

Mobile Laboratory for Noble Gases Analysis in Atmospheric Air

• Mobile Russian Installation for Noble Gas Analysis –Field (RINGA-F) has the productivity 20m³/h and Xe-133 MDC=0.35 mBq/m³. • Main process for sampling and processing of Xe and Kr from atmospheric air is cryogenic sorption on the charcoal. The turbo - expander used for cooling of the air. The minimum temperature -105 C was achieved after 6 hours, after 1.5 hours, T=-80 C. Extraction efficiency is $\geq 50\%$, Xe stable was extracted up to 6 - 9 cm³. Scintillation NaI (Tl) -spectrometer β - γ coincidences is used; and NaI (Tl) + Si-PIN diodes spectrometer is now made. RINGA-F Noble gas system allows to sampling of air during 1.5-3 hours, MDC on Xe-133 be 0.3 mBq / m³. This installation can be used to atmospheric air analysis at On-site inspection . RINGA-F was used to monitor of air on areas of Leningrad, Kalinin and Kola NPPs , as well as in the Vologda region far away from the NPP. Almost all components and installation units, despite the great distances traveled 1200 km, were intact and functioning. This installation can be transported, for example, by a minivan VWCrafter30-35 •

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