

Energy Dependence Study of Pen Dosimeters

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Abstract— After the calibration of fifteen direct reading dosimeters (pen dosimeters) with gamma radiation (^{60}Co), they were tested with another gamma radiation source (^{137}Cs) and with beta radiation ($^{90}\text{Sr}+^{90}\text{Y}$). The objective of this work was to study the gamma energy dependence and the difference in relation to the radiation type of these instruments. The results show that there is a very low energy dependence for ^{137}Cs and ^{60}Co beams. However, when the responses of the direct reading dosimeters for gamma (^{60}Co) and beta ($^{90}\text{Sr}+^{90}\text{Y}$) radiations were compared, high radiation type correction factors were obtained.