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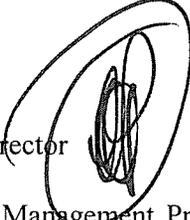
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October 27, 2006

TO: Parties and Intervenors

FROM: S. Derek Phelps, Executive Director 

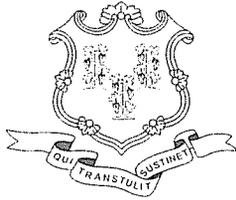
RE: **PETITION NO. 754** - Best Management Practices for Electric and Magnetic Fields

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Comments have been received from the Department of Public Health, dated October 25, 2006. A copy is attached for your review.

SDP/laf

c: Council Members

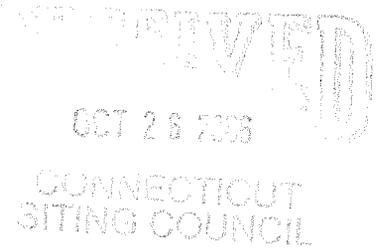


# STATE OF CONNECTICUT

## DEPARTMENT OF PUBLIC HEALTH

October 25, 2006

Mr. Derek Phelps  
Executive Director  
Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT 06051



Dear Mr. Phelps:

Thank you for sending DPH a review copy of the latest draft of the Connecticut Siting Council's (CSC's) Best Management Practices (BMPs) for Electric and Magnetic Fields. DPH appreciates CSC's efforts to further evaluate the BMPs in light of comments from DPH dated May 31, 2006. Our comments on the revised draft are provided as an attachment to this letter. Please keep me and my staff abreast of your deliberations on this important topic as you proceed in BMPs development. If the opportunity arises, we would be happy to meet with the Siting Council and other interested parties to help finalize the BMPs.

Sincerely,

Suzanne Blancaflor  
Chief, Environmental Health Section

Cc: DPH Deputy Commissioner Gyle  
Attorney General Blumenthal  
Asst AG Wertheimer  
R. Carberry, NU  
D. Moore, NU



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## Connecticut Dept of Public Health Comments on the Sept 28, 2006 Draft BMPs

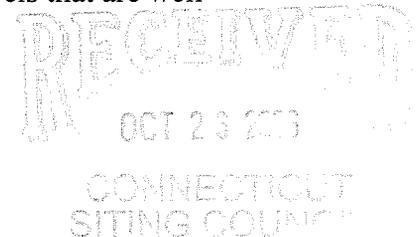
This latest CSC draft represents a broadening of the magnetic field (MF) control strategy from the single bright-line (100 mG) approach described in the previous draft. The latest draft now includes a clause that where transmission lines go through land use areas that can involve children (e.g., residences, schools, day care centers) that the CSC will “evaluate the feasibility of reducing MF exposure to the greatest extent possible”.

While this is an improvement, the BMP draft is still out of balance in emphasizing the 100 mG target and the analysis that supports it. There is considerably greater scientific uncertainty over the safety of a 100 mG target with respect to the risks for childhood leukemia, than expressed in the draft document. The tone of the document makes it seem that the only reason for “reducing MF exposure to the greatest extent possible” is because of “unsubstantiated” concerns by DPH and the Connecticut legislature. This tone and the associated over-emphasis on the 100 mG target should be corrected as described below.

In addition, DPH recommends an additional BMP measure that involves risk communication at locations where children can be exposed to MF levels that are well above the background range.

### **Over-Emphasis on the 100 mG Target**

While DPH does not disagree with the selection of 100 mG as a risk management tool for the protection of adults, we feel that the draft BMPs’ emphasis on this value is misleading and overshadows the equally important goal of reducing MF to the greatest extent possible when children are involved. The draft document spends the first several pages building up to and justifying the 100 mG target, describing in some detail the methodology that arrived at this value. Not until a very brief paragraph on Page 4 does the BMP document describe the goal of “reducing MF exposure to the greatest extent possible” where children are involved. Further, that goal is stated only as “the Council will examine the feasibility” for such reductions. Then the document spells out its Best Management Practices (Section IV) and in so doing ignores the goal of “reducing exposure to the greatest extent possible” but rather focuses singly on the 100 mG target



(see Page 4, middle of 4<sup>th</sup> paragraph). Page 5 once again refers to the 100 mG target to the exclusion of children's as-low-as-possible goal. The impression is that the BMPs are primarily established with the 100 mG target in mind, with the goal for children (as low as possible) appearing as an afterthought that may or may not be taken seriously.

In contrast, DPH sees the two goals as complimentary and deserving of equal footing. DPH recommends the following modifications to address the draft document's unbalanced treatment of these goals.

- The goal of “reducing exposure to the greatest extent possible” needs to be strengthened and better defined. The 2<sup>nd</sup> paragraph on Page 4 should clearly state that land uses involving the potential for childhood exposure will necessitate going beyond the 100 mG target and require MF reductions to the greatest extent possible. This is more definitive than merely stating an intent to “examine the feasibility” without a commitment to take such action.

