

A multihole diverging photon Cerrobend collimator for megavoltage energies was used to measure water transmission values at different locations in a 20x20 cm field size at 100 cm SAD. The transmission curves in water were measured at 25 locations of the 20x20 field, where each point of calculation was separated by 5 cm from its nearest neighboring calculation points. Each transmission value was attained using a 0.3175 cm diameter (0.079 cm<sup>2</sup> area) hole. The measured transmission curve is given by the expression  $T(X) = I(X)/I(0) = \exp(-\mu_{\text{eff}} \cdot X)$ , where  $X$  is the thickness of water,  $\mu_{\text{eff}}$  is the effective linear attenuation coefficient in water, and  $I(X)$  and  $I(0)$  are the transmission readings for water thickness  $X$  and 0, respectively. From this transmission curve, the zero field size TMR was calculated as  $\text{TMR}_0(d) = \exp[-\mu_{\text{eff}} \cdot (d - d_m)]$ , where  $\mu_{\text{eff}}$  is the effective linear attenuation coefficient,  $d_m$  is the depth of maximum dose or 1.2 cm for 4 MV and 3.0 cm for 15 MV, and  $d$  is the depth of interest. In this notation,  $X = d$  and  $\text{TMR}_0(d) = T(X)/T(d_m)$ . The water HVL varied from 12.0 cm to 12.7 cm for the 4 MV field and 17.7 cm to 20.9 cm for the 15 MV field.