

# Argonne National Laboratory

DETECTION SENSITIVITIES IN  
THERMAL-NEUTRON ACTIVATION

by

James Wing and  
Morris A. Wahlgren

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# DETECTION SENSITIVITIES IN THERMAL-NEUTRON ACTIVATION

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## ABSTRACT

Detection sensitivities of the chemical elements in thermal-neutron activation are compiled from the available experimental cross sections and nuclear properties. The counts per minute per microgram of target element by techniques of  $4\pi$  counting, single-gamma counting, gamma-gamma coincidence counting, beta-gamma coincidence counting, and triple-coincidence counting are tabulated for irradiation times of 0.5, 5, 50, 500, and 5000 min at a flux of  $10^{14}$  thermal neutrons/sec-cm<sup>2</sup>. For single-gamma counting, the source is 3 cm and 9.3 cm from the face of a 3-in. by 3-in. NaI(Tl) crystal. For coincidence counting, the source is 3 cm from two opposed 3-in. by 3-in. NaI(Tl) crystals. The results on the single-gamma countings are compared with the existing experimental data. Several applications of this compilation are discussed.

## INTRODUCTION

In many experiments involving the study of radioactive product nuclides, such as in nuclear-activation analyses and cross-section measurements, alternative counting methods to be used and possible interfering activities must usually be considered. When radiochemical separations are to be performed on the products, only the elements present with similar chemical or physicochemical properties need be considered. The necessary steps in the separations are governed by the induced radioactivities of these elements. For nondestructive analyses, all the chemical elements present in the target samples must be taken into account. The choosing of the best suitable gamma counting technique can be quite tedious if many gamma rays of similar energies are expected in the irradiated samples. The possibility of Compton scattering from large amounts of undesirable high-gamma energies must not be overlooked. The selection of irradiation and cooling times, though not difficult, may be time-consuming. The present compilation of detection sensitivities is an aid for these considerations.

## EQUATIONS

The following equations were used in our calculation of detection sensitivities (second-order reactions are neglected):

$$D = \frac{\phi N f}{A} \left\{ (F \sigma_m + \sigma_g) (1 - e^{-\lambda_g t}) + \frac{F \sigma_m \lambda_g}{(\lambda_m - \lambda_g)} \left[ e^{-\lambda_m t} - e^{-\lambda_g t} \right] \right\}; \quad (1)$$

$$R = D H G P \left( \frac{1}{1 + \alpha} \right); \quad (2)$$

$$C = D H_1 G_1 P_1 H_2 G_2 P_2 \left( \frac{1}{1 + \alpha_1} \right) \left( \frac{1}{1 + \alpha_2} \right); \quad (3)$$

$$L = D H_1 G_1 P_1 H_2 G_2 P_2 H_3 G_3 P_3 \left( \frac{1}{1 + \alpha_1} \right) \left( \frac{1}{1 + \alpha_2} \right) \left( \frac{1}{1 + \alpha_3} \right); \quad (4)$$

and, for a product nuclide B decaying to a radioactive daughter C:

$$D = \frac{\phi N f \sigma_B}{A} \left\{ 1 - \frac{\lambda_B e^{-\lambda_C t}}{\lambda_B - \lambda_C} + \frac{\lambda_C e^{-\lambda_B t}}{\lambda_B - \lambda_C} \right\}; \quad (5)$$

where

D = detection sensitivity, in disintegrations per minute per microgram of target element;

R = detection sensitivity, in counts of single gamma per minute per microgram of target element;

C = detection sensitivity, in coincidence counts per minute per microgram of target element;

L = detection sensitivity, in triple-coincidence counts per minute per microgram of target element;

$\phi$  = neutron flux, in number of thermal neutrons per second per  $\text{cm}^2$ ;

N = Avogadro's number,  $6.02 \times 10^{23}$  atoms per mole;

f = isotopic abundance of the target nuclide;

A = atomic weight of the target element;

F = fraction of isomeric transition leading to the ground state of the product nuclide;

$\sigma$  = reaction cross section;

$\lambda$  = decay constant;

$t$  = duration of irradiation;

$\alpha$  = internal conversion coefficient;

$H$  = intrinsic peak efficiency of the detector, including the full-energy photo peak-to-total ratio, for gamma rays;

$G$  = counting geometry;

and

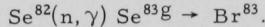
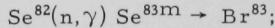
$P$  = percent of beta decay or gamma transition of the product or daughter nuclide.

The subscripts m and g refer to the metastable and ground states of the product nuclide, respectively. The subscripts 1, 2, and 3 indicate different gamma rays or beta branchings.

## CALCULATIONS

In our calculations, we assumed a flux of  $10^{14}$  thermal neutrons/sec-cm<sup>2</sup> and irradiation times of 0.5, 5, 50, 500, and 5000 min. The calculated sensitivities can be alternatively read as sensitivities for one-gram samples at a flux of  $10^8$  thermal neutrons/sec-cm<sup>2</sup>. The isotopic abundances were based on Nier's recommended values.<sup>1</sup> The cross-section values were taken from several compilations.<sup>2-4</sup> The nuclear-decay properties (i.e., half-lives, fractions of isomeric transitions, decay and transition energies, decay and transition probabilities, internal-conversion coefficients, and coincidences) were obtained from three sources.<sup>1,5,6</sup> The values of internal-conversion coefficients for many nuclides are either unknown or not well known. The reactions leading to product nuclides with half-lives shorter than 0.8 sec are not included here.

Equation (5) was also used for the computation of the lower limit of sensitivity for the ground state of a product nuclide whose  $\sigma_m$  and F are known but  $\sigma_g$  is not, as in the cases of Mo<sup>92</sup> and Nb<sup>93</sup>. Several nuclides are decay daughters of a pair of isomeric product nuclides. For these daughters, the detection sensitivities were calculated from the two paths of formation, one from the metastable state and the other from the ground state of the product nuclide. For example, the sensitivities for Br<sup>83</sup> were computed on the basis of the following two reactions:



Thus, one must add the calculated sensitivities of these two reactions to obtain the value for Br<sup>83</sup>.

The choice of gamma energies for single-gamma counting was based on the highest transition probabilities and high gamma-energy values. Gamma energies less than 0.010 MeV were not considered. The choice of coincidence partners was based almost entirely on the highest decay or transition probabilities of the nuclide. However, because of better energy selection, triple-gamma coincidence counting was preferred over beta-gamma-gamma coincidence counting. The values of detection efficiencies and photopeak-to-total ratios for a 3-in. by 3-in. NaI(Tl) crystal and point source were obtained from the calculations of Heath<sup>7</sup> and Lazar.<sup>8</sup> For alpha, beta, and electron-capture (X-rays) countings, all disintegrations are counted. For single-gamma counting, the source is 3 and 9.3 cm from the scintillator face; for all the coincidence countings, the source is 3 cm from two opposed 3-in. by 3-in. NaI(Tl) crystals.

Corrections for self-absorption of gamma rays and self-shielding of neutrons by the sample matrixes have not been made. Also, no correction has been made for loss of photopeak counts by coincidence summing. This loss is minor for a source-detector distance of 3 cm and greater. Angular correlation, except for annihilation radiations between cascade gamma transitions, has also been neglected.

The calculation was performed by an IBM 1620 II computer. The calculated values of D, R, C, and L are tabulated in the appendix. The transition probabilities and internal conversion coefficients of gamma rays used in our calculation are listed in Table I for reference. In Table I, the first line, for each nuclide, lists the energies (in MeV) of the gamma rays, the beta transition (followed by the letter B), the alpha transition (followed by the letter A), and the electron capture (preceded by the letters EC); the second line lists the corresponding transition probabilities; the third line lists the available values of internal-conversion coefficients (ratios of number of converted electrons to the number of unconverted photons). A dash between two energies indicates a coincidence of the two transitions of these energies.

TABLE I. Transition Probabilities and Internal Conversion Coefficients

B -12	4.43			
B -12	.013			
B -12				
N -16	6.13			
N -16	.76			
N -16				
O -19	1.37	0.20	1.37-0.20	
O -19	.56	.97	.56 .999	
O -19				
F -20	1.63			5.4B-1.63
F -20	.999			.999 .999
F -20				
NE-23	0.44	1.65	1.65-0.44	3.9B-0.44
NE-23	.33	.009	.009 .999	.32 .999
NE-23				
NA-24	2.75	1.37	2.75-1.37	1.4B-2.75
NA-24	.999	.999	.999 .999	.999 .999
NA-24				
MG-27	0.83	1.02	0.18-0.83	1.8B-0.83
MG-27	.58	.41	.0084 .999	.58 .999
MG-27				
AL-28	1.78			2.9B-1.78
AL-28	.999			.999 .999
AL-28				
SI-31	1.27			
SI-31	.0007			
SI-31				
S -37	3.10			1.6B-3.10
S -37	.90			.90 .999
S -37				
CL-38M	0.66			
CL-38M	.999			
CL-38M				
CL-38G	2.16	1.60	1.60-2.16	
CL-38G	.47	.31	.31 .999	
CL-38G				
AR-41	1.29			1.2B-1.29
AR-41	.991			.991 .999
AR-41				
K -40	1.46			
K -40	.11			
K -40				
K -42	1.52		0.32-1.52	
K -42	.18		.002 .999	
K -42				
CA-47	1.30	0.81	0.81-0.50	0.60-0.32-1.52
CA-47	.76	.057	.057 .999	.0002 .999 .999
CA-47				
CA-49	3.10	4.00		2.0B-3.10
CA-49	.90	.10		.90 .999
CA-49				
SC-46M	0.15			
SC-46M	.999			
SC-46M	1.0			
SC-46G	1.12	0.89	0.89-1.12	0.4B-1.12
SC-46G	.999	.999	.999 .999	.999 .999
SC-46G				

TABLE I (Contd.)

SC-47	0.16					
SC-47	.70					
SC-47					0.4B-0.16	
SC-48	1.31	1.04	1.04-1.31	1.31-0.99		
SC-48	.999	.999	.999	.999		
SC-48						1.04-1.31-0.99
SC-49	1.76					
SC-49	.0003					
SC-49						
TI-51	0.32	0.93	0.61-0.32			
TI-51	.952	.048	.014	.999		
TI-51					2.1B-0.32	
TI-51						.938 .999
V -52	1.43					
V -52	.999					
V -52					2.7B-1.43	
V -52						.999 .999
CR-51	0.32					
CR-51	.09					
CR-51					EC -0.32	
MN-54	0.84					
MN-54	.999					
MN-54						
MN-56	0.84	1.81	1.81-0.84	2.12-0.84	2.9B-0.84	
MN-56	.989	.236	.236	.999	.145	.999
MN-56						.60 .999
FE-59	1.29	1.10	0.19-1.10			
FE-59	.44	.57	.03	.999		
FE-59					0.5B-1.10	
FE-59						.54 .999
CO-58M	0.03					
CO-58M	.999					
CO-58M						
CO-58G	0.81	0.51	0.51-0.51	0.51-0.81	0.5B-0.81	0.51-0.51-0.81
CO-58G	.999	.148	.296	.999	.296	.999
CO-58G						.296 .999
CO-60M	1.33	0.06				
CO-60M	.0028	.997				
CO-60M		45.5				
CO-60G	1.33	1.17	1.17-1.33		0.3B-1.17	0.3B-1.17-1.33
CO-60G	.999	.999	.999	.999		
CO-60G						.999 .999
NI-65	1.49	1.11	0.37-1.11			
NI-65	.23	.08	.23	.999		
NI-65						
CU-64	1.34	0.51	0.51-0.51			
CU-64	.006	.38	.38	.999		
CU-64						
CU-66	1.04	0.83	0.83-1.04		1.6B-1.04	
CU-66	.09	.002	.002	.999		
CU-66						.09 .999
CU-67	0.18	0.09	0.09-0.09		0.4B-0.18	0.4B-0.09-0.09
CU-67	.44	.45	.45	.999		
CU-67	.01	.09	.09	.09		
CU-67						.45 .999
ZN-65	1.11	0.51	0.51-0.51		EC -1.11	
ZN-65	.49	.017	.034	.999		
ZN-65						.49 .999
ZN-69M	0.44					
ZN-69M	.999					
ZN-69M						

TABLE I (Contd.)

ZN-71M	0.61 •999	0.49 •999	0.49-0.61 •999 •999		1.5B-0.38 •999	0.38-0.49-0.61 •999 •999 •999
ZN-71G	0.51 •14				2.4B-0.51 •14	•999
ZN-71G						
GA-70G	1.04 •0076		0.17-1.04 •0044 •999		0.6B-1.04 •003	0.4B-0.17-1.04 •002 •999 •999
GA-70G						
GA-72G	0.84 •622	2.20 •286	2.51-0.84 •17 •999	2.20-0.84 •286 •999	3.2B-0.84 •05	1.86-0.63-0.83 •053 •16 •999
GA-72G						
GA-72G						
GE-75M	0.14 •999					
GE-75M	2.0					
GE-75G	0.26 •11	0.20 •02	0.43-0.20 •0027 •999		0.9B-0.26 •114	0.9B-0.07-0.20 •114 •03 •999
GE-75G						
GE-77M	0.22 •18	0.16 •36				
GE-77M						
GE-77G	0.42 •265	0.56 •152	0.56-0.42 •152 •48	1.37-0.42 •07 •48		0.56-0.42-0.22 •144 •48 •999
GE-77G						
GE-77G						
AS-76	0.56 •446	0.66 •063	0.66-0.56 •063 •999		2.4B-0.56 •306	0.56-0.66-0.56 •054 •999 •999
AS-76						
AS-77	0.52 •027	0.25 •027	0.28-0.25 •0011 •999		0.4B-0.25 •027	•999
AS-77						
SE-75	0.26 •54	0.40 •152	0.14-0.26 •41 •97	0.12-0.28 •137 •99	EC -0.40 •76 •999	0.14-0.07-0.20 •41 •03 •999
SE-75						
SE-75						
SE-77M	0.16 •999					
SE-77M						
SE-77M						
SF-81M	0.10 •999					
SF-81M	10.8					
SF-81M						
SE-83M	2.02 •10	1.01 •10	1.01-0.65 •10 •999	0.65-0.35 •10 •999	1.5B-2.00 •10 •999	1.01-0.65-0.35 •10 •999 •999
SE-83M						
SE-83M						
BR-80M	0.05 •999	0.04 •999	0.05-0.04 •999 •999			
BR-80M	400.	1.1	400. 1.1			
BR-80G	0.62 •138		0.51-0.51 •052 •999		1.4B-0.62 •138	•999
BR-80G						
BR-82	0.55 •999	0.62 •49	0.55-0.78 •37 •999	1.31-0.78 •36 •999		0.83-1.04-0.78 •999 •999 •999
BR-82						
BR-82						
BR-83	0.05 •20					
BR-83						
BR-83						
KR-79G	0.26 •08	0.51 •08	0.51-0.51 •154 •999			
KR-79G	0.02					

TABLE I (Contd.)

KR-83M	0.03	0.03-0.01
KR-83M	.999	.999 .999
KR-83M		
KR-85M	0.31	0.15
KR-85M	.19	.81
KR-85M	.047	0.04
KR-85G	0.51	
KR-85G	.0046	
KR-85G		
KR-87	0.40	2.57
KR-87	.87	.22 .22 .999
KR-87		
RB-86M	0.56	
RB-86M	.999	
RB-86M		
RB-86G	1.08	
RB-86G	.09	
RB-86G		
RB-88	1.84	0.90
RB-88	.23	.145 .145 .999
RB-88		
SR-85M	0.15	0.23
SR-85M	.14	.85
SR-85M		0.024
SR-85G	0.51	
SR-85G	.999	
SR-85G		
SR-87M	0.39	
SR-87M	.999	
SR-87M		0.28
Y -89M	0.92	
Y -89M	.999	
Y -89M		0.01
ZR-89G	0.92	0.51
ZR-89G	.999	.62 .60 .999
ZR-89G		
ZR-95	0.74	
ZR-95	.98	
ZR-95		
ZR-97	0.75	
ZR-97	.90	
ZR-97		0.015
NB-92G	0.93	1.84
NB-92G	.98	.026 .01 .999
NB-92G		
NB-94M	0.04	0.87
NB-94M	.999	.001
NB-94M		53.0
NB-94G	0.70	0.87
NB-94G	.999	.999
NB-94G		
NB-95M	0.24	
NB-95M	.999	
NB-95M		
NB-95G	0.77	
NB-95G	.99	
NB-95G		

TABLE I (Contd.)

NB-97M	0.75				
NB-97M	.999				
NB-97M	0.015				
NB-97G	0.67	1.02			
NB-97G	.99	.01			
NB-97G				1.38-0.67	
				.99	.99
MO-93M	1.48	0.69	1.48-0.69		
MO-93M	.999	.999	.999		
MO-93M					0.26-0.69-1.48
					.999
					0.6
MO-99	0.14	0.74	0.74-0.14		
MO-99	.92	.10	.10		
MO-99	0.095		0.60		
MO-99			0.095		
MO-99				0.98-0.37	0.74-0.04-0.14
				.01	.999
					.10
					.60
					30.0
					0.095
MO-101	1.02	2.08	1.56-0.51	1.38-0.59	0.78-2.08
MO-101	.25	.16	.11	.999	.09
MO-101					.16
MO-101					.999
MO-101					.02
MO-101					.999
MO-101					0.35
TC-99M	0.14				
TC-99M	.986				
TC-99M	0.095				
TC-101	0.31	0.55	0.39-0.55		1.38-0.31
TC-101	.91	.076	.016	.999	
TC-101					.90
TC-101					.999
RU-97	0.22	0.33	0.11-0.22		
RU-97	.933	.10	.10	.999	
RU-97					
RU-103	0.50	0.61	0.56-0.05		0.28-0.50
RU-103	.885	.065	.005	.999	
RU-103					.89
RU-103					.999
RU-105	0.73	0.67	0.32-0.48		1.1B-0.73
RU-105	.48	.15	.106	.999	
RU-105					.48
RU-105					.999
RU-105					•306
RU-105					.68
RU-105					.999
RH-103M	0.04				
RH-103M	.999				
RH-103M	240.0				
RH-104M	0.08	0.05	0.08-0.05		1.2B-0.77
RH-104M	.999	.999	.961	.999	
RH-104M	56.0	1.07	56.0	1.07	
RH-104G	0.56		1.24-0.56		0.6B-1.24
RH-104G	.0196		.0011	.999	
RH-104G					.0011
RH-104G					.999
RH-105	0.32				0.6B-1.24-0.56
RH-105	.10				
RH-105	0.018				
PD-103	0.36	0.04	0.07-0.30		
PD-103	.0006	.999	.0008	.999	
PD-103					
PD-109M	0.18				
PD-109M	.999				
PD-109M	0.6				
PD-109G	0.09	0.64			
PD-109G	.999				
PD-109G	22.5				
PD-111M	0.17				
PD-111M	.68				
PD-111M					
PD-111G	0.07				
PD-111G	.999				
PD-111G					

TABLE I (Contd.)

AG-107M	0.09					
AG-107M	.999					
AG-107M	20.3					
AG-108G	0.63	0.62-0.43				
AG-108G	.019	.004	.999			
AG-108G						
AG-109M	0.09					
AG-109M	.999					
AG-109M	22.5					
AG-110M	0.66	0.88	0.88-0.65	0.94-0.88	0.94-0.88-0.66	
AG-110M	.93	.72	.72	.999	.34	.999
AG-110M					.34	.999
AG-110G	0.66					
AG-110G	.05					
AG-110G						
AG-111M	0.07					
AG-111M	.999					
AG-111M						
AG-111G	0.34	0.25	0.10-0.25	0.78-0.34		
AG-111G	.061	.011	.001	.999	.062	.999
AG-111G	.0015	.08		0.08		0.015
CD-107	0.85	0.09				
CD-107	.0042	.999				
CD-107		20.3				
CD-111M	0.25	0.15	0.15-0.25			
CD-111M	.999	.999	.999	.999		
CD-111M	0.064	2.32	2.32	0.064		
CD-113M	0.27					
CD-113M	.001					
CD-113M						
CD-115M	0.94	1.30	0.49-0.94	0.78-0.94		
CD-115M	.023	.01	.003	.999	.02	.999
CD-115M						
CD-115G	0.52	0.49	0.23-0.26	0.68-0.52		
CD-115G	.24	.122	.006	.999	.244	.999
CD-115G						
CD-117M	1.53	1.27	0.28-1.27	1.08-1.27	1.08-0.28-1.27	
CD-117M	.999	.999	.999	.999	.999	.999
CD-117M						
IN-113M	0.39					
IN-113M	.999					
IN-113M	0.52					
IN-114M	0.19	0.72	0.72-0.56	0.78-1.30		
IN-114M	.965	.035	.035	.999	.0015	.999
IN-114M	4.3					
IN-114G	1.30					
IN-114G	.0015					
IN-114G						
IN-115M	0.34					
IN-115M	.999					
IN-115M	0.9					
IN-116M	0.15					
IN-116M	.999					
IN-116M	1.0					
IN-116M	1.27	1.09	1.09-1.27	0.41-2.09	0.98-0.41	0.98-0.41-2.09
IN-116M	.83	.57	.57	.999	.32	.999
IN-116M				0.01		0.01
IN-116M					.38	.84
IN-116M						.53

TABLE I (Contd.)

IN-117G	0.57	0.16	0.57-0.16		0.78-0.57	0.78-0.57-0.16
IN-117G	.999	.999	.999 .999		.999 .999	.999 .999
IN-117G		.146		0.146		0.146
SN-113M	0.08					
SN-113M	.91					
SN-113G	0.26					
SN-113G	.018					
SN-113G	0.044					
SN-117M	0.16		0.16-0.16			
SN-117M	.999		.999 .999			
SN-117M	0.10		0.10			
SN-119M	0.07		0.07-0.02			
SN-119M	.999		.999 .999			
SN-119M			6.3			
SN-121M	0.01					
SN-121M	.999					
SN-121M						
SN-123	1.08				0.38-1.08	
SN-123	.02				.02	.999
SN-123						
SN-123	0.16					
SN-123	.999					
SN-123	0.13					
SN-125M	0.33	1.39	1.39-0.33			
SN-125M	.997	.019	.019 .999			
SN-125M						
SN-125G	1.07	1.97	0.81-1.07			
SN-125G	.039	.012	.01 .999			
SN-125G						
SB-122M	0.08	0.06	0.08-0.06			
SB-122M	.999	.999	.999 .999			
SB-122M						
SB-122G	0.56	0.69	0.69-0.56			
SB-122G	.663	.034	.034 .999			
SB-122G						
SB-124M	0.03					
SB-124M	.999					
SB-124M						
SB-124M	0.64	0.51	0.64-0.60			
SB-124M	.999	.999	.999 .999			
SB-124M						
SB-124G	0.60	1.69	1.69-0.60			
SB-124G	.98	.48	.48 .999			
SB-124G						
SB-125	0.43	0.60	0.43-0.04			
SB-125	.31	.24	.31 .999			
SB-125	0.013		0.013 13.2			
TE-121M	0.08	0.21	0.08-0.21			
TE-121M	.95	.95	.95 .999			
TE-121M		0.084		0.084		
TE-121G	0.58		0.51-0.07			
TE-121G	.999		.999 .999			
TE-121G		0.018				
TE-123M	0.16	0.09	0.09-0.16			
TE-123M	.999	.999	.999 .999			
TE-123M	0.19			0.19		

TABLE I (Contd.)

TE-125M	0.11	0.04	0.11-0.04		
TE-125M	.999	.999	.999 .999		
TE-125M	290.0	13.2	290.0 13.2		
TE-127M	0.09	0.67			
TE-127M	.985	.0001			
TE-127G	0.42	0.06	0.36-0.05		
TE-127G	.0083	.0012	.0012 .999		
TE-127G				0.22-0.15-0.06	
				.0005 .02	.999
TE-129M	0.11				
TE-129M	.95				
TE-129M					
TE-129G	0.48	0.72	0.48-0.03		
TE-129G	.16	.03	.16 .999		
TE-129G				1.0B-0.48	
				.16 .999	
TE-131M	0.78	0.84	0.84-0.78		
TE-131M	.80	.40	.40 .999		
TE-131M				0.4B-2.00	
				.43 .999	
TE-131G	0.15	0.45	0.45-0.15		
TE-131G	.80	.20	.20 .999		
TE-131G	0.26		0.26		
I -128	0.46	0.99	0.54-0.46		
I -128	.155	.02	.02 .999		
I -128				1.7B-0.46	
				.155 .999	
I -129	0.04				
I -129	.999				
I -129	24.0			0.2B-0.04	
				.999 .999	
I -130	1.15	0.74	0.74-0.66		
I -130	.47	.53	.53 .999		
I -130				0.74-0.53	
				.53 .999	
I -131	0.36	0.64	0.28-0.08		
I -131	.81	.091	.055 .999		
I -131	0.021		0.043 2.16		
				0.6B-0.36	
				.815 .999	
				0.021	
XE-129M	0.20				
XE-129M	.999				
XE-129M	16.3				
XE-131M	0.16				
XE-131M	.999				
XE-131M	46.0				
XE-133G	0.08		0.08-0.08		
XE-133G	.999		.008 .999		
XE-133G	1.41		1.41		
				0.3B-0.08	
				.99 .99	
				1.41	
XE-135G	0.25	0.60	0.36-0.25		
XE-135G	.97	.03	.0009 .999		
XE-135G	0.062		0.062		
				0.9B-0.25	
				.97 .999	
				0.062	
CS-134M	0.13		0.13-0.01		
CS-134M	.999		.999 .999		
CS-134M	7.15		7.15 200.0		
CS-134G	0.61	0.80	0.80-0.61		
CS-134G	.98	.725	.725 .999		
CS-134G				0.1B-1.37	
				.05 .999	
CS-136	0.83	1.07	0.83-1.07		
CS-136	.999	.84	.84 .999		
CS-136				0.57-0.80-0.61	
				.115 .999	
				0.01	
CS-137	0.66				
CS-137	.95				
CS-137	0.11				

TABLE I (Contd.)

BA-131	0.50	0.12	0.50-0.12		
BA-131	.40	.55	.40 .999		
BA-131	0.015	0.53	0.015 0.53		
BA-133G	0.36	0.08	0.27-0.16	0.36-0.08	
BA-133G	.60	.92	.05 .11	.60 .999	
BA-133G	0.02	1.73	0.106 0.5	0.02 1.73	
BA-139	0.17			2.2B-0.17	
BA-139	.32			.32 .999	
BA-139	0.23			0.23	
LA-140	1.60	0.49	0.49-1.60	0.82-1.60	2.2B-1.60
LA-140	.999	.50	.50 .999	.45 .999	.07 .999
LA-140		.01	0.01		0.33-0.49-1.60 .45 .999 .999
CE-137M	0.25				0.046 0.01
CE-137M	.994				
CE-137M	6.72				
CE-137G	0.45	0.01	0.45-0.01		EC -0.45
CE-137G	.03	.999	.03 .999		.03 .999
CE-137G	0.014	140.0	0.014 140.0		0.014 0.014
CE-139M	0.75				EC -0.45-0.01
CE-139M	.999				
CE-139M	0.08				
CE-139G	0.17				
CE-139G	.999				
CE-139G	0.25				
CE-141	0.15			0.4B-0.15	
CE-141	.70			.70 .999	
CE-141	0.447			0.447	
CE-143	0.29	0.06	0.29-0.06		1.1B-0.29
CE-143	.43	.73	.43 .999		.40 .999
CE-143	0.035	11.8	0.035 11.8		0.035 .12 .999 .999
PR-142	1.57			0.6B-1.57	
PR-142	.04			.04 .999	
PR-142					
ND-147	0.53	0.09	0.32-0.09		0.8B-0.09
ND-147	.20	.77	.20 .999		.77 .999
ND-147	0.015	1.89	0.04 1.89		0.12-0.32-0.09 1.89 0.66 0.04 1.89
ND-149	0.21	0.11		1.5B-0.11	
ND-149	.41	.54		.31 .999	
ND-151	1.00	0.60			
ND-151	.999	.999			
ND-151	ND-151				
PM-145	0.07				
PM-145	.12				
PM-145	3.4				
PM-148G	1.46	0.55	0.91-0.55		1.0B-1.46
PM-148G	.24	.31	.17 .999		.24 .999
PM-148G					
PM-149	0.29			0.8B-0.29	
PM-149	.03			.03 .999	
PM-149	0.18			0.18	
PM-151	0.34	0.06	0.28-0.07		0.9B-0.34
PM-151	.21	.14	.064 .999		.21 .999
PM-151	0.01		0.024		.39 .0.01 .21 .999
SM-145	0.06				
SM-145	.92				
SM-145	6.2				

TABLE I (Contd.)

SM-153	0.10	0.07	0.07-0.10		0.78-0.10	0.68-0.07-0.10
SM-153	.78	.32	.32 .999		.456 .999	.334 .96 .999
SM-153	1.7	5.27	5.27 1.7		1.7	5.27 1.7
SM-155	0.10	0.25	0.14-0.10		1.58-0.10	1.48-0.14-0.10
SM-155	.96	.04	.01 .999		.95 .999	.05 .20 .999
SM-155	0.43	1.0	0.16 0.43		0.43	0.16 0.43
EU-152M	0.84	0.96	0.84-0.12		1.68-0.34	
EU-152M	.11	.09	.11 .999		.02 .999	
EU-152M						
EU-152G	1.41	0.34	1.41-0.12	0.78-0.34	0.78-0.78	0.78-0.78-0.34
EU-152G	.25	.26	.25 .999	.12 .999	.12 .999	.12 .999 .999
EU-152G		0.037	1.65	0.037		0.037
EU-154	1.28	0.12	1.28-0.12	0.73-0.88	0.68-1.28	0.68-1.28-0.12
EU-154	.35	.97	.35 .999	.21 .999	.35 .999	.35 .999 .999
EU-154		1.2	1.2			1.2
EU-155	0.09	0.11	0.02-0.09			
EU-155	.45	.25	.18 .999			
EU-155	0.58	0.34	0.58			
GD-153	0.10	0.10	0.07-0.10			
GD-153	.56	.38	.16 .999			
GD-153						
GD-159	0.06	0.36	0.23-0.08		0.68-0.36	0.23-0.08-0.06
GD-159	.24	.12	.003 .999		.13 .999	.003 .999 .999
GD-159	6.0	0.01	0.04		0.01	0.04 6.0
GD-161	0.36	0.06	0.36-0.06	0.10-0.32	1.68-0.36	1.68-0.36-0.06
GD-161	.60	.73	.60 .999	.12 .89	.60 .999	.91 .83 .999
GD-161	0.02	15.0	0.02 15.0	0.26 0.12	0.02	0.02 15.0
TB-160	0.88	0.30	0.30-0.88		0.68-0.30	0.30-0.88-0.00
TB-160	.288	.247	.21 .57		.209 .999	.209 .57 .009
TB-160		0.015	0.015		0.015	0.015 4.52
TB-161	0.05	0.06	0.05-0.03			0.06-0.05-0.03
TB-161	.72	.30	.72 .999			.30 .82 .999
TB-161	12.5	8.0	12.5 2.2			8.0 12.5 2.2
DY-159	0.06				EC -0.06	
DY-159	.26				.26 .999	
DY-159	8.5				8.5	
DY-165M	0.11	0.52			0.98-0.52	
DY-165M	.97	.022			.022 .999	
DY-165M	4.0					
DY-165G	0.10		0.63-0.36			
DY-165G	.15		.014 .999			
DY-165G	3.1		0.02 0.27			
HO-166G	1.38	0.08	1.38-0.08		1.88-0.08	0.67-0.71-0.08
HO-166G	.0093	.48	.0093 .999		.475 .999	.0003 .999 .999
HO-166G		11.0	11.0		11.0	11.0
ER-163	0.43	1.10				
ER-163	.06	.04				
ER-163						
ER-167M	0.21					
ER-167M	.999					
ER-167M	0.6					
ER-169	0.01					
ER-169	.42					
ER-169	69.0					
ER-171	0.30	0.11	0.30-0.11		1.18-0.30	1.08-0.31-0.11
ER-171	.93	.93	.93 .999		.93 .999	.93 .999 .999
ER-171	0.015	1.16	0.015 1.16		0.015	1.16

TABLE I (Contd.)

TM-170	0.08			0.98-0.08	
TM-170	.24			.999	
TM-170	1.31			1.31	
TM-171	0.07			0.07B-0.07	
TM-171	.02			.999	
TM-171					
YB-169G	0.11	0.20	0.20-0.11	0.06-0.20	0.06-0.20-0.12
YB-169G	.59	.49	.49	.999	.55 .49 .999
YB-169G	2.12	0.4	.4	2.12	0.17 0.4
YB-175G	0.40	0.11	0.28-0.11	0.1B-0.40	0.1B-0.28-0.11
YB-175G	.10	.10	.10	.999	.10 .999 .100 .999 .999
YB-175G	0.059	3.08	0.046	3.08	0.059 0.046 3.08
YB-177G	0.15	0.12	0.95-0.14	1.2B-0.15	0.95-0.14-0.15
YB-177G	.07	.02	.04	.999	.07 .999 .04 .999 .999
YB-177G	0.45	1.3		0.7	0.45 0.7
LU-176M	0.09			1.1B-0.09	
LU-176M	.999			.999 .999	
LU-176M	14.5			14.5	
LU-177G	0.32	0.11	0.21-0.11	0.2B-0.32	
LU-177G	.07	.03	.07	.999	.07 .999 .02
LU-177G	0.02	.83	0.051	0.83	
HF-181	0.48	0.13	0.13-0.48	0.4B-0.48	0.4B-0.13-0.48
HF-181	.82	.86	.86	.85	.82 .82 .92 .999 .855
HF-181	0.027	0.50	0.50	0.027	0.027 0.50 0.027
TA-182M	0.36	0.15			
TA-182M	.95	.95			
TA-182M	4.0	1.0			
TA-182G	1.12	1.23	0.22-1.23	1.12-0.10	0.07-1.12-0.10
TA-182G	.33	.40	.11	.999	.33 .999 .34 .54 .999
TA-182G					
W -181	0.15			EC -0.16	
W -181	.0012			.0012 .999	
W -181	1.13			1.13	
W -185G	0.13				
W -185G	.0002				
W -185G					
W -187	0.69	0.13	0.55-0.13		0.48-0.07-0.13
W -187	.70	.70	.70	.999	.70 .999 .999
W -187		2.59		2.59	2.59
RE-186G	0.14	0.12	0.63-0.14	EC -0.12	
RE-186G	.231	.017	.0007	.999	.0166 .999
RE-186G	0.86				
RE-188G	0.16	0.63	0.48-0.16	2.0B-0.16	0.83-0.48-0.16
RE-188G	.20	.006	.004	.999	.20 .999 .0036 .40 .999
RE-188G	0.90		0.023	0.90	0.90 0.023 0.90
OS-185	0.65	0.88	0.23-0.65	0.59-0.13	0.16-0.59-0.12
OS-185	.80	.074	.013	.999	.009 .212 .999
OS-185	0.013		0.133	0.013	0.016 5.71 0.016 5.71
OS-191M	0.07				
OS-191M	.999				
OS-191M					
OS-191G	0.13	0.04	0.04-0.13		
OS-191G	.999	.999	.999	.999	
OS-191G	3.0				
OS-193	0.14	0.07	0.32-0.14	1.0B-0.14	0.7B-0.32-0.14
OS-193	.12	.085	.017	.999	.087 .999 .074 .23 .999
OS-193	1.53		0.18	1.53	1.53 0.18 1.53

TABLE I (Contd.)

