COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

Investigation by the Department of Telecommunications and Energy on its own Motion into the Appropriate Pricing, based upon Total Element Long-Run Incremental Costs, for Unbundled Network Elements and Combinations of Unbundled Network Elements, and the Appropriate Avoided Cost Discount for Verizon New England, Inc. d/b/a Verizon Massachusetts' Resale Services in the Commonwealth of Massachusetts	D.T.E. 01-20 Part A (UNE Rates)

AT&T'S POST-HEARING REPLY BRIEF

REDACTED - PUBLIC VERSION

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March 29, 2002

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Glossary of Acronyms and Short Forms.

Words and Phrases – Acronyms

Term	**Definition**
AC Power	Alternating Current Power
ACF	Annual Cost Factor
ADM	Add Drop Multiplexer
BDFB	Battery Distribution Fuse Bay
BH/AHD	Busy Hour to Any Hour of the Day ratio
CLEC	Competitive Local Exchange Carrier
CLLI Code	Common Language Local Identification Code
CO	Central Office
COT	Central Office Terminal
CLEC	Competitive Local Exchange Carrier
DA	Distribution Area
DC Power	Direct Current Power
DID	Direct Inward Dial
DCPR	Detailed Continuing Property Record
DCS	Digital Cross-Connect Systems
DLC	Digital Loop Carrier
DS0	Digital Signal Level 0
DS1	Digital Signal Level 1
DSL	Digital Subscriber Line
DWD	Dial-with-Dial
EF&I	Engineered, Furnished and Installed
ENRS	Enterprise Network Reconfiguration Service
EPHC	Equivalent POTS Half Calls
FCC	Federal Communications Commission
FDF	Fiber Distribution Frame
FDI	Feeder-Distribution Interface
HARC	House and Riser Cable
IDLC	Integrated Digital Loop Carrier
ILEC	Incumbent Local Exchange Order

Term	Definition
IOF	Interoffice
kw	Kilowatt
M-dollars	Moves and Rearrangements Expenses
MDF	Main Distribution Frame
MIPS	Millions of Instructions Per Second
MOU	Minute of Use
MTU	Multiple Tenant Unit building
NCT	Non-Conversation Time
NRC	Non-Recurring Charge
OSSs	Operations Support Systems
PBX	Private Branch Exchange
POP	Point of Presence
POTS	Plain Old Telephone Service
R-dollars	Repair Expenses
RT	Remote Terminal
RTU	Right To Use
SAI	Serving Area Interface
SCIS	Switching Cost Information System
SONET	Synchronous Optical Network
TELRIC	Total Element Long Run Incremental Cost
THC	Telephone Holding Company
UDLC	Universal Digital Loop Carrier
UNE	Unbundled Network Element
UNE-L or UNE-Loop	Unbundled Loop
UNE-P or UNE-Platform	Unbundled Loop and Switching, provided in combined or unseparated form
WACC	Weighted Average Cost of Capital

Cases and Regulatory Decisions – Short Names

Short Form	**Long Form**
AT&T Corp.	*AT&T Corp. v. Iowa Utilities Board*, 525 U.S. 366, 119 S.Ct. 721, 142 L.Ed.2d 835 (1999).
Consolidated Arbitrations docket or proceeding	*Consolidated Petitions of New England Telephone and Telegraph Company d/b/a NYNEX, Teleport Communications Group, Inc., Brooks Fiber Communications, AT&T Communications of New England, Inc., MCI Communications Company, and Sprint Communications Company, L.P., pursuant to Section 252(b) of the Telecommunications Act of 1996, for arbitration of interconnection agreements between NYNEX and the aforementioned companies*, Massachusetts DTE Dockets D.T.E./D.P.U. 96-73/74, 96-75, 96-80/81, 96-83, 96-94
FCC's Arkansas /Missouri 271 Order	*In the Matter of Joint Application by SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide In-Region, InterLATA Services in Arkansas and Missouri*, CC Docket 01-194, Memorandum Opinion and Order, No. FCC 01-338 (released Nov. 16, 2001)
FCC's Kansas /Oklahoma 271 Order	*In the Matter of Joint Application by SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide In-Region, InterLATA Services in Kansas and Oklahoma*, CC Docket 00-217, "Memorandum Opinion and Order" No. FCC 01-29, 16 FCC Rcd. 6237 (rel. Jan. 22, 2001)
FCC's First Local Competition Order	*In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket 96-98, First Report and Order, No. FCC 96-325 (released August 8, 1996)
FCC's Line Sharing Order	*In the Matters of Deployment of Wireline Services Offering Advanced Telecommunications Capability* (CC Docket 98-147) and *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996* (CC Docket 96-98), Third Report and Order in CC Docket No. 98-147 and Fourth Report and Order in CC Docket No. 96-98, No. FCC 99-355 (released December 9, 1999)
FCC's Line Sharing Clarification Order	*In the Matters of Deployment of Wireline Services Offering Advanced Telecommunications Capability* (CC Docket 98-147) and *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996* (CC Docket 96-98), Third Report and Order on Reconsideration in CC Docket No. 98-147 and Fourth Report and Order on Reconsideration in CC Docket No. 96-98, No. FCC 99-355 (released January 19, 2001)

Short Form	**Long Form**
FCC's Massachusetts 271 Order	*In the Matter of Application of Verizon New England Inc., Bell Atlantic Communications, Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions) And Verizon Global Networks Inc., For Authorization to Provide In-Region, InterLATA Services in Massachusetts*, CC Docket No. 01-9, Memorandum Opinion and Order, No. FCC 01-130 (released April 16, 2001)
FCC's Pennsylvania 271 Order	*In the Matter of Application of Verizon Pennsylvania Inc., Verizon Long Distance, Verizon Enterprise Solutions, Verizon Global Networks Inc., and Verizon Select Services Inc. for Authorization to Provide In-Region, InterLATA Services in Pennsylvania*, CC Docket 01-138, Memorandum Opinion and Order, No. FCC 01-269 (released Sept. 19, 2001)
FCC's Rhode Island 271 Order	*In the Matter of Application by Verizon New England Inc., Bell Atlantic Communications Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions), Verizon Global Networks Inc., and Verizon Select Services Inc., for Authorization to Provide In-Region, InterLATA Services in Rhode Island*, CC Docket 01-324, Memorandum Opinion and Order, No. FCC 02-63 (released February 22, 2002)
FCC's UNE Remand Order	*In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket 96-98, Third Report and Order, No. FCC 99-238 (released November 5, 1999)
FCC's USF Inputs Order	*In the Matter of Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Tenth Report and Order, No. FCC 99-304 (released November 2, 1999)
FCC's USF Platform Order	*In the Matter of Federal-state Joint Board on Universal Service and Forward-Looking Mechanism for High Cost Support for Non-Rural LECs*, CC Docket 96-45, CC Docket 97-160, Fifth Report and Order, No. FCC 98-279 (released Oct. 28, 1998)
Maine UNE Rates Order	*Investigation of Total Element Long-Run Incremental Cost (TELRIC) Studies and Pricing of Unbundled Network Elements*, Maine Public Utility Commission Docket 97-505, Order dated February 12, 2002.
New Hampshire 271 Conditions Order	*Application of Verizon New England, Inc. d/b/a Verizon New Hampshire, for a Favorable Recommendation to Offer InterLATA Service Under 47 U.S.C. 271*, New Hampshire Public Utilities Commission Docket DT 01-151, Letter Order with Conditions (March 1, 2002)
New Jersey UNE Rates Order	*In the Matter of the Board's Review of Unbundled Network Elements Rates, Terms and Conditions of Bell Atlantic New Jersey, Inc.*, New Jersey Board of Public Utilities Docket No. TO00060356, Summary Order of Approval (December 17, 2001)

Short Form	**Long Form**
New Jersey Final UNE Rates Order	*In the Matter of the Board's Review of Unbundled Network Elements Rates, Terms and Conditions of Bell Atlantic New Jersey, Inc.*, New Jersey Board of Public Utilities Docket No. TO00060356, Decision and Order (March 6, 2002)
New York UNE Rates Order	*Proceeding on Motion of the Commission to Examine New York Telephone Company's Rates for Unbundled Network Elements*, New York Public Service Commission Case 98-C-1357, Order on Unbundled Network Element Rates (issued January 28, 2002)
Rhode Island UNE Inputs Order	*In re Review of Bell Atlantic-Rhode Island TELRIC Study*, Rhode Island Public Utilities Commission Docket No. 2681, Report and Order No. 16793 (issued November 18, 2001).
Vermont UNE Rates Order	*Investigation into New England Telephone and Telegraph Company's (NET's) tariff filing re: Open Network Architecture, including the unbundling of NET's network, expanded interconnection, and intelligent networks in re: Phase II, Module 2 – Cost Studies*, Vermont Public Service Board Docket 5713, Order entered February 4, 2000.

Verizon Briefs in Other Proceedings – Short Names

Verizon New Jersey Revised 271 Application	*In the Matter of Application by Verizon New Jersey Inc., Bell Atlantic Communications Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions), Verizon Global Networks Inc., and Verizon Select Services Inc., for Authorization to Provide In-Region, InterLATA Services in New Jersey*, CC Docket 02-__ (filed March 26, 2002). Available at < http://newscenter.verizon.com/policy/nj/supp/brief/njsupplement.doc >.
Verizon Supreme Court Brief	Brief for Respondents BellSouth, SBC, Verizon, and USTA, filed on June 8, 2001, in *FCC* v. *Iowa Utilities Board*, United States Supreme Court Docket Nos. 00-555, 00-587, 00-590, 2001 WL 881072.

I. INTRODUCTION.

AT&T's initial brief began with a simple but fundamental point: the Department has the opportunity in this proceeding to establish a markedly pro-competitive paradigm by adopting TELRIC-compliant rates that will foster UNE-based competition. We summarized the reasons why pro-competitive rates are needed to achieve the policy goals of the Commonwealth, the Department, and the 1996 Telecommunications Act, and why doing so is required under the TELRIC methodology.[1] We also discussed specific reasons why any doubts must be resolved in favor of lower UNE rates, including that Verizon has the burden of proof, the fact that rates set in this proceeding are likely to be in effect for a number of years, and that telecommunications is a declining cost industry.[2] The body of our initial brief discussed each category of proposed rate elements, and specific model inputs and design issues that will inform the Department's decision regarding the appropriate UNE rates and rate structure. At all times, however, we tried to keep the focus where it belongs: on the rates that the evidence shows are the cost-based, pro-competitive results.

We proved that "[t]he evidence in this case fully supports the adoption of much lower UNE rates that can make Massachusetts a true leader in the development of robust local exchange competition, with the attendant pricing and service quality benefits that such competition will bring to Massachusetts consumers."[3] We demonstrated that this was not empty rhetoric. To the contrary, we proved through meticulous analysis that this result is fully supported by the record developed in this case. We provided the Department with 1,311 specific citations to the pertinent record evidence and legal authorities, which we carefully and fairly discussed.

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1 AT&T's Initial Brief at 1-8.
2 *Id*. at 8-10.
3 *Id*. at 4.

In marked contrast, Verizon's arguments in its initial brief "recall an oft-quoted adage: If the law is against you, argue the facts; if the facts are against you, argue the law; and if they both are against you, pound the table and attack your opponent."[4] Verizon's initial brief is the written equivalent of pounding the table, and its verbal attacks on AT&T cannot substitute for reasoned analysis.

Verizon's initial brief is largely a combination of three things: (i) points that function as red herrings, evidently intended to distract the Department from the issues that have a meaningful impact on the relevant analysis and the outcome;[5] (ii) rhetoric with no citation to any record evidence; and (iii) discrete synopses of the prefiled testimony of Verizon witnesses, which ignore the material ways in which the prefiled testimony has been undercut or refuted on cross-examination, by testimony of other witnesses (including, on occasion, by other Verizon witnesses), or by FCC decisions. What Verizon consistently fails to do is defend the exorbitant UNE rates it has proposed. Indeed, Verizon's initial brief almost completely ignores the actual rates that Verizon-MA has proposed in this case.

We will demonstrate this by analyzing Verizon's rhetoric and comparing it with the facts and the law. We will not repeat at length points already established and well-supported in our initial brief, but instead where appropriate will provide cross-references to points already developed in AT&T's initial brief. Many of the points argued by Verizon were fully anticipated and thoroughly rebutted in AT&T's initial brief, and are not addressed a second time in this reply brief.

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[4] *United States* v. *Griffin*, 84 F.3d 912, 927 (7th Cir. 1995).

[5] The phrase "red herring" – in the sense of "[s]omething that draws attention from the matter or issue at hand" – derives from the use of smoked, reddish herrings "to distract hunting dogs from the trail." THE AMERICAN HERITAGE DICTIONARY, Second College Edition, at 1037 (1985). For color photographs of freshly smoked, red herrings, see < http://www.dk-web.com/roegeri/sildeng.htm >.

A. An Overview of Key Rates.

1. Loops: The Statewide Average 2-Wire Loop Rate Should be Close to $7.00, as Both Loop Cost Models Show When Run With TELRIC-Compliant Inputs.

a. Adjusting the 1996 *Consolidated Arbitration* Rates to Conform to the Record Evidence in This Case Confirms that a 2-Wire Loop Rate of Around $7.00 Is Proper.

Verizon begins its initial brief by asserting that a statewide average loop rate of approximately $7.00 is "inconceivable" because it is less than half the rate adopted by the Department in 1996.[6] Verizon's inability to conceive of a pro-competitive loop rate that complies with the TELRIC methodology is beside the point, and is one of many attempts by Verizon to distract the Department from the clear record evidence and from the pricing standards that must be applied to set forward-looking UNE rates. As AT&T demonstrated in our initial brief, Verizon's cost model, when re-run using proper inputs, and the HAI 5.2a-MA model both show that the appropriate statewide average recurring rate for two-wire analog loop service is slightly over $7.00, in the range of $7.09 to $7.27.[7]

The fact is that, all else being equal, one would expect Massachusetts loop rates set in this proceeding to be in this range precisely because it ***is*** about half the level adopted by the Department back in 1996. One should expect this outcome as a result of four simple factors.

First, the 1996 Massachusetts UNE rates were set using a weighted average cost of capital ("WACC") of 12.16%. We now know – from more recent information, from the consistent adoption of substantially lower cost of capital assumptions in other Verizon-East states, from the FCC's skepticism of the unusually high rate used in the *Consolidated Arbitrations* proceeding, and from Verizon's acknowledged inability to identify any facts tending to show that Verizon will face a higher cost of capital in Massachusetts than in other states – that

[6] Verizon Initial Brief, at 1-2.

UNE rates for Massachusetts should be set using a WACC of no more than about 9.54 percent, and probably at or below the 9.0 percent level.[8] New Jersey has adopted a WACC of 8.8%, and New Hampshire ordered that UNE rates be recalculated based on an 8.42% WACC.[9] Verizon has admitted the 8.8% figure adopted in New Jersey is the correct result under TELRIC.[10] The difference between these new, lower cost of capital rates and the figure reflected in the 1996 Massachusetts rates is material. A 24% reduction in the WACC from 12.16% to 9.54% will reduce the loop cost estimated by Verizon's model by 12%. We can see this in Mr. Baranowski's restatement of Verizon's model.[11]

Second, the 1996 loop rates were set using fill factor (*i.e.*, effective utilization) assumptions that essentially match the fill factors used by Verizon in this proceeding. The result of using such unduly low fill factors is to unduly inflate Verizon's cost estimates. Indeed, Verizon has admitted in the Rhode Island 271 proceeding that the effective utilization assumptions it has made in this proceeding are at least 20 percent too low. The admissions by Verizon-RI confirm that: the assumed distribution fill should be at least 50 percent, not 40 percent (a 20 percent difference); the fiber feeder fill should be at least 75 percent, not 60 percent (again a 20 percent difference); and the copper feeder fill should be at least 75 percent, not 55.2 percent (a difference of more than 26 percent).[12] For each component of Verizon's loop cost model, the effect of the fill factors is linear. For example, understating the effective utilization of the distribution plant by 20 percent will overstate the cost of the distribution portion of the loop by 20 percent. Consistent with this, Mr. Baranowski's restatement shows that correcting for

(..continued)

7 *See* AT&T's Initial Brief, at 109-112.

8 *See* Section II.A, beginning at page 29; *see also* AT&T's Initial Brief, at 11-25.

9 *See* Section II.A, beginning at page 29.

10 Verizon New Jersey Revised 271 Application, at 7.

11 *See* Ex. ATT-23, Baranowski Direct, at ex. MRB-1; *or see* AT&T's Initial Brief, at 112.

