



RADIATION PROTECTION OF THE ENVIRONMENT – NEW TRENDS

Pavel P POVINEC

Comenius University SK 84248 Bratislava Slovakia

Tel +421 260 295 544 Fax +421 2 65 425 882

Povinec@fmph.uniba.sk

Recent trends in the radiation protection of the environment focusing on basic changes of the protection philosophy from the egocentric to ecocentric approach are presented and discussed. The globalization of the economy is accompanied by global contamination of the environment that requires changes in the attitude of the protection of the total environment i.e. protection of humans, fauna and flora, all ecosystems and the Earth in general, as well as the cosmic space. This complex approach is illustrated on the radiation protection of the environment that has always been in the forefront in developing protection philosophy, methodology and standards, which later has also been applied to the protection of the environment caused by non-radioactive contaminants such as heavy metals and organic compounds. High radiation doses delivered to biota are illustrated on shellfish and fish collected in the Mururoa and Fangataufa lagoons (affected by series of nuclear weapons tests) and on fish in Novaya Zemlya bays (affected by dumping of nuclear reactors and radioactive wastes). On the methodological side, an example is discussed focusing on the *in situ* sea bed radionuclide mapping and seawater monitoring using submersible gamma ray spectrometers operating with NaI(Tl) and HPGe detectors, which has proved to be an important pre-requisite for estimation of the spatial distribution of radionuclides in the water column and on the sea floor, as well as for optimisation of sediment sampling for studying the radionuclide distribution with depth.

Keywords *Radiation protection, environment, humans, biota, in situ spectrometry, sea-bed mapping*