ORIGINAL

DOCKET NO. 144 - An application of the Connecticut Light and Power Company for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications tower in the Town of Newtown, Connecticut. The proposed prime site is north of Barnabas Road approximately 400 feet west of the intersection of Tunnel and Barnabas Roads. The proposed alternate site is located south of Barnabas Road approximately 800 feet west of the intersection of Tunnel and Barnabas Roads.

Connecticut

Siting

Council

November 20, 1991

## FINDINGS OF FACT

1. The Connecticut Light and Power Company (CL&P), acting by its agent, the Northeast Utilities Service Company (NUSCO), in accordance with provisions of section 16-50g to 16-50z of the Connecticut General Statutes (CGS), applied to the Connecticut Siting Council (Council) on June 13, 1991, for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications facility in the Town of Newtown, Connecticut, to provide mobile radio communications, remote control load management, and microwave linkage for the Newtown Area Work Center, serving the Towns of Bethel, Brookfield, Danbury, Monroe, Newtown, and Ridgefield, Connecticut. (CL&P 1, pp. 1, 3-4, 10)

2. Public notice of the application, pursuant to section 16-50l(b) of the CGS, was published in The Hartford Courant on June 4 and 5, 1991, and in the Newtown Bee on May 24 and 31, 1991. A corrected public notice, identifying a site in the Town of Newtown, Connecticut, proposed as an alternate, was published in The Hartford Courant on August 4 and 5, 1991, and in the Newtown Bee on August 2, 1991. (CL&P 1, tab 3; CL&P 7; CL&P 8; CL&P 9)

3. The Council and its staff made inspections of the proposed prime and alternate sites in the Town of Newtown, Connecticut, on August 27, 1991. During the field inspection, CL&P flew balloons at the proposed prime and alternate sites in order to simulate the height of the proposed prime and alternate towers. (Council Hearing Notice, July 26, 1991)

4. Pursuant to section 16-50m of the CGS, the Council, after giving due notice thereof, held a public hearing for the proposed application on August 27, 1991, beginning at 3:30 P.M., and reconvening at 7:00 P.M., in the Edmond Town Hall, 45 Main Street, Newtown, Connecticut. (Council Hearing Notice, July 26, 1991; Transcript (Tr.) Day, p. 1; Tr. Evening (Eve.), p. 1)

5. The Connecticut Department of Environmental Protection (DEP) filed written comments, pursuant to section 16-50j(h) of the CGS, on July 31, 1991. (July 31, 1991, Letter from DEP Commissioner Timothy R. E. Keeney to Council Chairman Gelston)

6. Pursuant to section 16-50l(e) of the CGS, the First Selectman of the Town of Newtown was provided a preliminary application for the CL&P Newtown telecommunications facility. If approved, CL&P has offered to share the tower with Newtown's municipal and emergency organizations. (CL&P 1, pp. 5, 29, tab 6)

7. The Federal Communications Commission (FCC) is required to license and regulate CL&P for the transmission of communications directly related to protect the imminent safety of life or property, as well as communications directly related to and necessary for the distribution of electrical energy for use by the general public. (CL&P 5, p. 3; Tr. Day, p. 20)

Newtown Area Work Center Facility

8. Due to the divestiture of CL&P's gas service division, the existing CL&P Bethel Area Work Center and its associated communications equipment became part of the Yankee Gas Service Company on July 1, 1989. The divestiture made it necessary for CL&P to search for a new area work center site. Thirteen sites in Bethel, Brookfield, New Milford, and Newtown, Connecticut, were evaluated for the new area work center. CL&P chose a site in Newtown for its central location and radio coverage of the service area. The Newtown service area includes the Towns of Bethel, Brookfield, Danbury, Monroe, Newtown, and Ridgefield, Connecticut. CL&P will vacate the Bethel Area Work Center by October 31, 1991. (CL&P 1, pp. 10, 24; CL&P 5, p. 10; Tr. Day, p. 12)

9. The Newtown Area Work Center telecommunications facility would be used to communicate with personnel assigned to the Norwalk Area Work Center in areas presently not served or inconsistently served by the Norwalk area telecommunications facility. (CL&P 1, p. 14)

