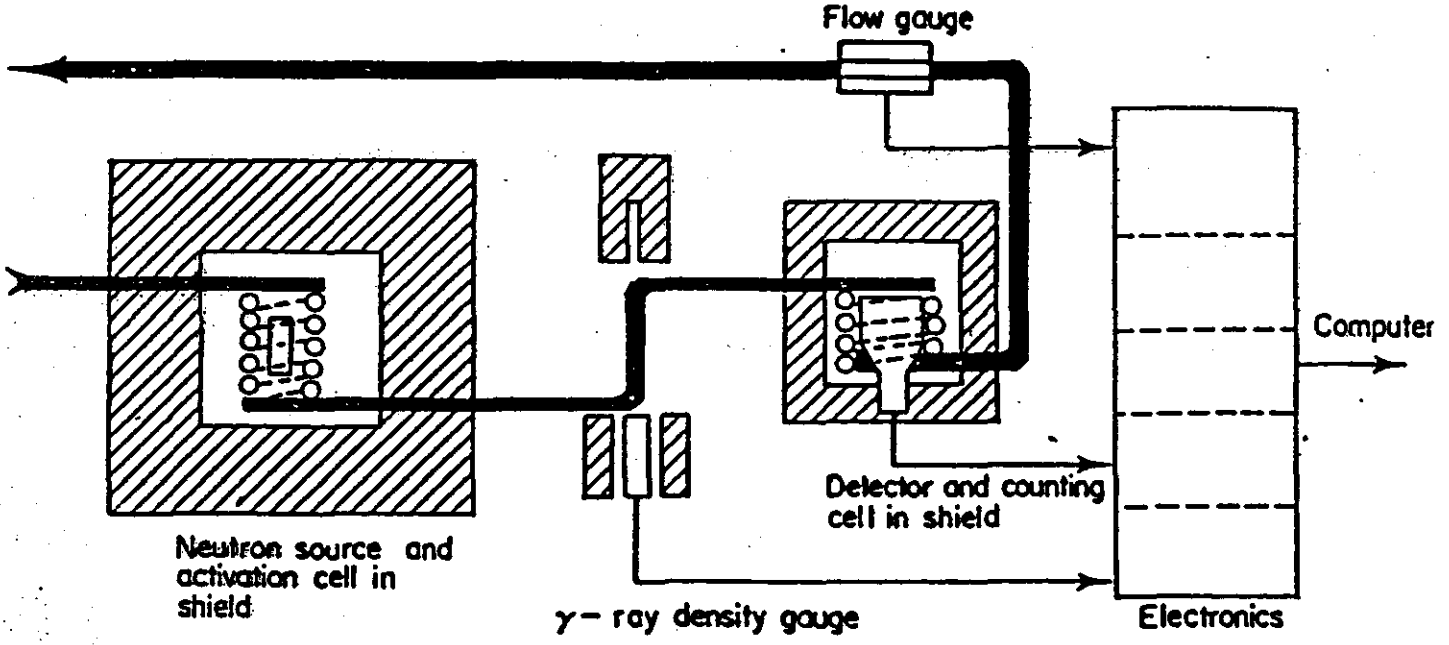