Verizon's understatement of effective utilization or fill reduces the loop cost estimated by Verizon's model by about 18%.[13]

Third, in 1996 Bell Atlantic insisted that it was no longer installing any new copper feeder under any circumstances, and convinced the Department to accept its misrepresentation that a forward-looking network would always have 100 percent fiber feeder regardless of the cost savings that can be achieved with copper for many customers located closer to a wire center.[14] But today Verizon concedes (finally) that this is incorrect, that "copper cables continue to be the economically efficient design choice for many feeder loops nearer to the serving wire center,"[15] and that the proper forward-looking technical construct is an economic mix of both copper and fiber feeder, based on a life-cycle analysis.[16] Verizon made no attempt to quantify the cost savings that result from recognizing the efficient use of copper feeder. However, the impact can readily be seen by comparing Dr. Mercer's alternative runs of the HAI 5.2a-MA. Those original runs showed a statewide average 2-wire loop cost of $7.11 with an economic mix of copper and fiber feeder, and a much higher cost of $8.32 if one arbitrarily assumes the use of 100 percent fiber feeder.[17] Thus, one would expect loop rates to be approximately 15 percent lower [1 - ($7.11/$8.32) = 14.54%] as a direct result of Verizon's concession that the forward-looking network is substantially more efficient with an economic mix of copper and fiber feeder than it would be if one assumes the use of all fiber feeder.

(..continued)

[12] *See* AT&T's Initial Brief, at 127; *see also* Ex. ATT-9, Joint Declaration of Donna C. Cupelo, Patrick A. Garzillo and Michael J. Anglin, filed by Verizon-RI in CC Docket No. 01-324, in support of Verizon's Section 271 Application for Rhode Island, ¶ 44.

[13] *See* Ex. ATT-23, Baranowski Direct, at ex. MRB-1; *or see* AT&T's Initial Brief, at 112.

[14] *See* AT&T's Initial Brief, at 114.

[15] Ex. VZ-36, Verizon Recurring Cost Panel Direct, at 71.

[16] Tr. 2576-2577, 2/1/02 (Anglin and Gansert); Tr. 3372, 2/7/02 (Gansert); Tr. 3405, 2/7/02 (Anglin).

[17] Ex. ATT-25, Mercer Direct, at 14 & exs. RAM-6a and RAM-7a.

Fourth, the Verizon recurring cost panel acknowledged that material investments are generally lower now than in its 1996 cost study.[18] That is to be expected, since it is undisputed that telecommunications is a declining cost industry.[19] Indeed, Verizon's acknowledgement that the prices it pays for materials are materially lower today than six years ago is further evidence that costs are declining and should be expected to continue to decline over the life of the UNE rates that the Department will adopt in this proceeding. Verizon was unable to quantify this effect with respect to loop rates, but for the purpose of this brief overview it is certainly reasonable to expect that the impact of six years of savings in material costs from 1996 to the present would exceed 10 percent.

Tellingly, though Verizon starts its brief by comparing the 2-wire loop rate of approximately $7.00 proven in this proceeding to the rate adopted in the 1996 *Consolidated Arbitration* proceedings, nowhere does Verizon attempt a similar evaluation of the exorbitant loop rates proposed in this proceeding by Verizon. Verizon proposes a 25 percent increase in the statewide average 2-wire loop rate [1 - ($18.75/$14.98) = 25.2%].[20] Verizon has been unable to offer any defense of that figure. To the contrary, when Verizon's recurring cost panel was asked by Department Staff to explain how forward-looking loop rates could end up being substantially higher than the levels set in the *Consolidated Arbitrations* proceeding, the witnesses were unable to do so.[21]

In sum, one would indeed expect that forward-looking loop rates today would be no more than half the levels set by the Department in the *Consolidated Arbitrations* proceeding, given that the 1996 rates reflect a cost of capital that is much too high (12% impact on rates), fill factors that are much too low (additional 18% impact), and the costly assumption of 100% fiber

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18 Tr. 2581-2582, 2/1/02 (Anglin).
19 *See* AT&T's Initial Brief, at 9-10.
20 *See* AT&T's Initial Brief, at 109.

feeder, an assumption that even Verizon now concedes is incorrect (15% impact), and given that material prices and other costs have been declining and continue to do so (impact of at least 10%). As AT&T has demonstrated, that is in fact what the record evidence shows: that the statewide average rate for an unbundled two-wire analog loop should be just over $7.00, or slightly less than half of the levels set in 1996.

b. There Is No Reason for Massachusetts Loop Rates to Exceed Those Recently Adopted in New Jersey, Which Verizon Ignores When Alluding to Old Loop Rates from Other States.

Verizon also tries at the beginning of its brief to discredit the very notion of a statewide average 2-wire loop rate of around $7.00 by arguing that it is much too low compared to rates that have passed muster elsewhere.[22] But the rates alluded to by Verizon are quite old and shed little light on what would be appropriate for Massachusetts today. Furthermore, Verizon tries to ignore the loop rates adopted in New Jersey only three months ago, which have far greater potential relevance here. Verizon has affirmatively represented that the New Jersey recurring loop rates are TELRIC-compliant, and that the BPU "adhered to TELRIC principles" in setting these rates.[23] The New Jersey rates are further evidence that Verizon's proposal in this proceeding is unreasonable, and that the roughly $7.00 loop rate supported by the record evidence is unsurprising.

Although the FCC Section 271 orders cited by Verizon at page 2 of its initial brief are mostly of recent vintage, they concern UNE rates that were adopted years ago and thus have little meaning for us in Massachusetts today. As the FCC has noted, experience shows that "increased sophistication in modeling or newly available evidence" can "produce different, more

(..continued)

[21] Tr. 2579-2582, 2/1/02 (Anglin).

[22] *See* Verizon Initial Brief. at 1-2.

[23] Verizon New Jersey Revised 271 Application, at 7, 10.

precise TELRIC refinements" that will lead to very different results, such that years-old UNE rates may well be "significantly higher" than what is appropriate based on current information.[24]

There can be no doubt that the loop rates alluded to by Verizon are outdated. For example, the Texas UNE rates relied upon for 271 purposes came from the Texas Commission's 1996 "mega-arbitration" proceedings.[25] With respect to Oklahoma, the FCC expressed "serious doubts as to whether the permanent [recurring UNE] rates … are at TELRIC-based levels," and instead looked to special discounted rates submitted by SBC which were derived from the old Texas rates.[26] The Missouri rates considered for 271 purposes were similarly based on the old Texas rates.[27] Furthermore, since the Oklahoma and Missouri rates were accepted by the FCC based on a benchmark analysis comparing them to Texas, it is inappropriate to look to those Oklahoma or Missouri rates for the purposes of benchmarking in Massachusetts or elsewhere. As the FCC recently explained, using "benchmark-approved rates in performing a subsequent benchmark analysis would compound any variations from rates in the state found to have correctly applied TELRIC principles in a full rate proceeding," and therefore doing so carries no weight.[28] The old Pennsylvania rates were adopted in the Pennsylvania Commission's 1999 "Global Order,"[29] and those rates are in the process of being revised. The New York 271 order looked at 1997 rates that have now been superceded, and for that reason are no longer a meaningful guidepost as to the reasonableness of rates elsewhere.[30]

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[24] *FCC's Rhode Island 271 Order* ¶ 46.

[25] *In the Matter of Application of SBC Communications, Inc., and Southwestern Bell Telephone Company, and Southwestern Bell Communications Services Inc. d/b/a Southwestern Bell Long-Distance for the Provision of In-Region, InterLATA Services in Texas*, CC Docket 00-4, "Evaluation of the Public Utility Commission of Texas" at 1, 25 (Jan. 31, 2000). *See* < http://www.puc.state.tx.us/telecomm/projects/16251/16251arc/271finalrec.pdf >.

[26] *FCC's Kansas/Oklahoma 271 Order* ¶¶ 73, 85-87.

[27] *FCC's Arkansas/Missouri 271 Order* ¶¶ 49, 56.

[28] *FCC's Rhode Island 271 Order* ¶ 42.

[29] *FCC's Pennsylvania 271 Order* ¶ 54.

[30] *FCC's Rhode Island 271 Order* ¶¶ 43-46

It is quite remarkable that Verizon invokes outdated loop rates from other states, but tries to ignore the loop rates adopted in December 2001 by the New Jersey Board of Public Utilities. Elsewhere in its brief, Verizon invokes the New Jersey Board's decision in support of the Verizon LCAM model, and indicates that New Jersey's decision with respect to loop models was sound.[31] As discussed in AT&T's initial brief at pages 1-3, however, the issue before this Department is the setting of pro-competitive, TELRIC-compliant UNE rates, and not the choice of one model to the exclusion of all information that might be gleaned from alternative models. Thus, rather than merely look at the New Jersey Board's discussion of model selection, we can learn much more by looking at the loop rates it adopted.

As one might expect from the fact that Verizon chose to ignore them, the New Jersey rates are further evidence that one should expect to see substantial reductions from the 1996 Massachusetts UNE loop rates. The following table compares the 1996 Massachusetts rates, the range of loop rates supported by the record evidence in this proceeding, and the loop rates adopted just months ago in New Jersey.

[31] *See* Verizon Initial Brief, at 25 fn. 13 & at 221 (citing New Jersey order as adopting Verizon model), and at 70 (citing New Jersey order in support of Verizon's distribution length assumptions).

Two-Wire Analog Loop Rates – Comparisons of Key Analyses

Zone	1996 Mass. Rates[32]	RANGE OF LOOP RATES SUPPORTED BY THE RECORD EVIDENCE: Current Rates * 0.45[33]	Corrections to VZ-MA's Loop Model[34]	HAI 5.2a-MA[35]	New Jersey Final Rates[36]
Statewide	$14.98	$6.74	**$7.27**	**$7.09**	$8.95
Metro	7.54	3.39	5.01	4.92	8.12
Urban	14.11	6.35	6.36		
Suburban	16.12	7.25	7.89	7.75	9.59
Rural	20.04	9.02	11.77	16.91	10.92

The $8.95 statewide average loop rate shown for New Jersey is calculated using the Massachusetts distribution of access lines by density zone, so that the statewide average figure will be comparable to that in the three other columns.[37]

There is no reason why loop rates should be higher in Massachusetts than in New Jersey, and the record evidence in this proceeding demonstrates that they should in fact be materially lower.

2. Switching: New FCC Pricing Guidance and New Information Pulled From Verizon Regarding Its True Switch Material Costs, All Ignored in Verizon's Brief, Show that Switching Rates Should Be a Small Fraction of What Verizon Proposed.

Though Verizon's switch cost proposals raise many issues, two very straightforward ones explain most of the reason why the switch rates proposed by Verizon are so far in excess of TELRIC-compliant levels. One is Verizon's use of an excessive cost of capital rate, which is a pervasive problem with all of Verizon's proposed charges. The other is Verizon's improper use

[32] Verizon Tariff DTE MA No. 17, Part M, § 2.5.1; *See also Consolidated Arbitrations* proceeding, NYNEX's February 14, 1997, compliance filing, Ex. Part A, Page 1 (for statewide average).

[33] *See* Section I.A.1.a, beginning at page 3 above.

[34] *See* AT&T's Initial Brief, at 109-112.

[35] Ex. ATT-26, Mercer Surrebuttal, at 4.

[36] *New Jersey UNE Rates Order*, Attachment A, Page 1.

[37] *See* RR-AG-1 for the percent of access lines by density zones. The $8.95 figure was derived as follows: (0.07 * $8.12) + (0.39 * $8.12) + (0.49 * $9.59) + (0.05 * $ 10.92) = $8.95.

of the very high prices that it only pays for expansions to the capacity of existing switches, so-called "growth parts" or "add-on" purchases.

What is most telling about Verizon's brief with respect to switching is its attempt to ignore, and thereby to distract the Department from, two key facts relevant to the proper estimation of forward-looking switch material prices. First, Verizon disregards the FCC's recent 271 order for Rhode Island, in which the FCC expressly rejected Verizon's attempt to estimate UNE switching costs based on 100% growth-part pricing.[38] Verizon cannot claim ignorance of this order, issued on February 22 of this year (ten days before initial briefs in this case were filed). It concerns Verizon, the same switch cost witness (Ms. Matt) participated both in this proceeding and in the FCC's docket to review the Verizon-RI 271 application, and the same attorney (Mr. Beausejour) represented Verizon in both matters. Second, Verizon completely ignores the evidence – kept hidden by Verizon until late in the hearings – that Verizon in fact is able to buy new switches at prices that are a small faction of the pricing assumed in Verizon's cost study.[39]

Despite the FCC's rejection of 100% growth part pricing, Verizon advocates just such pricing here. Verizon's switch cost analysis is based entirely on the pricing for the "growth additions and other incremental upgrades" that Verizon "expects to deploy going forward."[40] Verizon tries to suggest that it has used pricing that represents "a mixture of equipment at new discounts versus other equipment at add-on discounts."[41] But this is a gross misrepresentation of the facts. Verizon's assumption regarding Lucent switch pricing reflects 99.7 percent growth

[38] *See FCC's Rhode Island 271 Order* ¶ 34.

[39] *See* AT&T's Initial Brief, at 62-68.

[40] Verizon Initial Brief, at 15; *see also* AT&T's Initial Brief at 71-73, Ex. Vz-36, Verizon Recurring Cost Panel Direct, at 138-141.

[41] Verizon Initial Brief, at 144.

part pricing, and only 0.3 percent new switch pricing.[42] For Nortel switches, Verizon acknowledges that it used the price available in Nortel's current contract with Verizon.[43] However, we now know that Verizon only pays this price for Nortel growth parts, and that if it wishes to buy a new Nortel switch it does so through competitive bidding and pays a price that is a small fraction of the contract price.[44]

Thus, we now know that Verizon's analysis based on 100% growth part pricing violates TELRIC, and that Verizon pays far less for new switches than it has ever admitted before. The remaining question with respect to the key issue of switch material pricing is what mix of new switch and growth part pricing is appropriate. AT&T has demonstrated that 100% new switch pricing best comports with TELRIC.[45] Verizon disagrees.[46]

If the Department were inclined to assume a forward-looking mix of new switch and growth-part purchases, the record evidence shows that the appropriate mix would be 90% new switch pricing and 10% growth-part pricing.[47] This 90/10 split comes from an analysis developed by Ms. Pitts,[48] which is consistent with the conceptual approach described by Verizon's witness Ms. Matt[49] and which was recently accepted by the New Jersey Board of Public Utilities.[50] The original form of this analysis, as filed here and in New Jersey, made the conservative assumption – conservative in the sense that it artificially increased the growth part proportion, and thus led to switch prices on the high side – of three percent annual growth in access lines. But Verizon itself says that the appropriate assumption is 1.5% annual line growth,

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42 *See* AT&T's Initial Brief, at 72-73; Tr. 2066, 1/29/02 (Pitts)

43 Verizon Initial Brief, at 144, fn. 119.

44 *See* AT&T's Initial Brief, at 62-63; *see also* Verizon-VA's Response to the FCC's RR VZ-VA-32, in the proprietary attachment to RR-DTE-49S.

45 AT&T's Initial Brief, at 68-70. *See also* III.A.2. beginning at page 60, below.

46 Verizon Initial Brief, at 145-149.

47 *See* AT&T's Initial Brief, at 73-76.

48 RR-DTE-56, Proprietary Attachment.

49 *See* AT&T's Initial Brief, at 74; Tr. 1624, 1628, 1/24/02 (Matt); Tr. 2357, 1/31/02 (Matt).

50 *New Jersey UNE Rates Order* at 8.

a figure that also is much more in line with Verizon's actual Business Plan line forecasts.[51] If one takes this forward-looking life cycle analysis and runs it assuming 1.5% annual line growth, the ratio of new switch to growth part pricing is 90/10.[52]

Together, these basic facts mean that forward-looking switching costs for Massachusetts should be a small fraction of the exorbitant rates proposed by Verizon.

The following table summarizes what the record tells us with respect to the key switching rate elements. The first column of numbers shows the rates requested by Verizon. The next column shows Ms. Pitts' restatement of the Verizon cost model, using the appropriate cost of capital and depreciation lives, and making the other specific changes discussed in AT&T's Initial Brief. Ms. Pitts' restatement was based on switch material prices that were equal to the prices in Verizon's current contract with Nortel,[53] and we now know that those prices only apply to growth parts.[54] Thus, Ms. Pitts' restatement remains much too high, because it reflects 100% growth part pricing which, as the FCC has made clear, does not comport with TELRIC.[55]

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[51] *See* AT&T's Initial Brief, at 75; Tr. 1629, 1/24/02 (Matt); Ex. ATT-VZ 4-29 Second Supplemental Response.

[52] *See* AT&T's Initial Brief, at 75.

