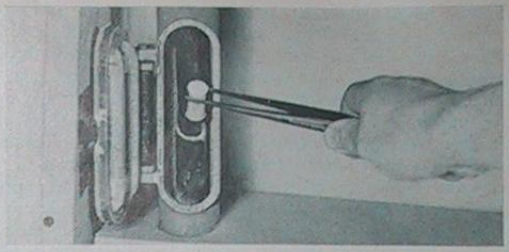

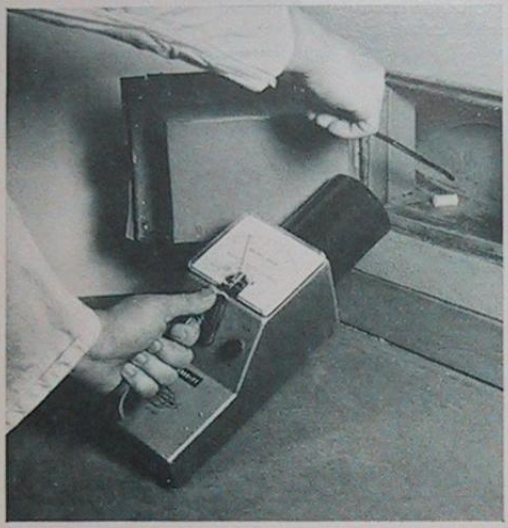

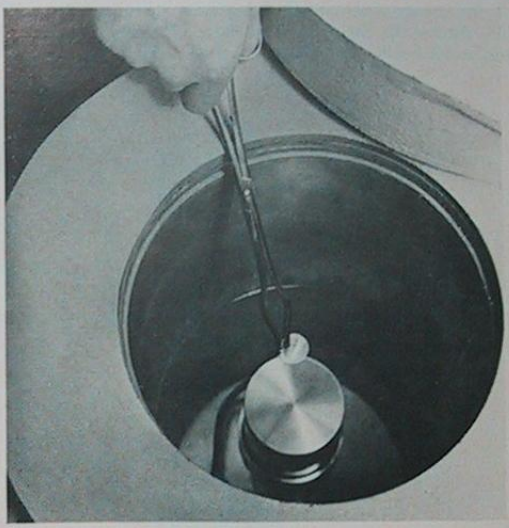

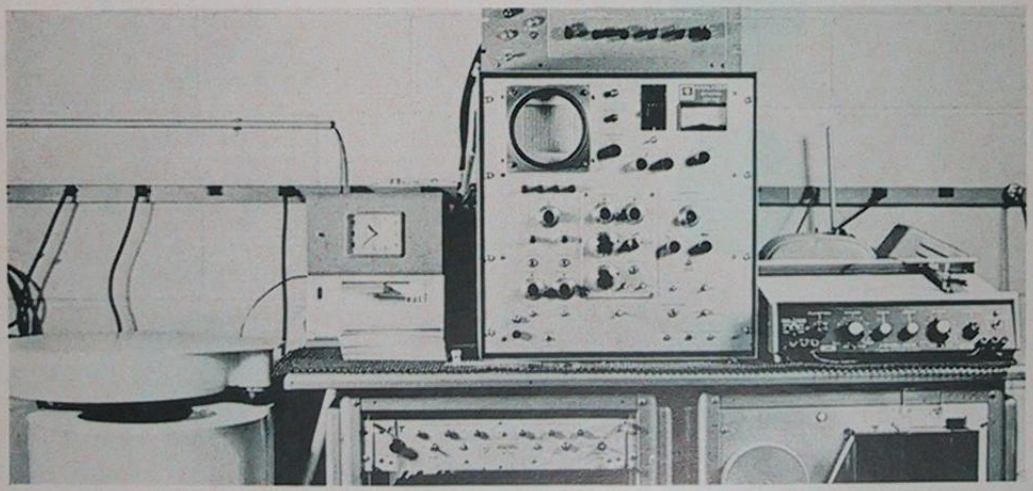

PROCEDURE followed in performing a typical neutron-activation analysis is illustrated by the sequence of photographs on this page, which were made in the authors' laboratory at the Sterling Forest Research Center of the Union Carbide Corporation. A small sample of the material to be analyzed is first inserted in a plastic irradiation container (*top left*). The container is then placed in a pneumatic transfer tube (*top right*), which leads to the core of a nuclear reactor where the sample is bombarded with neutrons. After a certain irradiation period the activated sample is returned to the laboratory (*middle left*) and placed inside a massive lead radiation shield (*middle right*). Scintillation detectors located inside the shield measure the radioactivity of the sample and transfer this information to an array of instruments (*bottom*), which analyze and record the characteristic energy spectrum of the induced radioactivity.