

Correlation of Dose Area Product (DAP) Values and Entrance Skin Exposure

Several manufacturers have developed sophisticated equipment to monitor dose or a quantity related to dose to regional areas exposed to radiation. A major portion of such devices are of a type classified as dose area product (DAP) meters.

Entrance skin exposure (ESE) has been used to characterize biologically significant radiation thresholds and can be related to dose area product. For defined geometries the entrance dose or entrance skin exposure (ESE) can be determined from the DAP measurement.

The purpose of this research is to establish conversion factors to be applied to DAP values in order to calculate with reasonable accuracy the corresponding ESE and entrance dose and how the DAP reading may be used as an operational threshold or action level in high dose interventional radiographic procedures.

The DAP meter can be reasonably calibrated to reflect real time entrance skin exposure with various modes of operation and orientations. Utilizing appropriate back scatter factors would then allow assessment of entrance dose. These values can then be used to notify the users of approaching a threshold for skin erythema.