

Comforting the community or deceiving the public: The Australian Government's 2004 DVD presentation "Mobile Communications and Health"

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Introduction

In response to community, workplace and local government concerns over possible adverse health impacts from the installation of mobile phone towers and the use of mobile phones, the Australian government is widely distributing an information pack to allay these concerns. Titled, "*Mobile Phone Towers and EME*" *Information for Communities and Councils*" the pack was also produced with assistance from the Australian Communications Authority (ACA) [now the Australian Communications and Media Authority (ACMA)] and the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA). Central to this pack is a DVD titled, "*Mobile Communications and Health*" that makes a number of statements about health and safety being assured from compliance with the so called "EME standards". This paper examines whether or not the statements in the DVD accurately portray the level of protection provided by the standards.

The Standards controversy

In 1999 the Standards Australia *TE/7 Committee: Human Exposure to Electromagnetic Fields* [radiofrequency and microwave-RF/MW] was dissolved after 15 years of debate, having failed to reach an agreement on a proposed health protection standard. This proposed standard was based on the guidelines promoted by the International Commission on Non-Ionizing Radiation and Protection (ICNIRP) and allowed for a significant increase in the exposure limits for RF/MW, when compared to the previous Australian / New Zealand Standard. The stated reason for this increase was that new wireless technology soon to be marketed in Australia and New Zealand could have emission levels in excess of the existing standard. In other words, for the sake of globalization and removing barriers to international trade, the allowable exposure limits had to be increased to accommodate the technology.

It is almost unique for any Standards Australia committee to fail to reach agreement (80% of members must vote affirmative). The contentious issue in TE/7 was that eight members considered the proposed standard was not protective against the possibility of adverse biological effects arising from environmental level RF/MW exposures over prolonged periods of time. A compromise was hammered out, where a number of concerned members indicated that they would vote in the affirmative, provided a suitable precautionary approach was embodied in the standard. An important part of this approach was clear wording in the foreword of the standard pointing out its limitations. As one proposal recommended:

" This Standard [Guideline] provides guidance on human exposure to radiofrequency and microwave (RF/MW) energy and sets limits intended to avoid acute and obvious detrimental

effects on health from high level (thermal) exposures. It does not cover the possible chronic or long-term effects of low-level prolonged exposures (non thermal) which are outside the scope of this Guideline". (1)

In the final draft, however, all reference to a precautionary approach was deleted by industry and as CEPU member Dan Dwyer remarked, all that was left was a “*cooking standard*” that only regulated the amount of heating that could be applied to the human body.

TE/7 members who voted against the new standard represented the following organizations:

Commonwealth Science and Industrial Research Organisation (CSIRO);
Australian Council of Trade Unions (ACTU);
Communications, Electrical and Plumbing Union (CEPU);
National Occupational Health and Safety Commission (NOHSC);
Australian Consumers Federation (ACF) – (two members on committee);
Adopt Radiation Controls, New Zealand (ARC);
Local Government, New Zealand.

As a result of TE/7 being unable to approve the proposed ICNIRP based standard there was no possibility of further revising the existing RF/MW standard which was set to expire in April 1999 – essentially leaving Australia with no standard. The Australian Communications Agency (ACA) then took over and gave the task of approving the proposed standard to the Australian Radiation Protection and Nuclear Safety Agency’s (ARPANSA) Radiation Health Committee (RHC). The RHC then established an 8 member committee. Unlike the democratic Standards Australia process where voting was paramount in reaching consensus, the ARPANSA committee had no voting rights but could only make recommendations to the RHC and its chairman, CEO of ARPANSA, who could make the final determination independent of advice. With essentially dictatorial powers, the CEO had the authority to decide if any dissent by committee members needed to be considered. (2)

Dr. Stan Barnett, from the CSIRO’s Telecommunications and Industrial Physics (TIP) division was nominated to the committee but after attending the first meeting resigned. His reason was that, in part:

“The purpose of the new committee... seemed to be way to push through a Standard that had failed to reach consensus under Standards Australia processes. . . There was a very high risk that the exercise would be more of a public relations activity than a genuine attempt to pay attention and properly deal with the issues of “non-thermal bioeffects’ and the “Precautionary Principle” (3)

