50 Leavenworth Street
Post Office Box 1110
Waterbury, Connecticut
06721-1110
Telephone: 203 573-1200
Facsimile: 203 575-2600
www.carmodylaw.com

CARMODY & TORRANCE LLP
Attorneys at Law

Marianne Barbino Dubuque
Partner

Direct: 203-578-4218
mdubuque@carmodylaw.com

March 20, 2008

Daniel F. Caruso, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: **DOCKET NO. 352** The Connecticut Light and Power Company application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a proposed substation located at 264 Rood Avenue and 25 Shelley Avenue, Windsor, Connecticut

Dear Chairman Caruso:

In connection with Docket No. 352, enclosed please find the original and twenty (20) copies of CL&P's Memorandum in Support of Application.

Very truly yours,

Marianne B. Dubuque

Marianne Barbino Dubuque

MBD/mkw
Enclosures
cc: Service List

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

NORTHEAST UTILITIES SERVICE COMPANY, ON BEHALF OF THE CONNECTICUT LIGHT AND POWER COMPANY (CL&P) CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE AND OPERATION OF A PROPOSED SUBSTATION LOCATED AT 264 ROOD AVENUE AND 25 SHELLEY AVENUE, WINDSOR, CONNECTICUT	:	DOCKET NO. 352
	:	MARCH 20, 2008

THE CONNECTICUT LIGHT AND POWER COMPANY'S
MEMORANDUM IN SUPPORT OF APPLICATION

I. INTRODUCTION

An application by The Connecticut Light and Power Company ("CL&P") for a Certificate of Environmental Compatibility and Public Need for the Rood Avenue Substation was filed on November 7, 2007, with the Connecticut Siting Council ("Council"). In its application, CL&P proposes to construct a new substation to be called the Rood Avenue Substation (the "Substation") in Windsor, Connecticut. The Substation would be located on property owned by CL&P that currently houses a 23-kV switching station, which is to be removed. The Substation will add capacity in response to the increasing demand for electricity

in Windsor and its surrounding area and will improve electric distribution system reliability. (CL&P 1, Vol. 1, Sec. A)

The proposed project (the "Project") will include the construction of a new source for converting power from 115- to 23-kV. This will be accomplished by connecting a 60-Megavolt-Ampere ("MVA") power transformer to both an existing 115-kV transmission line and to the local 23-kV distribution system. (CL&P 1, Vol. 1, Sec. A) CL&P has located and designed the Substation in a manner that minimizes potential environmental and visual effects and has incorporated measures to ensure the protection of existing resources during construction and operation of the Substation facilities. (CL&P 1, Vol. 1, Sec. A)

CL&P has proposed to construct the Substation within its property, comprised of two lots, 25 Shelley Avenue and 264 Rood Avenue (the "Property"). (CL&P 1, Vol. 1, Sec. A) Based on the existing conditions of the Property and the Substation's design, the construction and operation of the Substation is not expected to have significant permanent adverse effects on the environment. CL&P has incorporated measures into all phases of Substation development and operation to ensure that the environment is protected in accordance with Federal, State and where possible, taking into account local requirements. (CL&P 1, Vol. 1, Sec. L)

(a) Statutory Criteria

The criteria for issuing a certificate for an electric power substation or switchyard, as described in CGS §16-50i(a)(4) i.e., one designed to change or regulate the voltage of electricity at 69 kV or higher or to connect two or more circuits at such voltage, which may have substantial environmental effect, is found chiefly in CGS §16-50p(a)(3)(A) – (C). Such criteria include public need for the facility and the basis for that need, the nature of the environmental impact alone, and cumulatively with other existing facilities, and why the adverse effects are not sufficient reasons to deny the application.

