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Procedures Developed by the IAEA's ALMERA Network Applicable to the Characterization of Legacy Nuclear Test Sites

The IAEA's network of Analytical Laboratories for the Measurement of Environmental Radioactivity (ALMERA), consisting early 2017 of 160 laboratories in 87 countries, has for aim to provide timely and reliable measurement results of environmental radioactivity in routine monitoring and emergency situations. The IAEA supports the ALMERA laboratories in their environmental monitoring activities by organizing proficiency tests exercises, collaborative development and validation of analytical procedures for environmental radioactivity measurement, and training courses. The characterization of legacy nuclear test sites in terms of radionuclide levels and distributions is important for obtaining information on the respective nuclear tests and their impacts, as well as for environmental rehabilitation purposes. ALMERA tested and validated analytical procedures are essential tools for the production of reliable and comparable environmental radioactivity measurements in such cases. In addition to routine sequential procedures, rapid procedures were developed for the determination of Pu isotopes and 241Am in soil and sediment samples, and for the simultaneous determination of 89Sr and 90Sr in milk, soil and seawater samples. Rapid procedures allow high sample throughput for large-scale or high resolution site characterization. This contribution will describe the current status of the ALMERA analytical procedures applicable to the characterization of legacy nuclear test sites. (https://nucleus.iaea.org/rpst/ReferenceProducts/ALMERA/Validated_analytical_methods/index.htm)

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