Oughton et al. Addressing uncertainties in ERICA JER 99

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Like any complex environmental problem, ecological risk assessment of the impacts of ionising radiation is confounded by uncertainty. At all stages, from problem formulation through to risk characterisation, the assessment is dependent on models, scenarios, assumptions and extrapolations. These include technical uncertainties related to the data used, conceptual uncertainties associated with models and scenarios, as well as social uncertainties such as economic impacts, the interpretation of legislation, and the acceptability of the assessment results to stakeholders. The ERICA Integrated Approach has been developed to allow an assessment of the risks of ionising radiation, and includes a number of methods that are intended to make the uncertainties and assumptions inherent in the assessment more transparent to users and stakeholders. Throughout its development, ERICA has recommended that assessors deal openly with the deeper dimensions of uncertainty and acknowledge that uncertainty is intrinsic to complex systems. Since the tool is based on a tiered approach, the approaches to dealing with uncertainty vary between the tiers, ranging from a simple, but highly conservative screening to a full probabilistic risk assessment including sensitivity analysis. This paper gives on overview of types of uncertainty that are manifest in ecological risk assessment and the ERICA Integrated Approach to dealing with some of these uncertainties.

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