Sharon Déoux
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September 27, 2011

Mr. Jean-Paul Théorêt
Chairman
Régie de l'énergie du Québec
800 Place Victoria
Montréal, Québec
H3C 1E8

Re: Hydro-Québec's Application to Install a Wireless Electric Meter Network Across the Province, Request Number R-3770–2011

Dear Mr. Théorêt:

I have read Hydro-Québec's application to the Régie de l'énergie, in particular section 5.3, *Impacts pour la santé*, of the report entitled *Projet lecture à distance, phase 1*, and I would like to inform you, if you do not already know, that the information presented on the possible health effects of Hydro-Québec's proposed wireless network is woefully incomplete. While I have no doubt that the wireless meters that Hydro-Québec intends to install will emit radiofrequency radiation far below the level set by Health Canada's *Code 6*, the truth is that the guidelines upon which *Code 6* is based were not developed to address the wireless telecommunications systems that exist today. As a result, the validity of these guidelines is in dispute world-wide, and they are considered to be inadequate by many scientists, organizations, and individuals who are qualified to make such an evaluation.

Because of my concerns about the potential effects on my health of Hydro-Québec's proposed wireless electric meter network, I wrote to the president on March 15, 2011, to tell him of my concerns, to explain my particular situation, to provide him with information about the dangers to health of electromagnetic radiation, and to ask whether public consultations would be held in order to identify the needs of customers and to take into account their wishes. I have enclosed a copy of this letter, along with the documents that I sent, for your information and consideration. I have not received a reply from Hydro-Québec.

Brief as Hydro-Québec's evaluation of the health effects of its planned wireless electric meter network may be, the information that it presents raises several serious concerns. One is that Hydro-Québec intends to take its readings mainly at night, which is the time of day when people are most susceptible to the deleterious effects of electromagnetic radiation. Among the health problems that people experience where wireless electric meters have been installed are: sleep disturbances, headaches, fatigue, ringing in the ears,

heart problems, dizziness, and nausea. Studies have documented DNA breaks, an increase in the incidence of cancer, endocrine disruption, birth defects, sterility, heart arrhythmia, learning impairment, and attention deficit disorder.

Children, the elderly, and the sick are the most vulnerable to the ill effects of electromagnetic radiation because it penetrates the body tissue to a depth of about one inch (3 cm) and has an affinity for the bones due to their high mineral content. In the case of children, the radiation may reach internal organs and, since the bones of infants and children are thinner, it is able to penetrate deep into the brain. Anyone with a metal implant, such as surgical pins, replacement knees and hips, pacemakers, and mercury-based tooth fillings, is at high risk of health problems because a standing wave is created in the irradiated metal, which irritates the surrounding tissue, causing chronic pain and other ailments.

Another concern is that Hydro-Québec intends to expand the network in the future, which would entail increasing the number of readings per day, thereby raising the level of radiation in the environment proportionately. At present, many jurisdictions use their wireless networks to monitor the consumption of clients, and they offer rate reductions based on the time of day when electricity is used, in order to encourage energy conservation. Unfortunately, this approach has largely failed, in part I suspect, because most of us are already conserving energy to the extent possible, and the only way we could further reduce our electricity bills would be through alternative sources of power, such as solar panels. Because of the recent vogue in wireless electric meter networks, new home appliances are now equipped with devices that transmit usage information on a continuous basis to wireless networks, whether they are in place or not, thereby greatly increasing household levels of electrosmog. Not only is this exposure damaging to the health, it constitutes an invasion of privacy where the data are collected.

My third concern, unrelated to health, is the exorbitant estimated cost of the project, especially in view of the fact that the installation of wireless electric meters constitutes a province-wide experiment that will adversely affect everyone's health, as well as the environment. If I understand correctly, Hydro-Québec has already spent about $42 million and, by the end of Phase 1, it will have spent $88 million. By the time the entire network is in operation, far more will have been spent. Each time that Hydro-Québec makes an application to the Régie, and that application is accepted, it becomes more difficult, in the future, to halt the project or change its direction, by virtue of the investment that has already been made. I fear that we are already in this position, in part because of the letter dated August 3, 2011, sent by Hydro-Québec to the Régie, the tone of which gave me the impression that Hydro-Québec views the acceptance of its application as a foregone conclusion.

Two feasible alternatives exist to a wireless electric meter network that relies on radiofrequency radiation to transmit data, neither of which would have any negative health consequences and both of which would be far less expensive. A network that used telephone land lines or fiber optic cable would be entirely free of radiation; it would not increase bandwidth usage, which is reaching saturation; and it would be far more frugal, practical, and safe as an approach. Admittedly, a wired network of electric meters would

not permit individual household usage to be monitored on an hourly basis; however, it would possess the advantage of obviating any privacy concerns. Unfortunately, the telecommunications companies have done a far too effective selling job for Hydro-Québec to have chosen either alternative, telephone lines and fiber optic cable being just so unsexy when compared with wireless technology.

In the time since I wrote my letter to Hydro-Québec, the *Centre international de Recherche sur le Cancer*, which is an agency of the *Organisation mondiale de la Santé*, has classified radiofrequency electromagnetic fields as "possibly carcinogenic to humans (Group 2B)." Many of the members of *le Groupe de Travail des Monographies du CIRC* who made this decision were of the opinion that radiofrequency radiation should be classified as Group 2A, which is an agent that is *probably* carcinogenic to humans. For your convenience, I have enclosed a copy of the press release announcing the news of this classification, which can be accessed electronically at: http://www.iarc.fr/fr/media-centre/pr/2011/pdfs/pr208_F.pdf.

If an organization as eminent and conservative as the *Organisation mondiale de la Santé* is able to achieve a concensus to classify radiofrequency radiation as possibly carcinogenic, it is because much evidence exists of the damaging effects of this radiation on human health. Furthermore, it is likely that future research will result in an upgrading of the classification to "probable," and eventually to a firm declaration that radiofrequency radiation does cause cancer in humans. Given the enormous cost of the system that is being contemplated by Hydro-Québec, and the fact that, once it is installed, it will be all but impossible to dismantle, I do not think that this is a propitious time to proceed.

An indication of the current concerns of scientists with regard to the health effects of electromagnetic radiation and the direction of future research is reflected in the course called "Physical Health Hazards: Health Effects of Electromagnetism" that is currently being given by Professor Paul Héroux, PhD, at McGill University's Faculty of Medicine. Section 3.5.1, page 3-30, of the course notes explains that "the electrical power network radiates harmonics and transients (high frequency perturbations) even more effectively than the 60-HZ power it is designed to distribute." These harmonics and transients are created when radiofrequency radiation from wireless meters travels along indoor wiring.

Field coherence is discussed in the next section of the notes, at the end of which it is stated that the theoretical considerations presented have a "major impact on **public policy dealing with telecommunications**, for example, where industry (which uses *incoherent* signals, due to its data content) may be submitted to regulations based on results evolved in laboratories which use *coherent* signals." In other words, there is every reason to suppose that current regulations are dangerously lax. [The boldface and italic type are the author's. The course notes can be accessed at: http://www.invitroplus.mcgill.ca/ftp/health%20effects%20of%20electromagnetism%20course%20notes%202010.pdf]

In my individual case, four electric meters are installed on the wall of my townhouse unit, which is only 17 feet wide. Furthermore, I live at the end of an electrical loop, and it is

likely that a collector, and perhaps even a repeater, would be located in my back yard, which is very small. As a result, I would be exposed to a high level of radiofrequency radiation from Hydro-Québec's planned network, especially once it is expanded. Therefore, I would like to know whether it will be possible to refuse a wireless electric meter and retain a mechanical, wired meter *at no charge*. Mine is only three years old. This solution would only be effective in protecting my health if I could convince my three neighbours to do the same, which is not necessarily a given.

I thank you in advance for considering the information and arguments that I have presented, which I request you share with the eleven commissioners of the Régie. I trust that you will deem fit to, at the very least, require that Hydro-Québec allow its customers to decline the installation of a wireless electric meter, if they so choose, without penalty.

Sincerely,

Sharon Déoux (Ms.)

P.S. Please feel free to respond to this letter in French.

c.c. Mr. Thierry Vandal, President and Chief Executive Officer,
Hydro-Québec

Ms. Nathalie Normandeau (Minister responsible for Hydro-Québec)
Minister of Natural Resources and Wildlife
Government of Québec

Dr. Yves Bolduc
Minister of Health and Social Services
Government of Quebec

The Honourable Christian Paradis
Industry Canada
Government of Canada

The Honourable Leona Aglukkaq
Minister of Health
Government of Canada

Ms. Charlotte L'Écuyer
Member of the National Assembly for the Pontiac
Government of Quebec

The Honourable Nycole Turmel
Member of Parliament for Hull-Aylmer
Government of Canada

Centre international de Recherche sur le Cancer

Organisation mondiale de la Santé

COMMUNIQUE DE PRESSE
N° 208

31 mai 2011

LE CIRC CLASSE LES CHAMPS ELECTROMAGNETIQUES DE RADIOFREQUENCES COMME « PEUT-ETRE CANCEROGENES POUR L'HOMME »

Lyon, France, 31 mai 2011 – Le Centre international de Recherche sur le Cancer (CIRC) de l'OMS a classé les champs électromagnétiques de radiofréquences comme peut-être cancérogènes pour l'homme (Groupe 2B),sur la base d'un risque accru de gliome, un type de cancer malin du cerveau[1], associé à l'utilisation du téléphone sans fil.

Contexte

Depuis quelques années, on note une préoccupation croissante pour de possibles effets néfastes sur la santé de l'exposition aux champs électromagnétiques de radiofréquences, tels que ceux qui sont émis par les appareils de communication sans fil. Le nombre d'abonnements de téléphonie mobile dans le monde est estimé à 5 milliards.

Du 24 au 31 mai 2011, un Groupe de Travail constitué de 31 chercheurs issus de 14 pays s'est réuni au CIRC à Lyon afin d'évaluer le potentiel cancérogène de l'exposition aux champs électromagnétiques de radiofréquences. Ces évaluations seront publiées dans le Volume 102 des *Monographies du CIRC*, cinquième volume de cette série à étudier des agents physiques, après le Volume 55 (Rayonnement solaire), le Volume 75 et le Volume 78 sur les rayonnements ionisants (rayons X, rayons gamma, neutrons, radionucléides), et le Volume 80 sur les rayonnements non ionisants (champs électromagnétiques de fréquences extrêmement basses).

Le Groupe de Travail des Monographies du CIRC a discuté de la possibilité que ces expositions puissent induire des effets à long terme sur la santé, et en particulier un risque accru de cancer. Cette possibilité a des implications potentielles dans les domaines de la santé publique, notamment pour les utilisateurs de téléphones portables, leur nombre étant en constante augmentation, surtout parmi les jeunes adultes et les enfants.

Le Groupe de Travail des Monographies du CIRC a discuté et évalué la littérature scientifique disponible sur les catégories d'exposition suivantes, impliquant toutes une exposition aux champs électromagnétiques de radiofréquences :

- expositions professionnelles aux radars et aux micro-ondes ;
- expositions environnementales associées à la transmission des signaux de radio, de télévision et aux communications sans fil ; et
- expositions individuelles associées à l'utilisation de téléphones sans fil.

[1] 237 913 nouveaux cas de cancers du cerveau (tous types confondus) sont apparus au niveau mondial en 2008 (les gliomes représentent les 2/3 de ces cancers). Source : Globocan 2008.

LE CIRC CLASSE LES CHAMPS ELECTROMAGNETIQUES DE RADIOFREQUENCES COMME « PEUT-ETRE CANCEROGENES POUR L'HOMME »

Les experts internationaux réunis à Lyon ont mis leurs compétences en commun pour analyser les **données d'exposition, les études du cancer chez l'homme, les études du cancer chez l'animal**, et les **données mécanistiques et les autres données pertinentes.**

Résultats

Les données ont été passées en revue de façon critique, et évaluées dans leur ensemble comme étant *limitées*[2] chez les utilisateurs de téléphones sans fil pour le gliome et le neurinome de l'acoustique, et *insuffisantes*[3] pour être concluanres pour les autres types de cancers. Les données des expositions professionnelles et environnementales mentionnées plus haut ont également été jugées insuffisantes. Le Groupe de Travail n'a pas quantifié ce risque ; cependant, une étude rétrospective de l'utilisation du téléphone portable (jusqu'en 2004), a montré un risque accru de 40% de gliome chez les plus grands utilisateurs (moyenne rapportée : 30 minutes par jour sur une période de 10 ans).

