

The Auditor General of Canada
 Commissioner of the Environment and Sustainable Development
 240 Sparks St.
 Ottawa, ON
 K1A 0G6

Attn. Petitions

Auditor General,

Health Canada's Safety Code 6 was established as a protection against thermal radiation and, therefore, is set at a dangerously high level for all who live close to transmission towers. It provides no protection whatsoever from the real danger to residents: non-thermal electromagnetic radiation. And Health Canada appears only too willing to ignore the health concerns of the residents in order to protect the interests of the telecommunication industry.

We live on the top of Triangle Mountain, in a cul-de-sac with 28 other homes, most of which were built in 1992-1994. At that time there was one small radio tower, which had been there for decades. In, addition there was an amateur radio antenna about 300 meters away on Walfred Road.

Suddenly, in 2000 this was removed and 2 new, tall towers were built and 3 FM transmitters with 2 Studio Link Transmitters (STLs) were installed, location address Fulton Road. These towers are as close as 30 meters from our homes. (Please see attached photos)

Company	Frequency	Avg. power	Peak power
CIOC-FM ROGERS	98.5 Mhz	47,000 Watts	100,000 Watts
CHTT-FM ROGERS	103.1	9,400	20,000
CFEX-FM CTV	107.3	9,700	20,000
CTV STL	955.525		
ROGERS STL	957.6875		

From the very beginning, the residents experienced harmful interference with their electronic equipment. Despite numerous complaints that continue even to this day and with an emission level in the year 2001 that is more than 1100 times higher than is allowed under the new CPC-2-0-03 guidelines, Industry Canada is quoted as saying: "To date...the Broadcasters have successfully remedied the issues." (letter of May 26, 2008 from Mr. Neil Allwood, A/Director, Industry Canada, Coastal District Office. To Mayor Jody Twa, Colwood)
 But, as harmful as this interference is, and as irritating as Industry Canada's failure to live up to its obligation is, they are nothing, nothing, in comparison to the real harm the transmitters are causing us.

In 2000, the residents on Bexhill Place expressed concern about the possible health implications and were repeatedly assured that Safety Code 6 provides protection. In 2001, with

the help of the City of Colwood, the residents were able to get Industry Canada to perform a test of emission levels, which we later learned was not done with the proper equipment or following the correct protocol. (please refer to page 23 of petition) After a few hours of testing over 2 consecutive days in August, everyone was told the emissions were under Safety Code 6 and therefore there was nothing to worry about.

Before building our home, we asked various authorities about the FM towers and any potential health implications and received repeated assurances that Industry Canada has strict guidelines which ensure that there is no danger from RF emissions. We believed them.

Neighbours soon began to complain about health problems and at a gathering in 2005 many discussed sleeping problems including insomnia and nightsweats, skin rashes, and headaches. We decided to investigate to see if proximity to the transmitters might be the cause.

We've since learned that within 1 city block of the towers we have several people with various cancers, neurological problems, multiple miscarriages, and dermatological problems. This was discovered through casual conversations; no survey of the neighbourhood has been done.

We approached Dr. Richard Stanwick, Vancouver Island Health Officer and he told us any problems were Health Canada's responsibility and he could not get involved. In numerous discussions with people at the BC Cancer and Radiation Centre, specifically Dr. Randy Ross, we have received assurance that Safety Code 6 is safe and any health problems are due to other causes. In telephone calls and letters to people at Industry Canada both in Vancouver (Mr. Bruce Drake) and Victoria (Mr. Jim Laursen) I've received the same response -- so long as the emissions are within the limits set by Safety Code 6, there is nothing that can be done. Through emails, Dr. McNamee of Health Canada assured us that Safety Code 6 is consistent with the rest of the world's guidelines and EMR at the non-thermal level is not dangerous.

Over the last year, we've learned that the scope of the problem has changed, with Industry Canada's requirement that broadcasters use existing towers wherever possible. Now there is a cell transmitter (869.00 MHz) on the FM towers (no notice was given, so I have no information on the installation date). The tower on Walfred has been removed and new towers were installed, with no notice or consultation. There are now many transmitters of various sorts and we were told by Mr. Laursen that 2 additional cell transmitters will be installed shortly. As of today, there are 44 transmitters within 1 kilometer of our home (please see the list from Industry Canada's website).

	NO. ON WALFRED	NO. ON FULTON
1999	1	1
2000	1	5
2008	29	6

According to one of many influential studies : "During the first 3-5 years of exposure, people suffer sleep disorders, melatonin reduction which leads to immune deficiencies. From 5-7 years, neurological problems begin to become noticeable with headaches, confusion, and

memory loss. After 10 years, serious disorders such as cancer occur and health damage become irreversible.” (I.S.F. Institute for Stress Research, Berlin, Biological effects of electromagnetic fields on humans in the frequency range of 1 to 3 Ghz)

Most of the people in our neighbourhood have been exposed to these FM towers for 8 years.

We all are on borrowed time and we ask for Health Canada to reduce the allowable exposure level by studying independent, non-industry funded research and heeding the recommendations of the preponderance of credible peer-reviewed international scientists.

On behalf of all Canadians, we respectfully petition:

Health Canada to explain its reliance on and association with the telecommunication industry, to the detriment of the health of the citizens by whom they are employed;

Health Canada to explain why Canadians are not granted the same level of protection that citizens of many other countries are granted;

Health Canada to revisit its decision regarding Safety Code 6 and to implement a biologically (health)-based standard for non-thermal electromagnetic radiation, patterned after those recommended by the BioInitiative Report, August 2007;

Industry Canada to ensure that all FM and cell phone transmitters presently in use be adjusted to meet this new standard;

Health Canada to remember that its mandate is to enhance and protect the health of Canadians;

Health Canada to use only scientific studies that are credible, peer-reviewed, non-industry funded that have no industry connections;

that Health Canada personnel no longer be allowed to have connections with bodies that tend to cast doubt on the impartiality of their work;

Health Canada to carryout its mandates as published on their webpages. But while doing so that it respect the concerns of those not in industry but with an interest in decisions that may impact upon them to be properly considered, informed and respected;

Health Canada and Industry Canada to ensure that all dealings with the public be fair, objective, and aboveboard.

We earnestly petition the responders for Health Canada and Industry Canada to provide honest answers that are not mere repetitions of replies that already have been given to us and to many others but which do not respond to the questions.

Petitioners:

Sharon and Dennis Noble

Bexhill Place

Victoria, British Columbia

V9C 3V5

I. INDEPENDENCE OF ADVISORY BODIES

In the New York Times, June 10, 2008, " Three prominent psychiatrists at the Harvard Medical School and its affiliated Massachusetts General Hospital have been caught vastly underreporting their income from drug companies whose fortunes could be affected by their studies and their promotional efforts on behalf of aggressive drug treatments. Their failure to divulge their conflicts is striking proof that today's requirements for reporting payments from industry — essentially an honor system in which researchers are supposed to reveal their outside income to their institutions — needs to be strengthened."

Health Canada and Industry Canada receives great sums of money from the telecommunication industry each through various licensing fees, siting fees, spectrum auctions, etc. For example, according to CanWest News Source, May 28, 2008, more than \$560 million was committed by 24 of the 60 participants on the first day of the recent auction of spectrum licenses. It was reported in The Times Colonist of June 18, 2008, page 5B, that "Canada's auction of the airwaves for wireless services ... has raised about \$3.77 billion in revenue" and that the auction is not yet over.