With such a process, ARPANSA – RHC was able to simply ignore all concerns over the new standard and on May 7, 2002 published its ICNIRP based RF/MW exposure standard, titled: “*Radiation Protection Standard - Maximum Exposure Levels to Radiofrequency Fields – 3 kHz to 300GHz*”. (4) Then in 2003 the Australian Communications Authority (ACA), which on July 1, 2005 became the Australian Communications and Media Authority (ACMA), established its own performance standard, based on the ARPANSA standard limits. The ACMA standard specifically

regulates a number of radiocommunications transmitters to protect the health and safety of persons exposed to radiation from the equipment. Titled, "*Radiocommunications (Electromagnetic radiation – Human Exposure) Standard 2003*", it is based solely on providing protection "*from the thermal effects of radiofrequency EME*". (5)

Comforting the community

During the final round of the TE/7 meetings in 1999, the Telstra representative summed up the industry's viewpoint on health concerns by mentioning the need to "*comfort the community*" over their fears of "*hypothetical*" risks". (6) This meant that there was a need to give the 'right information' to the community so that they would stop worrying about irrational fears (according to Telstra).

Efforts to "comfort the community" would most likely include education campaigns consisting of information sheets, videos and DVD presentations, to create a more 'scientifically literate' public who then would be more supportive of scientific research programs, be more enthusiastic about technological innovations, as well as willing consumers of the technology.

An example of government attempts to "comfort the community" over the safety of mobile phones, communications towers and other associated equipment is a 6 minute DVD presentation titled, "*Mobile Communications and Health*". (7)

This presentation, funded by the Australian government and the Australian Communications Authority (ACA-later ACMA), was initiated by Telstra, supported by the Mobile Carriers Forum and has "expert and independent" commentary by Michael Bangay from the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA). The presenter in the video is well known Australian TV broadcaster and journalist Jeff Watson, who is best known for his 1979 TV science production, *Towards 2000*. Watson starts off by giving a briefing on radiofrequency and microwave radiation which he terms, Electromagnetic Energy (EME). To quote:

"Putting it in basic terms, EME stands for Electro-Magnetic Energy ...A fact of everyday life...Almost everything in our homes emits electro magnetic fields to some degree... So if it's natural energy... and already in our everyday life, why do so many see it as harmful?"

Watson's surprising statement, inferring that microwave radiation from cell phone handsets and base station transmitters is "*natural energy*" and therefore why worry, is especially concerning as it is stated in a presentation approved by the ACA and ARPANSA in a medium specifically to convey scientific understanding to the public. Using this line of reasoning one could just as well argue that asbestos insulation in buildings must be safe because it is a natural fibre.

Such a deceptive nonsense statement just insults the intelligence of the target audience.

The problem for the credibility of the DVD presentation just gets worse when Watson introduces Michael Bangay from ARPANSA who, according to Watson, "*is the best person to answer those very valid questions about EME*". Bangay then goes on to state:

*" The EME safety limits provides protection for people of all ages and health conditions (including children) whether they're exposed to EME irregularly, or for 24 hours a day, 7 days a week. "*¹

The EME safety limits Bangay refers to are RF/MW exposure standards/guidelines mentioned previously.

Bangay's statement is in direct contradiction to a statement made by the chairman of ICNIRP, Paolo Vecchia at the September 2004 "International Conference on Mobile Communications and Health : Medical, Biological and Social Problems", held in Moscow, Russia. In Vecchia's presentation on the rationale of the ICNIRP's RF guidelines, he stated (in part) the following:

"ICNIRP only considers acute effects in its precautionary principle approach. Consideration of long term effects is not possible". (8)

This is also plainly stated in the ICNIRP guidelines where it is written on page 496 that *"these guidelines are based on short-term, immediate health effects..."*(9)

Vecchia's admission validated the major concern in the TE/7 Committee (acute effects only – no consideration of long term effects). Bangay from ARPANSA somehow interprets all this as providing protection for everyone all the time!

Bangay would have been far more correct if he had said that the "EME safety limits" are only designed to provide protection against acute, or immediate health hazards at high level of exposure and not for long term exposure, such as 7 days a week and more. Such honesty, however, would not be very comforting for the target audience.

According to Bangay, *"the EME safety limits are well below the thresholds where health effects have been shown to occur"* He said that EME radiations *"are only known to heat...we can feel more relaxed over the issue of radiation."* He then makes a comparison to an electric heater. When asked if there are any long-term health effects (such as cancer) he simply states that *"the evidence is saying that there isn't really a problem"*.

