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IDENTIFICATION OF GROUND ZEROS OF NUCLEAR EVENTS OF THE SEMIPALATINSK TEST SITE

In the territory of the “Experimental Field” ground of the Semipalatinsk test site there are a great number of ground zeros of nuclear events. In case there is a crater, a ground zero is quite easy to identify, however, in case of no technogenic disturbances, it is impossible to spot it visually. A detailed analysis of Cs-137 and Am-241 has also shown that due to these meteorologically transported products, this forms a displacement of real ground zero, and in some cases, a ground zero cannot be detected. In this context, neutron activation products are assumed to be the most effective to reveal ground zeros of nuclear events, in particular, Eu-152. For the technique to be processed, surface soil samples were collected at different distances from the supposed ground zero of a nuclear event. Fractional sample analysis was carried out; extra deep-earth soil sampling was made. Based on the mineralogical analysis, sampling should be made at a depth of 5-10 cm rather than on the surface, as the surface layer is subjected to contamination due to radionuclides fallout after the explosion. For research one should use a coarse fraction because it is less subjected to transfer.

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