Presented by I& Bazin, together with Paper No. 5

At the radiometallurgy laboratory at Fontenay-aux-Roses the techniques used for recording the distribution of α- and β- emitters (Pu, transplutonic elements and various fission products) are of two kinds: fission radiography and autoradiography.

The fission radiography method consists in irradiating a fuel sample in a neutron flux and recording the induced tracks of the fission fragments on a mica plate. Tests performed on (UPu) C sample containing 17.5% wt of plutonium and irradiated to 40,000 MWd/t in the EL-3 reactor reveal the flux-depression effect of the fuel.

The α- and β- autoradiographs are obtained by means of cellulose nitrate foils or photographic plates. The exposures are developed outside the hot cell by conventional photographic methods. These two techniques have been used for the study of mixed fuel irradiated up to 100,000 MWd/t...