10. The new CL&P Newtown Area Work Center is located within a 92-acre industrial park on a 23.9 acre, industrially-zoned parcel owned by the Barnabas Realty Group, off of Barnabas Road in Newtown, Connecticut. The Newtown Area Work Center includes a 59,000 square foot service building for offices and customer service personnel, a 9,000 square foot service garage for vehicle maintenance and repair, vehicle parking for service vehicles and personnel, and a storage warehouse. CL&P has negotiated a 30-year lease agreement with the Barnabas Realty Group for use of the Newtown Area Work Center's land and improvements. The lease includes an option to purchase the site and its improvements in the fifteenth or thirtieth years. CL&P also has the ability to renew the lease for two successive ten-year periods at the end of the original 30-year term. (CL&P 1, pp. 3, 5, 19-20, tab 20)

11. The following are towers within a ten-mile radius of the proposed Newtown prime and alternate sites:

| Company Name | Location | Distance from proposed sites in miles | Tower height above ground level (AGL) in feet and type |
|---|---|---|---|
| Housatonic Cable Vision, Co. | Guinea Rd. Monroe | 6.8 | 140-guyed |
| Housatonic Cable Vision, Co. | Wheeler Rd. Southbury | 6.6 | 150-guyed |
| Metro Mobile CTS | Commerce Rd. Newtown | 3.1 | 180-monopole |
| Southern New England Telephone Company | Secor Rd. Newtown | 1.6 | 150-monopole |
| Yankee Gas Service, Co. (Former CL&P Bethel Area Work Center) | Stony Hill Rd. Bethel | 3.1 | 100-self-supporting lattice |
| Connecticut Dept. of Transportation | I-84 & Rt. 172 Southbury | 6.0 | 180-self-supporting lattice |

(CL&P 1, p. 28; CL&P 6)

12. Telecommunications services including a microwave link-up, proposed for the Newtown Area Work Center could not be supplied by the former CL&P Bethel Area Work Center tower because the existing 100-foot AGL, self-supporting, lattice tower could not support both the Yankee Gas Service Company's antennas and the additional antennas proposed by CL&P. (Tr. Day, pp. 16-17)

13. Of all the existing towers within a ten-mile radius of the proposed Newtown Area Work Center prime and alternate sites, only the existing Metro Mobile CTS, 180-foot monopole tower could provide mobile radio and remote control load management coverage similar to, but less than, coverage of the proposed Newtown facility as well as a microwave link-up to the CL&P microwave network via the existing New Milford Area Work Center telecommunications facility. (CL&P 4, Q. 14)

14. Supporting a microwave dish on the existing Metro Mobile CTS, 180-foot monopole tower would require a reinforced 130,000 pound monopole, nine feet in diameter at the base tapering to two feet at the top, costing approximately $122,540. (Tr. Day, pp. 27-28)

15. Any facility not adjacent to the Newtown Area Work Center would require a fiber optic communications link that would be more expensive and less reliable than an adjacent link. If fiber optic lines were to be used for a communications link, CL&P would place the lines underground at a cost of approximately $125,000 to $150,000 per mile. (CL&P 1, p. 23; CL&P 10; Tr. Day, p. 19; Tr. Eve., pp. 17, 19)

16. For the needs of CL&P's service crews, cellular telecommunications would not provide adequate service capabilities for the following reasons:

    1. Inability to simultaneously communicate between multiple crews and dispatch units;
    2. No third party call relay capability if two service units are unable to communicate;
    3. CL&P would have to share air time with the public; and
    4. Higher cost due to monthly and per call charges than the estimated $0.075 per hour cost of operating mobile radio units.