IR-191M	0.08	0.13	0.04-0.13			
IR-191M	.999	.999	.999 .999			
IR-191M		1.73		1.73		
IR-192M	0.06					
IR-192M	.999					
IR-192M	3400.					
IR-192G	0.32	0.47	0.47-0.32	0.59-0.61		0.42-0.47-0.32
IR-192G	.80	.48	.48 .999	.048 .999		.014 .999 .999
IR-192G	0.085	0.031	0.031	0.085 0.015 0.024		0.019 0.031 0.085
IR-194G	0.33		0.29-0.33	0.64-0.33	1.9B-0.33	0.65-0.29-0.33
IR-194G	.23		.025 .999	.024 .82	.205 .999	.0275 .82 .999
IR-194G	0.063		0.087 0.063	0.014 0.063	0.063	0.014 0.087 0.063
PT-193M	0.14	0.01	0.14-0.01			
PT-193M	.999	.999	.999 .999			
PT-193M	90.0		90.0			
PT-197G	0.08	0.19	0.19-0.08		0.7B-0.08	0.5B-0.19-0.08
PT-197G	.99	.09	.09 .999		.90 .999 .09	.999 .999 .999
PT-197G	3.4	2.34	2.34 3.4		3.4	2.34 3.4
PT-199G	0.20		0.20-0.32		1.3B-0.32	0.4B-0.32-0.20
PT-199G	.999		.999 .999		.999 .999	.999 .999 .999
PT-199G						
AU-198	0.41	0.68	0.68-0.41		1.0B-0.41	0.3B-0.68-0.41
AU-198	.99	.0082	.0082 .999		.99 .99 .01	.82 .999 .999
AU-198	0.041	0.035	0.035 0.041		0.041	0.035 0.041
AU-199	0.21	0.16	0.05-0.16		0.3B-0.16	0.3B-0.05-0.16
AU-199	.18	.75	.053 .999		.70 .999 .23	.23 .999 .999
AU-199	.091	0.78	18.0 0.78		0.78	18.0 0.78
HG-197M	0.16	0.13	0.16-0.13			
HG-197M	.965	.965	.965 .999			
HG-197M	350.0	2.1	350.0 2.1			
HG-197G	0.19	0.08	0.19-0.08			
HG-197G	.017	.999	.017 .999			
HG-197G	2.34	3.4	2.34 3.4			
HG-199M	0.37	0.16				
HG-199M	.999	.999				
HG-199M	1.79	0.25				
HG-203	0.28				0.2B-0.28	
HG-203	.999				.999 .999	
HG-203	0.23				0.23	
HG-205	0.21				1.4B-0.21	
HG-205	.999				.999 .999	
HG-205						
BI-210M	0.26	0.30			4.9A-0.26	
BI-210M	.59	.35			.59 .999	
BI-210M	0.25	0.30			0.25	
RA-227	0.29	0.50				
RA-227	.04	.006				
AC-228	0.06	0.91	0.13-0.21	0.06-0.13	2.1B-0.06	0.06-0.13-0.21
AC-228	.70	.25	.105 .999	.70 .999	.10 .999	.70 .999 .999
AC-228						
TH-228	0.08	0.21	0.08-0.14			0.08-0.14-0.17
TH-228	.016	.0027	.016 .999			.016 .999 .999
TH-228						
TH-231	0.03	0.08	0.03-0.14	0.08-0.14	0.3B-0.08	0.08-0.14-0.16
TH-231	.125	.11	.125 .999	.11 .999	.44 .999	.11 .999 .999
TH-231						

TABLE I (Contd.)

TH-233	0.09	0.45		
TH-233	.027	.01		
TH-233	0.9			
PA-232	0.89	0.97		
PA-232	.21	.41		
PA-232				
PA-233	0.31			
PA-233	.80			
PA-233	0.74			
U -232	0.06	0.13	0.06-0.13	
U -232	.0021	.0008	.0021 .999	
U -232				
U -234	0.05	0.12		
U -234	.28	.003		
U -234				
U -235	0.19	0.14	0.20-0.19	0.20-0.14
U -235	.55	.12	.04 .999	.04 .999
U -235				
U -237	0.06	0.21	0.06-0.21	
U -237	.36	.24	.36 .999	.36 .999
U -237				
NP-237	0.03	0.09	0.03-0.14	0.09-0.14
NP-237	.12	.18	.12 .999	.18 .999
NP-237				
NP-239	0.11	0.28	0.07-0.21	0.4B-0.28
NP-239	.50	.31	.09 .999	.16 .999
NP-239	0.23			
PU-238	0.04			
PU-238	.038			
PU-238	740.0			
PU-243	0.08	0.04		
PU-243	.21	.01		
PU-243				
AM-241	0.06	0.03	0.04-0.06	0.04-0.06-0.03
AM-241	.40	.028	.0007 .999	.0007 .999 .999
AM-241				
AM-242M	0.05			
AM-242M	.999			
AM-242M				
CM-242	0.04			
CM-242	.0003			
CM-242				
CM-245	0.17	0.13		
CM-245	.14	.05		
CM-245				
ES-253	0.04	0.39		6.2A-0.39
ES-253	.0004	.0005		.0004 .999
ES-253				
FM-255	0.06	0.08		
FM-255	.01	.01		
FM-255				

## DISCUSSION

Table II compares our calculated results for single-gamma counting with the experimental data of Anders<sup>9</sup> and Yule.<sup>10</sup> The experimental conditions of Anders were: a flux of  $10^8$  moderated neutrons/sec-cm<sup>2</sup>, irradiation time of 5 min, cooling time of 1 min (or otherwise indicated), and source-to-detector distance of 1.8 cm. His data are converted to correspond to our 5-min irradiation-time results. Yule's experimental conditions were:  $4.3 \times 10^{12}$  neutrons/sec-cm<sup>2</sup>, irradiation time 1 hr, and counting geometry of 31% with a 1/2-in. polystyrene absorber between the source and the detector. Yule's data are converted to match our 50-min irradiation-time results. Gamma attenuation in polystyrene is assumed to follow that in aluminum.<sup>11</sup> No correction is made for the difference of 60 and 50 min of irradiation.

TABLE II. Comparison of Detection Sensitivities for Single-gamma Counting

Target Element	Product Nuclide	Gamma Energy, MeV	Present Result per Anders*	Present Result per Yule**	Remarks
O	O <sup>19</sup>	0.20		< 2.4	
F	F <sup>20</sup>	1.63		1.4	
Na	Na <sup>24</sup>	1.37 2.76	1.6 1.9	1.6	
Mg	Mg <sup>27</sup>	0.84 1.02	1.1 1.8	0.91	
Al	Al <sup>28</sup>	1.78	1.5	1.8	
Si	Si <sup>31</sup>	1.26	0.004	0.3	Very small gamma branching
S	S <sup>37</sup>	3.1		1.1	
Cl	Cl <sup>38g</sup>	1.64 2.15	2.0 3.2	1.2	
Ar	Ar <sup>41</sup>	1.29		1.0	
K	K <sup>42</sup>	1.53	1.6	1.0	
Ca	Ca <sup>49</sup>	3.1		1.9	
Sc	Sc <sup>46m</sup> Sc <sup>46g</sup>	0.14 0.89	4.4	4.6 1.3	
Ti	Ti <sup>51</sup>	0.32	1.5	1.6	
V	V <sup>52</sup>	1.47	1.6	2.0	
Cr	Cr <sup>51</sup>	0.32		1.0	
Mn	Mn <sup>56</sup> Mn <sup>56</sup>	0.84 0.84	1.7 0.5	1.6	
Fe	Fe <sup>59</sup>	1.09		1.2	
Co	Co <sup>60m</sup> Co <sup>60g</sup>	0.06 1.33 1.17	< 2.4 2.2	< 7	No correction for self-absorption of gamma
Ni	Ni <sup>65</sup>	1.12 1.49	> 0.68 < 1.5	< 1.3	Part of the 1.49 level decays to the 1.12 level
Cu	Cu <sup>64</sup> Cu <sup>66</sup>	0.51 1.04		1.2 40	
Zn	Zn <sup>69m</sup> Zn <sup>65</sup>	0.44 1.12	2.4	1.5 0.64	Anders included Zn <sup>71</sup>
Ga	Ga <sup>72</sup>	0.84 2.50	0.83 1.0	0.74	
Ge	Ge <sup>75m</sup> Ge <sup>75</sup>	0.13 0.26	< 0.65	< 3.3	o not available
As	As <sup>76</sup>	0.56	< 1.9	< 1.3	Gamma branching not well known
Se	Se <sup>77m</sup> Se <sup>81m</sup> Se <sup>75</sup>	0.16 0.10 0.27	< 11	< 9.2 0.56 > 0.26	o not available Some gammas are from Se <sup>81g</sup>
Br	Br <sup>80</sup> Br <sup>82</sup>	0.64 0.55	2.8	5.6 < 2.2	Gamma branching not available

\*o = internal conversion coefficient

TABLE II (Contd.)

Target Element	Product Nuclide	Gamma Energy, MeV	Present Result per Anders <sup>a</sup>	Present Result per Yule <sup>b,c</sup>	Remarks
Rb	Rb <sup>86m</sup>	0.56	2.4	0.72	Gamma branching not well known
	Rb <sup>86g</sup>	1.08		1.2	
	Rb <sup>88</sup>	1.85		0.9	
Sr	Sr <sup>87m</sup>	0.39	3.2	0.7	Very small gamma branching
	Sr <sup>85m</sup>	0.23		1.9	
Zr	Zr <sup>97</sup>	0.75	> 0.35		Some gamma from Zr <sup>97</sup>
		0.75 + 0.67		0.11	
Nb	Nb <sup>94m</sup>	0.87	0.31	0.26	Very small gamma branching
	Nb <sup>101</sup>	0.19	0.8	1.3	
Mo	Mo <sup>99</sup>	2.04	1.4		Some gamma from Mo <sup>99</sup>
	Mo <sup>99</sup>	0.14		1.5	
	Mo <sup>101</sup>	0.73	1.3	0.91	
Ru	Ru <sup>103</sup>	0.5		1.5	Some gamma from Ru <sup>103</sup>
	Ru <sup>97</sup>	0.22		0.6	
	Ru <sup>105g</sup>	0.31		0.03	
Rh	Rh <sup>104m</sup>	0.05	0.22	16	Some gamma from Rh <sup>104m</sup>
	Rh <sup>104</sup>	0.56	2.4	3.5	
Pd	Pd <sup>109m</sup>	0.18	2.5	1.7	Some gamma from Pd <sup>109m</sup>
	Pd <sup>109g</sup>	0.09		2.9	
Ag	Ag <sup>110</sup>	0.66	< 1.6	< 1.0	Some gamma from Ag <sup>110</sup>
	Ag <sup>110m</sup>	0.66		0.72	
	Ag <sup>108</sup>	0.63		1.7	
Cd	Cd <sup>111m</sup>	0.24	1.5	0.10	Some gamma from Cd <sup>117</sup> possible
	Cd <sup>115g</sup>	0.34		0.08	
In	In <sup>116m</sup>	1.27	2.4	1.6	Some gamma from In <sup>116m</sup>
	In <sup>116</sup>	2.1	2.2		
Sn	Sn <sup>125m</sup>	0.33	1.4	1.7	Some gamma from Sn <sup>125m</sup>
	Sn <sup>123</sup>	0.15		1.3	
Sb	Sb <sup>122m</sup>	0.06	< 12		Some gamma from Sb <sup>122m</sup> possible
	Sb <sup>122</sup>	0.51 + 0.66	0.33		
	Sb <sup>124</sup>	0.57		0.5	
Te	Te <sup>131g</sup>	0.60		0.3	Some gamma from Te <sup>131g</sup> possible
	Te <sup>131</sup>	0.15	2.1	1.9	
I	I <sup>131</sup>	0.45	1.7		Some gamma from I <sup>131</sup>
	I <sup>128</sup>	0.36		0.5	
Cs	Cs <sup>134m</sup>	0.13	2.2	0.8	Some gamma from Cs <sup>134m</sup>
	Cs <sup>134g</sup>	0.61		0.8	
Ba	Ba <sup>139</sup>	0.16	1.4	1.9	
La	La <sup>140</sup>	0.50	1.5		Gamma branchings not well known
	La <sup>140</sup>	1.60	< 1.6	< 1.6	
Ce	Ce <sup>139m</sup>	0.74		0.2	Some gamma from Ce <sup>143</sup> possible
	Ce <sup>143</sup>	0.29		0.7	
	Ce <sup>141</sup>	0.14		0.7	
Pr	Pr <sup>142</sup>	1.57	2.1	1.1	
Nd	Nd <sup>147</sup>	0.09		2.6	Gamma branchings not well known
	Nd <sup>151,149</sup>	0.11	< 3.5	0.52	
	Nd <sup>149</sup>	0.21		< 3.0	
Sm	Sm <sup>153,155</sup>	0.11	6.8	1.0	Some gamma from Sm <sup>153,155</sup>
	Sm <sup>155</sup>	0.24	4.0		
	Sm <sup>155</sup>	0.10		1.0	
Eu	Eu <sup>152m</sup>	0.84	4.7		
		0.96	4.7	1.0	
Gd	Gd <sup>161</sup>	0.05	0.6		Assumed Yule included Gd <sup>161</sup>
	Gd <sup>159,161</sup>	0.36	2.9	< 7.8	
Tb	Tb <sup>160</sup>	0.30	0.63	0.7	
		0.88 - 0.97	0.46		
Dy	Dy <sup>165m</sup>	0.11	31	14	Assumed Yule included Dy <sup>165m</sup>
	Dy <sup>165g</sup>	0.52	14	2.0	
Ho	Ho <sup>166</sup>	0.08	0.57	0.52	Assumed Yule included Ho <sup>166</sup>
	Ho <sup>166</sup>	1.38	1.2	0.9	

TABLE II (Contd.)

Target Element	Product Nuclide	Gamma Energy, MeV	Present Result per Anders*	Present Result per Yule**	Remarks
Er	Er <sup>171</sup>	0.30	2.8	1.1	
	Er <sup>167m</sup>	0.21		4.7	
Tm	Tm <sup>170</sup>	0.08	1.3	14	
	Yb <sup>177</sup>	0.13	1.0	1.0	
	Yb <sup>175</sup>	0.40		1.0	
Lu	Yb <sup>169</sup>	0.18		2.1	
	Lu <sup>176m,177</sup>	0.08	0.92	1.1	
	Lu <sup>177</sup>	0.20	<0.53	<1.3	Gamma branching not available
Hf	Hf <sup>181</sup>	0.48		0.54	
Ta	Ta <sup>182m</sup>	0.17	<2.5	<1.1	Gamma branching not available Anders reported as Ta <sup>182m</sup>
	Ta <sup>182g</sup>	1.12	0.4	0.26	
W	W <sup>187</sup>	0.07	<4.1		Gamma branchings and $\sigma$ not available
		0.48	<2.8	1.4	Gamma branchings and $\sigma$ not available
Re	Re <sup>186</sup>	0.14		1.3	
	Re <sup>188g</sup>	0.16		1.7	
Ir	Ir <sup>192m</sup>	0.06	1.4		
	Ir <sup>194</sup>	0.30	1.5	1.0	
	Ir <sup>192g</sup>	0.32		0.9	
Pt	Pt <sup>199g</sup>	0.19	<14		$\sigma$ and gamma branchings not available
		0.54	<8.1		
Au	Au <sup>199</sup>	0.32		<16	$\sigma$ and gamma branchings not available
		0.16		0.6	
Hg	Au <sup>198</sup>	0.41	1.9	0.5	$\sigma$ and gamma branchings not available
	Hg <sup>199m</sup>	0.16	0.55	0.13	
Hg	Hg <sup>205</sup>	0.37	0.35	0.3	$\sigma$ and gamma branchings not available
	Hg <sup>197m</sup>	0.20		<<16	
	Hg <sup>197g</sup>	0.13		0.6	
	Hg <sup>203</sup>	0.19		0.7	
Th	Th <sup>233</sup>	0.07	0.46	0.57	
		0.46			

\*Anders' values have been converted to meet the conditions of 5-min irradiation time of our calculations.

\*\*Yule's values have been converted to meet the conditions of 60-min irradiation time of our calculations.

Some of the gamma rays observed by Anders are not listed in the decay schemes in the Nuclear Data Sheets.<sup>1</sup> No cross-section values are available for the production of a few isotopes reported by Anders and Yule.

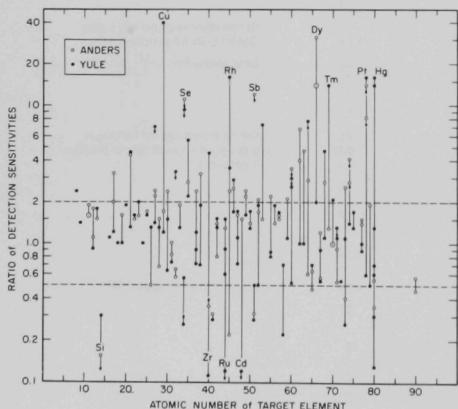


Fig. 1. Ratios of Our Calculated Detection Sensitivities for Single-gamma Counting to the Experimental Data of Anders and Yule

Figure 1 summarizes the comparison in Table II. In the experiments by both Anders and Yule, no corrections were made for self-shadowing of neutron flux and self-absorption of gamma rays by the target matrix. The extent of these effects depends upon the individual elements. Epithermal neutrons were likely to be present in their irradiation environments; therefore resonance absorption of these neutrons could have lowered their experimental values on detection sensitivities. On the other hand, neither Anders nor Yule performed

radiochemical separations on the irradiated samples. Additional gamma activities could have arisen from unexpected nuclides in the samples and given high experimental values.

Certain high ratios of our values to those of Anders and Yule, such as for platinum, may be explained by the fact that the gamma branchings of the isotopes produced are not well understood, and our calculations often assumed 100% transition for these cases. It is also possible that some of the high ratios for Sm, Eu, Gd, and Dy may be due to the very large absorption cross sections<sup>2</sup> of these elements. The ratios of our values to those of Anders and Yule for Si and Nb are below 0.5. In both cases, the gamma branchings are very small, so that gamma activities from impurities in the samples could produce the observed high experimental sensitivities. Similarly, the low ratios of Cd, Sb, and Ce may also be explained by the fact that the energies of the observed gamma rays from different isotopes of the same elements are not easily distinguished. The internal-conversion coefficients of the low-energy gamma rays in several isotopes are not available, and these isotopes should have lower calculated sensitivities than those reported in the present compilation. For example, the 0.21-MeV gamma of Hg<sup>203</sup> is highly converted, and the gamma branching that was used was a value of 100% (in absence of a better value). In using our compilation, one must bear in mind the above considerations. Table I lists the input parameters in our calculation.

#### SUMMARY

In summary, many of our values of detection sensitivities for single-gamma counting agree with the experimental data of Anders and Yule to a factor of 2, and most to better than a factor of 10.

We believe that the present compilation is useful in many aspects. Among them are:

1. Identification, prediction, and estimation of the amount of induced radioactivities and interferences.
2. Comparison of the relative detection sensitivities of the chemical elements.
3. Feasibility of nondestructive or radiochemical analysis.
4. Selection of counting techniques.
5. Selection of irradiation and cooling times.
6. Choice of target matrix.

As further aids to these applications, some of the calculated sensitivities are plotted as a function of time of irradiation in Figs. 2-6. Most of the results plotted are the maximum sensitivities for the target element

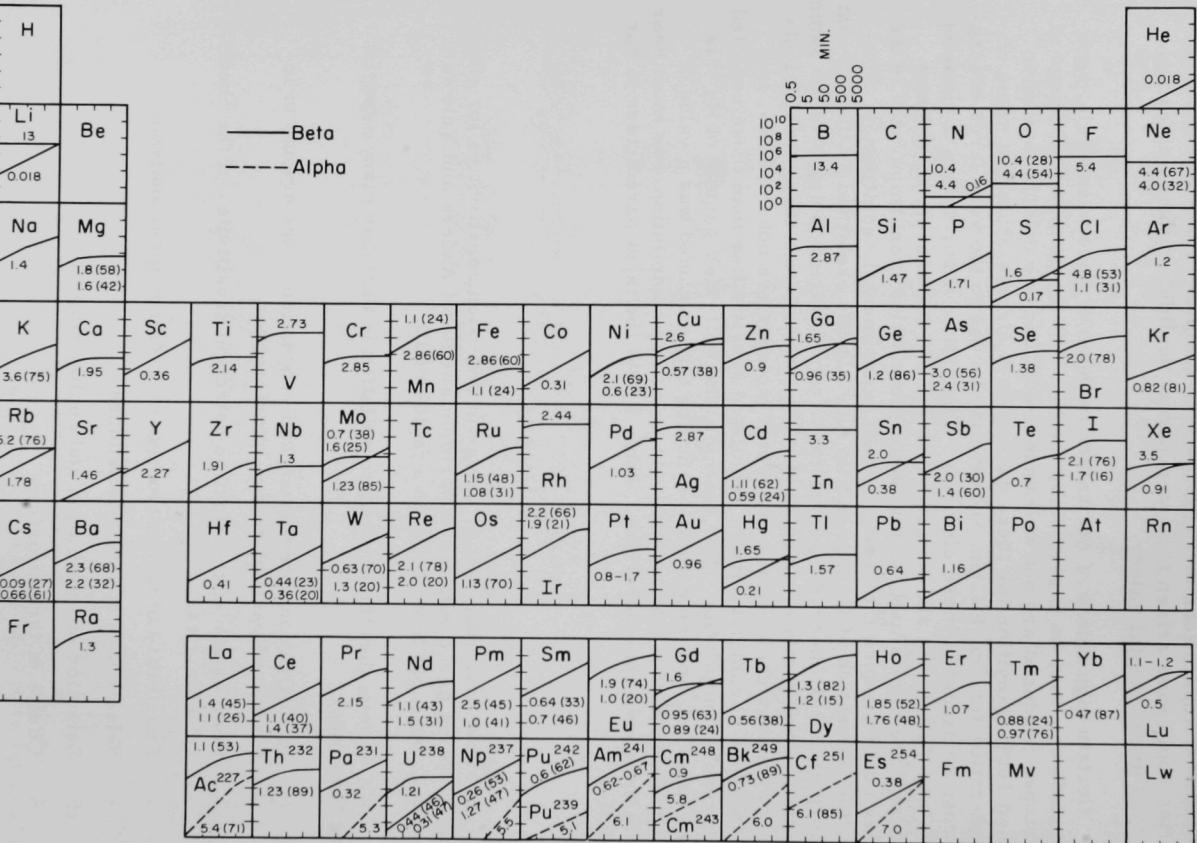


Fig. 2. Detection Sensitivities for  $4\pi$  Beta and Alpha Countings. Detection sensitivities are expressed in disintegrations per minute per microgram of target element (or isotope, if so indicated). Energies are given in MeV with branchings (percents) in parentheses. Branchings over 90% are not shown. Not all energies are indicated.

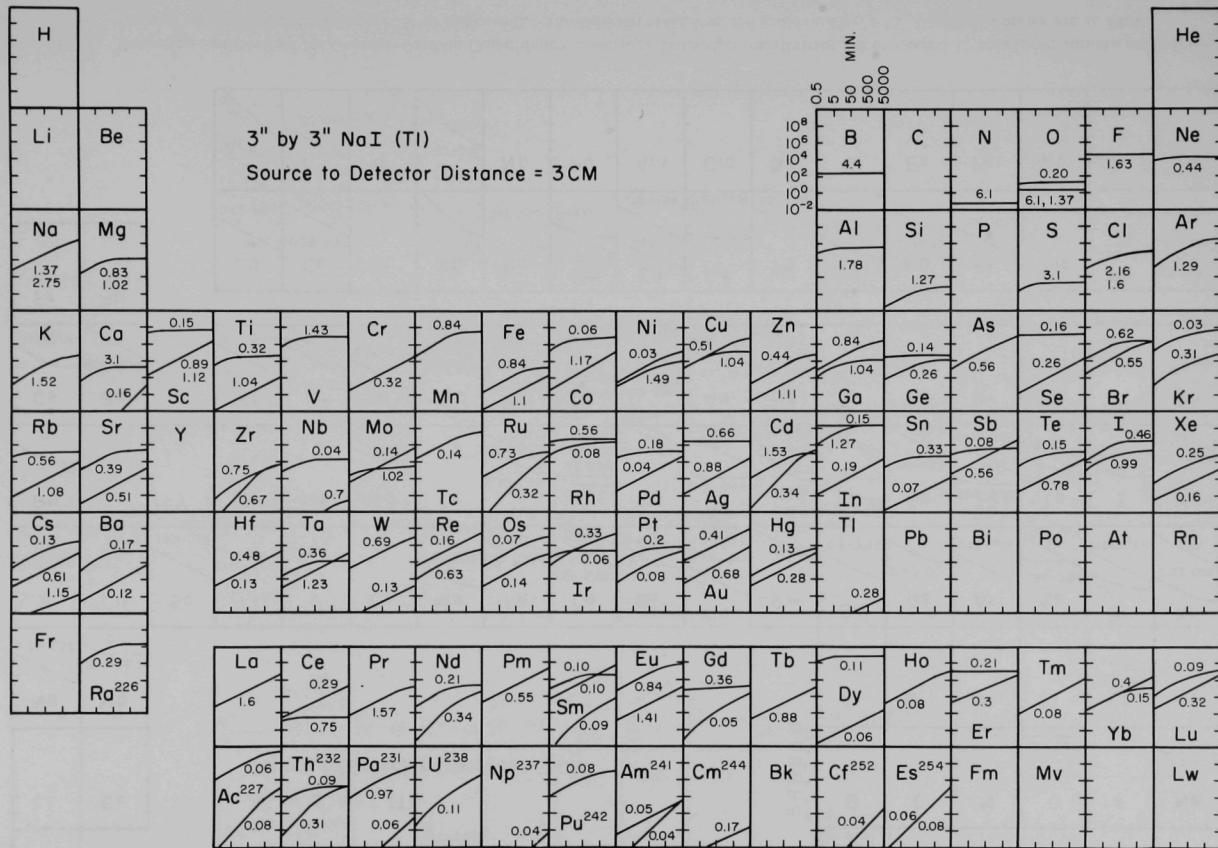


Fig. 3. Detection Sensitivities for Single-gamma Counting. Detection sensitivities are expressed in counts per minute per microgram of target element (or isotope, if so indicated). Gamma energies are given in MeV.

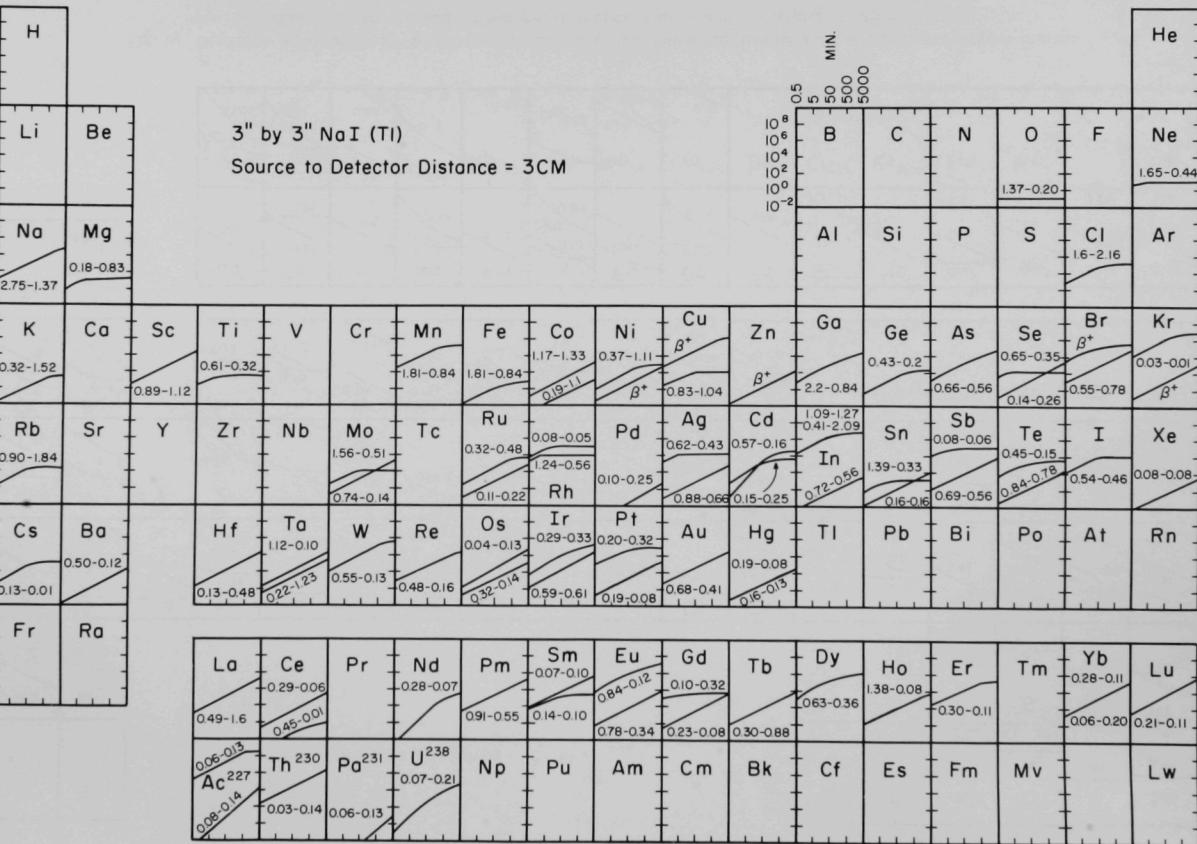


Fig. 4. Detection Sensitivities for Gamma-Gamma Coincidence Counting. Detection sensitivities are expressed in counts per minute per microgram of target element (or isotope, if so indicated). Annihilation radiations are indicated by  $\beta^+$ . Gamma energies are in MeV.

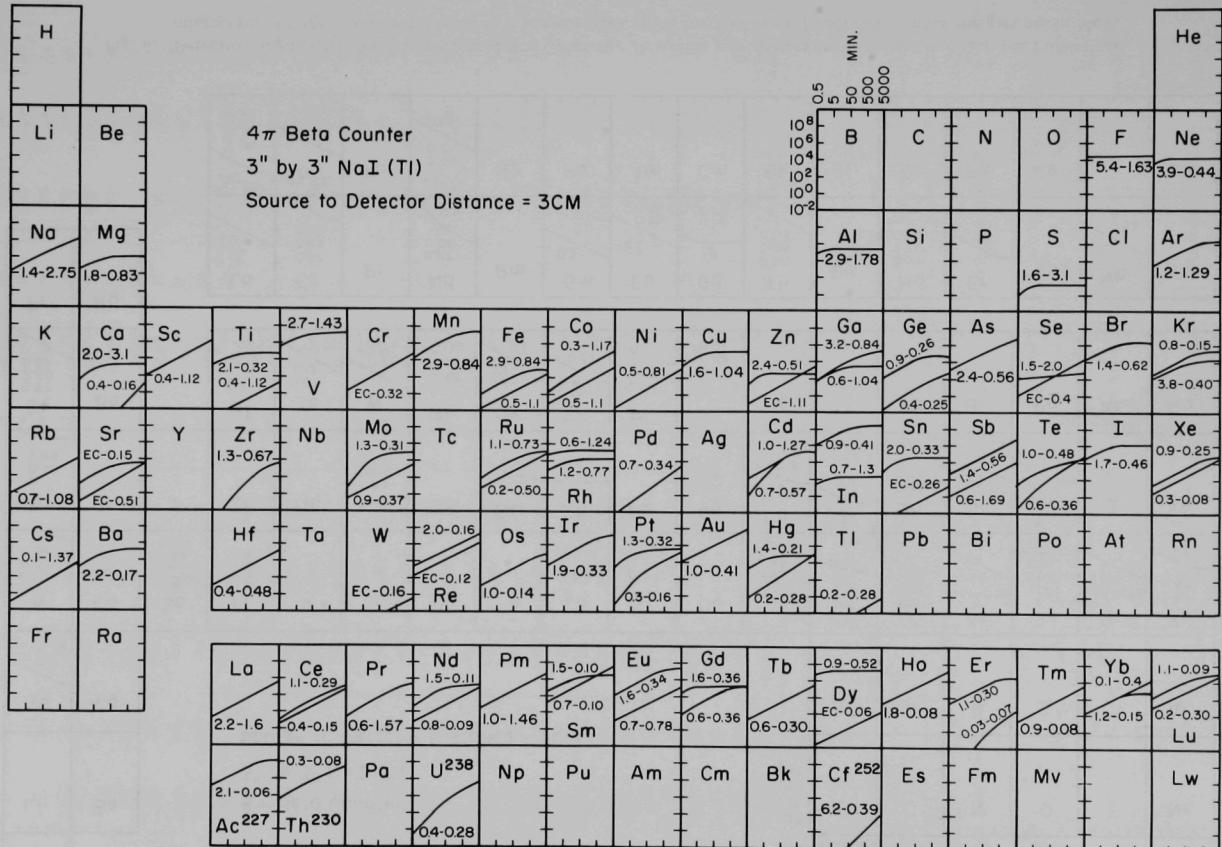


Fig. 5. Detection Sensitivities for Beta-Gamma Coincidence Counting. Detection sensitivities are expressed in counts per minute per microgram of target element (or isotope, if so indicated). The first number refers to beta energy (alpha for  $\text{Cl}^{252}$ ), and the second to gamma energy, all in MeV.

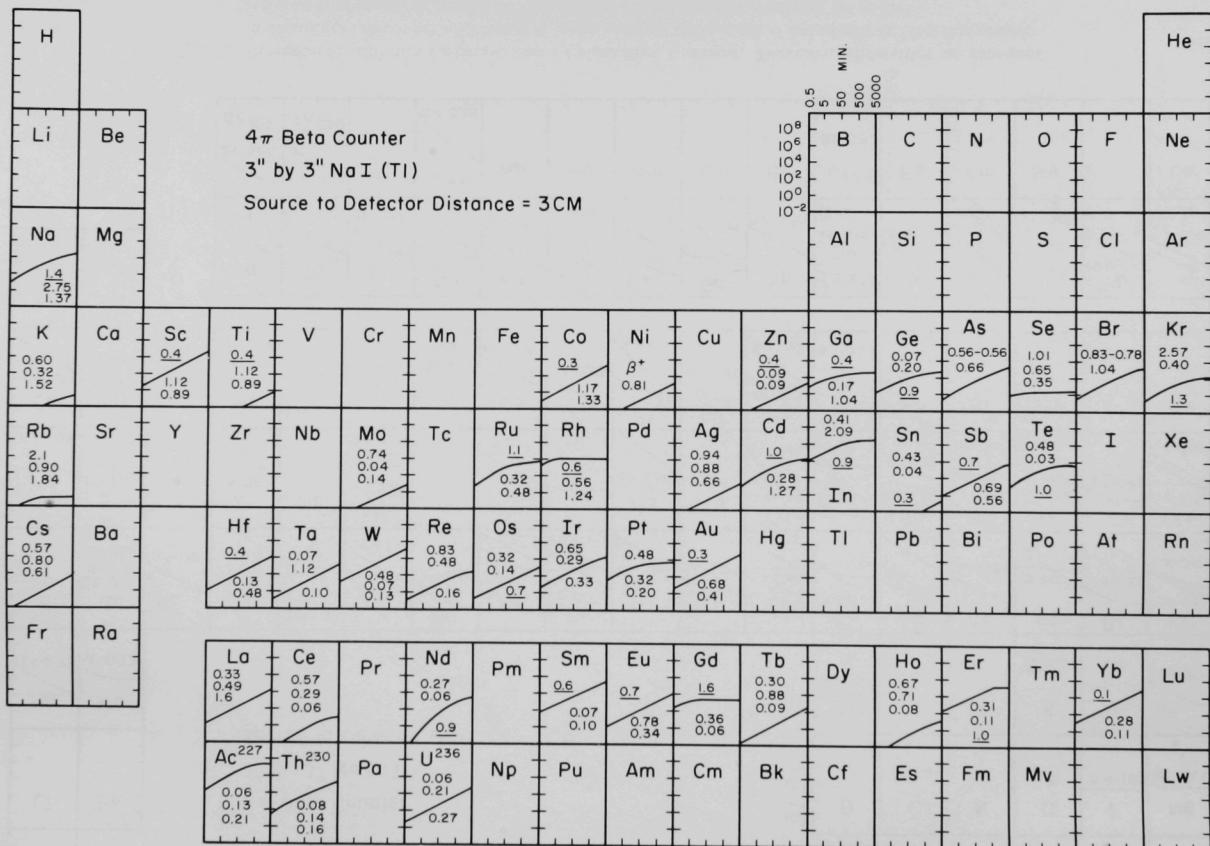


Fig. 6. Detection Sensitivities for Triple-coincidence Counting. Detection sensitivities are expressed in counts per minute per microgram of target element (or isotope, if so indicated). Beta energies (underlined) and gamma energies are in MeV.

