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Type: **Wedge Participant**

Inter-Laboratories Comparison for trace analysis: EQRAIN traces proficiency testing organized by CETAMA.

One of the mission of the Analysis Method Establishment Commission (CETAMA) is to supervise the organization of Inter-Laboratories Comparison (ILC) for the nuclear industry and for environmental or safeguards public organizations. Those programs, called "EQRAIN" (French acronym for Quality Assessment of Analytical Results in the Nuclear Industry) are organized every year or every two years on uranium, plutonium and anions or cations at a trace level in solution for the latter.

Notably, the EQRAIN traces ILC concerns laboratories implementing inductively coupled plasma atomic emission spectroscopy (ICP-AES) or mass spectrometry (ICP-MS) and willing to estimate the accuracy of their measurements for trace elements comprised between 0.1 and 15 mg/L. For the 23rd edition, the multi elementar standard solution contains 15 elements to be measured which includes uranium and which are listed hereafter (Al, B, Ca, Cr, Cu, Fe, Ga, K, Nd, Rh, Si, Sr, U, Zn et Zr).

The challenge for the laboratories is to evaluate the performances of method and equipment for the determination of those elements in solution and to meet the requirements of quality management and accreditation body.

The "target" elements are chosen by partners during working group (WG) meetings dedicated to Atomic Emission Spectroscopy (WG6) and Mass Spectrometry (WG12). The results of the ILC are presented every year during joined WG6-WG12 meetings where the performance scores are discussed anonymously. It gives also the opportunity to run a variance analysis on both technics, ICP-AES and ICP-MS, for the 15 elements and to highlight their performance evolutions.

Finally, during our last meeting, the idea came to organize a future ILC on traces elements contained in an uranium matrix composed of a 10 g/L uranium solution in acidic medium. The implementation of such an ILC is under feasibility study and would be the follow-up of the proficiency test run in 2012 by CETAMA upon IAEA's request. A sum of 15 elements, between 1- 100 ppm relative to uranium, would have to be analyzed and are to be chosen between alkaline, alkaline earth, transition metals, platinum metals and lanthanides families.

Which "Key Question" does your Abstract address?

SGI4.4

Topics

SGI4

Which alternative "Key Question" does your Abstract address? (if any)

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