Further, this approach should be justified by the science that points to a public health concern, briefly noting the associations found in epidemiology studies, and particularly the meta-analyses, between MF exposures and childhood leukemia. The document should point out that these associations are found at MF levels well below 100 mG, and while they cannot be proven, neither can they be dismissed. This creates substantial uncertainty at levels below 100 mG and leads to a BMP of prudent avoidance to bring levels down as close to the background range as possible when children are involved. By so doing, the CSC will manage the attributable risks for childhood leukemia, which have been estimated by several researchers as generally in the 1-10% range, although values as low as zero and up to 30% cannot be ruled out. Given the number of childhood leukemia cases currently in Connecticut, 3 cases per year may be theoretically attributable to MFs (30 cases per year and assuming 10% attributable risk). Future siting of transmission lines in residential areas can increase these risk estimates. That is

why the BMPs are taking this prudent avoidance approach towards MF and children.

By including this type of explanation within the BMP document, it will indicate that there is a scientific, public health rationale as well as legislative and agency support for lowering MF to the extent possible to minimize children's exposures.

- The last sentence of the first paragraph (Page 4) implies that the actions of the legislature and the recommendations of DPH are without a credible or “substantiated” basis. DPH strongly objects to this language as it is counter to our practice of public health and ignores the constructive and documented manner in which we have provided input to the CSC in the past. This sentence should be amended as follows: “ . . . . to protect children from MF-associated risk, which is of particular importance given the associations between MF and childhood leukemia and the uncertainty this presents for children's health.
- The first paragraph in Section IV (page 4) should fully state the equally important and complimentary objectives for applying the BMPs: the screening level of 100 mG for situations not involving children and the goal of “lowering MF to the greatest extent possible” for situations involving children. The current version of this paragraph completely ignores the latter goal. The paragraph should state that the BMP options for controlling MF exposures described in this section (buffer zones and engineering controls) are to be applied equally to both objectives depending upon the type of land use and whether it involves children's exposures.
- Section IV.A., page 5, 1<sup>st</sup> 2 paragraphs: estimations of MF strength are required for distances out from the lines until the level is below 100 mG. This again ignores the goal related to children. If the CSC does not receive modeled estimates that go below 100 mG then how will it know the level at residences or schools and whether alternative designs have successfully minimized MF at these locations. This deficit appears to be remedied in the next paragraph where MF

levels at residences, schools, etc. are called for (note: should read “at” these locations, not “encompasses”). However, the intent of these two paragraphs relative to the 100 mG screening target is unclear and should be improved by bringing the children’s-related statement into the first paragraph as follows: MF estimates and locational information will not be needed below 100 mG in cases where there is no potential for exposure to children. However, for residential areas, schools, day care centers, etc., the applicant will provide MF estimates at each child-related location regardless of the MF level.

- Derivation of the 100 mG screening target on Page 3: this description should be simplified and shortened. Its goal is to derive a screening target that is safe for adults since the goal for children, as defined later, is as-low-as-possible. Since the epidemiology does not currently suggest associations between low level MF exposures in adults and health risk, one can default to ROW limits established in other states as described on Page 5. The range presented there is generally consistent with a 100 mG target and no further justification for adults would appear necessary. However, these limits are dated and do not take into account the much more recent epidemiological associations found in meta-analyses between lower MF exposures and childhood leukemia. Therefore, this section should state that the 100 mG target is intended only for locations where there will be no potential for childhood exposure. The derivation of a 100 mG target based upon the NTP study with application of uncertainty factors typically used in non-cancer risk assessment, is an approach that is fraught with difficulties as pointed out in DPH’s last round of comments. This approach should be removed or de-emphasized since it is not needed to justify a non-child screening level of 100 mG, and only raises questions of methodological validity that would cast doubts on the BMP document.

## **DPH Recommendations for a Risk Communication BMP**

We recommend that the BMPs include a risk communication section. This would apply to any location in which there is the potential for childhood exposure and where lowering MFs to the greatest extent possible does not bring the calculated level close to background (i.e., its  $> 10$  mG) at the edge of the ROW. In this case, the BMPs should provide notification to residents and property owners that MF exposures greater than typical background levels are possible from the transmission line. The risk communication strategy should include distribution of a DPH fact sheet which describes the state of the science and degree of uncertainty, and the value of obtaining more refined MF exposure information, either from actual field measurements at the property or more detailed modeling for various indoor and outdoor locations. The fact sheet would also describe prudent avoidance measures (e.g., placement of children's play areas and bedrooms as far from power lines as possible and avoidance of other sources of MF in the home). The fact sheet should be accompanied by a commitment from the utility to offer free MF testing and/or modeling estimates to any individuals who receive the fact sheet, both in the near and long-term to monitor MF changes over time as loads change.

The risk communication activities would be different if there were no current residents along the ROW where MF levels  $> 10$  mG are possible. In this case, the concern is over future land uses surrounding the MF source as new development may bring homes, schools, day care centers and playgrounds close to power lines. Risk communication would be directed to local authorities such as the town manager, health director, or planning and zoning commission. They would be informed about which locations along the transmission line are in exceedance of 10 mG at the edge of the ROW. This information would be accompanied by a DPH fact sheet (as described above) so that future developers and town officials would know the uncertainties concerning MF health effects and would understand the concepts involved in prudent avoidance.

**LIST OF PARTIES AND INTERVENORS**  
**SERVICE LIST**

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