COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

D.T.E. NO. 01-20

REQUEST: DOD and FEA Request to AT&T Communications of New England, Inc.

DATE: June 20, 2001

DOD/FEA 1-1 At page 63 of his pre–filed testimony, AT&T witness Robert A. Mercer states that the cost per pair of horizontal cable is 0.22 cents per foot per month. On the other hand, Verizon's Cable Cost Study shows a statewide average cost of $0.78202 per pair per month for 150 feet of cable, which is about 0.52 cents per foot.

(a) Please state whether or not the facilities cited are definitionally comparable, *i.e*. the difference between 0.22 and 0.52 relates to distinctions in unit costs owing to differences concerning fill factors, return requirements, unit material costs, unit labor costs etc.

(b) If the response to part (a) is negative, please provide a corrected comparison.

(c) If the response to part (c) is affirmative, please list some of the considerations which, in AT&T's view, cause the difference between 0.22 and 0.52 cents per foot in the monthly cost of horizontal cable.

Respondent:J. Donovan

RESPONSE:

AT&T interprets this question as a request to compare and contrast Verizon's statewide proposed Horizontal Cable costs with AT&T's proposed Horizontal Cable costs.

The $0.78202 mentioned in the question involves only Verizon's *Terminal Cost*

[1] *and omits Verizon's Horizontal Cable Cost*

[2]. *AT&T's cost study basically involves the cost of a 25-pair cable; AT&T assumed that a terminal would not be required, or that the per-pair cost for a punch-down termination would be very minimal.*

The primary difference between Verizon's cost study and AT&T's cost study is Verizon's claim that the material and labor to install a simple 50-pair punch-down termination costs $442.09. AT&T believes that a reasonable installed cost of such a termination is $32.00, and as mentioned, Dr. Mercer's testimony did not include a terminal at all.

The following analysis alters the AT&T cost study to more closely align with Verizon's cost study, including the use of a 50-pair punch-down terminal and backboard. A 50 pair punch-down terminal is normally mounted with two screws (See Figure 1) on a piece of plywood, which is usually installed by the builder in the telephone closet at the time of building construction.

AT&T does not feel it is necessary to place and splice an extra 20-foot 50-pair cable stub. The standard industry practice would be to strip off the outside cable sheath to expose the twelve 25-pair binder groups in the 300 pair cable (See Figure 2 below). Two of those binder groups (50 pairs) would then be terminated on one side of the punch-down terminal using a technician's standard punch down tool. Such a tool pushes each wire into one of the terminal clips and cuts off the excess wire that sticks through the clip (See Figure 3). The FCC found that such an operation is typically done at the rate of 200 pairs per hour.

Using an unnecessary 20-foot length of 50-pair cable (stub), simply adds an unnecessary splice point to join a 50-pair cable to a 300-pair cable, and still results in the technician stripping off the outside cable sheath to expose two 25-pair binder groups in the 50-pair cable; the two binder groups (50 pairs) would then still be terminated on one side of the punch-down terminal in the same manner as described above.

However, as described in the next paragraph, even if Verizon's unnecessary stub and extra splice is included, the FCC-approved punch-down rate of 200 pairs per hour should prevail.

For the purposes of comparison, the analysis offers an alteration of Verizon's cost study

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[1] Verizon's *"Terminal Cost"* includes the labor and material for the following: (1) backboard; (2) 50-pair punch-down terminal block; (3) 20-foot long 50-pair cable (stub); (4) splicing 50 pairs at one end of 50-pair cable stub to one end of a 300-pair horizontal cable; (5) punching down 50 pairs at other end of 50-pair cable stub onto the 50-pair terminal.

[2] Verizon's "Horizontal Cable Cost" includes only the material and placing of a 300-pair horizontal cable.

in a manner that retains all components claimed by Verizon (including the termination and placing and splicing of a 20-foot 50-pair cable stub), but adjusts the labor content to reflect what AT&T and the FCC believe are appropriate productivity numbers, adjusts the fill factor from 40% to the 75% level that AT&T believes is appropriate for distribution cable (Verizon agrees with AT&T that horizontal cable fill should be the same as copper distribution cable fill)

[3]*, and adjusts the horizontal cable length from Verizon's unsubstantiated 150-foot cable length to 91 feet based on a sample of such horizontal cable lengths performed by AT&T's field installation personnel.*

The details of the analysis are being supplied as an Excel spreadsheet attached to this response. In summary, the DOD has correctly focused on the fact that Verizon's material and labor cost of the termination (not its Horizontal Cable Cost) represents the critical difference. Labor content is the culprit. AT&T estimates that it takes 26 minutes to travel between floors and place a simple $6 punch-down terminal block

[4] and backboard. Verizon assumes that it takes 352 minutes for the same function. The analysis presented below yields a combined monthly cost for an average horizontal cable pair (91 feet of cable + termination) of **<u>$0.232 per month for AT&T</u>**. If Verizon's cost study is changed to reflect reasonable labor productivity (while even retaining its extra cable stub), a 75% fill factor, and a 91 foot cable length, then the analysis presented below yields a monthly cost for an average horizontal cable pair (91 feet of cable + termination) of **<u>$0.144 per month for Verizon</u>**. The two main reasons for Verizon's adjusted cost becoming less than AT&T's cost per line is that AT&T assumes a higher monthly carrying factor, and because AT&T assumes a 25-pair cable rather than Verizon's 300-pair cable, which reduces the per-pair cost of Verizon's cable.

