Thesis Title	Estimation of Exposure in Diagnostic X-Ray Machine
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Date of Graduation	16 July B.E. 2540 (1997)

ABSTRACT

In radiographic examinations, exposure dose should be set properly for good image quality, but it should not exceed the safety level. The exposure estimation is useful to reduce unnecessary exposure of the patient. In routine practices, dosimeters which have limitations and inconvenient are used for exposure determination . The exposure estimation by computer program has been used instead of dosimeter. The efficiency depended on the qualities of the x-ray machine such as accuracy, precision, reproducibility, dose linearity and beam limiting system, HVL determination, total filtration determination and correction factor determination, and discrepancy (%) of exposure which were determined by this method and compared with exposure measured by dosimeter. The results of this study indicate that the exposure estimation with this method minimized discrepancy (%) in technique factor ranges 60-120 kVp if the proper CF corresponding to each kVp were employed. They were within $\pm$12%. There are many problems such as the quality of machine, the HVL measurement, which will affect exposure estimation.