

ORIGINAL



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Antonio Gill

From: David Smith [desmithbranfc
Sent: Tuesday, September 20, 2011
To: Antonio Gill
Subject: Docket #: E-00000C-11-0328
Attachments: AZCorpSep20.pdf

Generic Smart Meter
Investigation
E-00000C-11-0328

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2011 SEP 20 A 11: 06

BEFORE THE ARIZONA CORPORATION COMMISSION

AZ CORP COMMISSION
DOCKET CONTROL

Smart Meter Hearing
Docket #: E-00000C-11-0328

Arizona Corporation Commission
DOCKETED

September 20, 2011

SEP 20 2011

Dear Commissioners,

DOCKETED BY

It is our understanding that all of the material that had previously been submitted under Docket # E-00000C-11-0328 is now in the process of being reviewed by the Commission's Director of Utilities. We wish to submit additional information to the Commissioners for their consideration and for inclusion in the above-mentioned review.

There currently is no consensus as to whether electromagnetic hypersensitivity (EHS) is an organic illness. Testifying before the Commission on September 8, 2011 on behalf of APS, epidemiologist Dr. Leeka Kheifets cited research that purportedly shows that EHS symptoms are not related to exposure to electromagnetic fields, yet epidemiologist Dr. Samuel Milham states otherwise (see attached statement and Curriculum Vitae of Dr. Milham). There is also double-blind research to show that electromagnetic fields can indeed provoke physical, and not merely psychosomatic, effects in people with EHS (see attached abstracts of studies by Dr. Havas, et. al., and by Dr. McCarty, et. al. And finally, while the World Health Organization has not, as yet, supported the organic basis of EHS, the Council Of Europe in its recent Resolution 1815 states in paragraph 4 that "other non-ionising frequencies, whether from extremely low frequencies, power lines or certain high frequency waves used in the fields of radar, telecommunications and mobile telephony, appear to have more or less potentially harmful, non-thermal, biological effects on plants, insects and animals as well as the human body, even when exposed to levels that are below the official threshold values." In paragraph 8.1.4 the Council recommends that member countries "pay particular attention to 'electrosensitive' people who suffer from a syndrome of intolerance to electromagnetic fields and introduce special measures to protect them . . ." (see attached Resolution 1815).

It seems clear that we have a situation where there is disagreement between two experienced epidemiologists, between double-blind research studies, and even between world bodies. In light of this uncertainty, and given the grave consequences for many Arizona citizens that will result from a wrong decision, we respectfully reiterate our request that the Commissioners adopt the physician's ethical principle when facing medical uncertainty: "First, do no harm."

We have previously submitted to the Commission a moderate and feasible plan for a medical opt-out. We ask that it become part of the discussion so that the needs of our disabled community in Snowflake, and other similar communities in Arizona, can be accommodated.

Sincerely,

David E. Smith

September 16, 2011

To whom it may concern:

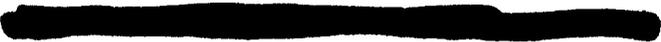
My name is Samuel Milham. I am a semi retired medical epidemiologist with over 20 years' experience studying the health effects of electromagnetic fields (EMFs). I have written a book about it called Dirty Electricity and have a website with my CV and recent papers: www.sammilham.com. I also have authored over one hundred peer-reviewed scientific papers, many dealing with electromagnetic fields.

I visited the colony of electro-sensitive people living in Snowflake Arizona two years ago and can testify to how compromised their health is by exposure to electricity. Smart meters installed on their dwellings would require most of them to relocate or disconnect from the grid.

I spend winters in southern California and spent much of last year dealing with electro-sensitive people who have had to relocate because of the smart meters deployed by Edison Electric. I have measured the EMFs emitted by the smart meters in living spaces and on the house wiring. Most of it is in the microwave frequencies, but they all generate dirty electricity (high frequency voltage transients). They convert the grid AC to DC to operate their transmitters with switching power supplies which interrupt the AC current flow and generate dirty electricity which travels on house wiring and gets into the earth.

