Abstract:

Dosimetric measurements to characterize a new ^{125}I source have been performed. Initial analysis was made to represent the results in terms of the AAPM Task Group #43 parameters. In this study, these data are formulated in terms of other established formalisms and presented in form(s) suitable for use in treatment planning systems that are not capable of the TG43 standard for source representation. Data in liquid water is presented for point source models in terms of Dale's radial dose function, $g_{Dale}(r)$, and the tissue attenuation factor, $T(r)$. The relative dose rate, $D(r,\theta)$, normalized to a point at 1 cm along the perpendicular bisector of the linear source is presented for two-dimensional models. Values are provided for the exposure-to-dose conversion factor and for the average mass energy-absorption coefficient ratio between water and air. Source strength specification is by prevailing 1985 NIST standards. The conversions in this work are implemented according to guidelines of the Task Group #43 report.
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