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February 3, 2005

Pamela B. Katz
Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06501

Roger C. Zaklukiewicz
Vice President - Transmission Projects

Re: Docket 272, Application of The Connecticut Light and Power Company and The United Illuminating Company: Questions Concerning Magnetic Field Levels

Dear Chairman Katz,

At the February 1, 2005 hearing, you posed a question to CL&P concerning the potential implementation of "prudent avoidance" actions to achieve a 6 mG field level along the proposed overhead right of way, assuming the "15 GW Case." Because I was uncertain whether the question asked about achieving the 6 mG level at statutory facilities, at the edge of the right of way adjacent to statutory facilities, or at the edge of the right of way for the entire length of the proposed overhead lines, and the transcript is not yet available, I asked that your staff to restate the question. As restated, the question is:

> *Could CL&P/UI accomplish a 6 mG boundary along the proposed segment 1 and segment 2 transmission line right-of-way if the new 345-kV and reconstructed 115-kV transmission lines were reconstructed overhead using low EMF design including optimum pole location and height, acquisition of property, or any other mitigating action?*

CL&P's answer to this question is:

> *"Yes. However, as further explained below, CL&P submits that such a 'boundary' is not required by P.A. 04-246, not required in order to attain very low magnetic field levels at statutory facilities, not justified by health science or by the doctrine of "prudent avoidance;" imposes unnecessary aesthetic impacts; and is certain to entail very large costs that would be unlikely to be regionalized.*

The consequences of requiring a 6 mG level at the edge of the right of way under the 15 GW case are quite different when evaluating whether this calculated level would reach adjacent private structures. Thus:

- The lines could be designed and constructed, without additional right of way acquisition, so that the calculated transmission line magnetic fields at houses and at the edge of the right-of-way adjacent to existing statutory facilities other than "residential areas" would not exceed 6 mG, assuming the "15 GW Case."

- Please note the distinction made here: the 6 mG level would be achieved *at the edge of the right of way* adjacent to statutory facilities other than "residential areas;" and that level could be achieved *at the nearest point of any house* to the lines; but the 6 mG level could not be achieved at the edge of the right of way adjacent to all houses, without expanding the right of way or implementing other severe actions.

- In the case of approximately 30 houses, achieving the 6 mG level at the closest point of the house would require additional strategies over and above the generic low magnetic field line designs presented to the Council. These would include increasing structure height, relocating the structure longitudinally within the right of way, adding structures, and shifting the lines within the right-of-way where possible. A combination of these strategies should avoid the need for additional property acquisition, if the 6 mG level is calculated at the closest point of the house, rather than at the edge of the right of way.

- There are many house lots (far more than the 30 houses described in the previous paragraph) where the magnetic field calculated in the 15 GW Case does not approach 6 mG at the house, but is higher than 6 mG at the right of way edge. The right of way also traverses undeveloped property where magnetic fields, even with low magnetic field designs, would exceed 6 mG outside the right of way. Accordingly, if the Council were to require edge of right of way fields at 6 mG for the 15 GW Case along the entire overhead right of way, significant overhead right of way expansion would be required. CL&P has not determined whether there is sufficient undeveloped property to allow the required expansion without the taking of structures.

CL&P does not consider that the steps that would be required to achieve 6 mG at the edge of the entire overhead right of way, or even the requirement of low magnetic field designs for the entire overhead route, could be justified within the doctrine of "prudent avoidance". The $68 million to $80 million incremental estimated cost of the low magnetic field designs, before any consideration of including any right of way expansion, is not a "small investment of money and effort" or "low cost" measure[1] such as would be considered "prudent" under the doctrine. Certainly, it is unlikely that such investments would be considered prudent or good utility practice for the purposes of cost regionalization.

Moreover, the environmental costs of achieving the 6 mG level should not be overlooked. For instance, increasing structure heights above those proposed through forested lands of the South Central Connecticut Regional Water Authority and others for a distance of approximately 4.5 miles in Hamden, Bethany, and Woodbridge, would make the structures more visible in this scenic and unpopulated area, in order to reduce magnetic fields below levels that are common along electric transmission rights of way throughout the state and the country. Similarly, the strategy to achieve 6 mG at a specific residence

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[1] *See*, Vermont Public Service Board, Docket No. 6860, Decision, February 28, 2005, Companies' Administrative Notice Item 29 ("Vermont Decision"), at 74, 75.

is likely to require increasing the height of a structure from the proposed 105 feet to 182 feet, and moving the structure so that it is next to the house, rather than further down the right of way, where it would not be prominently visible from the house. The effort to achieve a 6 mG level thus imposes a definite negative aesthetic effect to achieve a magnetic field reduction that has no real significance.

As the Companies have previously submitted to the Council, P.A. 04-246 does not require the Council to establish a "boundary" according to any specific criteria such as an edge of right of way magnetic field level, or magnetic field levels at adjacent structures. Rather, the Council must make a finding of fact that overhead lines will be contained "within an area that provides a buffer zone that protects the public health and safety, as determined by the Council." P.A. 04-246 §3. This finding is essentially equivalent to that which the Council has always been required to make, with respect to all lines - that the location of the line will not pose an undue hazard to persons or property along the area traversed by the line. Conn. Gen. Stats. § 16-50p(a)(5).[2] Such findings are supported by the record, whether or not low magnetic field designs and other magnetic field reduction strategies are implemented. The record in this case compels the same conclusion as that just reached by the Vermont Public Service Board in its Northwest Vermont Reliability Project docket: "[R]esearchers keep looking hard but they find little evidence that EMF does produce a health effect, and no evidence of reasons why it should.[3]" This Council can only find, as the Vermont Board did that "there will be no undue adverse health effects from EMF as a result of this project."[4]

Thus, CL&P suggests that the Council not base its buffer zone finding on the premise that the line as approved can be constructed so as produce 6 mG magnetic field levels under average conditions (the 15 GW Case) everywhere along the right of way, or at all statutory facilities. Rather, the Council should avoid imposing needless expense on the electric consumers, and avoid unneeded right of way acquisition. Moreover, it should leave itself and CL&P more flexibility to accommodate interested Towns and landowners in the D&M Plan process. Many of them are likely to prefer less intrusive transmission structures to small reductions in magnetic fields from already low levels. Moreover, on a close consideration, the Council is likely to find that the significant investment required for low magnetic field designs is "prudent" only in some locations, which can be determined during the D&M Plan process. That is what the Vermont Public Service Commission concluded in its recent decision in the Northwest Vermont Reliability Project docket.[5]

Very truly yours,

Roger C. Zaklukiewicz

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[2] Please refer to "applicants' Response to Council's Interrogatory Concerning 'Buffer Zone" Determinations Pursuant to Public Act 04-246," d. July 19, 2004 for further discussion of this point.
[3] Vermont Decision at 74
[4] Vermont Decision at 72
[5] Vermont Decision at 75, 76