I strongly recommend the Snowflake residents be offered an opt-out option with regard to smart meter installation. It would be better for them if no smart meters were deployed in the community, since I have seen people become ill from exposure to neighborhood smart meters.

Respectfully,

Samuel Milham MD


Sam Milham Curriculum Vitae

Birth Date: May 12, 1932

Education Union College, Schenectady, New York, September

Experience 1950-June 1954, B.S. Sigma Xi, Fuller Chemistry Prize

New York State Medical Scholarship.

Albany Medical College, September 1954-June 1958, M.D. Alpha Omega Alpha.

Intern, U.S. Public Health Hospital, Boston, Massachusetts, July 1958-July 1959.

U.S. Public Health Service Residency in Public Health. Assigned to Monroe County Health Department, Rochester, New York, July 1959-August 1960.

Johns Hopkins School of Hygiene and Public Health, September 1960-June 1961, M.P.H.

Senior Resident in Epidemiology. Epidemiology Residency Program, New York State Department of Health, June 1961-1962.

Development Consultant. New York State Department of Health, 1963-1967.

Assistant Professor, Department of Pediatrics, Albany Medical College, July 1964-1967.

Diplomate, American Board of Preventive Medicine, June 1966.

Associate Professor, University of Hawaii School of Public Health and Medical School, 1967-1968.

Travel Fellowship, IARC 1971.

Section Head, Epidemiology Section, Washington

State Department of Health, 1968-1986.

Travel Fellowship, International Cancer Research Technology Transfer, 1981.
Washington State Public Health Association Annual Award, 1986.

Chronic Disease Epidemiologist, Washington State Department of Health, 1968-1988.

Clinical Associate Professor, University of Washington School of Public Health, 1968--.

Section Head, Chronic Disease Epidemiology Section, Washington State Department of Health, 1988-May 1992.

Adjunct Professor, Mount Sinai School of Medicine, 1989--.

Robert Carl Strom Foundation Humanitarian Award, 1990.

Member of Bioelectromagnetics Society, 1984--.

Self-employed, June 1992.

Elected to Fellowship, Collegium Ramazzini, October 1994.

Ramazzini Award. 1997

Special Congenital defects, occupational and

Interests: environmental illness, methods in occupational studies, EMF epidemiology.

Publications

P = peer reviewed article

L = letter

M = monograph

P Rathbun, Margaret L.; Broad, Robert H.; Font, Wallace; Milham, Samuel; Ames, Wendell R. Mass Immunization with Sabin and Cox Oral Poliomyelitis Vaccines. N.Y.S.J. of Med., Vol. 62, No. 11, pp. 1767-1775, June 1962.

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P Milham, Samuel. Leukemia in Husbands and Wives. *Science*, Vol. 148, No. 3666, pp. 98-100, April 1965.

P Gittlesohn, A.M. and Milham, S. Vital Record Incidence of Congenital Malformations in New York State. *Public Health Services Publication No. 1163*, pp. 305-314, 1965.

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- P Magenis, R.E., Hecht, F. and Milham S. Trisomy 13 (DI) Syndrome: Studies of Parental Age, Sex Ratio and Survival. J. of Pediatrics, Vol. 73, pp. 222-228, August 1968.
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- P Milham, Samuel. Leukemia and Multiple Myeloma in Farmers. American Journal of Epidemiology, Vol. 94, pp. 307-310, 1971.
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- L Milham, Samuel and Elledge, William. Maternal Methimazole and Congenital Defects in Children. Teratology, Vol 5, p. 125, February 1972.
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- L Milham, Samuel. Hodgkin's Disease as an Occupational Disease of School Teachers. New Eng. J. or Med., Vol. 290, Nol 23, p. 1329, 1974.
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- P Petersen, Gerald R. and Milham, Samuel. Brief Communication: Hodgkin's Disease Mortality and Occupational Exposure to Wood. Journal of the National Cancer Institute, 53:957-958, 1974.