[53] *See* AT&T's Initial Brief, at 61.

[54] *See* AT&T's Initial Brief, at 63; Verizon-VA's Response to the FCC's RR VZ-VA-32, reproduced in the proprietary and non-proprietary attachments to RR-DTE-49S.

[55] *See* AT&T's Initial Brief, at 62-66.

Summary of Key Switching Rate Elements – Adjusted for New Information from Verizon with Results of Melding New Switch and Growth Part Pricing

Rate Element	VZ-MA 100% Growth[56]	Pitts' Rev'd 100% Growth[57]	90% New / 10% Growth[58]	100% New[59]
Analog Line Port per month	$2.55	$1.93	$0.56	$0.41
Switching – Originating per MOU	.0028880	.0003133	.0000905	.0000658
Switching – Terminating per MOU	.0025330	.0002749	.0000794	.0000577
Trunk Port – Common per MOU	.0005690	.0003931	.0001136	.0000826
Tandem Switching per MOU	.0002720	.0000840	.0000243	.0000176
Tandem Trunk Port per MOU	.0005940	.0001793	.0000518	.0000377

Now that we know what Verizon actually pays for new Nortel switches, we know that the rates reflecting all new switch pricing should be 79 percent less than (or 21 percent of) Ms. Pitts' restatement (which reflects all growth part pricing).[60] This is reflected in the last column of numbers in the table above. The same information tells us that a 90/10 mix of new switch and growth part pricing will produce switch costs that are 71.1 percent less than (or 28.9 percent of) Ms. Pitts' restatement.[61] This is reflected in the second to the last column.

> [NOTE: At one point in AT&T's initial brief we misstated these relationships, and said that the 100% new switch rates would be 21 percent lower than (rather than 21 percent of) Ms. Pitts' restatement, and that the 90/10 mix rates would be 28.9 percent lower than (rather than 28.9 percent of) that restatement. *See* AT&T's Initial Brief at 77. The correct relationships are as stated above, and in the preceding pages of AT&T's Initial Brief. We apologize for this error, and for any confusion that it has caused.]

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[56] RR ATT-2 (Verizon's proposed recurring costs revised January 2002).

[57] Adapted from Ex. ATT-20, Pitts Revised Rebuttal, Ex. CP-1. Port rates reflect 0.5% reduction from original Pitts rate, to account for correction to non-conversation time factor. *See* Ex. ATT-21, Pitts Surrebuttal, at 10. End office switching rates reflect 2.0% reduction for correction to non-conversation time factor. *Id.* at 10.

[58] *See* AT&T's Initial Brief, at 73-77.

[59] *See* AT&T's Initial Brief, at 62-65.

[60] *See* AT&T's Initial Brief, at 62-64.

[61] *See* AT&T's Initial Brief, at 76.

NOTE: At one point in AT&T's initial brief we misstated these relationships, and said that the 100% new switch rates would be 21 percent lower than (rather than 21 percent of) Ms. Pitts' restatement, and that the 90/10 mix rates would be 28.9 percent lower than (rather than 28.9 percent of) that restatement. *See* AT&T's Initial Brief at 77. The correct relationships are as stated above, and in the preceding pages of AT&T's Initial Brief. We apologize for this error, and for any confusion that it has caused.

In sum, the record evidence shows that the last two columns of numbers in this table represent the range within which TELRIC-compliant switching rates for Massachusetts should fall.

3. Non-Recurring Charges: Verizon's Proposed NRCs Would be Anti-Competitive, Just Like the New Jersey Hot Cut Rates that Failed to Pass Muster Before the FCC.

The non-recurring charges proposed by Verizon are anticompetitive, and far too high to comply with TELRIC. Recent events regarding Verizon's Section 271 application for New Jersey confirm that Verizon-MA's assertions to the contrary are without merit.[62] Specifically, Verizon-NJ was forced to withdraw its Section 271 application and to reduce its hot cut charges to the same $35 rate level recently agreed to in New York.

Non-Recurring Charges for UNE-L Hot Cuts

	VZ-MA[63]	VZ-NJ Filed w/ FCC[64]	VZ-MA % > Orig. VZ-NJ	VZ-NJ New Rate[65]
2 Wire Initial	$202.42	$159.76	26.70%	$35
2 Wire Add'l	140.63	73.01	92.62%	35
4 Wire Initial	200.50	157.86	27.01%	35
4 Wire Add'l	152.92	70.72	116.23%	35
IDLC to Copper New	233.70	184.82	26.45%	35
IDLC to Copper Add'l	148.02	60.92	142.97%	35
Line Port New	205.26	158.81	29.25%	35
Line Port Add'l	152.68	62.52	144.21%	35

The New Jersey Board of Public Utilities had previously approved substantial increases in Verizon-NJ's NRCs, including an NRC for each initial 2-wire hot cut order of $159.76. The New Jersey hot cut NRCs did not pass muster before the FCC, however, and Verizon was forced to withdraw its Section 271 application as a result. The Department of Justice, in its evaluation, observed that the NRCs for hot cuts had been substantially increased to levels far in excess of

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62 *See* Verizon Initial Brief, at 213 (asserting that Verizon's proposed NRCs are TELRIC-compliant).

63 Ex. VZ-21 (Verizon Revised Non-Recurring Cost Summary).

64 *New Jersey UNE Rates Order*, Attachment C.

those in neighboring states, and cited evidence from Conversent, Cavalier, and AT&T for the proposition that hot cut NRCs at the level submitted to the FCC would preclude competition using unbundled loops.[66] After the FCC made clear that it would not approve the Section 271 application for this reason, on March 19, 2002, Verizon-NJ withdrew its application in order to fix and substantially reduce its hot cut rates.[67]

The next day, Verizon submitted a letter to the New Jersey BPU agreeing to a $35 rate for all 2-wire, 4-wire, IDLC to copper, line port, ADSL/HDSL, and DDS/56KD hot cuts, for both initial or additional hot cuts.[68] As Verizon-NJ noted, this new rate "mirrors" the $35 hot cut rate previously agreed to in New York.[69] As in Massachusetts, Verizon-NJ also lists an additional charge for a field dispatch (or "premises visit," in New Jersey parlance). But in the context of a hot cut, there will never be such a thing as a field dispatch. A hot cut involves the transfer of an existing Verizon customer to a CLEC. If the Verizon retail customer is already receiving service, there could not be any work in the field required to transfer the customer to a CLEC. Thus, the $35 rate hot cut rate now in place in both New Jersey and New York represents the total NRC for transferring a UNE-L customer from Verizon to a CLEC.

The hot cut NRCs proposed by Verizon for Massachusetts are substantially ***higher*** than the hot cut rates that the FCC refused to accept for New Jersey. The proposed Massachusetts NRCs are close to 30 percent higher than the original New Jersey rates for initial hot cuts, and

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[65] *See* Letter dated March 20, 2002, from Bruce D. Cohen for Verizon-NJ to the New Jersey Board of Public Utilities, in Docket No. tO00060356 ("Cohen Letter").

[66] *In the Matter of Application by Verizon New Jersey Inc., Bell Atlantic Communications, Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions), Verizon Global Networks Inc., and Verizon Select Services Inc., for Authorization to Provide In-Region, InterLATA Services in New Jersey*, CC Docket 01-347, Evaluation of the Department of Justice, at 7-8 and footnotes 29, 31 (Jan. 28, 2002). Available at < http://www.usdoj.gov/atr/public/comments/sec271/verizon/9901.pdf >.

[67] *See* Letter dated March 19, 2002, from Michael E. Glover of Verizon to the FCC. Available at < http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6513082284 >.

[68] Cohen Letter at 1.

about two times to two-and-one-half times the original New Jersey rates for additional hot cuts on a single order. If the FCC was unprepared to accept the New Jersey hot cut rates as TELRIC-compliant, there is no way that Verizon-MA's significantly higher proposed hot cut charges can be reasonable.

Quite simply, there is no reason why the Massachusetts hot cut rate should exceed the $35 level set now in both New York and New Jersey. As Dennis Bone, president of Verizon New Jersey, has noted, this $35 hot cut rate first established in New York is a "benchmark."[70] It is a benchmark that Verizon New Jersey was not permitted to exceed, and it similarly should serve as the ceiling for hot cut rates in Massachusetts.

More generally, the Department has the opportunity in this proceeding to chart a new, pro-competitive path by putting an end to Verizon's pattern of artificially carving selected plant management costs out of its recurring UNE rates and assessing those costs as onerous non-recurring charges. "It is evident that nonrecurring charges can be used as an anticompetitive weapon to … discourage competitors," the FCC has observed.[71] As discussed in AT&T's initial brief at pages 236-247, the activities for which Verizon seeks to assess NRCs almost all concern moves and rearrangements of Verizon's facilities, and related coordination activities. But there is nothing unique about the particular facility that Verizon uses to provide service in response to a UNE order. Verizon regularly incurs day-to-day maintenance costs for moving and rearranging cross-connect wires and for related coordination. Verizon accounts for almost all of

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[69] Cohen Letter at 2; *see also* Joint Proposal Concerning Verizon Incentive Plan for New York, NY PSC 00-C-1945, at 2 (filed Feb. 8, 2000).

[70] Tom Johnson, *Verizon Pulls Application*, THE STAR LEDGER, March 20, 2002. Available at < http://www.nj.com/business/ledger/index.ssf?/base/business-0/1016619025112527.xml >

[71] *In the Matter of AT&T Communications Tariff FCC Nos. 9, 10, and 11*, 103 F.C.C.2d 77, 94, ¶ 37 (1985). *See also In the Matter of Expanded Interconnection with Local Telephone Company Facilities*, Second Memorandum Opinion and Order on Reconsideration, 8 FCC Rcd. 7341, ¶ 43 (1993).

those costs through the Network ACFs that it uses to develop its recurring UNE rates.[72] There is no reason why the same categories of cost incurred in fulfilling a particular CLEC order should be recovered through one-time NRCs, when all other costs for moves, rearrangements, and coordination are covered by the general ACFs and incorporated into the recurring rates.

Verizon's rhetoric of wishing to promote facilities-based competition is belied by its request for exorbitant hot cut rates. There will be no competition if Verizon is permitted to impose substantial non-recurring charges. CLECs will not install additional switches if they cannot afford to order unbundled loops from Verizon.

B. TELRIC: Verizon's Effort to Rewrite or Replace TELRIC Is Improper and Should Be Rejected.

Verizon offers a 20-page discussion of supposed "economic principles," at pages 7-26 of its initial brief. Though not couched in these terms, Verizon's methodological points are nothing less than a frontal assault on TELRIC. The claims made here by Verizon merely paraphrase and repeat the very arguments made by Verizon to the United States Supreme Court as reasons why TELRIC purportedly makes no sense and thus should be deemed unlawful. But the question of whether or not TELRIC makes good sense is not at issue in this proceeding. Verizon's lengthy arguments in favor of alternative pricing standards are therefore irrelevant. That aspect of Verizon's brief is one of the many red herrings with which Verizon is attempting to perfume this case.

Furthermore, the primary thrust of Verizon's methodological arguments is not only inconsistent with TELRIC, but is also inconsistent with Verizon's own cost models. The "economic principles" discussed by Verizon are entirely theoretical, abstract points. We will show that they conflict with TELRIC, and were already considered and rejected by the FCC. We

[72] *See* AT&T's Initial Brief, at 241-243.

will also show that these abstract principles have no possible bearing on the Department's setting of rates, since they cannot be squared with Verizon's own models. This latter point should not be surprising. Dr. Taylor did not review any of Verizon's cost models in this proceeding; instead, he says that he was asked to address general economic principles, "and then to argue with other economists."[73] But this case is about the setting of UNE rates using TELRIC, and Verizon's attempt to pick a fight among economists about possible alternative pricing methodologies is simply irrelevant.

1. Verizon's Theoretical Arguments are Attacks on TELRIC, Not an Interpretation of TELRIC, and Thus Are Improper and Irrelevant.

The Department stated at the outset that it is not adjudicating the choice of pricing methodology in this case, but that instead it would apply TELRIC.[74] Verizon did not seek reconsideration of the Department's order, or challenge it in any other way. Thus, it has already been established that UNE rates will be set here by applying the TELRIC methodology. In reliance upon the Department's clear statement at the outset regarding the scope of this case, AT&T did not sponsor any economist witness to debate methodological points. It is entirely improper for Verizon to ask the Department to change course and to decide whether to alter TELRIC or adopt an alternative pricing methodology. The Department may not, of course, adjudicate such issues without fair notice to the parties.[75]

The Department has quite properly ruled that it will not attempt to undertake a similar review of economic theory, but instead will undertake its responsibility to adopt pro-competitive, TELRIC-compliant UNE rates based on the record evidence. The FCC adopted the TELRIC methodology after careful review of an extensive record, which included economic commentary

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[73] Tr. 1/7/02 at 28-29 (Taylor).

[74] Docket DTE 01-20, Vote and Order to Open Proceeding at 5, 7 (Jan. 12, 2001). *See generally* AT&T's Initial Brief at 4-5.

[75] G.L. c. 30A, §§ 10-11; *Kearney* v. *Board of Registration in Pharmacy*, 4 Mass. App. Ct. 25, 29 (1976).

on all sides of the issue.[76] Not only is there no need for the Department to duplicate that effort, but doing so would be improper. The FCC's TELRIC rules remain in effect, and govern the setting of UNE rates in this proceeding.[77] Furthermore, Verizon stipulated at the outset of this proceeding that it will "charge what the Department finds to be appropriate TELRIC rates,"[78] and it still agrees that "the TELRIC rules as currently in effect are what we're applying" to set UNE rates in this proceeding.[79] Verizon's effort to lure the Department into a methodological debate should therefore be rebuffed, and its arguments for pricing alternatives to TELRIC can and should be ignored.

Verizon's methodological assertions in large part repeat assertions made in the December 2001 surrebuttal of Dr. Taylor.[80] But these assertions are really a paraphrase of arguments made in Verizon's June 2001 brief to the United States Supreme Court in the *Iowa Utilities Board* case, in support of Verizon's claims that TELRIC should be overthrown by the Court. One can readily see the manner in which Verizon is repeating its prior attacks on TELRIC, by comparing the key "economic principles" discussed in Verizon's initial brief with the almost identical arguments it submitted to the Supreme Court.

?? Verizon argued in the Supreme Court that, instead of TELRIC, "the logical starting point is the incumbent's current network configuration, assuming phased replacement of facilities over time in the real market."[81] Here, Verizon defends the very high UNE rates it has proposed on the ground that they represent "the costs that Verizon MA would incur if it expanded and replaced its entire network over time."[82]

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[76] *FCC's First Local Competition Order* ¶¶ 635-671.

[77] *See Iowa Utilities Board v. FCC*, Docket Nos. 96-3321 *et al*., Order on Motion to Stay Mandate, (8th Cir., Sept. 25, 2000); *FCC's Massachusetts 271 Order* ¶ 17. *See also, e.g., FCC's Rhode Island 271 Order* ¶ 20; *FCC's Arkansas/Missouri 271 Order* ¶ 48; *FCC's Pennsylvania 271 Order*, Appendix C, ¶ 46.

[78] Procedural Conference Tr. 14, 2/8/01 (Beausejour, attorney for Verizon-Massachusetts).

[79] Tr. 1582, 1/24/02 (Anglin).

[80] *See* Verizon Initial Brief, at 7-26 (citing Ex. VZ-2, Taylor Surrebuttal).

[81] Verizon Supreme Court Brief, 2001 WL 881072, * 22.

[82] Verizon Initial Brief, at 9.

?? Verizon complained to the Supreme Court that "[a]n incumbent could not meet the TELRIC standard without actually tearing out its network and rebuilding it instantly from scratch."[83] Here, Verizon asserts that "AT&T's methodology is based on an idealized, scorched-node network that is instantaneously and successively rebuilt from scratch,"[84] and that the rates advocated by AT&T based on TELRIC improperly assume the "instantaneous … replacement" of the local exchange network.[85]

?? Similarly, in the Supreme Court Verizon said that TELRIC should be rejected because it purportedly represents a "make-believe cost," on the ground that incumbents will actually "replace their facilities in phases" and do so only where it is "efficient [as] determined by the network already in place,"[86] and thus "their networks will have a mix of old and new technologies."[87] Here, Verizon argues that "efficient firms add and replace network plant on an incremental rather than total basis,"[88] that UNE rates reflect the cost of continuing to use existing facilities where doing so is "more efficient."[89] Verizon reiterates here its position that carriers will "deploy[] new technologies incrementally," and thus will always "have a mix of technological vintages."[90]

?? Before the Supreme Court, Verizon also attacked TELRIC on the alternative ground that it improperly assumes that "there would be at any time in a competitive market other firms (entrants) that could start from scratch and thereby meet the TELRIC ideal," and that this was improper because "there is in fact no alternative in an existing market today."[91] Here, Verizon asserts that "[t]he CLECs' TELRIC theory is based on the unrealistic assumption that there always will be a carrier able and willing to deploy new technology and network design instantaneously and ubiquitously."[92]

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83 Verizon Supreme Court Brief, 2001 WL 881072, *12. *See also id.* at *17.
84 Verizon Initial Brief, at 5. *See also id.* at 15, 18, 19.
85 *Id.* at 14, 16.
86 Verizon Supreme Court Brief, 2001 WL 881072, *17-*18, *21.
87 *Id.* at *27.
88 Verizon Initial Brief, at 20.
89 *Id.* at 11. *See also id.* at 12, 15, 18-20.
90 *Id.* at 17.
91 Verizon Supreme Court Brief, 2001 WL 881072, *19-*20. *See also id.* at *25.
92 Verizon Initial Brief, at 16.

