

Opening Speech by the Chairperson

Professor Pan, honourable guests and colleagues in the field of radiation protection, on behalf of the Radioisotope Unit of the University of Hong Kong and the Hong Kong Radiation Protection Society, I would like to express our warmest welcome to you all to this seminar on the *Public Exposure to Technically Enhanced Naturally Occurring Radioactive Material*, which is jointly organised by the Radioisotope Unit, the Hong Kong Radiation Protection Society and the China Radiation Protection Association.

This is indeed a memorable occasion. Firstly it is the first collaboration in history between the three organisations. Secondly it serves as a formal inauguration of the close tie in the field of radiation protection between Hong Kong and the Mainland especially after the return of Hong Kong to China in July 1997. Last but not the least; it takes place at the opportune time to commemorate the 60th Anniversary of the Faculty of Science of the University of Hong Kong. For this we are also thankful to the generous sponsorship given to this occasion by the Faculty of Science.

Natural ionising radiation pervades the Earth. It comes from outer space in the form of cosmic ray, and in and on the Earth, where radioactive materials normally present in soil, air, water, food and the body undergo radioactive decay. It has long been known that exposure to natural ionising radiation is by far the most significant source of human exposure to ionising radiation. The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) reports that the collective dose committed for 50 years to the world population from natural sources amounts to 650 million man-sievert. This is 77% of the collective dose committed to the world population from all sources. Human exposure to natural sources of ionising radiation well deserves our closest attention.

Some human activities may increase the population's exposure to natural ionising radiation. Indoors living increases our exposure to radon, a gaseous radioactive material formed by the natural decay of radium in soil and building materials. On the average, exposure to radon indoor contributes to about 54% of the population's exposure to natural sources of ionising radiation. Indiscriminate use of building material, improper building design and air-conditioning may further increase such an exposure pathway by allowing radon to build up in indoor air. Indiscriminate use of building material may also increase the population's exposure to gamma radiation from the decay of naturally occurring radioactive materials in the building materials. The use of phosphate fertilisers and the mining, processing and usage of natural resources excavated from the Earth, besides increasing the release of naturally accumulated radioactive material to our living environment, also increase the exposure of the affected workers to the enhanced radioactivity.

While exposure to some nominal level of natural ionising radiation is to a large extent unavoidable, human enhancement of such exposure can be critically reduced by careful

planning and control mechanisms. To better protect the health of the population from the detrimental effects of ionising radiation, reasonable efforts commensurate with the degree of risks should be given to the understanding and aversion of unnecessary enhancement of human exposure to natural ionising radiation.

You will certainly hear more about this subject from our distinguished speakers in the coming sessions. With this brief introduction, I pronounce the opening of the Seminar on Public Exposure to Technically Enhanced Naturally Occurring Radioactive Material and I wish everyone here will have a successful sharing of experience and information, and at the end will put the knowledge to the greatest benefit of the population.