

STATE OF CONNECTICUT

SITING COUNCIL

**Re: 2006 Revision of the Electric and Magnetic
Field Best Management Practices**

**Petition 754
June 6, 2007**

**COMMENTS
of
THE CONNECTICUT LIGHT AND POWER COMPANY
and
THE UNITED ILLUMINATING COMPANY
on the
MAY 23, 2007 DRAFT
ELECTRIC AND MAGNETIC FIELD BEST MANAGEMENT PRACTICES**

The Connecticut Light and Power Company and The United Illuminating Company (collectively, the "Companies") appreciate this opportunity to comment on the Council's May 23, 2007 draft Electric and Magnetic Field Best Management Practices ("BMP"). The Companies' comments are set forth below:

I. PRELIMINARY STATEMENT

On February 1, 2007, the Companies submitted, together with the Connecticut Department of Public Health, a joint proposal for the Council's revised EMF Best Management Practices. The Companies continue to support that proposal. For that reason and for the substantive reasons that are generally well stated in the Department of Health comments submitted on June 5, 2007, the Companies would prefer "Draft B" considered at the Council's meeting of May 22, 2007 to the "Draft A" which the Council has circulated to the service list for

comment. However, since the majority of the Council members have declared themselves in favor of the draft circulated for comment on May 23, 2007 (the “New Draft”), the Companies direct these comments to that document.

II. COMPANIES’ COMMENTS ON THE NEW DRAFT

A. Change “Facilities” to “Lines” (Title)

Unlike some previous drafts, the New Draft does not attempt to prescribe BMP for substations. The Council may well be planning a separate document that addresses substations. In any case, previous attempts to address both lines and substations in a single document have been confusing, so the approach of the New Draft is a good one which the Companies support, and it is consistent with Conn. Gen. Stats. § 16-50t(c), which requires that the Council adopt BMP only for “electric transmission lines.” However, the title of the document should be changed to reflect that it applies only to Transmission Lines and not to “Transmission Facilities” generally.

B. Correct Description of Electric and Magnetic Fields (Sec. I ¶ 2)

The second paragraph of Part I (“Introduction”) begins with a sentence that describes transmission line electric and magnetic fields as if they were coupled and propagated in the same way that much higher frequency electromagnetic fields do. To avoid this misleading suggestion, the Companies suggest that sentence should be revised to adopt the language of the National Institute of Environmental Health Sciences Questions and Answers Booklet,¹ as follows:²

¹ Administrative Notice Item No. 12, p. 4. For discussion of distinction of transmission frequency EMF from higher frequencies where the electric and magnetic fields are coupled, see pp. 6, 7.

² Throughout this document, suggested new text to be inserted is underlined; text to be deleted is in brackets.

Electric and magnetic fields (EMF) are invisible lines of force that surround any electrical device. [two forms of energy that emanate in tandem from an electrical source.] The strength of an electric field (EF) is proportional to the amount of electric voltage at the source, and decreases rapidly with distance from the source, diminishing [dissipating] even faster when interrupted by conductive materials, such as building walls and vegetation. The strength of a magnetic field (MF) is proportional to the amount of electric current at the source, and it, too, decreases rapidly with distance from the source; but magnetic fields are not easily interrupted[–] as they pass through most materials. EF is often measured in units of kilovolts per meter (kV/m). MF is often measured in units of milligauss (mG).

C. Define “Prudent Avoidance” (Sec. III ¶ 1)

While the New Draft assumes an appropriate definition of the concept of “prudent avoidance,” it does not provide a definition. Because of the great confusion that can be caused by the use of this term, it should be defined. The appropriate definition appears in the work of Dr. Granger Morgan, who coined the term: “limiting exposures which can be avoided with small investments of money and effort.”³ Unless the BMP so define the policy, it is likely to be misunderstood by the first-time reader as referring to the “prudence” of avoiding fields, rather than to the “prudence” of making only no-cost or low-cost investments to avoid unknown and uncertain risks⁴. Thus, the Council explained the term “prudent avoidance” in its Finding of Facts in Docket 272 by stating that the concept “does not imply setting exposure limits at an artificially low level, and requiring that they be achieved regardless of cost, but rather adopting measures to reduce public exposure at modest cost.”⁵ That understanding should be reflected in the BMP.

