

Robinson, Gwen

From: Neill, Susan
Sent: September 13, 2005 9:02 AM
To: Jaczek, Dr. Helena
Cc: Walsh, Corinne; Grylls, Stephanie
Subject: FW: Health Canada correspondence

Importance: High

Attachments: HEALTH CANADA 061005.doc; Sue1.doc; Health Canada Letter sent to Ministers of Health.doc



HEALTH CANADA Sue1.doc (45 KB) Health Canada
061005.doc (108 ... Letter sent to M...

JB

As per direction from the Deputy Regional Clerk, this e-mail is being forwarded you for your information. Ms. Fusco has been advised that her communication was received too late for circulation at the Committee meeting.

Thank you,

Susan Neill
Committee Coordinator
Regional Clerk's Office
905-830-4444 Ext. 1305
susan.neill@york.ca

-----Original Message-----

From: Sue Fusco [mailto:suefusco@rogers.com]
Sent: Thursday, September 08, 2005 1:29 PM
To: Regional Clerk
Cc: Scarpitti, Frank; Payne, Mark; Grylls, Stephanie; Health Webmaster
Subject: Fw: Health Canada correspondence
Importance: High

Mr Kelly,

I have attached three documents that I would request you forward to the members of the Health and Emergency Medical Services Committee listed below. I understand from the Region of York website that this committee is meeting today at 2:00 p.m.

Health and Emergency Medical Services Committee
Regional Councillor Joyce Frustaglio (Chair)
Regional Councillor Brenda Hogg (Vice-Chair)
Mayor Robert Grossi
Regional Councillor Jack Heath
Regional Councillor Linda D. Jackson
Regional Councillor A.J. (Tony) Van Bynen
Regional Chair Bill Fisch (ex officio)

Please confirm that these are received as it relates to the communications

item # 7 from the Office of the Minister of Health in Ottawa regarding electromagnetic fields.

The attachments are three letters written to Health Canada from the STOP Committee in Markham, Lisa Amyotte in Edmonton, Alberta and TRAHVOL a community Group in BC, all sharing the same concerns on the matter of EMF and the governments standards being inadequate to protect public health.

Please also advise these Regional representatives that STOP was recently contacted and provided an opportunity to arrange a meeting with Health Canada for STOP members and Dr. Magda Havas to meet and present recent medical research. Their contact appeared to be open to looking at this matter openly however the communications # 7 on the agenda today reflects a different position with regards to their policy on EMF.

On a final note I would like to add that Health Effects related to electrical and magnetic pollution exist in occupational, agricultural, residential and recreational settings in Ontario and the world.

Public health Authorities in our Province have not implemented monitoring or educational programs for EMF to inform the public of the health hazards of EMF exposure beyond what is considered typical. As government policy makers procrastinate to acquire conclusive proof they abandon the precautionary principle which calls for action and ignores citizens concerns. The onus has heavily relied on the public to inform authorities of the international precedents and reduced EMF readings as new standards are set around the world with the same scientific data available to Canada.

Citizen groups continue to appeal to Municipalities to adopt planning bylaws that offer property owners more opportunity to comment where provincial projects affect adjacent land use. Implementation of EMF by-laws are also recommended and enforceable until nationwide standards for EMF exposure are developed

With regards to protecting rights of children and carcinogenic exposures to electrical pollution including electromagnetic fields the health authorities have provided no co-ordination or intervention to protect them from these dangers at home or school. Requests for this have been made with the York Region Medical officer of Health for St. Monica School for the existing internal readings to be evaluated in light of the leukemia case reported.

I thank you in advance for your co-operation so that my comments and these submissions can be seen by the appropriate parties.

Regards,

Sue Fusco
S.T.O.P. Committee

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TSAWWASSEN RESIDENTS AGAINST HIGHER VOLTAGE OVERHEAD LINES

C/O 1558 -53A St
Delta, BC, V4M3G2

June 15, 2005

Attention Honourable Minister of Health Ujjal Dosanjh

Dear Minister,

We am writing this request on behalf of the "Tsawwassen Residents Against High Voltage Overhead Lines" (TRAHVOL). Our organization is a community based group, and we regularly have 250 or more people to our meetings. The Honourable Val Roddick, MLA for Delta South, has attended many of our meetings. Two of our members have already contacted Health Canada with their health concerns that BC Transmission Corporation is increasing EMF in a residential area that already has over 10 times the normal Canadian EMF levels.

The British Columbia Transmission Corporation (BCTC) is planning to completely replace a 138kV / 50MW high voltage transmission line with a 230kV / 1200MW line to provide power to Vancouver Island. It is a part of a major (approx. \$600 million) project to increase the electrical energy capacity and reliability to Vancouver Island. They plan to use their existing right of way of which 4 km passes through a densely populated area in Tsawwassen, over the back yards of about 140 residents (<25 feet from their houses), over the South Delta Secondary School property, a daycare, extended health care facility and several parks. BCTC advised the community that the proposed new transmission line will radiate 150 mG into these yards, the school property and Dennison Park BCTC told a community information meeting on May 31, 2005: *"They would abide by all Canadian rules and regulations, but at this time are permitted to continuously expose residents and pupils up to 830 mG of EMF."* Health Canada was used as the references that this level was safe.

