+02	2	0	405
						1.0	1.0	5.1900E+06	5.0000E-01				
48-CD-119	481190	5.6400E+02	9.4005E+05	9.1018E+05	0.	1.0	1.0	3.2500E+06	1.0000E+00	1.1789E+02	1	0	430
48-CD-119M	481191	1.9200E+02	1.0485E+06	1.0152E+06	0.	1.0	0.0	3.7500E+06	5.0000E-01	1.1789E+02	2	0	431
						1.0	1.0	3.5000E+06	5.0000E-01				
49-IN-119	491190	1.5000E+02	6.9935E+05	6.5012E+05	0.	1.0	0.0	2.5000E+06	9.5000E-01	1.1328E+07	2	0	459
						1.0	1.0	2.4110E+06	5.0000E-02				
49-IN-119M	491191	1.0800E+03	7.3212E+05	6.9309E+05	0.	1.0	0.0	2.7500E+06	9.5000E-01	7.7950E+08	2	0	460
						3.0	0.0	2.5000E+05	5.0000E-02				
50-SN-119	501190	INF	0.	0.	0.	STABLE		0.	0.	1.1788E+02	0	0	487
SIGMA(,0253): RI, B1, B2, B3			2.3003E+00	3.9058E+00				1.00000	0.00000	0.00000			
50-SN-119M	501191	2.1168E+07	0.	8.9000E+04	0.	3.0	0.0	8.9000E+04	1.0000E+00	1.1788E+02	1	0	488
44-RU-120	441200	2.9316E-01	2.3382E+06	2.9824E+06	0.	1.0	0.0	7.7600E+06	1.0000E+00	1.1891E+02	1	0	329
45-RH-120	451200	1.6241E-01	3.6865E+06	3.6970E+06	0.	1.0	0.0	1.1070E+07	1.0000E+00	1.1891E+02	1	0	354
46-PD-120	461200	4.2721E+00	1.3370E+06	1.6140E+06	0.	1.0	0.0	4.6900E+06	1.0000E+00	6.8670E+08	1	0	377
47-AG-120	471200	1.3000E+00	2.7251E+06	2.4492E+06	0.	1.0	0.0	8.3500E+06	1.0000E+00	1.1889E+02	1	0	406
48-CD-120	481200	5.0800E+01	4.4491E+05	5.0303E+05	0.	1.0	0.0	1.7800E+06	5.0000E-01	1.1888E+02	2	0	432
						1.0	1.0	1.5300E+06	5.0000E-01				
49-IN-120	491200	4.9000E+01	1.0386E+06	3.0597E+06	0.	1.0	0.0	5.3000E+06	1.0000E+00	1.1888E+02	1	2	461
49-IN-120M	491201	2.9000E+00	2.4715E+06	1.7574E+05	0.	1.0	0.0	5.6000E+06	1.0000E+00	1.1888E+02	1	2	462

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
50-SN-120	501200	INF	0.	0.	0.	STABLE		0.	0.	1.1887E+02	0	0	489
SIGMA(.0253), RI, B1, B2, B3			1.4098E-01	1.2491E+00				.99300	.00700	0.00000			
45-RH-121	451210	2.2103E-01	2.9284E+06	3.3048E+06	0.		1.0 0.0	9.1900E+06	1.0000E+00	1.1990E+02	1	0	355
46-PD-121	461210	6.2214E-01	2.3403E+06	2.6191E+06	0.		1.0 0.0	7.6500E+06	1.0000E+00	5.7456E+09	1	0	378
47-AG-121	471210	3.0000E+00	1.8790E+06	1.9829E+06	0.		1.0 0.0	6.2100E+06	1.0000E+00	1.1988E+02	1	0	407
48-CD-121	481210	1.2800E+01	1.3912E+06	1.4042E+06	0.		1.0 0.0	4.7500E+06	8.2000E-01	1.6897E+07	2	0	433
							1.0 1.0	4.5000E+06	1.8000E-01				
49-IN-121	491210	2.8000E+01	1.0200E+06	1.0116E+06	0.		1.0 0.0	3.6000E+06	1.0000E+00	1.1987E+02	1	0	463
49-IN-121M	491211	1.9800E+02	1.0908E+06	1.0818E+06	0.		1.0 0.0	3.8500E+06	1.0000E+00	1.1987E+02	1	0	464
50-SN-121	501210	9.6480E+04	1.0491E+05	9.8931E+04	0.		1.0 0.0	3.8000E+05	1.0000E+00	1.1987E+02	1	0	490
50-SN-121M	501211	1.5768E+09	1.7393E+05	1.6402E+05	0.		1.0 0.0	6.3000E+05	1.0000E+00	6.3118E+07	1	0	491
51-SB-121	511210	INF	0.	0.	0.	STABLE		0.	0.	3.0409E+07	0	0	511
SIGMA(.0253), RI, B1, B2, B3			6.2550E+00	2.0677E+02				.99100	.00900	0.00000			
45-RH-122	451220	1.0533E-01	3.8989E+06	4.0723E+06	0.		1.0 0.0	1.1870E+07	1.0000E+00	1.2089E+02	1	0	356
46-PD-122	461220	1.2701E+00	1.6627E+06	2.1038E+06	0.		1.0 0.0	5.7700E+06	1.0000E+00	1.2088E+02	1	0	379
47-AG-122	471220	1.0000E-01	2.9658E+06	2.9119E+06	0.		1.0 0.0	9.1700E+06	1.0000E+00	1.2088E+02	1	0	408
48-CD-122	481220	5.5000E+00	6.6074E+05	7.8835E+05	0.		1.0 0.0	2.4300E+06	1.0000E+00	1.1551E+06	1	0	434
49-IN-122	491220	1.1000E+01	2.0938E+06	1.8595E+06	0.		1.0 0.0	6.7500E+06	1.0000E+00	1.2086E+02	1	0	465
49-IN-122M	491221	1.5000E+00	2.1713E+06	1.9284E+06	0.		1.0 0.0	7.0000E+06	1.0000E+00	1.2086E+02	1	0	466
50-SN-122	501220	INF	0.	0.	0.	STABLE		0.	0.	1.1334E+05	0	0	492
SIGMA(.0253), RI, B1, B2, B3			1.8099E-01	7.6635E-01				.99400	.00600	0.00000			
51-SB-122	511220	2.3501E+05	5.6774E+05	4.6631E+05	0.		1.0 0.0	1.9700E+06	9.7000E-01	9.8466E+06	2	0	512
							2.0 0.0	1.6300E+06	3.0000E-02				
51-SB-122M	511221	2.5200E+02	0.	1.6200E+05	0.		3.0 0.0	1.6200E+05	1.0000E+00	1.4458E+07	1	0	513
52-TE-122	521220	INF	0.	0.	0.	STABLE		0.	0.	1.2086E+02	0	0	538
SIGMA(.0253), RI, B1, B2, B3			2.8000E+00	7.4111E+01				.60700	.39300	0.00000			
45-RH-123	451230	1.3346E-01	3.1716E+06	3.7468E+06	0.		1.0 0.0	1.0090E+07	1.0000E+00	6.7341E+08	1	0	357
46-PD-123	461230	3.1002E-01	2.6306E+06	3.0594E+06	0.		1.0 0.0	8.4600E+06	1.0000E+00	1.2188E+02	1	0	380
47-AG-123	471230	8.6274E-01	2.2252E+06	2.4736E+06	0.		1.0 0.0	7.2800E+06	1.0000E+00	1.2187E+02	1	0	409
48-CD-123	481230	8.4037E+00	1.6021E+06	1.7658E+06	0.		1.0 0.0	5.5300E+06	7.7000E-01	6.3147E+05	2	0	435
							1.0 1.0	5.2800E+06	2.3000E-01				
49-IN-123	491230	6.0000E+00	1.2530E+06	1.3189E+06	0.		1.0 0.0	4.5000E+06	5.0000E-01	1.2186E+02	2	0	467
							1.0 1.0	4.2500E+06	5.0000E-01				
49-IN-123M	491231	4.8000E+01	1.3246E+06	1.3943E+06	0.		1.0 0.0	4.7500E+06	5.0000E-01	1.2186E+02	2	0	468
							1.0 1.0	4.5000E+06	5.0000E-01				
50-SN-123	501230	1.1146E+07	4.0120E+05	3.9579E+05	0.		1.0 0.0	1.4200E+06	1.0000E+00	4.7946E+08	1	0	493
SIGMA(.0253), RI, B1, B2, B3			3.3000E-02	2.6660E+00				1.00000	0.00000	0.00000			
50-SN-123M	501231	2.4000E+03	4.7183E+05	4.6548E+05	0.		1.0 0.0	1.6700E+06	1.0000E+00	2.7229E+04	1	0	494
51-SB-123	511230	INF	0.	0.	0.	STABLE		0.	0.	2.4948E+07	0	0	514
SIGMA(.0253), RI, B1, B2, B3			4.3262E+00	1.2785E+02				.98900	.00800	.00300			
52-TE-123	521230	3.7843E+20	0.	2.0000E+04	0.		2.0 0.0	5.0000E+04	1.0000E+00	1.2185E+02	1	0	539
SIGMA(.0253), RI, B1, B2, B3			4.0973E+02	5.3814E+03				1.00000	0.00000	0.00000			
52-TE-123M	521231	1.0342E+07	0.	2.4750E+05	0.		3.0 0.0	2.4750E+05	1.0000E+00	1.2185E+02	1	0	540
46-PD-124	461240	5.6012E-01	1.9455E+06	2.5724E+06	0.		1.0 0.0	6.6800E+06	1.0000E+00	1.2287E+02	1	0	381

