

DOSIMETRY OF VIRTUAL PHOTON ENERGIES OF A MEDICAL LINEAR ACCELERATOR

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Photon energy numbers of a medical linear accelerator (LINAC) are limited because of technical limitation. In generally, medical LINACs are produced with two photons energies such as 6 and 18 MV. But some clinical situations, such as tangential breast irradiation, different energies between these energies are needed. These can be created by combination of two photon energies. The aim of present study is to make the dosimetry of virtually photon energies of a linear accelerator. For this purpose, a CMS treatment planning system was used in simulation medium. Isodose curves were created for different ratio (50%-50%; 25%-75%; 75%-25%) of two photon energies (6 and 18 MV) and depth dose value were measured from these isodose curves. It was determined that energy at ration of 50% (6MV) and 50% (18 MV) is ≈ 12 MV, for 25% (6MV) and 75% (18 MV) is ≈ 15 MV, for 75% (6MV) and 25% (18 MV) is ≈ 9 MV.