From this arises the perception of a conflict of interest in Health Canada's and Industry Canada's responsibility of protecting the citizens of Canada from the potential dangers of electromagnetic radiation emitted by telecommunication transmitters and devices. We undertook to see if perception conflicts with reality:

A. Health Canada Independence

1. In his letter to me of Dec. 17, 2007, Dr. James McNamee, Research Scientist,

Consumer and Clinical Radiation Protection Bureau (CCRPB) of Health Canada, stated that "Myself and my colleagues maintain a vigilant surveillance of the health effects literature related to this issue and conduct our own research to evaluate potential bioeffects (such as DNA damage). It is Health Canada's position, and one which I personally agree with, that exposure to radiofrequency fields below the limits outlined in Safety Code 6 do not pose a health risk."

In reply to my request for examples of what Health Canada considers credible studies showing that there are no adverse health effects from non-thermal RF radiation, on March 17, 2008, Dr. McNamee sent me the following list:

- a) Krewski D, Glickman BW, Habas RW, Habbick B, Lotz WG, Mandeville R, Prato FS, Salem T, Weaver DF. Recent advances in research on radiofrequency fields and health: 2001-2003. J Toxicol Environ Health B Crit Rev. 10:287-318 (2007)
- b) Valberg PA, van Deventer TE, Repacholi MH. Workgroup report: base stations and wireless networks-radiofrequency (RF) exposures and health consequences. EnvironHealth Perspect. 115:416-424 (2007)

c) Moulder JE, Foster KR, Erdreich LS, McNamee JP. Mobile phones, mobile phone base stations and cancer: a review. *Int J Radiat Biol.* 81:189-203 (2005)

d) Vijayalaxmi, Obe G. Controversial cytogenic observations in mammalian somatic cells exposed to radiofrequency exposure. *Radiat Res.* 162:481-496 (2004)

e) Ahlbom A, Green A, Kheifets L., Savitz D, Swerdlow A; ICNIRP. Epidemiology of health effects of radiofrequency exposure. *Enviro Health Perspect.* 112:1741-1754 (2004)

2. I decided to apply Dr. McNamee's "vigilant surveillance" to the quality and integrity of some of his sources:

a) D. Krewski is Director of the R. Samuel McLaughlin Centre for Population Risk Assessment, University of Ottawa.. According to CBC's Marketplace, Nov. 25, 2003, the Canadian Wireless and Telecommunication Association (CWTA), a cell phone industry lobby group along with its members invested \$1 million to help establish the R. Samuel McLaughlin Centre for Population Health Risk Assessment at the University of Ottawa, where Dr. Krewski is doing his cellphone research. The head of the CWTA, Peter Barnes, told CBC that the million dollars his lobby group gave to Krewski's centre has no strings attached.

Dr. Krewski also holds the position of Chair of the scientific advisory group of the Wireless Information Research Centre (WIRC). According to CBC News, Nov. 25, 2003, the WIRC is funded by the Canadian Wireless and Telecommunication Association.

Another of his positions is that of Director of IARC, the Canadian Interphone Study. Canada is the only country of the 13 participants that accepts funding from the telecommunications industry. "Krewski has about \$1million to fund his part of the IARC research, most of it came from the Canadian Wireless and Telecommunications Association, the cellphone industry lobby group." (CBC News, Nov. 25, 2003)

According to the University of Ottawa Gazette, May 10, 2001, "The Canadian project has received a grant from the Canadian Wireless Telecommunications Association (CWTA), which is being administered through the university-industry partnership program of the Canadian Institutes for Health Research (CIHR). CIHR is expected to fund half, with the CWTA funding the remainder. "Industry has a responsibility to contribute to health research on their products, to address questions about potential health risks associated with wireless telecommunications," he says. "The university-industry partnership program that CIHR has set up is exactly designed for this purpose."

In addition, "Roger Poirier, the man who negotiated the million dollar deal, is a consultant on the big cellphone study for IARC," as reported by CBC News, Nov. 25, 2003.

The World Health Organization (WHO), according to many observers, is closely associated with the industries they are supposed to be researching. According the WHO 2005 Annual Report, Krewski acted as the Principal Investigator in the epidemiological study of cellular telephones and head and neck cancer which was funded by CIHR and

CWTA, with the databases created and coordinated by the McLaughlin Centre.

In the same WHO Report is documentation that Dr. Krewski, along with R. Habash and M. Repacholi, was the principal investigator for the study on Electromagnetic Fields and Health which was funded by the CWTA and CIHR (\$850,000).

b) John Moulder is an industry consultant, and, according to Microwave News, July 31, 2006, "has a lucrative consulting practice on EMFs and health. Over the years, Moulder has earned hundreds of thousands of dollars disputing the existence of adverse EMF health effects, even those accepted by most other members of the EMF community."

He has worked for Radiation Research since the early 1990s and is now senior editor of it. "Over the last 16 years, only one positive paper on microwave genotoxicity has appeared in *Radiation Research*.... 80% of the negative papers (17 out of 21) published in *Radiation Research* were paid for by either industry or the U.S. Air Force."

Microwave News is "meticulously researched and thoroughly documented." **Time Magazine, July 30, 1990**

"the most authoritative journal on ELF fields and health." **Fortune Magazine, Dec. 31, 1990**

"the world's most authoritative source on EMF health risks." **Washington Journalism Review, Jan/Feb 1991**

c) Obe G. Vijayalaxmi, together with Moulder and some colleagues from Washington University and the U.S. Air Force had published a review paper that dismissed any possible connection between cell phones and cancer. This was published in *Radiation Research*. After Moulder had moved up to senior editor in 2001, he recruited Vijayalaxmi of the University of Texas in San Antonio to join the *Radiation Research* editorial board. Vijayalaxmi is the lead author on seven of the negative microwave-genotox papers. All were funded by the U.S. Air Force, Motorola or a combination of the two. (Microwave News, July 31, 2006)

Dr. Vijayalaxmi is treasurer for the Bioelectromagnetics Society, and will be until 2010.

d) James McNamee, research scientist, Consumer & Clinical Radiation Protection Bureau, Health Canada, is the new EMR specialist on the editorial board of Radiation Research. He has published three negative papers on microwave genotoxicity in *Radiation Research*. McNamee also has written a review paper with Moulder on cell phones and cancer. Vijayalaxmi, McNamee and Maria Scarfi, an Italian researcher, are authors on 14 of the 42 negative genotox papers. Ten of their 14 negative papers were published in *Radiation Research*. (Microwave News, July 31, 2006)

Dr. McNamee is on the Board of Directors for the Bioelectromagnetics Society, with his term ending 2008. (www.bioelectromagnetics.org) This Society's newsletter is funded by Motorola, and its editor is Dr. Mays Swicord, director of EMR research for Motorola. (Microwave News, July 2004)

e) MH Repacholi headed the Project into ElectroMagneticFields (EMFs) by the World Health Organisation (WHO) until July 2007 and has been tied to the telecommunication industry contributions as reported in Microwave News, Nov. 17, 2006.

f) R. Mandeville -- President and CSO of Biophage, Inc, a biopharmaceutical company.
Company Partners:The Company's partners include the REGA Institute of the University of Leuven in Belgium, Nymox Inc., the Defence Research Establishment Suffield (DRES) and Biopolymer Engineering of Eagan, MN.