Conclusions

Le Dr Jonathan Samet (Université de Californie du Sud, Etats-Unis), Président du Groupe de Travail, a indiqué que « les données, qui ne cessent de s'accumuler, sont suffisantes pour conclure à la classification en 2B . Cette classification signifie qu'il pourrait y avoir un risque, et qu'il faut donc surveiller de près le lien possible entre les téléphones portables et le risque de cancer».

"Etant donné les implications de cette classification et de ces résultats pour la santé publique, il est crucial que des recherches supplémentaires soient menées sur l'utilisation intensive à long terme des téléphones portables», a déclaré le Directeur du CIRC, Christopher Wild. « En attendant qu'une telle information soit disponible, il est important de prendre des mesures pratiques afin de réduire l'exposition, comme l'utilisation de kits mains-libres ou des textos».

Le Groupe de Travail a pris en compte des centaines d'articles scientifiques ; la liste complète sera publiée dans la Monographie. Il faut noter que plusieurs articles scientifiques[4] récents issus

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[2] ' ***Indications de cancérogénicité limitées' :*** une association positive a été établie entre l'exposition à l'agent considéré et la survenue de cancers, et le groupe de travail estime qu'une interprétation causale de cette association est crédible, mais il n'a pas été possible d'exclure avec suffisamment de certitude que le hasard, des biais ou des facteurs de confusion aient pu jouer un rôle.

[3] ***'Indications de cancérogénicité insuffisantes'*** : les études disponibles ne sont pas d'une qualité, d'une concordance ou d'une puissance statistique suffisantes pour permettre de conclure à l'existence ou non d'une relation de cause à effet entre l'exposition et le cancer, ou bien aucune donnée sur le cancer chez l'homme n'est disponible.

[4] a. 'Acoustic neuroma risk in relation to mobile telephone use: results of the INTERPHONE international case-control study' (the Interphone Study Group, in Cancer Epidemiology, *sous presse*

b. ' Estimation of RF energy absorbed in the brain from mobile phones in the Interphone study' (Cardis et al., Occupational and Environmental Medicine, *sous presse*)

c. ' Risk of brain tumours in relation to estimated RF dose from mobile phones – results from five Interphone countries' ' (Cardis et al., Occupational and Environmental Medicine,,sous presse)

d. 'Location of Gliomas in Relation to Mobile Telephone Use: A Case-Case and Case-Specular Analysis' (American Journal of Epidemiology, 24 Mai 2011. [Epub avant publication].

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de l'étude Interphone et non encore publiés, mais acceptés pour publication, ont été mis à disposition du Groupe de Travail peu avant la réunion, et inclus dans l'évaluation.

Un rapport concis résumant les conclusions principales du Groupe de Travail du CIRC et les évaluations du risque cancérogène des champs électromagnétiques de radiofréquences (y compris l'utilisation des téléphones portables) sera publié dans **The Lancet Oncology dans son numéro du 1er juillet, et mis en ligne dans quelques jours.**

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LES MONOGRAPHIES DU CIRC

Que sont les Monographies du CIRC ?

Les Monographies du CIRC identifient les facteurs environnementaux susceptibles d'accroître le risque de cancer chez l'homme. Il s'agit de produits chimiques, de mélanges complexes, d'expositions professionnelles, d'agents physiques et biologiques, et de facteurs comportementaux. Les organismes de santé publique utilisent ensuite ces informations comme support scientifique dans leurs actions visant à prévenir l'exposition à ces cancérogènes potentiels. Des groupes de travail interdisciplinaires composés d'experts scientifiques internationaux examinent les études publiées et évaluent le degré de risque de cancérogénicité présenté par un agent. Les principes, procédures et critères scientifiques qui guident l'évaluation sont décrits dans le Préambule aux Monographies du CIRC.

Depuis 1971, plus de 900 agents ont été évalués parmi lesquels 400 ont été classés comme étant cancérogènes ou potentiellement cancérogènes pour l'homme.

Définitions

Groupe 1: L'agent est *cancérogène pour l'homme*.

Cette catégorie n'est utilisée que lorsqu'on dispose *d'indications suffisantes* de cancérogénicité pour l'homme. Exceptionnellement, un agent peut être placé dans cette catégorie lorsque les indications de cancérogénicité pour l'homme ne sont pas tout à fait suffisantes, mais qu'il existe des *indications suffisantes* de sa cancérogénicité chez l'animal de laboratoire et de fortes présomptions que l'agent agit suivant un mécanisme de cancérogénicité reconnu.

Groupe 2.

Cette catégorie comprend les agents pour lesquels, au maximum, on a obtenu des indications de cancérogénicité pour l'homme presque suffisantes et, au minimum, on ne dispose d'aucune donnée concernant l'homme mais on dispose d'indications suffisantes de cancérogénicité pour l'animal de laboratoire. Lesdits agents sont classés soit dans le groupe 2A (*probablement cancérogène pour l'homme*), soit dans le groupe 2B (*peut-être cancérogène pour l'homme*) sur la base d'indications épidémiologiques et expérimentales de cancérogénicité de données mécanistiques et d'autres renseignements pertinents. Les termes probablement cancérogène et peut-être cancérogène n'ont pas de signification quantitative et ne sont utilisés que pour décrire différents niveaux de données de cancérogénicité chez l'homme, *probablement cancérogène* signifiant un niveau d'indication plus élevé que *peut-être cancérogène*.

Groupe 2A : L'agent est *probablement cancérogène pour l'homme*.

On fait appel à cette catégorie lorsque l'on dispose *d'indications limitées de cancérogénicité* chez l'homme et d'*indications suffisantes de cancérogénicité* chez l'animal de laboratoire. Dans certains cas, un agent peut être classé dans cette catégorie lorsque l'on dispose *d'indications insuffisantes* de cancérogénicité pour l'homme et *d'indications suffisantes* de cancérogénicité

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pour l'animal de laboratoire et de fortes présomptions que la cancérogenèse s'effectue par un mécanisme qui fonctionne également chez l'homme. Exceptionnellement, un agent peut être classé dans cette catégorie sur la seule base d'*indications limitées* de cancérogénicité pour l'homme. Un agent peut être rangé dans cette catégorie s'il appartient clairement, sur la base de considérations mécanistiques, à une classe d'agents dont un ou plusieurs membres ont été classés dans le Groupe 1 ou le Groupe 2A.

Groupe 2B : L'agent est peut-être *cancérogène pour l'homme*.

Cette catégorie concerne les agents pour lesquels on dispose d'*indications limitées* de cancérogénicité chez l'homme, et *d'indications insuffisantes* de cancérogénicité chez l'animal de laboratoire. On peut également y faire appel lorsque l'on dispose d'*indications insuffisantes* de cancérogénicité pour l'homme, mais que l'on dispose d'*indications suffisantes* de cancérogénicité pour l'animal de laboratoire. Dans certains cas, peut être classé dans ce groupe un agent pour lequel on dispose *d'indications insuffisantes* de cancérogénicité chez l'homme et pas d'*indications suffisantes* d'une action cancérogène chez l'animal de laboratoire, corroborées par des données mécanistiques et d'autres données pertinentes. Un agent peut être classé dans cette catégorie sur la seule base d'indications solides provenant de données mécanistiques et autres.

Groupe 3 : L'agent est *inclassable quant à sa cancérogénicité pour l'homme*.

Cette catégorie comprend essentiellement les agents pour lesquels les indications de cancérogénicité sont *insuffisantes* chez l'homme et *insuffisantes* ou *limitées* chez l'animal de laboratoire.

Exceptionnellement, les agents pour lesquels les indications de cancérogénicité sont *insuffisantes* chez l'homme mais *suffisantes* chez l'animal de laboratoire peuvent être classés dans cette catégorie lorsqu'il existe de fortes présomptions que le mécanisme de la cancérogénicité chez l'animal de laboratoire ne fonctionne pas chez l'homme.

On classe aussi dans cette catégorie les agents qui ne correspondent à aucune des autres catégories.

Une évaluation dans le Groupe 3 n'est pas une décision de non-cancérogénicité ou de sûreté globale. Cela signifie souvent que davantage de recherches sont nécessaires, notamment quand les expositions sont très répandues ou que les données sur le cancer sont compatibles avec des interprétations divergentes.

Groupe 4 : L'agent n'est *probablement pas cancérogène pour l'homme*.

Relèvent de cette catégorie les agents pour lesquels on dispose *d'indications suggérant une absence de cancérogénicité* chez l'homme ainsi que chez l'animal de laboratoire. Dans certains cas, peuvent être classés dans ce groupe des agents pour lesquels les *indications de cancérogénicité pour l'homme* sont *insuffisantes*, mais pour lesquels on dispose *d'indications suggérant une absence de cancérogénicité* chez l'animal de laboratoire, constamment et fortement corroborées par une large gamme de données mécanistiques et d'autres données pertinentes.

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Définition des degrés d'indications de cancérogénicité, tels qu'ils sont utilisés dans les Monographies du CIRC pour les études portant sur l'homme

Les indications de cancérogénicité provenant d'études portant sur l'homme sont classées dans l'une des catégories suivantes :

Indications de cancérogénicité suffisantes : le Groupe de travail considère qu'une relation de cause à effet a été établie entre l'exposition à l'agent et le cancer chez l'homme. En d'autres termes, une relation positive a été établie entre l'exposition et la survenue de cancers, dans le cadre d'études où les effets du hasard, de biais et de facteurs de confusion ont pu être exclus avec suffisamment de certitude. Une déclaration selon laquelle il existe des *indications suffisantes* est suivie d'une phrase séparée permettant d'identifier le ou les organes ou tissus cibles où un risque accru de cancer a été observée chez l'homme. L'identification d'un organe ou de tissus cibles n'empêche pas que l'agent puisse provoquer le cancer sur d'autres localisations.

Indications de cancérogénicité limitées : une association positive a été établie entre l'exposition à l'agent considéré et la survenue de cancers, et le groupe de travail estime qu'une interprétation causale de cette association est crédible, mais il n'a pas été possible d'exclure avec suffisamment de certitude que le hasard, des biais ou des facteurs de confusion aient pu jouer un rôle.

Indications de cancérogénicité insuffisantes : les études disponibles ne sont pas d'une qualité, d'une concordance ou d'une puissance statistique suffisantes pour permettre de conclure à l'existence ou non d'une relation de cause à effet entre l'exposition et le cancer, ou bien aucune donnée sur le cancer chez l'homme n'est disponible.

Indications d'une absence de cancérogénicité : on dispose de plusieurs études suffisantes, couvrant la totalité des niveaux d'exposition connus pour être rencontrés chez l'homme et dont les résultats, concordants, ne font pas ressortir d'association positive entre l'exposition à l'agent et le cancer étudié et ce, quel que soit le niveau d'exposition examiné. Les résultats de ces études, seuls ou combinés, devrait disposer d'intervalles de confiance étroits, dont la limite supérieure devrait être proche d'une valeur nulle (par exemple un risque relatif de 1,0). Biais et facteurs de confusion doit être exclus avec une certitude raisonnable, et les études devraient avoir un suivi suffisamment long. Lorsque les renseignements disponibles suggèrent 'une absence de cancérogénicité', cette conclusion ne peut s'appliquer qu'aux localisations tumorales, aux conditions et niveaux d'exposition et à la durée d'observation pris en considération dans les études dont on dispose. Au demeurant, l'éventualité de l'existence d'un risque très faible aux niveaux d'exposition étudiés ne peut jamais être exclue.

Dans certains cas, les catégories précitées peuvent être utilisées pour classer le degré d'indications de cancérogénicité pour certains organes ou tissus.

Pour plus d'informations, contacter
Dr Kurt Straif, Section des Monographies du CIRC, au +33 472 738 511, ou straif@iarc.fr;
Dr Robert Baan, Section des Monographies du CIRC, au +33 472 738 659, ou baan@iarc.fr; ou
Nicolas Gaudin, Groupe Communication, à com@iarc.fr (+33 472 738 478)
Lien vers le fichier audio de la conférence de presse :

http://terrance.who.int/mediacentre/audio/press_briefings/

A propos du CIRC

Le Centre international de Recherche sur le Cancer (CIRC) fait partie de l'Organisation mondiale de la Santé. Sa mission consiste à coordonner et à mener des recherches sur les causes du cancer chez l'homme et sur les mécanismes de la cancérogenèse, ainsi qu'à élaborer des stratégies scientifiques de lutte contre le cancer. Le Centre participe à des recherches épidémiologiques et expérimentales, et assure la diffusion de l'information scientifique au moyen de publications, de conférences, de cours, et de bourses d'études.

