International EMF Project - 15th International Advisory Committee (IAC) meeting
Report on National Activities – Australia 2009/2010

Research – EMF and Health

The majority of Australian research into health effects of EMF/EMR/EME over the last 6 years has been conducted under the auspices of the Australian Centre for Radiofrequency Bioeffects Research (ACRBR), which has been funded by the National Health and Medical Research Council of Australia (NHMRC) from a levy on the telecommunications industry. Further to this, NHMRC funds individual research projects, many of which, but not all, are also conducted within ACRBR.

Recent publications from Australian research include:

- *ACRBR EME In Homes Survey: Final Report*
- *How well do adolescents recall use of mobile telephones? Results of a validation study*, Inyang, I et al
- *Mobile telephone use is associated with changes in cognitive function in young adolescents*, Abramson MJ et al

The arrangement for ACRBR funding ceased in January 2010. NHMRC is currently considering applications from competing groups for a similar Centre of Research Excellence in EMF/EMR, with their verdict to be announced mid-2010. It should be noted that the composition of the ACRBR has changed following the end of the 2004-2009 funding.

The projects which are continuing with NHMRC funding, or which are funded from other sources, include:

- Australian Arm of Mobi-Kids (EU 7th framework grant & NHMRC EU Grant)
- Examination of Psychological Outcomes in Students Using Radiofrequency Devices (ExPOSURe) (NHMRC EME Project Grant)
- Thermal Effects of Radiofrequency Radiation on Brain Tissue (NHMRC EME Project Grant)
- A Comparison of the Effects of Alcohol and Mobile Phone Use on Driving (Industry Grant)
- Determining EME exposure Levels in Schools (Industry Grant)

Other future research will depend on the outcome of the funding decision but proposed projects include:

- Mobile Phone Exposure and Emotional Processing
- Testing the Salford 'Window Effect' Hypothesis
- Does EME Induce Cerebral Neoplasms in Genetically Prone Mice?
- EME Bioeffect Mechanism Research Stream
- Therapeutic Applications of EME

Review of scientific literature on health effects of RF EMR

ARPANSA is currently cataloguing scientific research papers, and reviews, that have been published since the ARPANSA RF exposure Standard was prepared in 2000- 2002. The aim is to assess this literature to enable a recommendation to be made regarding the need to formally the review the RF Standard. "ARPANSA is cataloguing original research papers on RF and health that have been published since the year 2000. To date, 174 epidemiological, 201 human provocation, 298 in vivo and 266 in vitro papers have been catalogued.

GLORE conference

Australia hosted the annual conference on Global Coordination of Research on Electromagnetic Fields and Health titled "Global Coordination of Radiofrequency Communication Research and Health Policy" in November 2009. This year a wider range of countries were represented, including New Zealand, Peru, PRC and Taiwan, in addition to the usual attendees from USA, EU, Korea, Japan and Australia. A wide variety of issues on RF and health were raised at the conference including: research activities in different countries, children and mobile phones, EMR policies in different countries, and others.

Policies and Legislation

ACIF Code of Practice

Australia has a Deployment of Mobile Phone Network Infrastructure Industry Code (ACIF C564:2004) that specifies requirements for consultation and other matters in regard to the installation or upgrading of mobile phone base stations. One of these requirements is the preparation of the"ARPANSA" Environmental EME Report that provide predictions of maximum levels of exposure in the vicinity of the proposed base station. A review of the Code is planned and aims to identify:

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- any existing issues with the Code;
- whether any process improvement is required, from operational experience in dealing with the Code;
- any gaps in the Code;
- clarifications that improve requirements;
- whether the document is meeting the needs of industry and the community satisfactorily; and
- expected impact of technology changes.

ARPANSA Standard for ELF and Static Electric and Magnetic Fields

In November, changes to the Standard, its precautionary aspects, and the necessary Regulatory Impact Statement were presented to a workshop held by the electrical industry's Energy Networks Association scientific workshop. A near final version of the Standard has been presented to ARPANSA's Radiation Health Committee. The members from state and territory governments have raised questions, particularly about the implementation of precaution and the Regulatory Impact Statement may need to address these. A final decision is expected later this year. Papers on the residential survey of magnetic fields in homes have been prepared for publication.

Revision of RF Measurement Standard AS/NZS 2772.2

A revision of this Australian Standard has been underway for several years. The revised version includes more material relevant to measurement of new technologies and the use of computational methods. It is aimed to guide assessment by providing a framework without being prescriptive. A draft is expected to be circulated for public comment very soon.

Public Concern

ELF magnetic fields from electrical power infrastructure remain the main focus of public concern as seen by ARPANSA. However, there appears to be a recent increase in concern about mobile phone base stations and one particular site, on a small residential property and 170 m from a primary school, has prompted organised opposition and political involvement at local, state and national level. Of particular interest is the suggestion from opponents to the base station that current standard aren't adequate to deal with newer "pulsed" technologies such as UMTS/WCDMA. ARPANSA has continued to provide answers to some hundreds of telephone and e-mail enquiries relating to health concerns from ELF and RF EMR each year.

Public Information

ARPANSA has continued publishing on its web site, summaries and, sometimes comments, on recent scientific papers dealing with EMF/EMR and health. The papers are selected on the basis of importance to the protection of health, on perceived likely interest to the wider public and where Australian research is reported. The summaries are available at http://www.arpansa.gov.au/RadiationProtection/EMR/literature/index.cfm.

ARPANSA operates an Electromagnetic Radiation Health Complaints Register which accepts submissions from people who believe they a suffering symptoms caused by electromagnetic fields or radiation from any source. A small number (46) of submissions have been received since the register started in July 2003 and they cover a wide range of complaints and suggested sources of EMR. ARPANSA provides a summary and analysis of total submissions each year (they are available at http://www.arpansa.gov.au/RadiationProtection/emr/index.cfm). Submissions are now received at a rate of around 6 per year.

As in recent years the ACRBR held a public symposium in November 2009 with a keynote speaker, this year Dr Bernard Veyret, followed by a panel discussion taking questions from the public. Dr Veyret provided an overview of the research into health effects of RF EMR.

Measurements of exposure levels around mobile phone base stations has continued with detailed results from 16 base stations, 80 measurement locations in total, being published on the internet. As expected, results show that the calculated predictions used in the EME reports overestimate the maximum exposure by a small factor. They also show the wide variation that can be found even within 1 m of a given location. A small number of further measurements are planned for the coming year. The results from the survey are available at http://www.arpansa.gov.au/RadiationProtection/BaseStationSurvey/index.cfm

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