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
47-AG-124	471240	2.6853E-01	3.2747E+06	3.3580E+06	0.	1.0	0.0	9.9700E+06	1.0000E+00	1.2286E+02	1	0	410
48-CD-124	481240	1.7170E+01	1.0147E+06	1.2727E+06	0.	1.0	0.0	3.6900E+06	1.0000E+00	4.6831E+06	1	0	436
49-IN-124	491240	3.2000E+00	2.2552E+06	2.1998E+06	0.	1.0	0.0	7.3400E+06	1.0000E+00	1.2285E+02	1	0	469
50-SN-124	501240	INF	0.	0.	0.	STABLE		0.	0.	7.8686E+08	0	0	495
SIGMA(,0253): RI, B1, B2, B3			1.3398E-01	7.1581E+00				.03000	.97000	0.00000			
51-SB-124	511240	5.2013E+06	8.6178E+05	7.4589E+05	0.	1.0	0.0	2.9100E+06	1.0000E+00	2.7165E+06	1	0	515
SIGMA(,0253): RI, B1, B2, B3			6.5000E+00	2.6410E+01				1.00000	0.00000	0.00000			
51-SB-124M	511241	9.6000E+01	0.	1.0000E+04	0.	3.0	0.0	1.0000E+04	1.0000E+00	1.2284E+02	1	0	516
51-SB-124N	511242	1.2180E+03	0.	2.5000E+05	0.	3.0	1.0	2.5000E+05	1.0000E+00	1.2284E+02	1	0	517
52-TE-124	521240	INF	0.	0.	0.	STABLE		0.	0.	1.2284E+02	0	0	541
SIGMA(,0253): RI, B1, B2, B3			6.7996E+00	8.4228E+00				.99400	.00600	0.00000			
46-PD-125	461250	1.8309E-01	2.8514E+06	3.5173E+06	0.	1.0	0.0	9.2200E+06	1.0000E+00	1.2387E+02	1	0	382
47-AG-125	471250	3.8205E-01	2.5286E+06	2.9505E+06	0.	1.0	0.0	8.1900E+06	1.0000E+00	1.2386E+02	1	0	411
48-CD-125	481250	1.6225E+00	1.8805E+06	2.1593E+06	0.	1.0	0.0	6.3900E+06	7.0000E-01	1.2385E+02	2	0	437
						1.0	1.0	6.1700E+06	3.0000E-01				
49-IN-125	491250	2.3300E+00	1.5299E+06	1.7015E+06	0.	1.0	0.0	5.4600E+06	3.0000E-01	1.2384E+02	2	0	470
						1.0	1.0	5.2100E+06	7.0000E-01				
49-IN-125M	491251	1.2000E+01	1.5864E+06	1.7642E+06	0.	1.0	0.0	5.7100E+06	8.0000E-02	1.2384E+02	2	0	471
						1.0	1.0	5.4600E+06	9.2000E-01				
50-SN-125	501250	8.3376E+05	8.3615E+05	3.1227E+05	0.	1.0	0.0	2.3630E+06	1.0000E+00	1.2384E+02	1	2	496
SIGMA(,0253): RI, B1, B2, B3			5.5000E-01	1.4640E+01				1.00000	0.00000	0.00000			
50-SN-125M	501251	5.7120E+02	7.9801E+05	3.4586E+05	0.	1.0	0.0	2.3890E+06	1.0000E+00	4.2610E+09	1	2	497
51-SB-125	511250	8.6152E+07	8.6860E+04	4.5207E+05	0.	1.0	0.0	7.6600E+05	7.7000E-01	1.2383E+02	2	2	518
						1.0	1.0	6.2100E+05	2.3000E-01				
SIGMA(,0253): RI, B1, B2, B3			1.0000E+00	1.8350E+01				.50000	.50000	0.00000			
52-TE-125	521250	INF	0.	0.	0.	STABLE		0.	0.	1.2383E+02	0	0	542
SIGMA(,0253): RI, B1, B2, B3			1.5501E+00	2.3669E+01				1.00000	0.00000	0.00000			
52-TE-125M	521251	5.0112E+06	0.	1.4375E+05	0.	3.0	0.0	1.4473E+05	1.0000E+00	1.2383E+02	1	1	543
46-PD-126	461260	2.8703E-01	2.2427E+06	3.0904E+06	0.	1.0	0.0	7.6200E+06	1.0000E+00	1.2486E+02	1	0	383
47-AG-126	471260	1.5546E-01	3.4731E+06	3.7937E+06	0.	1.0	0.0	1.0740E+07	1.0000E+00	1.2485E+02	1	0	412
48-CD-126	481260	3.7660E+00	1.2792E+06	1.6807E+06	0.	1.0	0.0	4.6000E+06	1.0000E+00	7.6991E+06	1	0	438
49-IN-126	491260	1.5300E+00	2.5389E+06	2.5932E+06	0.	1.0	0.0	8.1300E+06	1.0000E+00	7.1821E+05	1	0	472
50-SN-126	501260	*3.1557E+12	7.0000E+04	4.9800E+04	0.	1.0	1.0	5.0000E+04	1.0000E+00	1.2483E+02	1	0	498
SIGMA(,0253): RI, B1, B2, B3			3.0000E-01	1.8470E-01				.50000	.50000	0.00000			
51-SB-126	511260	1.0714E+06	3.5800E+05	2.6700E+06	0.	1.0	0.0	3.6700E+06	1.0000E+00	1.2483E+02	1	0	519
SIGMA(,0253): RI, B1, B2, B3			5.8000E+00	4.6090E+01				1.00000	0.00000	0.00000			
51-SB-126M	511261	1.1400E+03	1.0036E+06	9.9523E+05	0.	1.0	0.0	3.9800E+06	8.6000E-01	4.8914E+07	2	0	520
						3.0	0.0	2.5000E+05	1.4000E-01				
52-TE-126	521260	INF	0.	0.	0.	STABLE		0.	0.	1.2482E+02	0	0	544
SIGMA(,0253): RI, B1, B2, B3			1.0350E+00	1.0379E+01				.87000	.13000	0.00000			
47-AG-127	471270	2.0518E-01	2.8314E+06	3.4571E+06	0.	1.0	0.0	9.1200E+06	1.0000E+00	3.5374E+08	1	0	413
48-CD-127	481270	6.5903E-01	2.0967E+06	2.5619E+06	0.	1.0	0.0	7.1600E+06	5.0000E-01	1.2584E+02	2	0	439
						1.0	1.0	6.9100E+06	5.0000E-01				
49-IN-127	491270	2.0000E+00	1.8729E+06	2.1931E+06	0.	1.0	0.0	6.4400E+06	9.9330E-01	2.6227E+06	2	0	473
						5.0	0.0	7.9608E+05	6.7000E-03				

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
49-IN-127M	491271	3.6400E+00	1.9573E+06	2.2908E+06	0.	1.0	0.0	6.6900E+06	1.0000E+00	1.2583E+02	1	0	474
50-SN-127	501270	7.6320E+03	6.7455E+05	1.4343E+06	0.	1.0	0.0	3.0900E+06	1.0000E+00	1.2582E+02	1	2	499
50-SN-127M	501271	2.4800E+02	1.1342E+06	4.9400E+05	0.	1.0	0.0	3.2000E+06	1.0000E+00	1.2582E+02	1	2	500
51-SB-127	511270	3.2832E+05	3.1806E+05	6.4432E+05	0.	1.0	0.0	1.5810E+06	8.4000E-01	1.2582E+02	2	2	521
						1.0	1.0	1.4920E+06	1.6000E-01				
52-TE-127	521270	3.3660E+04	2.2728E+05	5.1700E+03	0.	1.0	0.0	6.9300E+05	1.0000E+00	1.2582E+02	1	2	545
52-TE-127M	521271	9.4176E+06	4.9793E+03	9.1865E+04	0.	1.0	0.0	7.7870E+05	2.4000E-02	1.2582E+02	2	0	546
						3.0	0.0	8.8700E+04	9.7600E-01				
SIGMA(,0253): RI, B1, B2, B3		9.4000E+00	4.2310E+01					1.00000	0.00000	0.00000			
53- I-127	531270	INF	0.	0.	0.	STABLE		0.	0.	1.2581E+02	0	0	565
SIGMA(.0253): RI, B1, B2, B3		6.2001E+00	1.5512E+02					1.00000	0.00000	0.00000			
47-AG-128	471280	1.0245E-01	3.6266E+06	4.2667E+06	0.	1.0	0.0	1.1520E+07	1.0000E+00	2.0065E+07	1	0	414
48-CD-128	481280	1.2901E+00	1.5576E+06	2.1376E+06	0.	1.0	0.0	5.5400E+06	1.0000E+00	1.2683E+02	1	0	440
49-IN-128	491280	3.7000E+00	2.8042E+06	3.0648E+06	0.	1.0	0.0	9.0700E+06	9.8800E-01	1.2682E+02	2	0	475
						5.0	0.0	1.1955E+06	1.2000E-02				
50-SN-128	501280	3.5400E+03	2.1720E+05	5.9651E+05	0.	1.0	1.0	1.3000E+06	1.0000E+00	1.2681E+02	1	2	501
51-SB-128	511280	3.2400E+04	4.1848E+05	3.0961E+06	0.	1.0	0.0	4.2980E+06	1.0000E+00	1.2681E+02	1	2	522
51-SB-128M	511281	6.2400E+02	9.4725E+05	1.9861E+06	0.	1.0	0.0	4.2610E+06	1.0000E+00	2.0320E+08	1	2	523
52-TE-128	521280	INF	0.	0.	0.	STABLE		0.	0.	1.2681E+02	0	0	547
SIGMA(,0253): RI, B1, B2, B3		2.1471E-01	2.4138E+00					.93000	.07000	0.00000			
53- I-128	531280	1.5000E+03	7.4800E+05	1.5500E+05	0.	1.0	0.0	2.0700E+06	9.3700E-01	1.2681E+02	2	0	566
						2.0	0.0	1.2700E+06	6.3000E-02				
54-XE-128	541280	INF	0.	0.	0.	STABLE		0.	0.	1.2680E+02	0	0	588
SIGMA(.0253): RI, B1, B2, B3		3.5004E+00	1.1349E+01					.93300	.06700	0.00000			
48-CD-129	481290	3.3773E-01	2.3431E+06	3.0838E+06	0.	1.0	0.0	7.9400E+06	1.0000E+00	1.2782E+02	1	0	441
49-IN-129	491290	8.0000E-01	2.0673E+06	2.5519E+06	0.	1.0	0.0	7.3100E+06	4.6500E-01	1.1737E+07	3	0	476
						1.0	1.0	7.0600E+06	5.0000E-01				
						5.0	0.0	2.1354E+06	3.5000E-02				
50-SN-129	501290	4.5000E+02	1.1452E+06	1.3847E+06	0.	1.0	0.0	4.0200E+06	1.0000E+00	1.2781E+02	1	0	502
50-SN-129M	501291	1.5000E+02	1.2164E+06	1.4708E+06	0.	1.0	0.0	4.2700E+06	1.0000E+00	9.7568E+07	1	0	503
51-SB-129	511290	1.5624E+04	3.5911E+05	1.3010E+06	0.	1.0	0.0	2.3760E+06	7.6000E-01	7.1626E+06	2	2	524
						1.0	1.0	2.2710E+06	2.4000E-01				
52-TE-129	521290	4.2000E+03	5.3394E+05	7.2900E+04	0.	1.0	0.0	1.5420E+06	1.0000E+00	1.2780E+02	1	2	548
52-TE-129M	521291	2.8858E+06	2.1402E+05	*9.6620E+04	0.	1.0	0.0	1.6080E+06	3.6600E-01	1.2780E+02	2	2	549
						3.0	0.0	1.0550E+05	6.3400E-01				
SIGMA(,0253): RI, B1, B2, B3		1.1000E+00	6.0170E+00					1.00000	0.00000	0.00000			
53- I-129	531290	5.0142E+14	6.2400E+04	4.0000E+04	0.	1.0	0.0	1.8900E+05	1.0000E+00	1.2780E+02	1	0	567
SIGMA(,0253): RI, B1, B2, B3		2.7003E+01	3.6105E+01					.33300	.66700	0.00000			
54-XE-129	541290	INF	0.	0.	0.	STABLE		0.	0.	1.2780E+02	0	0	589
SIGMA(,0253): RI, B1, B2, B3		1.7802E+01	2.5599E+02					1.00000	0.00000	0.00000			
54-XE-129M	541291	6.9120E+05	0.	2.3600E+05	0.	3.0	0.0	2.3600E+05	1.0000E+00	1.2780E+02	1	0	590
48-CD-130	481300	5.2403E-01	1.8845E+06	2.6940E+06	0.	1.0	0.0	6.6300E+06	1.0000E+00	1.2882E+02	1	0	442
49-IN-130	491300	5.0000E-01	2.8906E+06	3.4328E+06	0.	1.0	0.0	9.6900E+06	9.5500E-01	3.9959E+06	2	0	477
						5.0	0.0	2.2754E+06	4.5000E-02				