BCTC totally disregards any research that indicates there could be a statistically significant link between childhood leukemia for long term exposure as low as 4 mG, or for miscarriages, breast cancer or brain cancer at the higher levels of exposure such as those in Tsawwassen residences and the school property. They claim that the BC Utilities Commission has never used EMF as a requirement for high voltage transmission lines as long as the FPTRPC and Health Canada requirements were met. **TRAHVOL finds it incredible that all this high quality research can be simply disregarded by BCTC, BCUC, FPTRPC and Health Canada simply because the scientific community has not yet identified the mechanism of how EMF increases the health risks in spite of a 95% confidence level of the relationship.**

The primary concern of TRAVHOL is that the existing line normally radiates an EMF of 50 mg, peaking at over 100 mG measured in Tsawwassen resident's homes and higher onto private property in their back yards. The existing line also radiates up to 120 mG into the South Delta High School property and Dennison Park. The new line will radiate 150 mG. **TRAVHOL and BCTC agree there are alternate viable routes available for the transmission line, but BCTC indicates it will only consider the higher cost alternatives if the community pays the added cost (in the range of \$14 million). They threaten that if we resist their proposal, we will possibly be sorry at the alternative finally installed.**

There are a number of standards used internationally for the radiation of EMF from transmission lines in public and residential areas. The most common is the ICNIRP Guideline developed in 1992 which for *"general public exposure to time-varying magnetic fields is 830 mG."* This standard is used by the FPTRPC Canada and subsequently accepted by Health Canada. We can understand FPTRPC Canada accepting this standard, because these levels of radiation are required for individuals to be **instantaneously affected** by the radiation. However, in health research, there is valid evidence that **extended exposure** to EMF levels as low as 4 mG can double the frequency of child hood leukemia and at 18 mG can affect miscarriages, so I have difficulty understanding why Health Canada accepts this standard.

We find it incredible that Health Canada, who are so careful on food and drug regulations, would accept the ICNIRP Guideline (1) as their standard when the guideline itself initially stated *"only established effects were used as the basis for the proposed exposure restrictions. Induction of cancer from long-term EMF exposure was not considered to be established, and so these guidelines are based on short-term, immediate health effects such as stimulation of peripheral nerves and muscles, shocks and burns caused touching conducting objects, and elevated tissue temperatures resulting from the absorption of energy during exposure to EMF."* This was later revised to read *"However, in the case of potential long-term effects of exposure, such as the increased risk of cancer, ICNIRP concluded that available data are insufficient to provide a basis for setting exposure restrictions, although epidemiological research has provided suggestive, but unconvincing, evidence of an association between possible carcinogenic effects and exposure at levels of 50/60 Hz magnetic flux densities substantially lower than those recognized in these guidelines"*.

The ICNIRP has been careful to identify the potential risk of long term exposure to low levels of EMF radiation but has not set a guideline for them. It is important to note that the ICNIRP does not deny that extended exposure could cause childhood leukemia, but simply that there was some, but not sufficient information to set a different standard. **This criteria does not sound consistent with the normal criteria Health Canada uses for protecting Canadians.**

More recent research and newer statistical reviews combining earlier studies have increased the concerns of the risk of the health effects of EMF. The National Institutes of Health publication June 2002 EMF (2), provides a good objective perspective on power line frequency EMF, with a number of reliable scientific references. In their "Reference" section, they reported that Greenland et al., 2000 did a review of the combined statistical analysis of 12 earlier studies, of which some were individually inconclusive and found evidence at a 95% confidence level that **3 mG or more exposure could almost double the incidence of childhood leukemia.** The Ahlbom et al 2000 study in the United Kingdom did a statistical review of 9 earlier studies and also found at a 95% confidence level **that exposure at 4 mG or higher could double the risk of childhood leukemia.** The ICNIRP Guidelines established before this analysis, did not have the advantage of these findings.

The recent and very thorough California EMF Study included both a study by the California Department of Health Services (3) and a study of EMF in Schools (4), *"where the State requires students to attend and consequently accepts a responsibility for their safety."* The California study had the benefits of the statistical reviews of the EMF studies, and subsequently concluded that "the DHS scientists are inclined *"to believe that EMFs can cause some degree of increased risk of childhood leukemia, adult brain cancer, Lou Gehrig's disease and miscarriage."* Regulations were established for new schools to be set back 150 feet from the edge of the right of way of 220-230kv transmission lines. Only 1.5% of the school areas examined have in excess of 4mG EMF radiation.

In addition to regulations established in California, many countries and communities around the world have enacted regulations and legislation to limit EMF exposure from high-voltage power lines in residential areas, including Connecticut, Holland, Germany, Italy, Australia and Sweden to name a few.

BCTC propose to have the overhead and/or buried 230KVkv transmission lines pass through the school yard, and predict the **EMF levels will be 150 mG directly over/under the lines. They flippantly claim this is acceptable in Canada because Health Canada permits them to expose the public, including students to 830 mG.** Of course, they are only indirectly responsible for public and student safety and in the future can claim they abided by all current laws and regulations when the lines were installed.

In 2004, the World Health Organization (WHO) did a case study on ELF Electric and Magnetic Fields (5), which used conclusions drawn from the International Agency for Research on Cancer (IARC). The IARC classified magnetic fields as "possibly carcinogenic" based on the evidence for childhood leukemia. The WHO stated *"The size of risk potentially involved, i.e. of the order of 1 in 2000 lifetime risk for childhood leukemia, is unlikely to be regarded as negligible by any society."* They also stated in their Risks Evaluation *"For childhood leukemia, the epidemiological evidence suggests a relative risk of approximately 2 applying to children living in homes where the long-term average field over the general volume of the house (i.e. specifically not close to domestic appliances) is 4 mG or more."*

On June 3, 2005 the BBC and CNN reported on the findings in the UK study of children who live near transmission lines. They found an increase in leukemia in children living in homes within 200 meters of the transmission lines (In Tsawwassen the lines are within 7 meters (25') of most homes.) The Dr Draper study, just released is reported by the BBC to say *"youngsters living within 200 meters of the lines were about 70% more likely to develop leukemia."*

In conclusion, we believe the position of Health Canada is being used by the BCTC in a manner that was never intended!

