Radiological Hazard Assessments and Control of Radionuclides Emitted from Building Materials in Kuwait Using Expert Systems

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Abstract : Building materials can make a significant contribution to the level of natural radioactivity in closed dwelling areas. Therefore, developing an expert system for monitoring the activity concentrations (ACs) of naturally occurring radioactive materials (NORMs) existing in building materials is useful for limiting the population's exposure to gamma radiation emitted from those materials. The present work not only is aimed at examining the indoor radon concentration emitted by the building materials that are originated from various countries but are commercially available in Kuwait, but also is aimed at developing an expert system for monitoring the radiation emitted from these materials and classifying it as normal (acceptable) or dangerous (unacceptable). This system makes it possible to always monitor any radiological risks to human health. When detecting high doses of radiation, the system gives warning messages.