Dr. Mandeville is on the Board of Directors of Montec Holdings, which is directly associated with telecommunication companies.
 (www.Montechholdings.com/boardofdirectors.htm)

QUESTION:

1) How can Health Canada rationalize using research that is influenced to such a degree by people who rely upon industry for funding?

2) Who in Health Canada is responsible for vetting researchers and the peer-reviewed research used to confirm that Safety Code 6 is safe?

3) Are Health Canada and Industry Canada employees required to sign conflict of interest statements that declare they have no affiliation with any organization that may bring into question the impartiality of their work?

4) Are scientists conducting research for Health Canada and Industry Canada required to sign conflict of interest statements that declare they have no affiliation with any organization, nor do they accept, directly or indirectly, funding from any source that could be perceived in anyway to cast doubt on the objectivity of their work?

5) Do Industry Canada and Health Canada adhere to the rule that the authors, whatever their affiliation, of all studies that Industry Canada or Health Canada depend on to support their position on EMR, must clearly be seen to be independent, and must be willing to declare that they have no financial interests in the outcome of their studies and that they receive no industry funding, whether directly or indirectly, in carrying out their studies?

B. Royal Society

1. According to Artnarong Thansandote, Chief, Electromagnetics Division, CCRPB, Health Canada, in a letter of June 2, 2006, to Pim Vanderveen, Industry Canada, copied to Robert Bradley, Director CCRPB, "...at the request of Health Canada, the Royal Society of Canada assembled an expert panel on radiofrequency (RF) fields to conduct an independent review of the guidelines for safe exposure limits set out in the Code."

Yet even the Expert Panel convened by the Royal Society of Canada to review new scientific studies and to make recommendations about the adequacy of SC6, has

persons with close ties to the telecommunications industries. In support of this statement I provide the following:

1. Dr. D. Krewski (please refer to #2a above)
2. R.W.Y. Habash has connections with the R.Samuel McLaughlin Centre, which is largely industry-funded. (See WHO 2005 Annual Report) (please refer to #2a)
3. B. Habbick also works for the R. Samuel McLaughlin Centre. (please refer to #2a)
4. T. Salem also works for the R. McLaughlin Centre.(please refer to #2a)
5. Mary McBride, worked on the WHO "Epidemiological Study of Cellular Telephones and Head and Neck Cancer" with D. Krewski and J. Siemiatycki, which was funded by CIHR, CWTA (Canadian Wireless and Telecommunications Association. The Collaborating Centre was the R. Samuel McLaughlin Centre for Population Health Risk Assessment. Source: WHO Annual Report, 2005.
6. R. Mandeville, President and CSO of Biophage, Inc a biopharmaceutical company. (refer to #2f for information)

QUESTION:

6) When at least half the members of the "expert panel" have direct or indirect associations with the telecommunication industry, why should the public believe that the recommendations of these people are not influenced by the industry?

7) How does Health Canada refute the perception that it is unduly supportive of telecommunication companies because of its dependence upon researchers who have ties to that industry?

C. WHO

1.

a) **MH Repacholi** headed the Project into ElectroMagneticFields (EMFs) by the World Health Organisation (WHO) until July 2007. For years, the WHO have declared Mobile Telephone Masts and the microwave radiation (the EMFs) emitted by them and other such devices not to be dangerous. **Repacholi has now admitted that a large proportion of the WHO-EMF Project funding was sourced via donations sent to the Royal Adelaide Hospital from where Repacholi was seconded**, and according to Microwave News, Nov. 17, 2006, reported that the funds were then transferred to the WHO. "Norm Sandler, a Motorola spokesman, told us that, 'This is the process for all the supporters of the WHO program.' At the time, Motorola was sending Repacholi \$50,000 each year. That money is now bundled with other industry contributions and sent to Australia by the Mobile Manufacturers Forum (MMF), which gives the project \$150,000 a year. " (WHO Progress Report, July 2007 as reported by Mast Sanity.org)

b) **D. Krewski:** The World Health Organization (WHO), according to many observers, is

closely associated with the industries they are supposed to be researching. According to the WHO 2005 Annual Report, Krewski acted as the Principal Investigator in the epidemiological study of cellular telephones and head and neck cancer which was funded by CIHR and CWTA, with the databases created and coordinated by the McLaughlin Centre.

c) **R. Habash**: In the same WHO Report is documentation that Dr. Krewski, along with R. Habash and M. Repacholi, was the principal investigator for the study on Electromagnetic Fields and Health which was funded by the CWTA and CIHR (\$850,000).

d) **Mary McBride**, worked on the WHO Epidemiological Study of Cellular Telephones and Head and Neck Cancer with D. Krewski and J. Siemiatycki, which was funded by CIHR, CWTA (Canadian Wireless and Telecommunications Association). The Collaborating Centre was the R. Samuel McLaughlin Centre for Population Health Risk Assessment. Source: WHO Annual Report, 2005.

QUESTION:

8. Since WHO accepts funding from the wireless industry, why should any credence be given to studies that WHO sponsors?

9. Since the researchers appear to be so closely associated with the industry that has a direct interest in the results of their research, why should we not assume that those results are biased in its favour?

II. SCIENTIFIC EVIDENCE

A. Credible Studies?

1. In his letter to me of Dec. 17, 2007, Dr. McNamee said, "I must point out that while there are some studies reporting evidence of adverse effects from radiofrequency field exposure, there are a much larger (sic) of other studies which do not find similar findings..."

In response to our request for more examples of credible, scientific, peer-reviewed studies that showed the absence of harm from non-thermal radiation, Dr. McNamee provided 20. Of these 20 studies, 18 were published in 3 journals funded by the telecommunication industry:

Radiation Research, funded by Industry and US Air Force (Microwave News, July 31, 2006.

Bioelectromagnetics Society Journal, funded by Motorola. Editor is Dr. Mays Swicord,

director of EMR research at Motorola. (Microwave News, July 2004)

International Journal of Radiation Biology published by Informa Healthcare which, along with its partner, Informa Media and Telecom, are part of the Informa Group Plc

In explanation of this reliance on industry-funded journals, Microwave News, July 31, 2006, pointed out, "Wireless companies like Motorola have fostered the spurious view that negative studies cancel out positive ones. Their strategy is this: First, seed the journals with no-effect papers that run counter to previously published work which does show biological changes. Then argue: 'If we couldn't replicate the effect, it cannot be real.' The assumption here is that industry science is superior to everyone else's. They make no effort to resolve inconsistent results."

Studies have confirmed that this could apply to industry-funded researchers and research projects regarding radiofrequency dangers.

A comparison of 85 Genotox Studies done from 1990-2006. 45 reported negative effects and 42 reported none. Of the 45 positive report, 3 were industry funded. Of the 42 negative all but 5 were industry funded, and one of these 5 was by Dr. James McNamee of Health Canada who has ties to industry but would not commit whether he was industry funded or not. ***Microwave News, July 2006 (vol. XXIV No.4)***

"Two of the world's leading radiation experts told The Express that multinational companies tried to influence the results of their research Professor Ross Adey, a biologist, had his funding withdrawn by Motorola before completing research which showed that mobiles affected the number of brain tumours in animals. Dr. Henry Lai, who has been studying the biological effects of electromagnetic fields for 20 years, was asked three times to change findings on how they caused DNA breaks in rats."

