ORIGINAL

DOCKET NO. 85 - An application of the Connecticut Light and Power Company for a Certificate of Environmental Compatibility and Public Need for the construction of a 115-kV underground transmission line to interconnect the proposed Dexter Corporation Cogeneration Facility to the Windsor Locks Substation.	:	Connecticut Siting Council
	:	February 5, 1988

FINDINGS OF FACT

1. Northeast Utilities (NU), acting on behalf of the Connecticut Light and Power Company (CL&P) in accordance with the provisions of Sections 16-50g to 16-50z of the Connecticut General Statutes (CGS), applied to the Connecticut Siting Council (Council) on September 24, 1987, for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction of a 115-KV underground transmission line to interconnect the certificated Dexter Corporation Cogeneration Project, Windsor Locks, Connecticut, (Project) to CL&P's existing Windsor Locks Substation (Substation). (Record)
2. The fee, as prescribed by Section 16-50v-1 of the Regulations of State Agencies (RSA), accompanied the application. (Record)
3. The application and notice thereof were served in accordance with CGS Section 16-501(b). (Record; CL&P-1)
4. Legal notice of the application was published in the Hartford Courant on September 18, 1987, and September 19, 1987, and in the Windsor Locks Journal on September 25, 1987. (Record; CL&P-1; Dexter Exhibit 4, Exhibit 5)

5. The Council and its staff made an inspection of the proposed underground transmission line route on November 30, 1987. (Record)
6. Pursuant to Section 16-50m of the CGS, the Council, after giving due notice thereof, held a public hearing on this application in the Windsor Locks Town Office Building, Windsor Locks, Connecticut, beginning at 7:00 P.M. on November 30, 1987. (Record)
7. The parties to the proceeding are the applicant and those persons and organizations whose names are listed in the Decision and Order which accompanies these Findings. (Record)
8. On January 12, 1987, the Council issued its Findings of Fact, Opinion, Decision and Order, in Docket No. 64, and approved an Application of Dexter Corporation Cogeneration Facility for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a 48.5 MW cogeneration facility in Windsor Locks, Connecticut. (Record Docket 64; CL&P-1, p. 2)
9. The proposed transmission line is necessary to interconnect the Facility to the existing 1300 circuit of CL&P's transmission system at the Substation. (CL&P-1, pps. 3-4)

10. Without the proposed line, the Facility cannot transmit the electricity generated to CL&P's electric grid, and the energy capacity would not be available to CL&P. (CL&P-2, p. 4)

11. An existing 27.6-kV distribution line connecting the Dexter Plant to CL&P's distribution system is not adequate for this purpose. (CL&P-2, page 4)

12. The interconnection, by joining the Facility to CL&P's transmission grid, would contribute to the general goal of furthering Connecticut's energy policy of diversifying electric generation, conserving fuel, and reducing the consumption of foreign oil. (Docket 64 Record; CL&P-1, p.4)

13. The proposed transmission line was identified in the "Northeast Utilities System 1987 Forecast of Loads and Resources for 1987-1996." (CL&P-2, p.4)

14. To obtain financing and conduct project testing of the cogeneration facility, electric power would be needed by August 1989. Construction of the line would begin in May 1989. (CL&P-1, pps. 2-3, 6)

15. The Project is currently under construction. Once the Project is operating, it will provide 39 MW of electricity to CL&P's transmission system, while providing 9.5 MW to Dexter Corporation (Dexter). (CL&P-1, pps. 3-4)

16. The proposed transmission line is located in the Town of Windsor Locks, Connecticut, within a parcel of property owned by Dexter except for a portion which crosses Main Street, the Amtrak Railroad (Railroad), and CL&P property at the Windsor Locks Substation. (CL&P-1, p. 7)

17. The proposed underground transmission line route would be approximately 1600 feet long. The terminal points are the Facility on the south side of the C.H. Dexter Division Mill and the existing Substation on the west side of Main Street, between Webb and South Streets. (CL&P-1, p. 11)

18. The proposed underground line would proceed south from the Cogeneration Project about 1500 feet along the eastern bank of the Windsor Locks Canal (Canal) to the vicinity of the intersection of Webb and Main Streets. It would cross under the Canal, the Railroad track, and Main Street and emerge to connect to the Substation. (CL&P-1, pps. 4,9,11)

19. CL&P's subcontractor, by using good engineering practices, would be able to place the cable 15 feet from the Canal bank without disturbing the Canal. (Tr. p. 23)19.

