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April 20, 2010.

Christine Holke David, Clerk of the Committee,  
Standing Committee on Health, House of Commons,  
131 Queen Street, Ottawa, Ontario, K1A 0A6,  
[holkec@parl.gc.ca](mailto:holkec@parl.gc.ca)

Dear Christine Holke David,

I would like this written submission entitled "*Urgent Need to Revise Safety Code 6 as it does NOT protect the Health of Canadians*" to be part of my testimony to the House of Commons Standing Committee on Health regarding Radio Frequency Radiation and Health.

Thank you,

Magda Havas  
Associate Professor

## **Urgent Need to Revise Safety Code 6 as it does NOT protect the Health of Canadians.**

**Magda Havas, B.Sc., Ph.D.,**  
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**Expertise:** Please note that I have been teaching courses and doing research at Trent University on the Health Effects of Electromagnetic Energy since the 1990s. Prior to that time I conducted research on toxic chemicals in the environment. I have provided expert testimony in both Canada and the United States dealing with power lines and radio frequency antennas. My current research is helping doctors diagnose and treat patients with electrohypersensitivity (EHS), which has been recognized as a disability in Sweden. I work with people who are electromagnetically sensitive and who respond to microwave radiation at levels well below Safety Code 6 guidelines.

**Previous Testimony House of Commons Environmental Committee:** Charles Caccia invited me to address the *House of Commons Environmental Committee* on May 21, 2002. My presentation was entitled: *Wired and Wireless Electromagnetic Energy: An overview of Health Concerns and a Call for Action*. I am including the handouts that I presented to the Environmental Committee as part of my documentation ([Appendix A](#)). I expect you will find French translations of these handouts in the archives.

As I reviewed my 2002 presentation, I am sorry to say that little has changed in Canada regarding our guidelines, despite the fact that (1) many new studies have been published documenting adverse biological and health effects of radio frequency and microwave radiation (see the Bioinitiative Report at [www.bioinitiative.org](http://www.bioinitiative.org) ; and (2) scientists and medical doctors from around the world have signed resolutions, petitions, and written advisories trying to get international guidelines lowered to protect the public against radio frequency radiation exposure (see list in [Appendix B](#)) and warnings about cell phone use ([Appendix C](#)).

**Industry Canada sides with the Wireless Industry:** Communities from Prince Edward Island to Vancouver Island are opposing towers and antennas placed in residential areas, near schools and daycare centres. When communities oppose tower placement, the final arbitrator is Industry Canada and they often side with the Telecom Industry. In Charlottetown, PEI, City Council voted against allowing Rogers to erect a tower near a convent and several schools/day care centres. Yet Industry Canada overruled Charlottetown City Council and provided Rogers with a license to operate. Antennas are placed in areas where there is already adequate cell phone reception, so lack of service is not the primary factor in the decisions that are made regarding the placement of antennas. This blatant disrespect for the jurisdiction of local governments and the wishes of citizens is unacceptable.

**Electrohypersensitivity - an Emerging Health Crisis:** If the number of emails and phone calls I receive on a daily basis from people who are ill because of this radiation or who are trying to prevent yet another antenna in their neighbourhood is any indication of what is happening on a much larger scale, then we are experiencing an environmental health crisis that is likely to erupt as unpredictably as a volcano. This illness (electrohypersensitivity) is debilitating and those who are severely affected are no longer able to work. Three percent of the population has severe sensitivity and 35% of the population may be moderately sensitive to this radiation and this figure comes from peer-reviewed research I conducted in schools in both Canada and the United States ([Havas and Olstad 2009](#), [Havas et al. 2004](#)).

It is particularly heart breaking when children become ill following exposure to the radiation from mobile phones and wireless routers that Health Canada tells us is perfectly safe since the levels are below thermal effects. The assumption that the only biological effect of microwave radiation is thermal, is just that, an assumption that has been repeatedly demonstrated to be false.