(b) CL&P Met All Filing Prerequisites

Pursuant to CGS §16-50*l*(e), beginning on September 5, 2007, which was at least 60 days before filing the application with the Council, CL&P undertook a detailed and formal Municipal Consultation with Windsor. (CL&P 1, Vol. 1, Sec. O) During the period prior to filing the application with the Council, CL&P also consulted with the Windsor Inland Wetlands and Watercourses Commission ("IWWC") and the Windsor Planning and Zoning Commission ("P&Z"), and filed substation "Location Review" submissions with each commission. (CL&P 1, Vol. 1, Sec. O) Both land-use agencies approved the location of the Project. (CL&P 1, Vol. 1, Sec. K)

Notices were provided to abutting and nearby property owners and Notice of the application was published in the Hartford Courant in accordance with CGS §16-50*l*(b). (CL&P 1, Vol. 1, Sec. Q; CL&P 1, Vol. 2, Exh. 9; CL&P 2) Service of the application was made on all state and local officials and agencies described in CGS §16-50*l*(b). (CL&P 1, Vol. 1, Sec. Q) A duly noticed hearing was held by the Council in the Windsor Town Hall, 275 Broad Street, Windsor, Connecticut, on February 21, 2008 at 3:00 p.m. and 7:04 p.m. (Tr. 1; Tr. 2)

II. PROJECT DESCRIPTION

The Property on which the Substation would be located is approximately 21.03 acres in area and is owned by CL&P. CL&P acquired the Property as several parcels over a ten-year period from the mid-1950s to mid-1960s. Since the 1950s, the Property has historically been used as an overhead transmission/distribution corridor. Additionally, the Property is the site of a former electrical substation (circa 1965-1991), which presently functions as a 23-kV switching station. The Substation would occupy an area measuring approximately 220 feet by 137 feet and would be covered with a trap rock surface and secured by a seven-foot high chain-link fence with one foot of barbed wire (three strands). The Property would be accessed by a gravel driveway, which will be established generally along the route of the existing unimproved dirt access. The

Property will accommodate the construction and operation of the Substation without the need to purchase any additional real estate. (CL&P 1, Vol. 1, Sec. F)

Once constructed, the Substation would connect into one of two existing 115-kV-overhead transmission line circuits (the 1751 transmission line), which is the southernmost line traversing the Property. The 1751 transmission line will be looped beneath the other line into the Substation, and a new 115-kV circuit breaker will be installed in the Substation to separate the existing 1751 transmission line into two circuits. The interconnection into the 1751 transmission line would be accomplished by installing two new terminal structures within the Substation, each of which would also support a line disconnect switch and two new wood-pole structures (structures #10142A and #10143A both located outside the Substation compound), each consisting of three wood poles in an H-frame configuration. Existing wood-pole structure #10143 would be relocated approximately 70 feet to the west. From the new #10142A structure, a new section of line conductors would connect to one of the line terminal structures located inside the Substation's fenced-in area. Line conductors from the relocated structure #10143 will be connected to the new #10143A structure and then to the second line terminal structure located within the fenced-in area.

Three transformer connecting positions in the Substation would each be outfitted with 115-kV disconnect switches, and two with 115-kV circuit switchers. One disconnect switch and

one circuit switcher would be in the supply path to the 60-MVA power transformer used to step down the voltage from 115- to 23-kV. The second disconnect switch would provide for a future 60-MVA power transformer, if needed. The third disconnect switch and circuit switcher will be used for a mobile transformer connection, when necessary, to perform maintenance or to replace a failed piece of equipment.

A metal-clad switchgear enclosure approximately 27-feet long, 14-feet wide and 14-feet high will be installed to provide the switching equipment for four 23-kV distribution feeders, of which three will be activated initially. (CL&P 1, Vol. 1, Sec. F) In addition to the switchgear enclosure, a 48-foot by 14-foot by 14-foot high protective relay and control equipment enclosure and a 24-foot by 14-foot by 14-foot high battery enclosure will be installed at the north end of the Substation.

Distribution cable getaways would exit the Substation underground in conduits and connect to existing overhead distribution lines already on the Property. Consistent with the present feeder configuration, two of the initial feeders will follow the general route of the access drive to Rood Avenue, and one will exit the Property on an existing right-of-way located to the north. (CL&P 1, Vol. 1, Sec. F)

III. NEED

(a) Existing Service Area Conditions

Currently, electric load in Windsor is served by four bulk power substations (Bloomfield Substation, North Bloomfield Substation, Windsor Locks Substation and Northwest Hartford Substation). The current configuration, which relies on the sharing of Windsor's load by distribution feeders from these four substations, is not a viable long-term option for reliably meeting Windsor's growing peak-load demands. As the area experiences increased growth, the demands placed on the existing substations currently providing service to Windsor require relief to meet this growing need and maintain service reliability. The challenges of load growth in this geographic region have been recognized and strategies have been employed as interim measures to delay the need for a new facility. For instance, the load on the Bloomfield Substation nearly reached the substation's permissible load rating of 120 MVA in 2006 and was projected to exceed this rating in 2007[1]. To alleviate the immediate need, a Forced Load Transfer (FLT) scheme has been instituted at the Bloomfield Substation using two separate 23-kV circuits. The FLT scheme allows the transfer of approximately 14 MVA of load off of Bloomfield Substation (to North Bloomfield and Northwest Hartford), thus increasing the permissible load rating of this

