DOCKET NO. 47

AN APPLICATION SUBMITTED BY COMMUNITY TV SYSTEMS, INC., D/B/A ROLLINS CABLEVISION OF CONNECTICUT, FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION OF A MICROWAVE HUB SITE, TOWER, AND ASSOCIATED EQUIPMENT IN THE TOWN OF GUILFORD, CONNECTICUT.	:	CONNECTICUT SITING COUNCIL
	:	June 6, 1985

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

1. Community TV Systems, d/b/a Rollins Cablevision of Connecticut, (Rollins), in accordance with provisions of sections 16-50g to 16-50z of the Connecticut General Statutes (CGS), applied to the Connecticut Siting Council (Council) on January 11, 1985, for a certificate of environmental compatibility and public need (certificate) for the construction, maintenance, and operation of a microwave hub site, tower, and associated equipment in the Town of Guilford, Connecticut.
2. The fee as prescribed by section 16-50v-1 of the Regulations of Connecticut State Agencies (RSA) accompanied the application. (Record)
3. The application was accompanied by proof of service as required by section 16-501 of the CGS. (Record)
4. Affidavits of newspaper notice as required by statute and section 16-501-1 of the RSA were also filed with the application. (Record)
5. The Council and its staff made an inspection of the proposed site, alternative sites, and the surrounding area on March 6, 1985. (Record)
6. Pursuant to section 16-50m of the CGS, the Council, after giving due notice thereof, held a public hearing on March 6, 1985, at 7:00 P.M. in the Guilford Community Center, Guilford, Connecticut. (Record)

7. The parties to the proceeding are the applicant, Rollins, and those persons and organizations whose names are listed in the Decision and Order which accompanies these findings. (Record)
8. The following state agency filed written comments with the Council pursuant to section 16-50j of the CGS: the Department of Environmental Protection (DEP). (Record)
9. Rollins was issued a certificate of public convenience and necessity by the Department of Public Utility Control to construct and operate a CATV system in the towns of Branford, North Haven, Wallingford, East Haven, Guilford, and Madison on March 21, 1967. (Rollins 1, p. 2)
10. Rollins was not required to provide one hundred percent service to the franchise at the time of the franchise award due to sparsity of the population density in the Madison area. This requirement was mandated by the Department of Public Utility Control decision of March 1, 1982, in Docket 80-09-07 which incorporated the universal franchise coverage standards. (Tr. pp. 28-29)
11. The DPUC ordered that the construction of all remaining unbuilt areas with a population density of at least 25 dwelling units per mile for overhead cable extensions and at least 50 dwelling units per mile for underground plant be completed within six months of the March 1, 1982 decision. Construction of all remaining areas must be completed within two years of the date of the decision at a rate of at least 5 miles per month. Since that decision, the DPUC has granted three six-month extension periods to Rollins. (Rollins 1, pp. 5, 6; Tr. p. 27)

12. Rollins presently serves 46,200 subscribers. (Rollins 1, p. 2)
13. The proposed hub site is located on 1.6 acres of land approximately 200' north of Route 80 in Guilford, Connecticut. The owners of this property are John and Judith Tasto, 330 Route 80, Guilford, Connecticut. (Rollins 1, pp. 9-10; p. 14)
14. Rollins proposes to lease a 25'x25' parcel of this property. (Tr. p. 37)
15. The elevation of the proposed site is 245' above mean sea level. Areas surrounding the proposed site are mostly wooded. The proposed site abuts Cockaponset State Forest to the north and east. To the south lies Route 80, while land to the west is residential in nature. The area is zoned Residential-8. (Rollins 1, pp. 9-10; Rollins 2, Q. 7)
16. The proposed site is presently cleared, and no further trees or vegetation would have to be cleared. There are no regulated wetlands on the proposed site. Access to the proposed site would be via an existing private driveway. (Rollins 1, p. 11, p. 5)
17. The proposed site contains a single family home and a utility garage with an efficiency apartment. (Rollins 1, p. 9)
18. The proposed hub site would contain a Rohn 150' SSV self-supporting tower. A 10' parabolic microwave receiving antenna would be mounted on the tower 145' above tower's base to receive signals from Rollin's head-end facility in North Branford. The proposed tower would also have a 20' whip antenna at its top, which would be used to communicate with Rollins' Service vehicles. (Rollins 1, pp. 4, 11; Tr. p. 19)