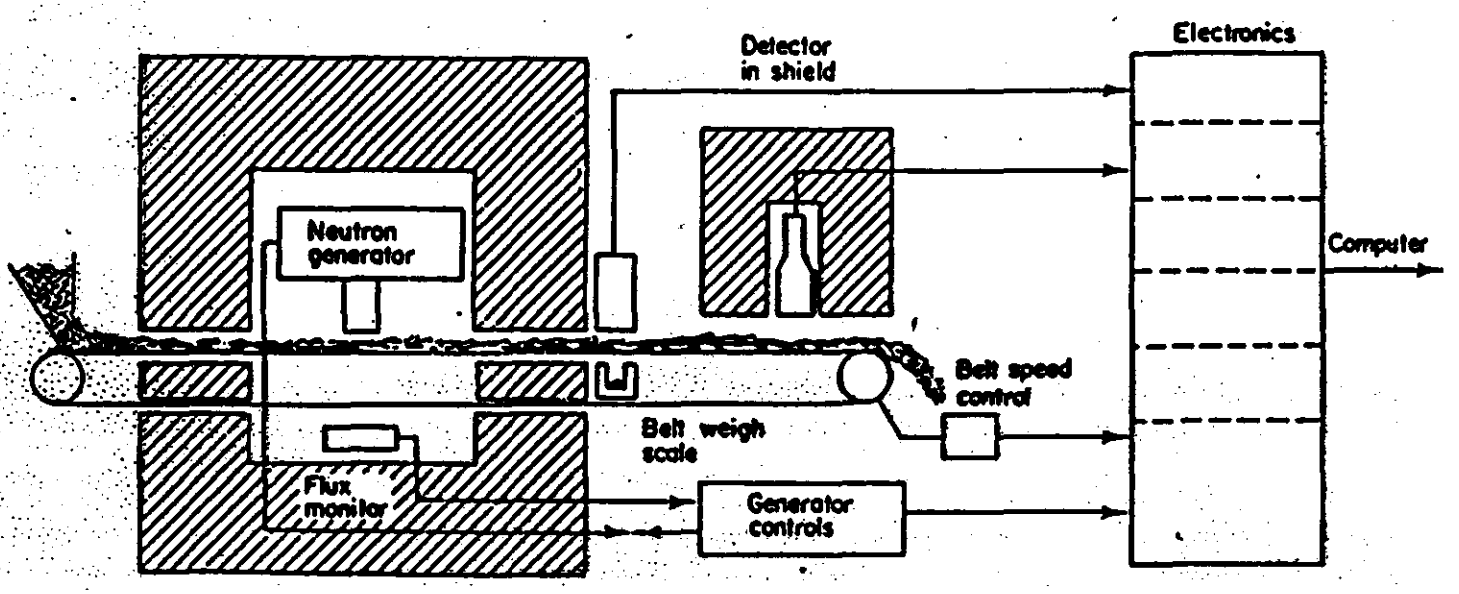


