E1-07 Quality assurance of nuclear techniques in environmental studies

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The increasing globalisation of evaluation on levels of pollution or radioactive contamination of the environment illustrates the need for analytical data that can be internationally comparable.

The Radioisotope Centre has initiated a substantial amount of implementation regarding the surveillance and distribution levels of environmental radioactivity and monitoring levels of pollution using nuclear and nuclear related techniques. This paper focuses on the quality assurance of the analytical data generated at the Radioisotope Centre.

Since 1994, Radioisotope Centre has participated in 2 international intercomparison projects on radioactivity measurement for environmental samples using gamma ray spectroscopy and 4 multi-element analysis programmes using X-ray Fluorescence analysis sponsored by the Analytical Quality Control Services of the International Atomic Energy Agency.

Results of the Radioisotope Centre indicate that for Cs-137 measurement in liquid form, the analysis is within 95% confidence interval. Measurement of elements such as Zr, Si and Sr in all 3 environmental matrices were within 95% confidence interval. In 2 samples Zr, Zn, Sr, in all 3 environmental matrices were within 95% confidence interval. In 2 samples Zr, Zn, Sr, Si, Rb, Pb, K and Ca were within 95% confidence interval.