In the May 17th, 2005 letter from the Executive Correspondence Directorate of Health Canada it was stated: *"There are no national guidelines in Canada regarding the exposure of the general public to EMF's from electrical installations and household appliances. Currently, there is no convincing scientific evidence nor international consensus that EMF's at levels such as those found in Canadian homes and schools, regardless of their proximity to powerlines, causes health problems such as cancer."*

This is being interpreted by the BCTC that it is acceptable in Canada to have continuous 830mG of EMF radiation in private residences, public schools, daycares, extended health care facilities and public gathering areas such as parks!

This may sound incredible, but this is the position the British Columbia Transmission Commission took with the residents of Tsawwassen in a public meeting. They stated *"that an EMF radiation of 150 mG in a public school area is only one fifth of what is allowed by Health Canada, and 50 to 100 mG being radiated into many homes is less than one eighth of what is allowed by Health Canada."*

Health Canada wrote to Bill Sharkey on April 25 stating that, "the FPTRPC position statement is a general statement that **covers most situations** encountered in everyday life." However, **BCTC is using 830 mG as the standard** and is using it to bully through a project that will create 150 mG EMF levels on private land and school areas where they do not have underground rights for the right of way!

We are sure that the Canadian Government, Health Canada and FPTRPC need to be cautious about their stance on the EMF levels that could cause health problems. Today electrical energy is essential to our life style and transmission lines owned and operated by the government are everywhere. **While there is no need to create a panic on existing lines, it is essential that regulations and guidelines be established immediately requiring transmission companies to route new lines to minimize the effect on residences, schools and public gathering areas.**

In conclusion, what are we asking for:

The BCTC is attempting to replace a 50MW transmission line with completely new 1200MW high voltage transmission lines on existing right of way through 4 km of

densely populated residential area and directly over school property and public parks. The line has a 60 year life expectancy. Alternate viable routes are available, some of which BCTC already has a right of way for and the capital cost is viable but higher.

We believe that current EMF levels of 50 -100 mG in residences along the transmission line, and an estimated future 150 mG EMF levels in the backyards, school yard and public parks exceeds "*most situations encountered in everyday life*" and warrants application of both "Prudent Avoidance" and "Precautionary Principles."

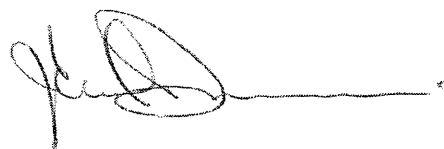
While the evidence that extended exposure of 4 mG or more EMF may not be conclusive to Health Canada, the body of evidence is sufficient to warrant advising BCTC and the British Columbia Ministry of Health Services that the 830 mG standard was not intended to provide a standard for long term, 7x24 exposure in residences, schools, daycares, extended health care facilities or public parks along a right of way. Also that exposures of the level forecast by BCTC are considered a potential risk to health. We request Health Canada specifically recommend to the BCTC and the BC Utilities Commission that the WHO Precautionary Procedure for this new line be applied: i.e. "***Changes to planning procedures to reduce exposure from high voltage transmission overhead lines (this includes changes to procedures for assessing the need for and siting of new lines, and changes to planning regimes that affect homes and schools already situated or proposed near existing power lines.***" and that the new facilities should be installed in one of the alternate routes that avoids the residences, school, daycare, extended health care facility and parks.

We do not believe this statement would interfere with the authority of BCTC or the BCUC because BCTC is already using the 830 mG limit as a standard adopted by Health Canada and indicated in a public meeting where our MLA was present that they would meet requirements of Health Canada.

TSAWWASSEN RESIDENTS AGAINST HIGHER VOLTAGE OVERHEAD LINES



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Honourable John Cummins, Member of Parliament, Delta
Premier Gordon Campbell

Honourable Richard Neufeld, Minister of Energy and Mines
Honourable Bill Barisoff, Minister of Water, Lands and Air Protection
Honourable George Abbott, Minister of Sustainable Resource Management
Honourable Shirley Bond, Minister of Health
Honourable Valerie Roddick, MLA Delta South
Mayor Jackson and Council, Corporation of Delta
Derek Griffin, BC Environmental Assessment office

REFERENCES

- 1 Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic and Electromagnetic Fields (up to 300GHz) International Commission on Non-Ionizing Radiation Protection, Health Physics, April 1998, Vol 74, Number 4
- 2 EMF Electric and Magnetic Fields Associated with the Use of Electric Power, June 2002, National Institute of Environmental Health Sciences, National Institutes of Health
- 3 California EMF Risk Evaluation June 2002, California Public Utilities Commission and California Department of Health Sciences
- 4 Electric and Magnetic Fields in California Public Schools, California Electric and Magnetic Fields Program, California Department of Health Services and Public Health Institute, April 2001
- 5 Framework to Develop Precautionary Measures in areas of Scientific Uncertainty, The WHO EMF Project Radiation and Environmental Health Unit, World Health Organization, October 2004

I am writing to express my concern about the lack of regulations/precautionary policy concerning electric magnetic fields (EMFs) and the public health of Canadians.