?? Verizon asserted to the Supreme Court that "the TELRIC ideal" is "implausible," arguing that because "incumbents have now been subject to more than a decade of price-cap regulation, the purpose of which is to mimic investment incentives that prevail in competitive markets," it is unreasonable to believe that forward-looking investment in the long-run would be meaningfully different than existing investment.[93] Here, Verizon asserts that its existing "technology choices and engineering guidelines" must be presumed to be efficient because "Verizon MA has been subject to both state and federal price cap regulation since 1995."[94]

?? Indeed, even Verizon's airline analogy comes from its Supreme Court attack on TELRIC. Before the Supreme Court, Verizon asserted that TELRIC was unrealistic, arguing by analogy that "[a]n airline that has committed itself to Boeing aircraft and has trained its pilots and maintenance crews accordingly will not replace its fleet simply because Airbus comes onto the market with a more efficient aircraft."[95] Here, to support its assertion that AT&T has improperly estimated UNE rates based on the most efficient use of new equipment, Verizon says that "[i]n the case of an airline, the availability of a new, more efficient commercial aircraft would not lead an airline to model its costs as though it had instantaneously replaced all of the planes in its fleet with the new type of aircraft and lower prices for tickets accordingly."[96]

This comparison demonstrates that Verizon's "economic points" in this case are the same arguments mad by Verizon in its frontal assault on TELRIC before the Supreme Court. As such, they have no relevance here.

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93 Verizon Supreme Court Brief, 2001 WL 881072, * 18.
94 Verizon Initial Brief, at 10-11.
95 Verizon Supreme Court Brief, 2001 WL 881072, * 26.
96 Verizon Initial Brief, at 19.

2. The "Economic Principles" Touted by Verizon Conflict with TELRIC, and Cannot be Squared With Verizon's Own Cost Studies.

a. Verizon's Argument that Rates Should Reflect Continued Use of Existing Plant and Equipment Violates the Long-Run Assumption that is TELRIC's Middle Name.

Verizon asserts that it and AT&T have "two starkly different visions of TELRIC."[97] But the "vision" that came to Verizon is something altogether different from TELRIC. Verizon says that UNE rates should be set by starting one's analysis with the current network, and assume that the entire network will remain in place in the future except where replacement of existing plant with new equipment can be shown to be less expensive than continued use of existing plant.[98] However, that is simply not what TELRIC posits. Bell Atlantic made this very argument to the FCC in 1996, as part of its arguments against a TSLRIC or TELRIC standard.[99] The FCC was unpersuaded.

As Verizon recognizes in passing, its attempt to redefine TELRIC turns on what is meant by the "long-run" assumption.[100] But it is quite clear that Verizon's insistence that one assume the continued use of existing plant and equipment is not the proper starting point under TELRIC. The FCC has explained that "[i]n a TELRIC methodology, the 'long run' used shall be a period long enough that all costs are treated as variable and avoidable."[101] Dr. Taylor's own testimony on cross-examination effectively refutes Verizon's insistence that rates reflect some portion of the existing network. Dr. Taylor explained that under TELRIC "the long run is measured by how long it takes for current contracts to become irrelevant, for the firm to be in a position where it can effectively change any decision -- any capital technology, any hiring practice, anything

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[97] Verizon Initial Brief, at 7.

[98] Verizon Initial Brief, at 18-20; *see also id.* at 9, 12, 14, 15, 21, 22, 23, 141.

[99] *FCC's First Local Competition Order* ¶ 653 (discussing the Declaration of Alfred E. Kahn and Timothy J. Tardiff, filed by Bell Atlantic).

[100] Verizon Initial Brief, at 15.

[101] *FCC's First Local Competition Order* ¶ 692.

like that -- that it has currently in the ground today."[102] Thus, the goal here is to estimate the costs that would result if Verizon could "choos[e] and arrang[e] its plant to produce the required level of output in the most efficient manner possible."[103]

The FCC recently reiterated "the assumption in TELRIC pricing of a forward-looking network built from scratch, given the location of existing wire centers."[104] Thus, when Verizon states that AT&T has estimated forward-looking UNE rates based on a hypothetical network that is "rebuilt from scratch," it is doing nothing more than confirming that AT&T's analyses comport with the requirements of TELRIC.[105] The question is not whether it may sometimes be prudent for Verizon to make do with dated assets even after more efficient alternatives become available. The relevant question is whether the more efficient alternatives may be taken into account in determining the forward-looking rates that Verizon may charge on a wholesale basis for providing services with those assets. That question has been answered by the FCC's adoption of the TELRIC methodology, and there is no point in Verizon proposing a different answer.

In the comic strip Calvin and Hobbes, the main characters create by dint of imagination a "transmogrifier gun," which they pretend can be used to turn themselves and others into creatures and things of most any kind.[106] Though such miracles of transformation may succeed in the minds of little boys and their stuffed tigers, Verizon cannot similarly reshape TELRIC just because it very much wants to do so.

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[102] Tr. 24, 1/7/02 (Taylor).

[103] Ex. VZ-1, Taylor Direct, at 6.

[104] *FCC's Rhode Island 271 Order* ¶ 34, citing *FCC's First Local Competition Order*, ¶ 685 and ¶ 677 fn. 1682, and citing 47 C.F.R. § 51.505.

[105] *See* Verizon Initial Brief, at 5; *see also id.* at 15.

[106] *See* THE INDISPUTABLE CALVIN AND HOBBES ENCYCLOPEDIA at < http://www.kerzap.com/calvin/iche/trans.html > for an explanation of Calvin's original transmogrifier and the later transmogrifier gun, and < http://johnston7gat.tripod.com/transm88.html > for illustrated explanations of the transmogrifier gun's invention, operation, and sample applications. *See also* THE AMERICAN HERITAGE

(continued…)

b. Verizon's Abstract Theory for Evaluating the Relative Efficiency of its Existing Network Versus a Redesigned Network with New Plant and Equipment Cannot be Squared With Verizon's Own Cost Models.

Verizon's alternative pricing theory is also irrelevant for the simple reason that it does not match Verizon's own cost models. Verizon argues in the abstract for UNE pricing based on an evaluation of the cost of maintaining existing equipment versus the cost of replacing it with new equipment.[107] But that is not what Verizon actually does in its cost studies. This mis-match underscores a fundamental problem with Verizon's lengthy discussion of "economic principles." That discussion is completely abstract, and Verizon makes no showing that any of the inputs or assumptions it relies upon to inflate UNE rates could be justified even if TELRIC were replaced with the new economic theories that Verizon tries to describe.

In fact, when Verizon turns to a discussion of actual cost modeling, it acknowledges that the TELRIC-construct involves a hypothetical network. In Verizon's own words, "the forward-looking network used for Verizon MA's cost studies differs markedly from the existing Massachusetts network *and* indeed from any real network that is likely ever to exist in Massachusetts."[108] Verizon admits that "the forward-looking TELRIC network does not yet exist."[109] It does not incorporate the existing network.

With respect to loop rates, Verizon assumes away the existing network and the instantaneous creation of a hypothetical new network. In its own words:

> Verizon MA's cost studies assume that the current loop facilities, which are primarily copper-fed, do not exist and assesses costs as if the more efficient fiber systems were in place. Thus, the study assumes that the forward-looking network would have 80 percent fiber-fed loops, even though Verizon MA's network has

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DICTIONARY at 1288 (Second College Edition 1985) (Transmogrify: "To change into a different shape or form, esp. one that is fantastic or bizarre.").

[107] Verizon Initial Brief, at 14, 18-19; *see also id.* at 11, 12, 15-16, 19-20.

[108] Verizon Initial Brief, at 70 (emphasis in original).

[109] Ex. Vz-36, Verizon Recurring Cost Panel Direct, at 26.

> less than 20 percent fiber-fed loops today and is not expected to have anywhere near 80 percent fiber-fed loops at the end of a three-year planning period.[110]

Verizon's assumptions regarding the mix of copper and fiber feeder were not derived from any evaluation of the cost of maintaining existing plant versus the cost of replacing it with new plant. (Indeed, the mix of copper and fiber feeder was not even the result of any economic analysis regarding the proper forward-looking mix, but instead was the result of arbitrary distance breakpoints set by Verizon for each geographic density zone.[111])

It appears that Verizon's 20-page discussion of "economic principles" is intended solely to justify the excessive switching rates sought by Verizon-MA. Verizon itself invokes switching as the reason why its alternative pricing theory, of assuming continued deployment of existing switches where economic, should be followed.[112] But once again, that is not what Verizon's model does. Verizon is not costing out the continued use of its existing switches. Rather, Verizon develops switching rates under the assumption that it starts from scratch and installs enough switching capacity to serve all demand for all local switching in the state.[113] This approach differs markedly from Verizon's avowed "economic principles." Verizon also assumes that it would pay the so-called "growth part" price for 100 percent of the total switching capacity.[114] As discussed earlier, this assumption has been expressly rejected by the FCC as patently inconsistent with TELRIC.[115]

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[110] Verizon Initial Brief, at 9-10.
[111] *See* AT&T's Initial Brief, at 145-146.
[112] Verizon Initial Brief, at 14-15, 19-20.
[113] *See* AT&T's Initial Brief, at 71-73; Ex. Vz-40, Verizon Further Revised Recurring Cost Study, Workpaper Part C-2, Pages 1-2.
[114] *See* Section I.A.2. beginning at page 10, above.
[115] *FCC's Rhode Island 271 Order* ¶ 34.

C. Verizon's Upward Bias: Any Doubts Must be Resolved In Favor of Lower UNE Rates, and Verizon's Efforts to Bias Rates Upward Should Be Rejected.

1. Verizon's Claims Regarding "True Forward-Looking Costs" Are Spurious.

From the outset, Verizon's initial brief is predicated on baseless and unsubstantiated rhetoric. For example, Verizon asserts that UNE rates which truly comply with TELRIC would purportedly be below Verizon's "true forward-looking costs,"[116] and would purportedly allow CLECs to lease UNEs "at prices that are less than the true costs of providing them."[117] Indeed, Verizon goes so far as to claim that the excessive cost estimates produced by its models understate "true forward-looking costs."[118] Tellingly, these assertions are not supported by citation to any evidence.

Notwithstanding its abstract discussion of "economic principles" to the contrary, Verizon has agreed throughout this proceeding that TELRIC is the governing pricing standard and has insisted that it was following TELRIC in its cost models.[119] Verizon made no attempt to prove any other measure of forward-looking cost. Thus, there is absolutely no basis for Verizon's unexplained assertion that TELRIC-compliant pricing would deny Verizon recovery of its "true forward-looking costs."

Indeed, Verizon does not even explain what it means by the catch-phrase "true forward-looking costs." It appears, however, that it is referring to some form of short-run marginal cost. As discussed in Section I.B.2.a. beginning at page 23, Verizon's abstract methodological discussion constitutes a rejection of long-run analysis. But forward-looking TELRIC rates will certainly exceed Verizon's short-run marginal cost. And Verizon has made no attempt to offer any proof to the contrary.

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[116] Verizon Initial Brief, at 2.
[117] *Id.* at 3.
[118] Verizon Initial Brief at 7; *see also id.* at 4.

2. Low, Pro-Competitive UNE Rates Are Needed to Avoid a Price Squeeze and Resulting Barrier to Competitive Entry.

Verizon argues that higher UNE rates should be put into place in order to encourage full facilities-based competition.[120] But this shibboleth is contrary to law and unsupported by fact, as explained in AT&T's initial brief at 3-4. Even Verizon is forced to concede that full facilities-based competition is at best a "long-term" goal.[121] Robust UNE-based competition is almost certainly a prerequisite to full facilities-based competition. As we have seen, until CLECs have the ability to build up a substantial customer base using UNEs to provide service in whole or in part, they will be unable to justify or afford substantial further investment in additional local exchange facilities.

But if UNE rates come anywhere close to the levels sought by Verizon, rather than matching the reductions that AT&T has proven are appropriate, the result is likely to be a price squeeze that would prevent competitive entry. By statute, Verizon must provide UNEs at rates that are "just, reasonable, and *nondiscriminatory*."[122] The United States Supreme Court has held that, even if a regulated utility has charged wholesale and retail rates that otherwise fall within the permissible ranges for those rates, its wholesale rates can nonetheless fail to satisfy a nondiscrimination requirement if the utility has foreclosed retail competition by charging retail rates at the lower end of the permissible range and wholesale rates at the higher end of the permissible range.[123] If Verizon-MA were to end up charging UNE rates that create such a price

(..continued)

[119] *E.g.*, Ex. VZ-36, Verizon Recurring Cost Panel Direct, at 16.

[120] Verizon Initial Brief, at 2, 5, 7.

[121] Verizon Initial Brief, at 5.

[122] 47 U.S.C. § 251(c)(3) (emphasis added).

[123] *See Federal Power Comm'n* v. *Conway Corp.*, 425 U.S. 271, 276-282 (1975); *see also NY, NH & H R.Co.* v. *ICC*, 200 U.S. 361, 390-91 (1905) (railroad engages in discrimination if it sells coal at retail prices that are lower than the sum of its transportation rate, the cost of the coal, and the cost of delivering the coal from the railroad line to the retail customer).

squeeze, it would not only be in violation of the requirement for non-discriminatory pricing, but would also be in violation of the public interest test under Section 271.[124]

AT&T recognizes that this issue – the sufficiency of the margin between Verizon's wholesale rates and the Verizon retail rates with which CLECs must compete – will be addressed in Phase II of Docket 01-31, and not in this proceeding. But for present purposes the import of this issue is straightforward. The first step toward avoiding an unlawful price squeeze is to adopt low, pro-competitive, TELRIC-compliant UNE rates. The alternative advocated by Verizon – deliberately adopting high rates intended to forestall UNE-based competition – would constitute bad public policy and would contradict the entire premise of this proceeding and the governing law.[125]

II. GENERAL INPUTS: AT&T'S RECOMMENDATIONS AS TO COST OF CAPITAL AND DEPRECIATION LIVES ARE REASONABLE, BUT THOSE OF VERIZON ARE NOT.

A. WACC: Massachusetts UNE Rates Should Reflect a Cost of Capital In Line With That Adopted in Other Verizon-East States, Since Verizon Has Mustered No Evidence To Support a Higher WACC Here.

In its Initial Brief, Verizon continues to advocate for a cost of capital that conflicts with FCC guidance and that greatly exceeds the cost of capital adopted by every other state in the Verizon-East territory. Interestingly, Verizon now advocates a WACC of 12.95%,[126] despite the fact that in its cost studies in this case it used a WACC of 12.6%.[127] Regardless of whether Verizon uses 12.95% or 12.6%, however, both recommendations far exceed any reasonable estimate of the WACC for Verizon's wholesale UNE business in Massachusetts. As was

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[124] *See Sprint Communications Co. L.P.* v. *Federal Communications Comm'n*, 274 F.3d 549, 554-555 (D.C. Cir. 2001).

[125] *See FCC's Massachusetts 271 Order* ¶ 30 (noting that if UNE rates "are not set in accordance with [the FCC's] rules and the Act, we retain the ability going forward to take appropriate enforcement action, including action pursuant to [47 U.S.C.] section 271(d)(6)").

[126] Verizon Initial Brief, at 36.

[127] Ex. VZ-36, Verizon Recurring Cost Panel Direct, at 41.

demonstrated in AT&T's Initial Brief, and as will be further demonstrated below, Verizon's recommendation is based on a flawed analysis and a misunderstanding of TELRIC. Furthermore, as will be demonstrated below, Verizon's criticisms of AT&T's WACC proposal lack merit and should be rejected.

1. Even the 9.54% WACC Discussed in AT&T's Initial Brief is Too High.

a. The Department Should Instead Set UNE Rates Based on a WACC At or Below 9.0%.

