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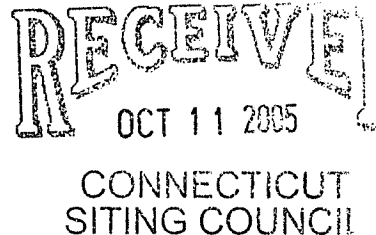
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~ ORIGINAL ~

October 7, 2005

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



**Re: Docket 217, Bethel - Norwalk Transmission Project  
EMF Monitoring Plan**

The Connecticut Siting Council's Decision and Order dated July 14, 2003 in Docket No. 217 included the following condition of approval:

Submit D&M Plans for Configuration X, including a plan for a post-construction electric and magnetic field monitoring plan.

CL&P included a plan for post-construction electric and magnetic field monitoring with each of the D&M Plans it subsequently filed for the overhead and underground transmission line segments (X' Configuration: Segments I, II, III and IV D&M Plans) of the Bethel-Norwalk project. This monitoring plan was provided in Appendix M of each D&M Plan. However, in each decision made by the Council on these D&M Plans, the Council postponed a review and approval of the post-construction electric and magnetic field monitoring plan.

Also, CL&P submitted the Segment V D&M Plans for the three 345-kV transition stations in the X' configuration of lines without an electric and magnetic field monitoring plan. The Council's subsequent approvals of the D&M Plans for each of the three transition stations included a condition to "get CSC review of a post-construction electric and magnetic field monitoring plan prior to commencement of operations."

The purpose of this correspondence is to follow-up on these rulings by providing a consolidated and updated electric and magnetic field monitoring plan for the Bethel-Norwalk transmission line project for the Council's review and approval.

Please find enclosed an updated plan entitled "Post-Construction E&MF Monitoring Plan, Bethel to Norwalk Transmission Lines Project". The plan consists of an introduction and purpose, a specification and listing of measurement locations, a general measurement protocol, and a reporting plan. The pre-construction magnetic field measurements in the Docket 217 record are over four years old and do not include measurement locations along all of the X' line segment routes. Therefore, CL&P recently completed pre-construction magnetic field measurements at spot locations in all of these route segments. The list of proposed post-construction E&MF monitoring locations in the updated plan matches the pre-construction measurement locations.

CL&P hereby requests the Council's review and approval of this Post-Construction E&MF Monitoring Plan. Questions regarding this plan may be directed to me at 860-665-6774.

Sincerely,

A handwritten signature in black ink, appearing to read "Phil Clabney". The signature is fluid and cursive, with a long, sweeping tail on the last letter.

cc. L.E. Aylsworth  
Service List, Docket 217

# **POST-CONSTRUCTION E&MF MONITORING PLAN BETHEL TO NORWALK TRANSMISSION LINES PROJECT**

## **Introduction and Purpose**

In accordance with the Council's July 14, 2003 Decision and Order in Docket 217, The Connecticut Light and Power Company proposes the following post-construction electric and magnetic field monitoring plan for the Bethel-Norwalk Transmission Lines Project.

A primary purpose for electric and magnetic field measurements near to transmission lines is to make comparisons to levels predicted by calculations. This purpose is best served by selecting post-construction measurement locations where terrain is relatively flat, conductor configurations and heights are typical and representative, and where few if any confounding sources and objects exist. A secondary purpose for electric and magnetic field measurements is to make comparisons of levels before and after new line construction at points of interest. However, those points of interest may not be at locations which best serve the primary purpose, and spot measurements of magnetic fields should not be so compared because grid and power-flow circumstances can be significantly different at the times of these before and after measurements.

## **Measurements for X' Line Segments**

With the above-described purposes in mind, CL&P's proposed list of 21 measurement locations along the transmission line route is attached. The selected locations capture each newly constructed overhead and underground line type that is part of the X' line design, and in each town where that type occurs. Pre-construction spot measurements of magnetic fields have been taken at all of the listed locations, and electric fields have been measured at a few of these locations. Similar post-construction spot measurements will be taken at each measurement location twice within the first six months of line operation.

