

## PROFILES OF HEAD-SCATTER PHOTONS AND CONTAMINATING ELECTRONS MEASURED WITH RADIOGRAPHIC FILM

We have evaluated a technique to measure the profile of the dose contribution from head-scattered photons in high-energy photon beams. Radiographic films, covered by acrylic buildup plates, were exposed with the same monitor-unit setting with a large field and a narrow strip field. They were scanned along corresponding lines. The measured difference between the doses in the large and the narrow fields was assumed to be due to the head-scattered photons. The same technique, without the buildup plate, was used to determine the profile of contaminating electrons in the beams. Experiments were made for 6 and 10 MV x-ray beams, with and without a 60-degree wedge. - The results of the film measurements agreed well with results of point measurements with ionization chambers. The advantage of film for this purpose is that many data can be collected and evaluated easily. The distributions showed that the directional spread of the head-scattered radiation, although large, does not obliterate the dependence on the fluence variation in the primary beam