Express Newspapers, 24 May, 1999

Dr. Henry Lai, compared 326 Cell Phone Biological Studies in an internal 2006 study for the Univ. of Washington and found the following:

Of the studies showing no biological effects, 72% were industry-funded.

Of the studies showing biological effects, 33% were industry-funded.

Egger, Nat. Inst. Of Environ. Health Science (NIEHS), Vol. 115 #1 Jan 2007: "Health effects of radiofrequency radiation should take sponsorship into account."

QUESTION:

10) How does Health Canada refute the perception that it discounts credible peer-reviewed scientific studies that are not industry-funded and favors studies that are industry-funded?

11) How does H.C. refute the perception that just as the multibillion dollar asbestos and tobacco industries were able to persuade government overseers to ignore credible evidence harmful to the bottom line of those industries, the multibillion dollar telecommunications industry is not persuading

Health Canada to ignore credible evidence that is harmful to the bottom line of that industry?

B. Credible Studies

1. In his letter to me of Dec. 17, 2007, Dr. McNamee said, "When evaluating the scientific evidence for a potential health risk, one must consider all data (not just a selected subset of the literature) to make scientifically sound health risk assessment."

Yet, it is maintained by both HC and the 'expert panel', the Royal Society of Canada, that there has been no new evidence to justify revision of SC 6 since its 1999 review.

Please find below just a few of quite credible studies from around the world that were reported since 1999, showing health effects from non-thermal radiation and, apparently, have been overlooked by the Royal Society of Canada and Health Canada.

REFLEX Report, (December 2004) *Risk Evaluation of Potential Environmental Hazards From Low Frequency Electromagnetic Field Exposure Using Sensitive in vitro Methods*, A project funded by the European Union under the programme "Quality of Life and Management of Living Resources" .

"Twelve institutes in seven countries have found genotoxic effects and modified expressions on numerous genes and proteins after Radio frequency and extremely low frequency EMF exposure at low levels, below current international safety guidance, to living cells in-vitro. These results confirm the likelihood of long-term genetic damage in the blood and brains of users of mobile phones and other sources of electromagnetic fields. The idea behind the REFLEX study was to attempt replicate damage already reported to see if the effects were real and whether, or not, more money should be spent of research into the possible adverse health effects of EMF exposure. They concluded that in-vitro damage is real and that it is important to carry out much more research, especially monitoring the long-term health of people."

Eger H et al, (November 2004) *The Influence of Being Physically Near to a Cell Phone Transmission Mast on the Incidence of Cancer*, Umwelt Medizin Gesellschaft 17,4 2004

"Newly diagnosed cancers were significantly higher among those who had lived for 10 years within 400 metres of the mast, in operation since 1993, compared with those living further away, and the patients had fallen ill on average 8 years earlier. People living within 400 metres of the mast in Naila had three times the risk of developing cancer than those living further away. This seems to be an undeniable clustering of cancer cases."

Oberfeld G et al, (October 2004) *The Microwave Syndrome - Further Aspects of a Spanish Study*, Conference Proceedings

"The adjusted (sex, age, distance) logistic regression model showed statistically significant positive exposure-response associations between the E-field and the

following variables: fatigue, irritability, headaches, nausea, loss of appetite, sleeping disorder, depressive tendency, feeling of discomfort, difficulty in concentration, loss of memory, visual disorder, dizziness and cardiovascular problems. The inclusion of the distance, which might be a proxy for the sometimes raised "concerns explanation", did not alter the model substantially."

Hallberg O, Johansson O, (July 2004) *Malignant melanoma of the skin - not a sunshine story!*, Med Sci Monit. 2004 Jul;10(7):CR336-40

"A good correlation in time was found for the rollout of FM/TV broadcasting networks while the increased amount of "sun travel" by air (charter) did not start until 7 years after the melanoma trend break in 1955. Counties that did not roll out their FM-broadcasting network until several years after 1955 continued to have a stable melanoma mortality during the intervening years. The increased incidence and mortality of melanoma of skin cannot solely be explained by increased exposure to UV-radiation from the sun. We conclude that continuous disturbance of cell repair mechanisms by body-resonant electromagnetic fields seems to amplify the carcinogenic effects resulting from cell damage caused e.g. by UV-radiation

Boscol et al. reported that RFR from radio transmission stations affected immunological system in women [Effects of electromagnetic fields produced by radiotelevision broadcasting stations on the immune system of women. Sci. Total Environ 273:1-10, 2001].

Salford et al. (2003) have shown that extremely low doses of GSM radiation can cause brain damage in rats. The authors reported nerve damage following a single two-hour exposure at a SAR of 2 mW/kg. They showed that RF energy can impair the BBB, but they added that the chemicals that leak through the BBB probably damage neurons in the cortex, the hippocampus and the basal ganglia of the brain. The cortex is close to the surface of the skull, while the basal ganglia are much deeper...

BioInitiative Report, August 2007. An international working group of scientists, researchers and public health policy professionals (The BioInitiative Working Group) has released its peer-reviewed report on electromagnetic fields (EMF) and health. By reviewing more than **2000** peer-reviewed studies, they document serious scientific concerns about current limits regulating how much EMF is allowable from power lines, cell phones, and many other sources of EMF exposure in daily life. The report concludes that the existing standards for public safety are inadequate to protect public health.

Clark, M.L. et al, "Biomonitoring of Estrogen and melatonin metabolites among women residing near radio and television radio broadcasting transmitters" concluded that RF and temporally stable 60 Hz exposures were associated with increased E1G excretion among post-menopausal women. J. Occup. Environ. Med. 2007;49: 1149-1156.

QUESTION:

12) How does Health Canada explain why each of these non-industry

funded studies is not considered relevant or credible by the experts at HC and the Royal Society?

13) How much has the telecommunications industry spent for research annually over the last 5 years?

14) How much has Health Canada spent for independent, non-industry funded research annually during the last 5 years?

III. OUR PROTECTION?

A. Safety Code 6

1. Health Canada and Industry Canada continue to assure the public that Safety Code 6 is adequate to protect the general public. In his letter to me of Dec. 17, 2007, Dr. McNamee said , "... we would not support Safety Code 6 unless we personally felt it was adequately protective."

The public has been told that we should be comforted by knowing that Canada's Safety Code 6 is one of the most stringent in the world and is consistent with most other western countries.

In reality, "an increasing number of countries have implemented stricter public exposure limits in response to concerns about and studies demonstrating health problems from RF exposure at levels lower than those allowed by SC 6. Many western European countries have done so following the precautionary principle attempting to keep RF exposure as low as possible.

In eastern European and Asian countries, lower standards are being established to protect the public from effects observed in their studies among people chronically exposed to RFs through their work, such as changes in the central nervous, endocrine and immune system functions.' (Toronto Prudent Avoidance Policy on Siting Telecommunication Towers and Antennas, Nov. 20, 2007)

As reported by the Medical Officer of Health of the Toronto Board of Health in the Siting Policy, "there are already several jurisdictions that have adopted lower exposure limits for the public. Some, such as Bulgaria, China, the Czech Republic, Hungary, Italy, Poland, Russia, and Switzerland have established legally enforceable national levels. Several other local governments have made exposure limits more protective, primarily through cooperative arrangements with industry: Auckland, Brussels, Paris, Salzburg (Austria), and several municipalities in Australia." In 1999, the Toronto Board of Health recommended exposure limits of .1W/meter squared (.1W/m²).