20. Dexter would provide CL&P with an easement for construction and maintenance of the transmission line. Dexter has requested that CL&P allow Dexter to retain ownership of that portion of the proposed line located on Dexter property. CL&P has taken this request under consideration. No decision on this matter has been reached. (CL&P-1, p.5; CL&P-2, Q-6; Tr. pps. 30-35, 39-41)

21. Approximately 200 feet of the cable would be installed in conduit where it crosses the Canal, the Railroad, and Main Street. The remaining cable would be buried directly in the earth along a dirt service road paralleling the Canal. (Tr. pps. 20-21)

22. The distance from the proposed route of the cable to the Canal wall would be approximately 35 to 45 feet. A section, approximately 80 feet long near the Dexter pump (sucker) house, would be approximately 15 feet from the Canal. (CL&P, Exh. 10; Tr. pps. 22-23)

23. The proposed transmission line would operate at 115,000 volts (115-kV). The conductor would consist of three 500 kcmil, solid dielectric, aluminum conductors, each 2.97 inches in diameter. This type cable would not require cathodic protection. (CL&P-1, p. 11; CL&P-2, Q-15)

24. The only aboveground components of the proposed line would be potheads and risers located where the line exits the ground at the Project and the Substation. (CL&P, p. 9)

25. The line would be constructed adjacent to an existing 27.6-kV overhead distribution line with a Right-of-Way (ROW) measuring 60 feet wide by 1600 feet long and totaling 2.2 acres. This line would be removed when the proposed line is operational. (CL&P-1 pps. 4,9,12; Tr. p. 42)

26. The existing ROW is approximately 50% cleared of vegetation. The rest of the route consists of grass and low shrubs. (CL&P-1, pps. 9-10)

27. Part of the proposed site is paved. This area is used by Dexter for storage. The unpaved section is a revegetated woodland with shrubs and small trees. (CL&P-1, p. 15)

28. The ROW of the proposed line would measure 90 feet wide by 1600 feet long and total 3.3 acres. No additional easements would be required other than the one obtained from Dexter. This existing easement and ROW would be amended by Dexter as required by CL&P. (CL&P-1, p. 9)

29. A crossing permit would be required from the National Railroad Passenger Association (AMTRAK). A permit to cross under the Canal would be required from the US Army Corps of Engineers. (Dexter-1, p-9, Dexter 2, 2-5)30.

30. Excavated materials would be removed from the site and disposed in an approved area. Materials would be stockpiled for a short period. No erosion or sedimentation into storm drains, the Canal, or the Connecticut River would be expected. (CL&P-1, p. 10, 16)

31. An overground field survey would be conducted to locate utilities with surface features. Utilities with known installations in the area would be contacted for existing plans. During construction, the installation contractor would perform excavations around these services with care. The "Call Before You Dig" program would be notified as work progresses. After surface material is excavated by a backhoe, hand excavations would pinpoint the location of any utility services. Where necessary, excavation around these services would be conducted by hand. (Dexter-2, Q-10)

32. Dexter has no plans to drain the Canal during construction. (Tr. p. 28)

33. The excavation trench would be approximately two feet wide and five feet deep. It would be dug by a tractor-mounted backhoe and by hand, where necessary. (CL&P-1, p. 10; Dexter 3, Q-14)

34. The excavation of a trench is not required to cross under the Canal. (CL&P-2, Q-12)

35. Construction of the crossing from the Substation to Dexter property would involve horizontal boring or pipe jacking equipment under Main Street, the Railroad, and the Canal. This would involve digging a pit on the east side of the Canal and the west side of Main Street and pushing a pipe through from one pit to the other. (CL&P-1, p. 10; Tr. pps. 25-27)

