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T3.2-P22. Xenon inter-comparison exercises with traceable activity concentration standards

Preparation methods for traceable xenon standards and the results of the 2014 Xenon laboratory intercomparison exercise are presented. One element of the quality assurance/quality control (QA/QC) program for Noble Gas systems of the IMS Radionuclide network will be based on sample re-analyses at IMS laboratories. In order to ensure the credibility of IMS laboratories as providers of reference results, these laboratories will require certification as well as participation in a QA/QC program. Part of the laboratory QA/QC program will be regular intercomparison exercises. The quantity measured at laboratories is the activity concentration (e.g.133Xe/(stable xenon) in Bq/ml). However, until recently activity concentration standards which are traceable to international reference standards were unavailable. Consequently, previous inter-comparisons between laboratories lacked references values for benchmarking. Therefore, two Xe-133 activity concentration traceable reference standards were produced independently and used for the 2014 Xenon laboratory intercomparison exercise.

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