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
50-SN-130	501300	2.2200E+02	5.0250E+05	6.8651E+05	0.	1.0	0.0	2.1000E+06	1.0000E-01	1.0863E+07	2	0	504
						1.0	1.0	1.8500E+06	9.0000E-01				
51-SB-130	511300	3.9600E+02	1.2607E+06	2.1409E+06	0.	1.0	0.0	5.0500E+06	1.0000E+00	1.2880E+02	1	2	525
51-SB-130M	511301	2.2200E+03	1.0932E+06	*3.0400E+06	0.	1.0	0.0	5.9000E+06	1.0000E+00	1.2880E+02	1	2	526
52-TE-130	521300	INF	0.	0.	0.	STABLE		0.	0.	1.2879E+02	0	0	550
SIGMA(,0253): RI, B1, B2, B3			2.8997E-01	3.5360E-01				.93100	.06900	0.00000			
53- I-130	531300	4.4640E+04	2.9500E+05	2.1200E+06	0.	1.0	0.0	2.9900E+06	1.0000E+00	1.2879E+02	1	0	568
SIGMA(,0253): RI, B1, B2, B3			1.8000E+01	1.8180E+02				1.00000	0.00000	0.00000			
53- I-130M	531301	5.3400E+02	1.3667E+05	3.4705E+05	0.	1.0	0.0	3.2000E+06	1.5000E-01	1.2879E+02	2	0	569
						3.0	0.0	2.5000E+05	8.5000E-01				
54-XE-130	541300	INF	0.	0.	0.	STABLE		0.	0.	1.2879E+02	0	0	591
SIGMA(,0253): RI, B1, B2, B3			6.2003E+00	4.1912E+00				.93500	.06500	0.00000			
48-CD-131	481310	1.1926E-01	3.1459E+06	4.2582E+06	0.	1.0	0.0	1.0550E+07	1.0000E+00	1.2981E+02	1	0	443
49-IN-131	491310	3.0000E-01	2.3482E+06	3.0708E+06	0.	1.0	0.0	8.3900E+06	9.0500E-01	1.6404E+06	2	0	478
						5.0	0.0	3.3657E+06	9.5000E-02				
50-SN-131	501310	6.3000E+01	1.3054E+06	1.7069E+06	0.	1.0	0.0	4.6300E+06	1.0000E+00	1.2979E+02	1	0	505
51-SB-131	511310	1.3800E+03	7.1369E+05	*1.7025E+06	0.	1.0	0.0	3.4000E+06	9.3200E-01	1.2979E+02	2	2	527
						1.0	1.0	3.2180E+06	6.8000E-02				
52-TE-131	521310	1.5000E+03	6.7172E+05	4.2280E+05	0.	1.0	0.0	2.2490E+06	1.0000E+00	1.2978E+02	1	2	551
52-TE-131M	521311	1.0800E+05	1.8218E+05	1.4911E+06	0.	1.0	0.0	2.4310E+06	8.2000E-01	1.2978E+02	2	2	552
						3.0	0.0	1.8240E+05	1.8000E-01				
53- I-131	531310	6.9474E+05	1.8550E+05	3.8928E+05	0.	1.0	0.0	9.7080E+05	9.9300E-01	1.2978E+02	2	2	570
						1.0	1.0	7.7600E+05	7.0000E-03				
SIGMA(,0253): RI, B1, B2, B3			7.0000E-01	8.0150E+00				1.00000	0.00000	0.00000			
54-XE-131	541310	INF	0.	0.	0.	STABLE		0.	0.	1.2978E+02	0	0	592
SIGMA(,0253): RI, B1, B2, B3			8.9984E+01	8.7856E+02				1.00000	0.00000	0.00000			
54-XE-131M	541311	1.0359E+06	0.	1.6754E+05	0.	3.0	0.0	1.6393E+05	1.0000E+00	1.2978E+02	1	1	593
48-CD-132	481320	1.4479E-01	2.6912E+06	3.9976E+06	0.	1.0	0.0	9.3800E+06	1.0000E+00	1.3081E+02	1	0	444
49-IN-132	491320	1.2000E-01	3.8247E+06	4.6606E+06	0.	1.0	0.0	1.2310E+07	1.0000E+00	1.0992E+07	1	0	479
50-SN-132	501320	4.0000E+01	6.6029E+05	1.3228E+06	0.	1.0	0.0	3.0200E+06	1.0000E+00	1.3079E+02	1	2	506
51-SB-132	511320	1.2600E+02	1.7221E+06	2.0066E+06	0.	1.0	0.0	6.0800E+06	1.0000E+00	1.3078E+02	1	2	528
51-SB-132M	511321	2.4600E+02	1.6955E+06	2.0386E+06	0.	1.0	0.0	6.0800E+06	1.0000E+00	1.3078E+02	1	2	529
52-TE-132	521320	2.8080E+05	6.0050E+04	2.6860E+05	0.	1.0	0.0	5.0500E+05	1.0000E+00	1.3077E+02	1	2	553
SIGMA(,0253): RI, B1, B2, B3			2.0000E-03	4.9800E-03				.50000	.50000	0.00000			
53- I-132	531320	8.2260E+03	5.2468E+05	2.2377E+06	0.	1.0	0.0	3.5800E+06	1.0000E+00	1.3077E+02	1	2	571
54-XE-132	541320	INF	0.	0.	0.	STABLE		0.	0.	1.3077E+02	0	0	594
SIGMA(,0253): RI, B1, B2, B3			4.5003E-01	1.7263E+00				.93500	.06500	0.00000			
49-IN-133	491330	1.1392E-01	3.3373E+06	4.4654E+06	0.	1.0	0.0	1.1140E+07	1.0000E+00	2.1681E+07	1	0	480
50-SN-133	501330	1.4700E+00	2.0824E+06	2.8049E+06	0.	1.0	0.0	7.2400E+06	9.9979E-01	1.3178E+02	2	0	507
						5.0	0.0	1.2594E+05	2.1000E-04				
51-SB-133	511330	1.4400E+02	5.3711E+05	*2.5000E+06	0.	1.0	0.0	3.9500E+06	9.7760E-01	1.3177E+02	2	2	530
						1.0	1.0	3.6160E+06	2.2400E-02				
52-TE-133	521330	7.5000E+02	8.1997E+05	9.8324E+05	0.	1.0	0.0	2.9600E+06	1.0000E+00	1.3177E+02	1	2	554
52-TE-133M	521331	3.3240E+03	5.5207E+05	1.8661E+06	0.	1.0	0.0	3.7250E+06	8.7000E-01	1.3177E+02	2	2	555
						3.0	0.0	3.3450E+05	1.3000E-01				

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
53- I-133	531330	7.4880E+04	4.1718E+05	5.9890E+05	0.	1.0	0.0	1.7600E+06	8.6000E-01	1.3177E+02	2	2	572
						1.0	1.0	1.5270E+06	1.4000E-01				
53- I-133M	531331	9.0000E+00	0.	2.5000E+05	0.	3.0	0.0	2.5000E+05	1.0000E+00	1.3177E+02	1	0	573
54-XE-133	541330	4.5706E+05	1.0188E+05	8.1440E+04	0.	1.0	0.0	4.2730E+05	1.0000E+00	1.3176E+02	1	2	595
SIGMA(.0253): RI, B1, B2, B3			1.9000E+02	3.5630E+02				1.00000	0.00000	0.00000			
54-XE-133M	541331	1.9267E+05	0.	2.3269E+05	0.	3.0	0.0	2.3290E+05	1.0000E+00	1.3176E+02	1	1	596
55-CS-133	551330	INF	0.	0.	0.	STABLE		0.	0.	1.3176E+02	0	0	613
SIGMA(.0253): RI, B1, B2, B3			2.9500E+01	3.8147E+02				.91400	.08600	0.00000			
49-IN-134	491340	7.7543E-02	4.0115E+06	5.1370E+06	0.	1.0	0.0	1.3160E+07	1.0000E+00	1.3279E+02	1	0	481
50-SN-134	501340	8.4469E-01	1.6642E+06	2.4711E+06	0.	1.0	0.0	6.0700E+06	1.0000E+00	1.3278E+02	1	0	508
51-SB-134	511340	8.5000E-01	3.9515E+06	0.	0.	1.0	0.0	8.4000E+06	1.0000E+00	1.3277E+02	1	1	531
51-SB-134M	511341	1.0700E+01	2.9538E+06	2.0944E+06	0.	1.0	0.0	8.4900E+06	9.9920E-01	1.3277E+02	2	2	532
						5.0	0.0	0.	8.0000E-04				
52-TE-134	521340	2.5200E+03	1.5208E+05	8.2497E+05	0.	1.0	0.0	1.4000E+06	1.0000E+00	1.3276E+02	1	2	556
53- I-134	531340	3.1560E+03	6.9093E+05	2.5926E+06	0.	1.0	0.0	4.1500E+06	1.0000E+00	1.3276E+02	1	2	574
53- I-134M	531341	2.1600E+02	0.	3.1570E+05	0.	3.0	0.0	3.1570E+05	1.0000E+00	1.3276E+02	1	1	575
54-XE-134	541340	INF	0.	0.	0.	STABLE		0.	0.	1.3276E+02	0	0	597
SIGMA(.0253): RI, B1, B2, B3			2.5002E-01	5.6744E-01				.98800	.01200	0.00000			
54-XE-134M	541341	2.9000E-01	0.	2.0000E+06	0.	3.0	0.0	2.0000E+06	1.0000E+00	1.3276E+02	1	0	598
55-CS-134	551340	6.5009E+07	1.6130E+05	1.5797E+06	0.	1.0	0.0	2.0585E+06	1.0000E+00	1.3276E+02	1	2	614
SIGMA(.0253): RI, B1, B2, B3			1.4000E+02	2.1290E+02				1.00000	0.00000	0.00000			
55-CS-134M	551341	1.0440E+04	0.	1.3760E+05	0.	3.0	0.0	1.3760E+05	1.0000E+00	1.3276E+02	1	1	615
56-BA-134	561340	INF	0.	0.	0.	STABLE		0.	0.	1.3275E+02	0	0	634
SIGMA(.0253): RI, B1, B2, B3			2.1582E+00	2.3897E+01				.92100	.07900	0.00000			
50-SN-135	501350	2.9108E-01	2.3365E+06	3.3044E+06	0.	1.0	0.0	8.0800E+06	1.0000E+00	1.3377E+02	1	0	509
51-SB-135	511350	1.7000E+00	2.0640E+06	2.8076E+06	0.	1.0	0.0	7.5200E+06	9.2000E-01	1.3377E+02	2	0	533
						5.0	0.0	3.6552E+06	8.0000E-02				
52-TE-135	521350	1.8000E+01	1.6251E+06	2.1773E+06	0.	1.0	0.0	5.9200E+06	1.0000E+00	1.3376E+02	1	0	557
53- I-135	531350	2.3706E+04	3.9365E+05	1.4560E+06	0.	1.0	0.0	2.7150E+06	8.5300E-01	1.3375E+02	2	2	576
						1.0	1.0	2.1890E+06	1.4700E-01				
SIGMA(.0253): RI, B1, B2, B3			2.0000E-02	1.4790E-02				.50000	.50000	0.00000			
54-XE-135	541350	3.3012E+04	3.0989E+05	2.6143E+05	0.	1.0	0.0	1.1580E+06	1.0000E+00	1.3375E+02	1	2	599
SIGMA(.0253): RI, B1, B2, B3			2.6360E+06	7.6450E+03				1.00000	0.00000	0.00000			
54-XE-135M	541351	9.1800E+02	0.	5.2682E+05	0.	3.0	0.0	5.2662E+05	1.0000E+00	1.3384E+02	1	1	600
55-CS-135	551350	7.2533E+13	6.9400E+04	1.0000E+02	0.	1.0	0.0	2.0900E+05	1.0000E+00	1.3375E+02	1	0	616
SIGMA(.0253): RI, B1, B2, B3			8.7000E+00	6.1580E+01				1.00000	0.00000	0.00000			
55-CS-135M	551351	3.1800E+03	0.	1.6210E+06	0.	3.0	0.0	1.6210E+06	1.0000E+00	1.3375E+02	1	0	617
56-BA-135	561350	INF	0.	0.	0.	STABLE		0.	0.	1.3375E+02	0	0	635
SIGMA(.0253): RI, B1, B2, B3			5.8140E+00	1.0056E+02				.99800	.00200	0.00000			
56-BA-135M	561351	1.0332E+05	0.	2.6800E+05	0.	3.0	0.0	2.6800E+05	1.0000E+00	1.3375E+02	1	0	636
50-SN-136	501360	4.1304E-01	1.9269E+06	2.9716E+06	0.	1.0	0.0	6.9500E+06	1.0000E+00	1.3477E+02	1	0	510
51-SB-136	511360	2.3126E-01	2.8885E+06	3.6877E+06	0.	1.0	0.0	9.5400E+06	1.0000E+00	1.3476E+02	1	0	534
52-TE-136	521360	2.1000E+01	1.1436E+06	1.6977E+06	0.	1.0	0.0	4.4000E+06	9.9500E-01	1.3475E+02	2	0	558
						5.0	0.0	7.1525E+05	5.0000E-03				