The fact that Verizon advocates a higher WACC in its initial brief than it in fact used in its cost studies has led AT&T to take a fresh look at the record evidence, to determine whether the 9.54% WACC used by the AT&T and AT&T/WorldCom witnesses is still the correct figure. Upon reflection, it is evident that this number is still too high, and that the Department should in fact adopt a WACC closer to or even less than 9.0%. There is no reason why the WACC upon which Massachusetts UNE rates are based should be materially higher than the WACCs recently adopted for this purpose in New Hampshire and New Jersey. Verizon's cost of capital witness conceded that there is nothing about Massachusetts that should cause its WACC to be higher than New Jersey, New Hampshire or any other state.[128]

Just days ago Verizon refiled its Section 271 application for New Jersey, and in so doing specific admitted that the 8.8% WACC adopted by the New Jersey Board of Public Utilities is appropriate, and is based on "principles that are … TELRIC-compliant."[129] The most recent WACC decisions in other states have reflected a downwards trend and suggest that Verizon's WACC has actually declined since Mr. Hirshleifer conducted his study and made his recommendation in the present case. For example, New Jersey and New Hampshire have both recently adopted WACCs for Verizon far below what Mr. Hirshleifer has suggested in this case.

[128] Tr. 51, 89, 1/7/02 (Vander Weide).

New Jersey adopted a WACC of 8.8% in December 2001,[130] and New Hampshire adopted a WACC of 8.42% on March 1, 2002.[131] Mr. Hirshleifer presented substantial evidence that his WACC recommendation may be too high.[132] In contrast, a WACC of 8.42% is in line with discount rates that Bell Atlantic and GTE used to evaluate the merger that led to the creation of Verizon.[133]

Because these recent decisions demonstrate that Verizon's WACC for the wholesale UNE market has dropped materially since Mr. Hirshleifer did his study, the Department should use the low end of Mr. Hirshleifer's recommended WACC range – 9.17%[134] – as a ceiling for setting Verizon's WACC. Indeed, if one takes the 10.24% cost of equity capital that Mr. Hirshleifer estimated using a DCF analysis,[135] and applies the average book capital structure weights that he also explained,[136] the result is a WACC of 9.07% [(10.24% * 0.51) + (7.86% * .49) = 9.07%].

b. Verizon Ignores the Fact that All Other States Have Rejected its WACC Recommendations.

Verizon attempts to defend its proposed WACC of 12.6% or even 12.95% on the ground that it is in line with the 12.16% adopted by the Department in 1996.[137] Verizon chooses to ignore that the FCC expressed serious concerns that the 12.16% was substantially excessive,[138] and that every state in the Verizon East region that has addressed the cost of capital issue in

(..continued)

[129] Verizon New Jersey Revised 271 Application, at 7.
[130] Ex. ATT-8, Excerpt from *New Jersey UNE Rates Order*, at 5.
[131] *New Hampshire 271 Conditions Order*, at 1.
[132] Ex. ATT-1, Hirshleifer Direct, at 39-46.
[133] Ex. ATT-1, Hirshleifer Direct, at 43.
[134] Ex. ATT-1, Hirshleifer Direct, at 4.
[135] Ex. ATT-1, Hirshleifer Direct, at 19.
[136] *Id*. at 37.
[137] Verizon Initial Brief, at 36, 39, 44.
[138] *See* AT&T's Initial Brief, at 15, and *FCC's Massachusetts 271 Order*, ¶ 38.

recent years has adopted a WACC far below what Verizon has recommended here.[139] Massachusetts is the only state in the Verizon-East territory that has adopted a WACC even close to the WACC which Verizon has proposed in the present case. For this reason the FCC expressed serious reservations about the current 12.16% Massachusetts WACC in its Massachusetts 271 Order, where it questioned "whether this relatively high cost of capital is sufficiently justified by state-specific factors."[140]

Significantly, Dr. Vander Weide admits there is nothing unique about Massachusetts that should result in a higher or lower average cost of capital for Verizon to provide UNEs in Massachusetts than for Verizon to provide UNEs in other states.[141] It is also significant that, as part of its application to the FCC for Section 271 relief in Rhode Island, Verizon admitted that Rhode Island's WACC of 9.5% complied with TELRIC principles and was reasonable.[142] As noted in AT&T's Initial Brief, this background shows the emptiness of Verizon's criticisms of Mr. Hirshleifer's proposed 9.58% WACC (Mr. Hirshleifer adjusted his estimate from 9.54% to 9.58% in his Surrebuttal Testimony[143]). Indeed, the recent New Jersey and New Hampshire decisions, which adopted WACCs far below that proposed by Mr. Hirshleifer here, suggests that the Department should look to Mr. Hirshleifer's WACC recommendation as an upper, not a lower, bound.

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[139] Ex. ATT-Vz 10-3; AT&T's Initial Brief at 14.

[140] *FCC's Massachusetts 271 Order*, ¶ 38.

[141] Tr. 51, 89, 1/7/02 (Vander Weide).

[142] Ex. ATT-9, Joint Declaration of Donna C. Cupelo, Patrick A Garzillo and Michael J. Anglin, filed by Verizon-RI in CC Docket No. 01-324, in support of Verizon's Section 271 Application for Rhode Island.

[143] Ex. ATT-3, Hirshleifer Surrebuttal, at 90.

2. Verizon's Discussion of Risk Has Little Relevance, and Is Offered in Support of Only a Tiny Portion of Verizon's WACC Overstatement.

a. Dr. Vander Weide Admits that the Risk Faced by Verizon Has Very Little Impact on His Estimate of Verizon's WACC.

Verizon's extravagant claims that the wholesale market for UNEs is (or will be, or should be presumed to be) highly competitive are a red herring, that have little to do with and serve to draw attention from the manner in which Verizon has unduly inflated its WACC assumption.

Verizon's primary argument in its Initial Brief is that Mr. Hirshleifer has purportedly underestimated the risk faced by Verizon and that this has caused him to understate Verizon's WACC.[144] As a result, the cost of capital section of Verizon's Initial Brief focuses primarily on the different choices that its witness Dr. Vander Weide and AT&T's witness Mr. Hirshleifer made regarding the appropriate capital structure and proxy group that should be used in determining the WACC of a company whose sole business is providing wholesale UNEs.[145] Verizon claims that Mr. Hirshleifer has understated the risks that Verizon will face in the wholesale UNE market and that this has led Mr. Hirshleifer to adopt an inappropriate capital structure and proxy group.[146]

Although they are material, the capital structure and proxy group factors are relatively small drivers of the overall WACC. Verizon seems to ignore the testimony of its own witness, Dr. Vander Weide, who made clear that the alternative capital structure and proxy group assumptions offered in this case have only a *de minimus* effect on the dueling estimates of the appropriate WACC.[147] Dr. Vander Weide has admitted that the choice of comparable proxy group has far less impact on the final WACC than the choice of an appropriate DCF model, and that at most it accounts for 40 of the 341 basis point difference between the WACC estimates of

[144] Verizon Initial Brief, at 36-45.
[145] Verizon Initial Brief, at 42-45.
[146] Verizon Initial Brief, at 40-45.

Dr. Vander Weide and Mr. Hirshleifer.[148] Dr. Vander Weide has also admitted that capital structure accounts for very little of the difference between the estimates of the experts in this case.[149] In fact, as AT&T noted in its Initial Brief, capital structure accounts for only between 25 basis points (when applied to Mr. Hirshleifer's reasonable cost of equity estimate) and 40 basis points[150] (when applied to Dr. Vander Weide's unreasonable cost of equity estimate) of the difference between the WACC estimates of AT&T and Verizon.[151]

Thus, the most significant driver of the difference between the WACC estimates of the two parties is neither proxy group nor capital structure, but rather is the different assumptions that they made regarding the proper DCF model. Although Verizon spends very little time discussing this issue, it is clear that Verizon's use of a DCF analysis that assumes Verizon will grow at a rate greater than the national economy forever is a much greater factor in Verizon's WACC estimation than is any purported risk that Verizon allegedly faces in the wholesale market for UNEs.[152]

b. The Department Should Reject Dr. Vander Weide's Single-Stage DCF Model and His Incredible Assumption that Verizon Can Forever Grow Faster than the Economy As a Whole.

The biggest flaw in Dr. Vander Weide's study was his use of a single-stage DCF model for estimating Verizon's cost of equity, a choice that had nothing to do with the alleged risk that Verizon faces.[153] Dr. Vander Weide's single-stage DCF model makes the unreasonable assumption that Verizon can continue to grow at a rate exceeding the growth rate of the economy

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147 Tr. 46-47, 1/7/02 (Vander Weide).
148 Tr. 46-47, 1/7/02 (Vander Weide).
149 Tr. 46-47, 1/7/02 (Vander Weide).
150 Tr. 45, 1/17/02 (Vander Weide).
151 AT&T's Initial Brief, at 24.
152 Verizon Initial Brief, at 45
153 AT&T's Initial Brief, at 16-18.

as a whole ***forever***.[154] This means that Dr. Vander Weide's model literally assumes that at some point in the future Verizon will subsume the entire U.S. economy. This assumption is implausible, and indeed indefensible.

Dr. Vander Weide's error causes him to overstate Verizon's cost of equity capital by at least 371 basis points.[155] Because, as noted in AT&T's Initial Brief, Verizon uses a capital structure consisting of 75% equity and only 25% debt, overstating Verizon's cost of equity by 371 basis points leads to an overstatement of Verizon's overall WACC by more than 278 basis points (371 * 0.75 = 281).[156] This is by far the most substantial driver of the difference in the parties' WACC estimates.

In contrast, Mr. Hirshleifer uses a three-stage DCF model which does not assume that Verizon will grow to subsume the entire economy of the United States at a future point in time.[157] In his three-stage model, Mr. Hirshleifer uses a first stage that lasts five years, because that is the longest horizon over which analysts' forecasts of growth are available.[158] In this first stage, Mr. Hirshleifer assumes that Verizon will grow at rates substantially above the growth rate of the U.S. economy. In the second stage, which lasts an additional fourteen years, Mr. Hirshleifer assumes that Verizon's growth rate will continue to be above average, but will slow a little bit each year until it reaches the same growth level as the U.S. economy as a whole in year twenty.[159] Finally, in the final stage, beginning in year twenty, Mr. Hirshleifer assumes that Verizon's growth rate will be equal to the growth rate of the economy as a whole into perpetuity.[160]

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[154] Ex. ATT-2, Hirshleifer Rebuttal, at 5-6.
[155] Ex. ATT-2, Hirshleifer Rebuttal, at 10.
[156] AT&T's Initial Brief, at 17.
[157] Ex. ATT-2, Hirshleifer Rebuttal, at 6-7.
[158] Ex. ATT-1, Hirshleifer Direct, at 15.
[159] Ex. ATT-1, Hirshleifer Direct, at 15.
[160] Ex. ATT-1, Hirshleifer Direct, at 15.

Verizon misrepresents the evidence when it says that Mr. Hirshleifer "ignore[s] that it is common for companies to grow at rates much greater than that of the GNP for long periods of time," and that a company may "typically" continue to grow faster than the economy as a whole "for a period of longer than five years in a rapidly growing industry such as telecommunications."[161] In fact, Mr. Hirshleifer has allowed for the possibility that Verizon may outpace the U.S. economy for a full nineteen years.[162] Nineteen years of above-average growth is a very "long period of time." What Mr. Hirshleifer refuses to do is to indulge in the fantasy that Verizon will someday subsume the entire U.S. economy.

Mr. Hirshleifer's approach is backed by a wide range of experts and academics that support use of multi-stage DCF models,[163] whereas Dr. Vander Weide's single-stage DCF approach does not appear to be supported by any expert other than Dr. Vander Weide himself.[164] Surely if Dr. Vander Weide's arguments were plausible, he would have been able to cite to at least one scholar or expert who supported his view.[165] His inability to do so constitutes a particularly damning critique of his model and assumptions. Dr. Vander Weide's claims regarding the cost of equity capital lack academic support and are based on assumptions that make no sense. The Department should instead look to the wisdom of the range of scholars, academics and other state commissions that have adopted the far more reasonable multi-stage DCF model proposed by Mr. Hirshleifer.

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[161] Verizon Initial Brief, at 46.
[162] *E.g.*, Tr. 196, 1/7/02 (Hirshleifer).
[163] Ex. ATT-1, Hirshleifer Direct, at 12-14.
[164] AT&T's Initial Brief, at 17-18.
[165] Ex. ATT-3, Hirshleifer Surrebuttal, at 2.

3. Though of Relatively Little Significance, Verizon's Risk Assumptions are Unreasonable and Cause Verizon to Adopt an Improper Proxy Group and Capital Structure.

Verizon's discussion of risk assumptions is an effort to defend both its use of the S&P industrials as a proxy group and its assumptions regarding capital structure.[166] But Verizon has failed to prove that its assumptions regarding risk are either appropriate or have any factual basis. Furthermore, Verizon's risk assumptions in no way justify its misspecification of the proxy group and of the capital structure.

a. Verizon Has Failed to Prove That the Wholesale Market for UNEs Is or Should Be Presumed to Be Highly Competitive.

Even if the level of Verizon's risk had a substantial impact on the determination of its WACC, which it does not, Verizon's assertions regarding the level of risk in the wholesale UNE market are unreasonable and unproven. Verizon asserts that consistency with the premises of TELRIC requires the Department to *assume* that effective competition for wholesale services will exist during the next few years, *regardless of* whether Verizon *in fact* is likely to face effective competition for the business of supplying UNEs at wholesale.[167] Verizon makes no attempt to reconcile this position with the relevant language of *Local Competition Order* ¶ 702, however, and the two are irreconcilable.

Paragraph 702 requires a detailed factual inquiry ("demonstrating with specificity") into the competition that Verizon "faces"—not the hypothetical level of risk that Verizon *would* face *if* (contrary to fact) the local market were fully competitive or contestable.[168] The factual inquiry mandated by the FCC, and the FCC-imposed allocation of the burden of proof for resolving any disputed facts, would be pointless if the FCC had meant for state commissions simply to *presume* the existence of intense competition. Indeed, the *Local Competition Order* makes clear that one

[166] Verizon Initial Brief, at 42-45.
[167] Verizon Initial Brief, at 37.

of the main purposes of TELRIC pricing is to enable new entrants to share in the incumbents' scale and scope economies. One of those economies is the reduced cost of capital enjoyed by Verizon as a result of its near-monopoly scale and scope in Massachusetts local markets. As the FCC has explained:

> The incumbent LECs have economies of density, connectivity, and scale; traditionally, these have been viewed as creating a natural monopoly. As we pointed out in our NPRM, the local competition provisions of the Act require that these economies be shared with entrants. We believe that they should be shared in a way that permits the incumbent LECs to maintain operating efficiency to further fair competition, and to enable the entrants to share the economic benefits of that efficiency in the form of cost-based prices.[169]

Indeed, Verizon's own economic witnesses have explained that, under TELRIC, rates must be set reflecting Verizon's continuing to function as "monopolist" in the wholesale UNE market.[170]

Verizon claims, falsely, that "AT&T/WorldCom have conceded that the forward-looking cost of capital used in UNE cost studies must assume a fully competitive market" through testimony before the FCC by Ms. Terry Murray in the Virginia arbitration.[171] In fact – as Mr. Hirshleifer explained when he was asked about the one answer by Ms. Murray that Verizon partially quotes in its brief – Ms. Murray's answer was in response to questions by FCC staff asking in substance "that if for the moment we set aside the requirements of TELRIC, what assumptions would be made under perfect contestability."[172] Mr. Hirshleifer was present during Ms. Murray's testimony in the Virginia proceeding, and his explanation that Ms. Murray was discussing cost of capital under the assumption of perfect contestability, not under the TELRIC methodology, is unchallenged. Ms. Murray herself has stated that Mr. Hirshleifer's assumptions

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[168] *FCC's First Local Competition Order*, at ¶ 702.

[169] *FCC's First Local Competition Order*, at ¶ 11.

[170] *See* AT&T's Initial Brief, at 20-21; Timothy Tardiff, William Taylor, Charles Zarkada, and Jaime d'Almeida, *An Economic Evaluation of Network Cost Models*, Appendix A at 4, published by the National Economic Research Associates (Aug. 7, 2000); reprinted in relevant part at Ex. ATT-3, Hirshleifer Surrebuttal, Attachment JH-12.

is in no way inconsistent with her testimony.[173] Thus, Verizon is deliberately distorting the meaning and import of Ms. Murray's prior testimony.

Verizon also suggests in its initial brief that it faces substantial risk because of the possibility of stranded investment stemming from the alleged ability of CLECs to stop using Verizon UNEs in the future.[174] This assertion fails for a number of reasons.

