

ENERGY DEPENDENCE EVALUATION OF THE PATIENT DOSE CALIBRATOR

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The kerma-area product (PKA) is a useful quantity to establish the reference levels in diagnosis of conventional X ray examinations. The PKA can be obtained by the use of the kerma-area product meter (KAP) which monitors the patient's exposure during the exam. It is important to use one reference KAP meter to obtain a reliable quantity of doses on the patient. The Patient Dose Calibrator (PDC) is new equipment from Radcal that measures PKA. The aim of this paper was to evaluate the behavior of the PDC using different energies that are related to the radiation qualities provided on the International Standard of the International Electrotechnical Commission IEC 61267 that are the RQR, RQA-M - RQR-M and RQT for conventional X rays, mammography and computerized tomography, respectively, according to their voltage that vary from 25kV to 150kV and considering the half value layer from 0,36 mmAl to 10,1 mmAl. The measurements were performed at the *Laboratório de Calibração de Instrumentos (LCI)* at the *Instituto de Pesquisas Energéticas e Nucleares (IPEN)* where the qualities used are established. The tests were done in accordance to previous studies where it was shown that the PDC presents a main feature. This feature is related to the energy at which it is pointed out that the PDC is a device that has less energy dependence comparing to other similar equipment. The results showed that, in fact, the PDC has smaller energy dependence for the calculated radiation qualities and their specific energies considering the half value layer.