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
53- I-136	531360	8.3000E+01	1.8110E+06	2.2135E+06	0.	1.0	0.0	6.3000E+06	1.0000E+00	1.3475E+02	1	2	577
53- I-136M	531361	4.8000E+01	1.9390E+06	1.9254E+06	0.	1.0	0.0	6.3000E+06	1.0000E+00	1.3475E+02	1	2	578
54-XE-136	541360	INF	0.	0.	0.	STABLE		0.	0.	1.3474E+02	0	0	601
SIGMA(,0253): RI, B1, B2, B3		1.6000E-01	1.2360E-01					1.00000	0.00000	0.00000			
55-CS-136	551360	1.1232E+06	1.1923E+05	2.1573E+06	0.	1.0	0.0	2.5745E+06	8.4000E-01	1.3474E+02	2	2	618
						1.0	1.0	5.0830E+05	1.6000E-01				
SIGMA(,0253): RI, B1, B2, B3		1.3000E+00	3.9809E+01					1.00000	0.00000	0.00000			
56-BA-136	561360	INF	0.	0.	0.	STABLE		0.	0.	1.3474E+02	0	0	637
SIGMA(,0253): RI, B1, B2, B3		4.0998E-01	1.9583E+00					.97500	.02500	0.00000			
56-BA-136M	561361	3.0800E-01	0.	2.0400E+06	0.	3.0	0.0	2.0400E+06	1.0000E+00	1.3474E+02	1	0	638
51-SB-137	511370	2.8367E-01	2.4432E+06	3.4033E+06	0.	1.0	0.0	8.4000E+06	1.0000E+00	1.3576E+02	1	0	535
52-TE-137	521370	3.5000E+00	1.7805E+06	2.5117E+06	0.	1.0	0.0	6.4800E+06	9.9500E-01	1.3575E+02	2	0	559
						5.0	0.0	7.8574E+05	5.0000E-03				
53- I-137	531370	2.4600E+01	1.5146E+06	2.0286E+06	0.	1.0	0.0	5.7700E+06	9.4600E-01	1.3574E+02	2	0	579
						5.0	0.0	1.3055E+06	5.4000E-02				
54-XE-137	541370	2.3040E+02	1.8407E+06	1.9526E+05	0.	1.0	0.0	4.3470E+06	1.0000E+00	1.3573E+02	1	2	602
55-CS-137	551370	9.4988E+08	1.7444E+05	0.	0.	1.0	0.0	1.1732E+06	5.4000E-02	1.3573E+02	2	1	619
						1.0	1.0	5.1160E+05	9.4600E-01				
SIGMA(,0253): RI, B1, B2, B3		1.1000E-01	4.8820E-01					1.00000	0.00000	0.00000			
56-BA-137	561370	INF	0.	0.	0.	STABLE		0.	0.	1.3573E+02	0	0	639
SIGMA(,0253): RI, B1, B2, B3		5.1005E+00	4.9489E+00					1.00000	0.00000	0.00000			
56-BA-137M	561371	1.5300E+02	0.	6.6217E+05	0.	3.0	0.0	6.6164E+05	1.0000E+00	1.3573E+02	1	1	640
51-SB-138	511380	1.3038E-01	3.2208E+06	4.2284E+06	0.	1.0	0.0	1.0670E+07	1.0000E+00	1.3675E+02	1	0	536
52-TE-138	521380	1.6404E+00	1.4102E+06	2.1780E+06	0.	1.0	0.0	5.3400E+06	1.0000E+00	1.3674E+02	1	0	560
53- I-138	531380	6.5000E+00	2.1216E+06	2.7011E+06	0.	1.0	0.0	7.4800E+06	9.7500E-01	1.3674E+02	2	0	580
						5.0	0.0	1.9258E+06	2.5000E-02				
54-XE-138	541380	8.5200E+02	6.5770E+05	1.1951E+06	0.	1.0	0.0	2.8300E+06	1.0000E+00	1.3673E+02	1	2	603
55-CS-138	551380	1.9320E+03	1.2624E+06	2.3291E+06	0.	1.0	0.0	5.2800E+06	1.0000E+00	1.3673E+02	1	2	620
55-CS-138M	551381	1.7400E+02	1.1469E+06	2.6000E+06	0.	1.0	0.0	5.3600E+06	1.0000E+00	1.3673E+02	1	2	621
56-BA-138	561380	INF	0.	0.	0.	STABLE		0.	0.	1.3672E+02	0	0	641
SIGMA(,0253): RI, B1, B2, B3		3.4996E-01	1.9523E-01					1.00000	0.00000	0.00000			
57-LA-138	571380	3.3113E+18	0.	8.4000E+05	0.	1.0	0.0	1.0100E+06	3.0000E-01	1.3672E+02	2	0	656
						2.0	0.0	1.7800E+06	7.0000E-01				
51-SB-139	511390	1.7192E-01	2.6537E+06	3.8426E+06	0.	1.0	0.0	9.1500E+06	1.0000E+00	1.3775E+02	1	0	537
52-TE-139	521390	4.2370E-01	2.1454E+06	3.1046E+06	0.	1.0	0.0	7.6100E+06	1.0000E+00	1.3774E+02	1	0	561
53- I-139	531390	2.4000E+00	1.7512E+06	2.4727E+06	0.	1.0	0.0	6.7700E+06	9.0000E-01	1.3773E+02	2	0	581
						5.0	0.0	2.4559E+06	1.0000E-01				
54-XE-139	541390	4.0400E+01	1.7868E+06	9.2749E+05	0.	1.0	0.0	4.8800E+06	1.0000E+00	1.3773E+02	1	2	604
55-CS-139	551390	5.5800E+02	1.7637E+06	3.1076E+05	0.	1.0	0.0	4.2900E+06	1.0000E+00	1.3772E+02	1	2	622
56-BA-139	561390	4.9980E+03	8.9727E+05	5.2290E+04	0.	1.0	0.0	2.2540E+06	1.0000E+00	1.3772E+02	1	2	642
57-LA-139	571390	INF	0.	0.	0.	STABLE		0.	0.	1.3771E+02	0	0	657
SIGMA(,0253): RI, B1, B2, B3		8.9959E+00	1.2973E+01					1.00000	0.00000	0.00000			
52-TE-140	521400	7.5194E-01	1.6297E+06	2.6128E+06	0.	1.0	0.0	6.1000E+06	1.0000E+00	1.3873E+02	1	0	562