First, it has been expressly rejected by the FCC. The FCC found that there is no basis for merely assuming that ILECs would face a higher cost of capital on the theory that there could be a risk of competitive entry by CLECs that could lead to stranded investment.[175] It explained that this claim "unrealistically assumes that competitive entry would be instantaneous," but that "[t]he more reasonable assumption of entry occurring over time will reduce the costs associated with sunk investment."[176] The FCC also found it "unlikely" that an ILEC's installed equipment "would become valueless once facilities-based competition begins," since "[i]n a growing market, there most likely would be demand for at least some embedded telecommunications equipment, which would therefore retain its value."[177]

Second, as noted in AT&T's Initial Brief, Verizon's claim directly contradicts the projections reflected in Verizon's own Business Plan access line forecast for Massachusetts.[178] Verizon's actual access line demand forecast cannot be squared with Dr. Vander Weide's unsupported and unsupportable assumption that Verizon will face tremendous risk in the

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[171] Verizon Initial Brief, at 38.

[172] Tr. 184-185, 1/7/02 (Hirshleifer).

[173] Tr. 186, 224, 1/7/02 (Hirshleifer).

[174] Verizon Initial Brief, at 3, 21, 41.

[175] *FCC's First Local Competition Order*, at ¶¶ 687-688.

[176] *Id.* ¶ 688.

[177] *Id.* ¶ 688.

[178] *See* AT&T's Initial Brief, at 21-22; Ex. ATT-VZ 4-29, Second Supplemental Reply, Proprietary Attachment, at 3.

wholesale market for network elements. Dr. Vander Weide's conjecture regarding Verizon's risk is simply not credible and should be ignored.

Third, Verizon has provided no substantial evidence that it faces any real competition in the wholesale UNE market. Verizon does assert that "during the period from January 2001 through December 2001, there was a net increase of more than 261,000 lines sold by competitors (for a total 1,112,100), and competitors are increasingly offering service based on UNEs or their own facilities, rather than pure resale."[179] But Verizon concedes that it has no proof that these lines represent facilities-based competition: Verizon is asserting that these lines represent CLEC "service based on UNEs or their own facilities."[180]

Verizon makes no claim, and to the contrary has conceded that it is unable to tell, the extent to which this data demonstrates the existence of full facilities-based competition. The only support for these numbers provided by Verizon is its reference to the E911 database statistics it provided in response to RR DTE-3.[181] The Department has incorporated by reference into this proceeding the record of Docket DTE 01-31, the ongoing alternative regulation proceedings, so that it would have available the full information needed to evaluate the E911 data upon which Verizon relies for this point.[182]

Verizon has admitted that the E911 database includes not only customers served by a CLEC over its own facilities, but also includes CLEC retail customers served over Verizon facilities through special access services as well as through UNE loops.[183] Verizon has further admitted that it cannot identify which parts of the "universe of CLEC switched lines" reported in

[179] Verizon Initial Brief, at 40.
[180] Verizon Initial Brief, at 40.
[181] Verizon Initial Brief, at 40.
[182] Tr. 99, 1/7/02 (Hearing Officer ruling, by agreement of all parties).
[183] Docket 01-31, Doane Rebuttal Testimony, at 16, n. 10; Docket 01-31, Tr. 93, 208-209, 12/19/01 (Conroy).

the E911 database represent full facilities-based competition.[184] Based on the only method Verizon has presented for measuring full facilities-based competition, Verizon cannot identify the full facilities-based lines and therefore Verizon cannot measure facilities-based competition in Massachusetts.[185] Thus, Verizon has failed to meet its burden of proving that it in fact faces substantial wholesale competition in Massachusetts.

Not only does Verizon's assertion regarding the number of retail lines sold by competitors include lines being served over Verizon facilities, but there is no evidence that the numbers drawn by Verizon from the E911 database represent the actual physical facilities in existence today. To the contrary, the record in Docket 01-31 makes clear that the E911 data probably overstates the extent to which Verizon faces competition in the provisioning of physical facilities. It is common for a business with one main telephone number to be served by a "T1" loop that has 24 voice grade channels, which connect into a PBX switch on the end-user's premises, which in turn can support as many as 300 to 500 employees each with their own "direct inward dial" ("DID") numbers.[186] But Verizon has no idea whether this common scenario is reported by CLECs to the E911 database as one line, 24 lines, or 300-500 lines.[187] It is undisputed that carriers may or may not report to the E911 database DID numbers behind a PBX switch.[188] AT&T, the only carrier whose E911 reporting practices are included in the record in Docket 01-31, reported every telephone number behind a PBX switch, including DID numbers, and including both ported and AT&T assigned numbers, before the first quarter 1999.[189] In other words, of the three sets of numbers in the example above (1, 24 or 300-500),

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[184] Docket 01-31, Doane Rebuttal Testimony, at 16, n. 10; Docket 01-31, Tr. 93, 208-209, 12/19/01 (Conroy).
[185] Docket 01-31, Tr. 194, 12/19/01 (Conroy).
[186] Docket 01-31, Exh. ATT-5 (November 13, 2001 Waldbaum Testimony), p. 4, n. 2.
[187] Docket 01-31, Exh. AG-VZ 2-5(b) ("Verizon MA cannot identify all situations where the number of listings is not equal to the number of lines in service for a CLEC.")
[188] Docket 01-31, Tr. 12/20/01 at 432 (Conroy).
[189] Docket 01-31, Exh. ATT-5 (November 13, 2001 Waldbaum Testimony), p. 4.

AT&T reported 300 to 500 telephone numbers to the E911 database, even though only a single T-1 line was used to provide the service. Since then, AT&T has included in the E911 database all telephone numbers behind a PBX switch when a customer migrates from Verizon.[190] Verizon has no information about the E-911 reporting practices of CLECs.[191]

Moreover, the E911 database is not necessarily purged of old information. The Verizon data is a "snapshot" of what the database contains at a given time.[192] Thus the data before the Department may in fact contain lines no longer in existence.[193]

Thus, there is no way of knowing what the CLEC count taken by Verizon from the E-911 database means, and whether it comes anywhere close to being a reasonable proxy for the extent of facilities-based competition in Massachusetts.[194] The FCC has made clear that Verizon "bear[s] the burden of demonstrating with specificity that the business risks that they face in providing unbundled network elements and interconnection services would justify" a higher cost of capital rate.[195] As discussed above, Verizon merely assumes the existence of such risks, but fails to prove that they exist in the wholesale market for providing UNEs.

b. Potential Risk from Future Competition is Already Reflected in the Market Prices for Telephone Holding Companies' Stock, and There is No Basis for Using the S&P Industrials as a Proxy Group.

Although determining the appropriate proxy group presents a challenge because there are no companies dedicated solely to the wholesale provisioning of UNEs for which market data is available, the Department should seek to use a proxy group facing similar risks to the business

190 *Id.*
191 Docket 01-31, Tr. 12/20/01, at 434 (Conroy); Exh. ATT-VZ-2-1 (a-b); Exh. AG-VZ-2-5(e).
192 Docket 01-31, Exh. AG-VZ-2-5(c); Tr. 1/3/02, at 686.
193 Docket 01-31, Exh. AG-VZ-2-5(c); Tr. 1/3/02, at 686.
194 Docket 01-31, Tr. 1/3/02, at 738 (Waldbaum).
195 *FCC's First Local Competition Order* ¶ 702. *See also* Tr. 181, 183, 1/7/02 (Hirshleifer).

being modeled — Verizon's wholesale UNE business.[196] In doing so, the Department is faced with two very different approaches. On the one hand, it can look to Mr. Hirshleifer, who based his analysis on companies similar to Verizon — the list of telephone operating companies in Standard and Poor's Industry Survey.[197] On the other hand, it can look to Dr. Vander Weide, who inexplicably chose the S&P Industrials, a disparate group of companies that face vastly different risks and opportunities than Verizon or other telecommunications companies.[198] As was demonstrated in AT&T's Initial Brief and was further demonstrated above, TELRIC requires the rejection of Dr. Vander Weide's erroneous assumptions and the adoption of Mr. Hirshleifer's reasonable proposal.

Dr. Vander Weide's approach has been almost universally rejected by the other state commissions in the Verizon-East region.[199] For example, the Maine Public Utilities Commission has stated that "the S&P Industrials are not a reasonably comparable group of companies, because the business risk inherent in their operations generally exceeds the risk faced by a provider of UNEs, and their forecasted growth rates are well above what we would expect for providers of basically monopoly services."[200] Similarly, in its recent UNE proceeding, the State of Vermont Public Service Board determined that the S&P Industrials were not comparable to Verizon, because "the business of selling network elements should present relatively low risks in the intermediate term."[201]

In any case, any purported risk from future competition is already reflected in the market prices for the telephone holding companies' stock.[202] This is undisputed. In the words of Dr.

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196 Ex. ATT-1, Hirshleifer Direct, at 6.
197 Ex. ATT-1, Hirshleifer Direct, at 7.
198 Ex. ATT-2, Hirshleifer Rebuttal, at 11.
199 AT&T's Initial Brief, at 22.
200 *Maine UNE Rates Order*, at 20.
201 *See Vermont UNE Rates Order*, at 33.
202 Tr. 182, 194, 1/7/02 (Hirshleifer); Ex. ATT-2, Hirshleifer Rebuttal, at 23.

Vander Weide, when investors "estimate the risk of a particular investment" they "consider all the risks that a firm might incur over the future life of the company."[203] Since risks from future competition are already reflected in the market price of the telephone holding companies, there is no need and indeed it is inappropriate to jigger one's analysis to inflate the calculated cost of capital on the basis of abstract assertions of future risk.

c. Verizon Assumes a Capital Structure with Too Much Equity.

In the present case, Verizon has proposed a capital structure consisting of 75% equity and 25% debt,[204] while AT&T has proposed a capital structure of 65.5% equity and 34.5% debt.[205] As AT&T noted in its Initial Brief, almost every state that has set UNE rates in recent years has adopted a Capital Structure more in line with AT&T's recommendation in this case than Verizon's recommendation.[206] Indeed, the majority of states have adopted capital structures containing even more debt and less equity than AT&T has proposed in this case.[207] Thus, if anything, AT&T's proposed capital structure is conservative and skewed in favor of Verizon.

Because Verizon has been unable to cite to any state-specific factors that would suggest that its capital structure should contain more equity than in the numerous other jurisdictions that have rejected Verizon's arguments, the Department should adopt AT&T's more reasonable recommendation. As AT&T noted in its initial brief, however, the differences between Mr. Hirshleifer's and Dr. Vander Weide's capital structure assumptions only account for between 25 and 40 basis points of the difference between their overall WACC proposals.[208]

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[203] Ex. VZ-3, Vander Weide Direct, at 18.
[204] Ex. Vz-3, Vander Weide Direct, at 45; Tr. 44, 1/17/02 (Vander Weide).
[205] Ex. ATT-1, Hirshleifer Direct, at 4.
[206] AT&T's Initial Brief, at 24; Ex. ATT-Vz 10-3.
[207] Ex. ATT-Vz 10-3.
[208] AT&T's Initial Brief, at 24.

4. Verizon's Further Attacks on Mr. Hirshleifer's Recommendation are Unfounded.

a. An Old AT&T Internal Hurdle Rate for Investments in Local Telephony is Irrelevant.

Verizon points to an old AT&T internal cost of capital hurdle rate, and attempts to characterize it as an admission that the 9.58 percent cost of capital proposed by Mr. Hirshleifer is too low.[209] Verizon's argument is without merit for several reasons.

First, the FCC has specifically ruled that internal hurdle rates should not be used as the cost of capital for estimating UNE costs because such hurdle rates typically exceed the market cost of capital.[210] Indeed, Mr. Hirshleifer explained that the old hurdle rate cited by Verizon is being revised, and that it is going to be "quite a bit lower" going forward.[211]

Second, even if there were evidence that an internal hurdle rate is some indication of the market cost of capital – which there is not – there is no reason that AT&T's old hurdle rate in evaluating possible entry into the local exchange market is a relevant indicator of Verizon's cost of capital in the wholesale UNE market. AT&T estimates a higher cost of capital for its entry into the ILEC-dominated local exchange business (not just into the network wholesale business) precisely because the ILECs are in control of the market and the prospects for successful entry are so meager. Verizon faces much lower risks than do the new entrants.[212] Verizon has both a ubiquitous network and a near-monopoly market share in virtually all of its local markets. Thus, Verizon's "existing infrastructure enables it to serve new customers at a much lower incremental cost than a facilities-based entrant that must install its own switches, trunking and loops to serve

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[209] Verizon Initial Brief, at 36, 49-50.
[210] *FCC's First Local Competition* Order, ¶ 689.
[211] Tr. 191, 1/7/02 (Hirshleifer).
[212] *FCC's First Local Competition Order*, ¶ 10.

its customers."[213] Hence, one should expect a CLEC's internal hurdle rate to exceed Verizon's cost of capital — and exceed it by a wide margin.

b. Verizon's Purported "Tests Of Reasonableness" Are Flawed.

As noted in AT&T's Initial Brief, Dr. Vander Weide cannot cite a single voice of support for his single-stage model which presumes that Verizon will someday control the entire U.S. economy.[214] Unable to find any support for his approach, Dr. Vander Weide invents so-called "tests of reasonableness" with which he tries to attack Mr. Hirshleifer's analysis.[215] According to Verizon, Mr. Hirshleifer's model produces lower costs of equity for higher risk companies instead of producing higher costs of equity for such companies; this assertion is based on Dr. Vander Weide's belief that Mr. Hirshleifer's DCF model produces higher costs of equity for electric and natural gas distribution companies than for the S&P Industrials.[216] This argument is without substance for two reasons.

First, Dr. Vander Weide's analysis shows that he is not consistent regarding his position on sample size.[217] He argues in his rebuttal testimony that an average of four to five companies will not yield an accurate estimate of a group's cost of capital, presumably because of measurement error.[218] Yet, for purposes of this alleged ranking comparison, he is quite comfortable using an average of only three "natural gas distribution companies", even though there are many such companies doing business in the United States.[219] Second, Dr. Vander Weide also makes some rather broad, and incorrect, assumptions about relative risk. For example, Dr. Vander Weide's "electric" group is composed of companies which are involved in

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213 *FCC's First Local Competition* Order, ¶ 10.
214 AT&T's Initial Brief, at 17-18.
215 Verizon Initial Brief, at 45-48.
216 Verizon Initial Brief, at 46.
217 Ex. ATT-3, Hirshleifer Surrebuttal, at 85.
218 Ex. ATT-3, Hirshleifer Surrebuttal, at 85.
219 Ex. ATT-3, Hirshleifer Surrebuttal, at 85.

electric, gas and nuclear energy, telecommunications, real estate, financial services and international businesses. Over the past year there have been unanticipated increases in natural gas prices which have had dramatic impact on certain electricity markets, such as in California.[220] As a result PG&E has entered bankruptcy and Edison teeters on the brink.[221] It is apparent that these companies are no longer "low risk," despite Dr. Vander Weide's attempt to portray them that way.

Dr. Vander Weide also offered statistical regressions as another attempt to impugn the reasonableness of Mr. Hirshleifer's three-stage model.[222] But in so doing Dr. Vander Weide incorrectly assumed that there is a direct linkage between the CAPM and DCF models. That incorrect assumption alone renders the regression hypothesis meaningless.[223] In addition, Dr. Vander Weide again ignored the analytical procedures that Mr. Hirshleifer used. For example, Mr. Hirshleifer's approach involved averaging betas and costs of equity of comparable companies in order to reduce measurement error, but Dr. Vander Weide did no such averaging and simply compared raw Value Line betas against raw costs of equity.[224] Mr. Hirshleifer did not use Value Line betas, and Dr. Vander Weide has himself said they are inappropriate, so this critique is not relevant.[225] Dr. Vander Weide does not explain why he did not use other measures of beta, such as averaged betas, or BARRA predicted betas, or Ibbotson Associates' betas, or betas calculated over one or two-year time periods.[226] Tellingly, Dr. Vander Weide relies on betas to criticize Mr. Hirshleifer, but in a previous article Dr. Vander Weide concluded based on

[220] Ex. ATT-3, Hirshleifer Surrebuttal, at 85.
[221] Ex. ATT-3, Hirshleifer Surrebuttal, at 85-86.
[222] Verizon Initial Brief, at 47.
[223] Ex. ATT-3, Hirshleifer Surrebuttal, at 86.
[224] Ex. ATT-3, Hirshleifer Surrebuttal, at 86.
[225] *Id.*
[226] *Id.*

a regression analysis of price-to-earnings ratios against potential explanatory variables (such as betas, forecasted growth rates, and others) that "the beta is never statistically significant …"[227]

Dr. Vander Weide is actually attacking a straw man of his own making. His criticisms are derived by ignoring the analytical procedures that Mr. Hirshleifer recommended for estimating the cost of capital, and then performing so-called "tests" that give Dr. Vander Weide results that he can criticize.[228] This premise is analogous to taking apart a car, throwing away half of the parts, attempting to reassemble the parts without the benefit of the blueprints, and then pronouncing that there are problems with the car.[229] There may be problems with the constructs analyzed by Dr Vander Weide, but those constructs differ materially from Mr. Hirshleifer's actual analysis.