A [Royal Society Report \(1999\)](#) reviewed Safety Code 6 and this report stated that biological effects occur below SC6 guidelines and that some of these biological effects may cause adverse health effects. This report was published in 1999, yet the guidelines have not changed substantially. Indeed, one change that has occurred is that Health Canada removed a phrase from their 1999 guideline that stated: “*Certain members of the general public may be more susceptible to harm from RF and microwave exposure*” (page 11). It is unclear why this statement was removed.

The Canadian Human Rights Commission recognizes that electromagnetic exposure is one cause of environmental sensitivities ([Sears 2007](#)).

**Cardiovascular Disease:** We have scientific evidence that microwave radiation from a cordless DECT phone affects the heart and causes arrhythmia and tachycardia in double blind placebo experiments. This could be life threatening to those with heart disease ([Havas et al. 2010](#)). This research is peer-reviewed and a short youtube video of it is available at: <http://www.youtube.com/watch?v=E19fZX4iww>.

**Cancer:** We have evidence that there is an increase in various types of ipsilateral tumors including gliomas, acoustic neuromas, salivary gland tumors, and uveal melanomas by those who have used a cell phone for 10 years or longer. Some of this evidence was presented to the U.S. Senate Committee on Cell Phones in September 2009. A short video clip of the Senate hearing (10 minutes) is available at: <http://www.youtube.com/watch?v=npK5HsxukyA>.

**Reproductive Problems:** Using cell phones has also been linked to reproductive problems associated with abnormal sperm and behavioural problems with children born to mothers who used their cell phones while pregnant. See: <http://www.youtube.com/watch?v=K4uz2TucwnI>.

**Environmental Petition:** I have submitted two environmental petitions to the Auditor General of Canada in 2008. One concerns **cordless DECT phones** that radiate unnecessarily 24-hours a day and are making people ill ([Havas 2008](#)). The other Environmental Petition concerns **energy efficient compact fluorescent lighting** (CFL) that is also making people ill and is a concern

raised by the UK Dermatological Association, Migraine Action, and Epilepsy Action (Havas and Hutchinson 2008). CFL are not only bad for human health because of the UV radiation, dirty electricity, and radio frequency radiation they emit, but they also contain mercury, which is a neurotoxin, is bad for the environment and is of particular concern if broken inside the home. Even the lighting industry recognizes the future of CFLs is far from bright as they are trying to replace them with LEDs as quickly as possible.

The Canadian Government, and especially Health Canada has failed to do its homework and has allowed products that are harmful to human health. Their lack of foresight and their response to the Auditor General Petition is a disgrace. Whether their response is due to incompetence or to collusion with industry is difficult to determine but they are failing to protect the Health of Canadians as their name implies.

**Credibility of government agencies** responsible for the Health of the Environment and for Human Health is at an all time low. This includes the World Health Organization as demonstrated by the Interphone Study, which involved 13 countries, cost millions of dollars, and was supposed to be release 4 years ago. We are told that the “scientists can’t agree on the interpretation of the results. When the WHO was encouraged to release the results without interpretation, they refused to do so.

Collusion between government regulatory agencies and multinational companies is so serious that several books are being written on this topic. I would strongly encourage you to read “Doubt is Their Product”, “Bending Science”, and “Environmental Skepticism”. These 3 books document why attempts to protect the environment and to protect human health are failing. The multinational companies with their billion dollar profits are far too influential within the walls of government.

Quote from *Environmental Skepticism: Ecology, Power and Public Life*.

“Environmental skepticism is the position that major environmental problems are either unreal or unimportant [or] . . . inauthentic.”

Quote from *Bending Science: How reliable is the science that federal regulators and legislators use to protect public from dangerous products?*

“As this disturbing book shows, ideological or economic attacks on the research are part of an extensive pattern of abuse. Bending Science makes a compelling case for reforms to safeguard both the integrity of science and the public health” (Harvard University Press 2008).

Quote from *Doubt is Their Product: How Industry’s Assault on Science Threatens your Health*.