(or isotope). Not all the results are presented in these figures. The usefulness of these figures is obvious. We have also plotted the decay half-lives versus coincidence-gamma energies in Figs. 7 and 8, and the decay half-lives versus sum of coincidence gamma energies in Figs. 9 and 10, for the product nuclides considered in this report. The numbers in these four figures refer to the nuclides listed in Table III. Not all the known coincidences are shown. We have not included a figure of decay half-lives versus single-gamma energies here, since this information is readily available elsewhere.<sup>12</sup>

Figures 9 and 10 are especially useful for sum-coincidence counting.<sup>13</sup> The detection sensitivities for sum-coincidence counting may be obtained from those for gamma-gamma coincidence counting by correcting for the difference in the counting efficiencies of the gamma energies involved. For this correction, we have included the counting efficiencies (including the peak-to-total adjustment) versus gamma energies<sup>7</sup> in Fig. 11.

TABLE III. Identification of the Nuclides in Figs. 7-10

Number	Nuclide	Half-life	Number	Nuclide	Half-life	Number	Nuclide	Half-life	Number	Nuclide	Half-life
1	O <sup>19</sup>	29 s	35	Rb <sup>88</sup>	18 m	69	Tc <sup>123m</sup>	104 d	103	Yb <sup>169g</sup>	32 d
2	Ne <sup>23</sup>	38 s	36	Mn <sup>93m</sup>	6.9 h	70	Tc <sup>125m</sup>	58 d	104	Yb <sup>175g</sup>	4.1 d
3	Na <sup>24</sup>	15 h	37	Nb <sup>92g</sup>	10 d	71	Tc <sup>127g</sup>	9.3 h	105	Yb <sup>177g</sup>	1.9 h
4	Mg <sup>27</sup>	9.5 m	38	Zr <sup>89g</sup>	79 h	72	Tc <sup>129g</sup>	74 m	106	Lu <sup>177g</sup>	6.8 d
5	Cl <sup>38g</sup>	37 m	39	Mn <sup>99</sup>	67 h	73	Tc <sup>131m</sup>	1.2 d	107	Hf <sup>181</sup>	45 d
6	K <sup>42</sup>	12 h	40	Mo <sup>101</sup>	15 m	74	Tc <sup>131g</sup>	25 m	108	Ta <sup>182g</sup>	115 d
7	Ca <sup>47</sup>	4.7 d	41	Tc <sup>101</sup>	14 m	75	I <sup>131</sup>	8.1 d	109	W <sup>187</sup>	24 h
8	Sc <sup>46g</sup>	84 d	42	Ru <sup>97</sup>	2.9 d	76	I <sup>128</sup>	25 m	110	Re <sup>186g</sup>	3.7 d
9	Sc <sup>48</sup>	1.8 d	43	Ru <sup>103</sup>	40 d	77	Xe <sup>133g</sup>	5.3 d	111	Re <sup>189g</sup>	17 h
10	Ti <sup>51</sup>	5.8 m	44	Ru <sup>105</sup>	4.5 h	78	Xe <sup>135g</sup>	9.1 h	112	O <sub>s</sub> <sup>185</sup>	94 d
11	Mn <sup>56</sup>	2.6 h	45	Rh <sup>104m</sup>	4.4 m	79	Cs <sup>134m</sup>	2.9 h	113	O <sub>s</sub> <sup>191g</sup>	16 d
12	Fe <sup>59</sup>	45 d	46	Rh <sup>104g</sup>	42 s	80	Cs <sup>134g</sup>	2.1 y	114	O <sub>s</sub> <sup>193</sup>	1.3 d
13	Co <sup>60g</sup>	5.3 y	47	Pd <sup>103</sup>	17 d	81	I <sup>130</sup>	13 h	115	I <sub>r</sub> <sup>192g</sup>	74 d
14	Co <sup>58g</sup>	71 d	48	Ag <sup>111g</sup>	7.5 d	82	Ba <sup>131g</sup>	12 d	116	I <sub>r</sub> <sup>194g</sup>	19 h
15	Ni <sup>65</sup>	2.6 h	49	Ag <sup>108g</sup>	2.3 m	83	Ba <sup>133g</sup>	7.2 y	117	Pt <sup>193m</sup>	4.4 d
16	Cu <sup>64</sup>	13 h	50	Ag <sup>110m</sup>	262 d	84	La <sup>140</sup>	40 h	118	Pt <sup>197g</sup>	18 h
17	Cu <sup>66</sup>	5.1 m	51	Cd <sup>111m</sup>	49 m	85	Ce <sup>137g</sup>	8.7 h	119	Au <sup>199</sup>	3.2 d
18	Zn <sup>65</sup>	245 d	52	Cd <sup>115m</sup>	43 d	86	Ce <sup>143</sup>	33 h	120	Au <sup>198</sup>	2.7 d
19	Cu <sup>67</sup>	62 h	53	Cd <sup>115g</sup>	2.2 d	87	Nd <sup>147</sup>	11 d	121	Hg <sup>197m</sup>	24 h
20	Zn <sup>71m</sup>	4.0 h	54	Cd <sup>117m</sup>	3.0 h	88	Pm <sup>151</sup>	28 h	122	Hg <sup>197g</sup>	2.7 d
21	Ga <sup>70g</sup>	21 m	55	In <sup>117g</sup>	38 m	89	Sm <sup>153</sup>	47 h	123	Np <sup>239</sup>	2.3 d
22	Ga <sup>72g</sup>	14 h	56	In <sup>114m</sup>	50 d	90	Sm <sup>155</sup>	22 m	124	Pt <sup>199g</sup>	30 m
23	Ge <sup>75g</sup>	82 m	57	In <sup>116m</sup>	54 m	91	Eu <sup>155</sup>	1.7 y	125	I <sub>r</sub> <sup>191m</sup>	4.9 s
24	Ge <sup>77g</sup>	11 h	58	Sr <sup>117m</sup>	14 d	92	Eu <sup>152m</sup>	9.3 h	126	Ac <sup>228</sup>	6.1 h
25	As <sup>77</sup>	39 h	59	Sr <sup>119m</sup>	245 d	93	Eu <sup>152g</sup>	13 y	127	Th <sup>228</sup>	1.9 y
26	As <sup>76</sup>	27 h	60	Sr <sup>125m</sup>	9.7 m	94	Eu <sup>154</sup>	16 y	128	Th <sup>231</sup>	26 h
27	Se <sup>75</sup>	120 d	61	Sr <sup>125g</sup>	9.4 d	95	Cd <sup>153</sup>	240 d	129	U <sup>232</sup>	72 y
28	Se <sup>83m</sup>	70 s	62	Sr <sup>125</sup>	2.6 y	96	Cd <sup>159</sup>	18 h	130	U <sup>235</sup>	$7.1 \times 10^8$ y
29	Br <sup>80m</sup>	4.5 h	63	Sr <sup>122m</sup>	3.3 m	97	Gd <sup>161</sup>	3.7 m	131	U <sup>237</sup>	6.8 d
30	Br <sup>80g</sup>	18 m	64	Sr <sup>122g</sup>	2.8 d	98	Tb <sup>161</sup>	6.9 d	132	Np <sup>237</sup>	$2.2 \times 10^6$ y
31	Br <sup>82</sup>	36 h	65	Sr <sup>124m</sup>	1.5 m	99	Tb <sup>160</sup>	73 d	133	Am <sup>241</sup>	460 y
32	Kr <sup>79g</sup>	35 h	66	Sr <sup>124g</sup>	60 d	100	Dy <sup>165g</sup>	2.3 h	134	Cs <sup>136</sup>	14 d
33	Kr <sup>83m</sup>	1.9 h	67	Tc <sup>121m</sup>	154 d	101	Ho <sup>166g</sup>	27 h			
34	Kr <sup>87</sup>	78 m	68	Tc <sup>121g</sup>	17 d	102	Er <sup>171</sup>	7.8 h			

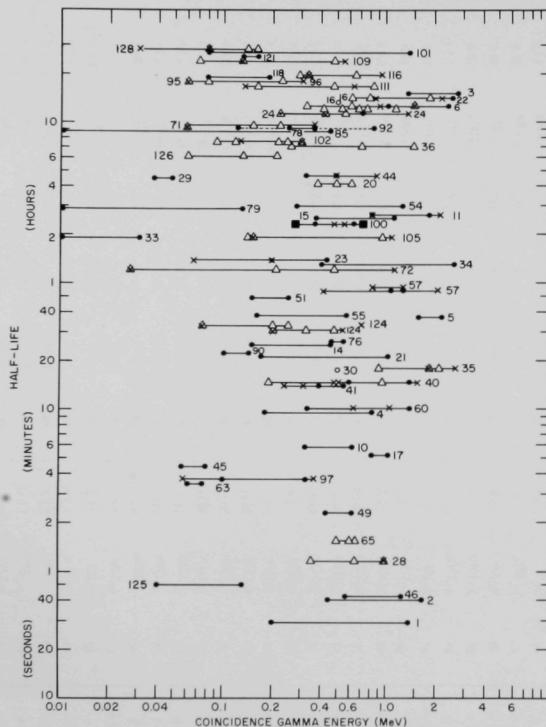


Fig. 7. Decay Half-lives in Seconds, Minutes, and Hours versus Coincidence-gamma Energies. The symbols  $\bullet$ ,  $\times$ , and  $\blacksquare$  represent gamma-gamma coincidences;  $\triangle$ , triple coincidence; and  $O$ , annihilation. No coincidence exists between unlike symbols. If only one symbol is present, the coincidence gammas have identical or similar energy.

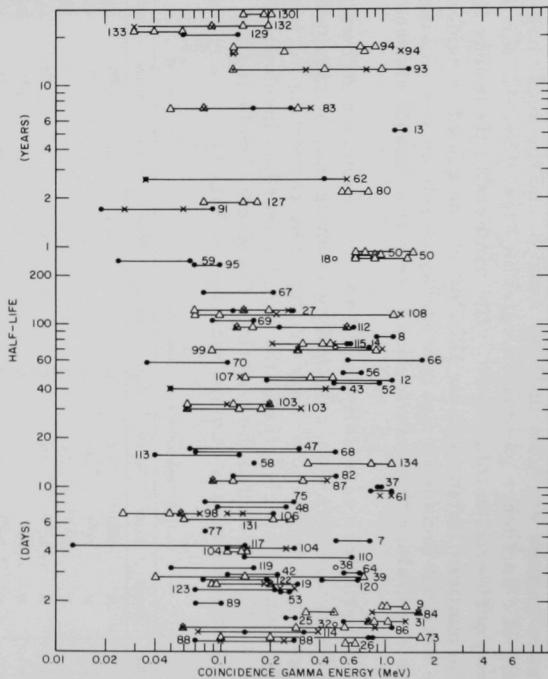
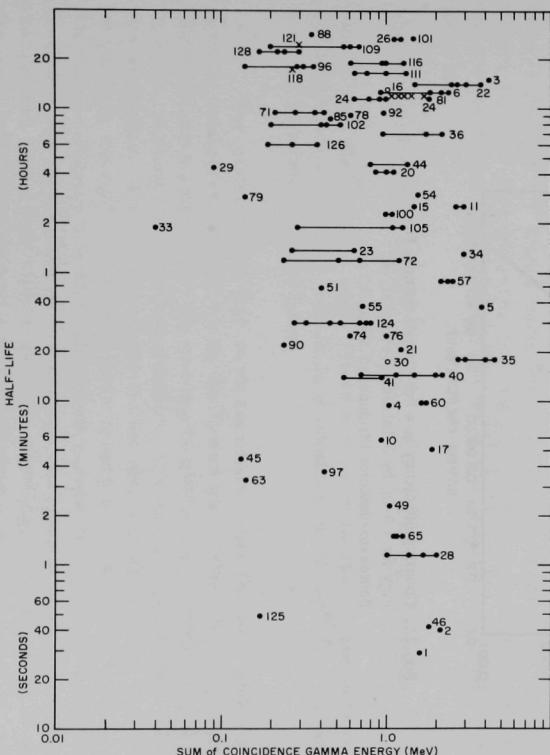


Fig. 8. Decay Half-lives in Days and Years versus Coincidence-gamma Energies. The symbols ● and X represent gamma-gamma coincidences;  $\Delta$ , triple coincidence; and O, annihilation. No coincidence exists between unlike symbols. If only one symbol is present, the coincidence gammas have identical or similar energy. The nuclides whose half-lives are greater than 20 years are shown above the 20-year line.



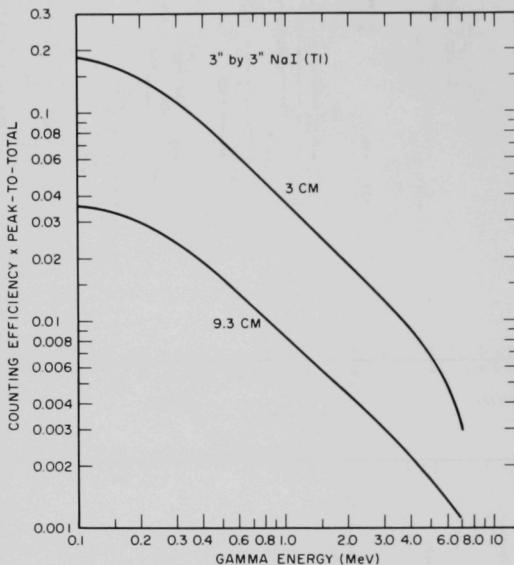


Fig. 11. Counting Efficiency as a Function of Gamma Energy for a 3-in. by 3-in. NaI(Tl) Crystal, at Source-to-detector Distances of 3 and 9.3 cm

## APPENDIX

### Tabulation of the Detection Sensitivities

The calculated detection sensitivities are arranged in the order of increasing atomic number and mass number of the target. For each reaction, the first line lists the symbol for the target nuclide, the reaction cross section, the symbol for the product nuclide, the decay half-life of the product, the fraction of isomeric transition of the metastable state of the product, the cross section for the formation of the isomer, and the decay half-life of the isomer. If the number 9.000 appears in the position for the fraction of isomeric transition, then the entries in this line will be: the symbol for the target nuclide, the cross section for the formation of the parent nuclide that decays to the daughter nuclide specified by the next entry, the symbol for the daughter nuclide, the half-life of the daughter, the number 9.000, and the decay half-life of the parent nuclide. All the cross-section values are given in barns ( $10^{24} \text{ cm}^2$ ). The numerical values of cross sections, half-lives, and detection sensitivities are all expressed in an exponent form; e.g., 2.41E-05 means  $2.41 \times 10^{-5}$ . The units of half-lives are: S = seconds, M = minutes, H = hours, D = days, and Y = years.

As illustrations, the heading

TE-130 27.0E-02 TE-131G 2.48E+01M .190 .40.0E-03 2.88E+01H

means that  $\text{Te}^{131}\text{g}$  with a half-life of 24.8 min is formed from  $\text{Te}^{130}$  with a cross section of 0.27 barn, and from its isomer (half-life 28.8 hr) whose formation cross section is 0.040 barn and isomeric transition is 19%. The heading

SE-82 40.0E-04 BR-83 2.30E-00H 9.000 2.50E+01M

means that  $\text{Br}^{83}$  with a half-life of 2.3 hr is formed from beta decay of  $\text{Se}^{83}\text{g}$  (half-life 25 min), which is a product of the  $\text{Se}^{82}(\text{n}, \gamma)$  reaction with a cross section of 0.004 barn.

The second line (for each reaction) lists the energies (in MeV) of gamma transitions, beta decay (followed by a letter B), and alpha decay (followed by a letter A). No energy is given for electron capture (indicated by EC). A dash between two numbers indicates a coincidence between these two energies. The first column below the second line (or the first line if no gamma energy is present) lists values of irradiation time  $t$ , in minutes. All other columns are the calculated values of detection sensitivities D, R, C, and L corresponding to the gamma energies or coincidences specified in the second line. For single-gamma counting, two values of R are listed, the first corresponding to a source distance of 3 cm, and the second to a source distance of 9.3 cm.

In summary, the format of this tabulation is presented in Table IV.  
The complete tabulation is presented in Table V.

TABLE IV. Format for Tabulation of Table V

Target Nuclide	$\sigma_m$ or $\sigma_g$	Product or Decay-daughter Nuclide		Half-life of Product or Decay Daughter		% IT or 9.000		Half-life of Isomer or Parent Nuclide	
		$\gamma$		$\gamma$		$\beta$ - $\gamma$	$\beta$ - $\gamma$ - $\gamma$	$EC$ - $\gamma$	$EC$ - $\gamma$ - $\gamma$
		(3 cm)	(9.3 cm)	(3 cm)	(9.3 cm)	$\gamma$ - $\gamma$	$\gamma$ - $\gamma$	$\alpha$ - $\gamma$	$\alpha$ - $\gamma$ - $\gamma$
.5	D	R	R	R	R	C	C	C	L
5.0	D	R	R	R	R	C	C	C	L
50.0	D	R	R	R	R	C	C	C	L
500.0	D	R	R	R	R	C	C	C	L
5000.0	D	R	R	R	R	C	C	C	L

TABLE V. Detection Sensitivities for Thermal-neutron Activation

H - 2	57.0E-05	H - 3	1.23E+01Y	B - 10	20.0E-02	BE- 10	2.50E+06Y
.5	1.6E-05			.5	3.4E-06		
5.0	1.6E-04			5.0	3.4E-05		
50.0	1.6E-03			50.0	3.4E-04		
500.0	1.6E-02			500.0	3.4E-03		
5000.0	1.6E-01			5000.0	3.4E-02		
HE - 3	54.0E+02	H - 3	1.23E+01Y	B - 11	50.0E-04	B - 12	3.00E-02S
					4.43		
.5	2.6E-01			.5	1.3E+06	1.3E+02	3.4E+01
5.0	2.6E-00			5.0	1.3E+06	1.3E+02	3.4E+01
50.0	2.6E+01			50.0	1.3E+06	1.3E+02	3.4E+01
500.0	2.6E+02			500.0	1.3E+06	1.3E+02	3.4E+01
5000.0	2.6E+03			5000.0	1.3E+06	1.3E+02	3.4E+01
LI - 6	94.5E+01	H - 3	1.23E+01Y	C - 13	90.0E-05	C - 14	5.78E+03Y
.5	1.9E+03			.5	3.4E-07		
5.0	1.9E+04			5.0	3.4E-06		
50.0	1.9E+05			50.0	3.4E-05		
500.0	1.9E+06			500.0	3.4E-04		
5000.0	1.9E+07			5000.0	3.4E-03		
LI - 7	36.0E-03	LI - 8	8.40E-01S	N - 14	17.5E-01	C - 14	5.78E+03Y
.5	1.7E+07			.5	5.1E-02		
5.0	1.7E+07			5.0	5.1E-01		
50.0	1.7E+07			50.0	5.1E-00		
500.0	1.7E+07			500.0	5.1E+01		
5000.0	1.7E+07			5000.0	5.1E+02		
BE - 9	90.0E-04	BE- 10	2.50E+06Y	N - 15	24.0E-06	N - 16	7.35E-00S
					6.13		
.5	9.5E-07			.5	2.1E+01	6.4E-02	1.6E-02
5.0	9.5E-06			5.0	2.2E+01	6.8E-02	1.7E-02
50.0	9.5E-05			50.0	2.2E+01	6.8E-02	1.7E-02
500.0	9.5E-04			500.0	2.2E+01	6.8E-02	1.7E-02
5000.0	9.5E-03			5000.0	2.2E+01	6.8E-02	1.7E-02

TABLE V (Contd.)

O - 16      38.0E-07      N - 16      7.35E-005

6.13

.5	8.0E+02	2.4E-00	6.1E-01
5.0	8.5E+02	2.6E-00	6.5E-01
50.0	8.5E+02	2.6E-00	6.5E-01
500.0	8.5E+02	2.6E-00	6.5E-01
5000.0	8.5E+02	2.6E-00	6.5E-01

O - 17      40.0E-02      C - 14      5.78E+03Y

.5	3.8E-06
5.0	3.8E-05
50.0	3.8E-04
500.0	3.8E-03
5000.0	3.8E-02

O - 17      32.0E-07      N - 17      7.35E-005

.5	2.5E-01
5.0	2.7E-01
50.0	2.7E-01
500.0	2.7E-01
5000.0	2.7E-01

O - 18      21.0E-05      O - 19      2.94E+01S

1.37

0.20

1.37-0.20

.5	4.8E+01	7.1E-01	1.6E-01	6.8E-00	1.4E-00	1.0E-01
5.0	9.6E+01	1.4E-00	3.2E-01	1.3E+01	2.8E-00	2.0E-01
50.0	9.6E+01	1.4E-00	3.2E-01	1.3E+01	2.8E-00	2.0E-01
500.0	9.6E+01	1.4E-00	3.2E-01	1.3E+01	2.8E-00	2.0E-01
5000.0	9.6E+01	1.4E-00	3.2E-01	1.3E+01	2.8E-00	2.0E-01

F - 19      90.0E-04      F - 20      1.07E+01S

1.63

.5	1.4E+06	3.2E+04	7.3E+03
5.0	1.7E+06	3.7E+04	8.5E+03
50.0	1.7E+06	3.7E+04	8.5E+03
500.0	1.7E+06	3.7E+04	8.5E+03
5000.0	1.7E+06	3.7E+04	8.5E+03

5.4B-1.63

3.2E+04
3.7E+04
3.7E+04
3.7E+04
3.7E+04

TABLE V (Contd.)

NE- 22 36.0E-03 NE- 23 4.02E+01S

	0.44	1.65	1.65-0.44	3.9B-0.44
•5	2.2E+05	6.0E+03	1.3E+03	4.5E+01
5.0	5.6E+05	1.4E+04	3.3E+03	1.1E+02
50.0	5.6E+05	1.4E+04	3.3E+03	1.1E+02
500.0	5.6E+05	1.4E+04	3.3E+03	1.1E+02
5000.0	5.6E+05	1.4E+04	3.3E+03	1.1E+02

NA- 23 53.6E-02 NA- 24 1.50E+01H

	2.75	1.37	2.75-1.37	1.4B-2.75 1.4B-2.75-1.37
•5	3.2E+04	4.5E+02	9.7E+01	8.4E+02
5.0	3.2E+05	4.5E+03	9.6E+02	8.4E+03
50.0	3.1E+06	4.4E+04	9.5E+03	8.2E+04
500.0	2.6E+07	3.7E+05	8.0E+04	6.9E+05
5000.0	8.2E+07	1.1E+06	2.4E+05	2.1E+06

MG- 26 27.0E-03 MG- 27 9.46E-00M

	0.83	1.02	0.18-0.83	1.8B-0.83
•5	1.6E+04	3.9E+02	9.3E+01	2.2E+02
5.0	1.3E+05	3.3E+03	7.9E+02	1.9E+03
50.0	4.3E+05	1.0E+04	2.5E+03	6.0E+03
500.0	4.4E+05	1.0E+04	2.5E+03	6.2E+03
5000.0	4.4E+05	1.0E+04	2.5E+03	6.2E+03

AL- 27 21.0E-02 AL- 28 2.27E-00M

	1.78	2.9B-1.78
•5	3.9E+06	7.9E+04
5.0	2.1E+07	4.3E+05
50.0	2.8E+07	5.6E+05
500.0	2.8E+07	5.6E+05
5000.0	2.8E+07	5.6E+05

SI- 30 11.0E-02 SI- 31 2.62E-00H

	1.27	2.9B-1.27
•5	9.6E+02	1.8E-02
5.0	9.5E+03	1.8E-01
50.0	8.6E+04	1.6E-00
500.0	3.8E+05	7.6E-00
5000.0	4.3E+05	8.5E-00

TABLE V (Contd.)

P - 31      19.0E-02      P - 32      1.42E+01D

*5	3.7E+02
5.0	3.7E+03
50.0	3.7E+04
500.0	3.7E+05
5000.0	3.4E+06

S - 33      15.0E-03      P - 33      2.44E+01D

*5	1.2E-01
5.0	1.2E-00
50.0	1.2E+01
500.0	1.2E+01
5000.0	1.2E+02

S - 34      26.0E-02      S - 35      8.80E+01D

*5	3.3E-00
5.0	3.3E+01
50.0	3.3E+02
500.0	3.3E+03
5000.0	3.3E+04

S - 36      14.0E-02      S - 37      5.04E-00M

3.10				1.6B-3.10
*5	1.4E+02	1.5E-00	3.8E-01	1.5E-00
5.0	1.0E+03	1.1E+01	2.8E-00	1.1E+01
50.0	2.1E+03	2.3E+01	5.7E-00	2.3E+01
500.0	2.1E+03	2.3E+01	5.7E-00	2.3E+01
5000.0	2.1E+03	2.3E+01	5.7E-00	2.3E+01

CL- 35      30.0E-00      CL- 36      3.08E+05Y

*5	4.9E-03
5.0	4.9E-02
50.0	4.9E-01
500.0	4.9E-00
5000.0	4.9E+01

TABLE V (Contd.)

CL- 35 19.0E-02 S - 35 8.80E+01D

.5	3.9E+01
5.0	3.9E+02
50.0	3.9E+03
500.0	3.9E+04
5000.0	3.9E+05

CL- 35 50.0E-06 P - 32 1.42E+01D

.5	6.5E-02
5.0	6.5E-01
50.0	6.5E-00
500.0	6.4E+01
5000.0	5.9E+02

CL- 37 50.0E-04 CL- 38M 1.00E-00S

0.66

.5	1.2E+05	6.5E+03	1.6E+03
5.0	1.2E+05	6.5E+03	1.6E+03
50.0	1.2E+05	6.5E+03	1.6E+03
500.0	1.2E+05	6.5E+03	1.6E+03
5000.0	1.2E+05	6.5E+03	1.6E+03

CL- 37 56.0E-02 CL- 38G 3.73E+01M 1.000 50.0E-04 1.00E-00S

2.16 1.60 1.60-2.16

.5	1.3E+05	1.0E+03	2.4E+02	9.2E+02	2.0E+02	1.5E+01
5.0	1.2E+06	9.9E+03	2.3E+03	8.9E+03	1.9E+03	1.5E+02
50.0	8.5E+06	6.8E+04	1.6E+04	6.0E+04	1.3E+04	1.0E+03
500.0	1.4E+07	1.1E+05	2.6E+04	1.0E+05	2.1E+04	1.7E+03
5000.0	1.4E+07	1.1E+05	2.6E+04	1.0E+05	2.1E+04	1.7E+03

AR- 36 60.0E-01 AR- 37 3.50E+01D

.5	1.2E+01
5.0	1.2E+02
50.0	1.2E+03
500.0	1.2E+04
5000.0	1.2E+05

TABLE V (Contd.)

AR- 38      80.0E-02      AR- 39      2.65E+02Y

.5	1.1E-04
5.0	1.1E-03
50.0	1.1E-02
500.0	1.1E-01
5000.0	1.1E-00

AR- 40      53.0E-02      AR- 41      1.10E+02M

1.29

.5	1.5E+05	4.1E+03	1.0E+03
5.0	1.4E+06	4.1E+04	1.0E+04
50.0	1.2E+07	3.5E+05	8.9E+04
500.0	4.5E+07	1.2E+06	3.1E+05
5000.0	4.7E+07	1.3E+06	3.3E+05

1.2B-1.29

4.1E+03
4.1E+04
3.5E+05
1.2E+06
1.3E+06

K - 39      30.0E-01      K - 40      1.41E+09Y

1.46

.5	1.2E-07	3.3E-10	7.9E-11
5.0	1.2E-06	3.3E-09	7.9E-10
50.0	1.2E-05	3.3E-08	7.9E-09
500.0	1.2E-04	3.3E-07	7.9E-08
5000.0	1.2E-03	3.3E-06	7.9E-07

K - 41      13.0E-01      K - 42      1.24E+01H

1.52

.5	3.8E+03	1.6E+01	4.1E-00
5.0	3.8E+04	1.6E+02	4.1E+01
50.0	3.7E+05	1.6E+03	4.0E+02
500.0	3.0E+06	1.3E+04	3.3E+03
5000.0	8.1E+06	3.5E+04	8.8E+03

0.32-1.52

1.9E-02
1.9E-01
1.8E-00
1.9E+01
4.1E+01

0.60-0.32-1.52

1.1E-04
1.1E-03
1.0E-02
8.9E-02
2.3E-01

CA- 44      72.0E-02      CA- 45      1.65E+02D

.5	1.9E-00
5.0	1.9E+01
50.0	1.9E+02
500.0	1.9E+03
5000.0	1.9E+04

TABLE V (Contd.)

CA- 46 25.0E-02 CA- 47 4.70E-00D

1.30

.5	3.8E-02	8.0E-04	2.0E-04
5.0	3.8E-01	8.0E-03	2.0E-03
50.0	3.7E-00	8.0E-02	2.0E-02
500.0	3.7E+01	7.8E-01	1.9E-01
5000.0	2.9E+02	6.3E-00	1.5E-00

0.81

9.1E-05	2.1E-05	6.5E-06
9.1E-04	2.1E-04	6.5E-05
9.0E-03	2.1E-03	6.5E-04
8.8E-02	2.1E-02	6.3E-03
7.1E-01	1.6E-01	5.1E-02

0.81-0.50

0.7B-1.30	0.7B-0.81-0.50
7.2E-04	6.5E-06
7.2E-03	6.5E-05
7.2E-02	6.5E-04
7.0E-01	6.3E-03
5.6E-00	5.1E-02

CA- 46 25.0E-02 SC- 47 3.40E-00D 9.000

4.70E-00D

0.16

.5	1.3E-06	1.5E-07	3.0E-08
5.0	1.3E-04	1.5E-05	3.0E-06
50.0	1.3E-02	1.5E-03	3.0E-04
500.0	1.2E-00	1.4E-01	2.8E-02
5000.0	9.0E+01	1.0E+01	2.0E-00

0.4B-0.16

1.5E-07
1.5E-05
1.5E-03
1.4E-01
1.0E+01

CA- 48 11.0E-01 CA- 49 8.80E-00M

3.10

4.00

.5	7.0E+03	7.6E+01	1.9E+01
5.0	5.9E+04	6.4E+02	1.6E+02
50.0	1.7E+05	1.9E+03	4.8E+02
500.0	1.8E+05	1.9E+03	4.9E+02
5000.0	1.8E+05	1.9E+03	4.9E+02

2.0B-3.10

7.6E+01
6.4E+02
1.9E+03
1.9E+03
1.9E+03

CA- 48 11.0E-01 SC- 49 5.80E+01M 9.000

8.80E-00M

1.76

.5	2.1E+01	1.3E-04	3.1E-05
5.0	1.8E+03	1.1E-02	2.7E-03
50.0	6.5E+04	4.0E-01	9.7E-02
500.0	1.8E+05	1.1E-00	2.7E-01
5000.0	1.8E+05	1.1E-00	2.7E-01

SC- 45 10.0E-00 SC- 46M 2.00E+01S

0.15

.5	5.1E+08	4.2E+07	9.3E+06
5.0	8.0E+08	6.6E+07	1.4E+07
50.0	8.0E+08	6.6E+07	1.4E+07
500.0	8.0E+08	6.6E+07	1.4E+07
5000.0	8.0E+08	6.6E+07	1.4E+07

TABLE V (Contd.)

SC- 45	12.0E-00	SC- 46G	8.39E+01D	1.000	10.0E-00	2.00E+01S		
				1.12	0.89	0.89-1.12		
.5	3.6E+03	1.1E+02	2.9E+01	1.4E+02	3.2E+01	4.3E-00	1.1E+02	4.3E-00
5.0	4.8E+04	1.5E+03	3.8E+02	1.8E+03	4.3E+02	5.8E+01	1.4E+03	5.8E+01
50.0	5.0E+05	1.5E+04	4.0E+03	1.9E+04	4.5E+03	6.0E+02	1.5E+04	6.0E+02
500.0	5.0E+06	1.5E+05	4.0E+04	1.9E+05	4.5E+04	6.1E+03	1.5E+05	6.0E+03
5000.0	4.9E+07	1.5E+06	3.9E+05	1.9L+06	4.4E+05	6.0E+04	1.5E+06	6.0E+04
TI- 46	41.0E-04	SC- 46G	8.39E+01D				0.4B-1.12	0.4B-1.12-0.89
				1.12	0.89	0.89-1.12		
.5	7.0E-02	2.1E-03	5.6E-04	2.7E-03	6.3E-04	8.4E-05	2.1E-03	8.4E-05
5.0	7.0E-01	2.1E-02	5.6E-03	2.7E-02	6.3E-03	8.4E-04	2.1E-02	8.4E-04
50.0	7.0E-00	2.1E-01	5.6E-02	2.7E-01	6.3E-02	8.4E-03	2.1E-01	8.4E-03
500.0	7.0E+01	2.1E-00	5.6E-01	2.7E-00	6.3E-01	8.4E-02	2.1E+00	8.4E-02
5000.0	6.9E+02	2.1E+01	5.5E-00	2.6E+01	6.2E-00	8.3E-01	2.1E+01	8.3E-01
TI- 47	21.0E-05	SC- 47	3.43E-00D				0.4B-0.16	
				0.16				
.5	8.0E-02	9.0E-03	1.8E-03				9.0E-03	
5.0	8.0E-01	9.0E-02	1.8E-02				9.0E-02	
50.0	8.0E-00	9.0E-01	1.8E-01				9.0E-01	
500.0	7.8E+01	8.7E-00	1.7E-00				8.7E-00	
5000.0	5.8E+02	6.5E+01	1.3E+01				6.4E+01	
TI- 48	77.0E-06	SC- 48	1.83E-00D				0.4B-0.16	
				1.31	1.04	1.04-1.31	1.31-0.99	1.04-1.31-0.99
.5	5.6E-01	1.5E-02	3.9E-03	1.9E-02	4.5E-03	5.1E-04	5.3E-04	1.8E-05
5.0	5.6E-00	1.5E-01	3.9E-02	1.9E-01	4.5E-02	5.1E-03	5.3E-03	1.8E-04
50.0	5.6E+01	1.5E-00	3.9E-01	1.9E-00	4.4E-01	5.1E-02	5.2E-02	1.8E-03
500.0	5.2E+02	1.4E+01	3.6E-00	1.7E+01	4.2E-00	4.8E-01	4.9E-01	1.7E-02
5000.0	3.1E+03	8.7E+01	2.1E+01	1.0E+02	2.5E+01	2.8E-00	2.9E-00	1.0E-01
TI- 48	55.0E-07	CA- 45	1.65E+02D					
.5	4.4E-04							
5.0	4.4E-03							
50.0	4.4E-02							
500.0	4.4E-01							
5000.0	4.4E-00							

TABLE V (Contd.)