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[3] *"Per-unit investments were calculated by dividing the total investments by a utilization factor of 40 percent. This corresponds to the utilization factor used in the loop study for distribution cable."* [Verizon Panel Testimony at 127]. AT&T's change in fill factor is done in light of the FCC's pointed criticism (in its Verizon-MA 271 decision §39) of the 40% fill factor used in the prior rate case.

[4] *FCC 99-120, FNPRM, Inputs Order*, May 28, 1999, Appendix D-2: Includes material cost – FCC determines: 66M1-50 terminal block material = $6.00 ea.

Terminal Cost	AT&T		Verizon		Verizon adjusted to AT&T productivity (min.) & fill factor (40% to 75%)	
	Item	Cost/mo.[1]	Item	Cost/mo.[2]	Item	Cost/mo.[3]
Travel time between floors	5	$0.011	53	$0.108	6	$0.006
Place terminal block (minutes)	1					
Terminal block Investment	$12.00		$61.30		$6.89	
Place backboard (minutes)	5	$0.005	53	$0.107	5	$0.005
Backboard Investment	$5.00		$60.27		$5.71	
Termination rate (pairs per hour)	200	$0.014	39	$0.154	200	$0.016
Terminate pairs (minutes)	15		77		15	
Pair-termination Investment	$15.00		$87.15		$17.02	
Place 20 foot cable stub (minutes)	5	$0.000	68	$0.204	5	$0.008
Cable Stub Investment	Not Req'd		$115.45		$8.44	
Splicing (pairs per hour) stub to cable	250	$0.000	30	$0.209	250	$0.013
Splice pairs (minutes)	12		101		12	
Pair-splicing Investment	Not Req'd		$117.92		$14.04	
Termination Labor (min.)	**26**	**$0.030**	**352**	**$0.782**	**43**	**$0.049**
Termination Investment	**$32.00**		**$442.09**		**$52.09**	
Total Termination Cost per pair	**$0.64**		**$8.84**		**$1.04**	

Horizontal Cable Cost	AT&T		Verizon		Verizon adjusted to AT&T cable length & fill factor (40% to 75%)	
	Item	Cost/mo.[4]	Item	Cost/mo.[5]	Item	Cost/mo.[6]
per foot cable pair cost	$0.048		$0.022		$0.022	
Assumed Cable Length (ft.)	91		150		91	
Total Cable Cost per pair	**$4.33**	**$0.202**	**$3.31**	**$0.293**	**$2.01**	**$0.095**

	AT&T		Verizon		Adjusted Verizon	
Terminal + Horizontal Cable	Item	Cost/mo.	Item	Cost/mo.	Item	Cost/mo.
Total Termination Cost per pair	$0.64	$0.030	$8.84	$0.782	$1.04	$0.049
Total Cable Cost per pair	$4.33	$0.202	$3.31	$0.293	$2.01	$0.095
Terminal + Horizontal Cable	**$4.97**	**$0.232**	**$12.15**	**$1.075**	**$3.05**	**$0.144**

1 AT&T's Terminal Cost/mo. is derived by multiplying the termination investment by a factor of 1 ÷ 0.75 Fill Factor ÷ 50 Terminated Pairs ÷ 12 Months per Year x (0.145540 Annual Capital Cost Factor + 0.153100 Annual Maintenance Factor) x (1+0.404600 COH & GRL Factor) = 0.0009321550

2 Verizon's Terminal Cost/mo. is derived by multiplying the termination investment by a factor of 1 ÷ 0.40 Fill Factor ÷ 50 Terminated Pairs ÷ 12 Months per Year x (0.179020 Annual Capital Cost Factor + 0.212895 Annual Maintenance Factor) x (1+0.08325 COH & GRL Factor) = 0.0017689256

3 Adjusted Verizon Terminal Cost/mo. is derived by multiplying the termination investment by a factor of 1 ÷ **0.75** Fill Factor ÷ 50 Terminated Pairs ÷ 12 Months per Year x (0.179020 Annual Capital Cost Factor + 0.212895 Annual Maintenance Factor) x (1+0.08325 COH & GRL Factor) = 0.0009434270

4 AT&T's Horizontal Cable Cost/mo. is derived by multiplying the termination investment by a factor of 1 ÷ 0.75 Fill Factor ÷ 12 Months per Year x (0.145540 Annual Capital Cost Factor + 0.153100 Annual Maintenance Factor) x (1+0.404600 COH & GRL Factor) = 0.0466077493

[5] Verizon's Horizontal Cost/mo. is derived by multiplying the termination investment by a factor of 1 ÷ 0.40 Fill Factor ÷ 12 Months per Year x (0.179020 Annual Capital Cost Factor + 0.212895 Annual Maintenance Factor) x (1+0.08325 COH & GRL Factor) = 0.0884462793

[6] Adjusted Horizontal Verizon Cost/mo. is derived by multiplying the termination investment by a factor of 1 ÷ **0.75** Fill Factor ÷ 12 Months per Year x (0.179020 Annual Capital Cost Factor + 0.212895 Annual Maintenance Factor) x (1+0.08325 COH & GRL Factor) = 0.0471713489