

TENTH NEUTRON USERS' CLUB

25 SEPTEMBER 2001

TECHNOLOGY TRANSFER ACTIVITIES OF THE NATIONAL MEASUREMENT SYSTEM PROGRAMME FOR IONISING RADIATION METROLOGY

Vic Lewis

OBJECTIVES

Organisation of user clubs and fora

Organisation of and participation in measurement comparisons

Provision of guidance and documentation

Other activities

NMS USER CLUBS and FORA

Ionising Radiations Metrology Forum	Clare Scott	Six-monthly November & May
Neutron Users Club	Peter Kolkowski	September 2002 September 2004
Radiotherapy Standards Users Club	Rebecca Nutbrown	Two meetings
Gamma-ray Spectrometry Users Forum	Mike Woods	Annually
Alpha Spectrometry Users Forum	Mike Woods	Annually
Liquid Scintillation Users Forum	John Makepeace	Two meetings
Air Monitoring Club	John Makepeace	Two meetings
Radionuclide Calibrators Forum	Mike Woods	Two meetings

IONISING RADIATIONS METROLOGY FORUM (IRMF)

Aims

- to facilitate the exchange of information about available UK calibration and testing facilities
- to facilitate efficient use of those facilities by those required to comply with the requirements of ionising radiations regulations and associated codes of practice
- to represent members' interests in discussions with expert bodies, including those responsible for regulations and for forming standards.

Activities

- hold meetings to discuss matters of common interest relating to calibration and measurement
 - maintain and disseminate register of UK calibration and testing facilities and services
 - organise measurement comparisons in UK
- encourage good measurement practice, including traceability to national standards

IONISING RADIATIONS METROLOGY FORUM (IRMF)

Membership

Representatives of UK organisations involved in calibration or measurements in the field of ionising radiation and radionuclide metrology

Representatives of manufacturers of instruments for such measurements

Fees

No annual subscription

Meetings

Six-monthly meetings at NPL in early November and May

Small charge to cover cost of meeting

IONISING RADIATIONS METROLOGY FORUM

Catalogue of Facilities and Services Available in the UK for the Calibration and Testing of Radiation Protection Instruments

PRIMARY STANDARDS LABORATORIES	1	15
UKAS-ACCREDITED FACILITIES	7	20
NON UKAS-ACCREDITED FACILITIES	18	47
TOTAL	24	82

www.npl.co.uk/npl/clubs/irmf

IONISING RADIATIONS METROLOGY FORUM

Measurement comparisons in UK

Calibrations of Portable Gamma-ray Dose-rate Monitors	1992 – 1993	J Rad Protection
	1995 – 1996	CIRM 8
	1998 – 1999	CIRM 32
	2001 – 2002	In progress
Calibrations of Neutron Area Survey Instruments	1995 – 1996	CIRM 14
	1998 – 1999	CIRM 34
	2001 – 2002	In progress
Surface Contamination Monitoring	1993 – 1994	CIRA 2
	2001 – 2002	In progress
	2003 – 2004	To be arranged

IRMF NEUTRON MONITORING COMPARISONS

FIRST: 1995/1996
SECOND: 1998/1999

AEA, Harwell DRaStaC NPL NRPB BAE Systems	$^{241}\text{Am} - \text{Be}$ ^{252}Cf	Harwell 0949 Studsvik 2202D
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THIRD IRMF NEUTRON MONITORING COMPARISON

AEA, Harwell DRaStaC NPL NRPB BAE Systems	$^{241}\text{Am} - \text{Be}$ ^{252}Cf	Mark 7 NRM NM2
BNFL, Berkeley NPL	2.7 MeV	Mark 7 NRM NM2

