

RECEIVED  
OCT 12 2004  
CONNECTICUT  
SITING COUNCIL

STATE OF CONNECTICUT

SITING COUNCIL

Re: The Connecticut Light and Power Company and ) Docket 272  
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 Scovill Rock Switching Station in )  
Middletown and Norwalk Substation in Norwalk, )  
Connecticut Including the Reconstruction of )  
Portions of Existing 115-kV and 345-kV Electric )  
Transmission Lines, the Construction of the Beseck )  
Switching Station in Wallingford, East Devon )  
Substation in Milford, and Singer Substation in )  
Bridgeport, Modifications at Scovill Rock )  
Switching Station and Norwalk Substation and the )  
Reconfiguration of Certain Interconnections ) October 12, 2004

TESTIMONY OF DR. GARY JOHNSON

1  
2

Magnetic Fields Associated with Low-Voltage Distribution Lines

3 Q. What is the purpose of this testimony?

4 A. To respond to the Council's request for information concerning the levels of  
5 magnetic fields associated with utility distribution lines that provide electricity to  
6 local homes and businesses.

7 Q. Are magnetic fields produced by both overhead and underground  
8 distribution lines?

9 A. Yes. Magnetic fields are produced by any conductor carrying electric currents.  
10 This includes the distribution lines along streets whether they are located above  
11 ground or underground. The ground does not shield magnetic fields, so even

1           though we do not see underground power lines it does not mean that there is not a  
2           magnetic field present.

3   **Q.    What levels of magnetic fields are measured near distribution lines?**

4   A.    The distribution lines along streets, sidewalks, and into our homes typically  
5           produce magnetic fields in the range from less than a milligauss (mG) to more  
6           than 20 mG.

7   **Q.    What are the magnetic field levels measured near overhead distribution  
8           lines?**

9   A.    I reviewed magnetic field measurements that were taken near a random sample of  
10          674 overhead distribution lines in a large nationwide survey.<sup>1</sup> The peak levels  
11          underneath these lines ranged from 0.1 mG to 19.3 mG, with an average of 1.5  
12          mG.

13   **Q.    What are the magnetic field levels measured near underground distribution  
14          lines?**

15   A.    The magnetic fields measured over a random sample of 227 underground  
16          distribution lines in the same national survey were similar to those of overhead  
17          distribution lines and ranged from 0.1 mG to 22.0 mG, with an average of 1.4  
18          mG.

19   **Q.    Are the measurements reported in this nationwide survey similar to what  
20          you have measured near distribution lines in Connecticut?**

21   A.    Yes, the measurements I summarized from the national survey are consistent with  
22          the magnetic field levels I have measured in various locations in Connecticut. My  
23          measurements along streets below overhead distribution lines have ranged from  
24          less than one mG to over 11 mG. I have measured magnetic field values up to 18  
25          mG on sidewalks and along streets above underground distribution lines.

---

<sup>1</sup> “Survey of Residential Magnetic Field Sources – Vol 1 and 2” EPRI TR-102759, September 1993 (magnetic field data from lateral profiles).

1 Magnetic field levels along streets are commonly in the 2 to 4 mG range with  
2 occasional 'spikes' to much higher levels.

3 **Q. Does this conclude this testimony?**

4 **A. Yes.**

## **SERVICE LIST**

**Docket: 272**

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

Anthony M. Fitzgerald, Esq.  
Brian T. Henebry, Esq.  
Carmody & Torrance, LLP  
50 Leavenworth Street  
P. O. Box 1110  
Waterbury, CT 06721-1110

Linda L. Randell, Esq.  
Bruce L. McDermott, Esq.  
Wiggin and Dana, LLP  
One Century Tower  
New Haven, CT 06508-1832

The Honorable Robert W. Megna  
State Representative – 97<sup>th</sup> District  
40 Foxon Hill Rd. #54  
New Haven, CT 06513

The Honorable Al Adinolfi  
State Representative – 103<sup>rd</sup> District  
235 Sorghum Mill Dr.  
Cheshire, CT 06410

Eric Knapp, Esq.  
Branse & Willis, LLC  
41-C New London Turnpike  
Glen Lochen East  
Glastonbury, CT 06033-2038

Julie Donaldson Kohler, Esq.  
Hurwitz, Sagarin & Slossberg LLC  
147 North Broad St.  
Milford, CT 06460

Peter G. Boucher, Esq.  
Halloran & Sage, LLP  
225 Asylum Street  
Hartford, CT 06103

Janice M. Small, Esq.  
Town Attorney  
Wallingford Town Hall  
45 South Main Street  
Wallingford, CT 06492

Ms. MaryAnn Boord  
First Selectwoman  
Durham Town Hall  
30 Townhouse Rd.  
Durham, CT 06422

Mr. Louis S. Ciccarello  
Corporation Counsel  
P. O. Box 798  
Norwalk, CT 06856-0798