Following are a number of countries and their national standards for 450MHz frequency.

Austria's "precautionary limit	0.001 W/m ²
Russia's exposure limit	0.02 W/m ²
ECOLOG recommendation 1998	0.023 W/m ²
Poland's exposure limit	0.1 W/m ²
Italy's exposure limit	0.16 W/m ²
CSSR's exposure limit	0.24 W/m ²
New Zealand's exposure limit	2.0 W/m ²
Canada's exposure limit	3.0 W/m²

Following are the national standards in many countries for 1800MHz frequency.

Toronto Board of Health precautionary	0.10 W/m ²
Italy regulatory, precautionary	0.10 W/m ²
Switzerland, regulatory, precautionary	0.10 W/m ²
China, regulatory	0.10 W/m ²
Russia, regulatory	0.10 W/m ²
Paris precautionary, cooperative	0.10 W/m ²
Salzburg, precautionary, cooperative	0.001 W/m ²
ICNIRP Guideline*	10.0 W/m ²
Canada	10.0 W/m²

Canada has the same guideline as ICNIRP which says it is only intended to protect the public against short term gross heating effects and NOT against 'biological' effects such as cancer and genetic damage from long term low level microwave exposure from mobile phones, their masts and many other wireless devices. This statement is made at: <http://www.icnirp.de/documents/emfgdl.pdf>

QUESTION:

15) Will Health Canada justify the current exposure standards of SC 6, which are at levels to protect the public only against short term gross heating effects, as per ICNIRP?

16) Will Health Canada and Industry Canada amend its public documents to reflect the fact that Canada's standard is not consistent with most other developed countries and to instruct its researchers to stop telling the public that Canada's standards are among the most stringent in the world?

17) Health Canada and Industry Canada do not follow the stricter safety codes of most of Europe but rather the much more lax safety codes of the U.S. To what degree is this because Health Canada and

Industry Canada have been unduly influenced by the powerful North American telecommunication industry?

IV. POLICY APPROACHES

The **International Commission for Electromagnetic Safety (ICEMS)** is a non-profit organization that promotes research to protect public health from electromagnetic fields and develops the scientific basis and strategies for assessment, prevention, management and communication of risk, based on the precautionary principle

In Dec. 2007 and June 2008 ICEMS and the 47 scientists who were signatories to the Benevento Resolution stated in the follow-up Venice Resolution:

“...we are compelled to confirm the existence of non-thermal effects of electromagnetic fields on living matter, which seem to occur at every level of investigation from molecular to epidemiological...” and urged the immediate adoption of precautionary measures to protect the public. (www.icems.eu)

A. The Precautionary Principle

1. The Precautionary Principle adopted in 1998 at the Wingspread Conference:

"We believe existing environmental regulations and other decisions, particularly those based on risk assessment, have failed to adequately protect human health and the environment, as well as the larger system of which humans are but a part.

We believe there is compelling evidence that damage to humans and the worldwide environment, is of such magnitude and seriousness that new principles for conducting human activities are necessary.

While we realize that human activities may involve hazards, people must proceed more carefully than has been the case in recent history. Corporations, government entities, organizations, communities, scientists

and other individuals must adopt a precautionary approach to all human endeavors.

Therefore it is necessary to implement the Precautionary Principle: Where an activity raises threats of harm to the environment or human health, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.

In this context the proponent of an activity, rather than the public bears the burden of proof." (the emphasis is mine) (www.sehn.org/wing.html)

2. In several of his letters to me, and in response to a question asking him for studies that prove that living in the midst of FM and cell transmitters, as we do, is safe, Dr. McNamee responded in his letter of April 3, 2008, "It is technically impossible to ever 'prove' that any activity, product, or item is absolutely safe..." In the same letter he admits, "There are some studies claiming that biological effects may occur at RF energy levels below SC 6 limits."

3. According to an Environment Canada pamphlet:

"Canada applies the precautionary approach in situations when a decision must be made about a risk of serious or irreversible harm and where there is scientific uncertainty. These factors should not be used as a reason to postpone decisions. The precautionary approach/principle is a distinctive approach to managing threats of serious or irreversible harm where there is scientific uncertainty. The precautionary approach recognizes that the absence of full scientific certainty shall not be used as a reason to postpone decisions where there is a risk of serious or irreversible harm. Even though scientific information may be inconclusive, decisions have to be made to meet society's expectations that risks be addressed and living standards maintained." (www.ec.gc.ca/econom/pamphlet_e.htm)

B. Risk Assessment

1. Health Canada has publicly subscribed to the Risk Assessment/Management approach that balances harm against cost.

2. But Health Canada and Industry Canada are attempting to redefine the Wingspread precautionary principle, as per their FAQ on Radiofrequency Fields (www.ic.gc.ca/epic/site/smt-gst/nsf/print-en/sf08792e.html#3):

“(21) What is the precautionary principle and when should it be used?”

The precautionary principle (PP) is a public policy approach for **risk management** of possible, but unproven, adverse effects....If you are concerned about RF exposure, you may apply PP by limiting the length of your calls on cell phones and using a “hands-free” device that keeps the cell phone away from your head and body.”

5. Obviously Health Canada and Industry Canada do not understand the precautionary principle to mean the same thing as the Wingspread Conference intended. It is not an

approach to **manage risk**, but to **avoid risks** where there is a possible threat of serious or irreversible harm.

Health Canada and Industry Canada also confuse precautionary principle with precautionary avoidance, eg. recommending limiting the length of cell phone calls is PA, not PP.

Perhaps Health Canada's and Industry Canada's redefining its risk management approach can best be explained by a report presented by Wirthlin, a public relations firm, and Nichols Dezenhall Communications Management, specialists in crisis management. In the report, entitled Industry's Response to the Precautionary Principle, industry is encouraged to "Conduct research and

<http://209.204.197.52/publicns/report/PPFINAL.PDF>)

As Mr. Vecchia, chairman of ICNIRP advised: "Be realistic about the EMR issue and consider the economical impact of precautionary measures."

QUESTION:

18) Why do Health Canada and Industry Canada require that the risk be established before the precautionary principle is applied when the essential point of the Precautionary Principle is to provide protection in the absence of full scientific certainty?

19) Given the risk involved and the growing body of credible scientific evidence indicating serious harm from non-thermal levels of RF, will Health Canada follow the lead of other Federal Departments (eg. Environment Canada), and implement the original Wingspread Statement on the Precautionary Principle in place of the current risk assessment method of determining the exposure level for the general public?

20) Until and unless the precautionary principle is implemented as intended, would Health Canada and Industry Canada amend their public statements so as to eliminate the possibility of confusing the public about the fact that they are employing risk management, not the precautionary principle?

21) Have Industry Canada and Health Canada changed the label of their risk assessment approach (which emphasizes cost) to the "Precautionary Principle" (which emphasizes safety) in an attempt to co-opt the positive public opinion of the Precautionary Principle without having to change the focus of their approach?