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P Milham, Samuel. Increased Incidence of Cancer in Office Workers Exposed to Strong Magnetic Fields. American Journal of Industrial Medicine, 30:702-704, 1996

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L Meningioma and mobile phone use

Sam Milham

International Journal of Epidemiology 2009; doi: 10.1093/ije/dyp196

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Papers

Male Breast Cancer in Office Workers

Magnetic Fields From Steel-Belted Radial Tires:
Implications for Epidemiologic Studies

A New Electromagnetic Exposure Metric:
High Frequency Voltage Transients Associated With
Increased Cancer Incidence in Teachers in a California School

Historical Evidence That Electrification Caused the
20th Century Epidemic of "Diseases of Civilization"

Low Proportion of Male Births and Low Birthweight of Sons
of Flour Mill Worker Fathers

Historical Evidence That Residential Electrification Caused
the Emergence of the Childhood Leukemia Peak

Most Cancer in Firefighters is Due to Radio-Frequency
Radiation Exposure Not Inhaled Carcinogens

Amyotrophic Lateral Sclerosis (Lou Gehrig's Disease)
is Caused by Electric Currents Applied to or Induced
in the Body

Increased Mortality in Amateur Radio Operators Due to
Lymphatic and Hematopoietic Malignancies

Diabetes on Islands and Dirty Electricity
(Letter to The Lancet rejected)

Provocation study using heart rate variability shows microwave radiation from 2.4 GHz cordless phone affects autonomic nervous system

Magda Havas*, Jeffrey Marrongelle**, Bernard Pollner***,
Elizabeth Kelley****, Camilla R.G. Rees*****, Lisa Tully*****

* Environmental and Resource Studies, Trent University, Peterborough, Canada

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*** Haspingerstrasse 7/2, 6020 Innsbruck, Austria

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Abstract

Aim: The effect of pulsed (100 Hz) microwave (MW) radiation on heart rate variability (HRV) was tested in a double blind study. **Materials and Methods:** Twenty-five subjects in Colorado between the ages of 37 to 79 completed an electrohypersensitivity (EHS) questionnaire. After recording their orthostatic HRV, we did continuous real-time monitoring of HRV in a provocation study, where supine subjects were exposed for 3-minute intervals to radiation generated by a cordless phone at 2.4 GHz or to sham exposure. **Results:** Questionnaire: Based on self-assessments, participants classified themselves as extremely electrically sensitive (24%), moderately (16%), slightly (16%), not sensitive (8%) or with no opinion (36%) about their sensitivity. The top 10 symptoms experienced by those claiming to be sensitive include memory problems, difficulty concentrating, eye problems, sleep disorder, feeling unwell, headache, dizziness, tinnitus, chronic fatigue, and heart palpitations. The five most common objects allegedly causing sensitivity were fluorescent lights, antennas, cell phones, Wi-Fi, and cordless phones. **Provocation Experiment:** Forty percent of the subjects experienced some changes in their HRV attributable to digitally pulsed (100 Hz) MW radiation. For some the response was extreme (tachycardia), for others moderate to mild (changes in sympathetic nervous system and/or parasympathetic nervous system). and for some there was no observable reaction either because of high adaptive capacity or because of systemic neurovegetative exhaustion. **Conclusions:** Orthostatic HRV combined with provocation testing may provide a diagnostic test for some EHS sufferers when they are exposed to electromagnetic emitting devices. This is the first study that documents immediate and dramatic changes in both Heart Rate (HR) and HR variability (HRV) associated with MW exposure at levels well below (0.5%) federal guidelines in Canada and the United States (1000 microW/cm²).