Si vous ne souhaitez plus recevoir de communiqués de presse de notre part, merci de nous écrire à com@iarc.fr

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March 15, 2011

Mr. Thierry Vandal
President and Chief Executive Officer
Hydro-Québec
P.O. Box 11003, Succursale Centre-ville
Montréal, Québec
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Dear Mr. Vandal:

It was with great concern that I read in the winter edition of the magazine *la Maison du 21e siècle* about Hydro-Québec's intention to conduct a trial installation of smart meters in Montréal, Boucherville, and the Memphremagog area. As you are no doubt aware, scientific evidence is mounting that attests to the negative effects on health of smart meters and of all wireless communication technology. As a result, many people who have had smart meters imposed upon them elsewhere have objected, and continue to do so, sometimes very strenuously.

It seems to me that, since Hydro-Québec has very wisely waited before making its decision regarding smart meters, it would be a great shame if you proceeded at this time in spending an enormous sum of money for a technology that is unwanted by a large number of your customers and that would be very harmful to public health. Once the system is installed throughout the province, it will be very difficult to admit the mistake and reverse it.

One reason for my concern is entirely personal in that I have been diagnosed by my physician as suffering from electromagnetic sensitivity. I am aware that this condition is not officially recognized in Canada; however, it is in Sweden, Norway, Austria, and several other countries, and the list is growing. Since it takes time for previously unrecognized medical conditions to be documented and accepted, it would behoove Hydro-Québec not to discount the validity of my medical condition, which I share with a increasing percentage of the general population.

I live in a four-unit townhouse building, and the four electric meters are on my side wall near the back. Three of the meters are 100 amperes in strength and one is 200 amperes. The width of my townhouse unit is seventeen feet, and I spend four to five hours a day in the kitchen and eating area that are immediately adjacent to the electric meters. In the

summertime, I also spend time outside tending my flower beds, three of which are very close to the meters. I am aware that measurements of the intensity of the radiation emitted by smart meters indicate that it drops off with distance; however, it would not be possible for me to achieve a safe distance from the four smart meters for much of the day, both inside and outside my dwelling. Therefore, I could expect a decline in my health if they were to be installed.

In addition, when I am standing at my kitchen sink and its nearby work area, I am about six feet from where I know my neighbour sits when she uses her laptop computer, which connects to the Internet by Wi-Fi. The radiation from the four smart meters would be added to that of my neighbour's cell phone, cordless telephone, and Wi-Fi. As you no doubt know, no studies have been conducted thus far on the potential health effects of chronic exposure to low-level electromagnetic radiation from multiple sources. It would not be logical to assume that there are no such effects.

Please note that I do not own a cell phone, a cordless telephone, or a microwave oven. As far as my computer is concerned, I have a CPU tower that is three feet away from me when I am working, and I connect to the Internet by dial-up, which is murderously slow. I tried upgrading to DSL, but it made me ill. I work at home, and because of my disability, I am able to work at most ten hours a week. If the radiation from four smart meters were to be added to my environment, I fear for my already very restricted ability to function. I do not have the financial means to move, and since all dwellings in Québec would be equipped with at least one smart meter, I would not be able to find a safe home in any case.

Before you hasten to assure me that any smart meters that Hydro-Québec would install would be in conformance with the requirements of Health Canada's *Code 6* and all other applicable standards, I would like to inform you that I am fully aware that the existing guidelines are woefully inadequate and do not even begin to protect public health. As you know, these standards are based on the false and utterly unproven assumption that electromagnetic radiation is only harmful if it heats the tissues and that no specific non-thermal effects exist. There is abundant scientific evidence indicating that these two assumptions are groundless. Some very reliable studies were conducted as far back as the 1960s, and even earlier, in particular by U.S. researchers and scientists in the Soviet Union.

Furthermore, the standards and guidelines that are currently in place in Canada and much of the rest of the world are biased in favour of the financial interests of the telecommunications industry in that they are based on selectively chosen data and studies. The organizations that developed these standards are not independent in that some members are funded by the Industry.

In view of the fact that Hydro-Québec is seriously considering the installation of smart meters province wide, I am enclosing the following information, including links to four web sites, that I am hoping will give you cause to reconsider your decision.

- Two articles by André Fauteux, one called "Compteurs intelligents : invasion de domicile ?" and the other "L'intolérance électromagnétique élucidée" published in the winter 2011 edition of *la Maison du 21e siècle*.
- News Release called "Independent Study Finds 'Smart' Meters Can Violate Federal Safety Limits." This release announces the publication of an independent study evaluating the safety of smart meters that was conducted by Sage Associates, Environmental Consultants, called "Assessment of Radiofrequency Microwave Radiation Emissions from Smart Meters" dated January 1st, 2011. Please note that Sage Associates is an independent organization that is *not* affiliated with the telecommunications industry. The report is 100 pages long and can be downloaded using this link: http://www.sagereports.com/smart-meter-rf.
- Reprint by Next-Up of newspaper article entitled, "More Smart Meter Arrests in Rohnert Park Where Wellington Energy Deployment Is Blocked This Morning, January 11, 2011.
- Article published in *The New York Times* dated January 5, 2011, called "Calif. County Criminalizes Smart-Meter Installations" by Debra Kahn. I am also providing a copy of the four-page Ordinance that is cited in the article. Among other things, the Ordinance lists the symptoms that people whose homes are equipped with smart meters often experience, it outlines concerns about the accuracy of the meters, and it invokes issues related to privacy.
- Article published in *Click Green News* by Natalie Evans, dated January 25, 2011, called "DECC confirms talks with Dept of Health over smart meter risks." This article relates to safety concerns about smart meters by officials at the United Kingdom's Department of Energy and Climate Change.
- Report of the Standing Committee on Health, House of Commons, Canada, "An Examination of the Potential Health Impacts of Radiofrequency Electromagnetic Radiation," December 2010, http://www2.parl.gc.ca/HousePublications/Publication.aspx?DocId=4834477&Mode=1&Parl=40&Ses=3&Language=E
- Abstract of an article by A. Fragopoulou et al., "Scientific panel on electromagnetic field health risks: consensus points, recommendations, and rationales," published in the October-December 2010 edition of *Rev Environ Health* 25(4): 307-17, to which has been appended the ten key points made in the article.
- Abstract of an article by I. Baldi et al., "Occupational and residential exposure to electromagnetic fields and risk of brain tumors in adults: A case-control study in Gironde, France, *Int J Cancer*, November 12, 2010.
- Article called "From Zory's Archive" by Magda Havas in the History of RF/Microwave Radiation section of www.Rewire.me magazine. This article describes the work of Zorach ("Zory") R. Glaser, Ph.D., LT, MSC, USNR, who

began compiling yearly radio-frequency-microwave bioeffects bibliographies starting in 1971. Dr. Havas is a professor at Trent University in Peterborough who is posting these bibliographies on her web site (www.Magdahavas.com) in the section called "From Zory's Archive".

- Pick of the Week #14, Proposal for Legislation: Non-ionizing Radiation (1979), downloaded from the "From Zory's Archive" section of Dr. Magda Havas's web site www.Magdahavas.com.
- Pick of the Week #17, Power Frequency Electromagnetic Fields, downloaded from the "From Zory's Archive" section of Dr. Magda Havas's web site, www.Magdahavas.com.

I believe that the opposition by the public to the installation of a comprehensive network of highly polluting so-called smart meters across the province may be far greater than you anticipate. Public awareness of the dangers of the current proliferation in the use of wireless technology is growing steadily. Please do not waste public funds installing wireless electric meters that are a documented health hazard.

I trust that Hydro-Québec has not adopted the cynical attitude that, since health care services in Québec are publicly funded, there is no need to be concerned about the public health consequences of installing smart meters. Please bear in mind that the wireless network that you intend to install will irradiate everything in its path—plants, animals, you, and your loved ones—and that no one will be able to escape its ill effects.

The most frustrating part with regard to your decision is that researchers are currently in the process of developing new wireless technologies that would not rely on dangerous electromagnetic radiation. One important reason for this research is that the wireless telecommunications industry is well aware of the negative health effects of EMFs because they are clearly evident in the health problems currently being experienced by their employees. If Hydro-Québec had the vision to wait just a little longer before choosing its smart meter system, it would be in a position to install smart meters that do not emit harmful radiation. At that point, you would be part of the solution and not part of the problem.

In closing, I would like to know whether Hydro-Québec will be holding public consultations once the pilot project has been conducted in order to take into consideration the needs and desires of your customers.

Sincerely,

Sharon Déoux

P.S.: Please feel free to respond to this letter in French.

c.c. Ms. Nathalie Normandeau (Minister responsible for Hydro-Québec)
Minister of Natural Resources and Wildlife
Government of Québec

Mrs. Dominique Vien
Minister of Health and Social Services
Government of Quebec

The Honourable Tony Clement
Industry Canada
Government of Canada

The Honourable Leona Aglukkaq
Minister of Health
Government of Canada

Ms. Charlotte L'Écuyer
Member of the National Assembly for the Pontiac
Government of Quebec

The Honourable Marcel Proulx
Member of Parliament for Hull-Aylmer
Government of Canada

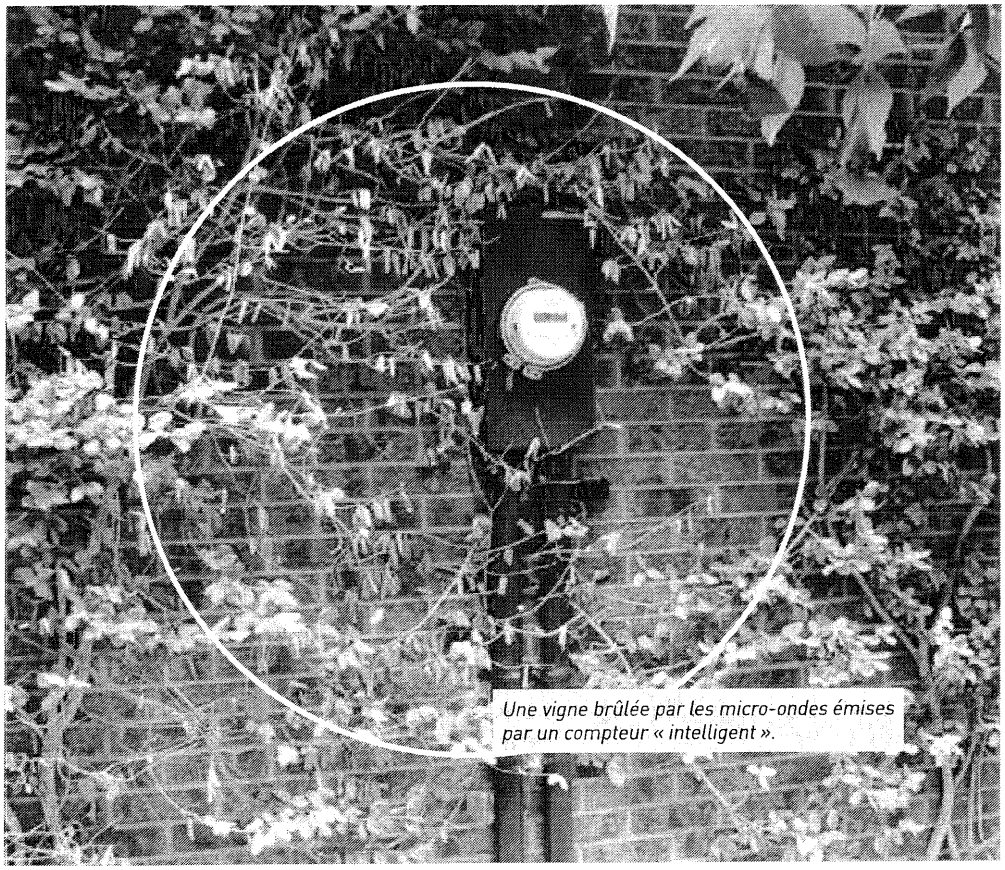
par André Fauteux

photo : Martin Weatherall

Compteurs intelligents : invasion de domicile ?

L'idée semblait brillante. Des compteurs d'électricité ou de gaz qui utilisent des radiofréquences pour transmettre sur de longues distances vos données de consommation.

TOUTEFOIS, ce projet pilote inquiète sérieusement les personnes hypersensibles à la pollution électromagnétique. Cette nouvelle technologie, disent-ils, risque de mettre en péril leur dernier refuge contre les méfaits sanitaires de l'électrosmog.



Une vigne brûlée par les micro-ondes émises par un compteur « intelligent ».

