DOCKET NO. 82

AN APPLICATION OF CONNECTICUT LIGHT AND POWER COMPANY FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR A PROPOSED 115-kV UNDERGROUND TRANSMISSION LINE TO INTERCONNECT THE CAPITOL DISTRICT ENERGY CENTER COGENERATION PROJECT TO THE EXISTING 115-kV NORTHWEST HARTFORD - SOUTHWEST HARTFORD UNDERGROUND TRANSMISSION LINE IN HARTFORD, CONNECTICUT	:	CONNECTICUT SITING COUNCIL
	:	October 22, 1987

F I N D I N G S O F F A C T

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 August 21, 1987, for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction of a 115kV underground transmission line to interconnect the Capitol District Energy Center (CDEC) Cogeneration Project, located on Capitol Avenue, to CL&P's existing 115-kV underground line which connects the Southwest Hartford and Northwest Hartford substations in Hartford, Connecticut. (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, p.v(a))

4. Legal notice of the application was published in the Hartford Courant on August 19, 1987, and August 20, 1987, in accordance with CGS Section 16-501(b). (Record)
5. The Council and its staff made an inspection of the proposed underground transmission line route on September 21, 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 Hartford City Hall, Hartford, Connecticut, beginning at 7:00 P.M. on September 21, 1987. (Record)
7. The parties in 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 July 11, 1986, the Council approved an Application of CDEC Cogeneration Associates for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a 55-MW Cogeneration Facility in Hartford, Connecticut, Docket No. 59. (Docket 59; CL&P-1, pp. 3,8, Record)
9. CL&P petitioned the Council for a Declaratory Ruling that no Certificate of Environmental Compatibility and Public

Need would be required for this proposed underground interconnection. The Council had denied this petition on August 4, 1987. (Petition 188, Record)

10. The proposed line is necessary to interconnect the CDEC Cogeneration Project Facility with the NU system. (CL&P-1, p. 2, 7, 8)

11. The CDEC Project is currently under construction and is expected to commence necessary testing in March 1988. (CL&P-1, p. 4)

12. Once the proposed interconnection is completed and the CDEC facility operating, the CDEC Project would supply approximately 45 MW of electricity for CL&P's use, and also would supply electric service to the Project itself. (CL&P-1, p. 5)

13. The proposed interconnection would contribute to the general goal of furthering Connecticut's energy policy of conserving fuel and reducing the consumption of foreign oil. (Docket No. 59, Opinion)

14. The proposed transmission line was identified as a planned transmission line in the "Northeast Utilities System 1987 Forecast of Loads and Resources for 1987-1996." (Record; CL&P-1, p. 7)

15. CL&P possesses rights, pursuant to its utility franchise, to construct and operate electric transmission facilities in the streets and public sidewalks of the City of Hartford. (CL&P-1, p. 15)

16. CL&P's transmission system does not presently have a line capable of interconnecting the CDEC Project to the electric grid. (CL&P-1, p. 8)

17. The proposed underground line is necessary to interconnect the substation at the CDEC Project and the existing Southwest Hartford substation, located at the intersection of Park Avenue and Kane Street. The Southwest Hartford substation also is connected to the South Meadow Substation, located at the South Meadow Generating Plant. (Petition 188, Q-2)

18. The interconnection with the Southwest Hartford - Northwest Hartford line would occur on South Whitney Street, at a point approximately 100 feet north of the Capitol Avenue - South Whitney Street intersection. (CL&P-1, p. 18)

19. The Northwest Hartford - Southwest Hartford Substations are connected by 115-kV, pipe-type underground lines filled with oil. Oil pressure monitoring equipment is located at the Northwest Hartford Substation. An oil

storage tank allows increased or decreased oil volume in the pipeline. A nitrogen system protects against oxidation of the oil in the oil storage tank. (Petition 188, Q-2)

20. The pipe-type oil-pressuring system maintains insulating oil at a pressure between 195 and 295 psi. Pressurized oil is necessary to preserve the electrical integrity of the cable insulation by thermal transfer. The oil used is a synthetic electrical, low-viscosity copolymer of polyisobutylene and butene, which contains no PCB's. (Petition 188, Q-7)

21. The proposed transmission cable would operate at 115,000 volts (115-kV). The conductor would be three 500 kvcmil copper cables, each 8/10 of an inch in diameter. The cable pipe would be filled with insulating oil identical to the oil currently used. (CL&P-1, p. 18; Petition 188)

22. As construction approaches the vicinity of the interconnection tap point, the existing Southwest Hartford - Northwest Hartford line would be temporarily taken out of service. There would be no effect on the existing electrical service. Customers along this line would be provided electricity from other sources. (Petition 188, Q-10)

23. No part of the line would involve above-ground structures except potheads and riser pipes where the line exits the ground and connects to the CDEC Project. The Federal Power Commission's guidelines are not applicable to the proposed line since they apply to overhead transmission lines and rights-of-way. (CL&P-1, pp. 8, 9, 15, 26)