22) Why does Health Canada hold, as stated by Dr. McNamee, that the danger associated with RF must be proven before action is taken, rather than taking the stance, recommended by the Wingspread Conference and Environment Canada, of making the proponent of the product (eg. the telecommunication industry) prove that RF exposure is safe? If it is not possible to prove its safety, as Dr. McNamee states, then how does Health Canada justify

imposing a potentially unsafe product on the Canadian public?

23) How does Health Canada recommend utilizing its avoidance approach by those living next to or under transmission towers 24 hours a day for years on end?

24) Why is it Health Canada's policy that, contrary to the industry standard whereby a new product must be shown to be safe before it is introduced to the public, in the case of cell phones and FM transmitters, they are first introduced to the public and then it becomes the public's obligation to prove them to be unsafe?

25) If Health Canada applied the Precautionary Principle as Environment Canada defines it, new technology would be withheld from public use until it is demonstrated to be safe.

Since to Health Canada the Precautionary Principle is really a synonym for industry's Risk Assessment, are there any tests that new technology must undergo before it is approved for public use?

V. HEALTH IMPLICATIONS

A. Electromagnetic Sensitivity

1. Recent studies in many countries have indicated that more and more people are suffering from electromagnetic sensitivity. The symptoms are varied and severity ranges from mild to debilitating. Sweden now recognizes this as a disability and more people are going on disability pensions each year.

Sweden, Austria, Germany, United States, Switzerland, England and Ireland participated in studies which indicate an increase in the number of people affected which corresponds to the increase in exposure, through more technological development and wider use of transmitters, such as cell phone towers.

As reported in the journal "Electromagnetic Biology and Medicine", 25:189-191, 2006: 190 **Hallberg and Oberfeld** Table 1 Estimated prevalence of electrosensitive people in different years and countries Measured % EI year sensitive Country, reported year Ref. No.:

1985 0.06 Sweden 1991 (0.025–0.125%) National Encyclopedia Sw., 1991
 1994 0.63 Sweden 1995 Anonymous est., 1994
 1995 1.50 Austria 1995 Leitgeb N. et al., 1995, 2005
 1996 1.50 Sweden 1998 SNBHW, Env. report, 1998
 1997 2.00 Austria 1998 Leitgeb N. et al., 1998, 2005
 1997 1.50 Sweden 1999 Hillert L. et al., 2002
 1998 3.20 California 2002 Levallois P., 2002
 1999 3.10 Sweden 2001 SValberg PANBHW, Env. report, 2001
 2000 3.20 Sweden 2003 Sw Labour Union Sif, 2003
 2001 6.00 Germany 2002 Schroeder E., 2002

2002 13.30 Austria 2003 (7.6–19%) Spiß B., 2003
 2003 8.00 Germany 2003 Infas, 2003
 2003 9.00 Sweden 2004 Elöverkänsligas Riksförbund, 2005
 2003 5.00 Schweiz 2005 Bern, Medicine Social, 2005
 2003 5.00 Ireland 2005 This is London, 2005
 2004 11.00 England 2004 Fox E., 2004
 2004 9.00 Germany 2005 Infas, 2004
 2017 50.00 Extrapolated to 50%

3. EHS - which can be very debilitating - is thought to result from large changes in the immune system caused by continuing exposure to microwave radiation, leading to chronic inflammation and allergic responses. Estimates of EHS vary from 3% to 10% of the population in the UK and other European countries. (The London Resolution, Dec. 3, 2007)

Canada did not have the technology and number of cell phones as Europe for some time, but it is logical to assume that Canada's exposure is growing at the same rate, and the health complaints are, too.

QUESTION:

Without acknowledging that there is evidence of health effects in humans exposed to non-thermal RF, and with the awareness that Health Canada has publicly subscribed to the risk assessment/management approach that balances harm against cost:

26) What research has Health Canada done to determine the current and future costs to our health system from the effects of EMR?

27) What level of harm will prompt Health Canada to revise its Safety Code 6 guideline to a lower biologically based but, perhaps, more costly level? Please give examples.

B. Consequences of Long-term exposure to FM and cell transmitters

1. Dr. Louis Slevin, editor of the authoritative Microwave News, upon learning that we lived within 100 meters of 3 FM transmitters, warned us that “cell phone transmitters are very dangerous, but FM transmitters can kill you.” (in a telephone conversation on June 18, 2008).

2. There are, and were in 2000, many studies **specific to FM transmitters**, concluding that prolonged exposure to radiation from these powerful antennae lead to various types of cancer including childhood leukemia. Examples are:

Chiang et al. found that people who lived and worked near radio antennae and radar installations showed deficits in psychological and short-term memory tests [Health effects of environmental electromagnetic fields. Journal of Bioelectricity 8:127-131, 1989].

Dolk H, Shaddick G, Walls P, Grundy C, Thakrar B, Kleinschmidt I, Elliott P. Department of Public Health and Policy, London School of Hygiene and Tropical Medicine, England. PMID: 8982016 [PubMed - indexed for MEDLINE] Am J Epidemiol. 1997 Jan 1;145(1):1-9

Melanoma Incidence and Frequency Modulation (FM) Broadcasting

Ref 3. Hallberg Ö, Johansson O. Melanoma incidence and frequency modulation (FM) broadcasting. *Arch Environ Health* (2002); 57: 32-40

...**Magras & Xenos (1997)** have reported irreversible sterility in mice after 5 generations of exposure to 0.168 to 1.053 microwatts per square centimeter in an "antenna park." Note that the current, applicable US exposure standard would be 579 microwatts per square centimeter, -- 500 times higher! -- and that this very low exposure level would relate more to a person living near a Cellular Tower, than a phone user. (<http://www.wave-guide.org/library/cellphones.html>)

Dr Vini Gautam Khurana is a Mayo Clinic-trained neurosurgeon with an advanced neurosurgery Fellowship in cerebral vascular and tumour microsurgery. He has established that long term exposure and its effects on the body, particularly its electrical organ, the brain, are compounded by numerous other simultaneous long-term exposures including continuous waves from radio and TV transmitter towers, cordless phone base stations, power lines, and wireless/WiFi computing devices. (www.brain-surgery.net.au)

3. According to Report, University of Washington, by Henry Lai, Sept. 2004

“when considering the health effect of radiation from wireless transmitters, one has to consider the effect of long-term exposure. People who live, attend school, or work close to transmitters are constantly being exposed to the radiation for months or years. Even though the level is low, it would matter if the effects of radiofrequency radiation turn out to be cumulative (eg. add up over time). Small doses cumulate over a long period of time will eventually lead to harmful effects. Therefore, exposure of the general public to radiofrequency radiation from wireless transmitters should be limited to a minimal level.” (www.Salzburg.gv.at/henrylailetterspt132004.PDF)

QUESTION:

28) If Health Canada continuously monitors all relevant scientific information, as they profess, how can it justify having allowed the corporations to install these dangerous transmitters among my neighbours on Triangle Mountain?

C. Consequences of Proximity to FM and cell transmitters

1. Many studies demonstrate that living near (within 300 meters of a base station) is

dangerous:

a) A German study found a threefold higher frequency of cancer among people living in the vicinity (400 m) of a GSM base station compared to people living further away from the antenna. The risk for mammary cancer was 3,4 times greater and the average age of contracting this disease was considerably lower, 50,8 years than in the control group (69,9 years). The frequency increased also the longer people had been exposed to the radiation. The study covered a ten year long period (1994-2004), starting the year after the installation of the base station. Before the installation of the base station, there was no difference in cancer incidence between people living in the vicinity of the (future) base station and the control area.

