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## Quality control for routine k<sub>0</sub>-NAA applications at Nuclear Physics Institute, Řež

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Implementation of the k<sub>0</sub>-NAA in Řež aimed at the development of routine panoramic trace-element analysis method for samples with various matrices and of different origin. To meet the customers' expectations, procedures and practices have been established to ensure the high quality of the results produced, such as, calibration of the equipment used (scales, pipettes, detectors), in-situ determination of neutron flux parameters in irradiation channels of the multipurpose research LVR-15 reactor, use of replicates (if possible), blank analyses, use of certified reference materials, namely NIST SRMs 1547, 1633B, 2711, and/or others in case of availability, preferably with a good matrix-match to the samples to be analyzed. Using results of the SRMs, control charts are maintained to monitor the long-term stability and quality of the assays. For most elements, agreement is obtained with the certified values within uncertainty margins. A procedure has also been designed to use noncertified values for quality control in the same way as the certified values. In a few cases, however, results deviating from the certified or noncertified values are consistently being found, although the differences are not of a systematic nature. Such cases are topics of our future studies. To test and improve the quality control measures, our lab also successfully participated in several inter-laboratory comparison rounds organized and sponsored by the IAEA using test samples of plant and soil origin provided by the Wageningen Evaluating Programs for Analytical Laboratories (WEPAL).

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