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Just Accepted by International Journal of Neuroscience

ELECTROMAGNETIC HYPERSENSITIVITY: EVIDENCE FOR A NOVEL NEUROLOGICAL SYNDROME

David E. McCarty, M.D., Simona Carrubba, Ph.D., Andrew L. Chesson, Jr., M.D., Clifton Frilot, II, Ph.D., Eduardo Gonzalez-Toledo, M.D., Andrew A. Marino, Ph.D.
doi:10.3109/00207454.2011.608139

ABSTRACT

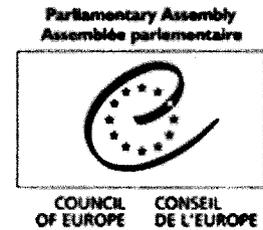
Objective: We sought direct evidence that acute exposure to environmental-strength electromagnetic fields could induce somatic reactions (EMF hypersensitivity). **Methods:** The subject, a female physician self-diagnosed with EMF hypersensitivity, was exposed to an average (over the head) 60-Hz electric field of 300 V/m (comparable to typical environmental-strength EMFs) during controlled provocation and behavioral studies.

Results: In a double-blinded EMF provocation procedure specifically designed to minimize unintentional sensory cues, the subject developed temporal pain, headache, muscle-twitching, and skipped heartbeats within 100 s after initiation of EMF exposure ($P < 0.05$). The symptoms were caused primarily by field transitions (off-on, on-off) rather than the presence of the field, as assessed by comparing the frequency and severity of the effects of pulsed and continuous fields in relation to sham exposure. The subject had no conscious perception of the field as judged by her inability to report its presence more often than in the sham control.

Discussion: The subject demonstrated statistically reliable somatic reactions in response to exposure to subliminal EMFs under conditions that reasonably excluded a causative role for psychological processes.

Conclusion: EMF hypersensitivity can occur as a *bona fide* environmentally-inducible neurological syndrome.

Parliamentary Assembly Assemblée parlementaire



Resolution 1815 (2011)¹

The potential dangers of electromagnetic fields and their effect on the environment

1. The Parliamentary Assembly has repeatedly stressed the importance of states' commitment to preserving the environment and environmental health, as set out in many charters, conventions, declarations and protocols since the United Nations Conference on the Human Environment and the Stockholm Declaration (Stockholm, 1972). The Assembly refers to its past work in this field, namely Recommendation 1863 (2009) on environment and health: better prevention of environment-related health hazards, Recommendation 1947 (2010) on noise and light pollution, and more generally, Recommendation 1885 (2009) on drafting an additional protocol to the European Convention on Human Rights concerning the right to a healthy environment and Recommendation 1430 (1999) on access to information, public participation in environmental decision-making and access to justice – implementation of the Århus Convention.

2. The potential health effects of the very low frequency of electromagnetic fields surrounding power lines and electrical devices are the subject of ongoing research and a significant amount of public debate. According to the World Health Organization, electromagnetic fields of all frequencies represent one of the most common and fastest growing environmental influences, about which anxiety and speculation are spreading. All populations are now exposed in varying degrees to electromagnetic fields, the levels of which will continue to increase as technology advances.

3. Mobile telephony has become commonplace around the world. This wireless technology relies upon an extensive network of fixed antennae, or base stations, relaying information with radio-frequency signals. Over 1.4 million base stations exist worldwide and the number is increasing significantly with the introduction of third generation technology. Other wireless networks that allow high-speed Internet access and services, such as wireless local area networks, are also increasingly common in homes, offices and many public areas (airports, schools, residential and urban areas). As the number of base stations and local wireless networks increases, so does the radio-frequency exposure of the population.

4. While electrical and electromagnetic fields in certain frequency bands have wholly beneficial effects which are applied in medicine, other non-ionising frequencies, whether from extremely low frequencies, power lines or certain high frequency waves used in the fields of radar, telecommunications and mobile telephony, appear to have more or less potentially harmful, non-thermal, biological effects on plants, insects and animals as well as the human body, even when exposed to levels that are below the official threshold values.

5. As regards standards or threshold values for emissions of electromagnetic fields of all types and frequencies, the Assembly strongly recommends that the ALARA (as low as reasonably achievable) principle is applied, covering both the so-called thermal effects and the athermal or biological effects of electromagnetic emissions or radiation. Moreover, the precautionary principle should be applied when scientific evaluation does not allow the risk to be determined with sufficient certainty. Given the context of growing exposure of the population, in particular that of vulnerable groups such as young people and children, there could be extremely high human and economic costs if early warnings are neglected.