A. Liquids and slurries system



B. Solids activation system

FIG. 1. Typical activation analysis schemes for fluids and solids.

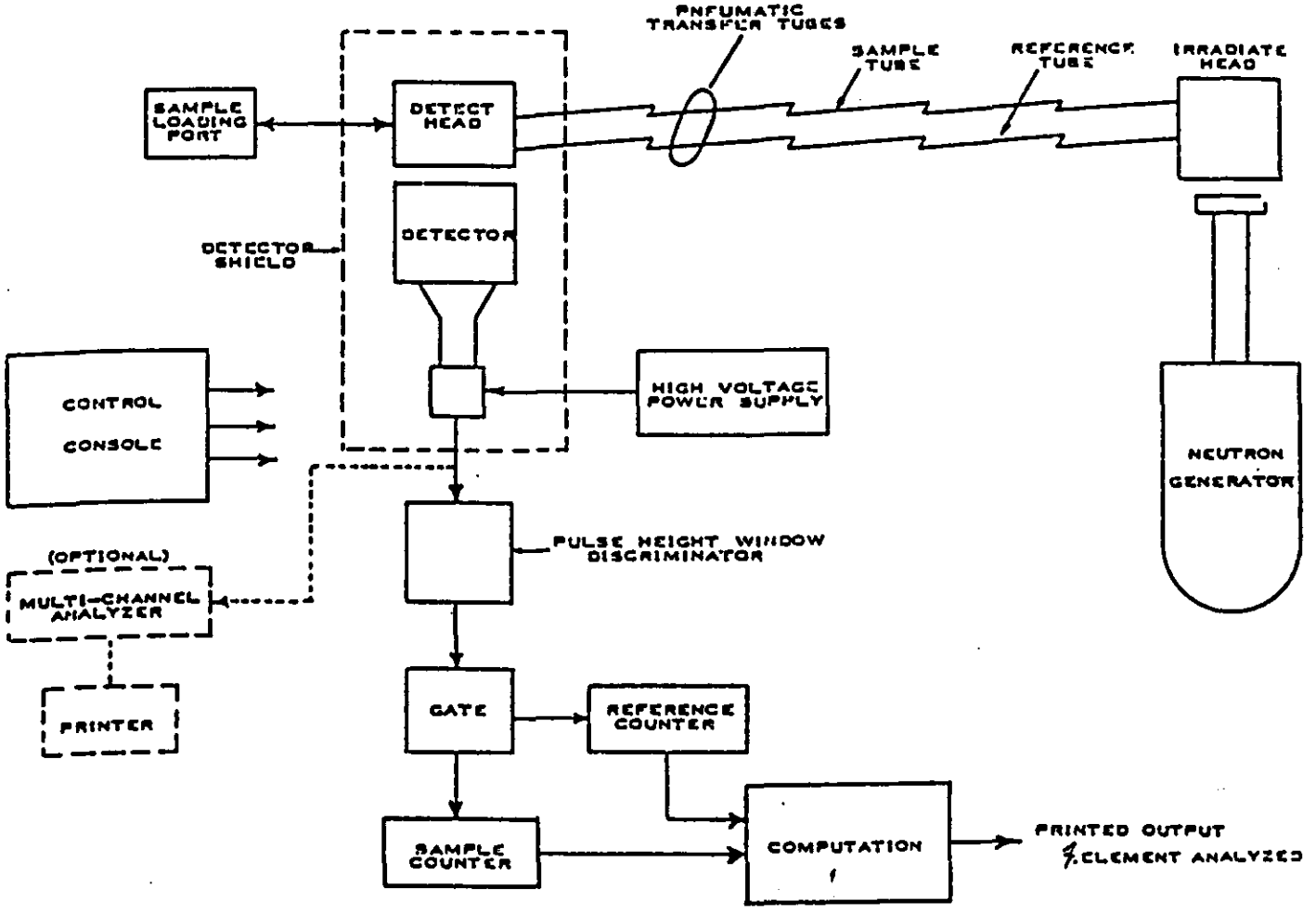


Figure 9.13 Block diagram of a fast-neutron activation analysis oxygen analyzer. [From D. E. Wood and L. C. Pasztor, A Comparison of Neutron Activation Analysis and Vacuum-Fusion Analysis of the Oxygen Content of Steel, in *Modern Trends in Activation Analysis* (Texas A&M University, College Station, 1965).]