36. Pneumatic equipment would be used to install the pipe conduit and keep vibrations to a minimum. After conductor installation, all voids would be completely filled and the area restored to original conditions. (CL&P-2, G-12)

37. A pit containing the equipment to force pipe under the Canal, the Railroad, and Main Street would be dug adjacent to the Canal at the southern end of the proposed line at a depth of 25 feet to 35 feet deep. This pit would be approximately eight feet in diameter. A second pit receiving the pipe on the substation side of Main Street would be dug approximately 15 feet deep. These pits would be approximately 220 feet apart. (Tr. pps. 24-26)

38. Test borings in the vicinity of the Canal would indicate if a third pit would be necessary between the Canal and the Railroad. If necessary, the construction contractor would use a temporary bridge, spanning the Canal lock, to move earth digging equipment to that area. (Tr. p. 29)

39. The specific pipe jacking or drilling method would be determined after test borings were conducted to identify subsurface conditions. Test borings would be scheduled in the near future. (CL&P-1, p. 10)

40. During the phase-in construction when a pipe would be forced under the railroad tracks, railroad inspectors would be present on a periodic basis. Specific plans for this crossing remain to be developed. This construction would not affect the operations of the Railroad. (CL&P-2, Q-11)

41. After the proposed 115-kV conductors have been placed in the trench, a series of DC high-potential tests, in excess of 115-kV, would be conducted to measure leakage currents. These tests would insure the integrity of the insulation of the conductor and terminations. This testing would be performed either by CL&P personnel with leased equipment or by a hired contractor. (CL&P-2, Q-16)

42. Prior to cable placement, a minimum of six inches of sand would be placed in the bottom of the trench and compacted. Once the cable is installed, 18 inches of sand would be placed in the trench and compacted. Unreinforced concrete would be poured over this sand, forming a four to five inch thick slab along the trench. Three feet of compacted backfill over this cap would close the trench. (CL&P-1, p. 10)

43. The concrete cap poured in the trench would be approximately 1400 feet long, and cover the width of the trench along the route. (CL&P-2, Q-13)

44. A minor structure would be required in the Substation to reinforce the Substation's tie-into the proposed line. The height and specifications for this structure have not been developed. No new substations would be needed for this project. (CL&P-2 p. 4,Tr. p. 30).)

45. After cable installation and backfilling are completed, restoration of disturbed areas would include the replacement of topsoil and seeding of suitable grasses. No trees are expected to be removed during construction. CL&P-1, p. 10, 15)

46. Dexter would request CL&P to remove the present 27.6-kV line after the proposed 115-kV line is in service. This would be done after restoration is completed. For economic reasons, no plans have been developed to retain the 27.6-kV line. (Tr. pps. 41-42)

47. The proposed line would not present a stability problem to CL&P's transmission system or the Substation. (CL&P-2, G-22)

48. An unscheduled CL&P power outage or a Dexter power plant outage would not negatively impact the Dexter plant operations. During any power plant outage, Dexter would use the CL&P system backup power. The loss of the proposed Dexter cogenerator's 39 MW would not destabilize the CL&P system. (CL&P-2, Q-18)

49. The estimated life expectancy of the underground cable transmission line would be approximately 35 years. The reliability factor of the underground line would be expected to exceed 99.5 percent. Based on CL&P design standards, a 1600 foot, underground 115-kV line would have one interruption every 132 years. (CL&P-2, Q-21)

50. Construction of the proposed project would not interrupt traffic on Route 159, Main Street, at any time. (Tr. p. 27)

51. A Department of Transportation (DOT) permit would be necessary to cross the proposed cable under Main Street. Application for this permit has not yet been submitted to the DOT. (Tr. p. 29)

52. Dexter has selected Geotechnical Engineering, Glastonbury, Connecticut, to conduct test borings along the proposed route. (Dexter 3, Q-9)

53. Dexter would select a subcontractor for the development of the final construction plan from a list of approved contractors. (Dexter 3, Q-8)