THIRD IRMF NEUTRON MONITORING COMPARISON

PROTOCOL FINALISED	AUGUST 2001
CHECKS at NPL	SEPTEMBER
PARTICIPANTS' MEASUREMENTS BEGIN	OCTOBER
REPORT to IRMF MEETING	NOVEMBER
FINAL MEASUREMENTS for Am/Be, Cf-252 FIELDS	MARCH 2002
ANALYSIS of Am/Be, Cf-252 DATA	APRIL 2002
FINAL MEASUREMENTS for 2.7 MeV FIELDS	APRIL 2002
REPORT to IRMF MEETING plus WORKSHOP	MAY 2002
FINAL CHECKS at NPL	MAY 2002
ANALYSIS (2.7 MeV)	MAY 2002
DRAFT REPORT	JUNE / JULY
FINAL REPORT	SEPTEMBER

NPL MEASUREMENT GOOD PRACTICE GUIDES

GPG 14 Portable Radiation Protection Instruments

Clare Scott, Peter Burgess, Mike Woods

Published: March 1999

GPG 29 Installed Radiation Protection Instruments

Mike Woods, Max Pottinger, Lynsey Keightley

In press: Sept 2001

GPG 30 Practical Radiation Monitoring

Mike Woods, Alan Edwards, Lynsey Keightley

Final consultation

Publish: December 2001

GPG 34 Radiometric Non-Destructive Assay

Paul McClelland, Vic Lewis

Initial consultation

Publish: December 2002

GPG ?? Uncertainties in Radiological Measurements

Vic Lewis, Mike Woods, et al

Drafting

GPG ?? Air Monitoring

WG to be set up in 2002

NPL MEASUREMENT GOOD PRACTICE GUIDE 34

Radiometric Non-Destructive Assay

This guide provides recommended procedures for the operation, testing and calibration of equipment used for radiometric non-destructive assay of fissile and radioactive materials in the nuclear industry.

The various techniques and their limitations are described. Guidance is given on calibration of NDA systems and the treatment of uncertainties in NDA measurements.

Recommendations are made for certification, performance demonstration and testing; competence and responsibility; documentation and control of modification.

Good Practice Guide 34: Radiometric Non-Destructive Assay

Working Group

Patrick Chard	UKAEA, Dounreay
Arthur Dale	BNFL Thorp
Ashley Finlayson	BNFL Engineering
Jonathan Hart	AWE, Aldermaston
Andrea Lewis	NNC, Winfrith
Vic Lewis (Secretary)	NPL
Paul McClelland (Chairman)	UKAEA, Dounreay
David Simister	NII, HSE
Adrian Tolchard	A N Technology Ltd
Antony Towner	A N Technology Ltd
Kevin Whitehouse	BNFL Instruments
Colin Wilkins	Harwell Instruments Ltd

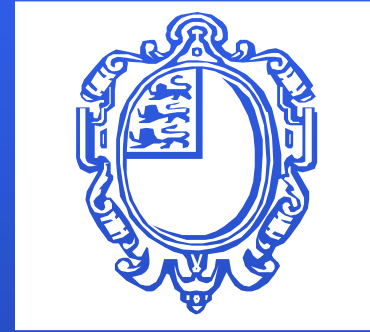
Sponsors

Atomic Weapons Establishment, Aldermaston
BNFL
Environment Agency
Health and Safety Executive
UKAEA, Dounreay

WORKSHOPS and NEUTRON USER CLUB MEETINGS

Neutron Users Club Meeting 4	April 1991
Neutron Users Club Meeting 5	April 1993
Workshop: Primary standards and field monitoring	April 1994
Neutron Users Club Meeting 6	October 1994
Neutron Users Club Meeting 7	June 1996
Workshop: Neutron survey meters, personal dosimeters	September 1997
Neutron Users Club Meeting 8	February 1998
Neutron Users Club Meeting 9	October 1999
Workshop: Neutron personal dosimeters, survey meters	September 2000
Neutron Users Club Meeting 10	September 2001
Neutron Users Club Meeting 11	September 2002
Workshop: Radionuclide neutron sources	September 2003
Neutron Users Club Meeting 12	September 2004
Neutron Users Club Meeting 13	September 2005

NPL



National Physical Laboratory