24. The proposed line would be necessary to properly test the CDEC Project. After testing, the Project would be able to transmit the electricity generated to CL&P's electric grid. (CL&P-1, pp. 7, 9)

25. Construction activities including the excavation of sidewalks and roads, laying of conduit, and restoration of sidewalks and roads would take place from October to December 1987. The cable would be pulled through the conduit, oil added and tested, and the line energized no later that March 1988. (CL&P-1, pp. 4, 5)

26. Electric power would be provided to the Project on or before March 15, 1988, to conduct the necessary testing of the cogeneration facility. (CL&P-1, pp. 4, 10)

27. Construction would be planned with and coordinated through the Hartford Department of Public Works. All construction

activities, mitigating actions, and safety procedures would meet the current "City of Hartford Rules and Specifications Regulating Curb and Walk Layers and Street Excavation" requirements. (CL&P-1, p. 26; Petition 188, Q-3)

28. The detailed construction work would be planned by a subcontractor, who has not yet been contracted by Capitol District Energy Center Cogeneration Associates (CDECCA). (CL&P-3, pp. 2-7; Tr., pp. 15, 16)

29. Gas, water, sewer, telephone, and electricity utilities lie under the streets and sidewalks along the proposed underground route of the line. The installation subcontractor would be required to excavate around underground gas, electric, water, sewer, and telephone utility lines by hand, and meet all legal requirements along the route. The "Call Before You Dig" program would be notified as work progresses. (CL&P-1, pp. 14, 15; CL&P-1, Figure 2; CL&P-2, Q-10)

30. The length of the proposed route is approximately 5,200 feet along Capitol Avenue, Hartford. An estimated 2,000 feet is in a residential area west of the intersection of Forest Street and Capitol Avenue, extending to the intersection of Capitol Avenue and South Whitney Street. (CL&P-1, p. 11)

31. The transmission line would cross over the Park River conduit on a parcel of land controlled by the developer of the CDEC Project under a long-term lease. No additional right-of-way would have to be acquired. (CL&P-1, pp. 9, 15)

32. No existing electrical facilities are anticipated to be moved or removed. (CL&P-1, p. 26)

33. Approximately 70 percent of the construction would be under existing sidewalks and 30 percent under city streets. Traffic disruption would be minimized by coordinating traffic control with the City of Hartford. (CL&P-1, p. 16; CL&P-2, Q-16; Tr., pp. 15, 16)

34. Hartford traffic safety officials would regulate traffic during working hours. (CL&P-2, Q-14)

35. The surrounding neighborhoods consist of single-family, two-family, and multi-family residences, interspersed with some commercial establishments. (CL&P-1, p. 11)

36. There are no public recreation areas in or immediately adjacent to the proposed route. Areas of Pope Park lie approximately 500 feet south-southeast and 500 feet south of the proposed route. The George H. Day Playground is approximately 300 feet south of the route. (CL&P-1, p. 11)

37. The Dominick F. Burns Elementary School on Russ Street is approximately 800 feet south of the CDEC Project, and the Hartford Public High School, on Forest Street, is approximately 750 feet north of the proposed route. (CL&P-1, p. 12)

38. In 1980 the Hartford Architecture Conservancy identified some buildings along the proposed route as architecturally or historically significant.

39. The proposed route traverses portions of three of four neighborhoods containing historic districts listed on the National Register of Historic Places. The Frog Hollow National Register Historic District is the only one that would be crossed by the proposed transmission line, for a distance of approximately 1,700 feet. (CL&P-1, p. 13)

40. If construction uncovered any archeological deposit, construction in that area would cease and the Connecticut Historical Commission would be contacted. Construction would proceed under the direction of the Historical Commission. (CL&P-1, pp. 14, 25, 26)

41. No land use changes are proposed in the vicinity of the proposed transmission line along Capitol Avenue that differs from planned land uses. (CL&P-1, p. 20)

42. The City of Hartford plans to renovate a section of Capitol Avenue over the Park River Conduit. As part of this project, CL&P would remove the north sidewalk, fill the excavation with compacted material, install a new sidewalk, and realign the curbing. (Petition 188, Q-4)

43. The proposed transmission line would run under a bridge supporting an existing railroad line. The excavation would not affect the bridge pier footings and would not affect train service or operation of the railroad. (Petition 188, Q-5)

44. Access to the three Aetna Insurance Company parking lot driveways, during the period when construction crossed them, has yet to be developed. (CL&P-3, Q-13)

45. Construction is planned during day-time hours. CL&P does not plan to undertake night or weekend construction. If required at certain locations along the proposed route, night or weekend work would comply with the City of Hartford's requirements. (CL&P-3, Q-9)

46. Construction noise levels would be those associated with excavation of city streets and would comply with all state and local regulations. (CL&P-1, p. 25)

47. During construction, temporary adverse visual impacts would occur in the residential and historic Frog Hollow

area. Some inconveniences to motorists and pedestrians using the sidewalks and streets in these areas would be expected. (CL&P-1, p. 25)