The conclusion that you put forth that "There is insufficient data to determine whether or not a cause and effect relationship exists" is misleading.

I am aware of several Canadian and International studies that suggest potential health effects from exposure to EMFs and yet I am not aware of any Canadian policy or guidelines that deal with this issue.

Four international organizations agree that magnetic fields are possible carcinogens:

- US National Institute for Environmental Health Sciences
- The World Health Organization @ 3-4mG see website at www.who.int
- The UK National Radiological Protection Board Advisory Group on Non-Ionizing Radiation (NRPB)-AGNIR @ 4mG
- The California Health Department EMF report - suggestive evidence of a 2-3mG threshold

Furthermore, the authors of the California report conclude: "To one degree or another, all three of the Department of Health Services scientists are inclined to believe that EMF's can cause some degree of increased risk of childhood leukemia, adult brain cancer, Lou Gehrig's Disease, and miscarriage."

Therefore, it is simply unacceptable to summarize the conclusions of international bodies that the evidence for the carcinogenicity of EMF is "insufficient". That is not the term used by the IARC Working Group (i.e. WHO). EMF has been placed in category 2B, i.e. classified as a possible human carcinogen. This is entirely on the basis of the human evidence, classified as limited, not insufficient. Limited evidence is defined by IARC as "A positive association has been observed between exposure to the agent, mixture or exposure circumstance and cancer for which a causal interpretation is considered by the Working Group to be credible, but chance, bias or confounding could not be ruled out with reasonable confidence."

As put forth by another scientist, "It is quite wrong to say that no link was found...the pooled analysis by Professor Anders Ahlbom et.al published in the British Journal of Cancer in 2000 ...shows a clear doubling of risk with magnetic fields exposure above 4 mG. A second independent pooled analysis by Greenland et. al published in the journal of Epidemiology in 2000 found a 1.7 fold increase in risk above 0.3uT, or 3mG. It is these pooled analyses that have led four international organizations to agree that magnetic fields are a possible carcinogen." (Henshaw, 2002)

In addition, the most recent pooled analysis by Daniel Wartenberg in Bioelectromagnetics supplement in 2001 found an increased risk at 2mG and higher. Wartenberg concludes, "many people believe that there are no data to support an association between residential magnetic field exposure and childhood leukemia. To the contrary, the data strongly and relatively consistently supports such an association."

Those who have been unwilling to accept the positive epidemiological results regarding childhood leukemia as cause for concern have cited arguments that there are no plausible biological mechanisms and no positive cellular or animal studies. This is no longer the case. There is now a plausible biological mechanism: the suppression of the hormone melatonin. "There is now a large body of evidence in people that magnetic fields as low as 2mG or lower reduce the production of the hormone melatonin in the pineal gland. Melatonin is an anti-cancer agent...the obvious conclusion is that a reduction in the production of melatonin by magnetic fields could possibly increase the risk of childhood leukemia." (Henshaw, 2002)

In addition, six independent labs have shown that magnetic fields can disrupt genetic blueprints. "Taken together these studies make the epidemiology linking EMFs to childhood leukemia more credible. These researchers may not yet understand the subtle changes that lead to genetic damage- the important thing is that magnetic fields have been repeatedly shown to cause such damage." (Microwave News – Sept/Oct. 2002)

Previously, a lack of positive animal studies to support the epidemiology evidence has cast doubt on the EMF-cancer link. This is also changing as studies are showing rats exposed to magnetic fields have increased tumor growth. The International Agency for Research on Cancer (IARC) a specialized cancer agency of the World Health Organization might have classified EMFs as low as 3-4mG as "probable" or "known" human carcinogens if they had this supporting animal data. In fact Dr Anderson of IARC said, "It would have been nice to have these results during the IARC deliberations". (Microwave News July/August 2002)

Further to this debate I am aware of two groups of Canadian citizens that are concerned about potential health effects that EMFs from power lines may have on their families and communities. I faced a similar dilemma in 2002.

I became interested in the health effects of electromagnetic fields when the location of my children's new school was announced. The proposed school and playing fields would be in close proximity to two sets of 240Kv high voltage transmission power lines.

As a small group of concerned parents we advocated for the precautionary principle.

After several months of advocacy, we managed to score a "temporary" victory to change the location of the school site as the attached news story shows.

To support our position on the precautionary principle we contacted several prominent scientists/researchers in the field from Canada, the United States, Germany and the United Kingdom. Their letters and testimony now form part of the public record at the City of Edmonton, City Hall.

The following excerpts clearly outline the need for a prudent public policy:

- "My personal opinion is if alternate sites are available...it is prudent to avoid the magnetic field exposures and any possibility or perception of increased risk. This is the Precautionary Principle." E-mail to concerned parents by Dr. Daniel Wartenberg
- "Basically, new buildings, especially schools, should not be built anywhere near high voltage powerlines. Ideally power companies should be encouraged to bury their lines, thereby eliminating altogether any electric field effects and considerably reducing the effects of magnetic fields." Professor Denis L Henshaw, Bristol University, UK

- “ I therefore urge you to take every step possible to ensure that school construction is not close to power lines. I have to point out that although I understand that the School Board has spent considerable sums on the proposed site, these sums will pale into insignificance compared to the Legal Liability that will accrue to the City, its officers and Councillors, if construction of the school with the exposure levels already documented proceeds. Inevitably, with time, children will be diagnosed with childhood leukaemia in the new school. It will be impossible to defend a claim for damages, if in spite of the warnings received; you authorize construction of the school at the proposed site. I trust that wiser councils will prevail at your meeting.” Dr. Anthony Miller, Professor Emeritus, University of Toronto, December 3, 2002 letter to City of Edmonton
- “ Further, there is evidence from our occupational studies, that intermittent exposure to higher fields, as will occur as children move into and out of the higher field areas, may be particularly hazardous. In addition, our research in Toronto identified a particularly increased risk for younger children, under age 6, and I understand many children at the school will be of this age.

