The International EMF Project

20th International Advisory Committee Meeting
4-6 May 2015, Geneva, Switzerland
Report on National Activities

Canada

1. Guidelines and Regulations

1.1 Health Canada

Health Canada recently published an updated version of its human exposure guidelines to radiofrequency electromagnetic energy, entitled "*Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3 kHz to 300 GHz - Safety Code 6 (2015)"*. This document can be accessed at: (http://hc-sc.gc.ca/ewh-semt/pubs/radiation/radio_guide-lignes_direct/index-eng.php)

Publication of Safety Code 6 (2015) follows an independent review by an Expert Panel of the Royal Society of Canada (http://rsc-src.ca/sites/default/files/pdf/SC6_Report_Formatted_1.pdf) and a 60-day public consultation (http://hc-sc.gc.ca/ewh-semt/consult/_2014/safety_code_6-code_securite_6/index-eng.php). Health Canada's response to comments received during the public consultation are available at: (http://hc-sc.gc.ca/ewh-semt/consult/_2014/safety_code_6-code_securite_6/feedback_commentaires- eng.php)

Safety Code 6 is accompanied by a "*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. A 'Rationale' document describing the derivation of the exposure limits in Safety Code 6 is also available upon request. To obtain electronic copies of these documents, please contact: ccrpb-pcrpcc@hc-sc.gc.ca

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:

RSS-102 — Radio Frequency (RF) Exposure Compliance of radiocommunication Apparatus (All Frequency Bands), March 2015. The purpose of this document is to sets out the requirements and measurement techniques used to evaluate RF exposure compliance of radiocommunication apparatus that are designed to be used within the vicinity of the human body. This document also has incorporated the official Safety Code 6 (2015) limits in this Issue. The document is available online (http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01904.html)

TN-261 - Safety Code 6 (SC6) Radio Frequency Exposure Compliance Evaluation Template (Uncontrolled Environment Exposure Limits), March 2015. 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)

GL-01 — Guidelines for the Measurement of Radio Frequency Fields at Frequencies From 3 KHz to 300 GHz, March 2015. The purpose of this technical note is to describe measurement procedures for different types of radiocommunication and broadcasting installations when verifying compliance with the "uncontrolled environment" limits as set out in Health Canada's Safety Code 6. The document is available online (http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01451.html)

In addition, Industry Canada has also updated the Facts about in Your Community in 2014. This Facts about towers is available at the following website: (http://www.ic.gc.ca/eic/site/ic-gc.nsf/eng/07422.html)

Since January 2012, the SAR values of a specific cell phone model can be obtained for almost all cell phones by using the Industry Canada (IC) Certification Number for that model through Industry Canada's Radio Equipment List (REL) database. In 2015, the database is running on a new platform available at the following website (https://sms-sgs.ic.gc.ca/equipmentSearch/searchRadioEquipments?execution=e2s1).

A Frequency Asked Questions on SAR was also published in conjunction with the publication of the SAR values. This FAQ is available at the following website: (http://www.ic.gc.ca/eic/site/ceb-bhst.nsf/eng/h_tt00084.html)

2. Public Information

Public information in the area of electromagnetic field exposure and health has recently been updated on the Health Canada website at the following URL's:
(http://hc-sc.gc.ca/ewh-semt/pubs/radiation/radio_guide-lignes_direct/safety_code_6-code_securite_6-eng.php)
(http://hc-sc.gc.ca/ahc-asc/media/ftr-ati/_2014/2014-023fs-eng.php)

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 The 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 with brain tumors in young people.

4.2 The University of Western Ontario and the Lawson Health Research Institute (LHRI) carry out research in the area of behavioural and biological effects from 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) on health impacts in humans. Their current ongoing experiments are investigating the impact of 20, 50, 60 and 100 Hz exposures of up to 50 mT on: 1) magnetophosphene perception and associated brain electrical activity in humans; 2) physiological brain activity (as measured using EEG); and 3) finger tremor. They are currently developing new protocols involving human exposures of up to 100 mT to: 1) further investigate the neurophysiological mechanisms associated with magnetophosphene perception; 2) study the human vestibular system as another candidate to acute responses to power frequency MF exposure, and 3) Explore the potential for translational applications of these exposure/stimulation levels. In addition, this group is using mathematical modeling of brain activity to propose mechanisms of action supporting their experimental results. These complex projects are attempting to establish a threshold of MF exposure that consistently produces an objective effect in humans, characterize the central nervous system structures (starting with the retina) involved in that effect, and validate the theoretical mechanisms of action that produce the effect.