48. Prior to excavation of street or sidewalks affecting access to driveways, building occupants would receive door-to-door delivery of information. (CL&P-1; CL&P-3, Q-11; Tr., p. 16)

49. Capitol Avenue would be restored to full traffic-carrying capacity during rush hours. Heavy steel plates would cover the trench during construction. During non-working hours, sidewalks and streets which affect access to driveways would also be covered with steel plates. (CL&P-1, pp. 17, 25; CL&P-3, Q-3, Q-11; Tr., p. 16)

50. Construction would begin with the removal of concrete or bituminous portions of sidewalks, curbs, and pavement. Excavated materials would be removed from the route and disposed in an approved location. (CL&P-1, pp. 15, 16, 24; Petition 188, Q-4)

51. The trench dimensions would be approximately two feet wide and five feet deep, dug by a tractor-mounted backhoe and by hand wherever necessary. (CL&P-1, p. 16)

52. Approximately 100 to 200 feet of trench would be excavated in a normal workday, barring any unexpected complications. (CL&P-3, Q-8)

53. A precast concrete, intermediate manhole would be installed approximately midway along Capitol Avenue in the area east of the Forest Street intersection. It would measure approximately 16 feet by nine feet by eight feet. This manhole would be used for the cable pulling and splicing operation. (CL&P-1, p. 16; Tr., p. 19)

54. A second manhole, measuring 22 feet by nine feet by nine feet, would be cast in place in South Whitney Street, approximately 100 feet north of the Capitol Avenue - South Whitney Street intersection. This manhole would be needed to complete the Y-splice in the existing 115-kV cable, to complete the interconnection. (CL&P-1, pp. 16, 18)

55. Constructing the South Whitney Street manhole would take 15 to 20 workdays. (CL&P-3, Q-15)

56. The transmission line would include a 5 9/16-inch diameter steel pipe cable with protective coating. It would be placed on a compacted sand bed at least six inches deep in the bottom of the trench. The 40-foot lengths of pipe would be set in place by a lifting crane. The sections would then be welded together and inspected, certified, and buried in two feet of compacted sand. The remaining three feet of trench would be closed by compacted back fill. (CL&P-1, p. 16)

57. After completing the installation of the conduit pipe, manholes, and trench backfilling, the cable would be pulled through the pipe and necessary splices made. The pipe would be filled with insulating oil and pressurized by the pumping unit located at Northwest Hartford Substation. (CL&P-1, pp. 16, 17)

58. Approximately 20 work days would be needed to set up the equipment, pull the cable through the conduit, complete splices at each manhole, and connect the cable to the CDEC Substation. (CL&P-2, Q-16)

59. Cleanup measures during construction and temporary paving of the refilled trench areas would control dust levels and protect air quality. (Petition 188, Q-3)

60. Upon completion of construction, the visual character of the Project area would be restored to its original state or better. Disturbed topsoil and grass would be completely restored. Any trees lost during construction would be replaced during the next planting season, according to municipal forestry requirements. (CL&P-1, pp. 20, 22, 23)

61. The operation of the proposed line would have no permanent effect on the landscape since the line would be underground. (CL&P-1, p. 23)

62. There are no inland wetlands, tidal wetlands, or coastal waters in or adjacent to the proposed route. One water course, the Park River, is enclosed in a concrete conduit underground and would be crossed by the proposed transmission line. The river would lie approximately four feet under the buried transmission cable. (CL&P-1, p. 12)

63. The Department of Environmental Protection (DEP) has reported no outstanding visual resources or natural systems in, or adjacent to, the proposed transmission route. (CL&P-1, pp. 12, 14)

64. CL&P investigated three alternate routes to the proposed line. All were rejected because larger residential areas would be affected, more traffic disrupted, and more cost incurred by the proposed route. (CL&P-1, p. 28; CL&P-3, Q-4, Q-5)

65. Each of the alternatives would require an interconnection along the existing Southwest Hartford Substation - South Meadows Substation line. Combined with a future connection from the O'Brien Energy Center cogeneration facility now under construction, these alternatives would require additional protective relaying equipment at each terminal at increased cost to the Project. (CL&P-2, Q-4; Tr., pp. 17-19)

66. Three alternatives proposed by the Council were judged unsuitable due to potential environmental impacts on larger numbers of residential and commercial establishments. These also would preclude an interconnection for the O'Brien Energy Center cogeneration facility due to the need for additional protective relaying equipment at each terminal. (CL&P-2, Q-4, Q-6)

67. The cost of the proposed project is $1,115,000, allocated as follows:

Engineering and construction $726,000;
Rehabilitation . . . . . $182,000; and
Equipment and Material . . . . . $207,000.

(CL&P-1, pp. 2, 9; Tr., p. 22)

68. The proposed construction would be paid entirely by CDECCA. The ratepayers of CL&P would not be responsible for the project's costs. (Petition 188)