Calibration procedures in Secondary Standard Dosimetry Laboratories

by H. Eisenlohr*

Forty persons from 33 countries and three international organizations participated in a Training Seminar on Calibration Procedures in Secondary Standard Dosimetry Laboratories held at the Institute for Radiation Protection of the Austrian Research Centre and the IAEA Dosimetry Laboratory at Seibersdorf, near Vienna, from 20 to 22 June 1983.

The training seminar was an activity of the Agency's secretariat of the international Network of Secondary Standard Dosimetry Laboratories, presently comprising 45 member laboratories, mainly located in developing countries. Invited lecturers came from the National Bureau of Standards, USA; the National Physical Laboratory, UK; the Hungarian Office of Measures; and the Austrian Calibration Office.

There has been great progress in the treatment of cancer by ionizing radiation since large-scale radioisotope sources were made available. High-energy accelerators producing photons and electrons have supplemented ^{60}Co gamma radiation, and are coming into use in developing countries as well. The safe and successful use of ionizing radiation in radiotherapy and reliable radiation protection services require, however, professional competence in the field of dosimetry and the availability of national or regional dosimetry calibration services.

There are a number of dosimetry calibration protocols but they are difficult to follow and require thorough interpretation. It was the main objective of the training seminar to offer guidance in the use of such protocols, in dosimetry instrument performance criteria, and in such basic matters as dosimetry quantities and units and the treatment of uncertainties. Through experimental sessions all participants were made acquainted with modern dosimetry equipment for radiotherapy and radiation protection, and with standardized measurement procedures.

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