I wish to comment on the term prudent avoidance, which appears to be being used by some of your advisors. This does not mean that one takes action for the public good only on the basis of risks that are established without doubt. Prudence requires that the likelihood of increased, but avoidable risk is noted, and that action follows...” Finally, I wish to comment on statements that appear to have been made that the California report is riddled with biases and has not been peer-reviewed. Neither statement is true. California has been a leader in recognising the risks of environmental exposures, and Dr Raymond Neutra, whom I know, is an acknowledged leader in this field. As I previously indicated, it would be extremely rash in this litigious age for you to ignore the opinions he and many others who have reviewed the evidence have expressed.” Dr. Anthony Miller, Professor Emeritus, University of Toronto, December 6, 2002 letter to City of Edmonton

- “ I certainly would not want to gamble with the health of young children and, therefore, I would recommend a policy of prudent avoidance. If, in 10 years time, we learn that electromagnetic fields are not responsible for the increased cancers that are documented in the literature we have lost little by practicing prudent avoidance, but if we learn that these fields are indeed responsible then we have gained much by such practice.” Dr. Magda Havas, Associate Professor at Trent University, e-mail to concerned parents.
- “ Of particular concern is the report that the City of Edmonton demands that there be 100% proof that electromagnetic fields cause cancer before they will consider locating the school at another site, away from the power lines...It is rarely possible to provide 100% proof for any particular human health outcome as a function of exposure, and proof at this level of certainty does not exist here. However the evidence that magnetic fields cause leukemia in children is sufficiently strong that, in my judgment, any jurisdiction which knowingly subjects children to this hazard is irresponsible and legally liable for the outcome” (October 1, 2002, Dr. David Carpenter-Professor, Department of Environmental Health and Toxicology; Director, Institute for Health and the Environment, University at Albany, State University of New York).

In addition, to suggest that the guidelines established by the ICNIRP are adequate to protect the health of Canadians, in particular children ignores the accepted leukemia association at 3-4mG. This limit is over 250 – 333 times higher. It is my understanding that when exposure limits are set they should be lower than threshold value (by a factor generally 10 to 1000) to protect the most sensitive individuals (most notably children), in our population. Clearly these guidelines are inadequate.

The principle of environmental justice, calls for the fair treatment, and meaningful involvement of all people with respect to environmental decision-making. Fair treatment means that no group of people (this includes children) should bear a disproportionate share of adverse environmental consequences resulting from industrial or municipal operations, or the execution of federal, state and local programs and policies. (California EMF study)

In my opinion to suggest an exposure limit over 250 times higher than the level recognized as a possible carcinogen is blatantly unfair and does not reflect the principles of environmental justice.

"In conclusion, when there is such direct human epidemiological evidence that a substance causes cancer, we should focus on margins of safety, avoiding extensive statistical manipulations of data and excessive debate about potential uncertainties. Prudent public health decisions should not wait until there is proof of serious cancer risks at low exposure". (Smith et al., Science, 2002).

As concerned Canadians we are calling on the leaders and policy makers to put the EMF issue in the public domain so that an open debate can be initiated and prudent public health policies established. It would be heartening to see Canada rise to this challenge.

Sincerely

Lisa Amyotte

Edmonton Examiner-November 15,2002

>By Corinne Lutter

The city subdivision and development appeal board revoked the development permit for Archbishop Joseph MacNeil K-9 school because of its close proximity to high voltage power lines, according to an 11-page report released Friday. While the board announced it's ruling after an appeal hearing Oct. 24, the reasons behind its decision to stop construction of the new Catholic school were not disclosed until the report was released Nov. 8. The board finds that the proposed development, sited in close proximity to electrical transmission lines, would not provide a safe environment for all of the young children who might be expected to attend the school, the appeal board concluded... the board's decision is based on evidence that there is a statistical correlation between electromagnetic fields and childhood leukemia. A group of parents appealed the school's development permit, concerned that the building's Terwillegar location, 108 metres from the power lines, could put student's health at risk. They argue that electromagnetic field (EMF) emissions from power lines may increase the risk of health problems for students and staff, including childhood leukemia, brain tumors and miscarriages. Edmonton Catholic Schools plans to ask city council to rezone the school site from Urban Reserve Zone (AGU) to Urban Services Zone (US) so that construction can continue. Under the current AGU zoning, schools are a discretionary use, and subject to appeal. But under US zoning, they are a permitted use, so if council approves the rezoning, its decision can't be appealed. The school district, which has already spent \$200,000 on school construction, says there is no conclusive evidence proving the dangers of EMF emissions.

Lisa Amyotte, one of the parents who oppose development at the Terwillegar site, says she'll use the appeal board's decision to support her argument against the rezoning when it goes to city council in December. An independent body of five citizens, with no political or economic ties, had an unbiased look at the research and came to the conclusion that the potential for children to be harmed is there, and practicing prudent avoidance and taking measures to eliminate that risk for kids is important, notes Amyotte. (The school district) may get around that by rezoning the land, but that doesn't change the fact that an independent body, appointed by city council, found it to be unsafe.

