DOCKET NO. 98 - An application of the Connecticut Light and Power Company for a Certificate of Environmental Compatibility and Public Need for an underground electrical transmission line running from the Exeter Energy Project in Sterling, Connecticut, to an existing CL&P overhead transmission line in Plainfield, Connecticut.

Connecticut Siting Council

May 15, 1989

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

1. The Connecticut Light and Power Company (CL&P) in accordance with the provisions of Section 16-50g to 16-50z of the Connecticut General Statutes (CGS) applied to the Connecticut Siting Council (Council) on June 30, 1988, for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, operation, and maintenance of a 115-kV underground electric transmission line to connect the Exeter Energy facility in the Town of Sterling to an existing CL&P overhead line in the Town of Plainfield, Connecticut. (Record)
2. The fee as prescribed by Section 16-50v-1a of the Regulations of State Agencies (RSA) accompanied the application. (Record)
3. The Council and its staff made an inspection of the proposed route of the transmission line on October 17, 1988. (Record)
4. Pursuant to Section 16-50m of the CGS, the Council, after giving due notice thereof, held a public hearing on the proposed line on October 17, 1988, beginning at 2:00 P.M. and continuing at 7:00 P.M. the same day in the Sterling Memorial School, Oneco, Connecticut. (Record)

5. On March 2, 1989, the Council reopened the proceeding with a hearing beginning at 1:00 p.m. in the Ekonk Grange in Sterling, Connecticut. (Record)
6. The additional hearing session was held for the limited purpose of taking testimony and allowing an opportunity for cross-examination of evidence regarding easements necessary for the proposed project. (Record)
7. The parties in the proceeding are the applicant and those persons whose names are listed in the Decision and Order which accompanies these Findings of Fact. (Record)
8. The Department of Environmental Protection (DEP) filed written comments with the Council pursuant to Section 16-50j of the CGS, in a letter dated October 3, 1988. (Record)
9. The proposed route of the line is approximately 7.6 miles in length. The route would follow an abandoned railroad bed for approximately five miles. The remaining distance would follow existing roads. (CL&P 1, p.1; CL&P 4, Exhibit 1, p. 5)
10. Several overhead lines were considered by CL&P. An overhead line would be less expensive, but might cause greater environmental impacts. The single wooden poles, 60 to 80 feet in height, would require a cleared right-of-way approximately 80 feet in width. (CL&P 1, p. 38).

11. Several alternative underground routes were evaluated. A right-of-way along Route 14 and nearby roads was rejected because construction in roadways is more costly than in a railroad bed, and would create substantial traffic disruption. The use of an existing right-of-way containing a 23-kV overhead line between Sterling and Plainfield was considered, but rejected because it would require the acquisition of additional easements, and construction in more difficult terrain than the proposed route. A third alternative was the creation of a new right-of-way. This alternative was rejected because of higher costs, substantial clearing of trees, and construction in wetlands. (CL&P 1, p. 36)

12. Exeter Energy Limited Partnership (Exeter) would design and construct the line, and then transfer the title to CL&P. CL&P would then own the line, with maintenance and repairs conducted under contractual agreement with Exeter. (CL&P 1, p. 4)

13. Exeter considered the use of a high-pressure oil-filled pipe cable as an alternative to the proposed dielectric cable. Although Exeter has no operational experience with dielectric cable, Exeter selected solid dielectric cable because of lower installed cost and no associated maintenance, and the dedicated function of interconnecting the Sterling tire burning facility with the grid. Failure of the transmission line would not have any immediate effect on distribution lines or customer service. (CL&P 1, p. 37)

14. The proposed underground line would consist of three single-phase solid dielectric 115-kV cables. The cables would be buried in the trench on top of a 6-inch layer of sand in a trefoil configuration. Six inches of sand would be laid over the cable and a concrete cap placed over the sand. The trench would be covered with excavated soil. The trench would be approximately 4.5 feet deep and three feet wide. (CL&P) 1, p. 24; CL&P 1, Exhibit E-2)

15. Warning tapes would be buried over the concrete cap to alert future excavators of the line's presence. (CL&P 1, p. 24)

16. High-voltage solid dielectric cable has been found to be very reliable in France and Japan where its use is more common. (CL&P 1, pp. 48-49)