19. A tower height of 150' is the minimum height feasible for this site. This height also makes allowances for future tree growth. This tower would consist of 10' sections. (Tr. p. 17)

20. The proposed microwave antenna would be utilized for reception only. (Rollins 1, p. 11)

21. Calculated power densities at the proposed site would be 5.5×10^{-7} mW/cm^2, which would be 10^{-7} times less than the American National Standards Institute standard of 5 mW/cm^2 for this frequency range. (Rollins 1, p. 21)

22. The Federal Aviation Administration (FAA) has declared that the proposed tower would not be a hazard to air navigation and that obstruction markings and lighting are not necessary. (Rollins 2, Q. 4)

23. The Federal Communications Commission (FCC) has approved the proposed transmission path and issued Rollins a construction permit on December 3, 1984. (Rollins 2, Q. 5)

24. The proposed tower and foundation are designed for Zone B wind loading with ½ inch of radial icing. The Connecticut area is considered a Zone A wind load area by the Electrical Industries Association (EIA). Zone A towers must withstand 87 mph winds with thirty p.s.i. on tower members. Zone B standards are 100 mph and forty p.s.i. (Rollins 1, p. 4; Rollins 8; Tr. p. 35)

25. The 10' diameter parabolic receiving antenna mounted on the proposed tower would be oriented to a heading of 324.27 degrees true north and would be light blue in color to blend in with the sky. (Rollins 2, Q. 14; Tr. p. 21)

26. Rollins does not anticipate adding any microwave dishes to the proposed tower in the near future. (Rollins 2, Q. 12)

27. A satellite receive dish would not be needed at the proposed site. These dishes are located at Rollins' existing head-end in North Branford. (Rollins 2, Q. 13)

28. Rollins does not plan to paint the proposed galvanized steel tower to minimize its visibility. Such painting would have to be redone periodically. (Tr. pp. 21, 43)

29. At the base of the proposed tower an 8' high, 48-square foot electronics building would be constructed. This building would house a microwave receiver and up to six signal processors. The proposed tower and building would be surrounded by a 6' high chain link fence. (Rollins 1, p. 4)

30. Rollins had soil test borings performed to design the most effective foundation for the proposed tower. (Rollins 2, Q. 16, Exhibit 11)

31. The estimated life of the proposed tower is 20 years. (Rollins 2, Q. 15)

32. If the proposed tower were to collapse, it could fall off of the proposed site. In such a case, it could fall onto wooded areas of the Cockaponset State Forest, or a small wooded area at the northwest corner of an abutting neighbor's property, or onto the lessor's property. Two existing buildings on the lessor's property could be struck by a collapsing tower. (Rollins 2, Q. 11; Tr. p. 32)

33. Town of Guilford Zoning Regulations do not require towers to be located away from buildings by a distance equal to their height. Under their regulations, communication towers are not to exceed 100 feet above ground level, but distance from buildings is not a consideration. (Rollins 7, Section 39b)

34. The direction of the proposed tower's fall in the event of a collapse would depend upon the direction in which the wind was blowing. Prevailing winds would tend to direct a tower collapse away from the residence on the lessor's property. If the tower were to buckle halfway down, it probably would not hit the lessor's home or garage. The worst case would be the tower upheaving at its base although the nearest residence occupies less than 10% of the area in which the tower could fall. (Rollins 8; Tr. pp. 32-35)

35. To prevent unauthorized climbing of the proposed tower, the lower ladder section of the tower would be removed after the microwave path has been aligned. (Rollins 2, Q. 27)

36. Town of Guilford Zoning Regulations require a 10' minimum setback from the rear of the property line in Residential-8 Zones. (Rollins 7, Section 31, Table 3)