[1] Substation Permissible Load Ratings are based on the loss of one power transformer, without dropping any load, and without damaging all remaining equipment engaged in temporarily serving the load until (and after) a mobile power transformer can be installed.

substation by 14 MVA and providing the necessary time window to construct the Rood Avenue Substation for operation beginning in 2009. (CL&P 1, Vol. 1, Sec. G)

North Bloomfield Substation is projected to exceed its permissible load rating of 79 MVA in 2008. Installing a similar FLT scheme will ultimately increase the permissible load rating at North Bloomfield Substation to 88 MVA. (CL&P 1, Vol. 1, Sec. G)

(b) Windsor's Need

Responding to increasing peak-load demands, the purpose of the Substation is to improve electric distribution system adequacy and reliability in Windsor and its surrounding areas by increasing the capacity to deliver electric power from the 115-kV transmission system to the local 23-kV distribution system. Electricity consumption in Windsor has steadily increased since 1981. By 2005, Windsor's power use grew by more than 53% compared to power use in 1981. In addition, there is significant potential for additional industrial/commercial development, specifically in the Pigeon Hill Road/Day Hill Road area, further increasing peak loads and the need for a dedicated power source in the Town. Moreover, there are a number of larger projects that were recently completed, currently being planned or are in various stages of construction within Windsor that represent a projected load increase of over 41 MW by 2010. (CL&P 1, Vol. 1, Sec. G; CL&P 5)

Customer demand is also on the rise in towns with substations now serving Windsor. For example, substantial regional projects and new developments in the vicinity of Bradley International Airport and Route 20 and I-91 are placing further stress on the overall system. (CL&P 1, Vol. 1, Sec. G)

CL&P has explored alternative sites and system alternatives, including participating in several conservation and demand side management programs. The load reductions that these programs will achieve will not relieve the need for the proposed Substation. (CL&P 1, Vol. 1, Sec. G)

Alternative sites were explored to meet Windsor's growing load but they were all found to be inadequate. Overall, CL&P examined eight sites but none could provide the reliability and flexibility necessary to meet Windsor's increasing electrical need. (CL&P 1, Vol. 1, Sec. G)

V. ENVIRONMENTAL EFFECTS

(a) Electric and Magnetic Fields

All alternating current devices produce Electric and Magnetic Fields ("EMF"), which some suspect might cause adverse health effects, particularly for long-term exposures to above-background magnetic field levels; however, there is no credible evidence of a causal link between such long-term exposures and adverse health effects. For many years, the focus of

concern has been on magnetic fields ("MF") and not on the electric fields. With the proposed Substation, the dominant source of MF on and beyond the property boundaries would not be from the proposed Substation but would continue to be from the existing transmission power lines (the 115-kV circuits numbered 1751 and 1779 and the 345-kV circuit number 395) and distribution power lines (23-kV circuits 3B11 and 3B12). MF exposure from the Substation equipment beyond the fence line around the Substation would quickly fall to very low background levels. Likewise, any MF levels from the transmission lines and distribution lines would also fall to background levels over short distances because MF decreases as the distance increases from the source. (CL&P 1, Sec. M)

The electrical equipment to be placed in the Substation will be more than 140 feet away from the closest property line. At such a distance, the Substation equipment within the fenced area will not cause any noticeable change to existing electric or magnetic field levels along or beyond the property lines. (CL&P 5, p. 21) However, MF levels will both increase and decrease at certain points along existing property boundaries. These changes are due to the reconfiguration of the 1751 transmission line needed to facilitate its interconnection to the Substation and resulting shifts in currents flowing on the 115-kV transmission circuits and the 23-kV distribution circuits. Under the peak-load condition in 2014, the abutting residence at 288 Rood Avenue is close enough to the existing transmission line to experience a 2.3-mG increase

in the portion of the home nearest to the transmission line. All other abutting residences will either experience no change or reduced MF as a result of the Project. Based on international guidelines and reviews of EMF research by the World Health Organization and other national and international scientific and health agencies, these MF exposure levels, however, will not pose a safety or health hazard to persons or property at or adjacent to the Property. (CL&P 5, pp. 22-23)