    (CL&P 4, Q. 15)

17. The following general types of antennas would be mounted on the proposed Newtown area telecommunications facility tower:

    1. VHF low-band;
    2. VHF high-band; and
    3. Microwave.

VHF coverage and microwave link-up capability would be the same for either the proposed Newtown Area Work Center prime or alternate sites. (CL&P 1, p. 7, tab 8, tab 13, tab 14, tab 15, tab 24)

18. The proposed Newtown Area Work Center telecommunications facility would have three VHF low-band antennas operating at 37.48, 37.74, and 48.34 MHz. Associated with the VHF low-band antennas would be three base stations with transmit and receive capabilities each operating at 100 watts of output power. The VHF low-band system would provide mobile radio coverage for the Newtown Area Work Center service territory in order to coordinate most field activities such as dispatching work orders, coordinating and verifying switching orders, signaling of field personnel, and coordinating storm damage repair. (CL&P 1, pp. 8, 11-13; CL&P 5, pp. 3, 5-6)

19. The proposed Newtown Area Work Center telecommunications facility would have one VHF high-band antenna operating at 154.46375 MHz. Associated with the VHF high-band antenna would be a single transmitter and necessary control equipment operating at 250 watts of output power. The VHF high-band would be used for the Remote Control Load Management System (RCLMS). The RCLMS would be used to implement the following Department of Public Utility Control mandated conservation and load management programs:

    1. Power Factor Control - Capacitor banks would be switched in and out of distribution circuits to control the NUSCO system power factor. The radio controlled pole top capacitor banks can correct the power factor of the Northeast Utilities electrical system by 1100 to 1200 megavars, a quantity equal to the total gross megavars capacity of the Millstone Power Station (1200 megavars). In the Newtown area the pole top capacitors could correct up to approximately 110 megavars.

    2. Water Heater Control - CL&P would be able to control the electric water heater portion of the system load to reduce peak loads. Northeast Utilities estimates that in 1990-1991 there has been an estimated peak load reduction of 27,000 kilowatts (kw) by controlling the lower element of participating water heaters. Upper element control would equal an interruptible load of 2000 kw. In the Newtown Area Work Center locale there are approximately 300 water heaters that would be under control of the RCLMS.

    3. Voltage Control - During emergency situations, the RCLMS could control the position of tap changers on substation transformers, decreasing line voltage by approximately two to five percent. This line voltage reduction would reduce system load between one and two percent.

CL&P has also been granted a FCC waiver to use RCLMS for radio paging of personnel essential to the safe and efficient operation of the electrical system. (CL&P 1, pp. 8-9, 11, 14-17; CL&P 5, pp. 4, 6-7; Tr. Eve., pp. 13-14)

20. The proposed Newtown Area Work Center telecommunications facility would have one six-foot-diameter microwave dish operating at 6775 MHz. There would be two receivers and two transmitters operating in the "hot standby" mode, where only one transmitter is connected to the system at one time. Power output would be one watt at the antenna port. The microwave system would tie the Newtown Area Work Center to the Northeast Utilities headquarters in Berlin, Connecticut, the Wethersfield Data Center, and other Northeast Utilities facilities via the existing New Milford Area Work Center telecommunications facility. The microwave would provide Supervisory Control and Data Acquisition (SCADA) circuits, radio control circuits, environmental data acquisition network (EDAN) circuits, protective relaying, and Wide Area Network (WAN) circuits for office automation. The microwave would also provide high speed data circuits for the interconnection of local area networks at the work center to outside customer service, operations dispatch, and mainframe computer facilities. (CL&P 1, pp. 9, 17-18, tab 8; CL&P 5, p. 8)

21. The proposed Newtown Area Work Center facility tower would be designed to withstand pressures equivalent to 100-mile per hour winds with one-half inch of solid ice accumulation in accordance with the Electronic Industries Association (EIA) Standard, EIA-222-D, "Structural Standards for Steel Antenna Towers and Antenna Support Structures." Without the ice accumulation, the tower could remain operational at wind speeds over 112 miles per hour. (CL&P 1, p. 6, tab 7, tab 24; Tr. Day, pp. 32-33)

22. Neither of the proposed Newtown prime or alternate towers would require lighting or obstruction marking pursuant to Federal Aviation Administration guidelines. (Tr. Day, pp. 20-21)

23. Construction at the proposed prime or alternate sites in Newtown would have no effect on Federally Endangered and Threatened Species or Connecticut Species of Special Concern. (CL&P 1, tab 5)

24. Construction at the proposed prime or alternate sites in Newtown would have no effect on historic, architectural, or archeological resources listed on or eligible for the National Register of Historic Places. (CL&P 1, tab 21)

