STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

March 15, 2004

Pamela B. Katz, P.E., Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: CT Department of Public Health comments regarding electric and magnetic field health studies as they relate to a CT Light and Power Co. and United Illuminating Co. application for construction of a new 345-kV electric transmission line and associated facilities between Middletown and Norwalk.

Dear Ms. Katz:

In response to your request to Commissioner J. Robert Galvin, dated February 23, 2004, the CT Department of Public Health (CT DPH) has reviewed portions of the CT Light and Power Co. and United Illuminating Co. application for construction of a new 345-kV electric transmission line. As you requested, CT DPH's review focused on the portion of the application related to electric and magnetic field (EMF) health studies. CT DPH is pleased to submit the attached comments. Also attached is a copy of our fact sheet on EMF Health Concerns. In preparing this fact sheet, CT DPH conducted its own review of the recent scientific literature on EMF exposure and health effects.

You also requested that CT DPH provide a staff member to testify on EMF health effects. CT DPH's chief toxicologist, Dr. Gary Ginsberg, is prepared to testify at the hearing scheduled on March 25, 2004. Dr. Ginsberg can be contacted at 860-509-7742.

If you have questions regarding our attached comments, please contact Meg Harvey, of my staff, at 860-509-7742.

Sincerely,

Ellen J. Blaschinski

Ellen Blaschinski, MBA, RS
Director
Division of Environmental Health

EB/mh/sm
Enclosures

c: J. Robert Galvin, Commissioner, DPH
Dr. Gary Ginsberg, DPH, Environmental and Occupational Health Assessment Program

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Connecticut Department of Public Health Comments to the Connecticut Siting Council Regarding Electric and Magnetic Field Health Studies

The Connecticut Department of Public Health (CT DPH) has reviewed portions of the application for construction of a new 345-kV electric transmission line between Middletown and Norwalk, CT. The application was submitted to the Connecticut Siting Council by the Connecticut Light and Power Company and the United Illuminating Company on October 9, 2003. CT DPH's review focused on portions of the application dealing with electric and magnetic field (EMF) health studies and conclusions.

CT DPH recently conducted its own review of the scientific literature concerning EMF. This review provided the basis for a fact sheet on EMF that was recently issued by CT DPH (see attached fact sheet). CT DPH reviewed much of the same EMF literature that is summarized in the application to the Siting Council. CT DPH believes that the application to the Siting Council presents a thorough review of recent scientific research regarding the potential for health effects from EMF exposure. In addition to summarizing the important recent EMF research studies, the application also summarizes the major literature evaluations that have been conducted recently by national and international organizations. The largest EMF literature evaluation conducted to date was completed by the National Institute of Environmental Health Sciences (NIEHS) in 1999 and was updated in 2002. The application to the Siting Council contains a good summary of the NIEHS literature evaluation. One of the sources of information that CT DPH relied on heavily for its own review of EMF studies is the NIEHS report.

Based on its own review of the EMF literature, CT DPH has reached the following conclusions about health impacts from EMF exposure. CT DPH believes that its own conclusions about EMF and health effects are generally consistent with the conclusions presented in the application to the Siting Council.

> Despite extensive research over the past 20 years, the health risk posed by EMF exposure remains somewhat of an open question. Two national organizations (NIEHS and the National Academy of Sciences) have looked at the studies and concluded that there is not strong evidence suggesting that EMF exposure poses a health risk. However, the NIEHS evaluation concludes that among some of the epidemiological studies, there is a fairly consistent pattern that links EMF exposures above 3 milligauss (mG) with a small increased risk of leukemia in children. Interpretation of these findings has been difficult because of the absence of supporting laboratory evidence in animals or a scientific explanation about how EMF exposures could cause leukemia.
>
> Workers can be exposed to much higher EMF levels than would be encountered in residential settings. There have been several very large studies of electric utility and other workers. Some studies have found evidence that suggests a link between EMF exposure and leukemia, brain cancer and Lou Gehrig's Disease. Other studies have not found such an association.

