pantagraphs and extended vertically by screwed cover surrounding the collimator body. Each lead plate keeps the same space at the same time by the pantagraph. The lead plate is 0.5 cm thick having 91 holes in the central area. Focus was changed from 10.5 to 20.0 cm continuously and the change of sensitivity was small as expected. The resolution was 2.0–2.5 cm for ^{99m}Tc line source, and the sensitivity was 42–121 cps/μCi.

A Model of Shadow-shield-type Whole-body Counter

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In this paper, the shadow-shield type whole-body counter which was recently built in Osaka University Hospital is outlined.

The counter was designed as a middle-level apparatus aiming the clinical applications in which tracer studies were main usages.

It consists of two fixed detectors with 5-in. diam. by 4-in. thick NaI (Tl) crystals. One detector is above and the other is below the patient, who lies on a moving bed passing between the two detectors. The distance between crystal faces is 78 cm. The detectors have a pair of flat-field type and slit type collimetors. The shielding is done with 5 cm thick lead around the detectors and the both side of the bed to cut out any direct pathway for external radiation to the crystals. The moving speed of the bed is variable in 5–15 cm/min.

The chief performance are as follows;

Background in ^{131}I range (255–473 KeV) is 721 cpm in ^{137}Cs range (530–794 KeV) is 335 cpm and in ^{60}Co range (1170–1325 KeV) is 116 cpm.

Counting linearity to the amount of radioisotope was fairly good in 0.1–50 μCi ^{131}I point source.

The minimum measurable amount for fixed ^{131}I point source to achieve $\pm 5\%$ accuracy is 0.012 μCi in 10 min, 0.0065 μCi in 30 min and 0.0045 μCi in 60 min counting time.

When the isotope is diluted in a body size plastic phantom and counted with bed running, the minimum measurable amount in the same accuracy was 0.043 μCi in 15 cm/min, 0.034 μCi in 10 cm/min and 0.023 μCi in 5 cm/min bed speed.

The counting efficiency to the point source fixed in the midst of the two detectors is 0.88%, and it is about 65% of the geometric value.