

## Progress Report on the Radiation Dosimetry at MKEH

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### Organisation

- Another reorganisation of the Hungarian Trade Licensing Office has been made in February 2013 and its Metrology Authority as Hungarian NMI has got back some legal metrology tasks. Concerning the IR section the staff (2.5 for dosimetry and 2.5 for radioactivity) tasks, and working environmental have remained the same.
- Realized a Secondary Standard Neutron Dosimetry Laboratory on Paks Nuclear Power Plant supervised the Hungarian NMI (IR section) in 2012.

### Photon dosimetry

- Most of the correction factors and physical values of the two free-air chambers as primary standard of air kerma for X-ray qualities were re-measured and evaluated.
- The BIPM.RI(I)-K2 key comparison was performed in September 2011. The comparison report in progress.
- In 2013 we are rebuilding the graphite extrapolation chamber for use as primary standard for  $D_w$  at middle energy X-rays. Construction in progress.

### Legal metrology

- Type test of Panasonic TLD system (equipment of the Hungarian National Personal Dosimetry Service), VF MDG-02, VF MDG-13S, LB-6360 types radiation protection instruments- warning assemblies and monitors, RadEye G-10, Urad Plus, FHZ 672E-10 survey meters have been performed on the basis of the relevant IEC standards.
- The biannual verifications of survey meters EPDs environmental monitors therapy dosimeters being used in Hungary are most significant part of the workload of the dosimetry team. Reference irradiations and performance test have also been carrying out by MKEH for the Hungarian National Personal Dosimetry Service.

### Quality assurance

- The 26 dosimetry CMC claims of MKEH approved on 24 January 2012.
- Accreditation of IR calibration service by the Hungarian Accreditation Body (NAT) is scheduled in 2013.

### International activities

- BIPM.RI.K-2 key comparison of MKEH using the MKEH free-air chamber finished in 2011 September.
- Participation in the EURAMET.RI.S-9 (Euramet project #1177) /KAP meter calibration/ in December 2012.
- Participation in the Dosimetry JRP in the frame of the EURAMET EMRP HLT09 MetrExtRT /Metrology for radiotherapy using complex radiation fields/. Project started July 2012.
- The air kerma irradiations of TLDs for the WHO IAEA SSDL service have been continued.

**Publications**

- D.T.Burns, **I.Csete**, P. Roger: Key comparison BIPM.RI(I)-K3 of the air-kerma standards of the MKEH, Hungary and the BIPM in the medium-energy x-rays (*Metrologia* 48 (2011) *tech.Suppl.* 06017)
- D.T. Burns, **I Csete**: Key comparison BIPM.R(I)-K2 of the air-kerma standards of the MKEH, Hungary and the BIPM in low-energy X-rays (*BIPM rapport XX*)
- J.M.Bordy, C.Andersen, U.Ankerhold, **I.Csete**, F.Delaunay, J.de Pooter, J Dobrovodsky, S .Duane, A.Kosunen, M.Pimpinella, J.Solc: Nouveau projet de recherche Européen pour la métrologie en radiothérapie (*51<sup>cmes</sup> journées scientifiques de la société française de physique Médicale, 12-15 June 2012, Strasbourg, France*)
- **Antal Szögi, Gábor Machula**: The effects of ambient parameters for measures of national standard (*37<sup>th</sup> Annual meeting on Radiation Protection, 24-26 April, 2012. Hajdúszoboszló, Hungary*)

Budapest, March 2013.