« Pour moi, ce serait une catastrophe, je n'aurais d'autre choix que de déménager », affirme José Levesque, un résidant de Saint-Colomban, dans les Basses-Laurentides. En mai 2009, l'homme de 40 ans, père de deux adolescents, a dû quitter définitivement son emploi d'installateur et programmeur de centrales de téléphonie sans fil dans des usines et magasins à grande surface. Ces systèmes sont semblables aux routeurs d'ordinateurs Wi-Fi et aux téléphones sans fil résidentiels (dont l'usage est déconseillé en vertu du principe de précaution par les gouvernements allemand et suisse), sauf qu'ils sont dotés de plusieurs antennes relais. Exposé pendant huit ans aux micro-ondes émises par ces systèmes, M. Levesque est soudainement devenu électrosensible à la fin de 2005. « Au début, ça pinçait dans mon oreille lorsque je téléphonais. Ensuite, j'avais beau utiliser une oreillette, j'étais étourdi et mon oreille bourdonnait. Puis en me levant un matin, je marchais comme un gars saoul et j'entendais un timbre comme un détecteur de fumée » Il a ensuite compris qu'une faible exposition à des micro-ondes augmente la tension artérielle dans sa tête : « Mon visage devient engourdi, j'ai mal à la tête, et si je persiste à rester là de nombreuse heures, je peux même saigner du nez ou des vaisseaux sanguins peuvent éclater dans mes yeux. Ça m'est déjà arrivé dans un hôpital du centre-ville doté d'émetteurs de téléphonie et Wi-Fi ! »

En visite chez un ami, il a d'ailleurs éprouvé ce même mal de tête avant de découvrir qu'Hydro-Québec avait installé un compteur sans fil sans en avertir le propriétaire. « J'ai mesuré les ondes avec mon lecteur de radiofréquences et ça tapait au fond, à plus de 2 000 microwatts par mètre carré (µW/m²). » Au moins deux groupes d'experts américains (**bioinitiative.org** et **buildingbiology.net**) recommandent de ne jamais être exposé à plus de 10 µW/m² et idéalement de s'en tenir en deçà de 0,1 µW/m².

L'expérience californienne

En Californie, le fournisseur d'énergie Pacific Gas & Electric (PG&E) avait déjà installé deux millions de ces nouveaux compteurs avant de découvrir que certains étaient imprécis, entraînant des surfacturations. En outre, 2 000 personnes se sont plaintes de symptômes attribués aux brèves mais intenses pulsations de micro-ondes qu'ils émettent périodiquement. Une vingtaine de municipalités ont imposé un moratoire d'un an sur leur installation, et le représentant démocrate de San Rafael, Jared Huffman, a pour sa part demandé une enquête sur leurs effets sanitaires.

Malgré ces plaintes et bien qu'aucune étude n'ait encore été réalisée sur l'innocuité de ces compteurs, les autorités affirment que les technologies sans fil sont sécuritaires : « Santé Canada n'a aucune raison scientifique de considérer l'usage des téléphones cellulaires ou des équipements Wi-Fi comme dangereux pour la santé », nous écrivait récemment Christelle Legault, attachée de presse au ministère fédéral. Quant à José Levesque, plusieurs médecins lui ont dit ne pas pouvoir traiter l'électrosensibilité : « Certains avaient peur de perdre leur droit de pratique car cette condition n'est pas reconnue par le Collège des médecins du Québec » (lire le texte suivant).

De nombreux Ontariens se plaignent également de malaises attribués aux compteurs sans fil du fournisseur d'électricité Hydro One, relate Martin Weatherall, un résidant de Stratford, dans la région de Kitchener. Cet ancien policier devenu électrosensible dirige l'Initiative canadienne pour arrêter la pollution électromagnétique sans fil et électrique (**weepinitiative.org**). Depuis que ces compteurs ont été installés, dit-il, des citoyens de Stratford se plaignent de problèmes de sommeil, de maux de tête, de vertiges, de cauchemars, de colères inexpliquées, d'animaux malades, etc. Des symptômes qui ne se résorbent que lorsque cesse l'exposition, par exemple en couchant au sous-sol, en recouvrant les murs avec un revêtement d'aluminium ou en quittant leur domicile.

Explications techniques

Ces compteurs dits intelligents sont « très préoccupants », affirme un expert en électrosmog basé au Wisconsin, Dave Stetzer, sur son site Web **electricalpollution.com**. « Ils vous exposent à des radiofréquences (dont des micro-ondes) de façon continuelle et sans votre consentement. Vous êtes exposés aux émissions de tous les compteurs dans votre secteur car ils ont une portée de transmission de plus de 2 milles (3,2 km). C'est ce qui expliquerait pourquoi une personne dont le compteur transmet seulement une fois par heure peut avoir des problèmes de sommeil. » Cependant, la situation serait encore plus dangereuse si un répétiteur est installé sur votre maison. Certains de ces appareils compilent les données sur la consommation de jusqu'à 500, voire 1 000 maisons, plus de 100 fois par minute dans le cas du modèle de Trilliant Networks utilisé par Hydro One, rapporte Martin Weatherall.

Selon Dave Stetzer, les objectifs visés avec les compteurs intelligents pourraient être atteints en toute sécurité par d'autres moyens. Par exemple, en envoyant périodiquement de l'information par fil téléphonique ou par câble.

Chez Hydro-Québec, l'attaché de presse Danielle Chabot affirme qu'on n'a pas encore choisi la technologie qui sera retenue pour le projet Lecture à Distance, prévu en 2011.

« Un deuxième projet pilote avec environ 25 000 compteurs est prévu à l'été 2011, dans des zones urbaines et rurales, soit : Montréal, Boucherville et la MRC Memphrémagog. » En plus de pouvoir lire nos compteurs à distance, Hydro-Québec aimerait un jour pouvoir, avec notre consentement, reporter l'usage de certains appareils en période de pointe, alors que les tarifs d'électricité seront plus élevés afin de réduire le besoin de démarrer des centrales électriques polluantes.

Enfin, à savoir si la société d'État accommodera les électrosensibles comme José Levesque qui a demandé de conserver son compteur filé, comme PG&E songe à le faire, Mme Chabot a répondu : « Il est trop tôt à ce stade-ci du projet pour définir les orientations compte tenu que nous n'avons pas finalisé le choix technologique. Toutefois, pour chaque projet déposé à la Régie de l'énergie, Hydro-Québec procède aux études requises : environnement, santé, etc. Ce dépôt à la Régie de l'énergie est prévu en 2012. »

par André Fauteux

L'intolérance électromagnétique élucidée

DES CHERCHEURS FRANÇAIS viennent de démontrer que les champs électromagnétiques (CEM) modifient sensiblement la physiologie du sang et du cerveau des personnes électrosensibles et que l'impact sur ces marqueurs biologiques augmente et diminue selon l'intensité de l'exposition. « Nous savons avec certitude que l'hypersensibilité électromagnétique n'est pas psychosomatique », nous a confirmé l'oncologue Dominique Belpomme en entrevue téléphonique. « Les CEM provoquent des effets majeurs dans le cerveau. Le plus important d'entre eux est l'ouverture de la barrière hémato-encéphalique. Cela permet au mercure, aux organochlorés et à d'autres polluants de pénétrer dans le cerveau, où ils causent diverses maladies neuro-dégénératives. »

© AP PHOTO/JASON DECROW

*En 2002, la directrice générale de l'Organisation mondiale de la santé (OMS) et ancienne première ministre de la Norvège, Gro Harlem Brundtland, annonçait que les ondes émises par un cellulaire allumé la rendaient malade (détails : **tinyurl.com/gro-ehs**). Et ce, même si le téléphone était caché dans une poche et situé à trois mètres de distance !*

Pourtant, l'OMS affirme encore que les symptômes d'électrosensibilité pourraient être d'origine psychosomatique, ce que l'oncologue Dominique Belpomme dit réfuter avec ses récentes découvertes. Et dire que le Dr Brundtland est la mère du concept du développement durable et de nos écoles vertes qui portent son nom...

20 nouveaux patients par semaine

Professeur d'oncologie à l'Université Paris Descartes, le Dr Belpomme est président de l'Association pour la recherche thérapeutique anticancéreuse (**artac.info**), qui s'est réorientée dans la prévention à partir de 2004. Depuis mai 2008, son équipe étudie ce qu'il a nommé le syndrome d'intolérance aux champs électromagnétiques (SICEM). « J'ai 450 malades et je vois jusqu'à 20 nouveaux cas chaque semaine, y compris des enfants qui ont des maux de tête, des troubles de la mémoire, de la concentration ou du langage. Nous avons la plus grande série européenne de malades électrosensibles. C'est un enjeu majeur de santé publique. »

Le SICEM est une réaction extrême à de faibles niveaux d'exposition aux champs électriques et magnétiques d'extrêmement basses fréquences (50-60 Hertz) émis par les câbles et les appareils électriques ainsi qu'aux radiofréquences (10 megaHertz à 300 gigaHertz incluant les micro-ondes) des appareils sans fil et leurs antennes. Ce syndrome est reconnu en Suède comme un handicap donnant droit à diverses modifications de l'environnement subventionnées par l'État afin de réduire l'exposition aux CEM.[1]

Les gens les plus sensibles sont souvent référés, à tort, en psychiatrie : leurs symptômes (notamment cardiovasculaires, dermatologiques, neurologiques et musculaires) sont si graves qu'ils doivent se protéger des ondes à l'aide de vêtements, rideaux, peintures et pare-vapeurs métalliques idéalement mis à la terre. D'autres déménagent carrément dans des forêts, grottes et autres endroits reculés, loin de toute émission de CEM.

L'équipe du Dr Belpomme a mis au point une méthode diagnostique basée sur des tests sanguins et un électroencéphalogramme spécial (échographie Doppler pulsée) qui permet de visualiser les flux sanguins. « Ces patients ont avec certitude des troubles de vascularisation cérébrale, affirme l'oncologue. En outre, les tests biologiques réalisés démontrent que 30 % d'entre eux ont des taux élevés d'histamine, 50 % ont trop de protéines de stress, la plupart ont un taux de mélatonine (hormone anticancer) trop bas, et 30 % ont des niveaux d'anticorps et de protéines qui indiquent un choc thermique et témoignent d'une souffrance cérébrale. » Il ajoute que la moitié de ses patients sont également hypersensibles aux produits chimiques, les deux syndromes partageant les mêmes anomalies cérébrales.

L'oncologue nous a expliqué qu'il existe trois niveaux distincts de sensibilité aux polluants. D'abord, il y a l'intolérance, engendrée par le polymorphisme. « Cela signifie que nous sommes tous différents. Par exemple, 30 % de la population est plus à risque de contracter un cancer », dit-il. Ensuite, il y a la susceptibilité, facteur démontré par son collaborateur l'oncologue suédois Lennart Hardell qui a observé 16 familles plus électrosensibles en raison de leur hérédité génétique. Il y a également des facteurs de susceptibilité actifs, « comme les amalgames dentaires qui se comportent comme des antennes » captant les ondes. Enfin, l'hypersensibilité électromagnétique qui se manifeste en deux temps. « Le première phase est celle de l'induction par surexposition à une fréquence spécifique de CEM, soit de façon aigüe ou sinon chronique comme le fait de parler sur un téléphone mobile vingt minutes par jour, indique Dr Belpomme. Les premiers signes d'hypersensibilité sont la

douleur et une sensation de chaleur dans l'oreille. La deuxième phase est celle de la constitution de la maladie. On devient alors intolérant à toutes les fréquences. »

Des chercheurs chevronnés

Le conseil scientifique de l'Artac est présidé par le Dr Luc Montagnier, corécipiendaire en 2008 du prix Nobel de médecine comme codécouvreur du virus de l'immunodéficience humaine (VIH) à l'origine du sida. Et le coordonnateur des recherches de l'Artac, le docteur en nutrition Philippe Irigaray, est l'un des cinq experts internationaux récemment invités par le Fonds de recherche en santé du Québec à sélectionner les meilleurs projets de recherche en prévention des cancers environnementaux. Philippe Irigaray souligne que le cerveau humain contient des magnétosomes, des oxydes de fer qui se comportent comme des aimants. L'électrosensibilité pourrait dépendre de leur quantité, qui varie d'un individu à l'autre.

Ces chercheurs préparent actuellement cinq articles scientifiques sur l'électrosensibilité. « Ça demande beaucoup de temps, dit Dominique Belpomme. Ils seront publiés dans un an ou deux. » Mais une action immédiate est nécessaire pour réduire la surexposition des gens aux CEM, a-t-il ajouté.

En France, on estime déjà que 5 % des gens sont électrosensibles, et la proportion augmente avec la popularité croissante des technologies sans fil. « Les études démontrent que de 10 à 50 % de la population risque de devenir très intolérantes aux champs électromagnétiques au cours des 25 à 50 prochaines années. J'ai deux cas de sclérose en plaques déclenchée après l'utilisation prolongée du téléphone cellulaire, trois cas de cancer du sein — deux récidives après surexposition à des champs électromagnétiques et un cas lié à l'utilisation d'ordinateurs — et des preuves anecdotiques également concernant l'autisme et la maladie d'Alzheimer dont le risque est beaucoup plus élevé que le cancer. Les liens de causalité avec les champs électromagnétiques sont très possibles. »

Heureusement, ce médecin arrive à soulager certains patients en administrant des tonifiants du système nerveux et en fermant la barrière hémato-encéphalique à l'aide de médicaments antihistaminiques.


