

## **“Zero Field” Output as Obtained from Film Dosimetry Measurement**

The “zero field” output factor is an important parameter in dosimetry calculations, and is required for some planning systems, such as CMS-FOCUS. It can be obtained by extrapolating the measurement data at various field sizes. However, this extrapolation may not be accurate due to the dramatic change of the output at small field sizes and the finite size of ion chambers available at most clinical facilities. We investigated the use of film dosimetry to obtain the “zero field” output factor. The output factors of small field sizes (1 x 1 and 2 x 2 cm<sup>2</sup>) were measured at  $d_{\max}$  by placing the films between acrylic plates for both 6 and 18 MV photons (Varian 2100C accelerator). The output factors at the field sizes of 4 x 4 cm<sup>2</sup> and above were measured by using a 0.6 cc ion chamber. The “zero field” output factor was obtained by the cubic spline analysis of the measured data, and was found to be 0.617 for the 6 MV photon beam and 0.434 for the 18 MV photon beam. If the data from the film measurement were excluded, the “zero field” output factor would be 0.835 for the 6 MV photon beam and 0.602 for the 18 MV photon beam. Further details will be presented.