(b) The Natural Environment and Wildlife

The development of the Substation would not have any significant, long-term adverse effects on the existing environment and ecology. There are six wetland areas on the Property. Development of the Substation would result in a limited temporary and permanent impact to portions of two of the wetland areas. Due to the size and extent of wetlands on the Property, only small outlying portions of the Property fall outside of Windsor's Inland Wetlands and Watercourses Commission's 150-foot upland review area. (CL&P 1, Vol. 1, Sec. K)

Approximately 490 square feet of wetland would be permanently impacted by the Substation footprint. There would be 575 square feet of temporary impacts on the wetland associated with vegetation clearing around the perimeter of the Substation to facilitate construction activities and for technical safety reasons. Nevertheless, due to historical

disturbances to these wetland areas, their functions and values have diminished. (CL&P 1, Vol. 1, Sec. K; Tr. 1, pp. 32-33)

Connecting the existing 115-kV 1751 transmission line to the Substation would require the installation of three wood poles, each within five-foot diameter cassions and eight associated guy-wire anchors within and adjacent to the wetland resulting in 40 square feet of permanent impacts and 2,228 square feet of temporary impacts. (CL&P 1, Vol. 1, Sec. K) Removal of a wood-pole angle structure from Wetland 1 at the western turn of the 115-kV line would require minimal temporary impacts (290 square feet). Replacement of the angle structure west of the wetland will result in temporary impacts (approximately 1,190 square feet) to cross this wetland via 14-foot wide timber mats to allow for construction access to this location. In total, the work associated with these transmission line modifications would result in 40 square feet of permanent wetland impacts and 3,708 square feet of temporary wetland impacts. (CL&P 1, Vol. 1, Sec. K)

Areas temporarily disturbed by construction activities would be restored with native shrubs, grasses and forbs as appropriate. The relatively small area of permanent impacts resulting from the new utility poles is not expected to adversely impact the principal functions or values of the wetland. This wetland area is primarily occupied by disturbed emergent and scrub/shrub habitat and such habitat would be maintained post-construction. (CL&P 1, Vol. 1, Sec. K) Removal of the 23-kV switching station and installation of wood poles would require

work in proximity to the wetlands but will not result in any direct temporary or permanent impacts on those wetlands. (CL&P 1, Vol. 1, Sec. K)

After construction is complete, the Project will have no permanent adverse effects on the environment. CL&P would implement its Construction Best Management Practices to minimize or eliminate potential adverse environmental effects during the construction phase of the Project. CL&P's Development and Management ("D&M") Plan for the Substation would also incorporate the mitigation measures outlined in the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control.* (CL&P 1, Vol. 1, Sec. L)

(c) Rood Avenue Substation Would Not Adversely Affect Wildlife in the Area

The majority of the Substation site would occupy what is currently upland forest habitat with a small portion of the Substation footprint occurring in a forested wetland. Permanent and temporary wetland impacts associated with connections and improvements to the existing transmission line corridor would occur primarily within the emergent and scrub-shrub wetland areas. A vegetation and wildlife survey of the Property conducted by Maguire Group Inc. determined that the most significant wildlife attribute of the Property is its function as a wildlife corridor, which is a feature that will be maintained post construction. Therefore, the Project would not have an adverse effect on wildlife due to maintenance of the wildlife corridor feature and the Substation footprint's immediate proximity to similar habitats that would allow for

natural relocation of potential wildlife from the construction zone. (CL&P 1, Vol. 1, Sec. K; CL&P 6, pp. 7-8)

According to the Connecticut Department of Environmental Protection ("CTDEP") Natural Diversity Data Base ("NDDB") geographic information system ("GIS") data layer (dated June 2007), the Property is not located within a buffered area of concern. (CL&P 1, Vol. 1, Sec. H) CL&P corresponded directly with the CTDEP, which provided a letter of "No Effect" on August 22, 2006. (CL&P 1, Vol. 1, Sec K; CL&P 1, Vol. 2, Exh. 4)