Amyotte says she hopes city council won't ignore the ruling when they're asked to rezone the land. Council twice approved the AGU zoning in July and September, despite parents' concerns. There are no municipal, provincial or federal regulations for development around power lines.



S.T.O.P. (Stop Transmission lines Over People)

April 26, 2005

Minister of Health, Ujjal Dosanjh &
Minister of State (Public Health), Dr. Carolyn Bennett
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K1A 0K9
Fax: 613-952-1154

Dear Ministers,

We extend our thanks for the letters of response dated December 8th, 2004 and April 12th, 2005 offered by Mr Gordon Taylor Lee on your behalf. We appreciate his effort to communicate with us, however many of our questions posted in the fax sent by Richard Johnson on February 10th and again on April 16th remain to be answered. A further discussion by phone followed with Mr. Lee who informed us that the response being offered by Hydro One is incorrect and that the jurisdiction in dealing with the health concerns relies with our Provincial level ministries and not the federal Health Canada level. This statement has obviously added complexity to the existing situation since this means everyone has been misinformed for the past year. We request some clarification as to how this message could be relayed so late into the process and do not accept this as an adequate reply to our letter.

We are also unclear as to who handles the EMF file and how we can make a presentation to Health Canada with regards to our concerns. We feel strongly that the weight of research we have warrants that we be given an opportunity to present our case for your consideration. We hereby request to meet with you both as well as Belinda Stronach, M.P., Lui Temelkovski M.P and John Cummins, M.P. who have all expressed concerns regarding the EMF issues facing their respective constituents.

As you are aware, Stop Transmission Lines Over People (S.T.O.P) is a community based group that has opposed a Hydro One project proposing to increase the frequency, height and voltage of a transmission lines running along a 24 kilometre corridor from Markham to Newmarket, Ontario. This proposal involved upgrading an existing corridor in close proximity to homes, schools and businesses. You have informed us that the responsibility of regulating the construction of these projects falls under the provincial jurisdiction of the Ontario Energy Board. We have been told by Hydro One and other provincial authorities that Health Canada is

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responsible for determining all acceptable exposure levels for transmission lines and in the general environment.

At the present time, Hydro One has temporarily withdrawn its application to proceed with the line expansion, while the Ontario Energy Board (OEB) and the Ontario Power Authority (OPA) conduct a review of all reasonable alternatives and considerations. Our initial meetings with the OPA, V.P. Amir Shalaby and consultant Armen Kulidjian have indicated they to also do not know how the EMF concerns will be addressed. The first step in this new process is to determine what Environmental Assessment Process will be applied in moving forward and we trust that your input will be required, given the overwhelming public concerns over the potential adverse health effects posed by Electro Magnetic Fields (EMFS) and we would like to point out a few areas of concern with regards to Health Canada's official position on this issue. The Class Environmental Assessment reviewed by the Minister of Environment, Honourable. Leona Dombrowsky received 653 "bump-up" letter submissions requesting that a Full Environmental Assessment be conducted. They also documented the environmental and socio-economic concerns identified, and yet we still do not know how the public's concerns will be addressed. In fact the concerns of thousands of people have been completely dismissed and disregarded in the EA process conducted by Hydro One to date.

We are encouraged that the new Ontario Power Authority (OPA) CEO, Jan Carr has identified the York Region power supply issue as its first and most pressing priority, and as such we are hopeful that the OPA will conduct a proper and thorough integrated system planning process. This said, our concern remains, in that neither the OEB nor the OPA have a mandate to fully address the socio-economic and environmental concerns and they are uncertain how the EA process should be applied. To further complicate matters, overlapping federal and provincial jurisdiction raises questions as to how the public's concerns are going to be addressed and when we will be given an opportunity to communicate face to face with those people that are responsible for protecting our environment and most importantly, public health.

You stated in your letters of response that the issue of EMF has been a concern for Health Canada for many years and you referred to both scientific literature and research that you have actively participated in order to evaluate the possible effects of these fields. We are interested in discussing your findings and conclusions as well as recent research that forms the basis for our concern.

You may recall a few questions that Richard Johnson, one of our Committee members, recently faxed to Gordon Taylor Lee. The April 12th response to Richard's fax does not provide an answer to any of the questions posed, therefore I would like to once again forward the following questions to you:

- 1. When were Canada's national EMF standards last reviewed with respect to prolonged EMF exposure above 2 mG?**

2. Where can we find the EMF research conducted by Health Canada that you referenced in your letter?

3. Who at Health Canada is responsible for maintaining up to date knowledge of EMF research and issues and what are their contact particulars?

4. What is our federal government's current position on this issue, given the battles currently being fought in Ontario and B.C. and the recent battles in Edmonton, Newfoundland and Toronto? As I am sure you are aware, there is wide spread concern surrounding prolonged EMF exposure as a result of recent scientific research and we feel that these concerns warrant further exploration and appropriate federal legislation in support of the WHO's recommendation for "prudent avoidance of risk" with regards to EMFs.

5. When is a convenient time for Dr. Magda Havas and a small delegation to present recent research and our EMF health concerns?

It is our hope that Health Canada and crown corporations of the Government will implement guidelines designed to safeguard the public from prolonged exposures to EMF levels above 2 to 4 mG. A growing number of international jurisdictions have implemented much more stringent levels of protection according to the same research you claim is inconclusive and we would like to discuss Health Canada's research in this area.