© ARTAC.INFO

Dominique Belpomme

Aucun lien établi, selon l'OMS

En 2005, l'Organisation mondiale de la santé affirmait[2] que les symptômes éprouvés par les personnes qui se disent atteintes d'hypersensibilité électromagnétique (HSEM) pourraient être d'ordre psychosomatique ou reliés à diverses autres causes (problèmes visuels, mauvaise qualité de l'air, problèmes ergonomiques, etc.). « Il n'existe ni critères diagnostiques clairs pour ce problème sanitaire, ni base scientifique permettant de relier les symptômes de la HSEM à une exposition aux CEM... Des études bien contrôlées et menées en double aveugle ont montré que ces symptômes n'étaient pas corrélés avec l'exposition aux CEM. »

Selon le Dr Dominique Belpomme, c'est de la bouillie pour les chats. « C'est un recul permanent de nature politique qui n'a rien de scientifique. L'OMS sera obligée de réviser son jugement dans les mois qui viennent. C'est un déni sociétal qui ne tient pas compte des connaissances actuelles qui évoluent en permanence. »

Selon cet oncologue, le lien de cause à effet entre l'exposition aux champs magnétiques et la leucémie ne fait plus de doute. « Quand on augmente la dose, on augmente le taux de leucémie. Des dizaines d'études toxicologiques en laboratoire le démontrent de la façon la plus évidente, tant *in vitro* que chez l'animal. »

Pour sa part, la chercheure ontarienne Magda Havas[3], de l'Université Trent, affirme que les études aux résultats négatifs concernant l'électrosensibilité comportaient des failles majeures. « Les chercheurs présumaient que les réactions sont instantanées alors que souvent il y a un délai entre l'exposition et la réponse. Les gens ne sont pas des interrupteurs qu'on peut allumer et éteindre. Ces études insinuent erronément que si l'on ne peut pas sentir quelque chose, cela ne peut nous nuire. Or, on sait très bien que l'on ne peut pas détecter le goût de l'arsenic, du plomb, du DDT ni de l'amiante, mais ils sont tous toxiques. »

À lire en page 77 :
Retour à la terre nourricière, sur les bienfaits de mettre son corps à la terre.

1. http://iopscience.iop.org/1755-1315/10/1/012005
2. tinyurl.com/oms-hsem
3. magdahavas.com

FULL REPORT (100p)

Tables in the report can be used to see RF levels depending on distance to the smart meter, and related health effects reported to occur at these exposure levels.

FOR IMMEDIATE RELEASE

INDEPENDENT STUDY FINDS 'SMART' METERS CAN VIOLATE FEDERAL SAFETY LIMITS

Scientific Analysis of New Wireless Meters May Explain Reported Health Symptoms.

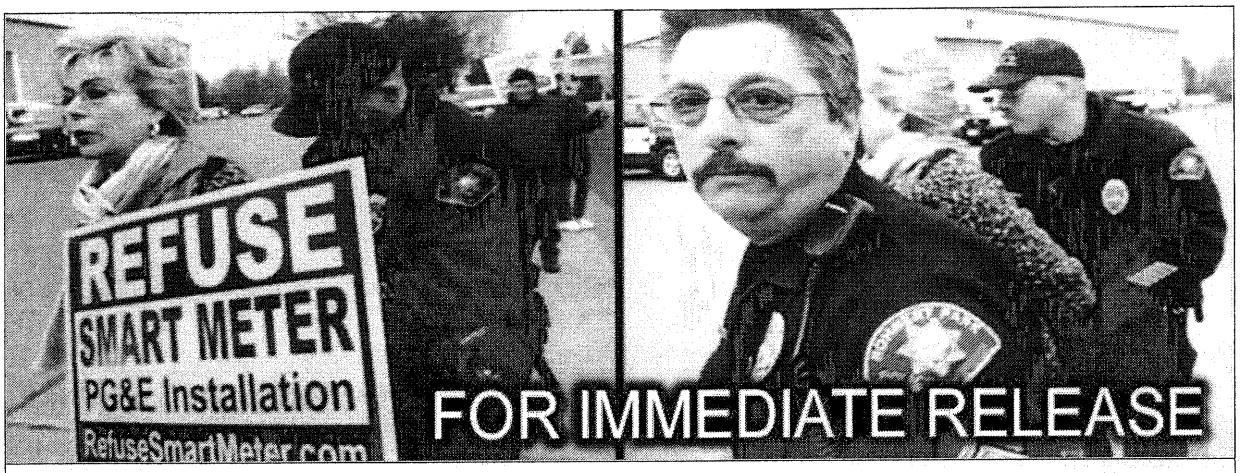
A new study on wireless 'smart' meters shows they are likely to violate Federal Communications Commission (FCC) safety limits in some instances where they are installed and operated close to where people spend time in their homes and back yards.
Further, the study found it typical to have excessively elevated radiofrequency (RF) radiation levels in rooms adjacent to the meter, comparable to living within 200 - 600 feet of cell phone towers.
Scientific studies have reported adverse health effects from chronic exposure to pulsed RF at the same levels and frequencies emitted by smart meters.

Health impacts can include neurological symptoms such as headache, sleep disruption, restlessness, tremors, cognitive impairment, and tinnitus, as well as increased cancer risk and heart problems such as arrythmias, altered heart rhythms, and palpitations.[1]

"From a public health point of view, it is very shortsighted to bring on new sources of human exposure to radiofrequency radiation without any attention to the adverse effects on human health. Smart meters result in a significant increase of exposure to a form of radiation already shown to cause cancer and other diseases." David O. Carpenter, M.D. Director, Institute for Health and the Environment, University at Albany, New York.

1. Khurana VG Hardell L Everaert J Bortkiewicz A Carlberg M Ahonen M, 2010. Epidemiological Evidence for a Health Risk from Mobile Phone Base Stations. Int Journal of Occupational Environmental Health 2010;16:263–267.

Contact: Cindy Sage, Sage Associates, info@sagereports.com



Next-up organization

FOR IMMEDIATE RELEASE

January 11th, 2011

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Katharina Sandizell (415) 663-8024 / (415) 728 7000
Deborah Tavares (707) 824-9850

MORE SMART METER ARRESTS IN ROHNERT PARK WHERE WELLINGTON ENERGY DEPLOYMENT IS BLOCKED THIS MORNING

"This Time it's Grandmothers Who Don't Want Their Grandchildren Exposed to Constant RF from Smart Meters"

This morning in Rohnert Park, Wellington Energy, PG&E's subcontractor who installs Smart Meters all over the Bay Area, was blocked from leaving their deployment yard by about two dozen angry grandmothers, dads, and just ordinary citizens who are outraged by PG&E's stonewalling their legitimate health and safety concerns about Smart Meter RF.

The Rohnert Park police arrested Deborah Tavares of Sebastopol and Ilona Gallo of Novato around 8am this morning for blocking the trucks carrying the Smart Meters ready for forced deployment.

"People are becoming increasingly angry about their civil liberties being rolled over as the CPUC and PG&E continue to stonewall people's concerns and requests for a Moratorium. Not only is the CPUC clearly a neutered reglulatory agency, but it is actually enabling PG&E to treat it's customers with chronic disdain. They recently advertised that disdain by arrogantly declaring that they will 'ignore' Marin County's Smart Meter Ordinance." said Katharina Sandizell, one of the mothers arrested December 29th in West Marin.

"I am a grandmother of four grandchildren and the mother of two children and I am seeing the radiation effects already, headaches and tinnitus as well as children's behavioral problems. Of great concern is also the loss of privacy and civil liberties that this rollout signifies. I am a native born Californian and I have been married for 39 years and I have never been arrested.
I became horrified by this whole Smart Meter roll-out a number of months ago in terms of the loss of freedom and the radiation that it entails." said Deborah Tavares of Sebastopol.

24 independent local governments have demanded a halt to the Smart Meter program. Marin County (unincorporated areas), Santa Cruz County (unincorporated areas), Watsonville, and Fairfax have all passed one year Emergency Ordinances banning the meters.

Joshua Hart / Director, Stop Smart Meters! http://stopsmartmeters.org

The New York Times

January 5, 2011

Calif. County Criminalizes Smart-Meter Installations

By DEBRA KAHN of

Citing alleged health effects from electromagnetic waves, a county in the North San Francisco Bay Area has criminalized the installation of "smart" electric meters.

The Marin County Board of Supervisors unanimously passed an **ordinance** (pdf) yesterday that deems the installation of smart meters a public nuisance in some areas.

The law applies to unincorporated Marin, home to about 70,000 of the county's 260,000 residents. In addition to electromagnetic health risks, the board cited concerns about meters being used to collect information about residents' activities, impacts on aesthetics and potential damage to amateur radio networks.

The board has asked the California Public Utilities Commission before to declare a moratorium on the meters, following the lead of the San Francisco Board of Supervisors.

A spokesman for Pacific Gas & Electric Co., which dismissed an executive last November after he admitted to monitoring smart-meter opponents online, said the company planed to continue smart-meter installation despite the ordinance (*Greenwire*, Nov. 11, 2010).

PG&E's meter installation is being done by a contractor, Wellington Energy, and is supposed to be finished by the end of next year to comply with a state mandate. The towns of Fairfax and Watsonville, as well as Santa Cruz County, have also passed laws against the meters.

"We continue to be committed to engaging fully with our customers as well as in communities where smart meters are being installed or are about to be installed," utility spokesman Jeff Smith said. "Ultimately, continuing the program will allow all our customers to enjoy the

benefits of them."

Among the benefits, Smith said, are faster power-outage detection, daily and hourly summaries of energy use for residents and alerts when a home is about to use enough energy to enter into a higher pricing tier.

Katharina Sandizell, a mother of two who was arrested last week for blocking Wellington trucks on a public road in Inverness Park, noted that San Francisco passed a law last year requiring cell phone retailers to post information on the radiation produced by each type of phone. Smart meters emit more radiation than phones, she said.

"With cell phones, you can choose not to have them, or to turn it off when you're not using it or you can use a headset," she said. "With the smart meter, it's just constantly on and you can't turn it off."

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ORDINANCE NO. _____

AN UNCODIFIED ORDINANCE OF THE BOARD OF SUPERVISORS OF THE COUNTY OF MARIN ADOPTED AS AN URGENCY MEASURE IMPOSING A TEMPORARY MORATORIUM ON THE INSTALLATION OF SMARTMETERS AND RELATED EQUIPMENT IN, ALONG, ACROSS, UPON, UNDER AND OVER THE PUBLIC STREETS AND OTHER PLACES WITHIN THE UNINCORPORATED AREA OF MARIN COUNTY

THE BOARD OF SUPERVISORS OF THE COUNTY OF MARIN FIND AS FOLLOWS:

WHEREAS, the County of Marin (the "County"), through its police powers granted by Article XI of the California Constitution, retains broad discretion to legislate for public purposes and for the general welfare, including but not limited to matters of public health, safety and consumer protection; and

WHEREAS, the County of Marin has a franchise agreement with PG&E that has been in effect since the early 1950's; and

WHEREAS, in addition, the County retains authority under Article XII, Section 8 of the Constitution to grant franchises for public utilities, and pursuant to California Public Utilities Code section 6203, "may in such a franchise impose such other and additional terms and conditions..., whether governmental or contractual in character, as in the judgment of the legislative body are to the public interest;" and

WHEREAS, Public Utilities Code section 2902 reserves the County's right to supervise and regulate public utilities in matters affecting the health, convenience and safety of the general public, such as the use and repair of public streets by any public utility, the location of the poles, wires, mains, or conduits of any public utility, on, under, or above any public streets, and the speed of common - carriers operating within the limits of the municipal corporation;" and

WHEREAS, Pacific Gas & Electric Company ("PG&E") is now installing SmartMeters in Central and Northern California and is installing these meters within the County of Marin; and

WHEREAS, concerns about the impact and accuracy of SmartMeters have been raised nationwide, leading the Maryland Public Service Commission to deny permission on June 21, 2010 for the deployment of SmartMeters in that state. The State of Hawaii Public Utility Commission also recently declined to adopt a smart grid system in that state. The CPUC recently had before it a petition from the City and County of San Francisco, and other municipalities, seeking to delay the implementation of SmartMeters until the questions about their accuracy can be evaluated; and

WHEREAS, major problems and deficiencies with SmartMeters in California have been brought to the attention of the Board of Supervisors of the County of Marin, including PG&E's confirmation that SmartMeters have provided incorrect readings costing ratepayers untold thousands of dollars in overcharges and PG&E's records outlined "risks" and "issues" including an ongoing inability to recover real-time data because of faulty hardware originating with PG&E vendors; and