Town of Westport  
c/o Ira W. Bloom, Esq.  
27 Imperial Ave.  
Westport, CT 06880

The Honorable Mary G. Fritz  
State Representative – 90<sup>th</sup> District  
43 Grove St.  
Yalesville, CT 06492

David A. Ball, Esq.  
Cohen & Wolf, P.C.  
1115 Broad Street  
Bridgeport, CT 06604

Deborah L. Moore, Esq.  
Legal Department  
Meriden City Hall  
142 East Main St.  
Meriden, CT 06450

Atty. Michael C. Wertheimer  
Assistant Attorney General  
Office of the Attorney General  
10 Franklin Square  
New Britain, CT 06051

The Honorable Raymond Kalinowski  
State Representative – 100<sup>th</sup> District  
P.O. Box 391  
Durham, CT 06422

Ms. Melanie J. Howlett  
Associate City Attorney  
Office of the City Attorney  
999 Broad Street  
Bridgeport, CT 06604

Ms. Trish Bradley, President  
Mr. Ed Schwartz, Treasurer  
Communities for Responsible Energy, Phase II  
45 Ironwood Lane  
Durham, CT 06422

Mr. Bruce Johnson  
Litigation Attorney  
Office of Consumer Counsel  
10 Franklin Square  
New Britain, CT 06051

The Honorable Themis Klarides  
State Representative – 114<sup>th</sup> District  
23 East Court  
Derby, CT 06418

Charles Walsh  
Assistant Attorney General  
Attorney General's Office  
Juris. No. 402623  
55 Elm Street, P.O. Box 120  
Hartford, CT 06106

Lawrence J. Golden, Esq.  
Pullman & Comley, LLC  
90 State House Square  
Hartford, CT 06103-3702

Anthony M. MacLeod, Esq.  
Whitman, Breed, Abbott & Morgan, LLC  
100 Field Point Road  
Greenwich, CT 06830

Franco Chieffalo  
General Supervisor  
First District Water Department  
P.O. Box 27  
Norwalk, CT 06852

The Honorable Kenneth A. Flatto  
First Selectman  
Independence Hall  
725 Old Post Rd.  
Fairfield, CT 06824

David A. Reif  
Jane K. Warren  
Joel B. Casey  
McCarter & English, LLP  
CityPlace I  
Hartford, CT 06103

Monte E. Frank, Esq.  
Cohen & Wolf, P.C.  
158 Deer Hill Avenue  
Danbury, CT 06810

Andrew W. Lord, Esq.  
Murtha Cullina LLP  
CityPlace I, 29<sup>th</sup> Floor  
185 Asylum Street  
Hartford, CT 06103-3469

Brian M. Stone, Esq.  
Sousa, Stone & D'Agosto, LLC  
375 Bridgeport Avenue  
Shelton, CT 06484

Robert E. Earley  
Connecticut Business & Industry Assoc.  
350 Church Street  
Hartford, CT 06103-1106

Richard J. Buturla, Esq.  
Town Attorney  
Berchem, Moses & Devlin, P.C.  
75 Broad Street  
Milford, CT 06460

Joaquina Borges King  
Assistant Town Attorney  
Hamden Government Center  
2750 Dixwell Avenue  
Hamden, CT 06518

Timothy P. Lynch  
Deputy City Attorney  
City Attorney's Office  
245 deKoven Drive, P.O. Box 1300  
Middletown, CT 06457-1300

The Honorable Derrylyn Gorski  
First Selectwoman  
Bethany Town Hall  
40 Peck Road  
Bethany, CT 06524-3378

William J. Kupinse, Jr.  
First Selectman  
Easton Town Hall  
225 Center Road, P.O. Box 61  
Easton, CT 06612

The Honorable William A. Aniskovich  
State Senate—12<sup>th</sup> District  
15 Grove Avenue  
Branford, CT 06405

David J. Monz  
Updike, Kelly & Spellacy, P.C.  
One Century Tower  
265 Church Street  
New Haven, CT 06510

David R. Schaefer, Esq.  
Brenner Saltzman & Wallman, LLP  
271 Whitney Avenue  
New Haven, CT 06511

Senator Joseph J. Crisco, Jr.  
17<sup>th</sup> District  
State Capitol  
Hartford, CT 06106-1591

Honorable Leonard A. Fasano  
State Senator – 34<sup>th</sup> District  
7 Sycamore Lane  
North Haven, CT 06473

Elizabeth Gilson, Esq.  
383 Orange Street  
New Haven, CT 06511

Karyl Lee Hall, Esq., Co-Chairman  
Branford Conservation and Environment  
Commission  
c/o Box 3072  
Branford, CT 06405

Honorable John E. Opie  
First Selectman  
Branford Town Hall  
P.O. Box 150, Town Hall  
Branford, CT 06405