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Use of Xe-127 in Quality Assurance of IMS Noble Gas Systems at Remote Locations

A quality assurance program for Noble Gas (NG) systems of IMS Radionuclide network is under development at PTS. Spiking NG systems with known amount of Xe-133/Xe-131m and reanalyzing spike samples at IMS Radionuclide laboratories with NG capability is part of the program. Remoteness and very difficult location of some IMS stations is preventing use of these two isotopes - due to their half-life, very short when compared to shipping times. Because of longer half-life and identical physical behaviour, Xe-127 has been suggested as possible candidate for spiking at remote locations. With technical and scientific support of the NLHB (Laboratoire National Henri Becquerel - CEA, LIST), PTS started in 2012 a feasibility study on use of Xe-127. The study is constituted by a test intercomparison for IMS labs and a set of test spikes at some designated IMS NG systems. Methods and results of this feasibility study are presented.

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