Magnetic fields will be measured along a transect passing perpendicularly over each new underground 345- and 115-kV transmission line, and also beneath new sections of overhead 345- and 115-kV lines, at the listed locations. Electric fields will be measured in at least one transect beneath each of the three basic types of overhead 345-kV line designs used on this project. There is no electric field above ground associated with these underground cables, and any above-ground measurements would reflect other sources. To demonstrate this, electric field measurements will be recorded for each cable system at one location directly above the cables where no local electrical lines are evident.

## **Measurements at 345-kV Line Transition Stations**

Electric and magnetic fields will be measured outside of the perimeter fence of the Hoyts Hill, Archers Lane and Norwalk Junction 345-kV Line Transition Stations after their construction, once before and once after commencement of 345-kV line operations.

## Measurement Instrumentation and Recording

All electric and magnetic field measurements will be recorded at a height of one meter (3.28 feet) above ground in accordance with the industry standard protocol for taking measurements near power lines (IEEE Std. 644-1994, "*IEEE Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields From AC Power Lines*"). The resultant magnetic field will be measured with a 3-axis, recording digital meter (EMDEX II). Electric fields will be measured with an E-Probe attachment accessory to the EMDEX II meter. This accessory enables the EMDEX II to make single-axis measurements of the electric field. Both the EMDEX II magnetic field meter and the E-probe accessory meet the IEEE instrumentation standard for obtaining valid and accurate field measurements at power line frequencies (IEEE Std. 1308-1994, "*IEEE Recommended Practice for Instrumentation: Specifications for Magnetic Flux Density and Electric Field Strength — 10 Hz to 3 kHz*"). With this instrumentation, magnetic fields can be recorded continuously while walking and then plotted, whereas electric fields can be measured at spots and then recorded by hand in a data table.

## Reporting

A report on these measurements will be provided to the Council within eight months of the in-service date of the 345-kV line.

## **EMF MONITORING LOCATIONS BETHEL TO NORWALK TRANSMISSION LINE PROJECT**

### **Plumtree S/S, Bethel – Hoyts Hill Road, Bethel; 115- and 345-kV Underground Lines (MF measurements, only)**

1. Vicinity of Bethel Skate Park, Whittlesey Drive, Bethel (115-kV ROW)
2. Opposite Ralph M. T. Johnson School, Whittlesey Drive, Bethel (115-kV ROW)
3. Opposite Bethel Middle School, Whittlesey Drive, Bethel (115-kV ROW)
4. Whittlesey Drive, Bethel, near entrance to Mountainview Estates (345-kV ROW)
5. Whittlesey Drive, Bethel, near Reynolds Ridge Estates (345-kV ROW)

### **Hoyts Hill Rd., Bethel - Gallows Hill Road, Redding; 345-kV Overhead Line (E&MF measurements)**

1. Crossing of Chestnut Ridge Rd., Bethel
2. Adjacent to cul-de-sac of Costa Lane, Redding

### **Hoyts Hill Rd., Bethel - Gallows Hill Road, Redding; 115-kV Underground Line (MF measurements, only)**

1. Route 58, Putnam Park Road, Bethel, opposite Putnam Memorial Park
2. Opposite 133 Gallows Hill Road, Redding

### **Gallows Hill Rd., Redding – Archers Lane, Redding; 345/115-kV Overhead Line (E&MF measurements)**

1. Crossing of Route 53, Redding

### **Archers Lane, Redding – Norwalk Junction, Wilton; 345-kV Underground Line (MF measurements, only)**

1. Across accessway to Archers Lane Transition Station, Redding
2. Umpawaug Road, 150 feet south of Diamond Hill Road intersection, Redding
3. Route 107, vicinity of Brookside Road, Redding
4. Route 107, near intersection with Goodsell Hill Road, Redding
5. Route 7 opposite the Girl Scout Council of Southwest CT, Wilton
6. Route 7, opposite Wilton High School, Wilton.

### **Norwalk Junction, Wilton – Norwalk Substation, Norwalk; 115-kV Underground Line (MF measurements, only)**

1. Main Avenue, opposite Sheraton Four Points Hotel, 426 Main Avenue, Norwalk.
2. Broad Street at intersection with Plattsville Avenue, Norwalk.

### **Norwalk Junction, Wilton – Norwalk Substation, Norwalk; 345-kV Overhead Line (E&MF measurements)**

1. Crossing of Kent Road, Wilton
2. Crossing of Grist Mill Road, Norwalk
3. Crossing of Perry Avenue, Norwalk