37. Rollins has, in cooperation with the lessor of the property, included plans for planting pine trees around the outside perimeter of the fence surrounding the proposed site. This would screen some of the visibility of the tower from the lessor's home. However, about 5' of space would be available for planting within the fence and within the leased area. (Tr. pp. 37-38; LF 7)

38. The visibility of the proposed tower would be its most significant environmental impact. The visibility of the proposed tower would be confined to the immediate area and would fade quickly with increasing distance. To the home immediately west of the proposed site, the tower would be clearly visible in the winter, but only marginally visible in summer. (DEP Comments, 2/27/85)

39. To the east of the proposed site, there are no homes within the viewing radius. To the south, on Maupus Road, the first home on the street would have a winter view of the tower. Also to the south, on Maple Hill Road, the northernmost three homes would have a view of the proposed tower in winter. (DEP Comments, 2/27/85; Rollins 2, Q. 1)

40. To the north of the proposed site, which abuts Cockaponset State Forest, there are no maintained trails. The only recreational area nearby is that of the Guilford Archery Club, some 300' to the east. (Rollins 2, Q. 2)

41. DEP's Natural Resource Center reports no known records of rare or endangered species at the proposed hub site. (Rollins 2, Q. 7)

42. The State Historic Preservation Officer has determined that the proposed site would have no effect on the historical, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places. (Rollins 3; Tr. p. 10)

43. The Guilford Conservation Commission is aware of the requirement for universal cable television service, has determined that the proposed hub site is not inappropriate for such use, and therefore has no objection to the application. (Tr. p. 41)

44. Rollins considered other potential hub sites. Rollins contacted DEP about a site in the Cockaponset State Forest, but was told such a site was unavailable. Rollins contacted the owners of two sites at Cranberry Hill in Madison, but the owners indicated little interest in leasing such sites, and access and utility easements were problems. An alternative site at the Guilford Sportsman's Club, Hart Road, Guilford, would require a tower 290' high and access road construction due to the remote nature of its location. The owners of the Guilford Sportsman's Club had no interest in leasing a parcel. (Rollins 1, pp. 17-18)

45. Any alternative site in the area of the Sugarloaf Hills would require a trunk system involving at least 35 amplifiers to the extremities of North Madison and would be more costly and less technically effective. This would only serve the North Guilford area and not the North Madison area. (Rollins 2, Q. 18)

46. Rollins submitted one potential alternative site in its application, located on Race Hill Road in Madison. Because of ridge obstructions between this alternative site and the Rollins North Branford head-end site, a proposed tower at this site would have to be greater than 275' in height. Such a tower would have to be lighted and would be widely visible in Madison. (Rollins 1, pp. 18-19; Rollins 5)

47. A 275' alternative site tower on Race Hill Road, Madison, would cost approximately $25,000 more to construct than the proposed tower. (Rollins 1, p. 19)

48. A 2.7 mile cable run consisting of two dual-trunk systems and overlash dual-trunk over the existing plant would be required from the Race Hill alternative site in Madison to Guilford in order to provide an acceptable and reliable signal. This would cost an additional $50,100. (Rollins 1, pp. 19-20; Tr. p. 19)

49. Rollins has rejected the Race Hill Road alternative site because of the high tower height necessary, as well as its greater cost and visibility. (Tr. pp. 19-20)

50. All utility service to the proposed site would be brought in underground, via a 165' trench from an existing pole adjacent to Route 80 to the proposed electronics building. (Rollins 1, p. 5)

51. Rollins would be willing to negotiate with municipal, state, or commercial users for sharing the proposed tower. Rollins has offered to allow the Town of Guilford to place a whip antenna on the proposed tower. (Rollins 3, Q. 10; Rollins 2, Exhibit 8; Tr. p. 25)

52. If Council approval were granted, construction of the proposed hub site would begin immediately. Construction of the proposed foundation and tower would be completed within 60 days of commencement of construction. (Rollins 1, p. 13)

53. The proposed hub site would result in acceptable amplifier cascades for the required extension of service to the northern areas of Guilford and Madison. The proposed hub site would serve to reduce existing cascades and improve the quality and reliability of the services presently provided by the North Branford head-end site. (Rollins 1, pp. 6-7)