The presentation then quotes from the ARPANSA website:

"The weight of national and international [read ICNIRP] scientific opinion is that there is no substantiated evidence that RF emissions associated with living near a mobile phone base station or telecommunications tower poses a health risk".

Also quoted is a WHO statement:

"Despite extensive research to date there is no evidence to conclude that exposure to low level electromagnetic fields is harmful to human health. "

These are the same arguments discussed in TE/7 back in the late 1990's and they failed to comfort the eight committee members who were well versed with the science. In

addition, simply deferring to international scientific opinion as the final say in the matter was rejected by these members as well, including the CSIRO.

The positive tone of certainty for safety in the ARPANSA DVD presentation, "*Mobile Communications and Health*" is in stark contrast to the high level of uncertainty expressed in the conclusions of ICNIRP's Standing Committee on Epidemiology, published in December 2004, the same month that the "*Mobile Communications and Health*" DVD was released.

"Despite the ubiquity of new technologies using RFs, little is known about population exposure from RF sources and even less about the relative importance of different sources. Other cautions are that mobile phone studies to date have been able to address only relatively short lag periods, that almost no data are available on the consequences of childhood exposure and that published data largely concentrate on a small number of outcomes, especially brain tumor and leukemia... Another gap in the research is children. No study population to date has included children, with the exception of studies of people living near radio and TV antennas. Children are increasingly heavy users of mobile phones. They may be particularly susceptible to harmful effects (although there is no evidence of this), and they are likely to accumulate many years of exposure during their lives." (10)

This is a far cry from Bangay's assurance that the "*EME safety limits provides protection for people of all ages and health conditions (including children)*" and that "*the evidence is saying that there isn't really a problem*".

Conclusion

At this point in time, while a number of scientific studies are underway, such as the Interphone Project, it is not possible to state with certainty that there are proven health risks from the use of wireless technology. It is also apparent from the totality of the evidence to date that there is a significant level of uncertainty as to possible long-term health risks. Bangay's assertion, therefore, that "*the evidence is saying that there isn't really a problem*" is plainly not based on science.

From the deceptive untruths and distortions presented as scientific facts in the Australian Government's DVD "*Mobile Communications and Health*" what is the aware viewer to make of it? This is an important question, especially for the workers who will, as part of their employment, generally have higher prolonged exposures than the general public. Many of these workers may have multiple exposures from a number of wireless devices in the workplace and so cumulative exposure levels need to be considered.

If this DVD is the best that the government, ACA (now ACMA), ARPANSA and Industry can come up with to answer valid concerns about human health and safety, this is reason enough to enact a strong precautionary approach to the unrestricted introduction of new wireless devices. In areas of scientific uncertainty it is essential to take into consideration the possibility of long-term health effects, and not simply dismiss the whole issue as unfounded fears, as implied by the producers of this DVD.

References

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- 2) Correspondence with Stan Barnett, Principal Research Scientist, CSIRO, 10 October, 2003.
- 3) Ibid.
- 4) FACT SHEET – EME Series No. 4, *The ARPANSA radiofrequency radiation exposure standard*, http://www.arpansa.gov.au/pubs/eme_comitee/fact4.pdf
- 5) *Your Health and Regulation of Radiofrequency Electromagnetic Fields*, ACMA doc. http://emr.acma.gov.au/mobile_phone_health.pdf
- 6) Final TE/7 meeting, March 1999.
- 7) *Mobile Communications and Health*, Distributed by the Australian Government, the Australian Communications Authority (ACA), DVD Version 10, December 2004.
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- 9) Guidelines For Limiting Exposure To Time-Varying Electric, Magnetic, And Electromagnetic Fields (Up To 300 GHz) ICNIRP, Health Physics, Vol. 74, No. 4, page 496, April 1998.
- 10) Ahlbon A, Green A, Kheifets L, Savatz D, Swerdlow A, *Epidemiology of Health Effects of Radiofrequency Exposure*, Environmental Health Perspectives, Vol. 112, Number 17, pp 1741 - 1754, December 2004.

Further reading:

Communications Workers of America

<http://www.cwa-union.org/issues/osh/articles/page.jsp?itemID=27339127>

Communications, Energy & Paperworkers Union of Canada:

http://www.cep.ca/health_safety/files/electromagnetic_e.html