WHEREAS, the ebb and flow of gas and electricity into homes discloses detailed information about private details of daily life. Energy usage data, measured moment by moment, allows the reconstruction of a household's activities: when people wake up, when they

come home, when they go on vacation, and even when they take a hot bath. SmartMeters represent a new form of technology that relays detailed hitherto confidential information reflecting the times and amounts of the use of electrical power without adequately protecting that data from being accessed by unauthorized persons or entities and as such pose an unreasonable intrusion of utility customers' privacy rights and security interests. Indeed., the fact that the CPUC has not established safeguards for privacy in its regulatory approvals may violate the principles set forth by the U.S. Supreme Court in Kyllo v. United States (2001), 533 U.S. 27; and

WHEREAS, there is now evidence showing that problems with SmartMeters could adversely impact the amateur radio communication network that operates throughout California and neighboring states, as well as other radio emergency communication systems that serve first responders, government agencies, and the public; and

WHEREAS, significant health questions have been raised concerning the increased electromagnetic frequency radiation (EMF) emitted by the wireless technology in SmartMeters, which will be in every house, apartment and business, thereby adding additional man-made EMF to our environment around the clock to the already existing EMF from utility poles, individual meters and telephone poles; and

WHEREAS, FCC safety standards do not exist for chronic long-term exposure to EMF or from multiple sources, and reported adverse health effects from electromagnetic pollution include sleep disorders, irritability, short term memory loss, headaches, anxiety, nausea, DNA breaks, abnormal cell growth, cancer, premature aging, etc. Because of untested technology, international scientists, environmental agencies, advocacy groups and doctors are calling for the use of caution in wireless technologies; and

WHEREAS, the primary justification given for the SmartMeters program is the assertion that it will encourage customers to move some of their electricity usage from daytime to evening hours; however, PG&E has conducted no actual pilot projects to determine whether this assumption is in fact correct. Non-transmitting time-of-day meters are already available for customers who desire them, and enhanced customer education is a viable non-technological alternative to encourage electricity use timeshifting. Further, some engineers and energy conservation experts believe that the SmartMeters program -- in totality -- could well actually increase total electricity consumption and therefore the carbon footprint; and

WHEREAS, Assembly member Jared Huffman has requested the California Council on Science and Technology to advise him on whether the Federal Communications Commission's standards for SmartMeters are sufficiently protective and assess whether additional technology-specific standards are needed for SmartMeters; and

WHEREAS, a response to Assembly member Huffman from the Council on Science and Technology is expected in the near future; and

WHEREAS, Assembly Member Huffman has also recently introduced legislation (AB 37) which would add a section to the Public Utilities Code to require the CPUC to identify alternative options for customers who do not wish to have a wireless SmartMeter installed and allow customers to opt-out of wireless SmartMeter installation, including removing existing SmartMeters where requested by the customer. Most importantly, the legislation would suspend deployment of SmartMeters until the CPUC meets the above requirements; and

WHEREAS, this Board of Supervisors has sent letters to the President of the CPUC on July 20, 2010 and again on October 26, 2010 asking that the CPUC suspend PG&E's authority to deploy SmartMeters or related equipment in Marin County until certain reports now in process have been completed and reviewed and considered, and certain other conditions have been met; and

WHEREAS, there has been no response to either of these letters; and

WHEREAS, because the potential risks to the health, safety and welfare of County residents are so great, the Board of Supervisors wishes to adopt a moratorium on the installation of SmartMeters and related equipment within the unincorporated area of the County of Marin. The moratorium period will allow the Council on Science and Technology and legislative process referenced above to be completed and for additional information to be collected and analyzed regarding potential problems with SmartMeters; and

WHEREAS, there is a current and immediate threat to public health, safety and welfare because, without this urgency ordinance, SmartMeters or supporting equipment will be installed or constructed or modified in the County without PG&E's complying with the CPUC process for consultation with the local jurisdiction, the County's Code requirements, and subjecting residents of Marin County to the privacy, security, health, accuracy and consumer fraud risks of the unproven SmartMeter technology; and

WHEREAS, the Board of Supervisors hereby finds that it can be seen with certainty that there is no possibility that the adoption and implementation of this Ordinance may have a significant effect on the environment. This Ordinance does not authorize construction or installation of any facilities and, in fact, imposes greater restrictions on such construction and installation in order to protect the public health, safety and general welfare. This Ordinance is therefore exempt from the environmental review requirements of the California Environmental Quality Act (CEQA) pursuant to Section 15061(b)(3) of Title 14 of the California Code of Regulations; and

WHEREAS, there is no feasible alternative to satisfactorily study the potential impact identified above as well or better with a less burdensome or restrictive effect than the adoption of this interim urgency moratorium ordinance; and

WHEREAS, based on the foregoing it is in the best interest of public health, safety and welfare to allow adequate study of the impacts resulting from the SmartMeter technology; therefore it is appropriate to adopt a temporary moratorium that would remain in effect from the date of its adoption until December 31, 2011, unless your Board acts to repeal it prior to that date.

NOW, THEREFORE, BE IT ORDAINED by the Board of Supervisors of the County of Marin as follows:

SECTION I

Moratorium. From and after the effective date of this Ordinance, no SmartMeter may be installed in or on any home, apartment, condominium or business of any type within the unincorporated area of the County of Marin, and no equipment related to SmartMeters may be installed in, on, under, or above any public street or public right of way within the unincorporated area of the County of Marin.

SECTION II

Violations of the Moratorium may be charged as infractions or misdemeanors as set forth in Section 1.04.270 of the Marin County Code. In addition, violations shall be deemed public nuisances, with enforcement by injunction or any other remedy authorized by law.

SECTION III

This Board of Supervisors finds and determines that: (a) there is a current and immediate threat to the public peace, health, or safety; (b) the moratorium must be imposed in order to protect and preserve the public interest, health, safety, comfort and convenience and to preserve the public welfare; and (c) it is necessary to preserve the public health and safety of all residents or landowners adjacent to such uses as are affected by this interim ordinance as well as to protect all of the citizens of Marin County by preserving and improving the aesthetic and economic conditions of the County.

SECTION IV

If any provision of this interim ordinance is held to be unconstitutional, it is the intent of the Board of Supervisors that such portions of such ordinance be severable from the remainder and the remainder be given full force and effect.

SECTION V

This interim ordinance is not subject to the California Environmental Quality Act (CEQA) pursuant to Section 15060(c) (2) — the activity will not result in a direct or reasonably foreseeable indirect physical change in the environment and Section 15060(c) (3) — the activity is not a project as defined in Section 15378 of the CEQA Guidelines, because it has no potential for resulting in physical change to the environment, directly or indirectly.

SECTION VI

Effective Dates. This ordinance shall take effect immediately based on the findings by the Board of Supervisors that this ordinance is necessary for the protection of the public health, safety, and general welfare. This ordinance shall be in full force and effect from the date of its adoption by the Board of Supervisors until December 31, 2011, at which time its terms and provisions shall expire and no longer remain in effect.

PASSED AND ADOPTED at a regular meeting of the Board of Supervisors of the County of Marin held on this ___th day of _____ 2011 by the following vote:

AYES: SUPERVISORS
NOES:
ABSENT:

_____
PRESIDENT, BOARD OF SUPERVISORS

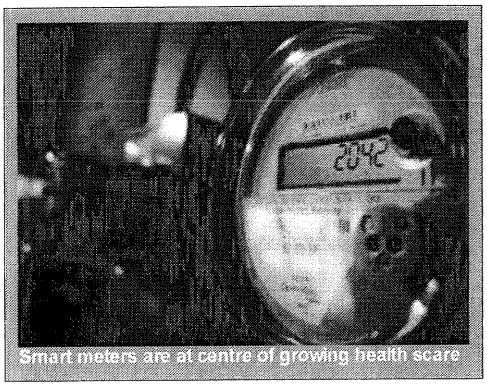
ATTEST:

_____
CLERK

Click Green News

DECC confirms talks with Dept of Health over smart meter risks

by Natalie Evans 25 Jan 2011


Smart meters are at centre of growing health scare

Officials from the UK's Department of Energy and Climate Change have confirmed "discussions" with their counterparts at the Health Department over safety concerns regarding the mass installation of smart meters.

Energy chiefs say talks will continue with the Department of Health as worries grow over research linking smart meter technology and an increased risk of cancer.

The news follows a warning that indoor electromagnetic fields and radio waves emitted by smart meters pose a growing health risk.

The risk of cancer has been linked to intense or prolonged exposure to electromagnetic fields (EMFs) and radio frequencies (RFs).

Worries persist about the potential for mobile phones to cause brain tumours.

And now researchers are warning of the risks from the cumulative effect of waves emitted by electric, gas and water smart meters, together with other devices in the home.

The Government is working with Ofgen to carry forward plans for every home in Britain should be fitted with remote-linked smart meters by 2020.

But experts say that combined with wi-fi hubs, mobile phones and other wireless devices this array of meters will turn homes into something like the inside of a microwave oven.

Smart meters record the exact levels of gas and electricity households use and remotely report the data to suppliers, doing away with meter readings and estimated bills.

The new generation of radio-linked smart meters were first introduced in the UK in September 2008, for customers in the East and West Midlands.

In December 2009, the Department of Energy and Climate Change (DECC) announced its intention to roll-out smart meters to all UK homes by the end of 2020.

But with more than 20,000 UK homes now using smart meter technology, wireless networks are coming under increased scrutiny.

The World Health Organisation states that EMFs are not harmful if they remain within strict frequency boundaries set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP).

However, an investigation conducted by researchers in the USA, where smart meters have been used since 2006, warns emissions can exceed safety limits.

But a report from, California-based Sage Environmental Consulting, reveals that the constant presence of a smart meter could lead to prolonged exposure to potentially harmful RFs.

The Sage report says: "Significant unanswered questions still exist about what levels of radio-frequency microwave radiation will be produced by these [smart] meters.

"Smart meters can produce excessively elevated RF exposures, depending on where they are installed.

"With respect to absolute RF exposure levels predicted for occupied space within dwellings, or outside areas like patios, gardens and walk-ways, RF levels are predicted to be substantially elevated within a few feet to within a few tens of feet from the meter(s).

"The rollout of millions of new RF sources (smart meters) will mean far greater general population exposures, and potential health consequences."

The paper explains that people are already increasingly exposed to radiofrequency radiation at home through the use of numerous wireless devices.

These include mobile and cordless telephones, Blackberry and iPhones, broadband, baby monitors and home security systems.

The report concludes that neither the authorities, nor the utility providers nor the consumer "know what portion of the allowable public safety limit is already being used up or pre-empted by RF from other sources already present in the particular location a smart meter may be installed and operated."

The DECC states that the issue was noted in an impact assessment which was published alongside the department's 'Smart Meters Prospectus' last July.

A DECC spokesman said: "We will keep under review any evidence related to the effects of radiofrequency signals on the health of individuals.

"Smart meters can pave the way for a transformation in the way energy is supplied and used. They will provide consumers with real-time information about energy use, enabling them to monitor and manage their use.

"Consumers will receive accurate bills. Switching between suppliers will be smoother and faster and improvements in the delivery of energy efficiency advice will be supported.

"Decisions on the communications requirements for smart meters have not yet been made and a communications technology solution has not yet been selected.

"Part of the work of the Smart Meter Implementation Programme, which is being taken forward by DECC and Ofgem, will be to develop detailed plans in relation to smart meter communications requirements, whether in the home or outside.

"This work will consider the range of issues relating to smart meter communications and the different technology solutions, including concerns expressed by some people about electromagnetic fields and electrical sensitivity.

"We will continue to discuss the issues raised with the Department of Health, Health Protection Agency and other relevant organisations as our work on smart metering progresses.

"We are currently examining the responses to the recent consultation on the roll out of smart meters, and we will publish the Government's response along with the plans for the roll out later this year."

HOUSE OF COMMONS
CANADA

AN EXAMINATION OF THE POTENTIAL HEALTH IMPACTS OF RADIOFREQUENCY ELECTROMAGNETIC RADIATION

Report of the Standing Committee on Health

Joy Smith, MP
Chair

DECEMBER 2010

40th PARLIAMENT, 3rd SESSION

Rev Environ Health. 2010 Oct-Dec

Scientific panel on electromagnetic field health risks: consensus points, recommendations, and rationales.

Fragopoulou A, Grigoriev Y, Johansson O, Margaritis LH, Morgan L, Richter E, Sage C.

University of Athens, Athens, Greece.