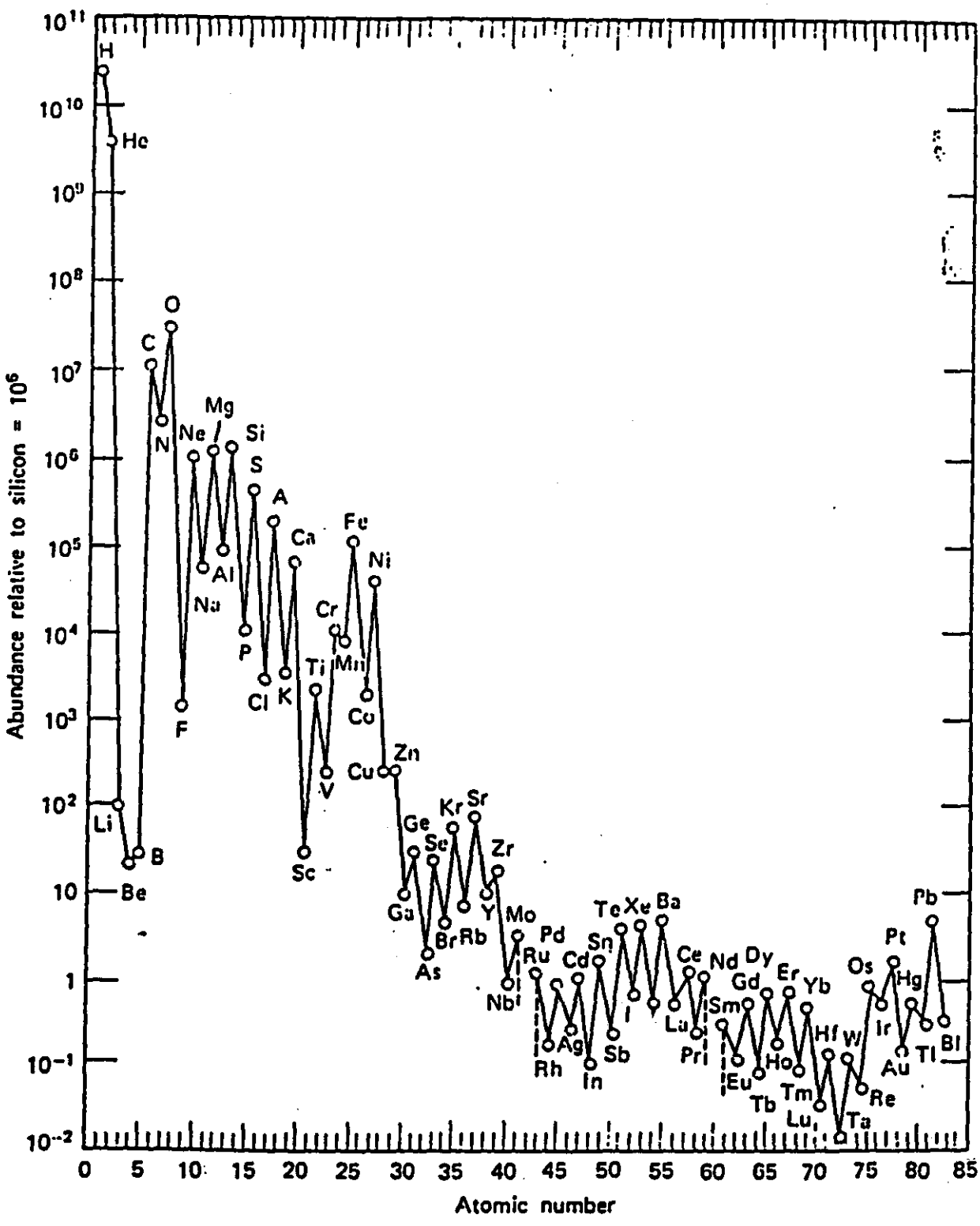


Figure 9.4 "Cosmic" abundance diagram of the elements, relative to 10^6 atoms of silicon. [From L. H. Ahrens, *Distribution of the Elements in Our Planet* (McGraw-Hill, New York, 1965), p. 14.]