17. The proposed route would begin at the switchyard of the Exeter Energy 26.5 MW (net) electrical generation facility in the Sterling Industrial Park, follow Industrial Park Road for 3500 feet, and then follow an abandoned railroad bed for five miles from the center of Sterling to Moosup. At a crossing of the Moosup River in Sterling, the cables would be pulled through steel pipes attached to an unused railroad bridge. In Moosup, the proposed route would leave the railroad bed at the intersection of River

street, follow River Street south to Sterling Hill Road, west on Sterling Hill Road to Grove Street, north to Plainfield Road; then, from Plainfield Road it would rejoin the railroad bed. The line then would follow the railroad bed along the underpass beneath Route I-395 to Pickett Road. At Pickett Road, the line would leave the railroad bed and follow Pickett Road to Jackson Road. Along Jackson Road, the route would proceed to Route 14. From Route 14 it would proceed 500 feet on Sugar Hill Road, ending at the intersection of the existing 115-kV CL&P overhead line number 1607. (CL&P 1, p. 2, p. 5, p. 16; CL&P 2, pp. 1-2)

18. The proposed line would terminate above ground at both ends with three porcelain terminations built on a fifteen-foot steel platform. Both terminations would be surrounded by a chain link fence with a gate. The only visible sections of the proposed line would be these terminations and a section where the line would cross the Moosup River over an existing unused railroad bridge. (CL&P 1, p. 13, p. 25, p. 30; CL&P 1, Fig. D-1, Segment 2)

Abandoned Railroad Bed

19. The top surface of the railroad bed is approximately 15 to 30 feet wide, including a cleared dirt path 10 to 20 feet wide. (CL&P 1, p. 10, p. 16)

20. The railroad bed was once the site of the Hartford, Providence and Fishkill Railroad Line. Construction of the line was completed in 1854. This railroad line was dismantled in 1968, and the land was deeded to the State of Connecticut. (Phase I Archaeological Report, pp. 26-27)

21. A trench would be excavated for approximately 24,200 feet within the railroad bed. This excavation would be performed with a backhoe. The backhoe would place the excavated soil immediately adjacent to the trench on the top level of the bed. In areas where the bed is narrow and elevated, the excavated soil would either be trucked to a wider spot on the bed until after backfilling is complete, or a fence would be constructed at the edge of the bed. This fence would use fabric or plastic sheeting to prevent soil from leaving the bed. (CL&P 3, Q. 3)

22. To limit erosion, Exeter would cover exposed soil with straw and reseed the area promptly after closing the trench. All construction activity would be confined to the top of the bed, thereby limiting the effects on vegetation along the railroad bed. (CL&P 3, Q. 11)

23. Substantial clearing of vegetation would not be needed along any portion of the railroad bed. Some tree and branch clearing might be required in several portions of the railroad bed to allow trucks carrying cable reels to move down the bed. (CL&P 3, Q. 18)

24. Very little blasting would be required during construction of the line. Some blasting may be required where the railroad bed traverses rock cuts near the Route 14 bridge. (CL&P 3, Q. 9)

25. The proposed route along the railroad bed crosses several areas designated as wetlands. Along the Moosup River section of the proposed route, the railroad bed is built on a berm 20 feet above wetland areas. Construction equipment and excavated soil would be confined to the railroad bed. No significant excavation would occur in actual wetland habitat. (CL&P 1, p. 32; CL&P 3, Q. 10)

26. Construction of the proposed line would impact one area defined under Connecticut regulations as a wetland. This is a flooded area under the Route 14 bridge. A spring flowing through nearby rocks forms a pool approximately 1,000 feet in length on the railroad bed. Exeter plans to place a culvert 6 to 12 inches in diameter along the east side of the railroad bed to increase drainage into the Moosup River. Removing this standing water would improve the recreation potential of the railroad bed. (CL&P 3, Q. 1; CL&P 4, p. 5; DEP Comments, 10/3/88)

27. The DEP has a long-term management plan to use the railroad bed in the area of the proposed route for non-motorized recreational trail activities such as walking, horse-back riding, and cross-country skiing. This park would extend along the railroad bed from Moosup to the Rhode Island border. (CL&P 3, Q. 5)

28. The use of the abandoned railroad bed as an underground transmission line route would not conflict with the use of this right-of-way as a park. (CL&P 1, p. 7; CL&P 1, Exhibit F-1; CL&P 3, Q. 14)

29. The proposed line would be installed along one side of the railroad bed to avoid any potential conflict with future uses of the railroad bed. (CL&P 3, Q. 14)

