

Uncertainties in Doses from Intakes of Radionuclides Assessed from Monitoring Measurements

G. Etherington¹, A. Birchall¹, M. Puncher¹, A. Molokanov^{2,3}, E. Blanchardon³

¹Health Protection Agency, Centre for Radiation Chemical and Environmental Hazards Protection Division, UK, ²The State Research Center, Institute of Biophysics, Russia; ³Institut de Radioprotection et de Sûreté Nucléaire, France

The evaluation of uncertainties in doses from intakes of radionuclides is one of the most difficult problems in internal dosimetry. In this paper, the process of assessing internal doses from monitoring measurements is reviewed and the major sources of uncertainty are discussed. Methods developed independently at HPA and at IRSN for the determination of uncertainties in internal doses assessed from monitoring measurements are described. Both use a Monte Carlo simulation approach. Results are described for three illustrative examples. An alternative method developed at the Los Alamos National Laboratory that uses Bayesian statistical methods is also described briefly.

USTUR-0445A-17