TI- 50 14.0E-02 TI- 51 5.80E-00M

0.32

0.93

0.61-0.32

2.1B-0.32

.5	3.2E+04	3.2E+03	7.1E+02	5.8E+01	1.4E+01	2.7E-00
5.0	2.5E+05	2.5E+04	5.5E+03	4.5E+02	1.0E+02	2.1E+01
50.0	5.6E+05	5.6E+04	1.2E+04	9.9E+02	2.4E+02	4.7E+01
500.0	5.6E+05	5.6E+04	1.2E+04	1.0E+03	2.4E+02	4.7E+01
5000.0	5.6E+05	5.6E+04	1.2E+04	1.0E+03	2.4E+02	4.7E+01

TI- 50 20.0E-08 CA- 47 4.70E-00D

1.30

0.81

0.81-0.50

0.7B-1.30 0.7B-0.81-0.50

.5	4.1E-05	8.7E-07	2.1E-07	1.0E-07	2.3E-08	7.0E-09
5.0	4.1E-04	8.7E-06	2.1E-06	1.0E-06	2.3E-07	7.0E-08
50.0	4.1E-03	8.7E-05	2.1E-05	1.0E-05	2.3E-06	7.0E-07
500.0	4.1E-02	8.7E-04	2.1E-04	9.8E-05	2.2E-05	6.8E-06
5000.0	3.2E-01	6.8E-03	1.7E-03	7.9E-04	1.8E-04	5.5E-05

TI- 50 20.0E-08 SC- 47 3.40E-00D 9.000 4.70E-00D

0.16

0.4B-0.16

.5	1.4E-09	1.6E-10	3.2E-11	1.6E-10	1.6E-08	1.6E-06
5.0	1.4E-07	1.6E-08	3.2E-09	1.6E-07	1.6E-06	1.6E-05
50.0	1.4E-05	1.6E-06	3.2E-07	1.6E-05	1.6E-04	1.6E-03
500.0	1.4E-03	1.5E-04	3.1E-05	1.5E-04	1.5E-03	1.5E-02
5000.0	9.8E-02	1.0E-02	2.1E-03	9.8E-03	1.0E-02	1.0E-02

V - 51 45.0E-01 V - 52 3.76E-00M

1.43

2.7B-1.43

.5	2.8E+07	6.9E+05	1.6E+05	7.2E+05	4.9E+06	8.2E+06
5.0	1.9E+08	4.7E+06	1.1E+06	7.9E+06	1.9E+06	8.2E+06
50.0	3.1E+08	7.9E+06	1.9E+06	9.9E+06	3.1E+06	8.2E+06
500.0	3.1E+08	7.9E+06	1.9E+06	9.9E+06	3.1E+06	8.2E+06
5000.0	3.1E+08	7.9E+06	1.9E+06	9.9E+06	3.1E+06	8.2E+06

CR- 50 16.0E-00 CR- 51 2.78E+01D

0.32

EC -0.32

.5	4.1E+02	3.8E-00	8.5E-01	3.9E-00	3.9E+01	3.9E+02
5.0	4.1E+03	3.8E+01	8.5E-00	3.8E+01	3.8E+02	3.8E+03
50.0	4.1E+04	3.8E+02	8.5E+01	3.8E+02	3.8E+03	3.8E+04
500.0	4.1E+05	3.8E+03	8.5E+02	3.8E+03	3.8E+04	3.8E+05
5000.0	3.9E+06	3.7E+04	8.2E+03	3.7E+04	3.7E+05	3.7E+06

TABLE V (Contd.)

CR- 54      38.0E-02      CR- 55      3.52E-00M

.5	5.8E+04
5.0	3.9E+05
50.0	6.2E+05
500.0	6.2E+05
5000.0	6.2E+05

MN- 55      13.3E-00      MN- 56      2.58E-00H

	0.84	1.81	1.81-0.84	2.12-0.84	2.98-0.84
.5	1.9E+06	8.1E+04	1.9E+04	9.2E+03	2.3E+03
5.0	1.9E+07	8.0E+05	1.9E+05	9.1E+04	2.2E+04
50.0	1.7E+08	7.2E+06	1.7E+06	8.2E+05	2.0E+05
500.0	7.8E+08	3.2E+07	7.7E+06	3.6E+06	9.2E+05
5000.0	8.7E+08	3.6E+07	8.6E+06	4.1E+06	1.0E+06

FE- 54      28.0E-01      FE- 55      2.60E-00Y

.5	2.6E-00
5.0	2.6E+11
50.0	2.6E+02
500.0	2.6E+03
5000.0	2.6E+04

FE- 54      23.0E-03      MN- 54      3.13E+02D

	0.84	1.81	1.81-0.84	2.12-0.84	2.98-0.84
.5	6.6E-02	2.7E-03	6.6E-04	6.6E-02	6.6E-03
5.0	6.6E-01	2.7E-02	6.6E-03	6.6E-01	6.6E-02
50.0	6.6E-00	2.7E-01	6.6E-02	6.6E-00	6.6E-01
500.0	6.6E+01	2.7E-00	6.6E-01	6.6E+01	6.6E-00
5000.0	6.6E+02	2.7E+01	6.6E-00	6.6E+02	6.6E+01

FE- 54      37.0E-05      CR- 51      2.78E+01D

0.32

.5	1.2E-02	1.1E-04	2.4E-05
5.0	1.2E-01	1.1E-03	2.4E-04
50.0	1.2E-00	1.1E-02	2.4E-03
500.0	1.1E+01	1.1E-01	2.4E-02
5000.0	1.1E+02	1.0E-00	2.3E-01

EC -0.32

1.1E-04
1.1E-03
1.1E-02
1.1E-01
1.0E-00

TABLE V (Contd.)

FE- 56 44.0E-05 MN- 56 2.58E-00H

				0.84		1.81		1.81-0.84		2.12-0.84		2.9B-0.84
.5	5.8E+01	2.4E-00	5.7E-01		2.7E-01	6.8E-02	1.1E-02	6.0E-03	1.4E-00			
5.0	5.7E+02	2.3E+01	5.7E-00		2.7E-00	6.8E-01	1.1E-01	5.9E-02	1.4E+01			
50.0	5.2E+03	2.1E+02	5.1E+01		2.4E+01	6.1E-00	1.0E-00	5.4E-01	1.3E+02			
500.0	2.3E+04	9.6E+02	2.3E+02		1.0E+02	2.7E+01	4.6E-00	2.4E-00	5.8E+02			
5000.0	2.6E+04	1.0E+03	2.5E+02		1.2E+02	3.0E+01	5.1E-00	2.6E-00	6.5E+02			

FE- 58 10.0E-01 FE- 59 4.51E+01D

				1.29		1.10		0.19-1.10		0.5B-1.10		
.5	1.1E-00	1.4E-02	3.5E-03		2.0E-02	5.1E-03	1.6E-04			1.9E-02		
5.0	1.1E+01	1.4E-01	3.5E-02		2.0E-01	5.1E-02	1.6E-03			1.9E-01		
50.0	1.1E+02	1.4E-00	3.5E-01		2.0E-00	5.1E-01	1.6E-02			1.9E-00		
500.0	1.1E+03	1.3E+01	3.4E-00		2.0E+01	5.1E-00	1.6E-01			1.9E+01		
5000.0	1.1E+04	1.3E+02	3.4E+01		2.0E+02	5.0E+01	1.5E-00			1.9E+02		

FE- 58 15.0E-04 CR- 55 3.52E-00M

				3.52E-00	3.52E-00	3.52E-00
.5	2.9E+01					
5.0	2.0E+02					
50.0	3.1E+02					
500.0	3.1E+02					
5000.0	3.1E+02					

CO- 59 20.0E-00 CO- 60M 1.05E+01M

				1.33		0.06	
.5	3.9E+07	3.0E+03	6.5E+02		1.5E+05	3.0E+04	
5.0	3.4E+08	2.6E+04	5.7E+03		1.3E+06	2.6E+05	
50.0	1.1E+09	8.9E+04	1.9E+04		4.6E+06	9.1E+05	
500.0	1.2E+09	9.2E+04	2.0E+04		4.8E+06	9.4E+05	
5000.0	1.2E+09	9.2E+04	2.0E+04		4.8E+06	9.4E+05	

CO- 59 20.0E-00 CO- 60G 5.24E-00Y .997 20.0E-00 1.05E+01M

				1.33		1.17		1.17-1.33		0.3B-1.17	0.3B-1.17-1.33
.5	1.5E+02	4.2E-00	9.3E-01		4.6E-00	1.0E-00	1.3E-01			4.6E-00	1.2E-01
5.0	1.7E+03	4.7E+01	1.0E+01		5.3E+01	1.2E+01	1.4E-00			5.2E+01	1.4E-00
50.0	2.6E+04	7.0E+02	1.5E+02		7.8E+02	1.8E+02	2.2E+01			7.8E+02	2.1E+01
500.0	3.0E+05	8.1E+03	1.8E+03		9.0E+03	2.1E+03	2.5E+02			9.0E+03	2.4E+02
5000.0	3.0E+06	8.2E+04	1.8E+04		9.2E+04	2.1E+04	2.5E+03			9.1E+04	2.4E+03

TABLE V (Contd.)

CO- 59    22.0E-03    FE- 59    4.51E+01D

			1.29	1.10	0.19-1.10	0.5B-1.10
•5	7.1E-00	8.8E-02	2.2E-02	1.3E-01	3.2E-02	1.0E-03
5.0	7.1E+01	8.8E-01	2.2E-01	1.3E-00	3.2E-01	1.0E-02
50.0	7.1E+02	8.8E-00	2.2E-00	1.3E+01	3.2E-00	1.0E-01
500.0	7.1E+03	8.8E+01	2.2E+01	1.3E+02	3.2E+01	1.0E-00
5000.0	7.0E+04	8.6E+02	2.1E+02	1.2E+03	3.1E+02	1.0E+01

NI- 58    13.0E-03    CO- 58M    9.20E-00H

0.03

•5	3.4E+02	6.2E+01	1.2E+01
5.0	3.3E+03	6.2E+02	1.2E+02
50.0	3.3E+04	6.0E+03	1.1E+03
500.0	3.5E+05	4.6E+04	9.0E+03
5000.0	5.4E+05	9.9E+04	1.9E+04

NI- 58    32.0E-03    CO- 58G    7.13E+01D    1.000    13.0E-03    9.20E-00H

0.81

			0.81	0.51	0.51-0.51	0.51-0.81	0.5B-0.81	0.51-0.51-0.81
•5	4.5E-00	1.9E-01	4.5E-02	4.6E-02	1.0E-02	3.2E-02	4.0E-03	5.8E-02
5.0	4.5E+01	1.9E-00	4.5E-01	4.6E-01	1.0E-01	3.2E-01	4.0E-02	5.8E-01
50.0	4.5E+02	1.9E+01	4.5E-00	4.7E-00	1.0E-00	3.3E-00	4.0E-01	5.9E-00
500.0	4.9E+03	2.1E+02	4.9E+01	5.1E+01	1.1E+01	3.6E+01	4.4E-00	6.4E+01
5000.0	5.9E+04	2.5E+03	5.9E+02	6.1E+02	1.4E+02	4.3E+02	5.2E+01	7.7E+02

NI- 60    50.0E-04    CO- 60G    5.24E-00Y

1.33

			1.33	1.17	1.17-1.33	0.3B-1.17	0.3B-1.17-1.33	
•5	1.0E-02	2.7E-04	6.0E-05	3.0E-04	7.0E-05	8.5E-06	3.0E-04	8.1E-06
5.0	1.0E-01	2.7E-03	6.0E-04	3.0E-03	7.0E-04	8.5E-05	3.0E-03	8.1E-05
50.0	1.0E-00	2.7E-02	6.0E-03	3.0E-02	7.0E-03	8.5E-04	3.0E-02	8.1E-04
500.0	1.0E+01	2.7E-01	6.0E-02	3.0E-01	7.0E-02	8.5E-03	3.0E-01	8.1E-03
5000.0	1.0E+02	2.7E-00	6.0E-01	3.0E-00	7.0E-01	8.4E-02	3.0E-00	8.1E-02

NI- 62    57.0E-04    FE- 59    4.51E+01D

1.29

			1.29	1.10	0.19-1.10	0.5B-1.10
•5	6.8E-02	8.4E-04	2.1E-04	1.2E-03	3.1E-04	9.8E-06
5.0	6.8E-01	8.4E-03	2.1E-03	1.2E-02	3.1E-03	9.8E-05
50.0	6.8E-00	8.4E-02	2.1E-02	1.2E-01	3.1E-02	9.8E-04
500.0	6.8E+01	8.4E-01	2.1E-01	1.2E-00	3.1E-01	9.8E-03
5000.0	6.6E+02	8.2E-00	2.0E-00	1.2E+01	3.0E-00	9.5E-02

TABLE V (Contd.)

NI- 64 15.0E-01 NI- 65 2.56E-00H

			1.49	1.11	0.37-1.11
.5	2.2E+03	1.2E+01	3.0E-00	5.5E-00	1.2E-00
5.0	2.2E+04	1.2E+02	3.0E+01	5.5E+01	1.2E+01
50.0	2.0E+05	1.1E+03	2.7E+02	4.9E+02	1.1E+02
500.0	8.9E+05	4.9E+03	1.2E+03	2.2E+03	4.9E+02
5000.0	9.9E+05	5.4E+03	1.3E+03	2.4E+03	5.5E+02

CU- 63 45.0E-01 CU- 64 1.28E+01H

			1.34	0.51	0.51-0.51
.5	7.9E+04	1.2E+01	2.8E-00	2.1E+03	4.8E+02
5.0	7.9E+05	1.2E+02	2.8E+01	2.1E+04	4.8E+03
50.0	7.7E+06	1.2E+03	2.8E+02	2.0E+05	4.7E+04
500.0	6.4E+07	1.0E+04	2.3E+03	1.7E+06	3.8E+05
5000.0	1.7E+08	2.8E+04	6.2E+03	4.6E+06	1.0E+06

CU- 63 31.0E-04 NI- 63 9.16E+01Y

.5	8.7E-04
5.0	8.7E-03
50.0	8.7E-02
500.0	8.7E-01
5000.0	8.7E-00

CU- 65 18.0E-01 CU- 66 5.10E-00M

			1.04	0.83	0.83-1.04	1.6B-1.04
.5	2.0E+06	6.1E+03	1.4E+03	1.7E+02	4.1E+01	5.9E-00
5.0	1.5E+07	4.6E+04	1.1E+04	1.3E+03	3.1E+02	4.4E+01
50.0	3.1E+07	9.3E+04	2.2E+04	2.6E+03	6.3E+02	9.0E+01
500.0	3.1E+07	9.3E+04	2.2E+04	2.6E+03	6.3E+02	9.0E+01
5000.0	3.1E+07	9.3E+04	2.2E+04	2.6E+03	6.3E+02	9.0E+01

ZN- 64 47.0E-02 ZN- 65 2.50E+02D

			1.11	0.51	0.51-0.51	EC -1.11
.5	1.2E+01	1.8E-01	4.7E-02	1.4E-02	3.1E-03	1.0E-02
5.0	1.2E+02	1.8E-00	4.7E-01	1.4E-01	3.1E-02	1.0E-01
50.0	1.2E+03	1.8E+01	4.7E-00	1.4E-00	3.1E-01	1.0E-00
500.0	1.2E+04	1.8E+02	4.7E+01	1.4E+01	3.1E+00	1.0E+01
5000.0	1.2E+05	1.8E+03	4.7E+02	1.4E+02	3.0E+01	1.0E+02

TABLE V (Contd.)

ZN- 64 10.0E-06 CU- 64 1.28E+01H

1.34

0.51

0.51-0.51

.5	1.2E-01	1.9E-05	4.3E-06
5.0	1.2E-00	1.9E-04	4.3E-05
50.0	1.1E+01	1.9E-03	4.2E-04
500.0	9.8E+01	1.5E-02	3.5E-03
5000.0	2.6E+02	4.3E-02	9.6E-03

ZN- 66 20.0E-06 NI- 63 9.16E+01Y

.5	2.2E-06
5.0	2.2E-05
50.0	2.2E-04
500.0	2.2E-03
5000.0	2.2E-02

ZN- 67 13.0E-04 CU- 67 6.16E+01H

0.18

0.09

0.09-0.09

.5	2.7E-01	1.8E-02	3.7E-03
5.0	2.7E-00	1.8E-01	3.7E-02
50.0	2.7E+01	1.8E-00	3.7E-01
500.0	2.6E+02	1.7E+01	3.5E-00
5000.0	1.7E+03	1.2E+02	2.4E+01

0.4B-0.18	0.4B-0.09-0.09
1.9E-02	3.5E-03
1.9E-01	3.5E-02
1.8E-00	3.5E-01
1.8E+01	3.3E-00
1.2E+02	2.2E+01

ZN- 68 99.0E-03 ZN- 69M 1.38E+01H

0.44

.5	4.2E+02	3.2E+01	7.4E-00
5.0	4.2E+03	3.2E+02	7.3E+01
50.0	4.1E+04	3.2E+03	7.2E+02
500.0	3.4E+05	2.6E+04	6.0E+03
5000.0	9.9E+05	7.7E+04	1.7E+04

ZN- 68 11.2E-01 ZN- 69G 5.50E+01M 1.000 99.0E-03 1.38E+01H

.5	7.2E+04
5.0	7.0E+05
50.0	5.3E+06
500.0	1.1E+07
5000.0	1.2E+07

TABLE V (Contd.)

ZN- 68 20.0E-06 NI- 65 2.56E-00H

			1.49	1.14	0.37-1.11
.5	4.6E-01	2.5E-03	6.3E-04	1.1E-03	2.5E-04
5.0	4.5E-00	2.5E-02	6.3E-03	1.1E-02	2.5E-03
50.0	4.1E+01	2.2E-01	5.7E-02	1.0E-01	2.3E-02
500.0	1.8E+02	1.0E-00	2.5E-01	4.5E-01	1.0E-01
5000.0	2.0E+02	1.1E-00	2.8E-01	5.0E-01	1.4E-01

ZN- 70 90.0E-04 ZN- 71M 4.10E-00H

			0.61	0.49	0.49-0.61	1.5B-0.38	0.38-0.49-0.61
.5	4.3E-00	2.4E-01	6.0E-02	3.1E-01	6.9E-02	1.7E-02	3.9E-01
5.0	4.3E+01	2.4E-00	6.0E-01	3.0E-00	6.8E-01	1.7E-01	3.9E-00
50.0	4.0E+02	2.3E+01	5.6E-00	2.9E+01	6.4E-00	1.6E-00	3.7E+01
500.0	2.3E+03	1.3E+02	3.2E+01	1.6E+02	3.7E+01	9.5E-00	2.1E+02
5000.0	3.0E+03	1.7E+02	4.3E+01	2.2E+02	4.9E+01	1.2E+01	2.8E+02

ZN- 70 11.1E-02 ZN- 71G 2.20E-00M

			0.51		2.4B-0.51
.5	5.5E+03	5.4E+01	1.2E+01		5.3E+01
5.0	3.0E+04	2.9E+02	6.7E+01		2.9E+02
50.0	3.7E+04	3.7E+02	8.5E+01		3.6E+02
500.0	3.7E+04	3.7E+02	8.5E+01		3.6E+02
5000.0	3.7E+04	3.7E+02	8.5E+01		3.6E+02

GA- 69 14.0E-01 GA- 70G 2.11E+01M

			1.04	0.17-1.04	0.6B-1.04	0.4B-0.17-1.04
.5	7.1E+05	1.8E+02	4.3E+01	1.6E+01	7.0E+01	7.5E-00
5.0	6.6E+06	1.7E+03	4.0E+02	1.5E+02	6.5E+02	7.0E+01
50.0	3.5E+07	9.1E+03	2.1E+03	8.0E+02	3.4E+03	3.7E+02
500.0	4.3E+07	1.1E+04	2.6E+03	1.0E+03	4.3E+03	4.6E+02
5000.0	4.3E+07	1.1E+04	2.6E+03	1.0E+03	4.3E+03	4.6E+02

GA- 71 50.0E-01 GA- 72G 1.41E+01H

			0.84	2.20	2.51-0.84	2.20-0.84	3.2B-0.84	1.86-0.63-0.83
.5	4.1E+04	1.0E+03	2.6E+02	2.0E+02	4.8E+01	4.4E-00	8.5E-00	8.8E+01
5.0	4.1E+05	1.0E+04	2.6E+03	2.0E+03	4.7E+02	4.4E+01	8.5E+01	8.7E+02
50.0	4.1E+06	1.0E+05	2.5E+04	2.0E+04	4.7E+03	4.4E+02	8.3E+02	8.6E+03
500.0	3.4E+07	9.0E+05	2.1E+05	1.6E+05	3.9E+04	3.6E+03	7.0E+03	7.2E+04
5000.0	1.0E+08	2.6E+06	6.2E+05	4.9E+05	1.1E+05	1.0E+04	2.0E+04	2.1E+05

TABLE V (Contd.)

GE- 70    34.0E-01    GE- 71G    1.14E+01D

•5	7.3E+02
5.0	7.3E+03
50.0	7.3E+04
500.0	7.2E+05
5000.0	6.6E+06

GE- 74    40.0E-03    GE- 75M    4.80E+01S

0.14

•5	2.5E+05	1.4E+04	2.8E+03
5.0	7.1E+05	4.0E+04	8.1E+03
50.0	7.2E+05	4.1E+04	8.2E+03
500.0	7.2E+05	4.1E+04	8.2E+03
5000.0	7.2E+05	4.1E+04	8.2E+03

GE- 74    21.0E-02    GE- 75G    8.20E+01M    1.000    40.0E-03    4.80E+01S

0.26

0.20

0.43-0.20

0.9B-0.26    0.9B-0.07-0.20

•5	1.6E+04	2.2E+02	4.7E+01	4.8E+01	1.0E+01	5.3E-01	2.2E+02	1.5E-00
5.0	1.8E+05	2.3E+03	5.1E+02	5.2E+02	1.0E+02	5.8E-00	2.4E+03	1.6E+01
50.0	1.5E+06	2.0E+04	4.4E+03	4.5E+03	9.3E+02	5.0E+01	2.0E+04	1.4E+02
500.0	4.4E+06	5.9E+04	1.2E+04	1.2E+04	2.6E+03	1.4E+02	5.9E+04	4.0E+02
5000.0	4.5E+06	5.9E+04	1.2E+04	1.3E+04	2.7E+03	1.4E+02	6.0E+04	4.1E+02

GE- 76    80.0E-03    GE- 77M    5.40E+01S

0.22

0.16

•5	9.8E+04	2.4E+03	5.1E+02	5.6E+03	1.1E+03
5.0	3.0E+05	7.6E+03	1.5E+03	1.7E+04	3.5E+03
50.0	3.0E+05	7.7E+03	1.6E+03	1.7E+04	3.6E+03
500.0	3.0E+05	7.7E+03	1.6E+03	1.7E+04	3.6E+03
5000.0	3.0E+05	7.7E+03	1.6E+03	1.7E+04	3.6E+03

GE- 76    80.0E-03    GE- 77G    1.13E+01H    \*360    80.0E-03    5.40E+01S

0.42

0.56

0.56-0.42

1.37-0.42

0.56-0.42-0.22

•5	1.6E+02	3.7E-00	8.4E-01	1.5E-00	3.8E-01	6.3E-02	1.2E-02	8.3E-03
5.0	1.9E+03	4.4E+01	1.0E+01	1.8E+01	4.5E-00	7.5E-01	1.4E-01	9.9E-02
50.0	2.0E+04	4.6E+02	1.0E+02	1.9E+02	4.7E+01	7.8E-00	1.5E-00	1.0E-00
500.0	1.6E+05	3.7E+03	8.4E+02	1.5E+03	3.8E+02	6.3E+01	1.2E+01	8.3E-00
5000.0	4.1E+05	9.2E+03	2.1E+03	3.9E+03	9.5E+02	1.5E+02	3.0E+01	2.0E+01

TABLE V (Contd.)

GE- 76	51.0E-03	AS- 77	3.87E+01H	9.000		5.36E+01S			
			0.52	0.25	0.28-0.25	0.4B-0.25			
*5	5.0E-00	9.2E-03	2.1E-03	1.6E-02	3.5E-03	7.9E-05	1.6E-02		
5.0	2.1E+02	4.0E-01	9.4E-02	7.4E-01	1.5E-01	3.4E-03	7.3E-01		
50.0	2.8E+03	5.2E-00	1.2E-00	9.5E-00	1.9E-00	4.4E-02	9.5E-00		
500.0	2.7E+04	4.9E+01	1.1E+01	9.1E+01	1.9E+01	4.2E-01	9.1E+01		
5000.0	1.5E+05	2.8E+02	6.5E+01	5.1E+02	1.0E+02	2.4E-00	5.1E+02		
GE- 76	11.0E-02	AS- 77	3.87E+01H	9.000		1.13E+01H			
			0.52	0.25	0.28-0.25	0.4B-0.25			
*5	1.6E-02	2.9E-05	6.9E-06	5.4E-05	1.1E-05	2.5E-07	5.4E-05		
5.0	1.6E-00	2.9E-03	6.9E-04	5.4E-03	1.1E-03	2.5E-05	5.4E-03		
50.0	1.5E+02	2.9E-01	6.8E-02	5.3E-01	1.1E-01	2.5E-03	5.3E-01		
500.0	1.3E+04	2.3E+01	5.6E-00	4.4E+01	9.1E-00	2.0E-01	4.4E+01		
5000.0	2.9E+05	5.3E+02	1.2E+02	9.8E+02	2.0E+02	4.5E-00	9.8E+02		
AS- 75	54.0E-01	AS- 76	2.64E+01H						
			0.56	0.66	0.66-0.56	2.4B-0.56	0.56-0.66-0.56		
*5	5.6E+04	1.5E+03	3.8E+02	1.9E+02	4.3E+01	1.1E+01	1.0E+03	6.2E-01	
5.0	5.6E+05	1.5E+04	3.8E+03	1.8E+03	4.2E+02	1.1E+02	1.0E+04	6.2E-00	
50.0	5.6E+06	1.5E+05	3.7E+04	1.8E+04	4.2E+03	1.1E+03	1.0E+05	6.1E+01	
500.0	5.1E+07	1.4E+06	3.4E+05	1.7E+05	3.8E+04	1.0E+04	9.6E+05	5.6E+02	
5000.0	2.3E+08	6.3E+06	1.5E+06	7.7E+05	1.7E+05	4.7E+04	4.3E+06	2.5E+03	
SE- 74	26.0E-00	SE- 75	1.20E+02D						
			0.26	0.40	0.14-0.26	0.12-0.28	EC -0.40	0.14-0.07-0.20	
*5	2.0E+01	1.3E-00	2.9E-01	2.7E-01	6.3E-02	1.6E-01	5.5E-02	1.3E-00	7.8E-04
5.0	2.0E+02	1.3E+01	2.9E-00	2.7E-00	6.3E-01	1.6E-00	5.5E-01	1.3E+01	7.8E-03
50.0	2.0E+03	1.3E+02	2.9E+01	2.7E+01	6.3E-00	1.6E+01	5.5E-00	1.3E+02	7.8E-02
500.0	2.0E+04	1.3E+03	2.9E+02	2.7E+02	6.2E+01	1.6E+02	5.5E+01	1.3E+03	7.8E-01
5000.0	2.0E+05	1.3E+04	2.8E+03	2.7E+03	6.2E+02	1.6E+03	5.5E+02	1.3E+04	7.8E-00
SE- 76	22.0E-00	SE- 77M	1.75E+01S						
			0.16						
*5	6.3E+07	1.0E+07	2.0E+06						
5.0	9.0E+07	1.4E+07	2.9E+06						
50.0	9.0E+07	1.4E+07	2.9E+06						
500.0	9.0E+07	1.4E+07	2.9E+06						
5000.0	9.0E+07	1.4E+07	2.9E+06						

TABLE V (Contd.)

SE- 80      30.0E-03      SE- 81M      5.70E+01M

0.10

5.5	4.1E+03	6.4E+01	1.2E+01
5.0	4.0E+04	6.2E+02	1.2E+02
50.0	3.1E+05	4.8E+03	9.4E+02
500.0	6.8E+05	1.0E+04	2.0E+03
5000.0	6.8E+05	1.0E+04	2.0E+03

SE- 80      50.0E-02      SE- 81G      1.82E+01M      1.000      30.0E-03      5.70E+01M

5.5	2.1E+05
5.0	1.9E+06
50.0	9.8E+06
500.0	1.2E+07
5000.0	1.2E+07

SE- 82      50.0E-03      SE- 83M      7.00E+01S

2.02

			2.02	1.01	1.01-0.65	0.65-0.35	1.5B-2.00	1.01-0.65-0.35
5.5	5.3E+04	9.7E+01	2.1E+01	1.8E+02	4.3E+01	9.7E-00	2.7E+01	9.7E+01
5.0	1.9E+05	3.5E+02	7.9E+01	6.9E+02	1.5E+02	3.5E+01	1.0E+02	3.5E+02
50.0	2.1E+05	3.7E+02	8.4E+01	7.3E+02	1.6E+02	3.7E+01	1.0E+02	3.7E+02
500.0	2.1E+05	3.7E+02	8.4E+01	7.3E+02	1.6E+02	3.7E+01	1.0E+02	3.7E+02
5000.0	2.1E+05	3.7E+02	8.4E+01	7.3E+02	1.6E+02	3.7E+01	1.0E+02	3.7E+02

SE- 82      40.0E-04      SE- 83G      2.50E+01M

5.5	2.3E+02
5.0	2.1E+03
50.0	1.2E+04
500.0	1.6E+04
5000.0	1.6E+04

SE- 82      50.0E-03      BR- 83      2.30E-00H      9.000      6.90E+01S

0.05

5.5	7.1E+01	2.6E-00	5.1E-01
5.0	3.5E+03	1.3E+02	2.5E+01
50.0	4.5E+04	1.6E+03	3.2E+02
500.0	1.9E+05	7.0E+03	1.5E+03
5000.0	2.1E+05	7.7E+03	1.5E+03

TABLE V (Contd.)

SE- 82 40.0E-04 BR- 83 2.30E-00H 9.000 2.50E+01M

0.05

*5	2.9E-01	1.0E-02	2.0E-03
5.0	2.7E+01	1.0E-00	1.9E-01
50.0	1.7E+03	6.5E+01	1.2E+01
500.0	1.5E+04	5.5E+02	1.0E+02
5000.0	1.6E+04	6.1E+02	1.2E+02

BR- 79 29.0E-01 BR- 80M 4.40E-00H

0.05

0.04

0.05-0.04

*5	8.6E+04	3.9E+01	7.7E-00	7.6E+03	1.4E+03	3.4E-00
5.0	8.6E+05	3.9E+02	7.7E+01	7.5E+04	1.4E+04	3.4E+01
50.0	8.1E+06	3.7E+03	7.3E+02	7.1E+05	1.3E+05	3.2E+02
500.0	4.8E+07	2.2E+04	4.3E+03	4.2E+06	8.2E+05	1.9E+03
5000.0	6.6E+07	3.0E+04	5.9E+03	5.7E+06	1.1E+06	2.6E+03

BR- 79 85.0E-01 BR- 80G 1.76E+01M 1.000 29.0E-01 4.40E-00H

0.62

0.51-0.51

1.4B-0.62

*5	3.7E+06	2.9E+04	6.7E+03	4.8E+03	2.9E+04
5.0	3.4E+07	2.6E+05	6.2E+04	4.4E+04	2.6E+05
50.0	1.7E+08	1.3E+06	3.0E+05	2.1E+05	1.3E+06
500.0	2.4E+08	1.8E+06	4.3E+05	3.0E+05	1.8E+06
5000.0	2.6E+08	2.0E+06	4.6E+05	3.3E+05	2.0E+06

BR- 81 33.0E-01 BR- 82 3.56E+01H

0.55

0.62

0.55-0.78

1.31-0.78

0.83-1.04-0.78

*5	1.1E+04	7.6E+02	1.7E+02	3.2E+02	7.6E+01	1.2E+01	5.4E-00
5.0	1.1E+05	7.6E+03	1.7E+03	3.2E+03	7.6E+02	1.2E+02	5.4E+01
50.0	1.1E+06	7.5E+04	1.7E+04	3.2E+04	7.5E+03	1.2E+03	5.3E+02
500.0	1.1E+07	7.0E+05	1.6E+05	3.0E+05	7.0E+04	1.1E+04	5.0E+03
5000.0	5.9E+07	3.7E+06	8.8E+05	1.6E+06	3.7E+05	6.2E+04	2.6E+04

KR- 78 20.0E-01 KR- 79G 3.45E+01H

0.26

0.51

0.51-0.51

*5	5.1E+01	4.8E-01	1.0E-01	2.8E-01	6.5E-02	1.9E-01
5.0	5.1E+02	4.8E-00	1.0E-00	2.8E-00	6.5E-01	1.9E-00
50.0	5.0E+03	4.7E+01	1.0E+01	2.8E+01	6.4E+00	1.9E+01
500.0	4.7E+04	4.4E+02	9.5E+01	2.6E+02	6.0E+01	1.7E+02
5000.0	2.4E+05	2.3E+03	5.0E+02	1.3L+03	3.1E+02	9.3E+02

TABLE V (Contd.)

KR- 80      95.0E-00      KR- 81      2.10E+05Y

.5	2.9E-04
5.0	2.9E-03
50.0	2.9E-02
500.0	2.9E-01
5000.0	2.9E-00

KR- 82      45.0E-00      KR- 83M      1.14E+02M

0.03				0.03-0.01	
.5	6.8E+05	1.2E+05	2.4E+04	2.2E+04	
5.0	6.7E+06	1.2E+06	2.4E+05	2.2E+05	
50.0	5.8E+07	1.0E+07	2.1E+06	1.9E+06	
500.0	2.1E+08	3.9E+07	7.6E+06	7.2E+06	
5000.0	2.2E+08	4.1E+07	8.0E+06	7.5E+06	

KR- 84      10.0E-02      KR- 85M      4.36E-00H

0.31				0.15		0.8B-0.15	
.5	3.2E+03	4.3E+01	1.0E+01	4.1E+02	8.3E+01	4.1E+02	
5.0	3.2E+04	4.3E+02	1.0E+02	4.1E+03	8.2E+02	4.1E+03	
50.0	3.0E+05	4.0E+03	9.4E+02	3.9E+04	7.8E+03	3.9E+04	
500.0	1.7E+06	2.4E+04	5.5E+03	2.3E+05	4.6E+04	2.3E+05	
5000.0	2.4E+06	3.2E+04	7.6E+03	3.1E+05	6.2E+04	3.1E+05	

KR- 84      60.0E-03      KR- 85G      1.03E+01Y      .190      10.0E-02      4.36E-00H

0.51						0.2B-0.51	
.5	9.4E-02	2.9E-05	6.9E-06			2.9E-05	
5.0	9.4E-01	2.9E-04	6.9E-05			2.9E-04	
50.0	9.6E-00	3.0E-03	7.0E-04			3.0E-03	
500.0	1.0E+02	3.4E-02	7.9E-03			3.4E-02	
5000.0	1.2E+03	3.8E-01	8.9E-02			3.8E-01	

KR- 86      60.0E-03      KR- 87      7.80E+01M

0.40				2.57		2.57-0.40		3.8B-0.40		1.3B-2.57-0.40	
.5	1.9E+03	1.5E+02	3.4E+01	6.5E-00	1.3E-00	5.3E-01		1.1E+02	6.5E-01		
5.0	1.9E+04	1.4E+03	3.3E+02	6.4E+01	1.2E+01	5.2E-00		1.1E+03	6.4E-00		
50.0	1.6E+05	1.2E+04	2.8E+03	5.3L+02	1.0E+02	4.3E+01		9.4E+03	5.2E+01		
500.0	4.4E+05	3.3E+04	7.7E+03	1.4E+03	2.9E+02	1.2E+02		2.6E+04	1.4E+02		
5000.0	4.4E+05	3.4E+04	7.8E+03	1.4E+03	2.9E+02	1.2E+02		2.6E+04	1.4E+02		

TABLE V (Contd.)

