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the Detection System of the MIKS (TKAS6) Xenon Isotope Monitoring Complex during Preparation for the International Certification

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The initial version of the beta-gamma coincidence detector of the MIKS complex failed to meet the requirements specified by the PTS of the CTBTO Preparatory Commission for the energy resolution of the beta channel and the memory effect. After the substantial upgrading, the energy resolution of the beta channel of the redesigned detectors is 37–38 keV for the 129 keV line and the memory effect does not exceed 3%, which meets the PTS requirements. The container of the QC source has been replaced with a container that is more transparent for gamma rays.

The tests of the upgraded detection system of the MIKS complex prototype, the analysis of the data files transferred by VNIIA to the IDC based on the test results, and the prompt implementation of the PTS recommendations by VNIIA confirm the readiness of the MIKS (TKAS6) xenon isotope monitoring complex for its certification in the International Monitoring System.

In order to successfully certify the MIKS complex taking the remoteness of its location (IMS RN58 Station near Ussuriysk, Primorsky krai of the Russian Federation) into account, VNIIA will provide prompt response to any undesirable event during the certification operation of the MIKS complex.

Promotional text

The process of development and modernization of a detection device for a radioactive xenon detection system based on the beta-gamma coincidence method is described

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