54. When the construction contractor digs the pits near Main Street, the Railroad, and the Canal, the pits would remain open overnight. Suitable safety barricades would be provided at all times. Any portion of the trench on Dexter property left open overnight would also be protected by barricades. (Dexter 3, Q-14)

55. The selection of a dielectric-type cable instead of an oil-filled cable was based on economics. A dielectric cable would cost $680,000 and an oil-filled cable $732,000. Oil-filled cables require periodic maintenance of the pressurized system that is not required for dielectric cable. In short-distance systems, solid dielectric cable would be cost effective. The specified dielectric cable would not be overloaded by the electricity generated by the Facility. (Tr. pps. 18, 44-45)

56. CL&P considered two overhead alternate transmission line routes. One would be constructed east of the existing 27.6-kV line. The second would be constructed west of the existing 27.6-kV line adjacent to the Canal. Both overhead options would have a greater impact on future land use and visual effects than the underground route. (CL&P-1, p. 12)

57. Due to the location of the Substation in relation to the Project, only alternative routes from the south could be considered. The two overhead options examined by CL&P would use the same ROW as the proposed underground route. (CL&P-1, p. 17, Figure 5a, 5b)

58. The first alternative overhead route would use four 90-foot high poles located approximately 20 feet to the east of the existing 27.6-kV line. The line would cross over Main Street, the Railroad, and the Canal in the vicinity of the Substation. It would proceed north to the Project through a wooded area parallel to the Canal. To provide line clearance, a total of 31 trees would need to be removed. CL&P-1, pps. 17-18)

59. The second overhead alternative would cross over Main Street, the Railroad, and the Canal, and proceed north to the Project parallel to the Canal. This construction would require seven poles, 75 feet high, but would not require the removal of many trees. (CL&P-1, pps. 15, 18; Exhibit 2c)

60. Both overhead lines would represent a visual change to the historical nature of the Canal. (CL&P-1, pps. 15, 18; Exhibit 2c)

61. The effects from construction of each of the two alternate overhead routes would include the removal of some trees and a permanent visual impact on nearby residences and the nearby Canal.

62. CL&P examined a third overhead alternative involving the modification of the existing 27.6-kV line to accept a new 115-kV line. This was rejected because power to the Dexter Plant would be interrupted during the 115-kV installation and existing poles do not meet minimum height or structural specifications required for a 115-kV transmission line. (CL&P-1, p. 19)

63. Dexter considered placing the existing 27.6-kV line into the same trench as the proposed line but rejected the idea as too costly. (Tr. p. 42)

64. The site of the proposed line is zoned as Industrial Zone 2, and is located within a residential, commercial, and industrial district of Windsor Locks. The proposed facility would be surrounded by an area with an industrial and residential mix. The nearest residences are on Main Street approximately 0.1 miles to the west of the proposed line. (CL&P-1, pps. 7, 12)

65. There are no public recreation areas in or immediately adjacent to the proposed route. The Connecticut River Bank is approximately 200 feet to the east and parallel to the proposed route. The nearest municipal facility is Peski Park, approximately 4,500 feet north and northwest of the proposed lines. (CL&P-1, pp. 7, 14, Figure 1)

66. Two schools provide public athletic facilities: Windsor Locks Public High School, about 2,500 feet northwest of the proposed route; and St. Mary's School, about 4,000 feet northwest of the route. (CL&P-1, pps. 7, 14)

67. Dexter does not intend to develop for recreational activities any portion of the proposed route south of the Dexter Plant. (TR. p. 28)

68. The Department of Environmental Protection (DEP) office of State Parks and Recreation found no apparent conflict between a proposed Windsor Locks Canal State Park and the proposed line. The DEP does not object to the Project. (CL&P-1, Exhibit 2b)

69. No outstanding visual resources other than the Connecticut River and the Canal have been identified in or adjacent to the proposed route. The underground route would have no permanent adverse effect on these visual resources. (CL&P-1, p.8)

70. The State Historic Preservation Office identified several historic and industrial properties of National Register quality in the vicinity of the proposed facility. The Canal is listed on the National Register of Historic Places. (CL&P-1, p.8)

71. The physical appearance and operation of the Canal would not be permanently affected by the proposed underground line. (CL&P-1, p. 8)