Excerpt:

"The result is a quite concrete epidemiological proof of a connexion between exposition to radiation from GSM Base stations and Cancer. This result is, considering the available documentation about the effect of high frequency electromagnetic radiation not only plausible but probable."

Source (in German): Horst Eger, Klaus Uwe Hagen, Birgitt Lucas, Peter Vogel, Helmut Voit, Einfluss der räumlichen Nähe von Mobilfunksendeanlagen auf die Krebsinzidenz. *Umwelt-Medizin-Gesellschaft* | 17 | 4/2004

b) New Austrian research confirms health effects of base station radiation.

Despite exposure to radiation far below recommended levels (max. 4.1 mW/m²), effects on wellbeing and performance on cognitive tests was observed in a study of 365 subjects living within 20-600 metres from Mobile Phone Base stations.

Source: Hutter HP, Moshammer H, Wallner P, Kundi M. Subjective symptoms, sleeping problems, and cognitive performance in subjects living near mobile phone base stations. *Occup Environ Med.* 2006 May;63(5):307-13.

c) Studies "on symptoms experienced by people living in vicinity of base stations shows that, in view of radioprotection, ***minimal distance of people from cellular phone base stations should not be < 300 m.***" Physicians and Scientists for Responsible Application of Science and Technology, June 15,2008

d) Clark, M.L. et al, "Biomonitoring of Estrogen and melatonin metabolites among women residing near radio and television radio broadcasting transmitters" concluded that RF and temporally stable 60 Hz exposures were associated with increased E1G excretion among post-menopausal women. *J. Occup. Environ. Med.* 2007;49: 1149-1156.

QUESTION:

29) Given than many people living in proximity to these are suffering serious diseases which are consistent with those attributable to chronic exposure to radiation from FM transmitters, what will Health Canada do to

enforce removal of these transmitters to non-residential areas?

30) Given that these FM transmitters are in close proximity to and directed toward schools, and given that children are more susceptible to radiation danger, how will Health Canada and Industry Canada respond to concern from parents about their children's health?

C. Antenna Farms

1. "In releasing Professor Dobell's review, Minister Rock acknowledged the Mayor, City Council and citizens of Colwood as having helped inspire the National Antenna Consultation, announced in October 2002. The National Antenna Tower Policy Review will give all Canadians the opportunity to shape the Department's tower siting procedures to ensure they keep pace with an evolving technological and consumer environment to best meet citizens' concerns." (Industry Canada's Minister Releases Third Party Review of Triangle Mountain Antenna Towers Siting Process, Feb. 6, 2003.)

2. In its circular CPC-2-0-03 effective Jan. 1, 2008, Industry Canada in section 3 states:

"Before building a new antenna-supporting structure, Industry Canada requires that proponents first explore the following options:

1) consider sharing an existing antenna system, modifying or replacing a structure if necessary;

2) locate, analyze and attempt to use any feasible existing infrastructure such as rooftops, water towers, etc."

3. In layman's term, such arrangements are called 'antennae farms', where multiple transmitters are grouped on one towers. When I asked why this was being encouraged, I was told by Jim Laursen, a local IC official, that people didn't object to transmitters but they do object to towers.

Industry itself admits, as stated in the Canadian Association of Broadcasters' submission, Oct. 17, 2003, "electromagnetic field levels in excess of HC's limits may be produced on the site if additional facilities are added."

Even the industry-weighted World Health Organization (WHO) states, "Situations where simultaneous exposure can occur to multiply frequency fields must be accounted for in the standard." [source](#)

4. Narda, the leading manufacturer of equipment to measure all aspects of EMR, used by Industry Canada in its field surveys, states that today's multi-emitter transmission sites present difficulties for "accurate RF emissions measurements. Multiple emitters dramatically complicate the measurement process, and it is quite easy to make measurements that appear accurate but are, in fact, quite the opposite...The fact that data gathering must be conducted in the field at sites where there are other transmitting systems besides the one to be measured compounds measurement difficulties. The emitters may also operate at different frequencies, invoking more than one level of

acceptable exposure as defined by today's frequency-dependent standards....

The antennas for these systems are usually located within a stone's throw of each other. Without the ability to discriminate among signals, it is almost impossible to determine the radiation level of a specific emitter. In addition, diode detectors that have often been used for electric and magnetic field measurements in the broadcast industry have characteristics that make their accuracy questionable in these applications." (*Narda East Product Brochure*)

(Please note: Even with improper equipment and giving no consideration for compounding effects of multiple transmitters, the measurements taken by Industry Canada in my neighbourhood in 2001 were as high as 115 microwatts per square centimeter, or up to 685 times higher than those used in the Magras & Xenos study (see page. 17). And since 2001, many more antennae have been added within 300 meters, with plans for more. Canada's Safety Code 6 allows 200 microwatts per square centimeter for the general public.)

5. In the Canadian Association of Broadcasters submission to Industry Canada as part of the Antenna Policy Review, Oct. 17, 2003, the broadcasters state one of the key licensing conditions imposed by IC is that all RF installations must meet the requirements of HC with respect to non-ionizing RF fields, as set out in SC 6. Engineering submissions supporting applications for new or modified facilities (eg. antenna farms) must include a technical analysis demonstrating that the facilities will not exceed the levels of SC 6. This is done by making "theoretical signal-level calculations."

In the same submission, the broadcasters state that "although the effective radiated power from FM/TV/DAB broadcasting installations can often be quite high, tall antenna towers are generally used. This automatically ensures that high-energy zones are located well above the ground.

In all of my research I have been unable to find even one long-term study of the effects of these antenna farms on nearby residents.

QUESTION:

It is uncontested that when wireless electronic equipment is added in an already existing EMR zone that the result is a compounding of emissions.

In light of the recent study **BY Dr. Khurana** regarding the impact of the compounding effects of multi-product use, without acknowledging that the evidence of documented health effects in animals or humans exposed to non-thermal levels of radiation is conclusive, and in the interest of protecting Health Canada from a future charge of failing in its fiduciary responsibility to protect the health of its citizens, and in mitigating somewhat the possibility of the telecommunications industry from being held liable for injuries caused by EMR:

31) Will Health Canada advocate/support the placing of warning signs within 200 meters of the transmitter sites with the wording?

WARNING! YOU ARE ENTERING AN AREA OF HIGH ELECTROMAGNETIC RADIATION EMISSIONS. USE OF WIRELESS EQUIPMENT, INCLUDING CELL PHONES, WITHIN A RADIUS OF 200 METERS OF THESE TRANSMITTERS IS TO BE AVOIDED.

32) Who is responsible for establishing the parameters for technical analyses associated with multiple transmitters?

33) Do these "theoretical calculations" take into consideration the fundamental properties of EM fields, namely reflection and compounding?

34) How does Ind. Can. ensure that the allowable limits for maximum values are never exceeded?

35) With the knowledge that "the effective radiated power from FM/TV/DAB broadcasting installations can often be quite high", why has Health Canada allowed, and continues to allow, installations of these transmitters near homes and schools which are at or near the same elevation of the transmitters? Please justify this practice.

