E1 228

Gamma equivalent dose to a Galle Road commuter

This study reports on a van-borne ratiometric survey carried out along the A2 route to assess the annual radiation equivalent dose received by acommuter from Galle to Colombo using in situ gamma spectrometry and a hand held environmental Gm survey meter. This route was selected as radiation levels as high as 13.0μ Sv h^{-1} was recorded in a few locations along the beach (unpublished data) due to the presence of Th bearing monazite.

The van - borne measurements presented in this study were done using two systems: a battery operated *in situ* system which has a 2 in. ø x 2 in. Nal (TI) detector and a hand held environmental GM survey meter. A total of 45 in situ measurements and 68 survey meter readings were collected while the van was driven at a speed close to 40km h-1 as the situation permitted and measurements lasting 300s were initiated every 5 min. The calculated dose by both systems was 0.17 mSv/y for a commuter for 240 working days and gives the upper limit. The highest equivalent dose rates were measured in Waskaduwa, Beruwala, Maggona and Wadduwa. The daily equivalent dose calculated was 0.70μ Sv in this route. A.0.85 correlation coefficent was obtained for the two systems used.

Southern Province has an average outdoor equivalent dose of 1.54 mSv/y (unpublished data) Reported outdoor world values range from 1.47-9.8 mSv/y[(1)]. The dose received by a commuter (0.17mSv/y) is about 10% of the average measured value for the Southern Province and is no more than a statistical variation of the natural background radiation.