B. Depreciation: The Department Should Adopt the FCC's Forward-Looking Prescribed Lives, and Reject the Unreasonably Short Lives Used by Verizon.

1. The FCC Prescription Lives Recommended By Mr. Lee Are Forward-Looking and Are Not Outdated.

In its Initial Brief, Verizon claims that the FCC "has repeatedly shortened the range of permissible lives" since it prescribed its Massachusetts state specific lives in 1996.[230] Verizon then asserts that "Mr. Lee ignores this clear evidence that even the FCC no longer contends that its 1996 lives reflect current, forward-looking depreciable lives: he generally proposes lives that are *longer* than those the FCC has prescribed since 1996."[231] But those assertions are belied by the facts.

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[227] Ex. ATT-3, Hirshleifer Surrebuttal, at 86-87 *citing* James H. Vander Weide and Willard T. Carleton, "Investor Growth Expectations: Analysts vs. History," Journal of Portfolio Management, Spring 1988, p. 82.

[228] Ex. ATT-3, Hirshleifer Surrebuttal, at 82.

[229] Ex. ATT-3, Hirshleifer Surrebuttal, at 82-83.

[230] Verizon Initial Brief, at 30.

[231] Verizon Initial Brief, at 30, fn. 17.

Mr. Sovereign was only able to identify one account for which the FCC has changed its prescribed life range since 1996.[232] In 1999, the FCC changed the range for digital switching from 16 – 18 years to 12-18 years. As Mr. Lee noted at the hearings, the FCC's 1996 prescribed life for digital switching for Massachusetts is 15 years, which is precisely at the mid-point of the FCC's updated range.[233]

Furthermore, the FCC's 1996 prescribed lives for Massachusetts are actually shorter than or equal to the midpoint of the FCC's updated nationwide range for every account except for one – Poles. Indeed, in 15 out of 20 accounts, the Massachusetts specific lives are ***shorter*** than the midpoint of the FCC's range. This demonstrates that the lives prescribed by the FCC for Verizon-MA were forward-looking at the time that they were prescribed and remain forward-looking today. This can be seen in the following table, which compares the projection lives that the FCC prescribed for Massachusetts in 1996 with the midpoint of the nationwide range of lives that the FCC prescribed in 1999.

PROJECTION LIVES (YEARS)[234]

Account	VZ-MA Proposed	FCC Mass	Midpoint of FCC's 1999 Range
Motor Vehicles	8	8.5	8.5
Other Work Equipment	10	12	15
Furniture	12	15	17.5
Office Support Equipment	10	10	12.5
Company Communications Eqpt	8	7	8.5
General Purpose Computers	5	6	7
Digital Switching	10	15	15
Operator Systems	10	8	10
Digital Circuit	9	11	12
Public Telephones	8	7	8.5

[232] Tr. 261, 1/8/02 (Sovereign).
[233] Tr. 310-311, 1/8/02 (Lee).
[234] Ex. ATT-6, Lee Rebuttal, at Attachment 1.

PROJECTION LIVES (YEARS)[234]

Account	VZ-MA Proposed	FCC Mass	Midpoint of FCC's 1999 Range
Poles	30	38	30
Aerial Cable – Metallic	18	22	23
Aerial Cable – Fiber	20	25	27.5
Underground Cable – Metallic	18	25	27.5
Underground Cable – Fiber	20	25	27.5
Buried Cable – Metallic	18	23	23
Buried Cable – Fiber	20	25	27.5
Intrabuilding Cable – Metallic	18	20	22.5
Intrabuilding Cable – Fiber	18	25	27.5
Conduit Systems	50	55	55

This chart also demonstrates that Verizon misspoke when it stated that Mr. Lee generally proposes lives that are *longer* than those the FCC has prescribed since 1996.[235] Comparing this chart to Verizon's response to RR-DTE 9 demonstrates that in more than half of the comparable accounts, Mr. Lee has proposed lives that are shorter than or equal to the lives that the FCC has prescribed since 1999 for the Verizon companies of Virginia, Ohio, Oregon, Washington, Idaho and Hawaii.[236]

Conversely, as this chart demonstrates, for 18 of 20 accounts, the lives proposed by Verizon in this case are below the midpoint of the FCC's range (the only exceptions being Operator Systems and Poles where Verizon's proposed lives are equal to the FCC midpoint). Even more astounding, as shown in Attachment 1 to Mr. Lee's Rebuttal testimony, in 13 out of 20 accounts, Verizon's proposed lives are below even the low end of the FCC's range.[237] This demonstrates that the lives proposed by Verizon are unreasonably short and are designed to

[235] Verizon Initial Brief, at 30, fn. 17.
[236] RR-DTE-9.
[237] Ex. ATT-6, Lee Rebuttal, at Attachment 1.

inflate UNE rates. In the face of this evidence, it is not at all surprising that 23 out of the 28 states that have ruled on the depreciation issue in recent years in UNE rate cases have chosen either the FCC prescribed lives or very similar state prescribed lives.[238]

Indeed, Verizon has admitted that the very short prescription lives it has assumed would never pass muster before the FCC. Mr. Sovereign acknowledged that the lives it relies upon "are short[er] than what we feel the FCC would prescribe."[239]

Verizon nonetheless criticized the FCC lives because, according to Verizon, those lives were set "prior to the explosion in technology and competition that the Act precipitated."[240] However, empirical data presented by Mr. Lee demonstrates that there has been little change in Verizon-MA's plant addition and retirement rates since 1996.[241]

Verizon-MA Plant Addition and Retirement Rates[242]

Year	Addition Rate	Retirement Rate
1997	8.4	3.9
1998	8.2	2.3
1999	8.4	2.8
2000	8.7	3.0

The lack of variance in addition and retirement rates since 1996 demonstrates that the Massachusetts specific lives set by the FCC adequately took account of any alleged "explosion in technology and competition" that has taken place since the passage of the Act. If the FCC lives were not forward-looking enough, as Verizon claims, there would have been greater variance in addition and retirement rates since 1996. Thus, Verizon's own experience puts the lie to Verizon's argument regarding the nature of the FCC lives.

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[238] AT&T's Initial Brief, at 26; Ex. ATT-5, Lee Direct, at 10-13; Ex. ATT-7, Lee Surrebuttal, at 4; Ex. ATT-VZ 24-2; Ex. ATT-VZ 24-3.

[239] Tr. 273, 1/8/02 (Sovereign).

[240] Verizon Initial Brief, at 30.

[241] Ex. ATT-6, Lee Rebuttal, at Attachment 3.

2. Verizon Unfairly Criticizes Mr. Lee for Relying on Facts that Underlie Verizon's Own Cost Studies.

Verizon repeatedly criticizes Mr. Lee for relying on facts that Verizon's own cost witnesses have confirmed to be true. It is bad enough that Mr. Sovereign offered testimony that is patently inconsistent with the witnesses that Verizon presented to discuss telecommunications technology. But it is even less understandable that Verizon in its initial brief would repeat Mr. Sovereign's mistaken accusations, even when they are inconsistent with the premises of Verizon's own cost studies.

For example, Verizon criticizes Mr. Lee's testimony that competition can be seen to spur innovations, such as DSL, which can lengthen the expected life of plant.[243] Verizon argues on brief that "extending the depreciable life of copper, as AT&T/WorldCom propose, … would be entirely out of sync with the dynamic telecommunications market."[244] But Verizon's criticism of Mr. Lee for assuming that DSL could extend the life of copper is unfounded. Verizon's own witnesses, discussing DSL, testified in their pre-filed testimony that "the fact that these technologies utilize copper loops enables telephone companies to extend the economic life of their embedded copper loop plant by using that plant to provision high-speed digital services."[245]

Similarly, Verizon criticizes Mr. Lee for not recognizing that SONET circuit equipment is purportedly becoming marginalized.[246] This is an unjust criticism, based on an incorrect premise, especially given that Verizon's study assumes an all SONET construct.[247] Verizon's recurring cost panel has explained that "Verizon MA is using SONET fiber optic transport rings for growth applications in the interoffice network," and for that reason forward-looking IOF

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[242] Ex. ATT-6, Lee Rebuttal, at Attachment 3.
[243] Verizon Initial Brief, at 29; Ex. ATT-6, Lee Rebuttal, at 15.
[244] Verizon Initial Brief, at 29.
[245] Ex. VZ-36, Verizon Recurring Cost Panel Direct, at 93.
[246] Verizon Initial Brief, at 29.

costs should reflect the use of SONET technology.[248] Verizon's criticism of Mr. Lee with respect to SONET technology cannot be squared with its own cost study.

Verizon also criticizes Mr. Lee and attempts to defend its own short lives by arguing that copper is being supplanted by fiber to the curb.[249] But elsewhere Verizon concedes that a forward-looking network would have a mix of copper and fiber feeder, and that copper will remain in use for the entire distribution plant.[250] If the entire distribution plant consists of copper wire, then Verizon has no fiber to the curb in its cost study. Verizon's baseless criticism of Mr. Lee contradicts its own affirmative case and assumptions.

Finally, Verizon attempts to justify its unreasonably short lives by arguing that digital switching lives should be short because digital switching is being overtaken by packet switching.[251] According to Verizon, because of this purportedly inevitable phenomenon, AT&T's proposed depreciation life for digital switching of 15 years is unreasonable.[252] But this argument cannot be squared with the record evidence. Verizon's own study assumes ***no*** packet switching.[253] This is unsurprising, since Verizon has stated that it has absolutely no plans to deploy packet switching in Massachusetts.[254]

3. Verizon's Other Criticisms of Mr. Lee's Position Are Invalid.

Verizon tries to discredit Mr. Lee's recommendation by claiming that Mr. Lee performed no study whatsoever before recommending the FCC state specific lives.[255] Much like many of Verizon's other attacks on Mr. Lee, however, this is a gross misrepresentation of the facts. In

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[247] Tr. 1260-61, 1/23/02 (Ankum); Tr. 2463-64, 1/31/02 (Gansert); Tr. 2531-32, 2/1/02 (Gansert).

[248] Ex. VZ-36, Verizon Recurring Cost Panel Direct, at 170.

[249] Verizon Initial Brief, at 29.

[250] Ex. VZ-36, Verizon Recurring Cost Panel Direct, at 71; Tr. 2576-2577, 2/1/02 (Anglin and Gansert); Tr. 3372, 2/7/02 (Gansert); Tr. 3405, 2/7/02 (Anglin).

[251] Verizon Initial Brief, at 29.

[252] Verizon Initial Brief, at 29.

[253] Tr. 305, 1/8/02 (Sovereign).

[254] Ex. ATT-VZ 1-8; Tr. 2410-2411, 2415-2416, 1/31/02 (Gansert).

fact, Mr. Lee studied the reserves, the additions and the retirements since 1996 "for all LECs, and for Massachusetts in particular – and indeed, by account for Massachusetts."[256] Mr. Lee's studies demonstrated that the state specific lives adopted by the FCC are forward-looking and are proper for use in a TELRIC cost study.

Verizon also criticizes Mr. Lee's observation that the forward-looking nature of the FCC lives is demonstrated by the increase in Verizon's depreciation reserve since those lives were prescribed.[257] Verizon's argument, however, only serves to point out the confusion of Verizon witness Lacey. As Mr. Lee explained during the hearings, Dr. Lacey's reserve analysis is fundamentally flawed because Dr. Lacey confuses the theoretical reserve (what the reserve should be) with the book reserve (what the reserve is).[258] As plant ages, its theoretical reserve increases, but whether or not its book reserve increases depends entirely upon the life used in the depreciation calculation.[259] The fact that since 1980 the book reserves of Verizon-MA, and all other LECs, have increased is a clear indication that the FCC has been prescribing forward-looking lives which adequately account for technological obsolescence as well as physical deterioration.[260]

Verizon also claims that its lives are appropriate for use because they are GAAP lives.[261] According to Verizon, GAAP lives "are intended to be inherently reliable and unbiased."[262] Verizon's argument, however, misses the point. As Mr. Lee explained in his Rebuttal Testimony, the FCC has recognized that financial book lives were not appropriate for use in

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[255] Verizon Initial Brief, at 34.
[256] Tr. 310, 1/8/02 (Lee).
[257] Verizon Initial Brief, at 32-33.
[258] Tr. 336-340, 1/8/02 (Lee).
[259] Tr. 336-340, 1/8/02 (Lee).
[260] Ex. ATT-6, Lee Rebuttal, at 12-13.
[261] Verizon Initial Brief, at 27, 34-35.
[262] Verizon Initial Brief, at 34.

regulation due to their conservative bias.[263] Furthermore, when cross-examined, Dr. Lacey conceded that GAAP requires the use of estimates resulting in lower income when measurement problems exist.[264] This would, in turn, result in the choice of shorter lives. Furthermore, to the extent that Verizon attempts to suggest that conservatism is no longer a guiding principle of GAAP,[265] this is simply not the case. As Mr. Lee emphasized during the hearings, the conservatism principle discussed in Concepts Statement No. 2 has been effect since 1980 and was unaffected by the 1993 rescission of APB Statement No. 4.[266] Verizon's own witness, Dr. Lacey, confirmed on cross-examination that the principle of conservatism remains an important part of GAAP, and dictates that – in Dr. Lacey's words – "where two estimates are about equally likely, you would choose the one that leads to the lower net-income number."[267] In the context of depreciation, picking the shorter lives in the face of uncertainty is the conservative choice dictated by GAAP. Therefore, GAAP lives still reflect the principle of conservatism which causes GAAP lives to be too short and inappropriate for use in a TELRIC study because they would lead to inappropriately high UNE rates.

Verizon also argues that its proposed lives are appropriate because they are comparable to those of its competitors and TFI's industry studies.[268] For a number of reasons, this argument is faulty. First, as was noted in AT&T's Initial Brief, the AT&T lives cited by Mr. Sovereign are ***remaining*** lives, not ***projection*** lives.[269] A projection life is the life that newly placed plant is expected to have over the course of its service life and is far different than the remaining life of a plant already in service, which is essentially the number of years that plant already in place is

[263] Ex. ATT-6, Lee Rebuttal, at 2-5.
[264] Tr. 256-258, 1/8/02 (Lacey).
[265] Verizon Initial Brief, at 35.
[266] R. 329-334, 1/8/02 (Lee).
[267] Tr. 258, 1/8/02 (Lacey).
[268] Verizon Initial Brief, at 35-36.
[269] AT&T's Initial Brief, at 32; Tr. 334-335, 1/8/02 (Lee).

expected to remain in service.[270] Verizon itself has admitted that remaining lives are far shorter than projection lives.[271] For example, as noted in AT&T's Initial Brief, Verizon's projection life for fiber in Pennsylvania is 20 years, but its remaining life for fiber is only 11 years.[272]

Second, as Mr. Lee has explained, Verizon's comparisons to other competitor's lives serve only to show that the GAAP principle of conservatism results in similar financial book lives for these comparables.[273] None of these GAAP lives are appropriate for use in regulation.[274] Finally, as Mr. Lee has also explained, TFI's life estimates have not proven accurate over the long run, and have been specifically rejected by the FCC.[275] This evidence is undisputed.

4. Verizon Tries to Ignore the Fact that the Overwhelming Majority of States Have Adopted Lives Identical or Quite Similar to the FCC's Prescribed Lives.

Finally, it is quite telling that Verizon's Initial Brief fails to even discuss what other states have decided when faced with the task of determining the appropriate depreciation lives for use in a TELRIC UNE study. As was noted in AT&T's Initial Brief, a full 23 out of 28 states that have ruled on the depreciation issue in recent years have adopted FCC lives or similar state prescribed lives.[276] Verizon has offered no explanation as to how all of these states made what Verizon apparently thinks were erroneous determinations. Verizon has failed to prove the existence of any Massachusetts-specific factors that would support use of shorter economic lives in this proceeding.