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
53- I-140	531400	8.6000E-01	2.0873E+06	2.9324E+06	0.	1.0	0.0	8.9300E+06	6.8000E-01	1.3873E+02	2	0	582
						5.0	0.0	3.6862E+06	3.2000E-01				
54-XE-140	541400	1.3600E+01	8.8074E+05	1.3624E+06	0.	1.0	0.0	3.5100E+06	1.0000E+00	1.3872E+02	1	0	605
55-CS-140	551400	6.3800E+01	1.9312E+06	2.1310E+06	0.	1.0	0.0	6.3000E+06	1.0000E+00	1.3872E+02	1	2	623
56-BA-140	561400	1.1051E+06	2.8027E+05	2.1687E+05	0.	1.0	0.0	1.0350E+06	1.0000E+00	1.3871E+02	1	2	643
SIGMA(,0253): RI, B1, B2, B3			1.6000E+00	1.2740E+01				1.00000	0.00000	0.00000			
57-LA-140	571400	1.4483E+05	5.1701E+05	*2.3000E+06	0.	1.0	0.0	3.7708E+06	1.0000E+00	1.3871E+02	1	2	658
SIGMA(,0253): RI, B1, B2, B3			2.7000E+00	6.4810E+01				1.00000	0.00000	0.00000			
58-CE-140	581400	INF	0.	0.	0.	STABLE		0.	0.	1.3870E+02	0	0	674
SIGMA(.0253): RI, B1, B2, B3			5.7000E-01	4.4420E-01				1.00000	0.00000	0.00000			
52-TE-141	521410	2.3579E-01	2.4098E+06	3.6004E+06	0.	1.0	0.0	8.4200E+06	1.0000E+00	1.3973E+02	1	0	563
53- I-141	531410	4.0000E-01	1.9479E+06	2.8857E+06	0.	1.0	0.0	7.4200E+06	8.8000E-01	1.3972E+02	2	0	583
						5.0	0.0	3.8958E+06	1.2000E-01				
54-XE-141	541410	1.7200E+00	1.5714E+06	2.2701E+06	0.	1.0	0.0	5.8200E+06	9.9946E-01	1.3972E+02	2	0	606
						5.0	0.0	1.0000E+01	5.4000E-04				
55-CS-141	551410	2.5000E+01	1.3770E+06	1.8249E+06	0.	1.0	0.0	5.0600E+06	9.9927E-01	1.3971E+02	2	0	624
						5.0	0.0	2.3591E+05	7.3000E-04				
56-BA-141	561410	1.0980E+03	9.1552E+05	8.8790E+05	0.	1.0	0.0	3.0300E+06	1.0000E+00	1.3970E+02	1	2	644
57-LA-141	571410	1.3932E+04	9.8988E+05	3.2810E+04	0.	1.0	0.0	2.4300E+06	1.0000E+00	1.3970E+02	1	2	659
58-CE-141	581410	2.8106E+06	1.5949E+05	7.1700E+04	0.	1.0	0.0	5.8090E+05	1.0000E+00	1.3970E+02	1	2	675
SIGMA(,0253): RI, B1, B2, B3			2.9000E+01	2.4060E+01				1.00000	0.00000	0.00000			
59-PR-141	591410	INF	0.	0.	0.	STABLE		0.	0.	1.3970E+02	0	0	692
SIGMA(.0253): RI, B1, B2, B3			1.1501E+01	1.9390E+01				.66100	.33900	0.00000			
52-TE-142	521420	4.9127E-01	1.7404E+06	2.8903E+06	0.	1.0	0.0	6.4400E+06	1.0000E+00	1.4073E+02	1	0	564
53- I-142	531420	1.9604E-01	2.9041E+06	3.9318E+06	0.	1.0	0.0	9.7400E+06	1.0000E+00	1.4072E+02	1	0	584
54-XE-142	541420	1.2200E+00	1.0973E+06	1.7654E+06	0.	1.0	0.0	4.3400E+06	9.9490E-01	1.4071E+02	2	0	607
						5.0	0.0	4.0509E+05	5.1000E-03				
55-CS-142	551420	1.7000E+00	2.0448E+06	2.5445E+06	0.	1.0	0.0	7.0600E+06	9.9790E-01	1.4070E+02	2	0	625
						5.0	0.0	1.1260E+06	2.1000E-03				
56-BA-142	561420	6.4200E+02	4.2828E+05	1.0127E+06	0.	1.0	0.0	2.2000E+06	1.0000E+00	1.4070E+02	1	2	645
57-LA-142	571420	5.5440E+03	9.4702E+05	*2.4000E+06	0.	1.0	0.0	4.5170E+06	1.0000E+00	1.4069E+02	1	2	660
58-CE-142	581420	3.3113E+18	0.	0.	1.4445E+06	4.0	0.0	1.4344E+06	1.0000E+00	1.4069E+02	1	0	676
SIGMA(,0253): RI, B1, B2, B3			9.5000E-01	8.3020E-01				1.00000	0.00000	0.00000			
59-PR-142	591420	6.8976E+04	8.0700E+05	5.8200E+04	0.	1.0	0.0	2.1600E+06	1.0000E+00	1.4069E+02	1	0	693
SIGMA(,0253): RI, B1, B2, B3			2.0000E+01	1.4530E+02				1.00000	0.00000	0.00000			
59-PR-142M	591421	8.7600E+02	0.	2.5000E+05	0.	3.0	0.0	2.5000E+05	1.0000E+00	1.4069E+02	1	0	694
60-ND-142	601420	INF	0.	0.	0.	STABLE		0.	0.	1.4069E+02	0	0	713
SIGMA(.0253): RI, B1, B2, B3			1.8703E+01	8.9206E+00				1.00000	0.00000	0.00000			
53- I-143	531430	3.2815E-01	2.2000E+06	3.3106E+06	0.	1.0	0.0	7.7600E+06	1.0000E+00	1.4171E+02	1	0	585
54-XE-143	541430	3.0000E-01	1.7989E+06	2.6889E+06	0.	1.0	0.0	6.6500E+06	9.8900E-01	1.4171E+02	2	0	608
						5.0	0.0	1.0555E+06	1.1000E-02				
55-CS-143	551430	1.7000E+00	1.5644E+06	2.1688E+06	0.	1.0	0.0	5.7300E+06	9.8870E-01	1.4170E+02	2	0	626
						5.0	0.0	1.4653E+06	1.1300E-02				
56-BA-143	561430	1.3600E+01	1.0888E+06	1.5700E+06	0.	1.0	0.0	4.2600E+06	1.0000E+00	1.4169E+02	1	0	646

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
57-LA-143	571430	8.4000E+02	8.3128E+05	1.1408E+06	0.	1.0	0.0	3.3000E+06	1.0000E+00	1.4169E+02	1	0	661
58-CE-143	581430	1.1880E+05	4.1913E+05	2.9583E+05	0.	1.0	0.0	1.4440E+06	1.0000E+00	1.4169E+02	1	2	677
SIGMA(,0253), RI, B1, B2, B3		6.0000E+00	4.0940E+01					1.00000	0.00000	0.00000			
59-PR-143	591430	1.1733E+06	3.2392E+05	0.	0.	1.0	0.0	9.3120E+05	1.0000E+00	1.4168E+02	1	1	695
SIGMA(,0253), RI, B1, B2, B3		8.9000E+01	1.9030E+02					1.00000	0.00000	0.00000			
60-ND-143	601430	INF	0.	0.	0.	STABLE		0.	0.	1.4168E+02	0	0	714
SIGMA(,0253), RI, B1, B2, B3		3.2500E+02	2.0456E+02					1.00000	0.00000	0.00000			
53- I-144	531440	1.3270E-01	3.0135E+06	4.2031E+06	0.	1.0	0.0	1.0230E+07	1.0000E+00	1.4271E+02	1	0	586
54-XE-144	541440	1.0000E+00	1.2006E+06	2.0039E+06	0.	1.0	0.0	4.6700E+06	1.0000E+00	1.4270E+02	1	0	609
55-CS-144	551440	1.0200E+00	2.3497E+06	3.0413E+06	0.	1.0	0.0	8.0500E+06	9.8900E-01	1.4269E+02	2	0	627
						5.0	0.0	1.8854E+06	1.1000E-02				
56-BA-144	561440	1.1000E+01	6.4787E+05	1.0462E+06	0.	1.0	0.0	2.6900E+06	1.0000E+00	1.4269E+02	1	0	647
57-LA-144	571440	4.0000E+01	1.5105E+06	1.9365E+06	0.	1.0	0.0	5.6000E+06	1.0000E+00	1.4268E+02	1	0	662
58-CE-144	581440	2.4572E+07	8.2960E+04	2.8870E+04	0.	1.0	0.0	3.1550E+05	9.8800E-01	1.4268E+02	2	2	678
						1.0	1.0	2.5650E+05	1.2000E-02				
SIGMA(,0253), RI, B1, B2, B3		1.0000E+00	2.0640E+00					1.00000	0.00000	0.00000			
59-PR-144	591440	1.0368E+03	1.2628E+06	3.1010E+04	0.	1.0	0.0	2.9966E+06	1.0000E+00	1.4268E+02	1	2	696
59-PR-144M	591441	4.3200E+02	3.0000E+02	5.9730E+04	0.	1.0	0.0	3.0556E+06	5.0000E-04	1.4268E+02	2	2	697
						3.0	0.0	5.9000E+04	9.9950E-01				
60-ND-144	601440	6.6226E+22	0.	0.	1.9072E+06	4.0	0.0	1.8940E+06	1.0000E+00	1.4267E+02	1	0	715
SIGMA(,0253), RI, B1, B2, B3		3.6002E+00	5.6153E+00					1.00000	0.00000	0.00000			
53- I-145	531450	1.8670E-01	2.4325E+06	3.7949E+06	0.	1.0	0.0	8.6600E+06	1.0000E+00	1.4370E+02	1	0	587
54-XE-145	541450	9.0000E-01	1.9857E+06	3.0504E+06	0.	1.0	0.0	7.1400E+06	1.0000E+00	1.4370E+02	1	0	610
55-CS-145	551450	5.6000E-01	1.6407E+06	2.3811E+06	0.	1.0	0.0	6.0700E+06	9.5600E-01	1.4369E+02	2	0	628
						5.0	0.0	2.2360E+06	4.4000E-02				
56-BA-145	561450	6.2000E+00	1.2866E+06	1.9218E+06	0.	1.0	0.0	4.9500E+06	1.0000E+00	1.4368E+02	1	0	648
57-LA-145	571450	2.9000E+01	1.0582E+06	1.5196E+06	0.	1.0	0.0	4.1500E+06	1.0000E+00	1.4368E+02	1	0	663
58-CE-145	581450	1.9800E+02	6.2994E+05	7.4890E+05	0.	1.0	0.0	2.4900E+06	1.0000E+00	1.4367E+02	1	2	679
59-PR-145	591450	2.1528E+04	7.0465E+05	1.3780E+04	0.	1.0	0.0	1.8050E+06	1.0000E+00	1.4367E+02	1	2	698
60-ND-145	601450	INF	0.	0.	0.	STABLE		0.	0.	1.4367E+02	0	0	716
SIGMA(,0253), RI, B1, B2, B3		4.1998E+01	2.2644E+02					1.00000	0.00000	0.00000			
54-XE-146	541460	9.3718E-01	1.4492E+06	2.5041E+06	0.	1.0	0.0	5.5700E+06	1.0000E+00	1.4469E+02	1	0	611
55-CS-146	551460	1.9000E-01	2.4784E+06	3.3232E+06	0.	1.0	0.0	8.5400E+06	9.6100E-01	1.4468E+02	2	0	629
						5.0	0.0	2.0856E+06	3.9000E-02				
56-BA-146	561460	2.2000E+00	7.2447E+05	1.2159E+06	0.	1.0	0.0	2.9700E+06	1.0000E+00	1.4468E+02	1	0	649
57-LA-146	571460	8.3000E+00	1.7677E+06	2.3575E+06	0.	1.0	0.0	6.4500E+06	1.0000E+00	1.4467E+02	1	0	664
58-CE-146	581460	8.5200E+02	2.4269E+05	3.1430E+05	0.	1.0	0.0	1.0800E+06	1.0000E+00	1.4466E+02	1	2	680
59-PR-146	591460	1.4520E+03	9.2790E+05	1.6349E+06	0.	1.0	0.0	4.0800E+06	1.0000E+00	1.4466E+02	1	2	699
60-ND-146	601460	INF	0.	0.	0.	STABLE		0.	0.	1.4466E+02	0	0	717
SIGMA(,0253), RI, B1, B2, B3		1.3996E+00	3.3004E+00					1.00000	0.00000	0.00000			
54-XE-147	541470	2.6384E-01	2.1838E+06	3.5323E+06	0.	1.0	0.0	7.9000E+06	1.0000E+00	1.4569E+02	1	0	612
55-CS-147	551470	5.5785E-01	1.9626E+06	2.9436E+06	0.	1.0	0.0	6.9700E+06	1.0000E+00	1.4568E+02	1	0	630
56-BA-147	561470	2.2274E+00	1.4413E+06	2.2169E+06	0.	1.0	0.0	5.4400E+06	1.0000E+00	1.4567E+02	1	0	650