72. In the event archeological deposits are discovered in the area during excavation, construction would cease and the State Historic Preservation Officer would be contacted immediately. Construction would proceed according to that person's direction. (CL&P-1, p. 16)

73. Dexter intends to hire a professional archaeologist at the commencement of construction. (Tr. p. 27)

74. The Connecticut Historical Commission found that the proposed 115-kV cogeneration line would have no effect on the historical and engineering character of the Canal. The State Historic Preservation Office prefers the underground line to aboveground alternatives. (Dexter, Exh. 7)

75. The Windsor Locks Historical Society has no objections to the proposed project. (CL&P-1, Exhibit 2c)

76. The owner of the Canal is the Windsor Locks Canal Company, a specially-chartered Connecticut corporation, which is wholly-owned by the Dexter Corporation. (Dexter 3, Q-7)

77. No residences or historic structures would be directly impacted by construction or operation of the project. During construction, intermittent and temporary impacts would occur in the form of visual intrusion by construction equipment and activities in the residential/historic areas. Some temporary disruption to pedestrian and vehicular traffic would occur during working hours at the point where the proposed line crosses under Main Street. Public use of sidewalk and Main Street would be restored at the end of the working day. Rehabilitation efforts would restore the area to its original visual character after the installation of the line. (CL&P-1, pps. 13-16)

78. The future land uses along the route of the proposed line would remain as they are now. The proposed line would have a minimal effect on present land use. (CL&P-1, pps. 12-13)

79. The designated route of the proposed trench has not been flooded in recent years. This area is above 100-year and 500-year flood elevations. The height of the proposed route is approximately 110 feet above the river. (Tr. p. 27)

80. The proposed route is within the officially designated Connecticut River Assembly (CRA) Conservation Zone. The underground transmission line would not adversely affect this zone. (CL&P-1, p. 14)

81. The CRA determined that the proposed project would have no adverse impact on the CRA Conservation Zone. (Dexter, Exhibit 8)

82. A DEP review of the Natural Diversity Data Base indicated that no known extent or historic population of endangered, threatened, or Connecticut Species of Special Concern are present on the property. (CL&P-1, p. 9)

83. The DEP stated that several animal species of concern, including bald eagle, short nose sturgeon, and fresh water snail, are found in the general area of the Connecticut River and would not be adversely affected by the proposed project. (CL&P-1, pps. 9, 15; Exhibit 2a)

84. Federal Energy Regulatory Commission guidelines are not applicable to the proposed underground transmission line since these only apply to overhead lines and right-of-ways. Construction of the proposed line would not have an effect on changing the location of any existing facility. (CL&P-1, p. 17)

85. The Canal is a regulated wetlands watercourse. (CL&P-1, p. 8)

86. CL&P has not yet submitted an application to the Department of Public Utility Control (DPUC) for the proposed project. This application would be submitted after approvals are received from all other utilities owning lines to be crossed by the proposed line. (CL&P-2, G-17)

87. All construction would conform to current industry standards and the Windsor Locks Department of Public Works Rules and Specifications. (CL&P-1, p. 10)

88. If a bridge is necessary, a U.S. Coast Guard permit is required. (Tr. p. 38)

89. A crossing permit would be required from the National Railroad Passenger Association (AMTRAK) for constructing the line under the railroad tracks. (CL&P-1, p. 9).

90. CL&P cannot proceed with the construction until all necessary federal and state regulatory approvals are acquired.

91. The estimated construction cost of the proposed project is $700,000. Rehabilitation of the line is estimated to cost less than $50,000. (CL&P-1, pps. 2, 6)

92. As a result of the Tax Reform Act of 1986 and a decision of the DPUC, the cost of the project could be subject to a 35% adjustment for taxes associated with customer contributions in aid of construction. (CL&P-1, p. 5)

93. The estimated costs to construct each of the alternative transmission options (installed) are as follows:

Underground	$680,000;
Overhead (easterly route)	$425,000; and
Overhead (westerly route)	$565,000.

(CL&P-2, Q-20; Tr. p. 20)