6. The Assembly regrets that, despite calls for the respect of the precautionary principle and despite all the recommendations, declarations and a number of statutory and legislative advances, there is still a lack of reaction to known or emerging environmental and health risks and virtually systematic delays in adopting and implementing effective preventive measures. Waiting for high levels of scientific and clinical proof before taking action to prevent well-known risks can lead to very high health and economic costs, as was the case with asbestos, leaded petrol and tobacco.

7. Moreover, the Assembly notes that the problem of electromagnetic fields or waves and their potential consequences for the environment and health has clear parallels with other current issues, such as the licensing of medication, chemicals, pesticides, heavy metals or genetically modified organisms. It therefore highlights that the issue of independence and credibility of scientific expertise is crucial to accomplish a transparent and balanced assessment of potential negative impacts on the environment and human health.

8. In light of the above considerations, the Assembly recommends that the member states of the Council of Europe:

8.1. in general terms:

8.1.1. take all reasonable measures to reduce exposure to electromagnetic fields, especially to radio frequencies from mobile phones, and particularly the exposure to children and young people who seem to be most at risk from head tumours;

8.1.2. reconsider the scientific basis for the present standards on exposure to electromagnetic fields set by the International Commission on Non-Ionising Radiation Protection, which have serious limitations, and apply ALARA principles, covering both thermal effects and the athermic or biological effects of electromagnetic emissions or radiation;

8.1.3. put in place information and awareness-raising campaigns on the risks of potentially harmful long-term biological effects on the environment and on human health, especially targeting children, teenagers and young people of reproductive age;

8.1.4. pay particular attention to "electrosensitive" people who suffer from a syndrome of intolerance to electromagnetic fields and introduce special measures to protect them, including the creation of wave-free areas not covered by the wireless network;

8.1.5. in order to reduce costs, save energy, and protect the environment and human health, step up research on new types of antenna, mobile phone and DECT-type device, and encourage research to develop telecommunication based on other technologies which are just as efficient but whose effects are less negative on the environment and health;

8.2. concerning the private use of mobile phones, DECT wireless phones, WiFi, WLAN and WIMAX for computers and other wireless devices such as baby monitors:

8.2.1. set preventive thresholds for levels of long-term exposure to microwaves in all indoor areas, in accordance with the precautionary principle, not exceeding 0.6 volts per metre, and in the medium term to reduce it to 0.2 volts per metre;

8.2.2. undertake appropriate risk-assessment procedures for all new types of device prior to licensing;

8.2.3. introduce clear labelling indicating the presence of microwaves or electromagnetic fields, the transmitting power or the specific absorption rate (SAR) of the device and any health risks connected with its use;

8.2.4. raise awareness on potential health risks of DECT wireless telephones, baby monitors and other domestic appliances which emit continuous pulse waves, if all electrical equipment is left permanently on standby, and recommend the use of wired, fixed telephones at home or, failing that, models which do not permanently emit pulse waves;

8.3. concerning the protection of children:

8.3.1. develop within different ministries (education, environment and health) targeted information campaigns aimed at teachers, parents and children to alert them to the specific risks of early, ill-considered and prolonged use of mobiles and other devices emitting microwaves;

8.3.2. for children in general, and particularly in schools and classrooms, give preference to wired Internet connections, and strictly regulate the use of mobile phones by schoolchildren on school premises;

8.4. concerning the planning of electric power lines and relay antenna base stations:

8.4.1. introduce town planning measures to keep high-voltage power lines and other electric installations at a safe distance from dwellings;

8.4.2. apply strict safety standards for the health impact of electrical systems in new dwellings;

8.4.3. reduce threshold values for relay antennae in accordance with the ALARA principle and install systems for comprehensive and continuous monitoring of all antennae;

8.4.4. determine the sites of any new GSM, UMTS, WiFi or WIMAX antennae not solely according to the operators' interests but in consultation with local and regional government authorities, local residents and associations of concerned citizens;

8.5. concerning risk assessment and precautions:

8.5.1. make risk assessment more prevention oriented;

