Eurados trial performance test for personal dosemeters for external beta radiation

On the initiative of the European Dosimetry Group (EURADOS) action group 'Harmonisation and Dosimetric Quality Assurance in Individual Monitoring for External Radiation' a trial performance test for whole-body and extremity personal dosemeters broadly representative of those in use in the EU was accomplished. This paper deals with the part of the performance test concerned with exposure to beta radiation. Fifteen dosimetric services participated with whole-body dosemeters intended to measure beta doses (H-p(0.07)) of which 13 used thermoluminescent (TL) detectors and two used photographic films. Eight services participated with extremity dosemeters which all used TL detectors. A description is given of the irradiation set-up, the characteristics of the irradiation fields, the calibration quantity applied and the performance criteria used for the evaluation of the results. The paper discusses in detail the results obtained from the exercise. In particular, based on the replies to a questionnaire issued to each participant, the results are analysed in relation to important design characteristics of the dosemeters taking part in the test.

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