RB- 85 61.0E-03 RB- 86M 1.04E-00M

0.56

.5	5.2E+05	3.2E+04	7.8E+03
5.0	1.7E+06	1.1E+05	2.6E+04
50.0	1.8E+06	1.1E+05	2.7E+04
500.0	1.8E+06	1.1E+05	2.7E+04
5000.0	1.8E+06	1.1E+05	2.7E+04

RB- 85 91.0E-02 RB- 86G 1.87E+01D 1.000 61.0E-03 1.04E-00M

1.08

0.7B-1.08

.5	3.6E+02	1.0E+00	2.5E-01
5.0	3.7E+03	1.0E+01	2.6E-00
50.0	3.7E+04	1.0E+02	2.7E+01
500.0	3.7E+05	1.0E+03	2.7E+02
5000.0	3.5E+06	1.0E+04	2.5E+03

1.0E-00
1.0E+01
1.0E+02
1.0E+03
1.0E+04

RB- 87 12.0E-02 RB- 88 1.78E+01M

1.84

0.90

0.90-1.84

2.66-1.84

2.10-0.90-1.84

.5	2.7E+04	1.2E+02	3.1E+01
5.0	2.4E+05	1.1E+03	2.8E+02
50.0	1.2E+06	5.5E+03	1.3E+03
500.0	1.4E+06	6.4E+03	1.6E+03
5000.0	1.4E+06	6.4E+03	1.6E+03

1.5E+02	3.5E+01	3.0E-00	1.9E-01
1.4E+03	3.2E+02	2.8E+01	1.7E-00
6.8E+03	1.5E+03	1.3E+02	8.4E-00
7.9E+03	1.8E+03	1.5E+02	9.8E-00
7.9E+03	1.8E+03	1.5E+02	9.8E-00

3.8E-03
3.4E-02
1.6E-01
1.9E-01
1.9E-01

SR- 84 60.0E-02 SR- 85M 7.00E+01M

0.15

0.23

EC -0.15

.5	6.8E+02	1.5E+01	3.1E-00
5.0	6.6E+03	1.5E+02	3.0E+01
50.0	5.4E+04	1.2E+03	2.4E+02
500.0	1.3E+05	3.1E+03	6.3E+02
5000.0	1.3E+05	3.1E+03	6.3E+02

7.6E+01	1.5E+01	1.5E+01
7.4E+02	1.5E+02	1.5E+02
6.0E+03	1.2E+03	1.2E+03
1.5E+04	3.1E+03	3.1E+03
1.5E+04	3.2E+03	3.1E+03

1.5E+01
1.5E+02
1.2E+03
3.1E+03
3.1E+03

SR- 84 14.0E-01 SR- 85G 6.40E+01D .860 60.0E-02 7.00E+01M

0.51

EC -0.51

.5	1.2E-00	8.4E-02	1.9E-02
5.0	1.2E+01	8.5E-01	1.9E-01
50.0	1.3E+02	9.1E-00	2.0E-00
500.0	1.5E+03	1.0E+02	2.5E+01
5000.0	1.6E+04	1.1E+03	2.5E+02

8.4E-02	1.5E+01	1.5E+01
8.4E-01	1.5E+02	1.5E+02
9.0E-00	1.0E+03	1.0E+03
1.0E+02	1.0E+04	1.0E+04
1.1E+03	1.1E+05	1.1E+05

TABLE V (Contd.)

SR- 86    17.0E-01    SR- 87M    2.80E-00H

0.39

.5	1.4E+04	9.9E+02	2.2E+02
5.0	1.4E+05	9.9E+03	2.2E+03
50.0	1.4E+06	9.9E+04	2.2E+04
500.0	6.0E+06	4.2E+05	9.4E+04
5000.0	6.0E+06	4.2E+05	1.0E+05

SR- 88    50.0E-04    SR- 89    5.28E+01D

.5	7.7E-01
5.0	7.7E-00
50.0	7.7E+01
500.0	7.7E+02
5000.0	7.5E+03

Y - 89    12.6E-01    Y - 90G    6.42E+01H

.5	4.6E+03
5.0	4.5E+04
50.0	4.5E+05
500.0	4.4E+06
5000.0	3.0E+07

ZR- 94    76.0E-03    ZR- 95    6.50E+01D

0.74

.5	1.9E-00	9.1E-02	2.0E-02
5.0	1.9E+01	9.1E-01	2.0E-01
50.0	1.9E+02	9.1E-00	2.0E-00
500.0	1.9E+03	9.0E+01	2.0E+01
5000.0	1.9E+04	8.9E+02	2.0E+02

ZR- 94    16.0E-04    NB- 95M    9.00E+01H    9.000                6.50E+01D

0.24

.5	1.3E-06	1.6E-07	3.5E-08
5.0	1.3E-04	1.6E-05	3.5E-06
50.0	1.3E-02	1.6E-03	3.5E-04
500.0	1.3E-00	1.6E-01	3.5E-02
5000.0	1.0E+02	1.3E+01	2.8E-00

TABLE V (Contd.)

ZR- 94	76.0E-03	NB- 95G	3.50E+01D	9.000	6.50E+01D	
			0.77			0.2B-0.77
.5	6.6E-06	2.9E-07	7.2E-08			2.9E-07
5.0	6.6E-04	2.9E-05	7.2E-06			2.9E-05
50.0	6.6E-02	2.9E-03	7.2E-04			2.9E-03
500.0	6.6E-00	2.9E-01	7.2E-02			2.9E-01
5000.0	6.4E+02	2.8E+01	7.0E-00			2.8E+01
ZR- 96	53.0E-03	ZR- 97	1.70E+01H			
			0.75			
.5	1.9E+01	8.3E-01	1.9E-01			
5.0	1.9E+02	8.3E+00	1.9E+00			
50.0	1.9E+03	8.1E+01	1.9E+01			
500.0	1.6E+04	7.0E+02	1.6E+02			
5000.0	5.6E+04	2.3E+03	5.5E+02			
ZR- 96	53.0E-03	NB- 97M	6.00E+01S	9.000	1.70E+01H	
			0.75			
.5	3.0E-00	1.4E-01	3.3E-02			
5.0	1.4E+02	6.6E-00	1.5E-00			
50.0	1.9E+03	8.8E+01	2.0E+01			
500.0	1.6E+04	7.8E+02	1.8E+02			
5000.0	5.6E+04	2.6E+03	6.1E+02			
ZR- 96	53.0E-03	NB- 97G	7.40E+01M	9.000	1.70E+01H	
			0.67			
			1.02			1.3B-0.67
.5	4.6E-02	2.4E-03	5.5E-04	1.6E-05	3.7E-06	2.3E-03
5.0	4.5E-00	2.3E-01	5.4E-02	1.6E-03	3.6E-04	2.3E-01
50.0	3.9E+02	2.0E+01	4.7E+00	1.3E-01	3.1E-02	2.0E+01
500.0	1.3E+04	7.0E+02	1.6E+02	4.7E-00	1.0E-00	6.9E+02
5000.0	5.6E+04	2.9E+03	6.7E+02	1.9E+01	4.5E-00	2.8E+03
NB- 93	10.0E-01	NB- 94M	6.60E-00M			
			0.04			
			0.87			
.5	1.9E+06	6.8E+02	1.3E+02	7.9E+01	1.9E+01	
5.0	1.5E+07	5.4E+03	1.0E+03	6.3E+02	1.5E+02	
50.0	3.8E+07	1.3E+04	2.6E+03	1.5E+03	3.8E+02	
500.0	3.8E+07	1.3E+04	2.6E+03	1.5E+03	3.8E+02	
5000.0	3.8E+07	1.3E+04	2.6E+03	1.5E+03	3.8E+02	

TABLE V (Contd.)

NB- 93    10.0E-01    NB- 94G    2.03E+04Y    9.000    6.60E-00M

		0.70	0.87	
•5	3.2E-05	1.6E-06	3.9E-07	1.3E-06
5.0	2.8E-03	1.3E-04	3.3E-05	1.1E-04
50.0	1.0E-01	5.1E-03	1.2E-03	4.0E-03
500.0	1.2E-00	6.1E-02	1.4E-02	4.9E-02
5000.0	1.2E+01	6.2E-01	1.5E-01	5.0E-01

MO- 92    60.0E-04    MO- 93M    6.95E-00H

	1.48	0.69	1.48-0.69	0.26-0.69-1.48
•5	2.9E+01	7.1E-01	1.7E-01	1.4E-00
5.0	2.9E+02	7.0E+00	1.7E+00	1.4E+01
50.0	2.8E+03	6.8E+01	1.7E+01	1.4E+02
500.0	2.0E+04	4.8E+02	1.2E+02	1.0E+03
5000.0	3.5E+04	8.5E+02	2.1E+02	1.7E+03

MO- 92    60.0E-04    MO- 93G    2.00E-00Y    9.000    6.90E-00H

	4.9E-06	4.9E-04	4.7E-02	3.8E-00	1.0E+02
•5					
5.0					
50.0					
500.0					
5000.0					

MO- 92    10.0E-05    NB- 92G    1.01E+01D

	0.93	1.84	0.90-0.93	EC -0.93
•5	1.4E-02	5.2E-04	1.2E-04	7.3E-06
5.0	1.4E-01	5.2E-03	1.2E-03	7.3E-05
50.0	1.4E-00	5.2E-02	1.2E-02	7.3E-04
500.0	1.4E+01	5.2E-01	1.2E-01	7.3E-03
5000.0	1.2E+02	4.7E-00	1.1E-00	6.5E-02

MO- 92    50.0E-08    ZR- 89G    7.93E+01H

	0.92	0.51	0.51-0.51	
•5	2.1E-04	8.1E-06	1.9E-06	9.4E-06
5.0	2.1E-03	8.1E-05	1.9E-05	9.4E-05
50.0	2.1E-02	8.1E-04	1.9E-04	9.3E-04
500.0	2.0E-01	7.8E-03	1.8E-03	9.0E-03
5000.0	1.5E-00	5.7E-02	1.3E-02	6.6E-02

TABLE V (Contd.)

MO- 92	50.0E-08	Y-	89M	1.40E+01S	9.000	7.93E+01H
0.92						
.5	1.0E-04		3.9E-06	9.2E-07		
5.0	2.0E-03		7.6E-05	1.8E-05		
50.0	2.1E-02		8.0E-04	1.9E-04		
500.0	2.0E-01		7.8E-03	1.8E-03		
5000.0	1.5E-00		5.7E-02	1.3E-02		
0.77						
MO- 95	17.0E-06	NB-	95G	3.50E+01D		
0.77						
.5	6.9E-04		3.0E-05	7.5E-06		
5.0	6.9E-03		3.0E-04	7.5E-05		
50.0	6.9E-02		3.0E-03	7.5E-04		
500.0	6.8E-01		3.0E-02	7.5E-03		
5000.0	6.6E-00		2.9E-01	7.2E-02		
0.28-0.77						
MO- 98	51.0E-02	MO- 99		6.60E+01H		
0.14						
.5	3.9E+02		5.7E+01	1.1E+01	1.8E-00	4.3E-01
5.0	3.9E+03		5.7E+02	1.1E+02	1.8E+01	4.3E-00
50.0	3.9E+04		5.6E+03	1.1E+03	1.8E+02	4.3E+01
500.0	3.8E+05		5.4E+04	1.0E+04	1.7E+03	4.2E+02
5000.0	2.6E+06		3.8E+05	7.6E+04	1.2E+04	2.9E+03
0.74						
0.74-0.14						
0.98-0.37						
0.74-0.04-0.14						
MO- 98	41.0E-02	TC-	99M	6.04E-00H	9.000	6.70E+01H
0.14						
.5	1.5E-01		2.3E-02	4.6E-03		
5.0	1.5E+01		2.3E-00	4.6E-01		
50.0	1.4E+03		2.2E+02	4.4E+01		
500.0	1.0E+05		1.0E+04	3.3E+03		
5000.0	1.9E+06		3.0E+05	6.0E+04		
6.70E+01H						
MO- 98	51.0E-03	TC-	99G	2.12E+05Y	9.000	6.70E+01H
6.70E+01H						
.5	6.3E-11					
5.0	6.1E-09					
50.0	6.0E-07					
500.0	5.9E-05					
5000.0	4.6E-03					

TABLE V (Contd.)

MO-100 20.0E-02 MO-101 1.46E+01M

	1.02
.5	$1.6E+04$
5.0	$1.5E+05$
50.0	$6.5E+05$
500.0	$7.2E+05$
5000.0	$7.2E+05$

$2 \cdot 08$	$1 \cdot 56 \cdot 0 \cdot 51$	$1 \cdot 38 \cdot 0 \cdot 59$	$0 \cdot 78 \cdot 2 \cdot 08$	$0 \cdot 95 \cdot 0 \cdot 51 \cdot 0 \cdot 19$
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 229 230 231 232 233 234 235 236 237 238 239 239 240 241 242 243 244 245 246 247 248 249 249 250 251 252 253 254 255 256 257 258 259 259 260 261 262 263 264 265 266 267 268 269 269 270 271 272 273 274 275 276 277 278 279 279 280 281 282 283 284 285 286 287 288 289 289 290 291 292 293 294 295 296 297 298 299 299 300 301 302 303 304 305 306 307 308 309 309 310 311 312 313 314 315 316 317 318 319 319 320 321 322 323 324 325 326 327 328 329 329 330 331 332 333 334 335 336 337 338 339 339 340 341 342 343 344 345 346 347 348 349 349 350 351 352 353 354 355 356 357 358 359 359 360 361 362 363 364 365 366 367 368 369 369 370 371 372 373 374 375 376 377 378 379 379 380 381 382 383 384 385 386 387 388 389 389 390 391 392 393 394 395 396 397 398 399 399 400 401 402 403 404 405 406 407 408 409 409 410 411 412 413 414 415 416 417 418 419 419 420 421 422 423 424 425 426 427 428 429 429 430 431 432 433 434 435 436 437 438 439 439 440 441 442 443 444 445 446 447 448 449 449 450 451 452 453 454 455 456 457 458 459 459 460 461 462 463 464 465 466 467 468 469 469 470 471 472 473 474 475 476 477 478 479 479 480 481 482 483 484 485 486 487 488 489 489 490 491 492 493 494 495 496 497 498 499 499 500 501 502 503 504 505 506 507 508 509 509 510 511 512 513 514 515 516 517 518 519 519 520 521 522 523 524 525 526 527 528 529 529 530 531 532 533 534 535 536 537 538 539 539 540 541 542 543 544 545 546 547 548 549 549 550 551 552 553 554 555 556 557 558 559 559 560 561 562 563 564 565 566 567 568 569 569 570 571 572 573 574 575 576 577 578 579 579 580 581 582 583 584 585 586 587 588 589 589 590 591 592 593 594 595 596 597 598 599 599 600 601 602 603 604 605 606 607 608 609 609 610 611 612 613 614 615 616 617 618 619 619 620 621 622 623 624 625 626 627 628 629 629 630 631 632 633 634 635 636 637 638 639 639 640 641 642 643 644 645 646 647 648 649 649 650 651 652 653 654 655 656 657 658 659 659 660 661 662 663 664 665 666 667 668 669 669 670 671 672 673 674 675 676 677 678 679 679 680 681 682 683 684 685 686 687 688 689 689 690 691 692 693 694 695 696 697 698 699 699 700 701 702 703 704 705 706 707 708 709 709 710 711 712 713 714 715 716 717 718 719 719 720 721 722 723 724 725 726 727 728 729 729 730 731 732 733 734 735 736 737 738 739 739 740 741 742 743 744 745 746 747 748 749 749 750 751 752 753 754 755 756 757 758 759 759 760 761 762 763 764 765 766 767 768 769 769 770 771 772 773 774 775 776 777 778 779 779 780 781 782 783 784 785 786 787 788 789 789 790 791 792 793 794 795 796 797 798 799 799 800 801 802 803 804 805 806 807 808 809 809 810 811 812 813 814 815 816 817 818 819 819 820 821 822 823 824 825 826 827 828 829 829 830 831 832 833 834 835 836 837 838 839 839 840 841 842 843 844 845 846 847 848 849 849 850 851 852 853 854 855 856 857 858 859 859 860 861 862 863 864 865 866 867 868 869 869 870 871 872 873 874 875 876 877 878 879 879 880 881 882 883 884 885 886 887 888 889 889 890 891 892 893 894 895 896 897 898 899 899 900 901 902 903 904 905 906 907 908 909 909 910 911 912 913 914 915 916 917 918 919 919 920 921 922 923 924 925 926 927 928 929 929 930 931 932 933 934 935 936 937 938 939 939 940 941 942 943 944 945 946 947 948 949 949 950 951 952 953 954 955 956 957 958 959 959 960 961 962 963 964 965 966 967 968 969 969 970 971 972 973 974 975 976 977 978 979 979 980 981 982 983 984 985 986 987 988 989 989 990 991 992 993 994 995 996 997 998 998 999 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1039 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1049 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1059 1060 1061 1062 1063 1064 1065 1066 1067 1068 1069 1069 1070 1071 1072 1073 1074 1075 1076 1077 1078 1079 1079 1080 1081 1082 1083 1084 1085 1086 1087 1088 1089 1089 1090 1091 1092 1093 1094 1095 1096 1097 1098 1098 1099 1099 1100 1101 1102 1103 1104 1105 1106 1107 1108 1109 1109 1110 1111 1112 1113 1114 1115 1116 1117 1118 1119 1119 1120 1121 1122 1123 1124 1125 1126 1127 1128 1129 1129 1130 1131 1132 1133 1134 1135 1136 1137 1138 1139 1139 1140 1141 1142 1143 1144 1145 1146 1147 1148 1149 1149 1150 1151 1152 1153 1154 1155 1156 1157 1158 1159 1159 1160 1161 1162 1163 1164 1165 1166 1167 1168 1169 1169 1170 1171 1172 1173 1174 1175 1176 1177 1178 1179 1179 1180 1181 1182 1183 1184 1185 1186 1187 1188 1189 1189 1190 1191 1192 1193 1194 1195 1196 1197 1198 1198 1199 1199 1200 1201 1202 1203 1204 1205 1206 1207 1208 1209 1209 1210 1211 1212 1213 1214 1215 1216 1217 1218 1219 1219 1220 1221 1222 1223 1224 1225 1226 1227 1228 1229 1229 1230 1231 1232 1233 1234 1235 1236 1237 1238 1239 1239 1240 1241 1242 1243 1244 1245 1246 1247 1248 1249 1249 1250 1251 1252 1253 1254 1255 1256 1257 1258 1259 1259 1260 1261 1262 1263 1264 1265 1266 1267 1268 1269 1269 1270 1271 1272 1273 1274 1275 1276 1277 1278 1279 1279 1280 1281 1282 1283 1284 1285 1286 1287 1288 1289 1289 1290 1291 1292 1293 1294 1295 1296 1297 1298 1298 1299 1299 1300 1301 1302 1303 1304 1305 1306 1307 1308 1309 1309 1310 1311 1312 1313 1314 1315 1316 1317 1318 1319 1319 1320 1321 1322 1323 1324 1325 1326 1327 1328 1329 1329 1330 1331 1332 1333 1334 1335 1336 1337 1338 1339 1339 1340 1341 1342 1343 1344 1345 1346 1347 1348 1349 1349 1350 1351 1352 1353 1354 1355 1356 1357 1358 1359 1359 1360 1361 1362 1363 1364 1365 1366 1367 1368 1369 1369 1370 1371 1372 1373 1374 1375 1376 1377 1378 1379 1379 1380 1381 1382 1383 1384 1385 1386 1387 1388 1389 1389 1390 1391 1392 1393 1394 1395 1396 1397 1398 1398 1399 1399 1400 1401 1402 1403 1404 1405 1406 1407 1408 1409 1409 1410 1411 1412 1413 1414 1415 1416 1417 1418 1419 1419 1420 1421 1422 1423 1424 1425 1426 1427 1428 1429 1429 1430 1431 1432 1433 1434 1435 1436 1437 1438 1439 1439 1440 1441 1442 1443 1444 1445 1446 1447 1448 1449 1449 1450 1451 1452 1453 1454 1455 1456 1457 1458 1459 1459 1460 1461 1462 1463 1464 1465 1466 1467 1468 1469 1469 1470 1471 1472 1473 1474 1475 1476 1477 1478 1479 1479 1480 1481 1482 1483 1484 1485 1486 1487 1488 1489 1489 1490 1491 1492 1493 1494 1495 1496 1497 1498 1498 1499 1499 1500 1501 1502 1503 1504 1505 1506 1507 1508 1509 1509 1510 1511 1512 1513 1514 1515 1516 1517 1518 1519 1519 1520 1521 1522 1523 1524 1525 1526 1527 1528 1529 1529 1530 1531 1532 1533 1534 1535 1536 1537 1538 1539 1539 1540 1541 1542 1543 1544 1545 1546 1547 1548 1549 1549 1550 1551 1552 1553 1554 1555 1556 1557 1558 1559 1559 1560 1561 1562 1563 1564 1565 1566 1567 1568 1569 1569 1570 1571 1572 1573 1574 1575 1576 1577 1578 1579 1579 1580 1581 1582 1583 1584 1585 1586 1587 1588 1589 1589 1590 1591 1592 1593 1594 1595 1596 1597 1598 1598 1599 1599 1600 1601 1602 1603 1604 1605 1606 1607 1608 1609 1609 1610 1611 1612 1613 1614 1615 1616 1617 1618 1619 1619 1620 1621 1622 1623 1624 1625 1626 1627 1628 1629 1629 1630 1631 1632 1633 1634 1635 1636 1637 1638 1639 1639 1640 1641 1642 1643 1644 1645 1646 1647 1648 1649 1649 1650 1651 1652 1653 1654 1655 1656 1657 1658 1659 1659 1660 1661 1662 1663 1664 1665 1666 1667 1668 1669 1669 1670 1671 1672 1673 1674 1675 1676 1677 1678 1679 1679 1680 1681 1682 1683 1684 1685 1686 1687 1688 1689 1689 1690 1691 1692 1693 1694 1695 1696 1697 1698 1698 1699 1699 1700 1701 1702 1703 1704 1705 1706 1707 1708 1709 1709 1710 1711 1712 1713 1714 1715 1716 1717 1718 1719 1719 1720 1721 1722 1723 1724 1725 1726 1727 1728 1729 1729 1730 1731 1732 1733 1734 1735 1736 1737 1738 1739 1739 1740 1741 1742 1743 1744 1745 1746 1747 1748 1749 1749 1750 1751 1752 1753 1754 1755 1756 1757 1758 1759 1759 1760 1761 1762 1763 1764 1765 1766 1767 1768 1769 1769 1770 1771 1772 1773 1774 1775 1776 1777 1778 1779 1779 1780 1781 1782 1783 1784 1785 1786 1787 1788 1789 1789 1790 1791 1792 1793 1794 1795 1796 1797 1798 1798 1799 1799 1800 1801 1802 1803 1804 1805 1806 1807 1808 1809 1809 1810 1811 1812 1813 1814 1815 1816 1817 1818 1819 1819 1820 1821 1822 1823 1824 1825 1826 1827 1828 1829 1829 1830 1831 1832 1833 1834 1835 1836 1837 1838 1839 1839 1840 1841 1842 1843 1844 1845 1846 1847 1848 1849 1849 1850 1851 1852 1853 1854 1855 1856 1857 1858 1859 1859 1860 1861 1862 1863 1864 1865 1866 1867 1868 1869 1869 1870 1871 1872 1873 1874 1875 1876 1877 1878 1879 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1898 1899 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1998 1999 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2039 2040 2041<br				

MO-100 20.0E-02 TC-101 1.40E+01M 9.000

1 • 46E+01M

		0 . 31	
• 5	2 . 0E+02	2 . 0E+01	4 . 5E-00
5 . 0	1 . 8E+04	1 . 7E+03	3 . 9E+02
50 . 0	5 . 0E+05	4 . 8E+04	1 . 1E+04
500 . 0	7 . 2E+05	6 . 9E+04	1 . 5E+04
5000 . 0	7 . 2E+05	6 . 9E+04	1 . 5E+04

	0.55	0.39-0.55
00	$2.3E-01$	$1.9E-02$
01	$2.0E+01$	$1.6E-00$
03	$5.7E+02$	$4.5E+01$
03	$8.2E+02$	$6.5E+01$
03	$8.2E+02$	$6.5E+01$

1.38-0.31  
1.9E+01  
1.7E+03  
4.8E+04  
6.9E+04  
6.9E+04

TC- 99 26.0E-01 TC- 99M 6.00E-00H

0.14

5	9.E+04	1.E+04	2.E+03
50	9.E+05	1.E+05	2.E+04
500	8.6E+06	1.E+06	2.E+05
5000	5.8E+07	8.9E+06	1.7E+06
50000	9.4E+07	1.E+07	2.9E+06

RU- 96 21.0E-02 RU- 97 2.88E-00D

0.22

• 5	$3.4E+01$	$4.4E-00$	$9.3E-01$
5.0	$3.4E+02$	$4.4E+01$	$9.3E-00$
50.0	$3.4E+03$	$4.3E+02$	$9.3E+01$
500.0	$3.3E+04$	$4.2E+03$	$8.9E+02$
5000.0	$2.3E+05$	$2.9E+04$	$6.3E+03$

01	7.5E-02	8.5E-02
00	7.5E-01	8.5E-01
01	7.5E-00	8.4E-00
02	7.2E+01	8.1E+01
03	5.1E+02	5.7E+02

EC -0.22	EC -0.11-0.22
4.2E-00	8.5E-02
4.2E+01	8.5E-01
4.2E+02	8.5E-00
4.1E+03	8.2E+01
2.9E+04	5.7E+02

RU- 96 21.0E-02 TC- 97G 2.60E+06Y 9.200

2 • 88E-00D

•5	4•1E-12
5•0	4•4E-10
50•0	4•3E-08
500•0	4•2E-06
5000•0	3•3E-04

TABLE V (Contd.)

RU-102 14.4E-01 RU-103 4.00E+01D

0.50

.5	9.7E+01	6.0E-00	1.3E-00
5.0	9.7E+02	6.0E+01	1.3E+01
50.0	9.7E+03	6.0E+02	1.3E+02
500.0	9.7E+04	6.0E+03	1.3E+03
5000.0	9.4E+05	5.8E+04	1.3E+04

0.61

3.6E-01	8.8E-02	1.6E-03
3.6E-00	8.8E-01	1.6E-02
3.6E+01	8.8E-00	1.6E-01
3.6E+02	8.8E+01	1.6E-00
3.5E+03	8.6E+02	1.5E+01

0.56-0.05

6.0E-00	6.0E+01
6.0E+01	6.0E+02
6.0E+02	6.0E+03
5.9E+04	

RU-102 14.4E-01 RH-103M 5.70E+01M 9.000

4.00E+01D

0.04

.5	2.9E-01	2.2E-04	4.4E-05
5.0	2.9E+01	2.2E-02	4.4E-03
50.0	2.4E+03	1.8E-00	3.6E+01
500.0	8.1E+04	6.2E+01	1.2E+01
5000.0	9.3E+05	7.1E+02	1.3E+02

RU-104 70.0E-02 RU-105 4.50E-00H

0.73

.5	5.9E+03	1.3E+02	3.1E+01
5.0	5.9E+04	1.3E+03	3.1E+02
50.0	5.5E+05	1.2E+04	2.9E+03
500.0	3.3E+06	7.7E+04	1.7E+04
5000.0	4.6E+06	1.0E+05	2.4E+04

0.67

4.6E+01	1.0E+01	4.9E-00
4.6E+02	1.0E+02	4.8E+01
4.6E+03	1.0E+03	4.6E+02
2.6E+04	6.0E+03	2.7E+03
3.6E+04	8.3E+03	3.8E+03

0.32-0.48

1.1B-0.73	1.1B-0.32-0.48
1.3E+02	9.6E-00
1.3E+03	9.5E+01
1.2E+04	9.0E+02
7.7E+04	5.4E+03
1.0E+05	7.4E+03

RU-104 70.0E-02 RH-105 3.65E+01H 9.000

4.50E-00H

0.32

.5	4.7E-01	4.8E-03	1.1E-03
5.0	4.6E+01	4.7E-01	1.1E-01
50.0	4.4E+03	4.5E+01	1.0E+01
500.0	3.0E+05	3.0E+03	7.1E+02
5000.0	3.5E+06	3.6E+04	8.3E+03

RH-103 12.0E-00 RH-104M 4.40E-00M

0.08

.5	3.1E+07	1.0E+05	2.0E+04
5.0	2.2E+08	7.3E+05	1.4E+05
50.0	4.2E+08	1.3E+06	2.6E+05
500.0	4.2E+08	1.3E+06	2.6E+05
5000.0	4.2E+08	1.3E+06	2.6E+05

0.05

2.8E+06	5.5E+05	8.7E+03
2.0E+07	3.9E+06	5.3E+04
3.7E+07	7.3E+06	1.1E+05
3.7E+07	7.3E+06	1.1E+05
3.7E+07	7.3E+06	1.1E+05

0.08-0.05

1.2B-0.77	1.2B-0.77-0.56
1.0E+03	6.3E+01
7.2E+03	4.5E+02
1.3E+04	8.3E+02
1.3E+04	8.3E+02
1.3E+04	8.3E+02

TABLE V (Contd.)

RH-103 14.0E+01 RH-104G 4.20E+01S 1.000 12.0E-00 4.40E-00N

1•24-0•56

0-6B-1-24 0-6B-1-24-0-56

•5	1 • 9E+09	2 • 3E+06	5 • 6E+05
5 • 0	5 • 0E+09	6 • 1E+06	1 • 4E+06
50 • 0	5 • 3E+09	6 • 4E+06	1 • 5E+06
500 • 0	5 • 3E+09	6 • 4E+06	1 • 5E+06
5000 • 0	5 • 3F+09	6 • 4F+06	1 • 5E+06

3.6E+03  
9.6E+03  
1.0E+04  
1.0E+04

6.1E+04	3.7E+03
1.6E+05	9.9E+03
1.6E+05	1.0E+04
1.6E+05	1.0E+04

PD-102 48.0E-01 PD-103 1.70E+01D

0.36

8-84

8-87-8-38

5.0	$2 \cdot 2E+01$	$1 \cdot 2E-03$	$2 \cdot 7E-04$	$4 \cdot 0E-00$	$7 \cdot 9E-01$	$3 \cdot 5E-04$
50.0	$2 \cdot 2E+02$	$1 \cdot 2E-02$	$2 \cdot 7E-03$	$4 \cdot 0E+01$	$7 \cdot 9E-00$	$3 \cdot 5E-03$
500.0	$2 \cdot 2E+03$	$1 \cdot 2E-01$	$2 \cdot 7E-02$	$4 \cdot 0E+02$	$7 \cdot 9E+01$	$3 \cdot 5E-02$
5000.0	$2 \cdot 1E+04$	$1 \cdot 2E-00$	$2 \cdot 7E-01$	$4 \cdot 0E+03$	$7 \cdot 9E+02$	$3 \cdot 5E-01$
	$2 \cdot 0E+05$	$1 \cdot 1E+01$	$2 \cdot 5E-00$	$3 \cdot 7E+04$	$7 \cdot 4E+03$	$3 \cdot 3E-00$

PD-102 48.0E-01 RH-103M 5.70E+01M 9.000

1-70E±01D

8.84

5 • 5	6 • 7E-02	5 • 1E-05	1 • 0E-05
50 • 0	6 • 5E-00	5 • 0E-03	9 • 8E-04
500 • 0	5 • 5E+02	4 • 2E-01	2 • 8E-02
5000 • 0	1 • 8E+04	1 • 4E+01	2 • 7E-00
	2 • 0E+05	1 • 5E+02	3 • 0E+01

PD-108 26.0E-02 PD-109M 4.80E-00M

8-18

• 5	1 • 6E+05	1 • 5E+04	3 • 1E+03
5 • 0	1 • 2E+06	1 • 1E+05	2 • 3E+04
50 • 0	2 • 3E+06	2 • 2E+05	4 • 5E+04
500 • 0	2 • 3E+06	2 • 2E+05	4 • 5E+04
5000 • 0	2 • 3E+06	2 • 2E+05	4 • 5E+04

PP-198 10.9E-90 PP-198G 1.35E+01H 1.000 21.35 00 0.000

Q-59

9.09

5.0	3.8E+04	3.0E+02	5.9E+01	2.0E-01	5.0E-02
50.0	3.8E+05	3.0E+03	5.9E+02	2.0E-00	5.0E-01
500.0	3.8E+06	3.0E+04	5.9E+03	2.0E+01	5.0E+00
5000.0	3.2E+07	2.5E+05	4.9E+04	1.7E+02	4.2E+01
50000.0	9.1E+07	7.1E+05	1.4E+05	4.9E+02	1.1E+02

TABLE V (Contd.)

PD-108 10.0E-00 AG-109M 4.00E+01S 9.000 1.36E+01H

0.09

.5	8.4E+03	6.6E+01	1.2E+01
5.0	3.1E+05	2.6E+03	4.7E+02
50.0	3.6E+06	2.6E+04	5.6E+03
500.0	3.1E+07	2.6E+05	4.7E+04
5000.0	8.9E+07	6.9E+05	1.3E+05

PD-110 50.0E-03 PD-111M 5.50E-00H

0.17

.5	2.1E+02	2.2E+01	4.5E-00
5.0	2.0E+03	2.2E+02	4.5E+01
50.0	1.9E+04	2.1E+03	4.5E+02
500.0	1.3E+05	1.3E+04	2.8E+03
5000.0	2.0E+05	2.1E+04	4.5E+03

PD-110 21.0E-02 PD-111G 2.20E+01M .680 50.0E-03 5.50E-00H

0.07

.5	1.3E+04	2.4E+03	4.7E+02
5.0	1.2E+05	2.2E+04	4.5E+03
50.0	6.7E+05	1.2E+05	2.4E+04
500.0	9.2E+05	1.7E+05	3.5E+04
5000.0	9.7E+05	1.7E+05	3.5E+04

PD-110 21.0E-02 AG-111M 1.20E-00M 9.000 2.20E+01M

0.07

.5	1.7E+03	3.1E+02	6.2E+01
5.0	8.3E+04	1.5E+04	3.0E+03
50.0	6.5E+05	1.2E+05	2.3E+04
500.0	8.4E+05	1.5E+05	3.0E+04
5000.0	8.4E+05	1.5E+05	3.0E+04

PD-110 16.0E-03 AG-111M 1.20E-00M 9.000 5.50E-00H

0.07

.5	8.8E-00	1.6E-00	3.1E-01
5.0	4.5E+02	8.2E+01	1.6E+01
50.0	6.1E+03	1.1E+03	2.2E+02
500.0	4.1E+04	7.6E+03	1.4E+03
5000.0	6.4E+04	1.1E+04	2.3E+03

TABLE V (Contd.)

