

European project Alpha-Risk (516483 FI6R)

The Alpha-Risk research project (1.7.2005-30.6.2008) aims to improve the quantification of risks associated with multiple exposures, taking into account the contribution of different radionuclides and external exposure using specific organ dose calculation. The project pools together major epidemiological studies in Europe to evaluate long term health effects of internal exposure from radionuclides (radon, uranium, plutonium). The project involves 18 partners from 9 countries, which allows a multidisciplinary collaboration between researchers in epidemiology, dosimetry, statistics, modeling, and risk assessment.

The National Radiation Protection Institute is involved in work package (WP1) related to chronic occupational exposure in uranium mines. The work package includes epidemiological studies conducted in the Czech Republic, France, and Germany. with more than 40 000 individuals. The assessment of the risks will focus on cancer mortality, particularly lung cancer, leukaemia, and kidney cancer, in relation to exposure from radon, long lived radionuclides, and external gamma. Estimation of doses from inhaled radionuclides will be conducted in co-operation with work package related to organ doses (WP5). Statistical models will involve factors such as time since exposure, age at exposure and exposure rate. The models will also involve effect modification related to exposure uncertainties. For lung cancer risk, information on smoking collected in nested case-control studies will be analyzed. Results of analyses in this work package will contribute to integrating work package (WP6), which involves in addition studies of nuclear workers exposed to uranium and plutonium (WP3 and 4) and studies on residential radon (WP2). It is hoped that the results from this work package will lead to direct estimates of the lifetime detriment per unit exposure and provide information on the lung dose conversion for radon.

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Reference: <http://www.alpha-risk.org>