The International EMF Project

18th International Advisory Committee Meeting
6-7 June 2013, Paris, France
Report on National Activities

Canada

1. Guidelines and Regulations

1.1 Health Canada

Health Canada is presently revising its human exposure guidelines to radiofrequency electromagnetic energy. The current version of these exposure guidelines is specified in a document entitled: *Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3 kHz to 300 GHz - Safety Code 6 (2009)*. This safety code is accompanied by the *Technical Guide for Interpretation and Compliance Assessment of Health Canada's Radiofrequency Exposure Guidelines*, to assist users in understanding and assessing the safety of electromagnetic exposures in working and living environments. Safety Code 6 is presently undergoing an independent review by the Royal Society of Canada, which is expected to issue its report in late 2013.

1.2 Industry Canada

Industry Canada, the Canadian regulator for radiocommunication and broadcasting installations as well as radiocommunication apparatus, has recently published the following technical documents related to RF exposure compliance:

TN-261 - Safety Code 6 (SC6) Radio Frequency Exposure Compliance Evaluation Template (Uncontrolled Environment Exposure Limits), Issue 2, December 2012. The purpose of this document is to provide an evaluation tool to quickly assess the radio frequency (RF) exposure compliance of simple antenna sites. The intent is to provide a nationally consistent approach regarding the evaluation compliance with Canadian RF exposure limits. The document is available online (http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09976.html)

CPC-2-0-20 –Radio Frequency (RF) Fields- Signs and Access Control, Issue 1, March 2013. The purpose of this document is to outline the corrective measures to ensure compliance with SC6 requirements for uncontrolled environments. These corrective measures include area demarcation (signs), access control (locked fences and/or locked doors) and/or changes to the station's parameters. The document is available online (http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf10249.html).

2. Public Information

Public information in the area of electromagnetic field exposure and health has recently been updated on the Health Canada and Industry Canada websites.

3. Public Concerns

Public concern about the possibility of health risks resulting from exposure to electromagnetic fields (EMFs) emitted from various wireless devices and their infrastructure in living, working and school environments continues to be an issue in Canada. In the past year, these concerns have included the safety of installing Wi-Fi equipment in schools, the implementation of smart meter technology on homes and businesses as well as base-station siting in residential neighborhoods. These issues have received frequent media attention.

4. Research Activities

4.1 University of Ottawa

University of Ottawa's McLaughlin Centre for Population Health Risk Assessment is participating in the MOBI-KIDS study. MOBI-KIDS is an international case-control study which aims to assess the

potential associations between use of communication devices and other environmental risk factors and brain tumors in young people.

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4.2 University of Western Ontario

Western University and Lawson Health Research Institute (LHRI) has carried out research in the area of behavioural and biological exposure to magnetic fields. Over the past five years, their activities have involved the investigation of 60 Hz magnetic field (MF) exposures up to 3.0 milliTesla (mT) in humans. Their results showed some effects on human movement, psychological tests, and brain activity measured using functional Magnetic Resonance Imaging. Beyond the scientific importance, these results highlight the consequences of MF exposure from an environmental and occupational health point of view. However, these results are too subtle to demonstrate a reliable threshold value as defined in the guidelines. This stresses the need for new studies testing higher MF exposure levels as well. LHRI is focusing on the effect of 60 and 50 Hz MF up to 50 mT on: 1) magnetophosphenes and associated brain electrical activity; 2) physiological brain activity; and 3) finger tremor. In addition, LHRI scientists will use mathematical modeling of brain activity to propose mechanisms of action supporting their experimental results. This complex project will establish, at a typical electrical power frequency, a threshold of MF exposure that will consistently produce an objective effect, characterize the brain structures involved in that effect, and validate the theoretical mechanisms of action that produce the effect. These results will assist future guidelines updates protecting the public and workers' safety, and will produce fundamental implications for future therapeutic applications utilizing any positive effects of MF exposure.

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