25. The proposed prime and alternate sites contain no unique scenic, natural, historic, or recreational characteristics. (CL&P 1, p. 21)

26. The calculated power density for the area 100 feet around the proposed Newtown Area Work Center prime facility would be 0.59 percent of American National Standards Institute (ANSI) guidelines for broadband fields which have been adopted by DEP as the state standard for electromagnetic radiation exposure. The calculated power density for the area 100 feet around the proposed Newtown Area Work Center alternate facility, where the tower would be 30 feet AGL lower than the tower at the proposed prime site, would be 1.43 percent of the ANSI guidelines for broadband fields. (CL&P 1, p. 31, tab 24)

Newtown Area Work Center Prime Site

27. The proposed Newtown Area Work Center prime site is located at the northeast corner of the Newtown Area Work Center office building. The northeast corner was chosen as the prime site because a fueling station is located on the west side of the Work Center office building. The elevation of the proposed prime site is 450 feet above mean sea level (AMSL) (CL&P 1, tab 16, tab 18; Tr. Day, p. 37)

28. The tower proposed for the Newtown Area Work Center prime site would be a self-supporting lattice structure, 180 feet AGL. The base-leg spread would be twenty-four feet, nine and three-eighths inches (24 feet 9-3/8 inches), narrowing to eight feet, six inches (8 feet 6 inches) at the top. The proposed tower base would be on a curbed island reinforced by concrete piers. Concrete-filled lolly columns would be in front of each leg of the tower. The property of the Newtown Area Work Center would be fenced. (CL&P 1, p. 6; CL&P 6; Tr. Day, p. 22; Tr. Eve., pp. 21-22)

29. The antennas proposed for the Newtown Area Work Center prime tower would be attached at the following heights.

| Antenna Type | Antenna Length (feet) | Antenna Attachment height (feet AGL) |
|---|---|---|
| VHF low-band | 14 | 173 |
| VHF low-band | 14 | 151 |
| VHF low-band | 14 | 130 |
| VHF high-band | 22 | 177 |
| Microwave | 6 (diameter) | 175 |

(CL&P 1, tab 8; CL&P 6)

30. The fall zone of the proposed Newtown Area Work Center prime tower would encompass the adjacent Newtown Area Work Center office building and parking lot area, and remain on the CL&P leased property. (CL&P 4, Q. 3)

31. The proposed Newtown Area Work Center base station radio equipment at the prime site would be located in a communications room within the Work Center office building. Utilities for the proposed VHF radio equipment would be from within the building. Power for all proposed microwave radio equipment would be obtained from a direct current (DC) battery plant. The batteries would be continuously charged using the Work Center's alternating current (AC) service, or the Work Center's emergency generator. (CL&P 1, p. 10, tab 10)

32. There are 15 residences and/or buildings within 2000 feet of the proposed Newtown Area Work Center prime site. The closest building is the adjacent Work Center. The closest residence, located approximately 600 feet northeast on Tunnel Road, would be able to see the upper 20 to 30 feet of the proposed prime site tower. Residences in areas to the north, 3000 to 8500 feet from the proposed prime site tower, would be able to see the majority of the tower. (CL&P 4, Q. 7, Q. 8; Tr. Day, pp. 39-40)

33. No clearing and only minimal grading would be necessary at the proposed Newtown Area Work Center prime site. (CL&P 1, p. 22, tab 16)

34. There are no wetlands at the proposed Newtown Area Work Center prime site. The closest wetlands are 160 feet to the east and 720 feet to the west of the proposed prime site. (CL&P 1, p. 21; CL&P 4, Q. 5)

35. No effluent discharge, air pollution, or noise emissions would occur at the proposed Newtown Area Work Center prime site other than emissions from the Work Center's central air conditioning system and an emergency generator. (CL&P 1, pp. 21-22)

36. The cost of the proposed Newtown Area Work Center prime facility to be incurred by CL&P is estimated as follows:

| | |
|---|---|
| Radio Equipment | $ 3,800 |
| Tower | 29,800 |
| Antennas | 2,500 |
| Transmission line and hardware | 8,900 |
| Power System | 0 |
| Installation | 40,300 |
| Miscellaneous, including site preparation | 10,200 |
| TOTAL | $95,500 |