Abstract

In November, 2009, a scientific panel met in Seletun, Norway, for three days of intensive discussion on existing scientific evidence and public health implications of the unprecedented global exposures to artificial electromagnetic fields (EMF). EMF exposures (static to 300 GHz) result from the use of electric power and from wireless telecommunications technologies for voice and data transmission, energy, security, military and radar use in weather and transportation.

The Scientific Panel recognizes that the body of evidence on EMF requires a new approach to protection of public health; the growth and development of the fetus, and of children; and argues for strong preventative actions. New, biologically-based public exposure standards are urgently needed to protect public health worldwide.

PMID: 21268443 [PubMed - in process]

10 Key Points:

1. The Global Population Is At Risk. Global populations are not sufficiently protected from electromagnetic fields (EMF) from emerging communication and data transmission technologies that are being deployed worldwide, affecting billions of people;
2. Sensitive Populations Are Currently Vulnerable. Sensitive populations (for example, the elderly, the ill, the genetically and/or immunologically challenged) and children and fetuses may be additionally vulnerable to health risks; their exposures are largely involuntary and they are less protected by existing public safety standards; and they may amount to 40-50% of the population;
3. Government Actions Are Warranted Now Based on Evidence of Serious Disruption to Biological Systems. The Seletun Scientific Panel urges governments to adopt an explicit statement that "the standard for judging and acting on the scientific evidence shall be based on prudent public health planning principles rather than scientific certainty of effect (causal evidence)". Actions are warranted based on limited, or weak, scientific evidence, or a sufficiency of evidence – rather than a conclusive scientific evidence (causation or scientific certainty) where the consequence of doing nothing in the short term may cause irreparable public health and economic harm, where the populations potentially at risk are very large, where there are alternatives without similar risks, or where the exposures are largely involuntary;
4. The Burden of Proof for the Safety of Radiation-Emitting Technologies Should Fall on Producers and Providers Not Consumers. The Seletun Scientific Panel urges governments to make explicit that the burden of proof of safety rests with the producers and providers of EMF- producing technologies, not with the users and consumers.
5. EMF Exposures Should Be Reduced in Advance of Complete Understanding of Mechanisms of Action. EMF exposures should be reduced now rather than waiting for proof or understanding of mechanisms of harm before acting. This recommendation is in keeping with traditional public health principles, and is justified now given abundant evidence that biological effects and adverse health effects are occurring at exposure levels many orders of magnitude below existing public safety standards around the world;
6. The Current Accepted Measure of Radiation Risk—the Specific Absorption Rate ('SAR')—Is Inadequate, and Misguides on Safety and Risk. SAR is not an adequate approach to predict many important biologic effects in studies that report increased risks for cancer, neurological diseases, impairments to immune function, fertility and reproduction, and neurological function (cognition, behaviour, performance, mood status, disruption of sleep, increased risk for auto collisions, etc);
7. An International Disease Registry Is Needed To Track Time Trends of Illnesses to Correlate Illnesses with Exposures. The Seletun Scientific Panel recommends an international registry be established to track time-trends in incidence and mortality for cancers and neurological and immune diseases. Tracking effects of EMF on children and sensitive EHS populations is a high priority. There should be open access to this information;
8. Pre-Market Health Testing and Safety Demonstration of All Radiation-Emitting Technologies. There is a need for mandatory pre-market assessments of emissions and risks before deployment of new wireless technologies. There should be convincing evidence that products do not cause health harm before marketing;
9. Parity Needed for Occupational Exposure Standards. The Panel discourages use of more lenient public safety standards for workers, as compared to the general public. Separate safety limits are not ethically acceptable. Workers include women of childbearing age and men who wish to retain their fertility;
10. Functional Impairment Designation for Persons with Electrohypersensitivity. The Panel strongly recommends that persons with electrohypersensitivity symptoms (EHS) be classified as functionally impaired rather than with 'idiopathic environmental disease' or similar indistinct categories. This terminology accepts responsibility for the environmental cause of the related health challenges and will encourage governments to make adjustments in the living environment to better address social and well-being needs of this subpopulation of highly sensitive members of society. [IEMFA]

NCBI PubMed.gov U.S. National Library of Medicine National Institutes of Health

Int J Cancer. 2010 Nov 12

Occupational and residential exposure to electromagnetic fields and risk of brain tumors in adults: A case-control study in Gironde, France.

Baldi I, Coureau G, Jaffré A, Gruber A, Ducamp S, Provost D, Lebailly P, Vital A, Loiseau H, Salamon R.

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Abstract

The etiology of brain tumors remains largely unknown

OBJECTIVES: Among potential risk factors, exposure to electromagnetic fields is suspected.

METHODS: We analyzed the relationship between residential and occupational exposure to electromagnetic field and brain tumors in adults. A case-control study was carried out in southwestern France between May 1999 and April 2001. A total of 221 central nervous system tumors (105 gliomas, 67 meningiomas, 33 neurinomas and 16 others) and 442 individually age- and sex-matched controls selected from general population were included.
Electromagnetic field exposure [extremely low frequency (ELF) and radiofrequency separately was assessed in occupational settings through expert judgement based on complete job calendar, and at home by assessing the distance to power lines with the help of a geographical information system. Confounders such as education, use of home pesticide, residency in a rural area and occupational exposure to chemicals were taken into account. Separate analyses were performed for gliomas, meningiomas and acoustic neurinomas

RESULTS: - A nonsignificant increase in risk was found for occupational exposure to electromagnetic fields [odds ratio (OR = 1.52, 0.92-2.51)].
- This increase became significant for meningiomas, especially when considering ELF separately [OR = 3.02; 95 percent confidence interval (95% CI) =1.10-8.25]. The risk of meningioma was also higher in subjects living in the vicinity of power lines (<100 m), even if not significant (OR = 2.99, 95% CI 0.86-10.40).

CONCLUSION: These data suggest that occupational or residential exposure to ELF may play a role in the occurrence of meningioma.

PMID: 21077161 [PubMed - as supplied by publisher]

SCIENTIFIC STUDY: ALZHEIMER and ELF (Extremely Low Frequency 50 Hz)

- Wissenschaftliche Studie : Elektromagnetische Felder erhöhen Alzheimer-RisikO [klicken]

- Gran Estudio Científico en Suiza: Los Campos electromagnéticos aumentan el riesgo de la enfermedad de Alzheimer [clicar]

- Studio Scientifico : I Campi elettromagnetici aumentano il rischio della malattia di Alzheimer [click].

From Zory's Archive *by Magda Havas*

At the beginning of April 2010, a friend sent me a scanned document entitled "Bibliography of Reported Biological Phenomena ('Effects') and Clinical Manifestations attributed to Microwave and Radio-Frequency Radiation."

This document first appeared on October 4, 1971, and what I received was the second printing with revisions, corrections, and additions, dated April 20, 1972. It was a Research Report (Project MF12.524.05-0004B, Report No. 2) commissioned by the Naval Medical Research Institute, and was authored by Zorach ("Zory") R. Glaser, Ph.D., LT, MSC, USNR.

To my surprise, I learned that by 1971 there were more than 2,300 references to documents that detailed the biological effects of radio frequency and microwave radiation from various technologies including radar and mobile communications, navigational devices, and physical therapy devices such as microwave and shortwave diathermy. What an amazing find, especially since the World Health Organization and the wireless telecommunication industries continually state that there is no credible research showing that non-ionizing, non-thermal microwave radiation is harmful at levels below our existing thermal guidelines.

As I flipped through the report and the citations, I found hundreds of references translated from Czech, Russian, German and Polish laboratories; references from the U.S. Navy, Army and Air Force; as well as government reports and documents, many of which had not been published or mentioned in other literature.

I wondered if Dr. Glaser was still alive, and/or still active in the field of radio frequency (RF)/microwave bioeffects, as I had no idea how old he was back in 1972. Consequently I looked him up on the Internet, found a phone number, and called. I wanted to thank Dr. Glaser for the remarkable work he did pulling together so many references on this topic.

We had a long, animated conversation about his research during the past few decades and my research interests, which were remarkably similar. He informed me that he had produced 9 supplements to the original 1971 bibliography, and now had cited well over 6,000 studies on the bioeffects and health effects of radio frequency and microwave radiation, and a number of these were studies showing that exposure to RF/microwave radiation was able, under certain conditions/circumstances, to produce changes, some of which could be considered dangerous (even at low levels where such exposure did not heat the body). He said he would send me copies or the references for the supplements he had in his possession.

For those of you who are new to the dangers of RF/microwave radiation, federal guidelines in Canada, the United States, the United Kingdom, Germany, Japan, New Zealand, and those recommended by the World Health Organization (WHO) are based on thermal effects. "If it does not heat you, it does not hurt you", the saying goes. These countries/organizations deny that electromagnetic fields (EMFs) cause biological effects below the thermal threshold for microwave radiation.

Countries such as Russia, Bulgaria, Hungary, Poland, the Czech Republic, Switzerland, China, Italy, Luxemburg, and Salzburg in Austria believe that non-thermal microwave radiation may harm you, and consequently have more conservative human safety guidelines.

Dr. Glaser compiled his first RF/microwave bioeffects bibliography in 1971 (after earning his PhD degree), as a result of his studies following helping to establish the RF bioeffects laboratory at the Naval Medical Research Institute, when he was assigned by the U.S. Navy, as the military wanted to know if non-ionizing radiation exposure from RF/microwave sources could have adverse effects on military personnel. His superiors were impressed with his report (which included Soviet research; note that the Cold War was on-going at that time), and they asked him to update the bibliography regularly.

Dr. Glaser then funded, managed, and performed RF/microwave bioeffects research as part of his next assignments at the Navy's Bureau of Medicine and Surgery (as Radiation Medicine Program Assistant), and then at the Naval Medical Research and Development Command (as Electromagnetic Radiation Program Manager), and as Officer-in-Charge and Senior Scientist (at the Non-Ionizing Radiation Bioeffects Laboratory, at the Naval Surface Weapons Center).

He then transferred to the U.S. Public Health Service, and began work as manager of the RF/Microwave Radiation Criteria Document, for NIOSH (the National Institute for Occupational Safety

and Health), where he continued his research on the human health effects of radio frequency and microwave radiation. He later transferred to the Bureau of Radiological Health, where he served as Executive Secretary of the Technical Electronic Product Radiation Safety Standards Committee (an advisory committee to the Commissioner of the U.S. Food and Drug Administration, FDA). A few years later he became Associate Director of the Division of Life Sciences, at the National Center for Medical Devices and Radiological Health, where he had responsibilities for (among other) evaluating/assessing the safety and effectiveness of applications for devices that used or generated electromagnetic energies to diagnose and/or treat illness.

In Dr. Glaser's very early Navy career, he was trained and served as an electronics technician. He is also a charter member of the international Bioelectromagnetics Society, and for many years provided the 'microwave bioeffects bibliography' update (referred to by many as the "centerfold") for the Society's monthly newsletter.) Dr. Glaser continued publishing his bibliographic supplements after he left the Navy, with supplements published by NIOSH, and by the Bureau of Radiological Health of the FDA.

He was, and is still considered to be one of the international experts in the RF/microwave bioeffects field, and I was most impressed with his knowledge, his insights, and his historical perspective.

Just before we finished our long insightful telephone conversation into both of our careers, I asked him if, by chance, he had any paper copies of those references.

Dr. Glaser said, "funny you should ask. As a matter of fact I have them all. I kept the reports in my home (basement, attic and garage) for a number of years following my retirement from FDA, and then moved them into two large commercial storage spaces, and over the years offered them (consisting of about 45-50 **large** boxes) to scientists performing research in this field, and to governmental and university libraries, but no one seemed to want them. I was planning to discard them, as I am now looking toward real retirement, and storing them is quite costly."

Dr. Glaser mentioned that a number of lawyers, and a few individuals working for the wireless industry have asked him for parts of his collection but he declined to give the collection to them because he felt the information would be buried. He indicated that he wanted the collection to be available to the public.

Before I knew what I was saying, I asked if I could have them. I would digitize them as PDF, put them online, and make them available to the public via the Internet. He thought for a long moment, and finally said "yes", with the provision that I would pick them up or pay for their delivery. For a university research scientist like me, this was an opportunity equivalent to winning a lottery!

I learned that he lived in Maryland (between Baltimore and Washington, DC), and, as it happened, I was giving a lecture on the health effects of microwave radiation at the Johns Hopkins School of Public Health (his university, where he teaches, and where he earned the MPH degree in 1990) at the end of April, and we decided to meet. He came to my lectures, and actually became part of the lectures by joining me, at my invitation, in answering some questions raised by the audience, and sharing his expertise with the students, in the hope that the concerns for the possible dangers of RF/microwave radiation exposure would be considered by the public.