“For almost half a century, the tobacco companies hired consultants and scientists—swarms of them, in times of greatest peril—initially to deny (sometimes under oath) that smokers were at greater risk of dying of lung cancer and heart disease, then to refute the evidence that secondhand smoke increases disease risk in nonsmokers. The industry and its scientists manufactured uncertainty by questioning every study, dissecting every method and disputing every conclusion. What they could not question was the enormous, obvious casualty

count—the thousands of smokers who die every day from a disease directly related to their habit—but no matter. Despite the overwhelming scientific evidence, the tobacco industry was able to wage a campaign that successfully delayed regulation and victim compensation for decades—and it is still doing so.”

Unfortunately, the same tactics are used by the telecommunication industry. Research funded by either the military or by the wireless industry predominantly shows no adverse effects of this technology, where as research independently funded shows the reverse. Henry Lai, at the University of Washington, as well as others (Huss et al. 2007), have documented this inverse relationship between adverse biological effects and source of funding. If the research was truly independent than both groups should document similar results.

This denial of any biological or health effects, especially in the face of so many studies documenting adverse effects is difficult to comprehend.

In a recent presentation in Thunder Bay (February 22, 2010), where the President of Lakehead University--Dr. Fred Gilbert--has opted in favor of wired rather than wireless internet access, Dr. Lai presented studies that document the following effects of radio frequency radiation: cancer, cellular/molecular disruption, changes in electrophysiology and behavior, affects on the nervous system, altered permeability of the blood-brain barrier, changes in calcium flux, cardiovascular disorders, hormonal and immunological changes, altered metabolic rate, reproductive problems and subjective symptoms (electrohypersensitivity).

**Safety Code 6 Guidelines are Inadequate to Protect Public Health:** The current guidelines we have in Canada for radio frequency radiation are orders of magnitude higher than in countries like Russia (1% of SC 6) and Salzburg, Austria (0.01% of SC 6). It is unlikely that Russians are more sensitive to this radiation and thus need more protective guidelines. While guidelines for chemical toxicants may vary slightly from country to country we have no other example, that I'm aware of, where guidelines range 4 orders of magnitude.

Canada has no long-term guidelines for radio frequency radiation exposure. Our exposure guideline is based on power density averaged over a 6-minute period. This was an engineering guideline rather than a biological guideline as living organisms are affected by extremes not averages. It is woefully inadequate and misguided.

**Recommendations:** The time is long overdue to re-evaluate Safety Code 6 and reduce guidelines to protect the Canada population. It is also necessary to bring in legislation to limit the placement of antennas near schools and other sensitive areas; to establish wireless-free zones for those who are sensitive; and to fund research on electrosensitivity and especially on the means by which this illness can be reversed and eradicated.

## References:

Havas, M, et al. 2010. Provocation Study using Heart Rate Variability shows Microwave Radiation from DECT phone affects Autonomic Nervous System. European Journal of Oncology, (in press).

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Royal Society of Canada. 1999. A Review of the Potential Health Risks of Radiofrequency Fields from Wireless Telecommunication Devices An Expert Panel Report prepared at the request of the Royal Society of Canada for Health Canada, March 1999.

Sears, M.E. 2007. The Medical Perspective on Environmental Sensitivities. The Canadian Human Rights Commission. 79 pp.

## **Appendix 1.**

### **House of Commons, Environmental Committee. notes 2002**

Wired and Wireless Electromagnetic Energy: An Overview of Health Concerns and a Call for Action. Oral Presentation by Dr. Magda Havas to the House of Commons Environmental Committee, May 21, 2002.

Attached are notes submitted to the Environmental Committee prior to translation (see pdf Havas Caccia RFR 02 HO). The French translation should be available in the Environmental Committee Archives.