The application to the Siting Council also includes a discussion of EMF levels typically encountered in everyday life (i.e., background levels). According to the NIEHS, most people in the United States are exposed to EMF levels less than 2 mG, on average. Since EMF exposures can fluctuate greatly over time, the most widely used measure of EMF exposure is a time-weighted average level rather than a spot (single) measurement. The average EMF exposure level presented in the application to the Siting Council (4.57 mG) is higher than the average level cited by NIEHS. The NIEHS average background level of 2 mG appears to be a more robust estimate of background exposures than the level presented in the Siting Council application because it is based on EMF measurements taken over 24 hours rather than only 2 hours. Another difference between the two measurements is that the NIEHS value includes exposures in the home and outside of the home (at work, shopping, driving), whereas the background level cited in the Siting Council application measured EMF exposures only outside the home. EMF exposures are lower, on average, in the home as compared with outside the home.

The NIEHS report discusses EMF levels that would typically be found near power transmission lines. According to NIEHS, average EMF levels directly beneath transmission lines range from 30 to 87 milligauss (mG). The low end of this range is for 115 kilivolt (kV) lines and the upper end of the range is for 500 kV lines. EMF levels drop off rapidly with distance. At 300 feet away, average EMF levels range from 0.2 mG to 1.4 mG. These levels generally would not be distinguishable from background. It should be noted that these are typical average EMF levels. On most lines, EMF levels fluctuate greatly as current changes in response to changing loads. During peak loads, EMF levels can be more than twice as strong as the average levels. However, according to NIEHS, peak loads typically are present only 1% of the time.

If homes, schools, or other places where people would spend significant amounts of time are located within 300 feet of power transmission lines, average EMF levels could exceed typical background levels.

As part of its review of the application to the Siting Council, CT DPH did not attempt to determine whether there are homes or schools within 300 feet of existing or proposed transmission lines and if so, whether EMF levels could exceed typical background levels. The portions of the application that CT DPH reviewed provide only isolated examples of measured and estimated EMF levels and do not discuss the types of development present within and adjacent to existing and proposed rights-of way. Therefore, CT DPH was not able to determine whether homes or schools within 300 feet of transmission lines would receive EMF exposures significantly in excess of typical background levels. This is something that the Siting Council may want to consider in their evaluation of the application.

FACT SHEET

John G. Rowland, Governor
J. Robert Galvin, MD, MPH, Commissioner

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Division of Environmental Epidemiology
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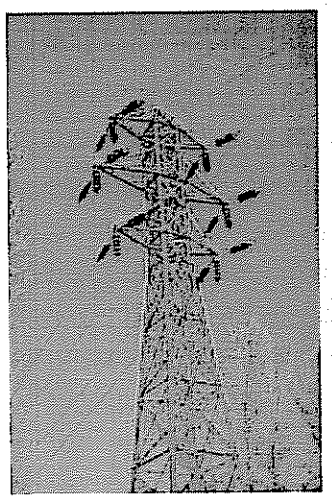
Electromagnetic Fields (EMF): Health Concerns

Exposure to Electromagnetic Fields (EMF) is very common, and so are questions about what exposure may mean. This fact sheet provides you with answers to some common questions about EMF and concerns about health.

What Are Electromagnetic Fields?



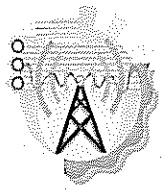
Electromagnetic fields are waves of energy generated from all electrical currents. Power lines, electrical wiring, computers, televisions, hair dryers, household appliances and everything else that uses electricity are sources of EMF. Electromagnetic fields radiate out from electrical devices and wiring. **The strength of the field decreases rapidly with distance from the source.**

How Are Electromagnetic Fields Measured?

EMF are commonly measured in units of **gauss (G)** by an instrument known as a gaussmeter. A **milligauss (mG)** is 1000 times smaller than a gauss.

Workers (for example, utility workers, railway workers) can be exposed to much higher EMF levels than would be expected within households. There is evidence that utility workers exposed to high levels of EMF may be at increased risk of developing amyotrophic lateral sclerosis (Lou Gehrig's Disease). Some studies have found evidence that suggests a link between EMF exposure in electrical workers and leukemia and brain cancer. Other similar studies have not found such associations. Among railway workers, some studies have found an association between EMF exposure and leukemia.

Although the current scientific evidence provides no definitive answers as to whether EMF exposure can increase health risks, there is enough uncertainty that some people may want to reduce their exposure to EMF.