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
57-LA-147	571470	1.0000E+01	1.1510E+06	1.7244E+06	0.	1.0	0.0	4.4600E+06	1.0000E+00	1.4566E+02	1	0	665
58-CE-147	581470	7.0000E+01	8.5132E+05	1.2714E+06	0.	1.0	0.0	3.4500E+06	1.0000E+00	1.4566E+02	1	0	681
59-PR-147	591470	7.2000E+02	7.4799E+05	8.2009E+05	0.	1.0	0.0	2.7000E+06	1.0000E+00	1.4566E+02	1	2	700
60-ND-147	601470	9.4954E+05	2.4169E+05	1.1870E+05	0.	1.0	0.0	8.9450E+05	1.0000E+00	1.4565E+02	1	2	718
SIGMA(.0253): RI,	B1, B2, B3		4.9000E+01	6.4780E+02				1.00000	0.00000	0.00000			
61-PM-147	611470	8.2776E+07	6.3000E+04	1.0000E+02	0.	1.0	0.0	2.2450E+05	1.0000E+00	1.4565E+02	1	2	733
SIGMA(.0253): RI,	B1, B2, B3		1.8190E+02	2.2832E+03				.53000	.47000	0.00000			
62-SM-147	621470	3.3744E+18	0.	0.	2.3298E+06	4.0	0.0	2.3141E+06	1.0000E+00	1.4565E+02	1	0	753
SIGMA(.0253): RI,	B1, B2, B3		6.4000E+01	7.4812E+02				1.00000	0.00000	0.00000			
55-CS-148	551480	2.0163E-01	2.7237E+06	3.8427E+06	0.	1.0	0.0	9.2900E+06	1.0000E+00	1.4667E+02	1	0	631
56-BA-148	561480	5.9009E+00	9.5593E+05	1.6636E+06	0.	1.0	0.0	3.8700E+06	1.0000E+00	1.4666E+02	1	0	651
57-LA-148	571480	1.3000E+00	1.9341E+06	2.6665E+06	0.	1.0	0.0	6.9300E+06	1.0000E+00	1.4666E+02	1	0	666
58-CE-148	581480	4.3000E+01	3.6692E+05	6.1958E+05	0.	1.0	0.0	1.5900E+06	1.0000E+00	1.4665E+02	1	0	682
59-PR-148	591480	1.2000E+02	2.0435E+06	3.0000E+05	0.	1.0	0.0	4.8600E+06	1.0000E+00	1.4665E+02	1	2	701
60-ND-148	601480	INF	0.	0.	0.	STABLE		0.	0.	1.4665E+02	0	0	719
SIGMA(.0253): RI,	B1, B2, B3		2.5000E+00	2.0062E+01				1.00000	0.00000	0.00000			
61-PM-148	611480	4.6397E+05	7.4430E+05	6.3037E+05	0.	1.0	0.0	2.4650E+06	1.0000E+00	1.4665E+02	1	2	734
SIGMA(.0253): RI,	B1, B2, B3		2.0000E+03	4.0010E+04				1.00000	0.00000	0.00000			
61-PM-148M	611481	3.5683E+06	1.4738E+05	2.0094E+06	0.	1.0	0.0	2.6020E+06	9.4000E-01	1.4665E+02	2	2	735
						3.0	0.0	1.3720E+05	6.0000E-02				
SIGMA(.0253): RI,	B1, B2, B3		1.0616E+04	3.6078E+03				1.00000	0.00000	0.00000			
62-SM-148	621480	2.5229E+23	0.	0.	2.0184E+06	4.0	0.0	2.0049E+06	1.0000E+00	1.4664E+02	1	0	754
SIGMA(.0253): RI,	B1, B2, B3		2.7000E+00	2.7420E+01				1.00000	0.00000	0.00000			
55-CS-149	551490	2.7822E-01	2.2388E+06	3.4825E+06	0.	1.0	0.0	7.9600E+06	1.0000E+00	1.4767E+02	1	0	632
56-BA-149	561490	9.1747E-01	1.6421E+06	2.6658E+06	0.	1.0	0.0	6.2000E+06	1.0000E+00	1.4766E+02	1	0	652
57-LA-149	571490	2.8638E+00	1.3998E+06	2.1822E+06	0.	1.0	0.0	5.3600E+06	1.0000E+00	1.4765E+02	1	0	667
58-CE-149	581490	1.0000E+00	9.8953E+05	1.5240E+06	0.	1.0	0.0	3.9300E+06	1.0000E+00	1.4765E+02	1	0	683
59-PR-149	591490	1.3800E+02	1.1578E+06	2.5126E+05	0.	1.0	0.0	3.0000E+06	1.0000E+00	1.4764E+02	1	2	702
60-ND-149	601490	6.2280E+03	4.7439E+05	3.3675E+05	0.	1.0	0.0	1.6800E+06	1.0000E+00	1.4764E+02	1	2	720
61-PM-149	611490	1.9116E+05	3.7658E+05	1.4230E+04	0.	1.0	0.0	1.0724E+06	1.0000E+00	1.4764E+02	1	2	736
SIGMA(.0253): RI,	B1, B2, B3		1.4000E+03	8.0120E+02				1.00000	0.00000	0.00000			
62-SM-149	621490	3.1536E+23	0.	0.	1.9076E+06	4.0	0.0	1.8949E+06	1.0000E+00	1.4764E+02	1	0	755
SIGMA(.0253): RI,	B1, B2, B3		4.1190E+04	3.0656E+03				1.00000	0.00000	0.00000			
55-CS-150	551500	1.2437E-01	2.9189E+06	4.3422E+06	0.	1.0	0.0	1.0180E+07	1.0000E+00	1.4866E+02	1	0	633
56-BA-150	561500	1.7975E+00	1.2180E+06	2.1931E+06	0.	1.0	0.0	4.8700E+06	1.0000E+00	1.4865E+02	1	0	653
57-LA-150	571500	6.4850E-01	2.1426E+06	3.1275E+06	0.	1.0	0.0	7.6800E+06	1.0000E+00	1.4865E+02	1	0	668
58-CE-150	581500	1.0000E+00	5.5188E+05	9.6795E+05	0.	1.0	0.0	2.3600E+06	1.0000E+00	1.4864E+02	1	0	684
59-PR-150	591500	1.2400E+01	1.3545E+06	1.8576E+06	0.	1.0	0.0	5.0900E+06	1.0000E+00	1.4864E+02	1	0	703
60-ND-150	601500	INF	0.	0.	0.	STABLE		0.	0.	1.4863E+02	0	0	721
SIGMA(.0253): RI,	B1, B2, B3		1.2000E+00	1.6845E+01				1.00000	0.00000	0.00000			
61-PM-150	611500	9.6480E+03	7.3500E+05	1.5100E+06	0.	1.0	0.0	3.4300E+06	1.0000E+00	1.4863E+02	1	0	737
62-SM-150	621500	INF	0.	0.	0.	STABLE		0.	0.	1.4863E+02	0	0	756
SIGMA(.0253): RI,	B1, B2, B3		1.0198E+02	3.1980E+02				1.00000	0.00000	0.00000			
56-BA-151	561510	4.3684E-01	1.8731E+06	3.2040E+06	0.	1.0	0.0	7.0800E+06	1.0000E+00	1.4965E+02	1	0	654