54. The proposed tower facility would bring cable service to areas of Madison where none now exists. (Tr. p. 29)

55. The best method to bring cable service to new customers is the proposed microwave system due to the effects of lengthy amplifier cascades on signal quality, the need for service reliability and long term maintenance, and the extra cost associated with a super-trunk cable system. (Rollins 1, p. 16)

56. Rollins considered the possibility of utilizing a supertrunk feed-forward amplification system; however, signal quality would not be acceptable and would not allow subscriber connections needed to identify service problems and repair. (Rollins 1, pp. 15-16)

57. The cost to erect 16.5 miles of an alternative system utilizing super-trunk, feed-forward technology over the same area to be served from the proposed tower would cost approximately $186,600 more than the proposed method, or approximately $264,100. (Rollins p. 1, pp. 13, 16; Rollins Exhibit 2, Q. 24)

58. The proposed hub site would improve the overall reliability of service to Guilford and Madison by reducing the number of amplifiers in cascade to 25. The proposed hub site would not provide additional channels to existing subscribers. However, about one third of the Guilford area and one fourth of the Madison area would experience substantial improvements in television picture quality and service reliability. (Rollins 2, Q. 20)

59. Rollins trunk design specifications, to assure picture quality and reliability with up to 20 amplifiers on line, are as follows:

a. Carrier to noise ratio 47 dB;
b. Carrier to second order beat ratio 63 dB;

c. Carrier to cross modulation ratio 57 dB; and
d. Carrier to composite triple beat ratio 59 dB.

(Rollins 2, p. 19)

60. The expected trunk distortions on a 25 amplifier cascade, the maximum cable run, are as follows:

a. Carrier to noise ratio 46 dB;
b. Carrier to second order beat ratio 60 dB;
c. Carrier to cross modulation ratio 56 dB; and
d. Carrier to composite triple beat ratio 59 dB.

(Rollins 2, p. 20)

61. An existing cascade involving 36 amplifiers produces the following system trunk distortion which are below acceptable levels:

a. Carrier to noise ratio 44.4 dB;
b. Carrier to second order beat ratio 56.8 dB;
c. Carrier to cross modulation ratio 52.0 dB; and
d. Carrier to composite triple beat ratio 55.0 dB.

(Rollins 2, p. 20)

62. The costs of the project would be internally financed through the parent company, Rollins Communication Inc. (Tr. p. 23)

63. The costs of the project totals approximately $79,247 and are as follows:

a. Engineering and design $ 3,075;
b. Tower 13,070;
c. Related electronic equipment 32,047;
d. Building 4,475;
e. Construction 23,500;
f. Utility service 1,700; and
g. Miscellaneous 1,380.

(Rollins 2, p. 18)

64. Additional costs to erect a tower capable of withstanding a 1" radial ice force would total $13,300, including:

a. Tower $ 700;
b. Foundation 11,500; and
c. Tower erection 1,100.

(Tr. pp. 22-23; Rollins 2, pp. 18-19)

65. Rollins signed a lease with the hub site land owner on December 14, 1984, for the initial rental sum of $300 monthly. This lease would extend for a thirty year period, with ten-year renewal options. (Rollins 1, p. 13; Tr. p. 24)

66. An alternative site on Cranberry Hill, Madison, would cost $12,000 annually to lease and additional requirements by the land owner would impose a time delay of 18 months. A half mile right-of-way access route to the location would have to be developed, negotiated, and constructed at additional costs. (Rollins 2, Q. 30; Tr. p. 18)

67. Utilizing the proposed microwave system instead of the alternative supertrunk, cascaded amplifier technology, Rollins estimates a minimum of $5,000 could be saved in annual preventive and emergency maintenance costs. (Rollins 2, Q. 29)

68. Rollins expects to gain 110-120 new customers by the construction of the tower facility. (Tr. p. 44)

69. Rollins estimates the additional net monthly cost to the average customer for the expense of constructing the proposed facility would be approximately 1¢. (Rollins, Late File 6)