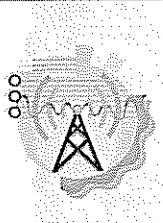


How Can I Reduce My EMF Exposure?

EMF exposure depends upon how strong the EMF source is, how far away you are from the source, and how long you are exposed.

If you would like to reduce your exposure to EMF, you can take simple steps such as:

- Increase the distance between you and the electrical source. For example, sit at arm's length from your computer or re-position electric alarm clocks farther away from your body while in bed.
- Repair faulty wiring which may be generating higher than usual EMF.
- Turn off electrical devices such as televisions and computers when not in use.
- Use electric blankets to warm the bed and turn off the blanket before getting into bed.



What Should I Do If A Home I Want To Buy Has High Voltage Power Lines Nearby?

If the power lines are more than 300 feet away, there should be no cause for concern. At this distance EMF levels from the power lines are no different from typical EMF levels outside or inside the home.

If the power lines are less than 300 feet away from the home, you may want to consider obtaining EMF measurements in the yard. Most electric utilities in Connecticut will

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CONNECTICUT SITING COUNCIL

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February 23, 2004

FEB 2 6 2004

Commissioner J. Robert Galvin
Department of Public Health
410 Capitol Avenue
P O Box 340308
Hartford, CT 06134-0308

RE: **DOCKET NO. 272** - The Connecticut Light and Power Company and The United Illuminating Company application for a Certificate of Environmental Compatibility and Public Need for the construction of a new 345-kV electric transmission line and associated facilities between the Scovill Rock Switching Station in Middletown and the Norwalk Substation in Norwalk, Connecticut. This includes construction of the Beseck Switching Station in Wallingford, East Devon Substation in Milford, and Singer Substation in Bridgeport and modifications to the Scovill Rock Switching Station and the Norwalk Substation and certain interconnections.

Dear Commissioner Galvin:

The Connecticut Siting Council (Council) is presently reviewing a Connecticut Light and Power Company and The United Illuminating Company application for a Certificate of Environmental Compatibility and Public Need for the construction of a new 345-kV electric transmission line and associated facilities between the Scovill Rock Switching Station in Middletown and the Norwalk Substation in Norwalk, Connecticut.

Pursuant to Connecticut General Statutes 16-50g, "The council shall not grant a certificate, either as proposed or as modified by the council, unless it shall find and determine: (1) A public need for the facility and the basis of the need; (2) the nature of the probable environmental impact, including a specification of every significant adverse effect, whether alone or cumulatively with other effects, on, and conflict with the policies of the state concerning, the natural environment, ecological balance, *public health and safety* (emphasis added), scenic, historic and recreational values, forests and parks, air and water purity and fish, aquaculture and wildlife...." and "in the case of an electric or fuel transmission line, that the location of the line will not pose an *undue hazard* (emphasis added) to persons or property along the area traversed by the line."

Electric and magnetic fields are an important concern of the Council. Accordingly, the Council is seeking testimony from your agency related to electric and magnetic field studies and conclusions.

No enclosure

Enclosed is the portion of the application related to electric and magnetic fields for your review. Also, please note that the Council has administratively noticed the following documents; National Institute of Environmental Health Sciences and U.S. Department of Energy, Questions and Answers About EMF Electric and Magnetic Fields Associated with the Use of Electric Power. United States Government Printing Office, Washington D.C., January 1995 and National Institute of Environmental Health Sciences of the National Institutes of Health, NIEHS Working Group

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CONNECTICUT SITING COUNCIL

Report, Assessment of Health Effects from Exposure to Power-line Frequency Electric and Magnetic Fields, NIH Publication No.98-3981, August 1998.

This Council is requesting a member of your staff to testify, on behalf of the Council, on matters of electric and magnetic fields. The Council has scheduled the date of Thursday, March 25, 2004 for testimony on this subject. A prefiled statement identifying current studies and findings would be most helpful for the Council in its final decision in this application. Such prefiled testimony is due March 9, 2004.

I thank you in advance for your assistance and I look forward to your agency's participation in this matter.

Very truly yours

Pamela B. Katz P.E.
Chairman

PBK/sdp/foc
Enclosure

c: Robert M. Marconi, AAG