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
57-LA-151	571510	9.5359E-01	1.6805E+06	2.7195E+06	0.	1.0	0,0	6.3600E+06	1.0000E+00	1.4964E+02	1	0	669
58-CE-151	581510	1.0000E+00	1.1779E+06	1.9200E+06	0.	1.0	0,0	4.6800E+06	1.0000E+00	1.4964E+02	1	0	685
59-PR-151	591510	4.0000E+00	9.2815E+05	1.4485E+06	0.	1.0	0.0	3.7400E+06	1.0000E+00	1.4963E+02	1	0	704
60-ND-151	601510	7.4400E+02	6.4418E+05	8.3926E+05	0.	1.0	0,0	2.4690E+06	1.0000E+00	1.4963E+02	1	2	722
61-PM-151	611510	1.0224E+05	3.1185E+05	3.0960E+05	0.	1.0	0,0	1.1880E+06	1.0000E+00	1.4962E+02	1	2	738
SIGMA(,0253), RI, B1, B2, B3			7.0000E+02	2.0030E+03				1.00000	0,00000	0.00000			
62-SM-151	621510	2,9329E+09	1.9500E+04	4.0000E+02	0.	1.0	0.0	7.6000E+04	1.0000E+00	1.4962E+02	1	0	757
SIGMA(,0253), RI, B1, B2, B3			1.5000E+04	3.3568E+03				1.00000	0.00000	0.00000			
63-EU-151	631510	INF	0.	0.	0.	STABLE		0.	0.	1.4962E+02	0	0	772
SIGMA(,0253), RI, B1, B2, B3			9.3480E+03	3.0306E+03				.64100	,35860	,00040			
56-BA-152	561520	7.5484E-01	1.4659E+06	2.7260E+06	0.	1.0	0.0	5.7900E+06	1.0000E+00	1.5065E+02	1	0	655
57-LA-152	571520	3.0940E-01	2.3885E+06	3.6834E+06	0.	1.0	0.0	8.5700E+06	1.0000E+00	1.5064E+02	1	0	670
58-CE-152	581520	1.4034E+01	7.9372E+05	1.4426E+06	0.	1.0	0.0	3.3500E+06	1.0000E+00	1.5063E+02	1	0	686
59-PR-152	591520	8.3177E+00	1.6226E+06	2.3632E+06	0.	1.0	0,0	6.1600E+06	1.0000E+00	1.5063E+02	1	0	705
60-ND-152	601520	6.9000E+02	2.0303E+05	3.5920E+05	0.	1.0	0.0	9.2000E+05	1.0000E+00	1.5062E+02	1	0	723
61-PM-152	611520	2.4600E+02	1.4388E+06	2.8814E+05	0.	1.0	0.0	3.6000E+06	1.0000E+00	1.5062E+02	1	2	739
61-PM-152M	611521	4.5000E+02	*9.0000E+05	1.2872E+06	0.	1.0	0,0	3.6000E+06	1.0000E+00	1.5062E+02	1	2	740
61-PM-152N	611522	1.0800E+03	8.0966E+05	1.1506E+06	0.	1.0	0.0	3.9900E+06	8.0000E-01	1.5062E+02	2	0	741
						3.0	1.0	2.5100E+05	2.0000E-01				
62-SM-152	621520	INF	0.	0.	0.	STABLE		0.	0.	1.5061E+02	0	0	758
SIGMA(,0253), RI, B1, B2, B3			2.0600E+02	3.0076E+03				1.00000	0.00000	0.00000			
63-EU-152	631520	4.0997E+08	4.2547E+05	5.6827E+05	0.	1.0	0.0	1.8200E+06	2.8000E-01	1.5062E+02	2	0	773
						2.0	0.0	1.8500E+06	7.2000E-01				
SIGMA(,0253), RI, B1, B2, B3			2.3130E+03	3.2987E+03				1.00000	0.00000	0.00000			
63-EU-152M	631521	3.3480E+04	4.3363E+05	5.7916E+05	0.	1.0	0.0	1.8700E+06	7.7000E-01	1.5062E+02	2	0	774
						2.0	0,0	1.9000E+06	2.3000E-01				
63-EU-152N	631522	5.7600E+03	0.	9.7800E+04	0.	3.0	0.0	9.7800E+04	1.0000E+00	1.5062E+02	1	0	775
64-GD-152	641520	3.4690E+21	0.	0.	2.2342E+06	4.0	0,0	2.2342E+06	1.0000E+00	1.5061E+02	1	0	789
57-LA-153	571530	4.3713E-01	1.9461E+06	3.2620E+06	0.	1.0	0,0	7.2800E+06	1.0000E+00	1.5163E+02	1	0	671
58-CE-153	581530	1.7251E+00	1.4003E+06	2.4108E+06	0.	1.0	0.0	5.5700E+06	1.0000E+00	1.5162E+02	1	0	687
59-PR-153	591530	7.7432E+00	1.1985E+06	1.9451E+06	0.	1.0	0,0	4.7700E+06	1.0000E+00	1.5162E+02	1	0	706
60-ND-153	601530	6.7544E+01	7.9190E+05	1.2966E+06	0.	1.0	0,0	3.3200E+06	1.0000E+00	1.5161E+02	1	0	724
61-PM-153	611530	3.2400E+02	6.7263E+05	7.7480E+04	0.	1.0	0.0	1.8000E+06	1.0000E+00	1.5161E+02	1	2	742
62-SM-153	621530	1.6812E+05	2.3070E+05	1.0452E+05	0.	1.0	0.0	8.0860E+05	1.0000E+00	1.5161E+02	1	2	759
SIGMA(,0253), RI, B1, B2, B3			3.3000E+02	2.8190E+03				1.00000	0.00000	0.00000			
63-EU-153	631530	INF	0.	0.	0.	STABLE		0.	0.	1.5161E+02	0	0	776
SIGMA(,0253), RI, B1, B2, B3			4.5260E+02	1.3795E+03				1.00000	0.00000	0.00000			
64-GD-153	641530	2.0800E+07	0.	1.2000E+05	0.	2.0	0.0	2.4000E+05	1.0000E+00	1.5161E+02	1	0	790
57-LA-154	571540	1.7533E-01	2.6262E+06	4.2075E+06	0.	1.0	0.0	9.4600E+06	1.0000E+00	1.5263E+02	1	0	672
58-CE-154	581540	3.5909E+00	1.0249E+06	1.9262E+06	0.	1.0	0.0	4.2700E+06	1.0000E+00	1.5262E+02	1	0	688
59-PR-154	591540	1.3072E+00	1.8574E+06	2.8657E+06	0.	1.0	0,0	6.9900E+06	1.0000E+00	1.5261E+02	1	0	707
60-ND-154	601540	6.6830E+05	3.8041E+05	6.9855E+05	0.	1.0	0.0	1.7000E+06	1.0000E+00	1.5261E+02	1	0	725
61-PM-154	611540	1.6800E+02	7.6000E+05	1.8847E+06	0.	1.0	0,0	3.9000E+06	1.0000E+00	1.5260E+02	1	0	743
61-PM-154M	611541	1.0800E+02	1.0337E+06	1.5223E+06	0.	1.0	0,0	4.5300E+06	9.0000E-01	1.5260E+02	2	0	744
						3.0	0.0	2.5000E+05	1.0000E-01				

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
62-SM-154	621540	INF	0.	0.	0.	STABLE		0.	0.	1.5260E+02	0	0	760
SIGMA(,0253), RI, B1, B2, B3			5.5003E+00	3.3919E+01				1.00000	0.00000	0.00000			
63-EU-154	631540	2.7121E+08	2.4700E+05	1.2500E+06	0.	1.0	0.0	1.9800E+06	1.0000E+00	1.5260E+02	1	0	777
SIGMA(,0253), RI, B1, B2, B3			1.5060E+03	2.2867E+03				1.00000	0.00000	0.00000			
64-GD-154	641540	INF	0.	0.	0.	STABLE		0.	0.	1.5260E+02	0	0	791
SIGMA(,0253), RI, B1, B2, B3			8.5001E+01	2.4817E+02				1.00000	0.00000	0.00000			
57-LA-155	571550	2.2155E-01	2.2396E+06	3.8808E+06	0.	1.0	0.0	8.3600E+06	1.0000E+00	1.5362E+02	1	0	673
58-CE-155	581550	7.1253E-01	1.6405E+06	2.9305E+06	0.	1.0	0.0	6.4600E+06	1.0000E+00	1.5361E+02	1	0	689
59-PR-155	591550	1.8907E+00	1.4472E+06	2.4368E+06	0.	1.0	0.0	5.6900E+06	1.0000E+00	1.5361E+02	1	0	708
60-ND-155	601550	2.6058E+01	9.3390E+05	1.6194E+06	0.	1.0	0.0	3.9200E+06	1.0000E+00	1.5360E+02	1	0	726
61-PM-155	611550	3.6561E+01	7.4743E+05	1.2133E+06	0.	1.0	0.0	3.1300E+06	1.0000E+00	1.5360E+02	1	0	745
62-SM-155	621550	1.3320E+03	3.7185E+05	6.1187E+05	0.	1.0	0.0	1.6500E+06	1.0000E+00	1.5359E+02	1	0	761
63-EU-155	631550	1.5137E+08	5.4531E+04	8.7547E+04	0.	1.0	0.0	2.5000E+05	1.0000E+00	1.5359E+02	1	0	778
SIGMA(,0253), RI, B1, B2, B3			4.0400E+03	1.8560E+03				1.00000	0.00000	0.00000			
64-GD-155	641550	INF	0.	0.	0.	STABLE		0.	0.	1.5359E+02	0	0	792
SIGMA(,0253), RI, B1, B2, B3			6.1000E+04	1.5422E+03				1.00000	0.00000	0.00000			
58-CE-156	581560	1.1624E+00	1.3030E+06	2.5277E+06	0.	1.0	0.0	5.3600E+06	1.0000E+00	1.5461E+02	1	0	690
59-PR-156	591560	5.1044E-01	2.1140E+06	3.3946E+06	0.	1.0	0.0	7.8800E+06	1.0000E+00	1.5460E+02	1	0	709
60-ND-156	601560	5.8494E+01	5.9436E+05	1.1302E+06	0.	1.0	0.0	2.6200E+06	1.0000E+00	1.5459E+02	1	0	727
61-PM-156	611560	1.3103E+01	1.2663E+06	1.9491E+06	0.	1.0	0.0	5.0000E+06	1.0000E+00	1.5459E+02	1	0	746
62-SM-156	621560	3.3840E+04	1.4953E+05	2.7775E+05	0.	1.0	0.0	7.1000E+05	1.0000E+00	1.5459E+02	1	0	762
63-EU-156	631560	1.3133E+06	4.3020E+05	1.3177E+06	0.	1.0	0.0	2.4530E+06	1.0000E+00	1.5459E+02	1	2	779
SIGMA(,0253), RI, B1, B2, B3			4.8200E+02	1.4860E+03				1.00000	0.00000	0.00000			
64-GD-156	641560	INF	0.	0.	0.	STABLE		0.	0.	1.5458E+02	0	0	793
SIGMA(,0253), RI, B1, B2, B3			1.5000E+00	1.2957E+02				1.00000	0.00000	0.00000			
58-CE-157	581570	3.6169E-01	1.9010E+06	3.4520E+06	0.	1.0	0.0	7.3100E+06	1.0000E+00	1.5560E+02	1	0	691
59-PR-157	591570	6.7790E-01	1.7453E+06	3.0424E+06	0.	1.0	0.0	6.7800E+06	1.0000E+00	1.5560E+02	1	0	710
60-ND-157	601570	4.1488E+00	1.1582E+06	2.0872E+06	0.	1.0	0.0	4.8100E+06	1.0000E+00	1.5559E+02	1	0	728
61-PM-157	611570	6.8025E+01	9.7720E+05	1.6487E+06	0.	1.0	0.0	4.0400E+06	1.0000E+00	1.5558E+02	1	0	747
62-SM-157	621570	4.8000E+02	5.5369E+05	9.6777E+05	0.	1.0	0.0	2.4600E+06	1.0000E+00	1.5558E+02	1	0	763
63-EU-157	631570	5.4720E+04	2.8093E+05	4.7074E+05	0.	1.0	0.0	1.2700E+06	1.0000E+00	1.5558E+02	1	0	780
SIGMA(,0253), RI, B1, B2, B3			1.9000E+02	1.2970E+03				1.00000	0.00000	0.00000			
64-GD-157	641570	INF	0.	0.	0.	STABLE		0.	0.	1.5558E+02	0	0	794
SIGMA(,0253), RI, B1, B2, B3			2.5447E+05	9.7340E+02				1.00000	0.00000	0.00000			
59-PR-158	591580	2.6290E-01	2.3952E+06	3.9231E+06	0.	1.0	0.0	8.7300E+06	1.0000E+00	1.5659E+02	1	0	711
60-ND-158	601580	7.8886E+00	8.5536E+05	1.6809E+06	0.	1.0	0.0	3.7200E+06	1.0000E+00	1.5658E+02	1	0	729
61-PM-158	611580	3.8012E+00	1.5912E+06	2.5541E+06	0.	1.0	0.0	6.2200E+06	1.0000E+00	1.5658E+02	1	0	748
62-SM-158	621580	2.6385E+03	2.4147E+05	4.6520E+05	0.	1.0	0.0	1.1300E+06	1.0000E+00	1.5657E+02	1	0	764
63-EU-158	631580	2.7540E+03	8.2487E+05	1.3050E+06	0.	1.0	0.0	3.5000E+06	1.0000E+00	1.5657E+02	1	0	781
64-GD-158	641580	INF	0.	0.	0.	STABLE		0.	0.	1.5657E+02	0	0	795
SIGMA(,0253), RI, B1, B2, B3			2.4999E+00	6.3092E+01				1.00000	0.00000	0.00000			
59-PR-159	591590	3.1408E-01	2.0449E+06	3.6833E+06	0.	1.0	0.0	7.8500E+06	1.0000E+00	1.5759E+02	1	0	712

