According to Eq. 64 the fraction of the current into the water, I_0/I, which is made up of unmoderated fission neutrons, increases from 30% to 41% in going from an uranium enrichment of 15% to 100%. We estimated the average fast neutron energy in the UF_6, E_f, by assuming $E_I = 1.3\ E_f$.

The critical thickness in centimeters of a slab of UF_6 tamped by water on one side as given by Eq. 50 is the curve (b) plotted versus enrichment percentage in Fig. 5.

Removal of the water is equivalent to allowing the source strengths F_i to approach zero in Eq. 50. Thus one obtains for the untamped slab a critical thickness in centimeters, d, given by:

$$\cot k_0(\sigma d + 2x_0) \rightarrow -\infty \quad \text{or} \quad d = (\pi/k_0 - 2x_0)/\sigma \tag{65}$$

Curve (a) in Fig. 5 shows the above untamped UF_6 critical slab thickness for comparison.

The lowest curve, (c) in Fig. 5 is the critical radius in centimeters, R, calculated according to Eq. 62 for a water-tamped sphere of UF_6.