We refer you to the following concept:

"At some point a growing body of evidence of an association between a disease and a biologically active agent raises ethical as well as scientific questions. The ethical questioning becomes more pertinent if exposure is involuntary rather than voluntary. A genuine scientific urge to resolve uncertainties over association between an imposed exposure and an incidence of disease, in a study population, cannot be allowed to obscure the fact that continued exposure takes on some aspect of human experimentation. At some point we have to decide who should have the benefit of the doubt, those who are exposed to, or those who emit, the agent in question."

(Dalton L, Social Policy and the Regulation of Electromagnetic Field Exposures, Radiation Protection in Australia (1993), Vol. 11, No.1)

Other countries, like Australia, Italy and Sweden have put policies in place in an effort to practice prudent avoidance of risk pertaining to EMF exposure. There has also been legislation passed and judicial rulings in the United States that have recognized the importance of exercising prudent avoidance of the risks associated with EMFs. Furthermore, significant studies conducted by the National Institute of Environmental Health Sciences (NIEHS) and the International Agency for Research

on Cancer (IARC) have also recommended prudent avoidance of EMF risks. Adverse cumulative health effects have been documented in public records across the country and are also available in the NRC archives right in Ottawa at the following link. Referring to a study by Jamie Bigu in 1973, interaction of electromagnetic fields and living systems with special reference to birds. LINK: <http://cat.cisti.nrc.gc.ca/search/g?SEARCH=ltr-cs-113&searchscope=1>

We would also like to direct your attention to the U.S. Department of Health, Office of Women's Health website at the following LINK: http://www.4woman.gov/napbc/catalog.wci/napbc/eti_workshop/assess_risk.html

The above noted webpage quotes:

"Ms. Banks also recommended that people take action to reduce their exposure without waiting for more conclusive evidence. She recommended the following prudent avoidance measures:

- Utility companies should be required to inform homeowners about EMF.
- All homeowners should have the EMF tested in their homes and should move beds (if indicated), step away from major appliances during their operation, and discard old clock radios and electric blankets.
- Manufacturers of electric blankets and appliances should be required to indicate the EMF levels emitted from their products.
- When new homes are constructed or when existing homes are sold, utility companies should be required to measure the EMF in the home.
- Zoning laws should require a reasonable distance separating distribution lines and substations from senior and child care centers.
- State departments of health should measure the EMF in all schools, hospitals, parks, and senior centers that are close to distribution lines and substations, and they should track the amount of electricity produced by substations and carried by lines.
- **The government should take a different approach to changing regulations that relate to health concerns. Specifically, government specialists should communicate better across agencies." (emphasis by the author of this letter)**

We had already researched the websites your staff conveniently directed us to for further information. Many of our concerns are present on those sites (WHO and ICNIRP) also, however for inexplicable reasons those sites come to the conclusion that until cause and effect has been determined there is no need to implement

prudent avoidance of risk measures. This logic has not been applied in many other instances and we wonder why the clearly apparent link between EMF exposure and a doubling of risk of childhood leukemia at 4 mG is not given significant weight. We also take exception to a number of statements in your letters that we can clearly prove to be incorrect. One example is that there are clinical studies that indicate an increase in the speed of growth of breast cancer as a result of EMF exposure and some research indicates that miscarriage can be linked with EMF exposure. Please give us the opportunity to present these findings to you for your further consideration.

Harmful effects are being experienced at far lower readings than those stated in many recommended guidelines and we simply ask why Canada would knowingly expose citizens to avoidable risks? While you claim it is extremely unlikely to exceed safe limits in normal Canadian living and office environments, the question we ask is how can Health Canada allow large segments of the public to be subjected to EMF levels that many credible studies suggest could do or have done irreparable damage to their immune systems, leaving them further vulnerable to potential health effects?

Our community has been and will be subjected to EMF levels of 7 to 10 mG and up, while typical exposures in North America are 2 mG. You will also be undoubtedly aware that the health risks commonly identified in many credible studies start in the 2 to 4 mG range. We trust that it is not Health Canada's position that it is not accountable to large segments of our population who live in close proximity to power lines, or who work in certain occupational settings, that result in their exposure to EMF levels that are well beyond "typical exposures". Given the deepening concern expressed by the public in York Region and throughout Canada, we feel that the issues we raise are worthy of action, and at the very least, they warrant further review and discussion.

Once again, we see the value in requesting an opportunity for Dr. Magda Havas to present her research and opinion. She has travelled extensively this year to present and share her findings to a number of countries around the world, including a presentation to the W.H.O. on October 25-27th, 2004 at an International Seminar and Working group in Prague. In presenting the cases of EMF hypersensitivity Dr. Havas states that Electrical Hypersensitivity:

"Is a phenomenon where individuals experience adverse health effects while using or being in the vicinity of devices emanating electric, magnetic, or electromagnetic fields (EMFs)."

"Whatever its cause, EHS is a real and sometimes a debilitating problem for the affected persons, while the level of EMF in their neighbourhood is no greater than is encountered in normal living environments. Their exposures are generally several orders of magnitude under the limits in internationally accepted standards."

There are many people feeling that this compelling research and the peak incidence of certain health problems could be the result of effects from electrification and our dependence on a highly technical modern environment coupled with exposure in the outdoor environments. This is an alarming and emerging trend that could easily be over burdening the health care system. Will we be faced with a potential cluster of future medical cases that could otherwise have been avoided? We realise that Health Canada needs to weigh its recommendations carefully; however prudent avoidance measures must be recognised as having societal benefit. How many credible research studies does Health Canada require in order to warrant precautionary steps?