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
60-ND-159	601590	1.4078E+00	1.3974E+06	2.5613E+06	0.	1.0	0.0	5.6600E+06	1.0000E+00	1.5758E+02	1	0	730
61-PM-159	611590	4.2296E+00	1.2567E+06	2.1986E+06	0.	1.0	0.0	5.1300E+06	1.0000E+00	1.5757E+02	1	0	749
62-SM-159	621590	1.6223E+02	7.0110E+05	1.2758E+06	0.	1.0	0.0	3.0800E+06	1.0000E+00	1.5757E+02	1	0	765
63-EU-159	631590	1.0860E+03	5.7643E+05	1.0052E+06	0.	1.0	0.0	2.5700E+06	1.0000E+00	1.5756E+02	1	0	782
64-GD-159	641590	6.6960E+04	1.9920E+05	3.5127E+05	0.	1.0	0.0	9.4000E+05	1.0000E+00	1.5756E+02	1	0	796
65-TB-159	651590	INF	0.	0.	0.	STABLE		0.	0.	1.5756E+02	0	0	803
SIGMA(,0253): RI, B1, B2, B3			2.5498E+01	4.5545E+02				1.00000	0.00000	0.00000			
60-ND-160	601600	2.1207E+00	1.1138E+06	2.2578E+06	0.	1.0	0.0	4.7800E+06	1.0000E+00	1.5857E+02	1	0	731
61-PM-160	611600	9.9631E-01	1.8543E+06	3.0390E+06	0.	1.0	0.0	7.0800E+06	1.0000E+00	1.5857E+02	1	0	750
62-SM-160	621600	3.4913E+02	5.9830E+05	1.1927E+06	0.	1.0	0.0	2.7600E+06	1.0000E+00	1.5856E+02	1	0	766
63-EU-160	631600	5.1000E+01	8.5524E+05	1.4133E+06	0.	1.0	0.0	3.5900E+06	1.0000E+00	1.5856E+02	1	0	783
64-GD-160	641600	INF	0.	0.	0.	STABLE		0.	0.	1.5855E+02	0	0	797
SIGMA(,0253): RI, B1, B2, B3			7.7004E-01	8.5668E+00				1.00000	0.00000	0.00000			
65-TB-160	651600	6.2467E+06	4.0115E+05	6.4020E+05	0.	1.0	0.0	1.8100E+06	1.0000E+00	1.5855E+02	1	0	804
SIGMA(,0253): RI, B1, B2, B3			5.2500E+02	1.1310E+03				1.00000	0.00000	0.00000			
66-DY-160	661600	INF	0.	0.	0.	STABLE		0.	0.	1.5855E+02	0	0	811
SIGMA(,0253): RI, B1, B2, B3			6.1000E+01	1.6694E+03				1.00000	0.00000	0.00000			
60-ND-161	601610	5.5577E-01	1.6562E+06	3.2121E+06	0.	1.0	0.0	6.7500E+06	1.0000E+00	1.5957E+02	1	0	732
61-PM-161	611610	1.1882E+00	1.5379E+06	2.7841E+06	0.	1.0	0.0	6.2000E+06	1.0000E+00	1.5956E+02	1	0	751
62-SM-161	621610	1.2875E+01	9.6295E+05	1.7832E+06	0.	1.0	0.0	4.1200E+06	1.0000E+00	1.5956E+02	1	0	767
63-EU-161	631610	4.2059E+01	7.3896E+05	1.3378E+06	0.	1.0	0.0	3.2500E+06	1.0000E+00	1.5955E+02	1	0	784
64-GD-161	641610	2.2200E+02	4.3108E+05	7.9294E+05	0.	1.0	0.0	2.0100E+06	1.0000E+00	1.5955E+02	1	0	798
65-TB-161	651610	5.9789E+05	1.2194E+05	2.1575E+05	0.	1.0	0.0	5.8000E+05	1.0000E+00	1.5955E+02	1	0	805
66-DY-161	661610	INF	0.	0.	0.	STABLE		0.	0.	1.5955E+02	0	0	812
SIGMA(,0253): RI, B1, B2, B3			5.8500E+02	1.1895E+03				1.00000	0.00000	0.00000			
61-PM-162	611620	3.9986E-01	2.1248E+06	3.6930E+06	0.	1.0	0.0	8.1600E+06	1.0000E+00	1.6056E+02	1	0	752
62-SM-162	621620	1.9588E+01	7.1234E+05	1.4665E+06	0.	1.0	0.0	3.2400E+06	1.0000E+00	1.6055E+02	1	0	768
63-EU-162	631620	2.6981E+02	1.2461E+06	2.1026E+06	0.	1.0	0.0	5.1000E+06	1.0000E+00	1.6055E+02	1	0	785
64-GD-162	641620	6.0000E+02	2.0259E+05	4.1038E+05	0.	1.0	0.0	1.0000E+06	9.8000E-01	1.6054E+02	2	0	799
						1.0	1.0	7.5000E+05	2.0000E-02				
65-TB-162	651620	4.4820E+02	6.2995E+05	1.0524E+06	0.	1.0	0.0	2.8100E+06	1.0000E+00	1.6054E+02	1	0	806
65-TB-162M	651621	8.0280E+03	6.8600E+05	1.1460E+06	0.	1.0	0.0	3.0600E+06	1.0000E+00	1.6054E+02	1	0	807
66-DY-162	661620	INF	0.	0.	0.	STABLE		0.	0.	1.6054E+02	0	0	813
SIGMA(,0253): RI, B1, B2, B3			1.9910E+02	2.8032E+03				1.00000	0.00000	0.00000			
62-SM-163	621630	2.5631E+00	1.2075E+06	2.3720E+06	0.	1.0	0.0	5.2000E+06	1.0000E+00	1.6154E+02	1	0	769
63-EU-163	631630	1.4843E+01	1.0463E+06	1.9617E+06	0.	1.0	0.0	4.5400E+06	1.0000E+00	1.6154E+02	1	0	786
64-GD-163	641630	9.2773E+01	5.8008E+05	1.0865E+06	0.	1.0	0.0	2.6300E+06	1.0000E+00	1.6153E+02	1	0	800
65-TB-163	651630	1.1700E+03	3.5839E+05	6.5933E+05	0.	1.0	0.0	1.6800E+06	1.0000E+00	1.6153E+02	1	0	808
66-DY-163	661630	INF	0.	0.	0.	STABLE		0.	0.	1.6153E+02	0	0	814
SIGMA(,0253): RI, B1, B2, B3			1.3437E+02	1.4347E+03				1.00000	0.00000	0.00000			
62-SM-164	621640	4.2471E+00	9.4081E+05	1.9965E+06	0.	1.0	0.0	4.2200E+06	1.0000E+00	1.6254E+02	1	0	770
63-EU-164	631640	2.1701E+00	1.5782E+06	2.8315E+06	0.	1.0	0.0	6.5000E+06	1.0000E+00	1.6253E+02	1	0	787

SYMBOL	ZZAAAS	HALFLIFE	E-BETA	E-GAMMA	E-ALPHA	RTYP	RFS	Q	BRANCHING	AWR	NDK	NSP	MAT
64-GD-164	641640	1.3014E+03	3.4725E+05	7.2730E+05	0.	1.0	0.0	1.6800E+06	1.0000E+00	1.6253E+02	1	0	801
65-TB-164	651640	1.8000E+02	8.7275E+05	1.4899E+06	0.	1.0	0.0	3.7900E+06	1.0000E+00	1.6252E+02	1	0	809
66-DY-164	661640	INF	0.	0.	0.	STABLE		0.	0.	1.6252E+02	0	0	815
SIGMA(,0253), RI, B1, B2, B3			2.5200E+03	3.1597E+02				.37000	.63000	0.00000			
62-SM-165	621650	9.2740E-01	1.4581E+06	2.9306E+06	0.	1.0	0.0	6.1600E+06	1.0000E+00	1.6353E+02	1	0	771
63-EU-165	631650	2.5483E+00	1.2868E+06	2.4937E+06	0.	1.0	0.0	5.5100E+06	1.0000E+00	1.6353E+02	1	0	788
64-GD-165	641650	1.0022E+02	7.7760E+05	1.5494E+06	0.	1.0	0.0	3.5500E+06	1.0000E+00	1.6352E+02	1	0	802
65-TB-165	651650	3.2752E+01	5.8560E+05	1.1174E+06	0.	1.0	0.0	2.7600E+06	5.0000E-01	1.6352E+02	2	0	810
						1.0	1.0	2.6520E+06	5.0000E-01				
66-DY-165	661650	8.4600E+03	2.6962E+05	5.1140E+05	0.	1.0	0.0	1.3000E+06	1.0000E+00	1.6352E+02	1	0	816
66-DY-165M	661651	7.5360E+01	7.3005E+03	1.1915E+05	0.	1.0	0.0	1.4080E+06	2.5000E-02	1.6352E+02	2	0	817
						3.0	0.0	1.0800E+05	9.7500E-01				
66-DY-165N	661652	3.2000E+01	0.	2.5000E+05	0.	3.0	1.0	2.5000E+05	1.0000E+00	1.6352E+02	1	0	818
67-HO-165	671650	INF	0.	0.	0.	STABLE		0.	0.	1.6351E+02	0	0	820
SIGMA(,0253), RI, B1, B2, B3			6.6500E+01	7.5208E+02				.94700	.05300	0.00000			
66-DY-166	661660	2.9340E+05	1.1750E+05	8.0000E+04	0.	1.0	0.0	4.8100E+05	1.0000E+00	1.6451E+02	1	0	819
67-HO-166	671660	9.6480E+04	3.8971E+05	6.9314E+05	0.	1.0	0.0	1.8400E+06	1.0000E+00	1.6451E+02	1	0	821
67-HO-166M	671661	3.7843E+10	4.4266E+05	7.8731E+05	0.	1.0	0.0	2.0900E+06	1.0000E+00	1.6451E+02	1	0	822
68-ER-166	681660	INF	0.	0.	0.	STABLE		0.	0.	1.6451E+02	0	0	823
SIGMA(,0253), RI, B1, B2, B3			*2.0000E+01	1.4112E+02				.25000	.75000	0.00000			
68-ER-167	681670	INF	0.	0.	0.	STABLE		0.	0.	1.6550E+02	0	0	824
SIGMA(,0253), RI, B1, B2, B3			6.7000E+02	2.9773E+03				1.00000	0.00000	0.00000			
68-ER-167M	681671	2.3000E+00	0.	2.0800E+05	0.	3.0	0.0	2.0800E+05	1.0000E+00	1.6550E+02	1	0	825

---

*Changed from ENDF/B-IV.

‡See Table V.

†Recent investigation indicates that all ^{98}Zr decays to the 2.8 s state of ^{98}Nb; change RFS to 0.0.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1975—677-343/43