Contribution ID: **606** Type: **Poster**

Levels of Indoor Radon Concentration in Schools: Case Study in Schools in the Northeaster Thailand

Tuesday 22 May 2018 15:00 (1 hour)

Radon is a human carcinogen and a serious public health problem. High radon inhalation for long periods can increase the risk of lung cancer. There are many studies in Thailand focused on the radon hazard posed in the home. However, no report of its level in school for children is observed. Children have been reported to have greater the risk than adults for certain types of cancer from radiation and children spend much of their time at school next on down their home. In this study, the indoor radon concentrations obtained from 9 schools in the Northeastern of Thailand were measured by solid state nuclear tract detectors (SSNDTs) using CR-39 detectors in closed cups, by a short-term test (90 days). Radon cups were placed in the different ground floor of kindergarten classrooms for 8 cups per room. The indoor radon concentrations (Bq/m^3), annual effect dose (mSv/y), total annual effect dose (mSv/y) were calculated from the measured track densities using the radon calibration factor. The calibration factor was carried out using CR-39 detectors in closed cups at Radon laboratory at Thailand Institute of Nuclear Technology (TINT). The results showed that the indoor radon concentrations were in the range of 13 to 89 Bq/m^3 with an average value of 29.44 Bq/m^3, the standard division was 7.25, the maximum and minimum indoor radon concentration values were found in Bantadnoontonglang and Buchaokun school, respectively. The measured indoor radon levels did not exceed the US Environmental Protection Agency (US EPA) safety limit of (148 Bq/m^3). The annual effective dose was in the rage of 0.08-0.53 mSv/y with an average value of 0.18 mSv/y andthe standard division of 0.14. The total annual effective dose ranged from 0.55-1.01 mSv/y was found which was a little bit exceeding the annual dose limit (1 mSv/y) for the general public regulated by International Commission on Radiological Protection (ICRP). The radon concentration and the annual effective dose values were also compared with those obtained in the other countries. These data were taken as part of radon mapping in Thailand.

Authors: Ms SOLA, P. (Thailand Institute of Nuclear Technology (Public Organization), 9/9 Moo.7, Saimoon, Ongkharak, Nakhon Nayok 26120 Thailand); KEWSUWAN, P. (Thailand Institute of Nuclear Technology (Public Organization), 9/9 Moo.7, Saimoon, Ongkharak, Nakhon Nayok 26120 Thailand); RATTANAPHRA, D. (Thailand Institute of Nuclear Technology (Public Organization), 9/9 Moo.7, Saimoon, Ongkharak, Nakhon Nayok 26120 Thailand); KONGSRI, S. (Thailand Institute of Nuclear Technology (Public Organization), 9/9 Moo.7, Saimoon, Ongkharak, Nakhon Nayok 26120 Thailand); KUKUSAMUDE, C. (Thailand Institute of Nuclear Technology (Public Organization), 9/9 Moo.7, Saimoon, Ongkharak, Nakhon Nayok 26120 Thailand); DUANG-AJ, T. (Banbuchaohkun school, 224 Moo 10, Wangmee, Wangnankhiao, Nakhon Ratchasima 30370 Thailand); BUREE, M. (Rujeejintaganon school, 171/2 Moo.5, Natubhai, Ruttanavapee, Nongkhai 43190 Thailand); YOSON, A. (Photakpittayacom school, 37 Moo.7, Photak, Photak, Nongkhai 43130 Thailand); KOTCHADA, ⊠B. (Bathasom school, 9 Moo.1, Sisamran, Numsom, Udonthani 41210 Thailand); KLAKERD, P. (Watsakaengam school, 20 Samaedam, Bangkhunthian, Bangkok 10150 Thailand)

Presenter: Ms SOLA, P. (Thailand Institute of Nuclear Technology (Public Organization), 9/9 Moo.7, Saimoon, Ongkharak, Nakhon Nayok 26120 Thailand)

Session Classification: A014: Environment (Poster)

Track Classification: Environmental Physics, Atmospheric Physics, Geophysics and Renewable Energy