



Industry Canada's RF Exposure Activities

Vision of regulators in the region:
The process of setting standards based on scientific data

Workshop on technical and regulatory aspects of the effect of non-
ionising electromagnetic non-ionizing emissions

Lima, Peru
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Introduction

Purpose:

- To provide a brief overview of radiofrequency (RF) exposure requirements in Canada.
- To introduce Industry Canada requirements pertaining to broadcasting, antenna sites and radiocommunication devices.



Outline

- RF Exposure Regulation in Canada
- Safety Code 6
- Safety Code 6 and Industry Canada
- Relationship between Health Canada and Industry Canada
- Industry Canada RF Activities
- Industry Canada Requirements
 - Radiocommunication Devices
 - Antenna Towers (PCS, cell, etc.)
 - Broadcast Towers
 - Satellites (Fixed-earth and subscriber stations)
- Other Industry Canada Publications



Who Regulates RF Exposure in Canada?

1) Health Canada

- SC-6 - Establishes maximum exposure limits for general public and RF workers.
- Guideline (not binding)

2) Human Resources and Skills Development Canada (HRSDC)

- Canadian Labour Code
- Applies to Employees of the Canadian Federal Government and Federal Undertakings (adopted the Worker Limits of SC-6).

3) Provincial Governments

- Incorporated limits of SC-6 into Provincial Labour Codes.
 - Applies only to workers

4) Industry Canada

- Adopted the limits of SC-6 in various documents (binding)
- In general, protection applies to the General Public.



Safety Code 6

- A guideline developed by Health Canada
 - limits have been adopted by various regulators
- Protects General Public and RF Workers from RF radiation
- Primary Source of Safety Requirements for Wireless Telecommunication Devices Operating at Non-Ionizing Frequencies



SC-6 and Industry Canada

- IC has adopted Safety Code 6 RF exposure limits
 - Radiocommunication devices
 - Antenna towers (PCS, cell, etc.)
 - Broadcast towers
 - Satellites
- The limits of SC-6 meet our regulatory requirements
 - Equipment and/or site compliance
 - IC can adopt any RF exposure standard
- Industry Canada and Health Canada work together to address RF exposure



Relationship between Industry Canada and Health Canada

- Industry Canada and Health Canada have a long-standing working relationship:
 - Industry Canada was involved in the development of SC-6.
 - RF Exposure Memorandum of Understanding (MoU) since 1988.
 - ◆ Most recent revision occurred in 2003.



MoU - IC and HC

MoU defines the role and responsibilities of:

- Industry Canada
- Health Canada
- Both Departments (joint roles)

- Health Canada acts as principal health advisor to Industry Canada.

- Industry Canada regulates technical compliance of equipment.
 - Not health related matters.



Industry Canada RF Activities

- IC develops standards to ensure the compliance of broadcasting sites, non-broadcasting (cell, PCS, etc) antenna towers and radiocommunication devices.
- IC develops measurement guidelines and evaluation tools.
- IC performs computational modeling.
- IC participates in international RF measurement standards development:
 - IEEE 1528/1529
 - IEC PT 62209 and 62232
- IC disseminates information and responds to public enquiries on equipment compliance.
- IC performs site measurements/audits.



Industry Canada RF Activities (continued)

- IC maintains formal liaison with:
 - Health Canada
 - The Department of National Defence
 - Wireless Information Resource Centre
(www.wirc.org)
 - ◆ Based at the University of Ottawa's McLaughlin Centre for Population Health Risk Assessment
 - » Recognized by the World Health Organization
 - Canadian Wireless Telecommunication Association (CWTA) Health Council

- ❖ **Industry Canada does not perform or fund research on the biological effects of RF exposure (i.e. basic science research)**

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Radiocommunicaton Devices

Radio Standards Specifications (RSS)-102

- Technical and procedural requirements for evaluating RF compliance of devices
 - Limits for devices used by the general public
 - Limits for controlled use devices (i.e. not general public)
- Adopted the SAR and MEL limits from SC-6
- Issue 1 was published in 1999
- Issue 2 to be published in Q1-Q2 2005
 - Includes body-worn devices
 - IEEE and IEC standards
 - Devices above 2.2 GHz

<http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/en/sf01904e.html>

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Non-Broadcasting Antenna Towers

Client Procedures Circular (CPC) 2-0-03

- Environmental Process, Radiofrequency Fields and Land-Use Consultation (1995)
- Document references the limits of SC-6
 - Industry Canada requires radio stations be installed and operated in a manner that complies with SC-6
- Undergoing revision

<http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/en/sf01031e.html>



Broadcast Towers

BPR-1 - General Rules (2004)

- Establishes the procedure to be followed when preparing and submitting information in support of applications for broadcasting undertakings.
 - AM
 - FM
 - TV
- Limits of SC-6 are incorporated by reference
 - Licensees must comply with the limits
- Procedure on exposure to radiofrequency energy
 - To evaluate RF emissions

<http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/en/sf01326e.html>





Satellite - Fixed

- CPC-2-6-01 - Procedure for the Submission of Applications to License Fixed Earth Stations and to Approve the Use of Foreign Fixed Satellite Service (FSS) Satellites in Canada
- Describes the licensing procedures for fixed earth stations operating in any space radiocommunication service other than the mobile and amateur satellite services.
- Fixed earth stations must comply with SC-6
 - Reference to CPC-2-0-03
- <http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/en/sf01940e.html>





Satellite - Mobile

- CPC-2-6-06 - Guidelines for the Submission of Applications to Provide Mobile Satellite Services in Canada (2000)
- Operation of subscriber earth stations must comply with the limits of SC-6

<http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/en/sf01036e.html>



Other Publications of Interest

- Guidelines for the Measurement of Radiofrequency Fields at Frequencies from 3 kHz to 300 GHz

<http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/en/sf01451e.html>

- Guidelines for the Protection of the General Public in Compliance with Safety Code 6

<http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/en/sf05990e.html>



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related web sites:

<http://strategis.ic.gc.ca/spectrum>

http://www.hc-sc.gc.ca/ahc-asc/branch-dirgen/hecs-dgsesc/sep-psm/rpb-bpcr/index_e.html

<http://www.wirc.org/index.html>