PD-110	21.0E-02	AG-111G	7.50E-00D	9.000		2.20E+01M	
			0.34		0.25	0.10-0.25	0.7B-0.34
•5	2.1E-01	1.2E-03	2.7E-04	2.7E-04	5.6E-05	4.5E-06	1.2E-03
5.0	2.0E+01	1.2E-01	2.6E-02	2.6E-02	5.3E-03	4.3E-04	1.2E-01
50.0	1.3E+03	7.9E-00	1.7E-00	1.7E-00	3.5E-01	2.8E-02	8.0E-00
500.0	2.4E+04	1.4E+02	3.2E+01	3.2E+01	6.5E-00	5.3E-01	1.4E+02
5000.0	2.2E+05	1.3E+03	3.0E+02	2.9E+02	6.0E+01	4.9E-00	1.3E+03
AG-107	45.0E-00	AG-108G	2.30E-00M				
			0.63		0.62-0.43		
•5	1.0E+08	1.1E+05	2.6E+04		1.9E+03		
5.0	6.0E+08	6.2E+05	1.4E+05		1.1E+04		
50.0	7.7E+08	8.0E+05	1.9E+05		1.4E+04		
500.0	7.7E+08	8.0E+05	1.9E+05		1.4E+04		
5000.0	7.7E+08	8.0E+05	1.9E+05		1.4E+04		
AG-109	32.0E-01	AG-110M	2.62E+02D				
			0.66		0.88	0.88-0.66	0.94-0.88-0.66
•5	4.7E+01	2.3E-00	5.7E-01	1.3E-00	3.4E-01	7.1E-02	2.3E-02
5.0	4.7E+02	2.3E+01	5.7E+00	1.3E+01	3.4E-00	7.1E-01	2.3E-01
50.0	4.7E+03	2.3E+02	5.7E+01	1.3E+02	3.4E+01	7.1E-00	2.3E-00
500.0	4.7E+04	2.3E+03	5.7E+02	1.3E+03	3.4E+02	7.1E+01	2.3E+01
5000.0	4.7E+05	2.3E+04	5.7E+03	1.3E+04	3.4E+03	7.0E+02	2.3E+02
AG-109	89.0E-00	AG-110G	2.42E+01S	•020	32.0E-01	2.62E+02D	
			0.66				
•5	8.3E+08	2.2E+06	5.4E+05				
5.0	1.4E+09	3.8E+06	9.4E+05				
50.0	1.4E+09	3.8E+06	9.4E+05				
500.0	1.4E+09	3.8E+06	9.4E+05				
5000.0	1.4E+09	3.8E+06	9.4E+05				
CD-106	10.0E-01	CD-107	6.70E-00H				
			0.85		0.09		
•5	3.3E+02	5.8E-02	1.4E-02	2.9E-00	5.6E-01		
5.0	3.3E+03	5.7E-01	1.4E-01	2.9E+01	5.6E-00		
50.0	3.2E+04	5.5E-00	1.3E-00	2.7E+02	5.4E+01		
500.0	2.2E+05	3.8E+01	9.5E-00	1.9E+03	3.8E+02		
5000.0	3.9E+05	6.7E+01	1.6E+01	3.3E+03	6.6E+02		

TABLE V (Contd.)

CD-106	10.0E-01	AG-107M	4.40E+01S	9.000	6.70E-00H
0.09					
*5	6.8E+01	5.9E-01	1.1E-01		
5.0	2.6E+03	2.2E+01	4.4E-00		
50.0	3.1E+04	2.7E+02	5.3E+01		
500.0	2.2E+05	1.9E+03	3.8E+02		
5000.0	3.9E+05	3.3E+03	6.6E+02		
0.25					
				0.15	0.15-0.25
*5	5.6E+03	6.6E+02	1.4E+02	2.8E+02	5.6E+01
5.0	5.4E+04	6.4E+03	1.3E+03	2.7E+03	5.4E+02
50.0	4.0E+05	4.7E+04	1.0E+04	2.0E+04	4.0E+03
500.0	7.9E+05	9.3E+04	2.0E+04	3.9E+04	7.8E+03
5000.0	7.9E+05	9.3E+04	2.0E+04	3.9E+04	7.9E+03
0.27					
				0.27	
*5	1.2E-02	1.4E-06	3.1E-07		
5.0	1.2E-01	1.4E-05	3.1E-06		
50.0	1.2E-00	1.4E-04	3.1E-05		
500.0	1.2E+01	1.4E-03	3.1E-04		
5000.0	1.2E+02	1.4E-02	3.1E-03		
0.94					
				1.30	
*5	7.2E-00	6.1E-03	1.5E-03	2.0E-03	5.0E-04
5.0	7.2E+01	6.1E-02	1.5E-02	2.0E-02	5.0E-03
50.0	7.2E+02	6.1E-01	1.5E-01	2.0E-01	5.0E-02
500.0	7.2E+03	6.1E-00	1.4E-00	2.0E-00	5.0E-01
5000.0	7.0E+04	6.0E+01	1.4E+01	1.9E+01	4.9E-00
				0.49-0.94	0.7B-0.94
0.52					
				0.49	
*5	1.1E+03	1.8E+01	3.9E-00	9.7E-00	2.1E-00
5.0	1.1E+04	1.8E+02	3.9E+01	9.7E+01	2.1E+01
50.0	1.1E+05	1.8E+03	3.9E+02	9.7E+02	2.1E+02
500.0	1.0E+06	1.7E+04	3.7E+03	9.2E+03	2.0E+03
5000.0	6.7E+06	1.1E+05	2.4E+04	5.9E+04	1.3E+04
				0.23-0.26	0.6B-0.52

TABLE V (Contd.)

CD-114      11.0E-01      IN-115M      4.50E-00H      9.000      2.23E-00D

0.34

.5	7.0E-01	3.6E-02	8.1E-03
5.0	7.0E+01	3.6E+00	8.1E-01
50.0	6.7E+03	3.5E+02	7.7E+01
500.0	4.6E+05	2.4E+04	5.3E+03
5000.0	6.4E+06	3.3E+05	7.4E+04

CD-116      15.0E-01      CD-117M      3.00E-00H

1.53

1.27

0.28-1.27

1.0B-1.27    1.0B-0.28-1.27

.5	7.0E+03	1.6E+02	4.2E+01	2.0E+02	4.9E+01	2.3E+01
5.0	6.9E+04	1.6E+03	4.1E+02	2.0E+03	4.8E+02	2.3E+02
50.0	6.3E+05	1.5E+04	3.8E+03	1.8E+04	4.4E+03	2.1E+03
500.0	3.1E+06	4.7E+04	1.8E+04	9.0E+04	2.1E+04	1.0E+04
5000.0	3.6E+06	8.7E+04	2.1E+04	1.0E+05	2.5E+04	1.2E+04

1.9E+02	2.2E+01
1.9E+03	2.2E+02
1.7E+04	2.0E+03
8.7E+04	1.8E+04
1.0E+05	1.1E+04

CD-116      15.0E-01      IN-117G      3.80E+01M      9.000      2.90E-00H

0.57

0.16

0.57-0.16

0.7B-0.57    0.7B-0.57-0.16

.5	3.3E+01	2.0E-00	4.6E-01	4.6E-00	9.2E-01	2.8E-01
5.0	3.1E+03	1.9E+02	4.4E+01	4.4E+02	8.9E+01	2.7E+01
50.0	2.3E+05	1.4E+04	3.2E+03	3.2E+04	6.5E+03	2.0E+03
500.0	3.0E+06	1.8E+05	4.2E+04	4.2E+05	8.4E+04	2.6E+04
5000.0	3.6E+06	2.2E+05	5.1E+04	5.0E+05	1.0E+05	3.1E+04

2.0E-00	2.8E-01
1.9E+02	2.7E+01
1.4E+04	1.9E+03
1.8E+05	2.5E+04
2.2E+05	3.0E+04

IN-113      81.0E-01      IN-114M      5.00E+01D

0.19

0.72

0.72-0.56

.5	5.2E+01	1.4E-00	2.8E-01	8.9E-02	2.2E-02	5.5E-03
5.0	5.2E+02	1.4E+01	2.8E-00	8.9E-01	2.2E-01	5.5E-02
50.0	5.2E+03	1.4E+02	2.8E+01	8.9E-00	2.2E-00	5.5E-01
500.0	5.2E+04	1.4E+03	2.8E+02	8.9E+01	2.1E+01	5.5E-00
5000.0	5.1E+05	1.3E+04	2.7E+03	8.7E+02	2.1E+02	5.4E+01

0.7B-1.30
5.5E+01
2.0E+02
2.2E+02
2.2E+02
2.4E+02

IN-113      39.0E-01      IN-114G      7.20E+01S      .965      81.0E-01      5.00E+01D

1.30

.5	1.3E+06	5.5E+01	1.3E+01
5.0	4.9E+06	2.0E+02	5.2E+01
50.0	5.2E+06	2.2E+02	5.5E+01
500.0	5.2E+06	2.2E+02	5.5E+01
5000.0	5.7E+06	2.4E+02	6.0E+01

5.5E+01
2.0E+02
2.2E+02
2.2E+02
2.4E+02

TABLE V (Contd.)

IN-115 92.0E-00 IN-116M 2.16E-00S

0.15

5	2.7E+09	2.2E+08	4.5E+07
50	2.7E+09	2.2E+08	4.5E+07
500	2.7E+09	2.2E+08	4.5E+07
5000	2.7E+09	2.2E+08	4.5E+07
50000	2.7E+09	2.2E+08	4.5E+07

IN-115 15.5E+01 IN-116M 5.40E+01M 1.000 92.0E-00 2.16E-00S

1.27

1.09

1.09-1.27

0.41-2.09

0.98-0.41

0.98-0.41-2.09

5	4.5E+07	1.0E+06	2.6E+05	8.3E+05	2.0E+05	2.2E+04	2.2E+04	1.2E+06	1.1E+04
50	4.6E+08	1.0E+07	2.6E+06	8.3E+06	2.0E+06	2.2E+05	2.2E+05	1.2E+07	1.1E+05
500	3.5E+09	8.1E+07	2.0E+07	6.4E+07	1.6E+07	1.7E+06	1.7E+06	9.5E+07	9.1E+05
5000	7.4E+09	1.7E+08	4.3E+07	1.3E+08	3.3E+07	3.6E+06	3.6E+06	2.0E+08	1.9E+06
50000	7.4E+09	1.7E+08	4.3E+07	1.3E+08	3.3E+07	3.6E+06	3.6E+06	2.0E+08	1.9E+06

IN-115 52.0E-00 IN-116G 1.30E+01S

5	1.2E+09
50	1.5E+09
500	1.5E+09
5000	1.5E+09
50000	1.5E+09

SN-112 53.0E-02 SN-113M 2.00E+01M

0.08

5	2.6E+03	4.4E+02	8.7E+01
50	2.4E+04	4.1E+03	8.0E+02
500	1.2E+05	2.1E+04	4.1E+03
5000	1.5E+05	2.5E+04	5.0E+03
50000	1.5E+05	2.5E+04	5.0E+03

SN-112 13.0E-01 SN-113G 1.12E+02D 0.910 53.0E-02 2.00E+01M

0.26

EC -0.26

5	8.1E-01	1.6E-03	3.6E-04
50	8.4E-00	1.7E-02	3.7E-03
500	9.7E+01	2.0E-01	4.3E-02
5000	1.0E+03	2.2E-00	4.9E-01
50000	1.1E+04	2.2E+01	4.9E-00

1.6E-03  
1.7E-02  
2.0E-01  
2.2E-00  
2.2E+01

TABLE V (Contd.)

SN-112    13.0E-01    IN-113M    1.73E-00H    9.000    1.18E+02D

0.39

.5	1.2E-03	7.6E-05	1.6E-05
5.0	1.2E-01	7.5E-03	1.6E-03
50.0	1.1E+01	6.8E-01	1.5E-01
500.0	5.4E+02	3.2E+01	7.2E+00
5000.0	7.4E+03	4.3E+02	9.7E+01

SN-116    60.0E-04    SN-117M    1.40E+01D

0.16

.5	4.4E-01	6.5E-02	1.3E-02	1.0E-02
5.0	4.4E+00	6.5E-01	1.3E-01	1.0E-01
50.0	4.4E+01	6.5E-00	1.3E-00	1.0E-00
500.0	4.4E+02	6.4E+01	1.3E+01	1.0E+01
5000.0	4.1E+03	5.9E+02	1.2E+02	9.5E+01

SN-118    10.0E-03    SN-119M    2.45E+02D

0.07

0.07-0.02

.5	7.1E-02	1.3E-02	2.5E-03	3.3E-04
5.0	7.1E-01	1.3E-01	2.5E-02	3.3E-03
50.0	7.1E-00	1.3E-00	2.5E-01	3.3E-02
500.0	7.1E+01	1.3E+01	2.5E-00	3.3E-01
5000.0	7.1E+02	1.3E+02	2.5E+01	3.3E-00

SN-120    10.0E-04    SN-121M    1.10E+01Y

0.01

.5	5.9E-04	1.1E-04	2.1E-05
5.0	5.9E-03	1.1E-03	2.1E-04
50.0	5.9E-02	1.1E-02	2.1E-03
500.0	5.9E-01	1.1E-01	2.1E-02
5000.0	5.9E-00	1.1E-00	2.1E-01

SN-120    14.0E-02    SN-121G    2.75E+01H

.5	2.9E+02
5.0	2.9E+03
50.0	2.9E+04
500.0	2.6E+05
5000.0	1.2E+06

TABLE V (Contd.)

SN-122	10.0E-04	SN-123	1.28E+02D						
1.08									
*5 5.0 50.0 500.0 5000.0	2.6E-03 2.6E-02 2.6E-01 2.6E-00 2.6E+01	1.7E-06 1.7E-05 1.7E-04 1.7E-03 1.7E-02	4.3E-07 4.3E-06 4.3E-05 4.3E-04 4.2E-03		0.3B-1.08				
0.16									
*5 5.0 50.0 500.0 5000.0	1.9E+03 1.9E+04 1.3E+05 2.2E+05 2.2E+05	2.8E+02 2.6E+03 1.8E+04 3.2E+04 3.2E+04	5.7E+01 5.5E+02 3.8E+03 6.6E+03 6.7E+03		1.3B-0.16				
0.33									
*5 5.0 50.0 500.0 5000.0	1.2E+04 1.1E+05 3.5E+05 3.6E+05 3.6E+05	1.2E+03 1.1E+04 3.5E+04 3.6E+04 3.6E+04	2.9E+02 2.5E+03 8.0E+03 8.2E+03 8.2E+03	6.3E-00 5.4E+01 1.7E+02 1.7E+02 1.7E+02	1.4E-00 1.2E+01 4.0E+01 4.1E+01 4.1E+01	6.3E-01 5.4E-00 1.7E+01 1.7E+01 1.7E+01	1.2E+03 1.0E+04 3.5E+04 3.5E+04 3.5E+04	2.0B-0.33	
1.07									
*5 5.0 50.0 500.0 5000.0	1.8E-01 1.8E-00 1.8E+01 1.8E+02 1.6E+03	2.3E-04 2.3E-03 2.3E-02 2.3E-01 2.1E-00	5.7E-05 5.7E-04 5.7E-03 5.6E-02 5.0E-01	3.9E-05 3.9E-04 3.9E-03 3.9E-02 3.5E-01	8.8E-06 8.8E-05 8.8E-04 8.7E-03 7.8E-02	2.5E-06 2.5E-05 2.5E-04 2.5E-03 2.2E-02	4.2E-05 4.2E-04 4.2E-03 4.1E-02 3.7E-01	0.4B-1.97	0.5B-0.81-1.07
1.97									
0.81-1.07									
0.43									
*5 5.0 50.0 500.0 5000.0	1.6E-03 1.4E-01 6.7E-00 9.0E+01 9.2E+02	4.1E-05 3.7E-03 1.6E-01 2.2E-00 2.3E+01	9.0E-06 8.1E-04 3.7E-02 4.9E-01 5.0E-00	2.2E-05 2.0E-03 9.3E-02 1.2E-00 1.2E+01	5.4E-06 4.9E-04 2.2E-02 3.0E-01 3.1E-00	5.3E-07 4.7E-05 2.1E-03 2.9E-02 2.9E-01	4.1E-05 3.6E-03 1.6E-01 2.2E-00 2.3E+01	0.3B-0.43	0.3B-0.43-0.04
0.60									
0.43-0.04									
0.3B-0.43									

TABLE V (Contd.)

SN-124	40.0E-04	SB-125	2.57E-00Y	9.000	9.40E-00D	0.60	0.43-0.04	0.3B-0.43	0.3B-0.43-0.04
			0.43			0.60			
.5	2.3E-08	5.9E-10	1.3E-10	3.3E-10	7.9E-11	7.7E-12		5.9E-10	7.5E-12
5.0	2.3E-06	5.9E-08	1.3E-08	3.3E-08	7.9E-09	7.7E-10		5.9E-08	7.5E-10
50.0	2.3E-04	5.9E-06	1.3E-06	3.2E-06	7.9E-07	7.6E-08		5.9E-06	7.5E-08
500.0	2.3E-02	5.9E-04	1.2E-04	3.2E-04	7.9E-05	7.6E-06		5.8E-04	7.5E-06
5000.0	2.1E-00	5.4E-02	1.2E-02	3.0E-02	7.3E-03	7.0E-04		4.4E-02	6.9E-04
SB-121	19.0E-02	SB-122M	3.30E-00M						
			0.08			0.06			
.5	3.2E+05	5.9E+04	1.1E+04	5.9E+04	1.1E+04	1.0E+04			
5.0	3.0E+06	3.8E+05	7.5E+04	3.8E+05	7.5E+04	7.0E+04			
50.0	3.2E+06	5.9E+05	1.1E+05	5.9E+05	1.1E+05	1.0E+05			
500.0	3.2E+06	5.9E+05	1.1E+05	5.9E+05	1.1E+05	1.0E+05			
5000.0	3.2E+06	5.9E+05	1.1E+05	5.9E+05	1.1E+05	1.0E+05			
SB-121	68.0E-01	SB-122G	2.80E-00D	1.000	19.0E-02	3.30E-00M			
			0.56			0.69			
.5	9.9E+03	4.0E+02	9.8E+01	1.7E+01	4.0E-00	1.0E-00			
5.0	1.0E+05	4.1E+03	9.9E+02	1.7E+02	4.0E+01	1.0E+01			
50.0	1.0E+06	4.1E+04	1.0E+04	1.7E+03	4.1E+02	1.0E+02			
500.0	9.7E+06	4.0E+05	9.7E+04	1.6E+04	3.9E+03	1.0E+03			
5000.0	6.8E+07	2.8E+06	6.8E+05	1.1E+05	2.7E+04	7.3E+03			
			1.4B-0.56			0.7B-0.69-0.56			
.5	3.8E+02	3.9E+03	1.0E+00	3.9E+03	1.0E+01	1.0E+01			
5.0	3.9E+03	3.9E+04	1.0E+02	3.9E+04	1.0E+02	1.0E+02			
50.0	3.9E+04	3.9E+05	1.0E+03	3.9E+05	1.0E+03	1.0E+03			
500.0	3.8E+05	3.8E+06	1.0E+04	3.8E+06	1.0E+04	1.0E+04			
5000.0	2.6E+06	2.6E+07	1.0E+05	2.6E+07	1.0E+05	1.0E+05			
SB-123	30.0E-03	SB-124M	2.10E+01M						
			0.03						
.5	6.2E+03	1.1E+03	2.2E+02						
5.0	5.7E+04	1.0E+04	2.0E+03						
50.0	3.0E+05	5.6E+04	1.1E+04						
500.0	3.8E+05	6.9E+04	1.3E+04						
5000.0	3.8E+05	6.9E+04	1.3E+04						
SB-123	30.0E-03	SB-124M	9.30E+01S						
			0.64			0.51			
.5	7.6E+04	4.1E+03	9.8E+02	5.2E+03	1.2E+03	2.3E+02			
5.0	3.3E+05	1.8E+04	4.4E+03	2.3E+04	5.4E+03	1.0E+03			
50.0	3.8E+05	2.0E+04	4.9E+03	2.6E+04	6.0E+03	1.1E+03			
500.0	3.8E+05	2.0E+04	4.9E+03	2.6E+04	6.0E+03	1.1E+03			
5000.0	3.8E+05	2.0E+04	4.9E+03	2.6E+04	6.0E+03	1.1E+03			
			51-0.65-0.60						
.5	1.6E+01	7.1E+01	8.0E+01						
5.0	8.0E+01	8.0E+01	8.0E+01						
50.0	8.0E+01	8.0E+01	8.0E+01						
500.0	8.0E+01	8.0E+01	8.0E+01						
5000.0	8.0E+01	8.0E+01	8.0E+01						

TABLE V (Contd.)

SB-123	25.0E-01	SB-124G	6.00E+01D					
				0.60	1.69	1.69-0.60	0.6B-1.69	0.6B-1.69-0.60
5.0	1.2E+02	7.2E-00	1.7E-00	1.2E-00	3.0E-01	7.7E-02	1.2E-00	7.8E-02
50.0	1.2E+03	7.2E+01	1.7E+01	1.2E+01	3.0E+00	7.7E-01	1.2E+01	7.8E-01
500.0	1.2E+04	7.2E+02	1.7E+02	1.2E+02	3.0E+01	7.7E-00	1.2E+02	7.8E-00
5000.0	1.2E+05	7.2E+03	1.7E+03	1.2E+03	3.0E+02	7.7E+01	1.2E+03	7.8E+01
50000.0	1.2E+06	7.0E+04	1.7E+04	1.2E+04	2.9E+03	7.6E+02	1.2E+04	7.7E+02
TE-120	34.0E-02	TE-121M	1.54E+02D					
				0.08	0.21	0.08-0.21	EC -1.13	
5.0	1.3E-02	2.3E-03	4.5E-04	1.6E-03	3.3E-04	3.0E-04	2.0E-05	
50.0	1.3E-01	2.3E-02	4.5E-03	1.6E-02	3.3E-03	3.0E-03	2.0E-04	
500.0	1.3E-00	2.3E-01	4.5E-02	1.6E-01	3.3E-02	3.0E-02	2.0E-03	
5000.0	1.3E+01	2.3E-00	4.5E-01	1.6E+00	3.3E-01	3.0E-01	2.0E-02	
50000.0	1.3E+02	2.3E+01	4.5E+00	1.6E+01	3.3E-00	2.9E-00	2.0E-01	
TE-120	20.0E-01	TE-121G	1.70E+01D	.950	34.0E-02	1.54E+02D		
				0.58		0.51-0.07	EC -0.58	
5.0	7.1E-01	4.2E-02	9.9E-03			8.9E-03	4.2E-02	
50.0	7.1E+00	4.2E-01	9.9E-02			8.9E-02	4.2E-01	
500.0	7.1E+01	4.2E-00	9.9E-01			8.9E-01	4.2E-00	
5000.0	7.0E+02	4.2E+01	9.8E-00			8.9E+00	4.2E+01	
50000.0	6.6E+03	3.9E+02	9.3E+01			8.4E+01	3.9E+02	
TE-122	11.0E-01	TE-123M	1.04E+02D					
				0.16	0.09	0.09-0.16		
5.0	1.7E-00	2.3E-01	4.9E-02	3.2E-01	6.3E-02	4.3E-02		
50.0	1.7E+01	2.3E-00	4.9E-01	3.2E-00	6.3E-01	4.3E-01		
500.0	1.7E+02	2.3E+01	4.9E-00	3.2E+01	6.3E-00	4.3E-00		
5000.0	1.7E+03	2.3E+02	4.9E+01	3.2E+02	6.3E+01	4.3E+01		
50000.0	1.7E+04	2.3E+03	4.8E+02	3.2E+03	6.2E+02	4.3E+02		
TE-124	50.0E-01	TE-125M	5.80E+01D					
				0.11	0.04	0.11-0.04		
5.0	2.7E+01	1.6E-02	3.2E-03	3.5E-01	6.8E-02	2.1E-04		
50.0	2.7E+02	1.6E-01	3.2E-02	3.5E-00	6.8E-01	2.1E-03		
500.0	2.7E+03	1.6E-00	3.2E-01	3.5E+01	6.8E-00	2.1E-02		
5000.0	2.6E+04	1.6E+01	3.2E-00	3.4E+02	6.8E+01	2.1E-01		
50000.0	2.6E+05	1.6E+02	3.1E+01	3.4E+03	6.7E+02	2.1E-00		

TABLE V (Contd.)

TE-126 90.0E-03 TE-127M 1.05E+02D

0.09

0.67

.5	1.0E-00	1.9E-01	3.8E-02	5.6E-06	1.3E-06
5.0	1.0E+01	1.9E-00	3.8E-01	5.6E-05	1.3E-05
50.0	1.0E+02	1.9E+01	3.8E-00	5.6E-04	1.3E-04
500.0	1.0E+03	1.9E+02	3.8E+01	5.6E-03	1.3E-03
5000.0	1.0E+04	1.9E+03	3.8E+02	5.6E-02	1.2E-02

TE-126 80.0E-02 TE-127G 9.40E-00H .985 90.0E-03 1.05E+02D

0.42

0.06

0.36-0.06

\*22-0.15-0.06

.5	2.6E+03	1.8E-00	3.8E-01	5.7E-01	1.1E-01	5.4E-02	1.0E-04
5.0	2.5E+04	1.8E+01	3.8E-00	5.7E-00	1.1E-00	5.4E-01	1.0E-03
50.0	2.5E+05	1.7E+02	3.7E+01	5.5E+01	1.0E+01	5.2E+00	1.0E-02
500.0	1.9E+06	1.3E+03	2.9E+02	4.2E+02	8.3E+01	4.0E+01	8.1E-02
5000.0	4.2E+06	2.9E+03	6.3E+02	9.3E+02	1.8E+02	8.8E+01	1.7E-01

TE-128 15.0E-03 TE-129M 3.35E+01D

0.11

.5	9.6E-01	1.6E-01	3.2E-02
5.0	9.6E-00	1.6E-00	3.2E-01
50.0	9.6E+01	1.6E+01	3.2E-00
500.0	9.6E+02	1.6E+02	3.2E+01
5000.0	9.3E+03	1.5E+03	3.1E+02

TE-128 13.0E-02 TE-129G 7.20E+01M .950 15.0E-03 3.35E+01D

0.48

0.72

0.48-0.03

1.0B-0.48 1.0B-0.48-0.03

.5	5.6E+03	6.6E+01	1.5E+01	8.2E-00	2.0E-00	1.2E+01
5.0	5.4E+04	6.5E+02	1.4E+02	8.0E+01	1.9E+01	1.1E+02
50.0	4.4E+05	5.2E+03	1.2E+03	6.5E+02	1.6E+02	9.7E+02
500.0	1.1E+06	1.3E+04	3.1E+03	1.7E+03	4.1E+02	2.5E+03
5000.0	1.1E+06	1.3E+04	3.2E+03	1.7E+03	4.2E+02	2.5E+03

TE-128 13.0E-02 I -129 1.60E+07Y 9.000 7.40E+01M

0.04

0.2B-0.04

.5	1.1E-10	8.5E-13	1.6E-13
5.0	1.1E-08	8.1E-11	1.5E-11
50.0	9.7E-07	7.1E-09	1.3E-09
500.0	3.7E-05	2.7E-07	5.4E-08
5000.0	4.7E-04	3.4E-06	6.7E-07

8.5E-13  
8.1E-11  
7.1E-09  
2.7E-07  
3.4E-06

TABLE V (Contd.)

TE-128	75.0E-05	I -129	1.60E+07Y	9.000	3.30E+01D	
			0.04			0.2B-0.04
.5	6.7E-14	4.9E-16	9.7E-17			4.9E-16
5.0	6.7E-14	4.9E-16	9.7E-17			4.9E-16
50.0	1.0E-11	7.4E-14	1.4E-14			7.4E-14
500.0	1.0E-09	7.4E-12	1.4E-12			7.4E-12
5000.0	9.8E-08	7.2E-10	1.4E-10			7.2E-10
TE-130	40.0E-03	TE-131M	2.88E+01H			
			0.78	0.84	0.84-0.78	0.4B-2.00 0.10-0.20-1.62
.5	7.8E+01	2.8E+00	6.8E-01	1.3E-00	3.1E-01	5.9E-02
5.0	7.8E+02	2.8E+01	6.8E+00	1.3E+01	3.1E+00	5.9E+01
50.0	7.7E+03	2.7E+02	6.8E+01	1.3E+02	3.0E+01	5.8E+00
500.0	7.0E+04	2.5E+03	6.2E+02	1.1E+03	2.8E+02	5.3E+01
5000.0	3.5E+05	1.2E+04	2.9E+03	5.6E+03	1.3E+03	2.5E+02
TE-130	27.0E-02	TE-131G	2.48E+01M	.190	40.0E-03	2.88E+01H
			0.15	0.45	0.45-0.15	
.5	3.6E+04	3.8E+03	7.6E+02	5.8E+02	1.3E+02	7.5E+01
5.0	3.4E+05	3.5E+04	7.1E+03	5.4E+03	1.2E+03	7.0E+02
50.0	1.9E+06	2.0E+05	4.1E+04	3.1E+04	7.1E+03	4.0E+03
500.0	2.6E+06	2.7E+05	5.5E+04	4.2E+04	9.5E+03	5.4E+03
5000.0	2.6E+06	2.8E+05	5.6E+04	4.3E+04	9.7E+03	5.5E+03
TE-130	32.0E-03	I -131	8.05E-00D	9.000	2.88E+01H	
			0.36	0.64	0.28-0.08	0.6B-0.36
.5	9.3E-04	7.0E-05	1.6E-05	4.5E-06	1.1E-06	3.2E-07
5.0	9.3E-02	7.0E-03	1.6E-03	4.5E-04	1.1E-04	3.2E-05
50.0	9.2E-00	6.9E-01	1.6E-01	4.5E-02	1.0E-02	3.2E-03
500.0	8.6E+02	6.5E+01	1.5E+01	4.2E-00	1.0E-00	3.0E-01
5000.0	4.7E+04	3.5E+03	8.2E+02	2.3E+02	5.6E+01	1.6E+01
TE-130	27.0E-02	I -131	8.05E-00D	9.000	2.48E+01M	
			0.36	0.64	0.28-0.08	0.6B-0.36
.5	5.4E-01	4.1E-02	9.5E-03	2.6E-03	6.4E-04	1.9E-04
5.0	5.2E+01	3.9E+00	1.0E-01	2.5E-01	6.2E-02	1.8E-02
50.0	3.6E+03	2.7E+02	6.3E+01	1.7E+01	4.2E+00	1.2E+00
500.0	7.2E+04	5.4E+03	1.2E+03	3.5E+02	8.5E+01	2.5E+01
5000.0	6.7E+05	5.0E+04	1.1E+04	3.3E+03	8.0E+02	2.3E+02

TABLE V (Contd.)

I -127 56.0E-01 I -128 2.50E+01M

•5	2.1E+06	2.6E+04	5.7E+03
5.0	2.0E+07	2.4E+05	5.4E+04
50.0	1.1E+08	1.4E+06	3.1E+05
500.0	1.5E+08	1.9E+06	4.1E+05
5000.0	1.5E+08	1.9E+06	4.1E+05

0.46			

1.5E+03	3.5E+02	2.1E+02	0.99
1.4E+04	3.2E+03	2.0E+03	
8.3E+04	1.9E+04	1.1E+04	
1.1E+05	2.5E+04	1.5E+04	
1.1E+05	2.5E+04	1.5E+04	

0.54-0.46			

1.7B-0.46			

I -129 24.0E-00 I -130 1.26E+01H

•5	3.0E+05	4.3E+03	1.0E+03
5.0	3.0E+06	4.3E+04	1.0E+04
50.0	3.0E+07	4.2E+05	9.8E+04
500.0	2.4E+08	3.4E+06	8.1E+05
5000.0	6.6E+08	9.3E+06	2.1E+06

1.15			

7.6E+03	1.7E+03	4.0E+02	0.74
7.6E+04	1.7E+04	4.0E+03	
7.4E+05	1.7E+05	3.9E+04	
6.1E+06	1.4E+06	3.2E+05	
1.6E+07	3.8E+06	8.7E+05	

0.74-0.66			

0.74-0.53			

0.74-0.66-0.53			

XE-128 50.0E-01 XE-129M 8.00E-00D

•5	7.9E+01	6.6E-01	1.3E-01
5.0	7.9E+02	6.6E-00	1.3E-00
50.0	7.9E+03	6.6E+01	1.3E+01
500.0	7.8E+04	6.5E+02	1.3E+02
5000.0	6.8E+05	5.7E+03	1.1E+03

0.20			

7.9E+01	6.6E-01	1.3E-01	0.20
7.9E+02	6.6E-00	1.3E-00	
7.9E+03	6.6E+01	1.3E+01	
7.8E+04	6.5E+02	1.3E+02	
6.8E+05	5.7E+03	1.1E+03	

0.20			

0.20			

XE-130 50.0E-01 XE-131M 1.20E+01D

•5	1.1E+02	3.8E-01	7.6E-02
5.0	1.1E+03	3.8E-00	7.6E-01
50.0	1.1E+04	3.8E+01	7.6E-00
500.0	1.1E+05	3.7E+02	7.5E+01
5000.0	1.0E+06	3.4E+03	6.9E+02

0.16			

1.1E+02	3.8E-01	7.6E-02	0.16
1.1E+03	3.8E-00	7.6E-01	
1.1E+04	3.8E+01	7.6E-00	
1.1E+05	3.7E+02	7.5E+01	
1.0E+06	3.4E+03	6.9E+02	

0.16			

0.16			

XE-132 20.0E-02 XE-133G 5.30E-00D

•5	6.7E+01	5.1E-00	1.0E+00
5.0	6.7E+02	5.1E+01	1.0E+01
50.0	6.6E+03	5.1E+02	9.9E+01
500.0	6.5E+04	5.0E+03	9.7E+02
5000.0	5.3E+05	4.1E+04	8.0E+03

0.08			

7.5E-03			0.08
7.5E-02			
7.5E-01			
7.3E-00			
6.0E+03			

0.08			

0.3B-0.08			

TABLE V (Contd.)

XE-134 20.0E-02 XE-135G 9.13E-00H

	0.25		0.60		0.36-0.25		0.9B-0.25
.5	3.6E+02	4.1E+01	8.9E-00	6.3E-01	1.5E-01	3.6E-03	4.1E+01
5.0	3.6E+03	4.1E+02	8.9E+01	6.2E-00	1.5E-00	3.6E-02	4.1E+02
50.0	3.6E+04	4.0E+03	8.6E+02	6.1E+01	1.4E+01	3.5E-01	4.0E+03
500.0	2.6E+05	3.0E+04	6.6E+03	4.6E+02	1.1E+02	2.7E-00	3.0E+04
5000.0	5.7E+05	6.5E+04	1.4E+04	9.9E+02	2.4E+02	5.7E-00	6.5E+04

XE-134 20.0E-02 CS-135G 2.00E+06Y 9.000 9.13E-00H

.5	6.8E-11
5.0	5.9E-09
50.0	5.8E-07
500.0	4.8E-05
5000.0	1.5E-03

XE-136 15.0E-02 XE-137 3.90E-00M

.5	3.1E+04
5.0	2.1E+05
50.0	3.6E+05
500.0	3.6E+05
5000.0	3.6E+05

XE-136 15.0E-02 CS-137 3.16E+01Y 9.000 3.90E-00M

0.66			
.5	3.2E-04	1.4E-05	3.6E-06
5.0	2.5E-02	1.1E-03	2.8E-04
50.0	6.7E-01	3.0E-02	7.5E-03
500.0	7.5E-00	3.4E-01	8.3E-02
5000.0	7.6E+01	3.4E-00	8.4E-01

CS-133 30.0E-01 CS-134M 2.90E-00H

	0.13		0.13-0.01
.5	1.6E+05	3.4E+03	6.7E+02
5.0	1.6E+06	3.4E+04	6.6E+03
50.0	1.4E+07	3.1E+05	6.1E+04
500.0	7.0E+07	1.4E+06	2.9E+05
5000.0	8.1E+07	1.7E+06	3.3E+05

TABLE V (Contd.)

