As a consequence of our conversation today, I am sending you this summary of the information that can be obtained from a computer code which I have written. This code treats all the fission products chains beginning with $^{72}$Zn through $^{161}$Dy, following their decay for any number of arbitrarily chosen time steps. In all, 469 nuclides are treated. The following tabulation shows the input and output data:

**Input**

1. Concentration of each nuclide at time zero. For example, time zero could be at discharge of fuel from the reactor.
2. Time (hours) of the decay period under consideration.
3. Efficiency with which each nuclide is removed during the chosen time step. For example, this could be the efficiency of a chemical processing step, a gas sparging step, or any other operation. A different removal efficiency may be entered for each nuclide.

**Output**

1. Concentration of each nuclide at end of time step.
2. Heat generation rate at end of time step for each nuclide due to beta decay.
3. Heat generation rate at end of time step for each nuclide due to gamma emission.
4. Total beta, total gamma, and total $(\beta + \gamma)$ heat generation rate at end of time step.
5. Beta, gamma, and total heat generation rate for each chemical element. (Sums the contribution for all the isotopes of an element.)
The above output may be obtained for as many time steps as desired. When a nuclide is removed in a time step, only the portion not removed is considered in subsequent calculations. The program is written for the IBM 360/75 or CDC 1604. The name of the program is CALDRON.

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