

IRPA 10

TOPICAL SESSIONS Reports of Co-Chairmen for Highlight Sessions

T-11: Discharge or Disposal? Decision-Making for Environmental Protection *Tuesday, 16 May 2000*

Chairs and Keynotes: S. Luo, M. Höfert

The title of the Topical Session 11 reflected well the general problem all four authors addressed in their contributions: *Should one discharge radioactivity into the environment or rather look for its safe disposal.*

Dr. S. Luo (China) set the tone in his overview paper: *Strict Discharge and Disposal for the Protection of the Environment* explaining the situation in China that however is similar to many other countries. He identified as the major producers of radioactivity the nuclear fuel cycle, radioisotope production, other facilities like accelerators, and nuclear weapons and disarmament. To the possibility of discharge and disposal he added the important possibility of clearing radioactive materials, i.e. their release and recuperation as essentially non-radioactive scrap for possible reuse. As far as releases of radioactivity in the environment are concerned the annual dose values generally nowadays experienced are much lower than the imposed dose limits to a critical group of the population. In China this dose limit is fixed at 250 microSv/a corresponding to 10 % of the natural background.

Dr. R. G. Morley (United Kingdom) pointed out in his paper: *BNFL Sellafield: The Future for Discharges*, that releases of radioactivity into the environment now correspond to about half this value but that as a consequence of a large development programme BNFL is committed to reduce the impact of the site discharges by the year 2020 to *near-zero levels*, i. e. to less than 30 microSv/a or to around 1 % of the natural background. It should be noted here that many nuclear installations and accelerators work already at release levels that are sometimes even lower than the 1 %.

Dr. P. Croüail (France) spoke on the subject: *Evaluation of the Impact and Inter-Generation Risk Transfers Related to the Release and Disposal of Radioactive Waste from the Nuclear Fuel Cycle* set the tone for the final discussion: Radioactivity that is not released needs to be treated, thus leads to personal doses and eventually becomes in concentrated form a risk for future generations. Any option either to dilute and disperse or to concentrate and store must be evaluated taking into account dose transfers between exposed groups in space and time. The decisive criterion for any decision-making should be the dose to the individual.

Dr. Höfert (Switzerland) presented *The Decommissioning of Accelerator Installations, a Challenge for Radiation Protection in the 21st Century* the problem of how to deal with the large masses of mostly metallic and only slightly radioactive material released during the dismantling of obsolete accelerators was addressed. In fact, it would be reasonable to recycle such valuable materials rather than consider them as waste. The enormous increase in fees that are nowadays charged for the elimination of radioactive waste are considered as an incentive to produce less but make strategies of a decay storage for the bulk of the materials over periods of up to 30 years a necessity at CERN. In this context the absence of internationally accepted clearance levels for weakly radioactive materials is deplorable.

The **general discussion** centered on the point whether *near-zero level* discharges are compatible with the ALARA principle or whether they are rather based on an attitude of political correctness. The unacceptability of scrap iron by steel mills where the material is in specific activity well below some national clearance levels that exist at least in some European countries was commented in some lighter way. Such steel should be used to build ships thus compensating for the missing doses to seamen both from terrestrial and cosmic radiation at sea level.