³ Supplemental Testimony of Dr. William H. Bailey Concerning Passive Regulatory Responses With Respect to 60 Hz Magnetic Fields, Ex. 75 in CSC Dkt. 272, at 3, 4. (Administrative Notice Item 16a in this Petition.)

⁴ See, Interagency Task Force Studying Electric and Magnetic Fields, “Connecticut 1993 Report on Task Force Activities,” at pp. 1-5; “The term ‘prudent avoidance’ and its varying interpretations make it a difficult term to employ in public policy.”

⁵ Dkt. 272, Findings of Fact, ¶ 670 (Administrative Notice Item 16 in this Petition.)

Accordingly, the Companies suggest amendment of the first paragraph under “Policy of the Connecticut Siting Council,” as follows:

The Council recognizes that a causal link between power-line MF exposure and adverse health effects has not been established, even after much scientific investigation in the U.S. and abroad. Furthermore, the Council recognizes that timely additional research is unlikely to prove the safety of power-line MF to the satisfaction of all. Therefore, the Council will continue its policy of “prudent avoidance” which has guided its Best Management Practices since 1993. This policy counsels limiting exposures to unknown and uncertain risks when that can be done with small investments of money and effort. This continuing policy is based on the Council’s [its] recognition of and agreement with conclusions shared by a wide range of public health consensus groups, and also, in part, on a review which the Council commissioned as to the weight of scientific evidence regarding possible links between power-line MF and adverse health effects. Under this policy, the Council will continue to advocate the use of effective low cost and no cost technologies and management techniques on a project-specific basis to minimize MF exposure to the public, when necessary, and maximize the efficiency of the electric generation, transformation, and transmission industry.

***D. Eliminate Ambiguous Use of Phrase “To the Greatest Extent Possible”
(Sec. 3 ¶ 3)***

References to reducing magnetic field levels “to the greatest extent possible” have appeared in various drafts over the life of this proceeding, when it appeared that the Council really meant to express a degree of reduction that is achievable by steps consistent with the principle of prudent avoidance. Use of the term “to the greatest extent possible” suggests something different to most people. For example, it could be interpreted to mean that any measures that will result in any reduction at all it should be taken, and is thus inconsistent with accompanying language in which the Council states that it is referring to “low cost” and “no cost” measures. To better capture the intent of the Council, the third paragraph of Section III of the New Draft, should be amended as follows:

While many experts and public health agencies agree that a policy of prudent avoidance is an adequate response to MF exposure, the General Assembly calls our

special attention to its [their] concern for our children. For that reason it [they] enacted Public Act 04-246, restricting the siting of overhead 345-kV transmission lines in areas where children congregate, subject to technological feasibility. These restrictions cover transmission lines [facilities] adjacent to "residential areas, public or private schools, licensed child day-care facilities, licensed youth camps, or public playgrounds." Consistent with this announced public policy, the Council will carefully examine the feasibility of reducing MF exposure [to the greatest extent possible] in the aforementioned areas using technologically proven low-cost measures, as determined by the Council.

E. Clarify That the Council Will Not Revisit in Every Transmission Line Docket the Entire Body of Research Related to Claimed Health Effects of MF (Sec. III ¶ 4)

The New Draft appropriately identifies continued ongoing study of the science related to claims of MF health effects, and periodic reporting of developments in that body of knowledge, as a best management practice. It would be helpful if the BMP also made clear that such ongoing study and reporting will be outside the context of individual transmission line dockets; and that the Council will not “reinvent the wheel” – or require that the applicant do so – whenever a transmission line application is filed. While it is certainly appropriate to consider, in the context of an individual Docket, any new scientific developments that have occurred since the Council’s last review of the health science, the subject as a whole should not be subject to review and contention each time an application is filed. Thus, the fourth paragraph of Section III could be improved as follows:

