

IRPA 10

TOPICAL SESSIONS Reports of Co-Chairmen for Highlight Sessions

T-20(2): Critical Issues and Alternative Approaches to Setting Radiation Protection Criteria *Thursday, 18 May 2000*

Chair and Keynote: G. Webb

Co-Chair: J. Lecomte

Implications of LNT hypothesis

Three presentations were concerned with low-level radiation in the context of the development of carcinogenic and other endpoints, concomitant exposure to radiation and chemicals, and the pitfalls and lessons to be learnt from transgenerational studies.

Dr. Pollycove hypothesized that low levels of radiation of a few tens of gray stimulated the immune system. At the DNA level, stimulated anti-oxidant processes assist anti-mutagen DNA damage control and repair mechanisms. Quoting many studies, he stated that improvements were shown through lowered cancer rates and also in the treatment and reversal of some cancers.

In the second presentation, **Dr. Burkart**, with the aid of a snake, car, and ducks, gave a preview of the forthcoming UNSCEAR 2000 Report on combined effects. The second agent or agents involved, and their nature and state, could have a considerable influence on the occurrence of synergy. Superadditivity was not easily predictable. In some cases, however, amplified effects occur and need to be considered in relation to protection regimes.

Dr. Slovak used the experience in the United Kingdom of investigating the leukaemia clusters around Seascale in Cumbria to highlight the complicating factors, pitfalls and lessons to be learnt from transgenerational studies. In rejecting the original Gardner hypothesis linking childhood leukaemia to paternal preconception exposure, he produced a useful set of guidelines. The keypoint was well summed up in a quotation from Sir Richard Doll "seldom, if ever, can so few cases of disease have caused so much work and so much public concern for such a long time".

Future trends

In a final presentation, **Dr. Bandle** gave an account of an approach being developed by the UK regulatory body for health and safety, intended to provide a sound basis for planning and prioritizing actions to improve human health and safety. This approach was centered on identifying and analysing emerging trends in technology and associated societal, economic and political developments. The

preliminary results, while not revolutionary, show that there is scope for more holistic and creative approaches to even some traditional problem areas. This approach is also helpful in providing a clearer picture of the order in which problems need to be addressed. This forward look would help professionals to focus their attention on the most important problem areas and would enable their societies, and even IRPA, to work to the most productive effect.