

Evaluation of the activity of a ^{137}Cs radioactive source utilized in oil-welling in Albania.

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The Institute of Applied Nuclear Physics (IANP) is responsible for the national management of radioactive waste and disused sealed radioactive sources (DSRS) in Albania. It collaborates with public and private entities to ensure the safe transport and storage of radioactive materials.

This study outlines the procedure used to evaluate the total activity of two ^{137}Cs sources with unknown activity. In 2018, IANP received five DSRS from the Geophysical Service Center in Fier, following the closure of their temporary storage facility. Based on source certificates and on-site measurements, the inventory included: two ^{241}Am -Be sources (5 Ci each), one ^{137}Cs source (300 mCi), and two ^{137}Cs sources (52 mCi and 51 mCi, dated July 1978) stored together in a single container.

To verify whether both ^{137}Cs sources were encapsulated together, activity was estimated using point-source geometry. The measured total activity was 1.418 GBq, closely matching the decay-corrected certificate value of 1.528 GBq (as of March 2018), confirming the presence of both sources in one capsule.

All sources were subsequently transferred to the National Radioactive Waste Storage Facility in Tirana.

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