Additionally, the Council notes two general policies it follows in updating its EMF Best Management Practices and conducting other matters within its jurisdiction. One is a policy to support and monitor ongoing study. Accordingly, the Council will periodically request an update on changes in scientific consensus-group positions on MF, and on any research addressing public health effects. The second is a policy to encourage public participation and education. The Council will continue to improve the accessibility of its open hearings and meetings, its website, <http://www.ct.gov/csc>, its numerous reports and findings-including this one-and the many other proceedings or documents through which it carries out its mission. In the context of individual transmission line dockets, the Council will consider evidence of any new developments in the relevant health science that have occurred since its most recent update.

*F. Clarify References to Measured and Calculated MF Levels
(Sec. III ¶ 5; Sec. IV A ¶ 1)*

The fifth paragraph of Section III reintroduces a reference to “measured MF levels.” As the Council knows, there is little utility in making and disclosing post-construction measurements as a matter of course, since the conditions at the time of the measurement will always be different than the “typical” condition values assumed for the purpose of the calculations. The Council can always order an analysis of post-construction measurements for a small subset of locations in order to demonstrate model accuracy. However, the reference to post-construction measurements suggests a broader measurement program. Eliminating it would avoid confusion. While the Council may well determine to order specific measurements in a particular case, a general requirement for filing post-construction measurements has more potential to cause confusion than illumination. Accordingly, the Companies suggest the following revision of this paragraph:

The Council will also require that notices of proposed overhead transmission lines provided in bill enclosures pursuant to Conn. Gen. Stats. §16-50/(b) state the proposed line will meet the Council's Electric and Magnetic Fields Best Management Practices, specifying the design elements used to reduce magnetic fields. The bill enclosure notice will inform residents how to obtain siting and MF information specific to the proposed line at the Council's website; this information will also be available at town hall. Phone numbers for follow-up information shall be made available, including those of DPH and utility representatives. The project's final post-construction structure and conductor specifications including calculated [and measured] MF levels shall also be available at the Council's website and town hall.

Section heading IV A is entitled: “Pre-and Post-Construction MF Calculations.” In fact, calculations (as opposed to measurements) do not differ pre and post construction. A calculation

will yield the same result based on the same assumptions, whether the line has been built or not. However, where a new line is proposed on an existing right-of-way, the Council will require calculations for both pre- and post-construction conditions. Accordingly, subject heading IV A and the following text should be revised as follows:

A. [Pre- and Post-Construction] MF Calculations

When preparing a transmission line project, an applicant shall provide design alternatives and [preconstruction] calculations of MF for pre-project conditions, and for post-project conditions resulting from each alternative, under 1) peak load conditions, and 2) projected seasonal maximum 24-hour average current load on the line anticipated within five years after the line is placed into operation. This will allow for an evaluation of how MF levels differ between alternative power line configurations. The intent of requiring various design options is to achieve reduced MF levels when possible through practical design changes. The selection of a specific design will also be affected by other practical factors, such as the design's cost, effects on system reliability, visual, and environmental impacts.

G. *Describe Baseline Design Requirements So As to Reflect Actual Practice (Sec. IV, ¶2)*

The second paragraph of Section IV states that the initial transmission line design should be developed “with no specific consideration given to MF management.” In fact, any base line design is likely to include no-cost features that have the effect of lowering MF. Thus, this paragraph could be more accurately stated as follows:

The initial transmission line design shall be consistent with the guidelines and expectations of statutes, reliability criteria, and safety codes, with [no specific] only no-cost consideration given to MF management, but which are readily amenable to design changes to lower MF. The Applicant will then evaluate and propose cost-effective changes to this base design to lower MF levels consistent with the policy described in Section III above. The Applicant shall provide a detailed rationale to the Council that supports the proposed MF mitigation measures. The Council has the option to retain a consultant to confirm that such an initial base proposal and the proposed MF reduction strategies are consistent with these EMF Best Management Practices.

Respectfully submitted,



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