(d) No Effect On Nearby Resources

The development of the Rood Avenue Substation would not have significant long-term adverse effects on the scenic, historic or recreational values of the surrounding area. (CL&P 1, Vol. 1, Sec. H, K) The Connecticut SHPO reviewed the Project and has determined that it will have no adverse effect on historic, architectural or archaeological resources on or eligible for inclusion on the National Register of Historic Places. A letter of "No Effect" was issued by the SHPO on September 6, 2007. (CL&P 1, Vol. 1, Sec K; CL&P 1, Vol. 2, Exh. 6) There are no recreational areas directly abutting or within 0.25 mile of the Property. Moreover, there are no adverse effects on scenic and recreational values, forest and parks, or water purity. The Project benefits from a full review by relevant local agencies in Windsor. (CL&P 1, Vol. 1, Sec. K)

(e) No Adverse Effect On Public Health And Safety

The noise analysis that was performed determined that the Substation will not generate noise impacts in excess of State noise control regulations or Windsor's Noise Control Ordinance. During construction, some large construction equipment will be in use and activities conducted that will generate noise. To the largest extent possible, general site construction hours would be limited to 7 a.m. to 5 p.m., Monday through Friday. Because of the difficulty of scheduling outages for interconnecting to the transmission system, there could be relatively short periods when some work will need to take place on a weekend or hours beyond the 7 a.m. to 5 p.m. period. Overall, the main source of noise in the area is traffic noise from I-91. (CL&P 1, Vol. 1, Sec. K; CL&P 6, p. 9)

The Substation would have low-level lighting for safety and security purposes. However, these lights would be recessed or activated manually to minimize visual effects at night. Lighting would not affect existing residences in the vicinity of the Property. Additional lighting capability would exist in the Substation to allow for work at night under abnormal or emergency conditions. (CL&P 1, Vol. 1, Sec. K)

CL&P would install secondary containment for the transformer, consisting of an underlying and surrounding polyvinyl-lined sump, capable of holding 110% of the transformer's oil capacity. (CL&P 6, p. 11) In addition, an Imbiber Beads Drain Protection System® will be

installed in a secondary containment structure. This design has been approved by CTDEP and incorporated into other operational substation designs by CL&P. (CL&P 1, Vol. 1, Sec. J; CL&P 6, p. 11)

The closest water supply wells are part of the Windsor Locks Wellfield (a State-designated Preliminary Aquifer Protection Area), located approximately 4.5 miles north of the proposed Substation. (CL&P 1, Vol. 1, Sec. K; CL&P 6, p. 10)

(f) CL&P's Application Should Not Be Denied

Based on the documents in the Record, the proposed Substation would have a minimal effect on the present environment. More importantly, the Project would meet the present vital electric reliability need that will only worsen as Windor's load continues to grow. The extensive mitigation measures, active participation of the local land-use agencies, and the thoughtful design and careful location of the proposed facility meet and exceed all the requirements for a Certificate of Environmental Compatibility and Need.

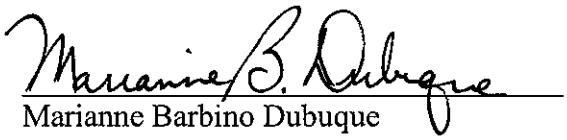
Furthermore, the proposed facility received strong support from Town officials. (CL&P 1, Vol. 2, Exh. 7) No one requested party or intervenor status, and there were no members of the public who spoke at the hearing. (Tr. 2, p. 5) Finally, CL&P is not aware of any post-hearing comments being filed with the Council.

VI. CONCLUSION

The Connecticut legislature has entrusted the Council with balancing the need for adequate and reliable public utility services with protection of the environment and ecology of the State. CL&P's application in this docket is based on a demonstrated need for a new and larger bulk power substation in Windsor where the distribution system is nearing its limit. CL&P's proposal addresses that need in a manner that minimally affects the environment and ecology of the State and minimizes damage to those resources. Accordingly, CL&P respectfully requests that its Application for a Certificate of Environmental Compatibility and Public Need for the Rood Avenue Substation be approved.

Respectfully submitted,

APPLICANT,
THE CONNECTICUT LIGHT AND POWER COMPANY

BY: 

Marianne Barbino Dubuque
Carmody & Torrance LLP
50 Leavenworth Street
Waterbury, CT 06702
Its Attorneys