CCRI(I)/07-12

Update on the NIST Program for Air Kerma from ^{60}Co Gamma-Ray Beams

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April 13, 2007

In July 2003 the re-characterization of the NIST therapy-level ^{60}Co vertical-beam facility was completed based on a revised US standard for the air kerma from such beams, reflecting mainly changes in the wall corrections for our suite of spherical graphite-walled air-cavity chambers. Since then the US primary standard has been disseminated to secondary calibration laboratories throughout the US via calibration of ion chambers. An agreement of 0.20 % between the NIST and each of the AAPM Accredited Dosimetry Calibration Laboratories (ADCLs) was achieved, as demonstrated by transfer-chamber measurements and proficiency tests.

During the spring of 2006 a bilateral international comparison of national measurement standards for air kerma from ^{60}Co therapy-level beams was initiated between the PTB (Ludwig Büermann), and the NIST (Ronaldo Minniti). This is the first international comparison performed since the implementation of the new US standards of July 1, 2003. Two chambers were used for the comparison: an Exradin A12 Farmer-type chamber and an Exradin A3 spherical small-volume chamber. Preliminary results indicate that the value of the calibration coefficients measured at both facilities agree within 0.20 % for both chambers.