CCRI(I)/07-50
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APMP/TCRI Activity Summary

Report of the 22nd APMP General Assembly, in Delhi 2006

Yoshio HINO, TCRI Chair

y.hino@aist.go.jp

Introduction

The Asia Pacific Metrology Program (APMP) Technical Committee on Ionizing Radiation (TCRI) was established in August 1998. The chairperson is elected by the committee from among its members. The names are Mr. Wen-Song Hwang from INER, Taiwan (1998-2000), Dr Tae-Soon Park from KRISS (2000-2002), Dr. David Webb from ARPANSA (2002-2005), and Dr. Yoshio Hino from NMIJ/AIST (2005-present).

The TCRI has 4 working groups. Photon & Electron Dosimetry, Radioactivity and Neutron Dosimetry, which support the program of regional key and supplementary comparisons, and the CMC Review working group, which undertakes the assessment of submissions from APMP laboratories before being passed to the JCRB for external review. The WG also evaluates the CMCs from other RMOs in the inter-RMO review process.

The workshop corresponding to the 22nd APMP general meeting in Delhi was held on 13 and 14th December 2006. 18 delegates and observers from 9 countries were taken part in this work shop.

CMC submission and review schedule

The CMCs from eight economies were submitted in March, 2003 to the JCRB for inter-RMO review as APMP.RI.1.2003. Three submissions (BARC/India, OAP/ Thailand, MINT/Malaysia) were withheld, as the laboratories involved had not been formally designated by the signatory of the MRA in the appropriate country at that moment. BARC has since obtained Designated Institute status for the MRA and is now also an APMP member. The Office of Atoms for Peace (OAP) in Thailand has been designated as a MRA signatory and a similar status is being arranged for the Department of Medical Sciences (DMSC). Both these organisations maintain radiation standards for Thailand.

Consequently the first stream was redefined as APMP.RI.1.2003 (activity) and the other areas (dosimetry and neutron) were re-submitted for inter-RMO review in February 2004 as APMP.RI.2.2004.

After modification, the APMP.RI.1.2003 (activity) CMCs were submitted to the JCRB in June 2004 for final acceptance into the KCDB database, and 5 countries (Japan, Australia, China, Korea and Taiwan) were finally published in the BIPM KCDB on 17 February 2005.

As for the APMP.RI.2.2004 (dosimetry and neutron), modified data for the first round of inter-RMO review got many comments, and we have to wait so long period to renew our data, it was abandoned and resubmitted with new number of APMP.RI.3.2006 on 12th March 2006. This new CMC table was finally published in the BIPM KCDB on 17th October 2006.

1. CMC submission and review schedule

- CMCs under intra-RMO review

Economy	NMI	No. of CMCs	Date of Re-Submission	Expected Date of Review Completion
Thailand	OAP and DMSC	34 (Activity) 11 (Dosimetry)		QS to be submitted
India	BARC	18 (Activity)		QS to be confirmed
Malaysia	**Nuclear Malaysia** (changed from MINT)	17 (Dosimetry)		**QS has been confirmed**

- CMCs under inter-RMO review

JCRB CMC Identifier	NMIs	Submitted date	Reviewing RMO(s)	Completion date
APMP.RI.3.2006 (Dosimetry and Neutrons)	ARPANSA, INER, KRISS, NIM, NMIJ,	**12/3/2006 (1st round) 09/09/2006 (2nd round)**	SADCMET SIM EUROMET COOMET	**Approved 03/10/2006 and posted BIPM/KCDB 17/10/2006**

2. Review scheme and procedure

The files and accompanying documents were evaluated by appointed experts in the areas of three categories corresponding to the three sections of CCRI. Those are TCRI(I) of photon and electron dosimetry, TCRI(II) of radioactivity and TCRI(III) of neutron dosimetry, and experts are nominated to form a CMC Review Working Group as follows:

TCRI(I)	Dr. Ing-Jane Chen (INER)	Photon Dosimetry
	Dr. Norio Saito (NMIJ/AIST)	"
	Dr. David Webb (ARPANSA)	"
TCRI(II)	Dr. Tae Soon Park (KRISS)	Radioactivity
	Dr. Yoshio Hino (NMIJ/AIST)	"
	Mr. Ming-Chen Yuen (INER)	"
TCRI(III)	Dr. Hideki Harano (NMIJ/AIST)	Neutron Dosimetry
	Mr. Kil-Oung Choi (KRISS)	"
	Mr. U.V. Phadnis(BARC)	"

