

AbstractID: 4434 Title: Shielding III: Practical examples, including IMRT, TBI, SRS

The recently published NCRP Report No. 151, "Structural Shielding Design and Evaluation for Megavoltage X- and Gamma-Ray Radiotherapy Facilities", presents updated methods and data for radiation therapy room shielding design. These calculational methods are applied in examples representing the more common shielding design situations. A radiation therapy vault with a maze barrier and intended for use with IMRT and TBI procedures is the principal example. Detailed calculations of the barriers and door shielding structures are presented. Procedures for evaluating compliance with the NRC licensing constraint on dose equivalent in-any-one-hour are presented. An example of a high-energy room where photoneutron production is of concern is presented with focus on assessing the dose equivalent at the entrance and the maze door design.