We then later visited the commercial storage unit, which was overflowing with many boxes containing thousands of reports and printed documents, and-after a quick peek at this treasure house of knowledge-we decided that once the documents was sorted to remove unrelated material I could pick them up. A few weeks later, I flew to Baltimore, rented a U-haul truck, and brought back the first of about 25 boxes overflowing with reports and printed documents.

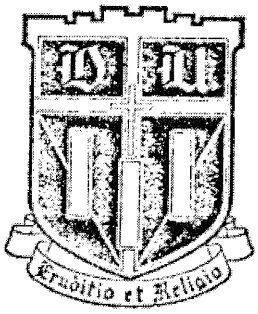
The plan is to have the documents scanned (starting with ones that are more difficult to access, including government and military reports and translations of foreign technical articles) as searchable PDFs, and then make them available at the Electrosensitive Society website (www.rewire.me).

The series will be posted under the heading "From Zory's Archive", and the articles will appear weekly as "Pick of the Week.

The very first article that I will summarize (and make available) is the document that first brought Dr. Glaser's work to my attention, his bibliography dated 1971/1972.

Click HERE to read the original document.

Pick of the Week #14. Proposal for Legislation: Non-ionizing Radiation (1979)



October 10, 2010. Pick of the Week #14 is based on a thoroughly researched and carefully crafted document (*The Challenge of Non-Ionizing Radiation: A Proposal for Legislation*) written by Karen A. Massey (Project Attorney for Natural Resources Defense Council) and published in the Duke Law Journal (Volume 1979, No. 1, 86 pp). This paper will be of interest to policy analysts, lawyers, member of Congress, and all the agencies that currently have pieces of the electromagnetic puzzle in the United States and elsewhere.

Massey identifies the key departments and agencies that have influence on the science and policy of non-ionizing radiation, including: Department of Health, Education and Welfare (HEW); Department of Labor (DOL); Occupational Safety and Health Administration (OSHA); Department of Defense (DOD); Federal Communication Commission (FCC); Department of Transport (DOT); Federal Aviation Administration (FAA); Department of Energy (DOE); National Regulatory Commission (NRC; Environmental Protection Agency (EPA); Food and Drug Administration (FDA); Central Intelligence Agency (CIA) as well as selected state and municipal authorities. With so many "authorities" involved, one might feel confident that appropriate steps are being take to protect public health and the heath of the environment from the potentially harmful effects of non-ionizing radiation. Nothing could be further from the truth!

Massey outlines the key issues that need to be addressed from both a scientific and public policy perspective.

She writes, this article "*. . . makes a plea for a legislative solution and offers some suggestions for dealing with what may be the most complex yet in a line of pollution problems that tax the individual talents of both the scientists and the policymakers, as well as their ability to bridge the gap between their two spheres of action.*"

What is disturbing is that so little progress has been made in the intervening 30 years. Indeed, today there is much less research on non-ionizing radiation than there was decades ago despite the fact that we have many more devices emitting microwave radiation and our levels of exposure are increasing exponentially.

One of the key impediments to progress is the ongoing debate about thermal vs non-thermal effects. This is a red-herring that has received much more attention than it deserves.

This is what Massey writes about thermal vs non-thermal effects.

"I*t has been said that present physical laws do not account for any 'nonthermal' effects and unless new laws are discovered, there can be no possible effects of electromagnetic radiation on biologic systems. This statement is slightly contrary to good science.*"[71]

She goes on to say that *"It may be more than 'slightly' contrary to good science. Knowledge of mechanisms or physical laws explaining phenomena is obviously very important, particularly for its predictive value. But to say that there are no effects when effects are in fact observed, simply because the effects cannot be explained, is like saying no apples fell until Newton discovered the law of gravity. For a long while American scientists could not have observed such effects because, believing only thermal mechanisms had biologic effect, they did not experiment at below-thermal levels. Their Soviet counterparts, believing they had discovered such effects, set their exposure standard accordingly.*[72]

While some things have changed since 1979, not all of the changes have been for the better. For example, Section 704 of the Telecommunications Act of 1996 bars state and local governments from regulating the placement, construction, and modification of cell phone and other personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the FCC regulations concerning such emissions. This certainly can't be called "progress"!

Pick of the Week #17: Power Frequency Electromagnetic Fields

November 8, 2010. Most of the documents in Zory's Archive are concerned with the biological effects of radio frequency radiation. This week we have one that focuses on the biological effects of low frequency electric and magnetic fields.

Nair, I, MG Morgan, and HK Florig. 1989. **Biological Effects of Power Frequency Electric and Magnetic Fields**, Background paper as part of OTA's assessment of *Electric Power Wheeling and Dealing: Technological Considerations for Increasing Competition*, Department of Engineering and Public Policy, Carnegie Mellon University, Pittsburgh, PA, Congress of the United States, Office of Technology Assessment, 110 pp.

Introduction and Overview

Electric and magnetic fields produced by electric power systems have recently been added to the list of environmental agents that are a potential threat to public health. This paper describes peoples' exposures to fields from power systems and other sources (Section 2), reviews existing scientific evidence on the biological effects of these fields (Sections 3 through 7), presents a history of research support and of regulatory activity (Sections 8 and 9), and discusses problems and alternatives in regulatory action (Section 10).

The electric power that is used in our homes, offices and factories uses AC or alternating current. This is in contrast to the DC or direct current that is produced by batteries. An alternating current does not flow steadily in one direction. It alternates back and forth. The power used in North America alternates back and forth 60 times each second. This is called 60 hertz (Hz) power. In Europe and some other parts of the world the frequency of electric power is 50 hertz rather than 60 Hz.

There are electric and magnetic fields wherever there is electric power. This means that there are fields associated with large and small powerlines, wiring and lighting in homes and places of work, and all electrical appliances. These fields are created by the electric charges that are pumped into the power system by electric power generating stations. Electric fields arise from the amount of that charge and magnetic fields result from the motion of that charge. Taken together, these fields are often referred to as electromagnetic fields. The electric and magnetic fields created by power systems oscillate with the current. That is why fields around power systems are called power-

frequency or 60 hertz fields. A more complete description of the electromagnetic fields from power systems is presented in Section 2.

Public concerns about power-frequency fields first emerged in the late 1960s as power companies turned increasingly to extra high voltage (EHV) transmission lines to handle large increases in electricity use. EHV lines carry electric power with lower energy losses and with smaller land usage than multiple lower-voltage lines with the same power-delivery capacity. Public attention to EHV transmission lines focused first on the aesthetic impact of their large towers, on the aesthetic and ecological impacts at their rights-at-way, and on various nuisance effects created by their strong electric fields. These nuisance effects include audible noise, TV/radio interference, and induced shocks that can occur when a person standing beneath an EHV line touches a large ungrounded metal object such as a truck or farm vehicle. By the early 1970s, the American National Standards Institute had issued voluntary standards to address nuisance effects. The first evidence that power-frequency fields might have a direct effect on human health appeared in 1972 when Soviet investigators reported that workers in Soviet EHV switchyards suffered from a number of nonspecific ailments [Korobkova 72]. Although these reports were greeted with much skepticism by western scientists, they served to stimulate public concern. By the mid-seventies, health effects had become a central issue in transmission line siting hearings in several states.

There are two reasons why conventional wisdom has until recently held that the fields associated with power systems could pose no threat to human health. First, there is no significant transfer of energy from power-frequency fields to biological systems. Unlike X-rays (i.e. ionizing radiation), powerfrequency fields do not break chemical bonds. Unlike microwaves (i.e. non-ionizing radiation), powerfrequency fields cannot cause significant tissue heating. Second, all cells in the body maintain large natural electric fields across their outer membranes. These naturally occurring fields are at least 100 times more intense than those that can be induced by exposure to common power-frequency fields.

However, despite the low energy of power-frequency fields and the very small perturbations that they make to the natural fields within the body, studies over the last fifteen years have demonstrated unequivocally that under certain circumstances, the membranes of cells can be sensitive to even fairly weak externally imposed low frequency electromagnetic fields. Extremely small signal changes can trigger major biochemical responses critical to the functioning of the cell [Adey 81, Adey 84, Adey 87]. This should perhaps have come as no surprise, as cells, especially those in the nervous system, make use of complex electrochemical processes in their normal function. The ability of some animals including eels, sharks, and pigeons to detect extremely weak ELF fields and use them for homing and finding prey clearly demonstrates that at least some specialized cells can be exquisitely sensitive to such fields [Fessard 74, Gould 82]. Among the responses demonstrated in laboratory studies using animal cells and tissue are:

• modulation of ion flows;

• interference with DNA synthesis and RNA transcription;

• interaction with the response of normal cells to various agents and biochemicals such as hormones, neurotransmitters, and growth factors;

• interaction with the biochemical kinetics of cancer cells.

Even when effects are demonstrated consistently on the cellular level in laboratory experiments, it is hard to predict whether and how they will affect the whole organism. Processes at the individual cell level are integrated through complex mechanisms in the animal. When a process in the cell is lightly perturbed by an external agent such as an ELF field, other processes may compensate for it so that there is no overall disturbance to the organism. Some perturbations may be within the ranges of disturbances that a system can experience and still function properly. This difficulty in extrapolating cellular level effects to predict the existence or severity of possible public health effects, together with the absence of any large-scale and obvious public health effect associated with electrification, are two arguments advanced during the last decade in support of the claim that there is no need for concern about possible public health effects from exposure to power-frequency fields.

Another problem in deducing possible health effects from cellular level effects has been the lack of a theoretical model to explain and understand the detailed mechanism of interaction. ELF fields affect the cell via the cell membrane. Cell membrane biology is still in its infancy although this area of molecular biology has made great strides in the past few years. Until recently, there was not enough understanding to even advance hypotheses on the potential mechanisms by which ELF fields may cause significant perturbations in cell and organ functions. Hypotheses are now being advanced but are still at a speculative stage [Adey 86, Smith 87, Liboff 86].

As we discuss in Section 3, findings at the cellular level display considerable complexity including resonant responses (or, "windows") in frequency and field strength, complex time dependencies, and dependence on the ambient DC magnetic field created by the earth. For these reasons, ELF fields appear to be an agent to which there is no known analog. Many lessons learned from environmental hazards such as chemical agents (PCB, vinyl chloride, benzene, etc.) or physical agents (ionizing radiation, asbestos etc.) may not directly apply to ELF fields. This is because in the case of fields it is not yet clear what measures of exposure or "dose" are relevant. In contrast to more familiar environmental agents where "if some of it is bad, more of it is worse", it may not be safe to assume that if ELF field exposure leads to health risks, exposure to stronger fields or exposure for longer periods is worse than exposure to weaker fields or brief periods.

In addition to cellular studies, whole animal and human experiments have examined five general categories of effects:

1. General effects such as detection, avoidance and behavior response and development and learning of animals, and moods of humans;

2. Effects on externally measured physical parameters such as growth and birthweight, respiration, heartbeat rate, and temperature rhythms;

3. Effects on specific biochemicals such as hormones that are responsible for the maintenance, regulation and control of general physiological and psychological functions; for response to environmental stressors; for growth and development; and, for triggering special responses such as sexual function, and fetal and newborn nourishment;

4. Effects on circadian rhythms of animals and humans, and,

5. Effects in the epidemiology of cancer, particularly leukemia and brain cancer.

Several authors and scientific advisory panels have reviewed the effects literature [Adey 86, Adey 87, AIBS 85, Carstensen 87, Florida 85, Grandolfo 86, lee 86, NYSPlP 87, Sheppard 83, West 86, WHO 84]. In summary, the results are complex and inconclusive. There have been many "negative" experiments, that is, experiments that have looked for effects but not found any difference between biological systems that have been exposed to fields and those that have not. However, the growing number of positive findings have now clearly demonstrated that under specific circumstances even weak low-frequency electromagnetic fields can produce substantial changes at the cellular level, and in a few experimental settings, effects have also been demonstrated at the level of the whole animal.

Epidemiological evidence, while controversial and subject to a variety of criticisms, is beginning to provide a basis for concern about risks from chronic exposure. Some observers find this epidemiological evidence more persuasive in light of the clear evidence of effects that is available at the cellular level, but others insist on treating the evidence from these two areas as separate.

As recently as a few years ago, scientists were making categorical statements that on the basis of all available evidence there are no health risks from human exposure to power-frequency fields. In our view, the emerging evidence no longer allows one to categorically assert that there are no risks. But it does not provide a basis for asserting that there is a significant risk.

If exposure to fields does turn out to pose a health risk, it is unlikely that high voltage transmission lines will be the only sources of concern. Power-frequency fields are also produced by distribution lines, wall wiring, appliances, and lighting fixtures. These non-transmission sources are much more common· than transmission lines and could play a far greater role than transmission lines in any public health problem.