3. Key comparison schedule

Name of Comparison	Field	Pilot Lab	Participating Laboratories	Period or Status
APMP.RI(I)-K1	Air kerma (Co-60 γ-rays)	KRISS	ARPANSA, BARC, INER, KRISS, *MINT*, NIM, NMIJ, PNRI, *CSIR, IAEA*	2004.08 to 2006.12 – in progress;
APMP.RI.(I)-K2	Air kerma Low energy X-ray 10-50 kV	NMIJ	NMIJ, INER, ARPANSA, OAP, KRISS, BARC	Will be proposed for 2008
APMP.RI(I)-K3	Air kerma (medium energy 100-250 kV X-rays)	INER	ARPANSA, BARC, DMSC, INER, KRISS, MINT, NMIJ, *AECS, CSIR-NML, IAEA, PTB*	2000.7 to 2003.6 – completed; draft A report completed
APMP.RI(I)-K4	Absorbed dose to water (Co-60 γ-rays)	INER	ARPANSA, BARC, INER, Nuclear Malaysia, OAP, NMIJ, *CSIR-NML, NSCL*	2007 to 2009 Proposed
APMP.RI(I)-K5	Air kerma (Cs-137?) (Am-241?)	KRISS	ARPANSA, BARC, *CSIR-NML*, INER, *IAEA* , KRISS, Nuclear Malaysia, OAP, NMIJ, PNRI	Will be proposed
APMP.RI(II)-K2. Ba-133	Activity of ^{133}Ba solution	NMIJ	NMIJ, ANSTO, BARC, INER, KRISS, NIM, OAP, P3KRBiN, INST, *CSIR-NML*	2006.3 to 2006.7 – Completed Draft A will be prepared
APMP.RI(II)-K2. Ce-139	Activity of ^{139}Ce solution	NMIJ	NMIJ, BARC, INER, KRISS, NIM, NMIJ, OAP, PSKRBiN, *CSIR-NML, VNIIM*	2004.1 to 2005.1 Completed Posted on KCDB
Trial-comp ➔ APMP.RI(II)-K2 C-14?	Activity of radionuclide ^{14}C	KRISS	KRISS, NMIJ OAP, INER, NIM, BARC, ANSTO	2004. 10 C-14 has source preparation problems In 2008, we will re-submission
APMP.RI(II)-K2. Cr51	Activity of ^{51}Cr solution	NMIJ	NMIJ, INER, VNIIM	2004.01 to 2004.09 Completed Posted on KCDB

APMP.RI(II)-K2. Cs134	Activity of ^{134}Cs solution	NMIJ	NMIJ, INER, LNHB, VNIIM	2005.01 to 2005.04 Completed Report has been prepared
APMP.RI(II)-K2 I-131	Activity of ^{131}I solution	KRISS	KRISS, NMIJ, INER ANSTO, NIM, BARC *CSIR-NML*?	2005.11 to 2005.12 1st measurements were finished, but because of short half life problem, BIPM/SIR result had some problem. 2nd run will be re-submitted in 2007.

4. Discussion matters at TC level

Since our CMCs are listed in the BIPM/KCDB, we are needed more inter-RMO key comparisons to maintain our CMC items.

At this moment, the INST (Institute for Nuclear Science and Technology, Vietnam) is not the TCRI member, but we submitted inter comparisons of APMP.RI(II)-K2.Ba-133. We would like to invite INST to the TCRI, and we hope VMI will help them to become the member of TCRI.

The Office of Atoms for Peace (OAP), the Department of Medical Sciences (DMSC) in Thailand was formally designated in the mean time, and we are waiting the official letter from the institutes.

5. Discussion matters at RMO-WG level

The CCRI RMO WG recommends that the inter-RMO CMC review process may proceed prior to the approval of an NMI's QMS, provided that the accompanying RMO CMC questionnaire states the date by which the QMS will be implemented. If approved by the inter-RMO review, these CMCs would be held provisionally on the JCRB web site until the QMS is approved formally by the RMO, of which the JCRB is informed.

6. Discussion matter in CC level

These years, it becomes more and more difficult to transport radioactive materials and also measuring instruments (such as "fission chambers"). We would like to express more strong appeal to all member governments to give special allowance for exchange the materials for inter comparisons.

7. Other discussion matters

The WG members of TCRI (Ionizing Radiation) are, in some cases, not included in the national metrology institute, and they do not have enough information and support to take part in the TCRI comparisons and meetings.