## Appendix 2.

### Resolutions and Appeals by International Groups of Scientific and Medical Doctors.

- 2000: Salzburg Resolution, Austria.** Scientists recommend 0.1 microW/cm<sup>2</sup> for radio frequency radiation exposure [[www.landsbg.gv.at/celltower](http://www.landsbg.gv.at/celltower)]. Guideline in U.S. is 1000 microW/cm<sup>2</sup>. No long-term guideline exists in the U.S.
- 2002: Catania Resolution, Italy.** Scientists recognize adverse health effects of EMF at levels below international guidelines. [[www.emrpolicy.org/faq/catania.pdf](http://www.emrpolicy.org/faq/catania.pdf)]
- 2002: Freiburger Appeal, Germany.** Physicians request tougher guidelines for radio frequency exposure, endorsed by hundreds of healthcare practitioners. [[www.mastsanity.org/doctors-appeals.html](http://www.mastsanity.org/doctors-appeals.html)]. Read quote from this appeal on next page.
- 2004: World Health Organization, Workshop on ElectroSensitivity, Czech Republic, Oct 2004.** Scientists recognize electrohypersensitivity and propose calling it “idiopathic syndrome”, which means “no known cause”.
- 2005: Irish Doctors’ Environmental Association (IDEA), Ireland.** Doctors recognize electrohypersensitivity (EHS) is increasing and request advice from government on how to treat EHS [[www.ideaireland.org](http://www.ideaireland.org)].
- 2005: Helsinki Appeal, Finland.** Call for new safety standards, reject International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines. [[www.emrpolicy.org/headlines/helsinki\\_appeal\\_05.pdf](http://www.emrpolicy.org/headlines/helsinki_appeal_05.pdf)]
- 2006: Benevento Resolution, Italy.** Scientists recognize adverse health effects, recommend precautionary principle, identify funding biased studies, recognize need for wireless-free zones [[www.icems.eu](http://www.icems.eu)]-International Commission for Electromagnetic Safety.
- 2007: BioInitiative Report, USA.** Reviewed 2000 studies showing biological effects of ELF and RF radiation and calling for biologically based exposure guidelines. [[www.bioinitiative.org](http://www.bioinitiative.org)]
- 2008: Venice Appeal, Italy.** Scientists recognize biological effects at non-thermal levels, that standards are inadequate, that electro-sensitivity exists and that there is a need to research mechanisms. [[www.icems.eu/resolution.htm](http://www.icems.eu/resolution.htm)]
- 2009: Porto Alegre Resolution, Brazil.** Scientists and doctors recognize electrohypersensitivity and are concerned that exposure to electromagnetic fields may increase the risk of cancer and chronic diseases; that exposure levels established by international agencies (IEEE, ICNIRP, ICES) are obsolete; and that wireless technology places at risk the health of children, teens, pregnant women and others who are vulnerable.

## Appendix 3.

### Warnings about Cell Phones

**United Kingdom:** “. . . we believe that the widespread use of mobile phones by children for non-essential calls should be discouraged.” (Stewart Report 2000)

**Germany:** People should avoid using Wi-Fi wherever possible because of the risks it may pose to health. (2007)

**France:** The French government is warning consumers to avoid “excessive” cell phone use because of concerns that mobile phone use could increase the risk of some cancers . . . children who use cell phones face the most danger from the devices. (2008). Cell phones banned in primary schools and models cannot be used near the ear.

**Russia:** Children under the age of 18 should not use cell phones (2008).

**India:** Ministry of Telecommunication recommends that children, pregnant women and people suffering from heart ailments limit use of mobile phones (2008).

**Toronto Board:** Children under 8 should use cell phones for emergencies only and teens should limit calls to under 10 minutes (2008).

**Pittsburgh Cancer:** Head of prominent cancer research institute warns faculty and staff to limit cell phone use because of the possible risk of cancer (2008).

**Belgium:** Discourage the use of cell phones by children (2008).

**Finland:** The Radiation and Nuclear Power Authority urges parents to err on the side of caution, because . . . there is no definitive research indicating the absence of health risks from cell phone use (2009).

**Seoul Korea:** “Cellular phones could harm the study atmosphere at schools and could cause health risks for kids. It is desirable to prohibit students from using cell phones at schools.” (2009).

**U.S. FCC:** Consumer Facts: Recommends precautionary steps for use of cell phones (2009).

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