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SUREERAT SRIPUTTIBAN : COMPARISON OF RADON CONCENTRATIONS IN DWELLINGS AND CONCRETE PRODUCT FACTORIES IN UBONRATCHATHANI. THESIS ADVISORS : PORNSRI POLPHONG M.Sc., MALULEE TUNTAWIROON M.S. 126 p. ISBN 974-661-884-9

Radon is a noble alpha-emitter radioactive gas and a member of the natural radioactive decay families. It is distributed everywhere in all soil and rock in different concentrations. Radon gas inside houses, either derived from building material or escaping from soil underneath the building, is a significant source of the radiation exposure to man. It has been indicated that a health effect associated with inhalation of radon gas and its decay products is lung cancer.

Measurements of indoor radon concentration were carried out during May to September 1997 in 17 Tambons of 8 Ampurs in Ubonrachathani province, Thailand. Radon was accurately measured to within ± 15 % using activated charcoal method and gamma spectrometry systems. The measurements were conducted in 1559 samples, 1386 samples from 452 dwellings and 173 samples from 10 concrete product factories. None of the detected value were found to be above the safety threshold (148 $Bq.m^{-3}$) according to the USEPA. The average indoor concentration were 20.70 ± 10.79 $Bq.m^{-3}$, 19.45 ± 10.49 $Bq.m^{-3}$ and 23.34 ± 10.58 $Bq.m^{-3}$ for the whole province. The houses 10 years of age or older have lower average radon concentrations than those less than 10 years ($p<0.05$). The detectors located on ground level showed average radon concentrations higher than those detected by detectors placed above 2.5 meters ($p<0.05$). Concrete buildings showed higher radon concentrations than wooden houses, wooden houses with concrete floors, and wooden houses with zinc ($p<0.05$).