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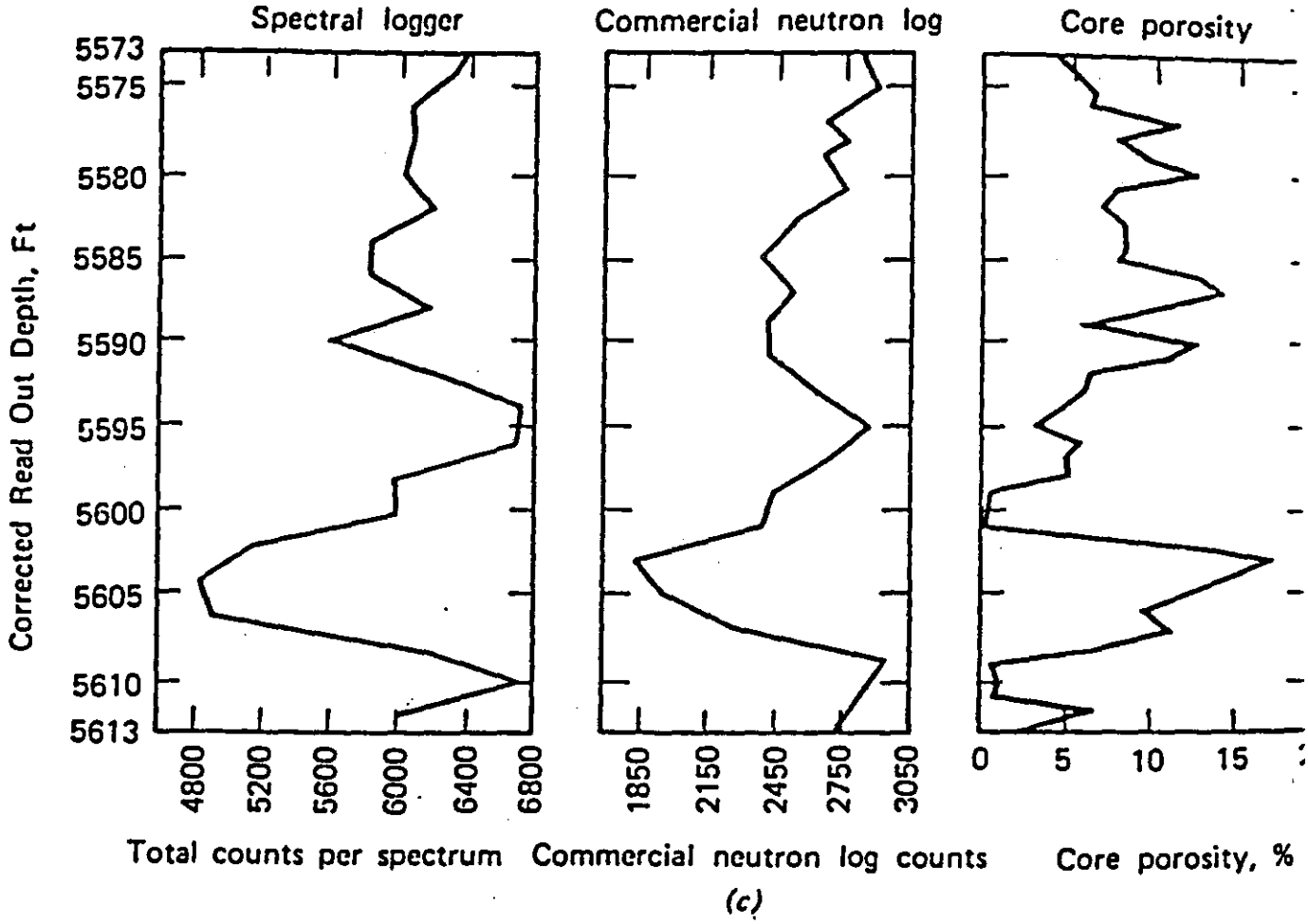

Figure 9.17 Data obtained with a high-energy neutron-induced spectral logging system: (*a*) C/O ratios and core porosites in limestone; (*b*) gamma-ray spectrum in dolomite at a depth of 5605 ft; (*c*) porosity response compared with that of a commercial neutron log and core porosity data in limestone-dolomite. [From Hoyer and Rumble, Field Experience in Measuring Oil Content, Lithology, and Porosity with a High-Energy Neutron-Induced Spectral Logging System, *J. Petr. Tech.* 801–807 (July 1965).]