TABLE V (Contd.)

BA-132	70.0E-01	BA-133G	7.20E-00Y	0.36	0.08	0.27-0.16	0.36-0.08	0.05-0.30-0.08
.5	1.6E-02	9.1E-04	2.0E-04	1.0E-03	1.9E-04	1.0E-06	6.1E-05	1.8E-06
5.0	1.6E-01	9.1E-03	2.0E-03	1.0E-02	1.9E-03	1.0E-05	6.1E-04	1.8E-05
50.0	1.6E-00	9.1E-02	2.0E-02	1.0E-01	1.9E-02	1.0E-04	6.1E-03	1.8E-04
500.0	1.6E+01	9.1E-01	2.0E-01	1.0E+00	1.9E-01	1.0E-03	6.1E-02	1.8E-03
5000.0	1.6E+02	9.1E-00	2.0E-00	1.0E+01	1.9E-00	1.0E-02	6.1E-01	1.8E-02
BA-138	50.0E-02	BA-139	8.29E+01M	0.17			2.2B-0.17	
.5	3.9E+04	1.5E+03	3.2E+02				1.5E+03	
5.0	3.8E+05	1.5E+04	3.2E+03				1.5E+04	
50.0	3.2E+06	1.2E+05	2.6E+04				1.3E+05	
500.0	9.2E+06	3.7E+05	7.7E+04				3.7E+05	
5000.0	9.4E+06	3.7E+05	7.8E+04				3.8E+05	
LA-139	82.0E-01	LA-140	4.02E+01H	1.60	0.49	0.49-1.60	0.82-1.60	2.2B-1.60 0.33-0.49-1.60
.5	3.0E+04	6.7E+02	1.5E+02	1.0E+03	2.4E+02	2.3E+01	1.3E+01	4.9E+01 2.1E-00
5.0	3.0E+05	6.7E+03	1.5E+03	1.0E+04	2.4E+03	2.3E+02	1.2E+02	4.9E+02 2.1E+01
50.0	3.0E+06	6.6E+04	1.5E+04	1.0E+05	2.4E+04	2.3E+03	1.2E+03	4.8E+03 2.1E+02
500.0	2.8E+07	6.2E+05	1.4E+05	1.0E+06	2.2E+05	2.2E+04	1.2E+04	4.5E+04 2.0E+03
5000.0	1.6E+08	3.5E+06	8.1E+05	5.7E+06	1.2E+06	1.2E+05	6.9E+04	2.6E+05 1.1E+04
CE-136	60.0E-02	CE-137M	3.45E+01H	0.25				
.5	4.9E-00	8.0E-02	1.6E-02					
5.0	4.9E+01	8.0E-01	1.6E-01					
50.0	4.9E+02	7.9E-00	1.6E-00					
500.0	4.5E+03	7.4E+01	1.5E+01					
5000.0	2.4E+04	3.9E+02	8.1E+01					
CE-136	63.0E-01	CE-137G	8.70E-00H	.994	60.0E-02	3.45E+01H	EC -0.45	EC -0.45-0.01
.5	2.0E+02	4.9E-01	1.1E-01	2.7E-01	5.3E-02	6.3E-04	4.8E-01	6.4E-04
5.0	2.0E+03	4.9E-00	1.1E-00	2.7E-00	5.2E-01	5.3E-03	4.8E-00	6.3E-03
50.0	2.0E+04	4.7E+01	1.0E+01	2.6E+01	5.1E-00	6.1E-02	4.7E+01	6.1E-02
500.0	1.5E+05	3.6E+02	8.1E+01	1.9E+02	3.9E+01	4.6E-01	3.5E+02	4.7E-01
5000.0	3.3E+05	7.9E+02	1.7E+02	4.3E+02	8.5E+01	1.0E-00	7.8E+02	1.0E-00

TABLE V (Contd.)

CE-136    63.0E-01    LA-137    6.00E+04Y    9.000    8.70E-00H

.5	1.1E-09
5.0	1.1E-07
50.0	1.1E-05
500.0	9.2E-04
5000.0	2.9E-02

CE-138    18.0E-03    CE-139M    5.50E+01S

0.75

.5	3.6E+02	1.5E+01	3.7E-00
5.0	1.1E+03	4.9E+01	1.1E+01
50.0	1.1E+03	5.0E+01	1.1E+01
500.0	1.1E+03	5.0E+01	1.1E+01
5000.0	1.1E+03	5.0E+01	1.1E+01

CE-138    65.0E-02    CE-139G    1.40E+02D    1.000    18.0E-03    5.50E+01S

0.17

.5	7.2E-02	8.8E-03	1.8E-03
5.0	7.3E-01	9.0E-02	1.8E-02
50.0	7.3E-00	9.0E-01	1.8E-01
500.0	7.3E+01	9.0E-00	1.8E-00
5000.0	7.3E+02	9.0E+01	1.8E+01

CE-140    31.0E-02    CE-141    3.31E+01D

0.15

.5	5.1E+01	4.1E-00	8.2E-01
5.0	5.1E+02	4.1E+01	8.2E-00
50.0	5.1E+03	4.0E+02	8.1E+01
500.0	5.1E+04	4.0E+03	8.1E+02
5000.0	4.9E+05	3.9E+04	7.9E+03

0.4B-0.15

4.0E-00
4.0E+01
4.0E+02
4.0E+03
3.9E+04

CE-142    95.0E-02    CE-143    3.34E+01H

0.29

0.06

0.29-0.06

1.1B-0.29    0.57-0.29-0.06

.5	4.6E+02	2.1E+01	4.6E-00	4.9E-00	9.6E-01	3.1E-01
5.0	4.6E+03	2.1E+02	4.6E+01	4.9E+01	9.6E-00	3.1E-00
50.0	4.6E+04	2.1E+03	4.6E+02	4.8E+02	9.5E+01	3.1E+01
500.0	4.3E+05	2.0E+04	4.2E+03	4.5E+03	8.8E+02	2.9E+02
5000.0	2.2E+06	1.0E+05	2.2E+04	2.3E+04	4.5E+03	1.5E+03

2.0E+01	5.3E-03
2.0E+02	5.3E-02
2.0E+03	5.2E-01
1.8E+04	4.8E-00
9.6E+04	2.5E+01

TABLE V (Contd.)

CE-142	95.0E-02	PR-143	1.38E+01D	9.000	3.34E+01H			
.5 5.0 50.0 500.0 5000.0	4.0E-03 4.0E-01 4.0E+01 3.8E+03 2.3E+05							
PR-141	11.0E-00	PR-142	1.92E+01H					
			1.57			0.6B-1.57		
.5 5.0 50.0 500.0 5000.0	8.4E+04 8.4E+05 8.3E+06 7.3E+07 2.6E+08	7.7E+01 7.7E+02 7.6E+03 6.7E+04 2.4E+05	2.0E+01 2.0E+02 2.0E+03 1.7E+04 6.4E+04			7.7E+01 7.7E+02 7.6E+03 6.7E+04 2.4E+05		
ND-146	18.0E-01	ND-147	1.11E+01D					
			0.53	0.09	0.32-0.09	0.8B-0.09 0.12-0.32-0.09		
.5 5.0 50.0 500.0 5000.0	1.6E+02 1.6E+03 1.6E+04 1.6E+05 1.5E+06	2.1E-00 2.1E+01 2.1E+02 2.1E+03 1.9E+04	4.9E-01 4.9E-00 4.9E+01 4.9E+02 4.4E+03	8.2E-00 8.2E+01 8.2E+02 8.1E+03 7.4E+04	1.6E-00 1.6E+01 1.6E+02 1.5E+03 1.4E+04	2.1E-01 2.1E-02 2.1E+01 2.1E+02 1.9E+03	8.2E-00 8.2E+01 8.2E+02 8.1E+03 7.4E+04	2.2E-02 2.2E-01 2.2E-00 2.2E+01 2.0E+02
ND-146	18.0E-01	PM-147	2.65E-00Y	9.000	1.11E+01D			
.5 5.0 50.0 500.0 5000.0	2.0E-05 2.0E-03 2.0E-01 2.0E+01 1.9E+03							
ND-148	37.0E-01	ND-149	1.80E-00H					
			0.21	0.11		1.58-0.11		
.5 5.0 50.0 500.0 5000.0	1.6E+04 1.6E+05 1.4E+06 5.0E+06 5.3E+06	9.7E+02 9.6E+03 8.3E+04 2.9E+05 3.0E+05	2.0E+02 1.9E+03 1.7E+04 6.0E+04 6.3E+04	1.6E+03 1.6E+04 1.4E+05 5.0E+05 5.2E+05	3.2E+02 3.1E+03 2.7E+04 9.6E+04 1.0E+05		9.4E+02 9.3E+03 8.1E+04 2.8E+05 2.9E+05	

TABLE V (Contd.)

ND-148	37.0E-01	PM-149	5.30E+01H	9.000	1.80E-00H	
			0.29			0.88-0.29
.5	9.2E-01	2.5E-03	5.6E-04			2.6E-03
5.0	9.1E+01	2.5E-01	5.5E-02			2.6E-01
50.0	8.3E+03	2.3E+01	5.0E-00			2.3E+01
500.0	3.8E+05	1.0E+03	2.3E+02			1.1E+03
5000.0	3.4E+06	9.6E+03	2.1E+03			9.8E+03
ND-150	15.0E-01	ND-151	1.88E+01M			
			1.00	0.60		
.5	3.8E+04	1.3E+03	3.0E+02	2.2E+03	5.3E+02	
5.0	3.5E+05	1.2E+04	2.8E+03	2.0E+04	4.9E+03	
50.0	1.7E+06	6.2E+04	1.4E+04	1.0E+05	2.9E+04	
500.0	2.1E+06	7.3E+04	1.6E+04	1.2E+05	2.9E+04	
5000.0	2.1E+06	7.3E+04	1.6E+04	1.2E+05	2.9E+04	
ND-150	15.0E-01	PM-151	2.84E+01H	9.000	1.88E+01M	
			0.34	0.06	0.28-0.07	0.98-0.34 0.98-0.27-0.06
.5	3.9E-00	8.0E-02	1.7E-02	1.0E-01	1.9E-02	5.1E-03
5.0	3.7E+02	7.6E-00	1.7E-00	9.5E-00	1.8E-00	4.9E-01
50.0	2.3E+04	4.7E+02	1.0E+02	5.9E+02	1.1E+02	3.0E+01
500.0	3.6E+05	7.5E+03	1.6E+03	9.5E+03	1.8E+03	4.8E+02
5000.0	1.8E+06	3.7E+04	8.3E+03	4.7E+04	9.2E+03	2.4E+03
PM-147	60.0E-00	PM-148G	5.30E-00D			
			1.46	0.55	0.91-0.55	1.08-1.46
.5	6.6E+04	4.0E+02	9.6E+01	1.3E+03	3.1E+02	2.7E+01
5.0	6.6E+05	4.0E+03	9.6E+02	1.3E+04	3.1E+03	2.7E+02
50.0	6.6E+06	4.0E+04	9.6E+03	1.3E+05	3.1E+04	2.7E+03
500.0	6.5E+07	3.9E+05	9.4E+04	1.2L+06	3.0E+05	2.7E+04
5000.0	5.3E+08	3.2E+06	7.7E+05	1.0E+07	2.5E+06	2.2E+05
SM-144	20.0E-01	SM-145	3.40E+02D			
			0.06			
.5	1.0E-00	2.4E-02	4.8E-03			4.0E+02
5.0	1.0E+01	2.4E-01	4.8E-02			4.0E+03
50.0	1.0E+02	2.4E-00	4.8E-01			4.0E+04
500.0	1.0E+03	2.4E+01	4.8E-00			3.9E+05
5000.0	1.0E+04	2.4E+02	4.8E+01			3.2E+06

TABLE V (Contd.)

SM-144	20.0E-01	PM-145	1.80E+01Y	9.000	3.40E+02D	
0.07						
.5	1.9E-08	9.6E-11	1.8E-11			
5.0	1.9E-06	9.6E-09	1.8E-09			
50.0	1.9E-04	9.6E-07	1.8E-07			
500.0	1.9E-02	9.6E-05	1.8E-05			
5000.0	1.9E-00	9.6E-03	1.8E-03			
0.10						
0.07						
0.07-0.10						
.5	1.1E+05	5.8E+03	1.1E+03	1.0E+03	2.0E+02	7.0E+01
5.0	1.1E+06	5.8E+04	1.1E+04	1.0E+04	2.0E+03	7.0E+02
50.0	1.1E+07	5.8E+05	1.1E+05	1.0E+05	2.0E+04	7.0E+03
500.0	1.1E+08	5.8E+06	1.1E+06	9.7E+05	1.9E+05	6.6E+04
5000.0	6.3E+08	3.3E+07	6.6E+06	5.9E+06	1.1E+06	4.0E+05
0.7B-0.10	0.6B-0.07-0.10					
3.4E+03	7.0E+01					
3.4E+04	7.0E+02					
3.4E+05	7.0E+03					
3.2E+06	6.6E+04					
1.9E+07	4.0E+05					
0.10						
0.25						
0.14-0.10						
.5	4.7E+05	5.8E+04	1.1E+04	2.1E+03	4.6E+02	8.6E+01
5.0	4.3E+06	5.4E+05	1.0E+05	1.9E+04	4.3E+03	8.0E+02
50.0	2.3E+07	2.9E+06	7.0E+05	1.0E+05	2.3E+04	4.3E+03
500.0	2.9E+07	3.7E+06	7.2E+05	1.3E+05	2.9E+04	5.4E+03
5000.0	2.9E+07	3.7E+06	7.2E+05	1.3E+05	2.9E+04	5.4E+03
1.5B-0.10	1.4B-0.14-0.10					
5.7E+04	8.7E+01					
5.3E+05	8.1E+02					
2.9E+06	4.4E+03					
3.6E+06	5.5E+03					
3.6E+06	5.5E+03					
0.09						
0.11						
0.02-0.09						
.5	9.1E-02	4.7E-03	9.3E-04	3.0E-03	5.9E-04	3.5E-04
5.0	8.7E-00	4.5E-01	8.9E-02	2.9E-01	5.7E-02	3.3E-02
50.0	5.7E+02	3.0E+01	5.9E+00	1.9E+01	3.7E+00	2.2E+00
500.0	1.0E+04	5.7E+02	1.1E+02	3.6E+02	7.1E+01	4.1E+01
5000.0	1.1E+05	6.0E+03	1.1E+03	3.8E+03	7.5E+02	4.4E+02
2.19E+01M						
0.84						
0.96						
0.84-0.12						
.5	9.9E+06	4.6E+04	1.0E+04	3.2E+04	8.0E+03	8.0E+03
5.0	9.9E+07	4.5E+05	1.0E+05	3.2E+05	8.0E+04	7.9E+04
50.0	9.6E+08	4.4E+06	1.0E+06	3.1E+06	7.8E+05	7.7E+05
500.0	7.4E+09	3.4E+07	8.1E+06	2.4E+07	6.0E+06	5.9E+06
5000.0	1.5E+10	7.3E+07	1.7E+07	5.1E+07	1.2E+07	1.2E+07
1.6B-0.34						

TABLE V (Contd.)

EU-151 28.0E+02 EU-152G 1.22E+01Y

	1.41	0.34	1.41-0.12	0.78-0.34	0.7B-0.78	0.7B-0.78-0.34
.5	1.7E+03	1.0E+01	2.5E-00	4.2E+01	9.4E-00	7.4E-01
5.0	1.7E+04	1.0E+02	2.5E+01	4.2E+02	9.4E+01	7.4E+00
50.0	1.7E+05	1.0E+03	2.5E+02	4.2E+03	9.4E+02	7.4E+01
500.0	1.7E+06	1.0E+04	2.5E+03	4.2E+04	9.4E+03	7.4E+02
5000.0	1.7E+07	1.0E+05	2.5E+04	4.2E+05	9.4E+04	7.4E+03

EU-153 42.0E+01 EU-154 1.60E+01Y

	1.28	0.12	1.28-0.12	0.73-0.88	0.6B-1.28	0.6B-1.28-0.12
.5	2.1E+02	2.1E-00	5.2E-01	1.6E+01	3.3E-00	1.6E-01
5.0	2.1E+03	2.1E+01	5.2E-00	1.6E+02	3.3E+01	1.6E+00
50.0	2.1E+04	2.1E+02	5.2E+01	1.6E+03	3.3E+02	1.6E+01
500.0	2.1E+05	2.1E+03	5.2E+02	1.6E+04	3.3E+03	1.6E+02
5000.0	2.1E+06	2.1E+04	5.2E+03	1.6E+05	3.3E+04	1.6E+03

GD-152 12.5E+01 GD-153 2.36E+02D

	0.10	0.10	0.07-0.10
.5	5.8E-00	6.0E-01	1.1E-01
5.0	5.8E+01	6.0E-00	1.1E-00
50.0	5.8E+02	6.0E+01	1.1E+01
500.0	5.8E+03	6.0E+02	1.1E+02
5000.0	5.8E+04	5.9E+03	1.1E+03

GD-158 40.0E-01 GD-159 1.80E+01H

	0.06	0.36	0.23-0.08	0.6B-0.36	0.23-0.08-0.06
.5	7.3E+03	4.6E+01	9.0E-00	8.2E+01	1.9E+01
5.0	7.3E+04	4.6E+02	9.0E+01	8.2E+02	1.9E+02
50.0	7.2E+05	4.5E+03	8.8E+02	8.1E+03	1.8E+03
500.0	6.2E+06	3.9E+04	7.7E+03	7.0E+04	1.6E+04
5000.0	2.1E+07	1.3E+05	2.7E+04	2.4E+05	5.7E+04

GD-160 80.0E-02 GD-161 3.73E-00M

	0.36	0.06	0.36-0.06	0.10-0.32	1.6B-0.36	1.6B-0.36-0.06
.5	3.5E+05	1.9E+04	4.4E+03	2.9E+03	5.8E+02	2.2E+02
5.0	2.4E+06	1.3E+05	4.0E+04	2.0E+04	3.9E+03	1.5E+03
50.0	4.0E+06	2.2E+05	4.0E+04	3.0E+04	6.6E+03	2.5E+03
500.0	4.0E+06	2.2E+05	4.0E+04	3.0E+04	6.6E+03	2.5E+03
5000.0	4.0E+06	2.2E+05	4.0E+04	3.0E+04	6.6E+03	2.5E+03

TABLE V (Contd.)

GD-160	80.0E-02	TB-161	6.88E-00D	9.000		3.73E-00M		
			0.05		0.06	0.05-0.03		0.06-0.05-0.03
.5	6.3E-00	6.2E-02	1.2E-02	3.8E-02	7.6E-03	3.5E-03		2.4E-05
5.0	4.9E+02	4.8E-00	9.4E-01	3.0E-00	5.8E-01	2.7E-01		1.9E-03
50.0	1.2E+04	1.2E+02	2.4E+01	7.6E+01	1.5E+01	7.0E-00		4.9E-02
500.0	1.3E+05	1.3E+03	2.6E+02	8.3E+02	1.6E+02	7.7E+01		5.3E-01
5000.0	1.1E+06	1.1E+04	2.2E+03	7.2E+03	1.4E+03	6.6E+02		4.6E-00
TB-159	22.0E-00	TB-160	7.23E+01D					
			0.88		0.30	0.30-0.88	0.6B-0.30	0.30-0.88-0.09
.5	1.6E+03	1.8E+01	4.3E-00	4.4E+01	9.7E-00	8.6E-01	3.7E+01	2.8E-02
5.0	1.6E+04	1.8E+02	4.3E+01	4.4E+02	9.7E+01	8.6E-00	3.7E+02	2.8E-01
50.0	1.6E+05	1.8E+03	4.3E+02	4.4E+03	9.7E+02	8.6E+01	3.7E+03	2.8E-00
500.0	1.6E+06	1.8E+04	4.3E+03	4.4E+04	9.6E+03	8.6E+02	3.7E+04	2.8E+01
5000.0	1.6E+07	1.8E+05	4.2E+04	4.3E+05	9.5E+04	8.4E+03	3.7E+05	2.8E+02
DY-158	96.0E-00	DY-159	1.44E+02D					
			0.06				EC -0.06	
.5	3.2E-00	1.6E-02	3.1E-03				1.6E-02	
5.0	3.2E+01	1.6E-01	3.1E-02				1.6E-01	
50.0	3.2E+02	1.6E-00	3.1E-01				1.6E-00	
500.0	3.2E+03	1.6E+01	3.1E-00				1.6E+01	
5000.0	3.1E+04	1.6E+02	3.1E+01				1.6E+02	
DY-164	20.0E+02	DY-165M	1.25E-00M					
			0.11		0.52		0.9B-0.52	
.5	3.0E+09	1.0E+08	2.0E+07	4.5E+06	1.0E+06		4.5E+06	
5.0	1.1E+10	4.0E+08	7.9E+07	1.7E+07	3.8E+06		1.7E+07	
50.0	1.2E+10	4.3E+08	8.5E+07	1.8E+07	4.1E+06		1.8E+07	
500.0	1.2E+10	4.3E+08	8.5E+07	1.8E+07	4.1E+06		1.8E+07	
5000.0	1.2E+10	4.3E+08	8.5E+07	1.8E+07	4.1E+06		1.8E+07	
DY-164	80.0E+01	DY-165G	1.39E+02M	.970	20.0E+02	1.25E-00M		
			0.10			0.63-0.36		
.5	1.6E+07	1.0E+05	2.1E+04			8.8E+02		
5.0	3.2E+08	2.1E+06	4.2E+05			1.7E+04		
50.0	3.6E+09	2.4E+07	4.8E+06			2.0E+05		
500.0	1.5E+10	1.0E+08	2.0E+07			8.5E+05		
5000.0	1.7E+10	1.1E+08	2.2E+07			9.3E+05		

TABLE V (Contd.)

HO-165    60.0E-00    HO-166G    2.73E+01H

	1.38	0.08	1.38-0.08	1.8B-0.08	0.67-0.71-0.08
5	2.7E+05	6.7E+01	1.5E+01	2.0E+03	3.9E+02
50	2.7E+06	6.7E+02	1.5E+02	2.0E+04	3.9E+03
500	2.7E+07	6.6E+03	1.5E+03	2.0E+05	3.9E+04
5000	2.5E+08	6.0E+04	1.3E+04	1.8E+06	3.6E+05
50000	1.1E+09	2.7E+05	6.4E+04	8.4E+06	1.6E+06

ER-162    20.0E-01    ER-163    7.50E+01M

	0.43	1.10
5	2.7E+02	1.3E-00
50	2.6E+03	1.3E+01
500	2.1E+04	2.8E-00
5000	5.8E+04	1.0E+02
50000	5.8E+04	2.8E+02
		6.3E+01
		7.5E+01

ER-162    20.0E-01    HO-163    1.00E+03Y    9.0000    7.50E+01M

5	8.9E-08
50	8.8E-06
500	7.7E-04
5000	3.0E-02
50000	3.7E-01

ER-164    17.0E-01    ER-165    1.00E+01H

5	3.3E+02
50	3.2E+03
500	3.2E+04
5000	2.5E+05
50000	5.7E+05

ER-166    15.0E-00    ER-167M    2.27E-00S

	0.21
5	1.0E+08
50	1.0E+08
500	1.0E+08
5000	1.0E+08
50000	1.0E+08
	9.4E+06

TABLE V (Contd.)

ER-168 20.0E-01 ER-169 9.40E-00D

0.01

*5	2.9E+02	3.3E-01	6.4E-02
5.0	2.9E+03	3.3E-00	6.4E-01
50.0	2.9E+04	3.2E+01	6.3E-00
500.0	2.9E+05	3.2E+02	6.3E+01
5000.0	2.9E+06	2.9E+03	5.6E+02

ER-170 90.0E-01 ER-171 7.80E-00H

0.30

0.11

0.30-0.11

1.1B-0.30 1.0B-0.31-0.11

*5	2.1E+04	2.1E+03	4.7E+02	1.6E+03	3.2E+02	1.7E+02
5.0	2.1E+05	2.1E+04	4.6E+03	1.6E+04	3.2E+03	1.7E+03
50.0	2.0E+06	2.0E+05	4.5E+04	1.5E+05	3.1E+04	1.7E+04
500.0	1.5E+07	1.5E+06	3.3E+05	1.1E+06	2.2E+05	1.2E+05
5000.0	2.8E+07	2.9E+06	6.3E+05	2.2E+06	4.3E+05	2.4E+05

ER-170 90.0E-01 TM-171 1.90E-00Y 9.000 7.80E-00H

0.07

0.3B-0.07

*5	3.7E-03	1.3E-05	2.6E-06
5.0	3.7E-01	1.3E-03	2.6E-04
50.0	3.6E+01	1.3E-01	2.6E-02
500.0	2.9E+03	1.0E+01	2.1E-00
5000.0	8.6E+04	3.1E+02	6.2E+01

1.3E-05  
1.3E-03  
1.3E-01  
1.0E+01  
3.1E+02

TM-169 13.0E+01 TM-170 1.34E+02D

0.08

0.9B-0.08

*5	4.9E+03	9.5E+01	1.8E+01
5.0	4.9E+04	9.5E+02	1.8E+02
50.0	4.9E+05	9.5E+03	1.8E+03
500.0	4.9E+06	9.5E+04	1.8E+04
5000.0	4.9E+07	9.4E+05	1.8E+05

8.7E+01  
8.7E+02  
8.7E+03  
8.7E+04  
8.6E+05

YB-168 11.0E+03 YB-169 3.18E+01D

0.11

0.20

0.20-0.11

0.06-0.20

0.06-0.20-0.12

*5	2.3E+03	7.9E+01	1.5E+01	1.1E+02	2.4E+01	6.8E-00	2.0E+01
5.0	2.3E+04	7.9E+02	1.5E+02	1.1E+03	2.4E+02	6.8E+01	2.0E+02
50.0	2.3E+05	7.9E+03	1.5E+03	1.1E+04	2.4E+03	6.8E+02	2.0E+03
500.0	2.3E+06	7.9E+04	1.5E+04	1.1E+05	2.4E+04	6.8E+03	2.0E+04
5000.0	2.2E+07	7.6E+05	1.4E+05	1.1E+06	2.3E+05	6.6E+04	2.0E+05

7.1E-01  
7.1E-00  
7.1E+01  
7.1E+02  
6.9E+03

TABLE V (Contd.)

YB-174 60.0E-00 YB-175G 1.01E+02H

	0.40		0.11	0.28-0.11
.5	2.2E+04	1.8E+02	4.3E+01	1.0E+02
5.0	2.2E+05	1.8E+03	4.3E+02	1.0E+03
50.0	2.2E+06	1.8E+04	4.3E+03	1.0E+04
500.0	2.2E+07	1.8E+05	4.3E+04	9.7E+04
5000.0	1.7E+08	1.4E+06	3.2E+05	7.6E+05

	0.1B-0.40	0.1B-0.28-0.11
	1.8E+02	1.1E+01
	1.8E+03	1.1E+02
	1.8E+04	1.0E+03
	1.8E+05	1.0E+04
	1.4E+06	8.3E+04

YB-176 55.0E-01 YB-177G 1.90E-00H

	0.15		0.12	0.95-0.14
.5	4.4E+04	3.5E+02	7.0E+01	6.7E+01
5.0	4.3E+05	3.4E+03	6.9E+02	6.6E+02
50.0	3.8E+06	3.0E+04	6.0E+03	5.8E+03
500.0	1.3E+07	1.1E+05	2.2E+04	2.1E+04
5000.0	1.4E+07	1.1E+05	2.3E+04	2.2E+04

	1.2B-0.15	0.95-0.14-0.15
	3.5E+02	8.2E-01
	3.4E+03	8.1E-00
	3.0E+04	7.1E+01
	1.1E+05	2.5E+02
	1.1E+05	2.7E+02

YB-176 55.0E-01 LU-177 6.75E-00D 9.000

	0.32		0.11	0.21-0.11
.5	7.9E-01	5.6E-03	1.2E-03	2.3E-03
5.0	7.8E+01	5.5E-01	1.2E-01	2.3E-01
50.0	7.1E+03	5.1E+01	1.1E+01	2.1E+01
500.0	3.5E+05	2.5E+03	5.5E+02	1.0E+03
5000.0	4.2E+06	3.0E+04	6.7E+03	1.2E+04

	0.2B-0.32
	5.9E-03
	5.9E-01
	5.3E+01
	2.6E+03
	3.2E+04

LU-175 35.0E-00 LU-176M 3.71E-00H

	0.09			
.5	1.0E+06	1.2E+04	2.5E+03	
5.0	1.0E+07	1.2E+05	2.5E+04	
50.0	1.0E+08	1.2E+06	2.3E+05	
500.0	5.5E+08	6.5E+06	1.2E+06	
5000.0	7.0E+08	8.3E+06	1.6E+06	

	1.1B-0.09
	1.2E+04
	1.2E+05
	1.2E+06
	6.5E+06
	8.3E+06

LU-176 40.0E+02 LU-177 6.75E-00D

	0.32		0.11	0.21-0.11
.5	7.6E+04	5.4E+02	1.2E+02	2.2E+02
5.0	7.6E+05	5.4E+03	1.2E+03	2.2E+03
50.0	7.6E+06	5.4E+04	1.2E+04	2.2E+04
500.0	7.4E+07	5.3E+05	1.1E+05	2.0E+05
5000.0	6.4E+08	4.5E+06	1.0E+06	1.8E+06

	0.2B-0.32
	5.7E+02
	5.7E+03
	5.7E+04
	5.6E+05
	4.8E+06

TABLE V (Contd.)

HF-180 10.0E-00 HF-181 4.55E+01D

0.48

.5	3.7E+02	2.2E+01	5.1E-00
5.0	3.7E+03	2.2E+02	5.1E+01
50.0	3.7E+04	2.2E+03	5.1E+02
500.0	3.7E+05	2.2E+04	5.1E+03
5000.0	3.6E+06	2.1E+05	4.9E+04

0.13

3.6E+01	7.3E-00	2.2E-00
3.6E+02	7.3E+01	2.2E+01
3.6E+03	7.3E+02	2.2E+02
3.6E+04	7.3E+03	2.2E+03
3.5E+05	7.1E+04	2.1E+04

0.13-0.48

1.8E+01	2.4E-00
1.8E+02	2.4E+01
1.8E+03	2.4E+02
1.8E+04	2.4E+03
1.7E+05	2.3E+04

TA-181 30.0E-03 TA-182M 1.65E+01M

0.36

.5	1.2E+04	2.2E+02	4.9E+01
5.0	1.1E+05	2.0E+03	4.5E+02
50.0	5.2E+05	9.4E+03	2.0E+03
500.0	5.9E+05	1.0E+04	2.3E+03
5000.0	5.9E+05	1.0E+04	2.3E+03

0.15

9.7E+02	1.9E+02
8.8E+03	1.7E+03
4.1E+04	8.2E+03
4.6E+04	9.3E+03
4.6E+04	9.3E+03

TA-181 19.0E-00 TA-182G 1.15E+02D 1.000 30.0E-03 1.65E+01M

1.12

.5	7.9E+02	8.1E-00	2.0E-00
5.0	7.9E+03	8.1E+01	2.0E+01
50.0	7.9E+04	8.1E+02	2.0E+02
500.0	7.9E+05	8.1E+03	2.0E+03
5000.0	7.8E+06	8.0E+04	2.0E+04

1.23

9.1E-00	2.2E-00	3.4E-01	1.4E-00
9.2E+01	2.2E+01	3.4E+00	1.4E+01
9.2E+02	2.2E+02	3.4E+01	1.4E+02
9.2E+03	2.2E+03	3.4E+02	1.4E+03
9.1E+04	2.2E+04	3.4E+03	1.4E+04

0.22-1.23

1.12-0.10

1.5E-01	1.5E-00
1.5E-00	1.5E+00
1.4E+02	1.4E+02
1.4E+03	1.4E+03
1.4E+04	1.4E+04

W -180 10.0E-00 W -181 1.45E+02D

0.15

.5	4.3E-01	4.0E-05	8.1E-06
5.0	4.3E-00	4.0E-04	8.1E-05
50.0	4.3E+01	4.0E-03	8.1E-04
500.0	4.3E+02	4.0E-02	8.1E-03
5000.0	4.3E+03	4.0E-01	8.1E-02

3.9E-05	
3.9E-04	
3.9E-03	
3.9E-02	
3.9E-01	

W -184 22.0E-01 W -185G 7.58E+01D

0.13

.5	4.2E+01	1.5E-03	2.9E-04
5.0	4.2E+02	1.5E-02	2.9E-03
50.0	4.2E+03	1.5E-01	2.9E-02
500.0	4.1E+04	1.5E-00	2.9E-01
5000.0	4.1E+05	1.5E+01	2.8E-00

TABLE V (Contd.)

W -186 34.0E-00 W -187 2.40E+01H

		0.69	0.13	0.55-0.13	•48-0.07-0.13
•5	4.5E+04	1.6E+03	3.8E+02	1.4E+03	3.0E+02
5.0	4.5E+05	1.6E+04	3.8E+03	1.4E+04	3.0E+03
50.0	4.5E+06	1.6E+05	3.8E+04	1.4E+05	2.9E+04
500.0	4.0E+07	1.4E+06	3.4E+05	1.2E+06	2.6E+05
5000.0	1.7E+08	6.1E+06	1.4E+06	5.3E+06	1.1E+06
					3.6E+05

RE-185 12.0E+01 RE-186G 8.90E+01H

		0.14	0.12	0.63-0.14	EC -0.12
•5	5.5E+04	1.1E+03	2.3E+02	1.6E+02	3.3E+01
5.0	5.5E+05	1.1E+04	2.3E+03	1.6E+03	3.3E+02
50.0	5.5E+06	1.1E+05	2.3E+04	1.6E+04	3.3E+03
500.0	5.0E+07	1.1E+06	2.2E+05	1.6E+05	3.2E+04
5000.0	4.1E+08	8.6E+06	1.7E+06	1.2E+06	2.4E+05
					1.4E+03

RE-187 69.0E-00 RE-188G 1.67E+01H

		0.16	0.63	0.48-0.16	2.0B-0.16 0.83-0.48-0.16
•5	2.9E+05	4.9E+03	1.0E+03	9.6E+01	2.2E+01
5.0	2.9E+06	4.9E+04	1.0E+04	9.5L+02	2.2E+02
50.0	2.9E+07	4.9E+05	9.9E+04	9.4E+03	2.2E+03
500.0	2.4E+08	4.2E+06	8.5E+05	8.1E+04	1.9E+04
5000.0	8.4E+08	1.3E+07	2.8E+06	2.6E+05	6.3E+04
					2.0E+04

OS-184 20.0E+01 OS-185 9.36E+01D

		0.65	0.88	0.23-0.65	0.59-0.13	0.16-0.59-0.12
•5	1.7E-00	7.3E-02	1.8E-02	5.1E-03	1.1E-03	1.4E-04
5.0	1.7E+01	7.3E-01	1.8E-01	5.1E-02	1.1E-02	1.4E-03
50.0	1.7E+02	7.3E-00	1.8E-00	5.1E-01	1.1E-01	1.4E-02
500.0	1.7E+03	7.3E+01	1.8E+01	5.1E-00	1.1E-00	1.4E-01
5000.0	1.7E+04	7.2E+02	1.7E+02	5.1E+01	1.1E+01	1.3E-00
						2.8E-01

OS-190 85.5E-01 OS-191M 1.40E+01H

		0.07	
•5	1.7E+04	3.2E+03	6.3E+02
5.0	1.7E+05	3.2E+04	6.3E+03
50.0	1.7E+06	3.1E+05	6.2E+04
500.0	1.4E+07	2.6E+06	5.2E+05
5000.0	4.2E+07	7.7E+06	1.5E+06

TABLE V (Contd.)

