

IRPA 10

TOPICAL SESSIONS Reports of Co-Chairmen for Highlight Sessions

T-5: Practical Issues in Occupational Dosimetry *Monday, 15 May 2000*

Chair and Keynote: J. Lipsztein

Co-Chair: G. Kramer

The session was opened by Dr. Joyce Lipsztein (Brazil), who spoke on the subject of the session. She first reviewed the history of selected ICRP recommendations and showed how they have driven natural legislation which in turn has dictated the required measurement sensitivity. This led to a review of available measurement methods with some brief discussion of new methods (e.g., plasma desorption mass spectrometry, importance of quality assurance, the role of computer technology (voxel phantoms), and concluded with the observation that the worldwide web has changed the way business is done.

Dr. G.H. Kramer (Canada) challenged the audience to imagine Monte Carlo code simulations and provide the health physicist with the tools to investigate theoretically what cannot be done experimentally due to cost constraints or because the equipment cannot yet be built. He emphasized these statements with examples of detector performance, lung phantom characteristics, bioassay and showed how well real and predicted data agreed.

Dr. B. LeGuen (France) discussed the monitoring of workers exposed to activities. He discussed the working environment, lack of barriers between material and workers, measurement sensitivity of personal and workplace monitoring. Three case examples were given in detail and of note was the decommissioning of a worksite. Worker screening is performed by nose-blow analysis for alpha radiation. 6,000 samples were analysed in 1999.

Dr. A. Pradhan (India) explained how high-energy rays can confuse the accurate reading of TLDs and film badges in nuclear power plants. Over responses of up to 250% were noted and suggestions on how to compensate for these errors were presented.

Dr. X. Ortega (Spain) compared the performance of nine electronic dosimeters as they are legally accepted in some European countries. Testing was performed according to the protocol in IEC 61255. He noted that additional tests may be required for special conditions involving EMF fields. No dosimeter passed all the tests. Problems noted were: poor energy response for beta and low-energy gamma rays, inability to measure shallow dose, some dosimeters failed the drop test and some have no method of indicating a signal overload. Until the problems are resolved users are advised to use redundant dosimetry.