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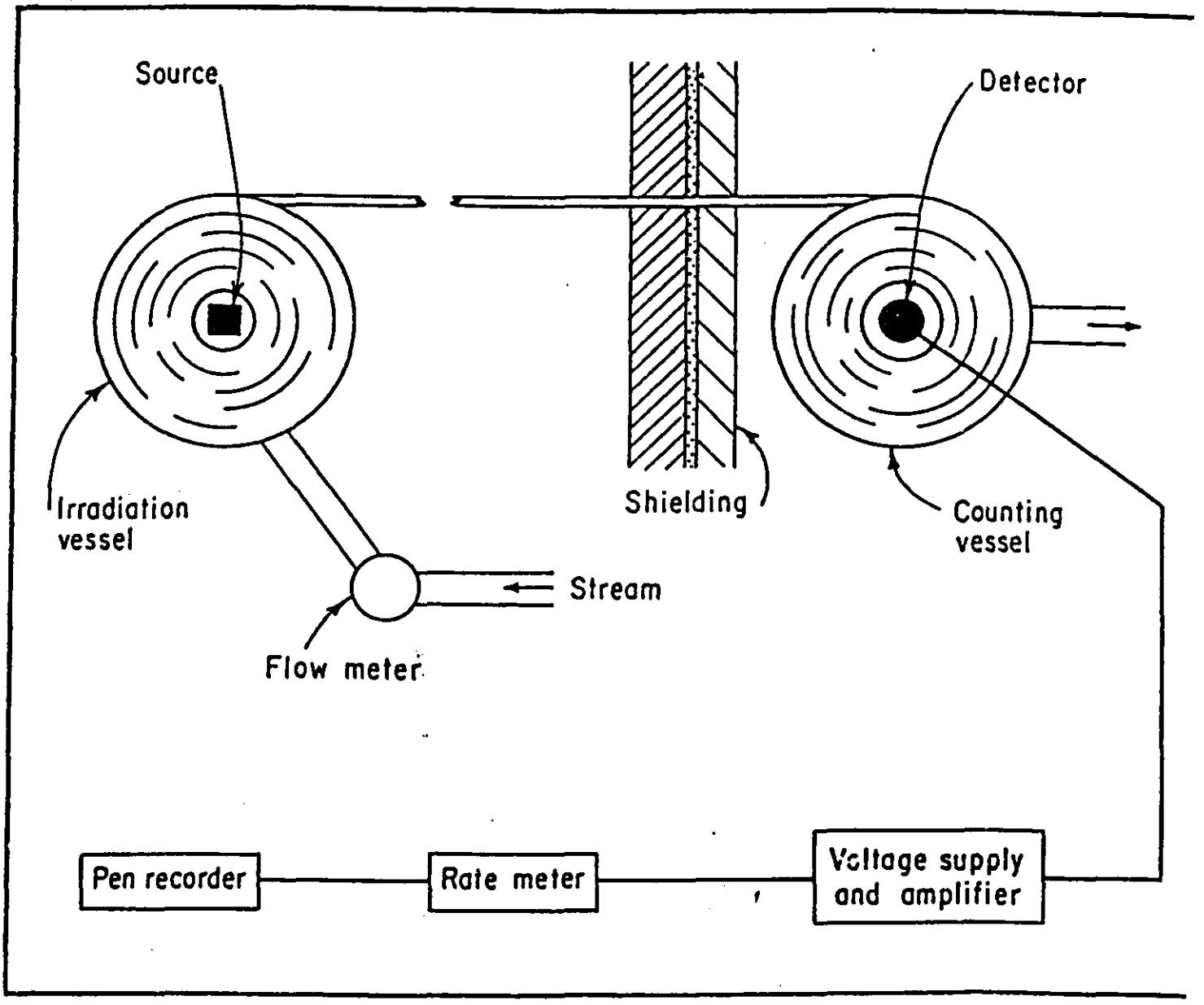

Figure 9.24 Schematic diagram of an activation analysis on-stream analyzer. [Fro O. U. Anders (1962).]

