

The characteristics of nominal 6 MV and 20 MV photon beams as modulated by large field wedges (25 cm x 30 cm maximum field size for 15 degree, 30 degree, and 45 degree wedges and 20 cm x 30 cm for 60 degree wedge) have been examined. The wedge factors and the depth dose characteristics have been measured for each wedge as a function of depth to 20 cm depth and field size, 10 cm x 10 cm and maximum field size. Four different 6 MV beams and two different 20 MV beams have been studied. The maximum change in the wedge factor between the depth of maximum dose and 20 cm depth is greater than 5% for the 6 MV beam with the 45 degree and the 60 degree wedge. The minimum change is approximately 2% for the 15 degree wedge. The effect of the beam hardening due to the presence of the wedge was small, being approximately a 1% change in depth dose at 20 cm depth for the 6 MV beam. Our monitor unit calculation approach has been modified to include tables of wedge factors as a function of depth and field size which provides more accurate dose delivery, especially for wedged pelvic fields.