TABLE III

Comparison of Typical Values for Fast and Thermal Fission for $l/\bar{\gamma}$ = 5.655 × 10^{-5} sec.

Index r	S_r Thermal Fission	S_r Fast Fission	% Diff	B_r Thermal Fission	B_r Fast Fission	% Diff
0	0.000 + 00	0.000 + 00	0.00	6.670 - 04	6.817 - 04	2.2
1	1.433 - 02	1.505 - 02	5.0	6.258 - 05	7.543 - 05	20.5
2	6.818 - 02	7.097 - 02	4.1	4.571 - 04	4.837 - 04	5.8
3	1.946 - 01	1.984 - 01	2.0	6.192 - 04	6.450 - 04	4.2
4	1.023 + 00	1.239 + 00	21.1	8.769 - 04	1.225 - 03	39.7
5	2.896 + 00	3.777 + 00	30.4	8.931 - 04	7.377 - 04	17.4
6	1.154 + 02	1.154 + 02	0.00	9.964 - 01	9.962 - 01	0.00

NOTE: All roots, S_r, are negative and in the units of sec^{-1}.

$$B_r = \frac{1}{\Lambda - S_r \sum_{i=1}^{6} \frac{\beta_i/\beta}{(S_r + \lambda_i)^2} + \sum_{i=1}^{6} \frac{\beta_i/\beta}{(S_r + \lambda_i)}} \quad (5)$$

as defined by Keepin and Cox.[3] The roots, S_r, and the corresponding coefficients, B_r, are presented in Tables I and II, respectively.

The delayed-neutron decay constants and relative abundances, λ_i and β_i/β, required in these calculations were taken from Keepin's 1957 data for thermal-neutron-induced fission[6] of ^{235}U.

The fissionable material, ^{235}U, was selected because of its wide use in thermal reactors; however, similar tables are easily generated for other fuels such as ^{233}U, ^{239}Pu, etc.

The basic parameter involved in both tables is $l/\bar{\gamma}$. Care should be exercised when comparing these tables with the earlier ones, since not all of them use the same nomenclature and definitions. Also, the original tables essentially assumed an average effectiveness, $\bar{\gamma}$, of unity and, hence, only l appears as a parameter.[3] However, as noted earlier by Lewins,[7] these tables can be corrected for other values of $\bar{\gamma}$ as is done here through the use of an adjusted lifetime, $l/\bar{\gamma}$.

The range of $l/\bar{\gamma}$ shown in the tables includes values typical of thermal graphite or D_2O reactors as well as the specific value of 5.655 × 10^{-5} sec which applies to the University of Illinois TRIGA Mark II Reactor for which these results were originally derived.[8] Specific values for other systems can be obtained with good accuracy by interpolation.

The values in the tables are given to four significant figures to retain calculational accuracy. However, since the delayed-neutron constants are given to only three significant figures,[6] any calculated results using data from these tables are accurate to only three significant figures.

An indication of typical differences between the present results and the earlier tables is shown in Table III for an adjusted lifetime which is representative of the TRIGA Mark II Reactor. The differences are not large for the coefficients and roots corresponding to the longest and shortest e-folding times (i = 0 and 6, respectively) in Eq. (2), but deviations ranging between 20 and 40% are noted for the intermediate values (i = 1 to 5). Thus, for short- and long-time behavior the flux calculations will not be strongly affected; but if accuracy at intermediate times is important, the correct table should be used.

[6] G. R. KEEPIN, T. F. WIMETT, and R. K. ZEIGLER, *Phys. Rev*, **107**, 1044 (1957).

[7] J. LEWINS, *Nucl. Sci. Eng.*, **11**, 97 (1961).

[8] H. A. KURSTEDT, JR., "The Application of the Kinetics Equations Solved in Temperature to the Short-interval Series Pulsing of a TRIGA Reactor," Nucl. Eng. Program, University of Illinois, Urbana, Ill., PhD Thesis (1968).

Corrigendum

WILLIAM G. DAVEY, "Selected Fission Cross Sections for ^{232}Th, ^{233}U, ^{234}U, ^{235}U, ^{236}U, ^{237}Np, ^{238}U, ^{239}Pu, ^{240}Pu, ^{241}Pu, and ^{242}Pu," *Nucl. Sci. Eng.*, **32**, 35 (1968).

The experimental $\sigma_F\,^{234}U/\sigma_F\,^{235}U$ fission ratio at 14.1 MeV is incorrectly plotted in Fig. 6. Re-plotting the point at the correct value of 0.956 reduces the selected fission ratios and the derived fission cross sections of ^{234}U at 6.70 MeV and above (Table I) to the following values:

Energy (MeV)	10.0	9.05	8.19	7.41	6.70
$\frac{\sigma_F\,^{234}U}{\sigma_F\,^{235}U}$	1.09	1.12	1.14	1.16	1.18
$\sigma_F\,^{234}U$ (barns)	1.79	1.94	1.96	1.82	1.58