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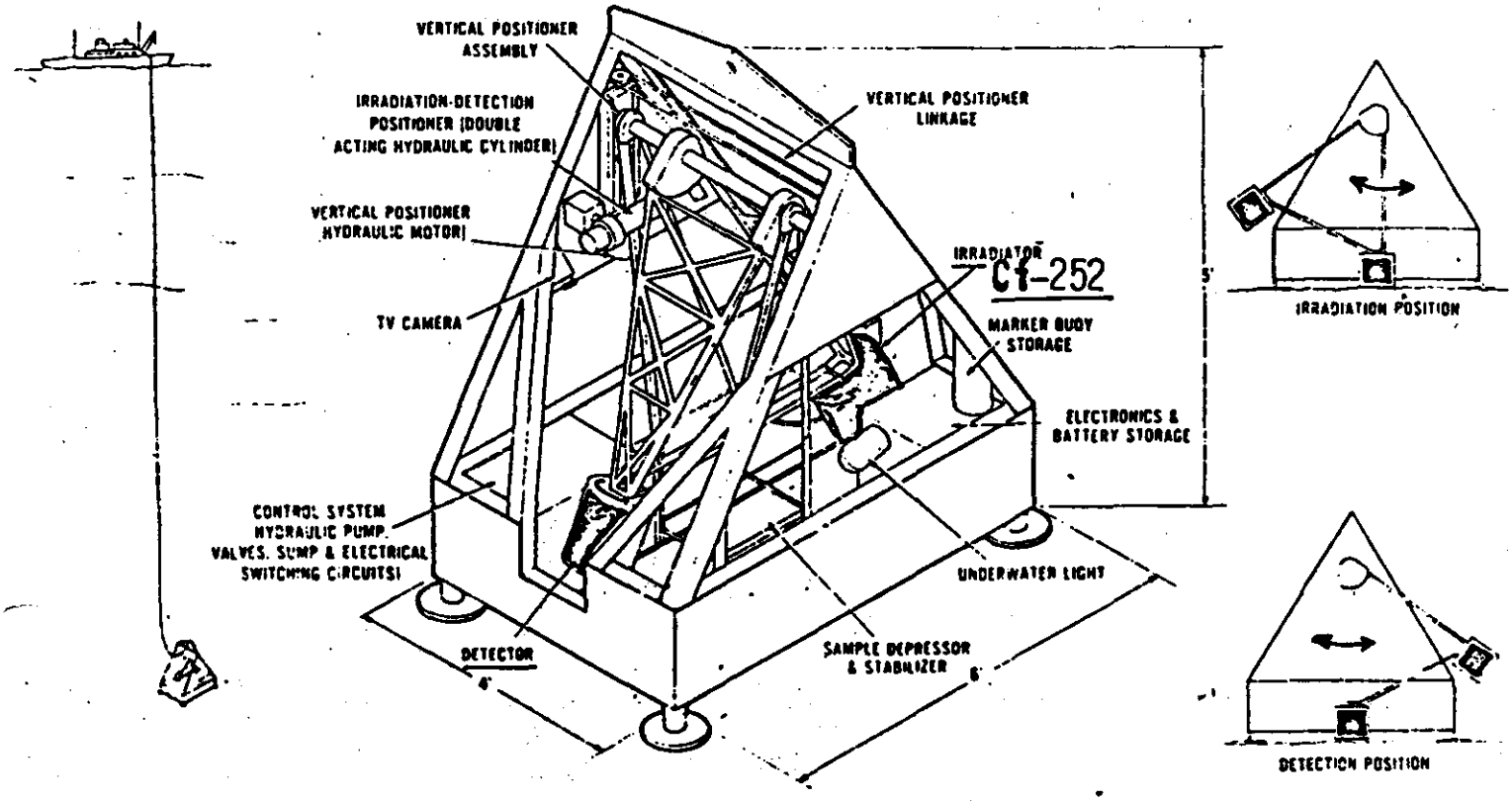
IN SITU ACTIVATION ANALYSIS OF SEDIMENTS WITH CALIFORNIUM - 252



A seabed nuclear probe has been developed which permits the measurement of up to 33 elements. The probe consists of a neutron irradiation source, CALIFORNIUM - 252 , which neutron activates the elements. These resulting radioactive elements emit characteristic gamma radiation which is analyzed in situ

(Vogman and Coll. Battelle, Washington, 1972)