OS-190	39.0E-01	OS-191G	1.60E+01D	1.000	85.5E-01	1.40E+01H			
			0.13		0.04		0.04-0.13		
.5	2.9E+02	1.2E+01	2.4E-00		5.4E+01	1.0E+01	2.3E-00		
5.0	2.9E+03	1.2E+02	2.4E+01		5.4E+02	1.0E+02	2.3E+01		
50.0	3.0E+04	1.3E+03	2.5E+02		5.6E+03	1.1E+03	2.4E+02		
500.0	4.0E+05	1.7E+04	3.3E+03		7.4E+04	1.4E+04	3.2E+03		
5000.0	7.3E+06	3.1E+05	6.0E+04		1.3E+06	2.6E+05	5.8E+04		
OS-190	39.0E-01	IR-191M	4.90E-00S	9.000			1.60E+01D		
			0.08		0.13		0.04-0.13		
.5	2.2E+02	4.1E+01	8.1E-00		1.4E+01	2.8E-00	2.5E-00		
5.0	2.8E+03	5.2E+02	1.0E+02		1.7E+02	3.5E+01	3.2E+01		
50.0	2.9E+04	5.3E+03	1.0E+03		1.8E+03	3.6E+02	3.3E+02		
500.0	2.9E+05	5.3E+04	1.0E+04		1.8E+04	3.6E+03	3.3E+03		
5000.0	2.7E+06	5.0E+05	9.8E+04		1.6E+05	3.3E+04	3.1E+04		
OS-192	16.0E-01	OS-193	3.06E+01H						
			0.14		0.07		0.32-0.14		
.5	2.3E+03	1.8E+01	3.6E-00		3.6E+01	7.1E-00	2.3E-01		
5.0	2.3E+04	1.8E+02	3.6E+01		3.6E+02	7.1E+01	2.3E+00		
50.0	2.3E+05	1.8E+03	3.6E+02		3.6E+03	7.1E+02	2.3E+01		
500.0	2.1E+06	1.7E+04	3.3E+03		3.3E+04	6.5E+03	2.1E+02		
5000.0	1.0E+07	8.5E+04	1.6E+04		1.6E+05	3.2E+04	1.0E+03		
			0.06				1.0B-0.14	0.7B-0.32-0.14	
.5	9.2E+08	5.0E+04	9.7E+03				1.3E+01	2.3E-01	
5.0	3.9E+09	2.1E+05	4.1E+04				1.3E+02	2.3E-00	
50.0	4.2E+09	2.3E+05	4.5E+04				1.3E+03	2.3E+01	
500.0	4.2E+09	2.3E+05	4.5E+04				1.2E+04	2.1E+02	
5000.0	4.2E+09	2.3E+05	4.5E+04				6.1E+04	1.0E+03	
IR-191	61.0E+01	IR-192M	1.42E-00M						
			0.06						
.5	9.2E+08	5.0E+04	9.7E+03						
5.0	3.9E+09	2.1E+05	4.1E+04						
50.0	4.2E+09	2.3E+05	4.5E+04						
500.0	4.2E+09	2.3E+05	4.5E+04						
5000.0	4.2E+09	2.3E+05	4.5E+04						
IR-191	30.0E+01	IR-192G	7.42E+01D	1.000	61.0E+01	1.42E-00M			
			0.32		0.47		0.47-0.32	0.59-0.61	
.5	8.3E+03	6.4E+02	1.4E+02		2.9E+02	6.6E+01	2.8E+01	1.2E+00	
5.0	1.5E+05	1.1E+04	2.6E+03		5.4E+03	1.2E+03	5.2E+02	2.4E+01	
50.0	2.0E+06	1.5E+05	3.4E+04		7.1E+04	1.5E+04	6.8E+03	3.1E+02	
500.0	2.0E+07	1.5E+06	3.4E+05		7.2E+05	1.6E+05	7.0E+04	3.1E+03	
5000.0	2.0E+08	1.5E+07	3.4E+06		7.1E+06	1.6E+06	6.9E+05	3.1E+04	
			0.42		0.47		0.42-0.47-0.32		
.5	8.3E+03	6.4E+02	1.4E+02		2.9E+02	6.6E+01	2.8E+01	1.2E+00	
5.0	1.5E+05	1.1E+04	2.6E+03		5.4E+03	1.2E+03	5.2E+02	2.4E+01	
50.0	2.0E+06	1.5E+05	3.4E+04		7.1E+04	1.5E+04	6.8E+03	3.1E+02	
500.0	2.0E+07	1.5E+06	3.4E+05		7.2E+05	1.6E+05	7.0E+04	3.1E+03	
5000.0	2.0E+08	1.5E+07	3.4E+06		7.1E+06	1.6E+06	6.9E+05	3.1E+04	

TABLE V (Contd.)

IR-193 97.0E-00 IR-194G 1.90E+01H

0.33			
.5	3.4E+05	7.5E+03	1.6E+03
5.0	3.4E+06	7.5E+04	1.6E+04
50.0	3.4E+07	7.3E+05	1.6E+05
500.0	2.9E+08	6.4E+06	1.4E+06
5000.0	1.0E+09	2.3E+07	5.1E+06

0.29-0.33	0.64-0.33	1.98-0.33	0.65-0.29-0.33
8.4E+01	3.4E+01	6.6E+03	4.0E-00
8.3E+02	3.4E+02	6.6E+04	4.0E+01
8.2E+03	3.3E+03	6.5E+05	4.0E+02
7.2E+04	2.9E+04	5.7E+06	3.5E+03
2.6E+05	1.0E+05	2.0E+07	1.2E+04

PT-192 90.0E-00 PT-193M 4.30E-00D

0.14			
.5	7.2E+02	1.3E-00	2.6E-01
5.0	7.2E+03	1.3E+01	2.6E-00
50.0	7.2E+04	1.3E+02	2.6E+01
500.0	7.0E+05	1.3E+03	2.5E+02
5000.0	5.5E+06	1.0E+04	2.0E+03

0.01	0.14-0.01
1.3E+02	2.6E+01
1.3E+03	2.6E+02
1.3E+04	2.6E+03
1.2E+05	2.5E+04
1.0E+06	2.0E+05

PT-196 87.0E-02 PT-197G 1.80E+01H

0.08			
.5	1.3E+03	5.4E+01	1.0E+01
5.0	1.3E+04	5.4E+02	1.0E+02
50.0	1.2E+05	5.3E+03	1.0E+03
500.0	1.1E+06	4.6E+04	9.0E+03
5000.0	3.9E+06	1.6E+05	3.1E+04

0.19	0.19-0.08
5.2E-00	1.0E-00
5.2E+01	1.0E+01
5.1E+02	1.0E+02
4.5E+03	9.0E+02
1.5E+04	3.1E+03

0.7B-0.08	0.5B-0.19-0.08
4.9E+01	2.2E-01
4.9E+02	2.1E-00
4.8E+03	2.1E+01
4.2E+04	1.8E+02
1.4E+05	6.5E+02

PT-198 39.0E-01 PT-199G 3.10E+01M

0.20			
.5	5.7E+04	8.3E+03	1.7E+03
5.0	5.5E+05	7.9E+04	1.6E+04
50.0	3.5E+06	5.0E+05	1.0E+05
500.0	5.2E+06	7.5E+05	1.5E+05
5000.0	5.2E+06	7.5E+05	1.5E+05

0.20-0.32
8.7E+02
8.3E+03
5.3E+04
7.9E+04
7.9E+04

1.3B-0.32	0.4B-0.32-0.20
6.0E+03	6.4E+01
5.7E+04	6.1E+02
3.6E+05	3.8E+03
5.4E+05	5.7E+03
5.4E+05	5.7E+03

PT-198 39.0E-01 AU-199 3.15E-00D 9.000

0.21			
.5	2.2E-00	2.9E-02	6.0E-03
5.0	2.1E+02	2.8E-00	5.8E-01
50.0	1.5E+04	2.0E+02	4.3E+01
500.0	3.4E+05	4.6E+03	9.6E+02
5000.0	2.7E+06	3.6E+04	7.5E+03

0.16	0.05-0.16
1.4E-01	2.9E-02
1.4E+01	2.8E-00
1.0E+03	2.1E+02
2.3E+04	4.7E+03
1.8E+05	3.7E+04

0.3B-0.16	0.3B-0.05-0.16
1.3E-01	1.0E-04
1.3E+01	9.8E-03
9.9E+02	7.2E-01
2.1E+04	1.6E+01
1.7E+05	1.2E+02

TABLE V (Contd.)

AU-197 96.0E-00 AU-198 2.70E-00D

		0.41	0.68	0.68-0.41	1.0B-0.41	0.3B-0.68-0.41
5.5	1.5E+05	1.2E+04	2.8E+03	6.4E+01	1.4E+01	5.3E-00
5.0	1.5E+06	1.2E+05	2.8E+04	6.4E+02	1.4E+02	5.3E+01
50.0	1.5E+07	1.2E+06	2.8E+05	6.4E+03	1.4E+03	5.3E+02
500.0	1.4E+08	1.2E+07	2.7E+06	6.1E+04	1.4E+04	5.1E+03
5000.0	1.0E+09	8.4E+07	1.8E+07	4.2E+05	9.8E+04	3.5E+04

HG-196 42.0E+01 HG-197M 2.40E+01H

	0.16	0.13	0.16-0.13
5.5	2.6E+03	1.1E-00	2.3E-01
5.0	2.6E+04	1.1E+01	2.3E-00
50.0	2.6E+05	1.1E+02	2.3E+01
500.0	2.3E+06	1.0E+03	2.0E+02
5000.0	1.0E+07	4.4E+03	8.8E+02

HG-196 88.0E+01 HG-197G 6.50E+01H .965 42.0E+01 2.40E+01H

	0.19	0.08	0.19-0.08
5.5	2.0E+03	1.5E-00	3.1E-01
5.0	2.0E+04	1.5E+01	3.1E-00
50.0	2.0E+05	1.5E+02	3.1E+01
500.0	2.0E+06	1.5E+03	3.1E+02
5000.0	1.7E+07	1.3E+04	2.7E+03

HG-198 18.0E-03 HG-199M 4.60E+01M

	0.37	0.16
5.5	2.4E+02	8.1E-00
5.0	2.3E+03	7.8E+01
50.0	1.7E+04	5.7E+02
500.0	3.2E+04	1.0E+03
5000.0	3.2E+04	1.0E+03
		2.4E+02
		4.1E+03
		8.2E+02
		4.1E+03
		8.3E+02

HG-202 38.0E-01 HG-203 4.72E+01D

	0.28	0.2B-0.28
5.5	1.0E+02	9.7E-00
5.0	1.0E+03	9.7E+01
50.0	1.0E+04	9.7E+02
500.0	1.0E+05	9.6E+03
5000.0	1.0E+06	9.4E+04
		2.0E+04
		9.6E-00
		9.6E+01
		9.6E+02
		9.6E+03
		9.4E+04

TABLE V (Contd.)

HG-204      43.0E-02      HG-205      5.50E-00M

0.21

.5	3.2E+04	4.5E+03	9.3E+03
5.0	2.4E+05	3.4E+04	7.1E+03
50.0	5.2E+05	7.3E+04	1.5E+04
500.0	5.3E+05	7.4E+04	1.5E+04
5000.0	5.3E+05	7.4E+04	1.5E+04

1.4B-0.21

4.5E+03
3.4E+04
7.3E+04
7.4E+04
7.4E+04

TL-203      80.0E-01      TL-204      3.57E-00Y

.5	7.6E-00
5.0	7.6E+01
50.0	7.6E+02
500.0	7.6E+03
5000.0	7.6E+04

TL-203      25.0E-06      HG-203      4.72E+01D

0.28

.5	6.6E-04	6.2E-05	1.3E-05
5.0	6.6E-03	6.2E-04	1.3E-04
50.0	6.6E-02	6.2E-03	1.3E-03
500.0	6.6E-01	6.1E-02	1.3E-02
5000.0	6.4E-00	6.0E-01	1.3E-01

0.2B-0.28

6.1E-05
6.1E-04
6.1E-03
6.1E-02
6.0E-01

TL-205      10.0E-02      TL-206      4.28E-00M

.5	9.6E+04
5.0	6.9E+05
50.0	1.2E+06
500.0	1.2E+06
5000.0	1.2E+06

PB-204      70.0E-02      PB-205      3.00E+07Y

.5	3.9E-09
5.0	3.9E-08
50.0	3.9E-07
500.0	3.9E-06
5000.0	3.9E-05

TABLE V (Contd.)

PB-208 60.0E-05 PB-209 3.32E-00H

.5	9.5E-00
5.0	9.4E+01
50.0	6.7E+02
500.0	4.5E+03
5000.0	5.4E+03

BI-209 14.0E-03 BI-210M 2.60E+06Y

	0.26	0.30	4.9A-0.26
.5	6.1E-08	3.4E-09	1.8E-09
5.0	6.1E-07	3.4E-08	3.9E-09
50.0	6.1E-06	3.4E-07	1.8E-07
500.0	6.1E-05	3.4E-06	1.8E-06
5000.0	6.1E-04	3.4E-05	1.8E-05

3.5E-09
3.5E-08
3.5E-07
3.5E-06
3.5E-05

BI-209 19.0E-03 BI-210G 5.01E-00D

.5	1.5E+01
5.0	1.5E+02
50.0	1.5E+03
500.0	1.5E+04
5000.0	1.2E+05

BI-209 19.0E-03 PO-210 1.38E+02D 9.000 5.01E-00D

.5	1.3E-05
5.0	1.3E-03
50.0	1.3E-01
500.0	1.3E+01
5000.0	1.1E+03

RA-226 20.0E-00 RA-227 4.12E+01M

	0.29	0.50
.5	2.6E+06	1.1E+04
5.0	2.5E+07	1.1E+05
50.0	1.8E+08	8.1E+05
500.0	3.1E+08	1.4E+06
5000.0	3.1E+08	1.4E+06

2.5E+02
2.4E+04
1.7E+05
3.0E+05
3.0E+05

TABLE V (Contd.)

RA-226 20.0E-00 AC-227 2.12E+01Y 9.000 4.10E+01M

.5	4.1E-02
5.0	4.0E-00
50.0	3.2E+02
500.0	8.7E+03
5000.0	9.8E+04

AC-227 80.0E+01 AC-228 6.13E-00H

	0.06	0.91	0.13-0.21	0.06-0.13	2.1B-0.06	0.06-0.13-0.21
.5	1.1E+07	1.5E+06	3.0E+05	1.1E+05	2.6E+04	3.2E+04
5.0	1.1E+08	1.5E+07	3.0E+06	1.1E+06	2.6E+05	3.2E+05
50.0	1.1E+09	1.4E+08	2.8E+07	1.0E+07	2.5E+06	3.1E+06
500.0	7.7E+09	9.9E+08	1.9E+08	7.3E+07	1.7E+07	2.1E+07
5000.0	1.2E+10	1.6E+09	3.2E+08	1.2E+08	2.8E+07	3.4E+07

AC-227 80.0E+01 TH-228 1.91E-00Y 9.000 6.13E-00H

	0.08	0.21	0.08-0.14	0.08-0.14-0.17
.5	2.0E-00	6.0E-03	1.1E-03	8.0E-04
5.0	2.0E+02	6.0E-01	1.1E-01	8.0E-02
50.0	2.0E+04	5.9E+01	1.1E+01	7.8E-00
500.0	1.5E+06	4.5E+03	8.9E+02	6.0E+02
5000.0	3.9E+07	1.1E+05	2.2E+04	1.5E+04

TH-230 21.0E-00 TH-231 2.56E+01H

	0.03	0.08	0.03-0.14	0.08-0.14	0.3B-0.08	0.08-0.14-0.16
.5	7.4E+04	1.7E+03	3.3E+02	1.5E+03	2.9E+02	2.4E+02
5.0	7.4E+05	1.7E+04	3.3E+03	1.5E+04	2.9E+03	2.4E+03
50.0	7.3E+06	1.6E+05	3.3E+04	1.4E+05	2.9E+04	2.4E+04
500.0	6.6E+07	1.5E+06	2.9E+05	1.3E+06	2.9E+05	2.5E+05
5000.0	2.9E+08	6.7E+06	1.3E+06	5.9E+06	1.1E+06	9.8E+05

TH-232 73.3E-01 TH-233 2.21E+01M

	0.09	0.45			
.5	1.7E+06	4.6E+03	9.0E+02	1.3E+03	3.0E+02
5.0	1.6E+07	4.9E+04	9.4E+03	1.2E+04	2.8E+03
50.0	9.0E+07	2.3E+05	4.6E+04	7.0E+04	1.5E+04
500.0	1.1E+08	2.9E+05	5.8E+04	8.8E+04	1.9E+04
5000.0	1.1E+08	2.9E+05	5.8E+04	8.8E+04	1.9E+04

TABLE V (Contd.)

TH-232 73.3E-01 PA-233 2.70E+01D 9.000 2.21E+01M

0.31

.5	7.9E-00	3.8E-01	8.7E-02
5.0	7.5E+02	3.6E+01	8.3E-00
50.0	5.0E+04	2.4E+03	5.5E+02
500.0	9.4E+05	4.6E+04	1.0E+04
5000.0	9.6E+06	4.7E+05	1.0E+05

PA-231 20.0E+01 PA-232 1.30E-00D

0.89

.97

.5	5.7E+05	4.8E+03	1.0E+03	8.5E+03	1.8E+03
5.0	5.7E+06	4.8E+04	1.0E+04	8.5E+04	1.8E+04
50.0	5.7E+07	4.8E+05	1.0E+05	8.4E+05	1.8E+05
500.0	5.2E+08	4.4E+06	9.9E+05	7.7E+06	1.7E+06
5000.0	2.6E+09	2.2E+07	4.9E+06	3.8E+07	8.6E+06

PA-231 20.0E+01 U -232 7.20E+01Y 9.000 1.32E-00D

0.06

0.13

0.06-0.13

.5	2.6E-03	1.0E-06	1.9E-07	3.6E-07	7.0E-08	1.7E-07
5.0	2.6E-01	1.0E-04	1.9E-05	3.6E-05	7.0E-06	1.7E-05
50.0	2.5E+01	1.0E-02	1.9E-03	3.6E-03	7.0E-04	1.7E-03
500.0	2.4E+03	9.4E-01	1.8E-01	3.4E-01	6.6E-02	1.6E-01
5000.0	1.5E+05	5.9E+01	1.1E+01	2.1E+01	4.2E-00	1.0E+01

U -233 52.0E-00 U -234 2.52E+05Y

0.05

0.12

.5	2.1E-03	1.0E-04	2.1E-05	1.1E-06	2.2E-07
5.0	2.1E-02	1.0E-03	2.1E-04	1.1E-05	2.2E-06
50.0	2.1E-01	1.0E-02	2.1E-03	1.1E-04	2.2E-05
500.0	2.1E-00	1.0E-01	2.1E-02	1.1E-03	2.2E-04
5000.0	2.1E+01	1.0E-00	2.1E-01	1.1E-02	2.2E-03

U -234 90.0E-00 U -235 7.10E+08Y

0.19

0.14

0.20-0.19

0.20-0.14

0.20-0.14-0.19

.5	7.1E-11	5.8E-12	1.2E-12	1.4E-12	2.8E-13	6.1E-14	7.0E-14	1.0E-14
5.0	7.0E-10	5.8E-11	1.2E-11	1.4E-11	2.8E-12	6.1E-13	6.9E-13	1.0E-13
50.0	7.0E-09	5.8E-10	1.2E-10	1.4E-10	2.8E-11	6.1E-12	6.9E-12	1.0E-12
500.0	7.0E-08	5.8E-09	1.2E-09	1.4E-09	2.8E-10	6.1E-11	6.9E-11	1.0E-11
5000.0	7.0E-07	5.8E-08	1.2E-08	1.4E-08	2.8E-09	6.1E-10	6.9E-10	1.0E-10

TABLE V (Contd.)

U -235    10.7E+01    U -236    2.39E+07Y

*5	3.2E-07
5.0	3.2E-06
50.0	3.2E-05
500.0	3.2E-04
5000.0	3.2E-03

U -236    60.0E-01    U -237    6.75E-00D

	0.06	0.21	0.06-0.21	0.06-0.21-0.27
*5	3.2E+03	2.1E+02	4.2E+01	1.0E+02    2.3E+01    3.0E+01    3.6E-00
5.0	3.2E+04	2.1E+03	4.2E+02	1.0E+03    2.3E+02    3.0E+02    3.6E+01
50.0	3.2E+05	2.1E+04	4.2E+03	1.0E+04    2.3E+03    3.0E+03    3.6E+02
500.0	3.2E+06	2.1E+05	4.2E+04	1.0E+05    2.3E+04    3.0E+04    3.5E+03
5000.0	2.7E+07	1.8E+06	3.5E+05	9.2E+05    1.9E+05    2.5E+05    3.0E+04

U -236    60.0E-01    NP-237    2.20E+06Y    9.000    6.75E-00D

	0.03	0.09	0.03-0.14	0.09-0.14	0.09-0.14-0.20
*5	9.3E-10	2.0E-11	4.0E-12	3.1E-11    6.0E-12    3.3E-12    4.9E-12	7.1E-13
5.0	5.0E-08	1.1E-09	2.1E-10	1.6E-09    3.2E-10    1.7E-10    2.6E-10	3.8E-11
50.0	5.0E-06	1.1E-07	2.1E-08	1.6E-07    3.2E-08    1.7E-08    2.6E-08	3.8E-09
500.0	4.9E-04	1.0E-05	2.1E-06	1.6E-05    3.2E-06    1.7E-06    2.6E-06	3.7E-07
5000.0	4.4E-02	9.8E-04	1.9E-04	1.4E-03    2.8E-04    1.5E-04    2.3E-04	3.4E-05

U -238    27.4E-01    U -239    2.35E+01M

*5	6.0E+05
5.0	5.6E+06
50.0	3.1E+07
500.0	4.1E+07
5000.0	4.1E+07

U -238    27.4E-01    NP-239    2.35E-00D    9.000    2.35E+01M

	0.11	0.28	0.07-0.21	0.4B-0.28
*5	3.0E+01	2.2E-00	4.4E-01	1.1E-00    2.4E-01    7.1E-02    5.6E-01
5.0	2.9E+03	2.1E+02	4.2E+01	1.0E+02    2.2E+01    6.8E-00    5.4E+01
50.0	2.0E+05	1.4E+04	2.8E+03	7.1E+03    1.5E+03    4.6E+02    3.6E+03
500.0	3.7E+06	2.7E+05	5.3E+04	1.3E+05    2.9E+04    8.6E+03    6.9E+04
5000.0	2.6E+07	1.9E+06	3.7E+05	9.3E+05    2.0E+05    6.0E+04    4.8E+05

TABLE V (Contd.)

NP-237    16.9E+01    NP-238    2.10E-00D

.5	2.9E+05
5.0	2.9E+06
50.0	2.9E+07
500.0	2.7E+08
5000.0	1.7E+09

NP-237    17.0E+01    PU-238    8.90E+01Y    9.000    2.10E-00D

0.04

.5	1.0E-03	1.0E-08	2.0E-09
5.0	1.0E-01	1.0E-06	2.0E-07
50.0	1.0E+01	1.0E-04	2.0E-05
500.0	1.0E+03	9.9E-03	1.9E-03
5000.0	7.7E+04	7.3E-01	1.4E-01

PU-238    40.0E+01    PU-239    2.44E+04Y

.5	1.6E-01
5.0	1.6E-00
50.0	1.6E+01
500.0	1.6E+02
5000.0	1.6E+03

PU-239    32.0E+01    PU-240    6.60E+03Y

.5	4.8E-01
5.0	4.8E-00
50.0	4.8E+01
500.0	4.8E+02
5000.0	4.8E+03

PU-240    25.0E+01    PU-241    1.32E+01Y

.5	1.8E+02
5.0	1.8E+03
50.0	1.8E+04
500.0	1.8E+05
5000.0	1.8E+06

TABLE V (Contd.)

PU-240	25.0E+01	AM-241	4.58E+02Y	9.000	1.30E+01Y		0.04-0.06-0.03
			0.06		0.03	0.04-0.06	
*5	2.2E-07	1.6E-08	3.2E-09	1.1E-09	2.2E-10	5.3E-12	9.8E-13
5.0	1.3E-05	1.0E-06	1.9E-07	7.0E-08	1.3E-08	3.2E-10	5.9E-11
50.0	1.3E-03	1.0E-04	1.9E-05	7.0E-06	1.3E-06	3.2E-08	5.9E-09
500.0	1.3E-01	1.0E-02	1.9E-03	7.0E-04	1.3E-04	3.2E-06	5.9E-07
5000.0	1.3E+01	1.0E-00	1.9E-01	7.0E-02	1.3E-02	3.2E-04	5.9E-05
PU-241	39.0E+01	PU-242	3.79E+05Y				
*5	1.0E-02						
5.0	1.0E-01						
50.0	1.0E-00						
500.0	1.0E+01						
5000.0	1.0E+02						
PU-242	19.0E-00	PU-243	4.98E-00H				
	0.08		0.04				
*5	3.2E+05	1.2E+04	2.4E+03	6.0E+02	1.1E+02		
5.0	3.2E+06	1.2E+05	2.4E+04	6.0E+03	1.1E+03		
50.0	3.1E+07	1.1E+06	2.3E+05	5.7E+04	1.1E+04		
500.0	1.9E+08	7.5E+06	1.4E+06	3.5E+05	7.0E+04		
5000.0	2.8E+08	1.0E+07	2.1E+06	5.2E+05	1.0E+05		
PU-242	19.0E-00	AM-243	7.65E+03Y	9.000	4.98E-00H		
*5	1.4E-05						
5.0	1.4E-03						
50.0	1.3E-01						
500.0	9.9E-00						
5000.0	2.2E+02						
PU-244	18.0E-01	PU-245	1.06E+01H				
*5	1.4E+04						
5.0	1.4E+05						
50.0	1.4E+06						
500.0	1.1E+07						
5000.0	2.6E+07						

TABLE V (Contd.)

PU-244 18.0E-01 AM-245 2.07E+00H 9.000 1.06E+01H

.5	2.0E+01
5.0	2.0E+03
50.0	1.8E+05
500.0	7.8E+06
5000.0	2.6E+07

AM-241 50.0E-00 AM-242M 1.52E+02Y

0.05

.5	3.2E-00	5.9E-01	1.1E-01
5.0	3.2E+01	5.9E-00	1.1E-00
50.0	3.2E+02	5.9E+01	1.1E+01
500.0	3.2E+03	5.9E+02	1.1E+02
5000.0	3.2E+04	5.9E+03	1.1E+03

AM-241 75.0E+01 AM-242G 1.60E+01H

.5	4.0E+06
5.0	4.0E+07
50.0	3.0E+08
500.0	3.0E+09
5000.0	1.0E+10

AM-241 61.0E+01 CM-242 1.63E+02D 9.000 1.60E+01H

0.04

.5	2.4E-00	1.3E-04	2.6E-05
5.0	2.4E+02	1.3E-02	2.6E-03
50.0	2.4E+04	1.3E-00	2.5E-01
500.0	2.1E+06	1.1E+02	2.3E+01
5000.0	9.7E+07	5.4E+03	1.0E+03

AM-243 74.0E-00 AM-244G 2.60E+01M

.5	1.4E+07
5.0	1.3E+08
50.0	8.0E+08
500.0	1.0E+09
5000.0	1.0E+09

TABLE V (Contd.)

AM-243 74.0E-00 CM-244G 1.81E+01Y 9.000 2.50E+01M

•5	2.7E-01
5.0	2.6E+01
50.0	1.8E+03
500.0	3.7E+04
5000.0	3.9E+05

CM-243 25.0E+01 CM-244G 1.81E+01Y

.5	1.3E+02
5.0	1.3E+03
50.0	1.3E+04
500.0	1.3E+05
5000.0	1.3E+06

CM-243 25.0E+01 PU-240 6.76E+03Y 9.000 1.81E+01Y

.5	3.7E-08
5.0	6.6E-07
50.0	6.5E-05
500.0	6.5E-03
5000.0	6.5E-01

CM-244 15.0E-00 CM-245 9.32E+03Y

9-13

.5	1.5E-02	3.5E-04	7.0E-05	1.3E-04	2.6E-05
5.0	1.5E-01	3.5E-03	7.0E-04	1.3E-03	2.6E-04
50.0	1.5E-00	3.5E-02	7.0E-03	1.3E-02	2.6E-03
500.0	1.5E+01	3.5E-01	7.0E-02	1.3E-01	2.6E-02
5000.0	1.5E+02	3.5E-00	7.0E-01	1.3E-00	2.6E-01

CM-244 15-9E-90 PU-241 1-30E+01Y 8-000 9-32E+03Y

.5	4.7E-09
5.0	4.4E-08
50.0	3.9E-06
500.0	3.9E-04
5000.0	3.9E-02

TABLE V (Contd.)

CM-245 20.0E+01 CM-246 5.48E+03Y

.5	3.5E-01
5.0	3.5E-00
50.0	3.5E+01
500.0	3.5E+02
5000.0	3.5E+03

CM-246 15.0E-00 CM-247 1.67E+07Y

.5	8.6E-06
5.0	8.6E-05
50.0	8.6E-04
500.0	8.6E-03
5000.0	8.6E-02

CM-248 60.0E-01 CM-249 6.40E+01M

.5	4.7E+05
5.0	4.6E+06
50.0	3.6E+07
500.0	8.6E+07
5000.0	8.7E+07

CM-248 60.0E-01 BK-249 3.14E+02D 9.000 6.50E+01M

.5	1.7E-01
5.0	1.7E+01
50.0	1.5E+03
500.0	5.4E+04
5000.0	6.5E+05

BK-249 50.0E+01 BK-250 3.20E-00H

.5	1.3E+07
5.0	1.2E+08
50.0	1.1E+09
500.0	6.0E+09
5000.0	7.2E+09

TABLE V (Contd.)

BK-249    50.0E+01    CF-250    1.00E+01Y    9.000    3.20E-00H

.5	4.3E-01
5.0	4.2E+01
50.0	4.0E+01
500.0	2.5E+05
5000.0	4.5E+06

CF-249    27.0E+01    CF-250    1.00E+01Y

.5	2.5E+02
5.0	2.5E+03
50.0	2.5E+04
500.0	2.5E+05
5000.0	2.5E+06

CF-249    27.0E+01    CM-246    5.48E+03Y    9.000    1.00E+01Y

.5	3.9E-08
5.0	1.6E-06
50.0	1.5E-04
500.0	1.5E-02
5000.0	1.5E-00

CF-250    15.0E+02    CF-251    8.00E+02Y

.5	1.7E+01
5.0	1.7E+02
50.0	1.7E+03
500.0	1.7E+04
5000.0	1.7E+05

CF-251    30.0E+02    CF-252    2.55E-00Y

.5	1.1E+04
5.0	1.1E+05
50.0	1.1E+06
500.0	1.1E+07
5000.0	1.1E+08

TABLE V (Contd.)

CF-252 28.0E-00 CF-253 1.70E+01D

.5	5.6E+03
5.0	5.6E+04
50.0	5.6E+05
500.0	5.6E+06
5000.0	5.2E+07

CF-252 28.0E-00 ES-253 2.00E+01D 9.000 1.90E+01D

0.04				0.39		6.2A-0.39	
.5	3.0E-02	2.2E-06	4.4E-07	1.3E-06	3.0E-07	1.0E-06	
5.0	3.0E-00	2.2E-04	4.4E-05	1.3E-04	3.0E-05	1.0E-04	
50.0	3.0E+02	2.2E-02	4.3E-03	1.3E-02	3.0E-03	1.0E-02	
500.0	3.0E+04	2.2E-00	4.3E-01	1.3E-00	3.0E-01	1.0E-00	
5000.0	2.8E+06	2.0E+02	4.0E+01	1.2E+02	2.8E+01	1.0E+02	

ES-254 40.0E-00 ES-255 2.40E+01D

.5	5.6E+03
5.0	5.6E+04
50.0	5.6E+05
500.0	5.6E+06
5000.0	5.4E+07

ES-254 40.0E-00 FM-255 2.00E+01H 9.000 2.40E+01D

0.06				0.08	
.5	8.2E-01	1.5E-03	2.9E-04	1.5E-03	2.9E-04
5.0	8.2E+01	1.5E-01	2.9E-02	1.5E-01	2.9E-02
50.0	8.1E+03	1.4E+01	2.9E+00	1.4E+01	2.9E+00
500.0	7.4E+05	1.3E+03	2.6E+02	1.3E+03	2.6E+02
5000.0	3.6E+07	6.7E+04	1.3E+04	6.7E+04	1.3E+04

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## REFERENCES

1. K. Way et al., Nuclear Data Sheets, National Academy of Sciences, National Research Council, Washington (1964).
2. D. J. Hughes and R. B. Schwartz, Neutron Cross Sections, Atomic Energy Commission Report BNL-325, 2nd ed. (1958); D. J. Hughes, B. A. Magurno, and M. K. Brussel, BNL-325, Supplement No. 1 (1960).
3. J. Wing, Isomeric Yield Ratios in Nuclear Reactions, Atomic Energy Commission Report ANL-6598 (1962).
4. R. C. Koch, Activation Analysis Handbook, Academic Press, New York (1960).
5. D. Strominger, J. M. Hollander, and G. T. Seaborg, Rev. Mod. Phys. 30, 585 (1958).
6. E. K. Hyde, I. Perlman, and G. T. Seaborg, The Nuclear Properties of the Heavy Elements, Prentice-Hall, Inc., Englewood Cliffs, New Jersey (1964).
7. R. L. Heath, Scintillation Spectrometry Gamma-ray Spectrum Catalogue, Atomic Energy Commission Report IDO-16408 (1957).
8. N. H. Lazar, Trans. IRE. NS-5, No. 3, 138 (1958).
9. O. U. Anders, Nucleonics 18, 178 (November 1960).
10. H. P. Yule, Anal. Chem. 37, 129 (1965).
11. R. D. Evans, The Atomic Nucleus, McGraw-Hill Book Co., Inc., New York (1955).
12. T. Westermark and B. Sjostrand, Int. J. Appl. Rad. Isotopes 9, 63 (1960).
13. M. Wahlgren, J. Wing, and J. Hines, International Conference on Modern Trends in Activation Analysis, College Station, Texas, ICAA-II/17 (1965).



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