The Neutron dose in the maze and at the maze door

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The Neutron dose was measured at the maze door of a 15 MV therapy accelerator room for three different gantry positions. Two techniques for evaluation of the neutron dose at the maze door the first by Kersey and the second by McGinley, as described in NCRP 151, were compared with measurements. Kersey's method overestimated the dose at the maze door by factors that vary from 2.8 to 5.3, depending on the gantry angle. McGinley's method showed better agreement, although it systematically underestimated the dosage by factors of 0.69 to 0.87, and is also dependent upon the gantry position.
The Neutron dose was measured in the maze, at a distance from the door of up to 5.35 m. The difference between the calculated and measured values increases systematically with the distance to the maze door. McGinley's results are much closer to the measured dosages but the rate of increase in the calculated dosages using Kersey's method is much closer to the corresponding rate of increase in the measured neutron dosages.