36) Why is Industry Canada taking the approach of requiring the placement of multiple transmitters on towers? Is it, as I have been told by Mr. Jim Laursen of Industry Canada, because people see the towers and complain; they don't see the transmitters and don't complain?

37) Upon what scientific evidence does Health Canada base its decision to force proliferation of these antenna farms near residences and schools?

38) Under the new siting policy, CPC-2-0-03, no consultation is required for placement of new transmitters, only for new towers. Why was this presented to the public as an effort for more consultation between Ind. Can. and the public when it really was intended to allow the creation of antenna farms with no consultation with or input by the public?

D. OUR SITUATION

1. In the study entitled "Biomonitoring of Estrogen and melatonin metabolites among women residing near radio and television radio broadcasting transmitters" M.L. Clark, et al, concluded that RF and temporally stable 60 Hz exposures were associated with increased E1G excretion among post-menopausal women. J. Occup. Environ. Med. 2007;49: 1149-1156.

The study took place at Lookout Mountain, Colorado, where people live with multiple FM and TV antennae. Results of the long-term study showed that long-term exposure to RF results in increases in estrogen in post-menopausal women and reduction in melatonin production, both of which have been shown to be related to cancer.

It should be pointed out that the closest house to the transmitters was 900 meters away and the scientists conducting the study considered, for their purposes, a high exposure level to be anything greater than 4 microwatts per centimeter squared.

2. However, I and my neighbours who live on top of Triangle Mountain live at nearly the same elevation as the FM and cell transmitters, and some live as close as 30 meters from them. Even with inadequate testing methods, which I will detail in the following section, the exposure level in the Triangle Mountain study was as high as 114 microwatts per centimeter squared. And today there are 10 times the number of transmitters here than there were in 2001. There are 44 transmitters of varying frequencies within 1 kilometer of my home, 55 within 2 kilometers.

And within approximately one kilometer there are two schools, an elementary school and a middle school, in direct line with the transmissions.

3. The Triangle Mountain study:

In August 2001, at the request of the City of Colwood and the residents of Triangle Mountain, two experts from Industry Canada spent 2 days at 10 different locations, measuring emission levels, in an effort to provide reassurance that health was not endangered by 3 FM transmitters and 2 Studio Link Transmitters (STLs) that were installed in 2000.

According to Safety Code 6,6.1: “the objective of a survey is to determine whether the device or installation complies with recommended standards of performance and personnel exposure....”

a) SC 6, 6.1f says that equipment shall match the source and the exposure levels in the near- and far-field.

According to the report written by Angela Choi, the spectrum analyzer was used merely to find the FM emissions, not to measure them. Instead, an electronic survey meter and a Narda field probe were used. According to an independent expert with whom I consulted, this means that not all RF emissions were measured from the STLs or other nearby transmitters.

In addition, according to Narda specifications, the Narda field probe that was used is “very suitable for Occupational Exposure levels and partially suitable for General Public Levels.”

Conclusion:

The correct equipment for the situation was not used.

b) SC 6, 6.2a says that records shall be kept for all RF survey measurements, including calibration date, and, SC 6, 6.1f says that survey instruments shall be fully calibrated at least every 3 years.

No calibration data was provided with the report and when, in Oct. 2007, Ms. Choi of Industry Canada, who performed the tests, was asked for the data, she said it had not

been kept. But she replied that some of equipment had last been calibrated on March 19, 1998, or 3 ½ years before the test.

Inconsistencies in the results were noted in the report and readings could not be duplicated, a clear indication that the equipment was not performing properly.

Conclusion:

Industry Canada's protocol regarding equipment and record keeping was not followed.

c) SC 6.2.2.1a requires that testing be done using a time averaging over a period of .1 hour (6 minutes).

Industry Canada reported that a 30 second averaging method was used.

Conclusion:

Industry Canada's protocol regarding time averaging was not followed.

d) Narda, the equipment manufacturer, states that the antenna should be at head level (1.5-1.75 meters) and should be placed on a non-conducting tripod connected to a basic unit via cable. This ensures that the field being measured is not influenced by the unit or the tester.

The Industry Canada report describes how the probe was moved slowly up and down as the surveyor held it and walked back and forth. "The probe was held high over his head, pointing the probe away from the body." Variable readings were explained by the movement of nearby people.

Conclusion:

Neither manufacturer nor Industry Canada's instructions for testing were followed.

e) SC 6.2.4.3 states that if measured strengths are as high as 20% of limits, induced and contact current measurements should be taken.

No such measurements were taken even though readings were reported to be as high as 54.5% .

Conclusion:

Industry Canada's protocol was not followed.

Even using improper equipment and incorrect protocol, the highest reported reading was 20.3 V/m or 109 uW/cm². (When the calculations were checked for accuracy, the highest reading actually was 20.7 W/m or 114 uW/cm² outdoors and 75 uW/cm² indoors.)

To put this into perspective, the precautionary maximum set by the BioInitiative Report is .1 uW/cm² outdoors and .01uW/cm² indoors, 7500 times lower than the results from the measurements done in 2001 inside a home where people live,

exposed, for 24 hours a day.

4. It should come as no surprise, then, that there are many people on my street suffering severe diseases: sleep disorders, memory reduction, loss of concentration, multiple miscarriages, skin rashes, multiple cataracts, prostate cancers, breast cancers -- all within one city block of the FM transmitters.

Whenever I have written to Health Canada or to Industry Canada informing them about our problems, I've been told the emissions are within Safety Code 6 levels for the general public. Therefore 1) there is nothing I can do; 2) there is no proof of a connection between the illnesses and electromagnetic radiation from the transmitters.

5. 21:08 06.08.2006 "microwave radiation can...functionally interfere with the natural processes involved in DNA replication and repair, by subtly altering molecular conformation (architecture), for example; this could well account, respectively, for the reports of chromosome aberrations / micronuclei formation and for the increased amount of DNA fragmentation observed under irradiation."

Source: How Exposure to GSM & TETRA Base-station Radiation can Adversely Affect Humans. By Dr Gerard Hyland.

QUESTION:

39) Please define "general public" as the term is used in Safety Code 6.

40) If, as according to ICNIRP, levels allowed by Safety Code 6 apply to short-term acute exposure, why are there no biologically (health)-based standards which apply to chronic, long-term exposures for people who are living with the transmitters 24 hours a day, 365 days a year?

41) Would Industry Canada provide the power level of each of the 55 transmitters within 2 kilometers of my home?

42) Does Industry Canada have a limit to the number of transmitters that will be added within this radius?

43) Would Health Canada commit to having an independent epidemiological study done to determine the health status of people on Triangle Mountain?

44) Would Health Canada commit to an immediate and independent investigation into the dangers posed by antenna farms and, should these show harm, would it commit to establishing biologically (health)-based exposure standards?

45) Considering the improper procedures and equipment used in the 2001 testing for EMR on Triangle Mountain, why should the residents of Colwood have any confidence in Health Canada's and Industry Canada's assurances that they are safe since the actions of their employees left them in no position to offer

an opinion?

46) Given the lack of concern for the public demonstrated by their employees at every level, why should the citizens of Canada have confidence in anything Health Canada or Industry Canada says or does?