8.5.2. improve risk-assessment standards and quality by creating a standard risk scale, making the indication of the risk level mandatory, commissioning several risk hypotheses to be studied and considering compatibility with real-life

conditions;

8.5.3. pay heed to and protect "early warning" scientists;

8.5.4. formulate a human-rights-oriented definition of the precautionary and ALARA principles;

8.5.5. increase public funding of independent research, in particular through grants from industry and taxation of products that are the subject of public research studies to evaluate health risks;

8.5.6. create independent commissions for the allocation of public funds;

8.5.7. make the transparency of lobby groups mandatory;

8.5.8. promote pluralist and contradictory debates between all stakeholders, including civil society (Århus Convention).

¹ . *Text adopted by the Standing Committee, acting on behalf of the Assembly, on 27 May 2011 (see Doc. 12608, report of the Committee on the Environment, Agriculture and Local and Regional Affairs, rapporteur: Mr Huss).*

Hospital Accommodations of Electrically Hypersensitive Patients in Sweden

Sweden is one of the first countries in the world to start recognizing electrical hypersensitivity (EHS) as a legitimate functional handicap. One of the fundamental issues facing people with EHS is access to medical facilities. In 2007, the Swedish organization for EHS patients surveyed the different regions of the country to see how accommodations were progressing. This English-language document is a compilation of the responses they received, which lists a total of eight Swedish hospitals that provide facilities suitable for EHS patients. Sweden has a population of eight million.

Kalmar Hospital (Kalmar län)

The recently built hospital building number 18 has 25 percent of the treatment rooms designed as shielded. One of the treatment rooms can be made completely free of any electricity as well. In all construction and renovation throughout the hospital, special considerations are made in the choice of wiring and location of electrical installations to reduce the overall radiation level everywhere in the hospital.

Karlstad Hospital (Värmland)

One consultation room in the infectious disease clinic has been renovated for lower radiation. The room has a door directly to the outside, so patients can enter without having to go through the entire building. The room is located at the very end of the building and already had a relatively low level of radiation before renovations. The room was up for renovation anyway, which made modifications simpler. To further reduce the level of radio frequency radiation, a fine mesh of copper (max 2 mm) was embedded in the walls while they were being stuccoed. The stucco used was a special conducting type, which will dampen any standing waves inside the copper shield. One outer wall was shielded using only the conducting stucco. Shielding glass was used for the windows in the wall and the doors. The doors were shielded with steel, and the door frames were changed to steel as well.

The doors, door frames, windows and walls are all in excellent electrical contact with each other along their edges, so they together provide a complete enclosure (presumably the ceiling and perhaps the floor have shielding too?). This enclosure is grounded in a single point (presumably using a separate ground rod).

Lycksele Hospital (Västerbotton)

Rooms with low radiation levels have been identified for use with EHS patients.

Ryhov Hospital (Jönköping)

This hospital has one modified treatment room, which also can be reserved by outside doctors. There is also a wood-framed bed available for use by metal-sensitive patients.

Skellefteå Hospital (Västerbotton)

There are three electrically modified rooms available at this hospital, one at the emergency room, one in surgery and an isolation room. A shielding canopy is also available to mount over a bed, to reduce the radio frequency radiation level around a patient. This canopy is available to the other hospitals in the region (i.e. Umeå and Lycksele).

Sundsvall Hospital (Västernorrland)

The letter only stated that this hospital had a room that meets the needs of EHS patients.

Umeå Hospital (Västerbotten)

Four rooms have been modified to accommodate EHS patients: one each at the emergency room, infectious diseases, surgery and intensive care departments.

Örebro (Örebro län)

The local government says there are specially modified rooms available in Örebro, but does not state where they are. They are presumably at either the Örebro University Hospital or the clinic for environmental medicine, or both, as their ability to work with EHS patients is mentioned in some detail.

This document was compiled by Steen Hviid, based on copies of letters from six Swedish regions. The copies were kindly provided by El-Överkansligas Riksförbund, the Swedish EHS organization. All documents were dated May, June or October 2007.