(CL&P 1, p. 18)

Newtown Area Work Center Alternate Site

37. The proposed Newtown Area Work Center alternate site is located on a 2.2-acre parcel, south of Barnabas Road, approximately 800 feet west of the intersection of Tunnel and Barnabas Roads in Newtown, Connecticut, zoned for

farming and residential use, and owned by the Barnabas Realty Group. The proposed alternate site is approximately 100 feet north of Interstate 84 and approximately 650 feet southwest of the proposed Newtown Area Work Center prime site. The elevation of the proposed alternate site is 480 feet AMSL. (CL&P 1, pp. 29-30, tab 23, tab 24)

38. The tower proposed for the Newtown Area Work Center alternate site would be a self-supporting lattice structure, 150 feet AGL. The base leg spread would be twenty-two feet and eleven inches (22 feet 11 inches), narrowing to eight feet six inches (8 feet 6 inches) at the top. (CL&P 1, tab 24)

39. The antennas proposed for the Newtown Area Work Center alternate tower would be attached at the following heights:

| Antenna Type | Antenna Length (feet) | Antenna Attachment Height (feet AGL) |
|---|---|---|
| VHF low-band | 14 | 143 |
| VHF low-band | 14 | 121 |
| VHF low-band | 14 | 100 |
| VHF high-band | 22 | 147 |
| Microwave | 6 (diameter) | 145 |

(CL&P 1, tab 8; Tr. Day, p. 23)

40. The fall zone of the proposed Newtown Area Work Center alternate tower would encompass the proposed equipment building, Barnabas Road, and a portion of the west bound lanes of Interstate 84. (CL&P 4, Q. 3)

41. The proposed Newtown Area Work Center base station radio equipment at the alternate site would be housed in a 11 foot by 16 foot equipment shelter. Utility access for the proposed VHF radio equipment would be underground from the Work Center. Power for all proposed microwave radio equipment would be obtained from a DC battery plant. The batteries, housed in the equipment building, would be continuously charged by the Work Center's AC service or an emergency generator that would be located at the alternate site. (CL&P 1, p. 30, tab 24; CL&P 4, Q. 12)

42. A fence and gate would surround the proposed Newtown Area Work Center alternate site. (CL&P 4, Q. 12)

43. There are 18 residences and/or buildings within 2000 feet of the proposed Newtown Area Work Center alternate site. The closest building is the Work Center office building, approximately 310 feet to the north. The closest residence is approximately 1200 feet to the northeast, on Tunnel Road. Residences in areas to the north, 3000 feet to 8500 feet from the proposed alternate site tower, would be able to see the majority of the tower. (CL&P 4, Q. 7, Q. 8; Tr. Day, p. 40)

44. A 2250 square foot clearing in a wooded area would be necessary at the proposed Newtown Area Work Center alternate site for the placement of an equipment building and tower. Once cleared, the site would require only minimal grading. (CL&P 4, Q. 11)

45. There are no wetlands at the proposed Newtown Area Work Center alternate site. The closest wetlands are 300 feet to the east and 900 feet to the northwest of the site. (CL&P 4, Q. 5)

46. No effluent discharge, air pollution, or noise emissions would occur at the proposed Newtown Area Work Center alternate site other than the emissions from the air conditioning unit in the equipment building and occasional operation of an emergency generator. (CL&P 1, p. 30; CL&P 4, Q. 6)

47. The cost of the proposed Newtown Area Work Center alternate facility to be incurred by CL&P is estimated as follows:

| | |
|---|---|
| Radio Equipment | $ 3,800 |
| Tower | 24,800 |
| Antennas | 2,500 |
| Transmission line and hardware | 8,900 |
| Power Systems, including an electric generator and propane tank | 16,500 |
| Installation | 40,300 |
| Miscellaneous, including equipment shelter, trenching work and conduit, and site preparation | 113,300 |
| TOTAL | $210,100 |

(CL&P 4, Q. 12)

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