30. There are no existing or historic records of Federally Endangered or Threatened Species or Connecticut Species of Special Concern directly along the path of the proposed line. However, the largest Connecticut population of the Hartford fern, a Connecticut species of special concern, occurs in near proximity to the railroad bed. (CL&P 1, p. 33, Exhibit F-2; CL&P 4, Exhibit 1, p. 21)

31. To protect the Hartford fern population along a portion of the railroad bed, Exeter would temporarily install sediment fences to prevent the accidental sliding of temporarily stored soil down to the flood plain. The proposed line would not pass through any of the stands of Hartford fern. (CL&P 4, Exhibit 1, p. 4, p. 30)

Local Roads

32. Approximately 10,750 feet of roadway would be excavated. No roads would be closed during this construction. One lane would always remain open. Road crossing under Route 12 and Interstate 395 would be via boring and an existing underpass respectively. (CL&P 3, Q. 3; CL&P 1, p. 3)

33. Along roadways, the proposed line would be constructed either in road shoulders or in the edge of the paved areas. Construction along roadways or roadsides would be in right-of-ways owned by the State of Connecticut. CL&P holds the rights to build in the right-of-ways along these roads. (CL&P 1, p. 16, p. 28)

34. In the vicinity of large trees along Pickett Road, construction would be confined to paved roads, to avoid the root systems of these trees. (CL&P 1, p. 31)

35. During construction, up to 4000 feet of trench may be open at any one time. Barriers and signs would be used to warn motorists and pedestrians of the open trench. (CL&P 1, p. 24, p. 48)

36. Along River Street, Sterling Hill Road, Grove Street, and Plainfield Road, all in Moosup, the proposed line would be placed in a concrete duct bank instead of the concrete cap over the line. This would protect the proposed line from future construction work on water, sewer, and gas lines along the proposed route. Warning tapes would be placed 15 inches below the soil surface. (CL&P 2, p. 2)

37. The duct bank would include a PVC tube surrounded by six inches of concrete. The duct bank would be buried in a trench 4.5 feet in depth. (CL&P 2, p. 2)

38. As a precautionary measure, Exeter would consult all as-built and design drawings, and the "Call Before You Dig" Program. (CL&P 3, Q. 19)

Construction

39. The proposed line would need 40 to 50 single-phase splices. During splicing, insulation is stripped from the conductors, the two conductor sections are welded together, and the insulation is rebuilt with insulating tapes. Splices would be constructed in concrete-encased areas which would be covered with a concrete lid and one foot of backfill. Splice locations would be denoted by markers. (CL&P 1, pp. 24-25)

40. Shoring of the trench would be performed when needed, but is not expected to be necessary in most areas. In splice pits, which would be wider than the trench, walls would be shored as necessary to protect workers. (CL&P 3, Q. 3)

41. Summer construction is preferred when solid dielectric cable is used, as cold weather makes such cable inflexible. Summer construction is expected to be simpler, less costly, and likely to result in a higher quality installation. (CL&P 1, p. 47)

42. Construction of the proposed line is expected to last approximately four months, beginning May, 1989. (CL&P 1, p. 47)

Archaeology

43. A Phase-One Archaeological Reconnaissance Survey was conducted along the route of the proposed line by the Public Archaeology Survey Team, Inc. The proposed underground line would have no effect on the State's prehistoric and historic archaeological heritage. (Connecticut Historical Commission, letter of December 5, 1988; Tr., 10/17/88, p. 23)

Easements

44. To construct the proposed line, Exeter must obtain easements from several property owners along the route of the proposed line. The areas for which easements must be obtained include the railroad bed owned by the State of Connecticut between Plainfield Road and Pickett Road, the railroad track crossing near the intersection of Pickett Road and Jackson Road, the stretch along Sugar Brook Road,

the railroad bed between Sterling and Moosup, and the tap yard for connection to CL&P line number 1607. Exeter expects to have all the necessary easements acquired by June, 1989. (CL&P Exhibit 1 RH, Q. 1; Tr., 3/2/89, p. 16)

Costs

45. Expected underground line costs are estimated as follows:

Construction and Engineering	$3,500,000.00
Land Cost	15,000.00
SUBTOTAL	$3,515,000.00
Tax gross-up (at 26%)	$ 914,000.00
TOTAL COST	$4,429,000.00

(CL&P 1, p. 41)