

Key Parameters for Radioecological Modelling and Assessments

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Any radiological assessments are based on an analysis of radionuclide transport patterns and processes governing radionuclide behaviour in the environment. Therefore it is essential that such information is kept up-to-date and that any relevant new literature is included, especially considering the paucity of existing data. The objective of the TRS-364 revision, undertaken by the IAEA, is to provide both updated values for radionuclide transfer parameters in terrestrial and freshwater ecosystems, and radioecological concepts and models which have been found to be important for radiation safety. Reference values and information on transfer parameters for plants, animals and freshwater ecosystems is given to provide a proper choice of parameter values for a given task. Individual chapters cover foliar and root uptake, radionuclide mobility in soil, transfers to animals, radionuclide transfers in forest and freshwater ecosystems including contamination routes, physical processes and radionuclide accumulation in food products and biota species. To reduce the uncertainty in the estimates of the transfer parameter values, available data were classified based on soil, plant and environmental classifications. Although the TRS is primarily intended to provide parameters for radioecological assessment of both routine discharges of radionuclides and accidental releases, it can be also used as background documentation for other relevant activities such as training and educational purposes in radioecology and radiation protection in general.