Lastly, Hydro One has referred us to a January 20, 2005 position statement by the Federal Provincial Territorial Radiation Protection Committee (FPTRPC) for the general public on the Health Effects of Power Frequency (60 Hz) Electric and Magnetic Fields. We feel that this position statement is inadequate, inaccurate and does not reflect the Precautionary Principle. We have consulted with Magda Havas for her professional opinion and we are happy to share her input in the following section. According to Magda Havas,

“The Precautionary Principle is not about doing more research or following the research done elsewhere. The Precautionary Principle is about “action”. She refers to Principle 15 of the 1992 Rio Declaration on Environment and Development, which states:

“In order to protect the environment, the precautionary approach shall be widely applied by States according to their capability. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall NOT be used as a reason for POSTPONING COST-EFFECTIVE MEASURES to PREVENT environmental degradation. What Hydro One proposes is a “delay in preventing environmental degradation” and this is inconsistent with the Precautionary Principle.”

In addition, we support Magda Havas' opinion that the document from the FPTRPC also misleads by omission. The Committee states that EMFs don't "cause" (i.e. initiate) cancer at this frequency but they don't state that EMFs "promote" cancer. This is evident in "in vivo" and "in vitro" conditions. With Dr. Havas' assistance in interpreting the scientific studies we understand that both *initiation* and *promotion* are important steps for cancer invading the body. Having said this, the public has no medical screening mechanism to determine who will be at greater risk for disease. Therefore, S.T.O.P. has recognized the value in maintaining a role in raising awareness of the issues involved to minimize the risks to the general public.

Similarly, in item # 3 the FPTRPC states that epidemiological studies have not found an association between power frequency EMF exposure and adult cancers. This is false since occupational exposure involves exposure to power frequency EMFs (60 Hertz) and studies reveal increases in leukemia, brain, and breast cancer as well as miscarriages.

In this same point # 3 the FPTRPC also states that the evidence associating cancer in children with exposure to power frequency to EMF's remains inconclusive. On the contrary, the studies show an association with residential EMF exposure of children being accepted worldwide. It is also misleading since the same research has prompted legislation to be enacted and enforced to protect children in other jurisdictions around the world. The Draper study from the U.K. and the study from Yale University are recent accounts of further evidence.

We have raised concerns for the children in these communities since there is a strong and consistent association that is dose-dependent with respect to children living with residential EMF exposure being at increased risk of leukemia. Hydro One would like us to believe that our concerns are merely a perceived risk. We want you to be aware of the elementary school, St. Monica Catholic School and Daycare Facility, which will close due to concerns surrounding the elevated EMF exposures, projected. The York Catholic District School Board (YCDSB) has implemented a new prudent avoidance policy in which future school sites will not be within 200 meters of hydro corridors. While this recognizes the need for increased distances it does not account for increased EMF exposures which Hydro One holds no regard for despite the free testing provided to members of the community.

We would also like to refer to Professor Henshaw's work, which shows that particles are charged near power lines because of the electric field. Charged particles are more "sticky" and more chemically active and thus more potentially harmful when they enter the respiratory tract.

Hydro One states that there are no epidemiological studies showing adverse effects near power lines that support Henshaw's hypothesis. This is false. One outcome of Henshaw's work is an increased incidence of lung cancer and at least 4 studies show this:

- 1) A study by Armstrong et al. (1994) reported a 3-fold (statistically significant) increase risk of lung cancer among utility workers and a dose-response relationship, which suggests causation.
- 2) Savitz et al. (1997) reported a 20% to 40% increase incidence (statistically significant) of lung cancer among utility workers in the United States.
- 3) Floderus et al. 1999 reported excess lung cancers for both men and women occupational exposed to EMFs.
- 4) Finally McDowal (1986) reported a standardized mortality ratio of 215 (which is a 2-fold increase) for residential power line exposure.

Anthony Miller's 1996 occupational study that was conducted by Ontario Hydro identified an eleven- fold increase in certain cancers, for those employees exposed to high EMF levels. His research findings have been disregarded by Hydro One.

Oxford University and staff from Yale University Cancer Research Centre also presented findings and statements that support our assertions and we would like to bring these to your attention.

In conclusion, if Hydro One and other agencies look to Health Canada as an authoritative body for guidance the need to recognize the public's concerns in this regard needs to be taken very seriously since the current guidelines do not, in our opinion, protect the public's health and contribute to certain corporations to not act in the public's best interests. In fact, new analyses of older data have induced a revision in the views of many high level authorities including the utilities themselves. Some have even dramatically revised their own EMF statements to reflect more current approaches recognizing the societal benefit in minimizing exposures for the public.

We appreciate your efforts towards addressing our concerns and look forward to your reply. We wish to defend the public's interest through positive means at all levels of government and remain hopeful that you will provide an opportunity to have these discussions in an open and transparent manner, as has been promised by MP Belinda Stronach's office. While we refer to you the health related environmental issues, we still have not had other socio-economic impacts related with this project mitigated and we will continue to defend our community through all possible legal means.

Please advise us as to your earliest availability and we will make ourselves available. These issues need to be addressed with the pending Ontario Power Authority and Ontario Energy Board Process being initiated with the first public consultation session being held in Richmond Hill, Ontario on May 4th, 2005. The public's patience and confidence in this provincial process has been thoroughly exhausted. As public officials please give this matter the attention it deserves.

Sincerely,

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Sue Fusco,

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