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[270] Tr. 334-335, 1/8/02 (Lee).
[271] Tr. 334-335, 1/8/02 (Lee).
[272] AT&T's Initial Brief, at 32; Tr. 334-335, 1/8/02 (Lee).
[273] Ex. ATT-6, Lee Rebuttal, at 6.
[274] Ex. ATT-6, Lee Rebuttal, at 6.
[275] Ex. ATT-6, Lee Rebuttal, at 7-11.
[276] AT&T's Initial Brief, at 26; Ex. ATT-5, Lee Direct, at 10-13; Ex. ATT-7, Lee Surrebuttal, at 4; Ex. ATT-VZ 24-2; Ex. ATT-VZ 24-3.

These facts serve to validate the Department's decision to follow the guidance of the FCC in the 1996 *Consolidated Arbitrations* proceeding and provide solid guidance for the department today. Thus, AT&T again respectfully urges the Department to follow the guidance of the FCC and the overwhelming majority of other states and adopt the Massachusetts-specific FCC lives, as recommended by Mr. Lee.

III. SWITCHING: VERIZON HAS NOT JUSTIFIED ITS GROWTH-ONLY SWITCH PRICING, ITS DUF CHARGES, OR ITS PLAN TO PRICE RECIPROCAL COMPENSATION TERMINATION DIFFERENTLY THAN UNBUNDLED SWITCHING.

A brief overview of the key switch cost issues can be found in Section I.A.2. beginning at page 10 above. As explained there, the record evidence shows that TELRIC-compliant switching rates for Massachusetts for the key rate elements should fall within the range represented by the last two columns of numbers in the table at the end of that section. This section will respond directly to specific additional points raised in Verizon's initial brief.

A. Switch Material Prices: Verizon's Growth-Only Discounts Violate TELRIC and Ignore the Evidence on What Verizon Actually Pays for Switches.

Verizon's proposed switch rates are based entirely, 100 percent, on the high prices that Verizon pays for so-called growth parts. Verizon ignores the substantially lower prices that it actually pays for new switches, and it ignores the FCC's recent rejection of growth-only switch pricing in the Rhode Island 271 order. The appropriate basis for setting UNE switch rates are the much lower prices that Verizon actually pays when it buys a new switch. This is consistent with the FCC's recent reminder that unbundled switch rates must conform to "the assumption in TELRIC pricing of a forward-looking network built from scratch, given the location of existing wire centers."[277] The record evidence in this case demonstrates that if the Department were

[277] *FCC's Rhode Island 271 Order* ¶ 34, citing *FCC's First Local Competition Order*, ¶ 685 and ¶ 677 fn. 1682, and citing 47 C.F.R. § 51.505.

nonetheless disinclined to set UNE rates based on 100% new switch material prices, the role of the higher growth-part pricing must be quite modest, and the ratio of new switch pricing to growth part pricing should be no lower than 90/10.

1. Verizon Violates TELRIC by Basing its Switch Cost Calculations on 100% Growth-Part Pricing.

Verizon says that its cost study assumes switch material prices for equipment Verizon "expects to deploy going forward," taking as given the existing network.[278] Verizon has stated that going forward it does not expect to purchase any new switches in Massachusetts, but instead will keep in place its existing digital switches and augment their capacity as needed.[279] It argues that "Verizon MA's actual forward-looking costs … will be for upgrades and growth additions only," and that it should therefore be permitted to set its unbundled switching rates on the assumption that its entire switching capacity is purchased at the very high growth-part pricing.[280] This is Verizon's justification for calculating switch costs based entirely on the prices it would pay "as it incrementally upgrades and expands its network."[281]

The record evidence confirms that the prices Verizon in fact pays to buy a new switch are a small fraction of the price that Verizon pays to buy switching growth parts.[282] But Verizon completely ignores this evidence, and instead looks only to the high prices it pays for adding capacity to an existing switch. Verizon's use of growth-only pricing violates TELRIC's long-run, forward-looking cost methodology.[283] A long-run study assumes that all costs are avoidable

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[278] Verizon Initial Brief, at 15.
[279] Verizon Initial Brief, at 14-15.
[280] Ex. VZ-58, Tardiff Rebuttal at 63; Tr. 3146-3147, 2/6/02 (Tardiff). *See also* Verizon Initial Brief at 145.
[281] Verizon Initial Brief, at 141.
[282] *See* AT&T's Initial Brief, at 62-64. *See also* the proprietary attachment to RR-DTE-49S which includes the response to the FCC's RR VZ-VA 32 filed in the Virginia proceeding.
[283] Ex. ATT-20, Pitts Revised Rebuttal, at 11.

or variable.[284] In other words, "the cost of a total new switch should be the starting point for developing switch costs."[285]

In the FCC's Rhode Island 271 Order, the FCC found that setting unbundled switching rates on "an assumption of only growth additions, as proposed by Verizon," is improper and is completely "inconsistent with the assumption in TELRIC pricing of a forward-looking network built from scratch…."[286] In sum, Verizon's proposed switching rates violate TELRIC and must be rejected.

As noted in the Overview section above, Verizon tries to suggest that it has used pricing that represents "a mixture of equipment at new discounts versus other equipment at add-on discounts."[287] But this is a deliberate misrepresentation. Verizon's assumption regarding Lucent switch pricing reflects 99.7 percent growth part pricing, and only 0.3 percent new switch pricing.[288] For Nortel switches, Verizon used the price available in Nortel's current contract with Verizon.[289] However, we now know that Verizon only pays this price for Nortel growth parts, and that if it wishes to buy a new Nortel switch it does so through competitive bidding and pays a price that is a small fraction of the contract price.[290] Verizon did in fact base its switch cost analysis on the inflated material prices associated with all growth parts and no new switches, which violates TELRIC.

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[284] *FCC's First Local Competition Order* ¶ 677.
[285] Ex. ATT-20, Pitts Revised Rebuttal, at 14.
[286] *FCC's Rhode Island 271 Order* ¶ 34.
[287] Verizon Initial Brief, at 144.
[288] *See* AT&T's Initial Brief, at 72-73; Tr. 2066, 1/29/02 (Pitts).
[289] Verizon Initial Brief, at 144, fn. 119.
[290] *See* AT&T's Initial Brief, at 62-63; *see also* Verizon-VA's Response to the FCC's RR VZ-VA-32, in the proprietary attachment to RR-DTE-49S.

2. Verizon's Arguments Against 100% New Switch Pricing Are Without Merit.

a. The Precedent Cited by Verizon-MA Was All Based on Verizon-NY's Now Discredited Misrepresentations About New Switch Pricing, and Thus No Longer Carries Any Weight.

Verizon insists that the FCC has purportedly "rejected" the use of new switch pricing to set UNE rates.[291] But all of the sources that Verizon cites for this proposition lead to the same origin: the 1997 New York Public Service Commission's order. Verizon points to the FCC's New York 271 Order which deferred to the New York PSC,[292] to the D.C. Circuit decision upholding the New York 271 Order, and to a passage in a court brief characterizing that D.C. Circuit decision.[293]

The fact that all of Verizon's purported authority constitutes a single chain linking back to the 1997 New York order is quite significant. The 1997 New York pricing order was based on a premise proffered by Verizon which – in the FCC's word – has now been "discredited." Specifically, in 1997 Verizon convinced the New York PSC to ignore the low prices that Verizon pays for new switches by claiming that these large discounts were atypical, were associated solely with Verizon's conversion of analog switches to digital technology, and would not be available under any other circumstances.[294] Only later was evidence presented "suggesting that the deep discounts might, in fact, be available for all purchases of new switches, not only large scale replacement programs."[295] Just a few weeks ago, the New York PSC found it to be "clear … that relatively deep new-switch discounts are not limited to full-scale switch replacements,

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[291] Verizon Initial Brief, at 141, 146, 149.
[292] *FCC's New York 271 Order* ¶ 245.
[293] Verizon Initial Brief, at 146.
[294] *See New York UNE Rates Order* at 20-21, recounting this important procedural history.
[295] *New York UNE Rates Order* at 21.

and there is no basis for agreeing with Verizon that incremental replacement of the system over time would entail growth discounts only."[296]

In sum, the entire basis for Verizon's claim that the FCC has "rejected" the use of new switch pricing to estimate the forward-looking cost of unbundled switching is ultimately predicated upon misplaced deference to Verizon's "discredited claim [that] no further new switch discounts" would be available in the future.[297] Verizon is trying to parlay its prior misrepresentations to the New York Public Service Commission, and a number of decisions or writings that directly or indirectly made the mistake of accepting those misrepresentations, into the illusion of unimpeachable authority. That effort reflects incredible disdain for the regulatory process and borders on contempt for the Department.

b. The Department Must Rely on the Record Evidence Regarding What Verizon Pays for New Switches, and Cannot Credit Verizon's Unfounded Conjecture that It Would Pay Higher Prices to Buy All New Switches for Massachusetts.

Verizon also argues against the use of new switch pricing on the ground that we cannot know what those prices would be. Verizon argues that because Firestone had difficulty replacing 6.5 million tires all at once, Nortel would have trouble supplying approximately 258 new switches for Massachusetts.[298] But Verizon has presented absolutely no evidence that Nortel would be incapable of fulfilling an order for several hundred new switches in Massachusetts. Verizon's assertion to the contrary is based on pure conjecture, not proof. It is another red herring, thrown down by Verizon in an effort to distract attention from the facts regarding the prices that Verizon actually pays for new switches.

In addition to being unproven, this conjecture is not even relevant as a matter of theory. Under TELRIC, one uses the best available marginal pricing per unit and applies it to the long-

[296] *New York UNE Rates Order* at 28.
[297] *FCC's Rhode Island 271 Order* ¶ 46, citing *New York UNE Rates Order* at 21.

run construct defined by the FCC under standard economic pricing theory to develop forward-looking cost estimates. This is what Verizon claims that it does with respect to outside plant. It says that it uses the actual material investment prices reflected in its records, or provided by the vendor, to reflect the actual best prices that Verizon currently pays.[299] There is no basis under TELRIC for arbitrarily inflating the prices of switch material investments. If the irrelevant Firestone analogy posited in Verizon's brief were applied to outside plant investments, then the cost of copper and fiber cables, electronics, poles, etc. would all be extraordinary, and would no longer reflect Verizon's forward-looking costs of doing business.[300] But that would make no sense, which is why Verizon does not do so with respect to outside plant material investments. There is no basis for treating switching material prices differently.

The Department should note that Verizon, as it tries to press this "Firestone recall" conjecture, grossly misrepresents the recent New York PSC UNE rates order. Verizon cites the New York order as purported support for the proposition that switch vendors would likely increase their prices if all Massachusetts switches were replaced at once, just as tire prices rose during the Firestone recall.[301] But the New York PSC was actually stating the exact opposite concern: that purchasing a larger number of switches at once could well lead to *lower* prices (higher price discounts). In words that the PSC quoted from the Administrative Law Judge: "It is entirely possible that the prospect of such an extensive series of purchases could have generated *discounts substantially higher* than those under the existing contracts, and a forward-

(..continued)

[298] Verizon Initial Brief, at 147. *See* Tr. 1120, 1/22/02 (Clark) and RR-AG-1 re number of wire centers.

[299] Ex. VZ-36, Verizon Recurring Cost Panel Direct, at 22.

[300] Ex. ATT-20, Pitts Revised Rebuttal, at 14.

[301] Verizon Initial Brief, at 147-148, fn. 128.

looking analysis must take account of that prospect."[302] Once again, Verizon cannot support its arguments except with material misrepresentations.

The record evidence in this case confirms the New York PSC's suspicion: Verizon does in fact pay substantially less for new switches than the prices reflected in its existing contracts.[303] These actual switch costs should form the basis of Verizon's forward-looking unbundled switching rates. The Department should turn a deaf ear to any complaint by Verizon regarding use of the available data regarding what Verizon actually pays for switching. Verizon has not offered a shred of evidence that it will pay anything more than the discounted prices revealed in this record evidence for new switches going forward. Verizon put all of its energy into misguided arguments in favor of 100% growth part pricing, which the FCC has now expressly rejected.

3. If the Department Assumes Some Growth Part Pricing, the Ratio of New Switch to Growth Pricing Should Be No Less Than 90/10.

At most, Verizon's arguments regarding switch pricing amount to a claim that 100% new switch pricing is somehow not appropriate. Even if that were correct, which it is not, that would mean only that the Department should base UNE rates on an appropriate mix of new switch and growth part pricing.

As discussed in Section I.A.2 beginning at page 10, and in AT&T's initial brief at 73-76, if the Department were inclined to assume a forward-looking mix of new switch and growth-part purchases, the record evidence shows that the appropriate mix would be 90% new switch pricing and 10% growth-part pricing. Verizon's switching witness explained that the proper way to meld new switch and growth part pricing would be to begin by modeling all new switches, and

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[302] *New York UNE Rates Order* at 28, quoting the ALJ's Recommended Decision at 133 (emphasis added).

[303] *See* AT&T's Initial Brief, at 62-63; Verizon-VA's Response to the FCC's RR VZ-VA-32, in the proprietary attachment to RR-DTE-49S.

then at the end of the planning period augment the switch capacity with growth parts.[304] In Verizon's words, "a carrier purchasing a new switch would deploy a switch with sufficient capacity to serve demand for only a finite period of time, with the understanding that when additional capacity is required, 'growth' lines will be added."[305] The New Jersey Board accepted Ms. Pitts' modeling of this approach and, using an assumption of three percent annual line growth, adopted a switch material price mix of 79.4% new switch prices / 20.6% growth parts.[306] But Verizon itself says that the appropriate assumption is 1.5% annual line growth, a figure that also is much more in line with Verizon's actual Business Plan line forecasts.[307] If one takes this forward-looking life cycle analysis and runs it assuming 1.5% annual line growth, the ratio of new switch to growth part pricing is 90/10.[308]

In a passing reference in a footnote, Verizon hints that, if the Department were to adopt a mix of new and growth discounts, this "blend" should reflect a 50/50 split between new and growth.[309] Verizon says that this ratio reflects the mix of equipment that it happened to purchase during the five-year period of 1996-2000.[310] Verizon arbitrarily limited this "analysis" to Lucent data, and failed to present any information regarding past purchases of Nortel switches.[311] But it really does not matter, because a five-year slice of switch purchases has no relevance to the estimation of long-run, forward-looking economic costs under TELRIC. Under TELRIC, the basic premise is that with the exception of wire center locations one starts from scratch in costing out a forward-looking network. The data to which Verizon refers does not reflect a "forward-

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[304] Tr. 1628, 1/24/02 (Matt); Tr. 2357, 1/31/02 (Matt).
[305] Verizon Initial Brief, at 147.
[306] *New Jersey UNE Rates Order* at 8.
[307] *See* AT&T's Initial Brief, at 75; Tr. 1629, 1/24/02 (Matt); Ex. ATT-VZ 4-29 Second Supplemental Response.
[308] *See* AT&T's Initial Brief, at 75.
[309] Verizon Initial Brief at 149 fn. 133; *see also* Tr. 2382, 1/31/02 (Matt); RR-DTE-66.
[310] RR-DTE-66, Proprietary Attachment 2; RR-DTE-49S, Proprietary Attachment RR-VZVA -29.
[311] RR-DTE-66.

looking network built from scratch," as TELRIC requires.[312] Instead, it reflects the state of the switching equipment that happened to be in place at the beginning of this five year period.

If there is to be any melding of new switch and growth part pricing, the record evidence shows that the proper mix is a 90/10 blend of new and growth costs.

B. Other Switching Inputs or Assumptions Used by Verizon Also Improperly Inflate Switching Rates.

1. EF&I Factor: Verizon's Reliance on One Year of Switching Augment Jobs Does Not Justify Its Inflated Factor of 40.27 Percent.

Verizon claims that it "has provided complete documentation of the data supporting its proposed EF&I factor."[313] This is not true. Although Verizon provided DCPR data, Verizon has failed to provide the data necessary to assess whether the types of activities, labor rates, engineering labor hours, installation labor hours, or miscellaneous equipment included in Verizon's engineering and installation factor are forward-looking and therefore appropriate.[314] Verizon has failed to meet its burden of proof with respect to its assumed installation costs for switching.

The mere fact that Verizon derived its EF&I factor from DCPR data is insufficient to meet Verizon's burden of proof. Verizon relied upon one year of Verizon-East DCPR data, for 1998.[315] Verizon has not proved that these historic costs allow estimation of a forward-looking EF&I factor.

To the contrary, the evidence indicates that the 1998 DCPR data results in an EF&I factor based on the higher installation costs of augment jobs to switches, as opposed to the cost of installing a new switch. Verizon only installed 34 new switches in 1998 in the Verizon-East

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[312] *FCC's Rhode Island 271 Order* ¶ 34.
[313] Verizon Initial Brief, at 161, fn. 145 (citing to a nonexistent transcript reference, "Tr. 12, at 2553-2553").
[314] Tr. 2449-2453, 1/31/02 (Anglin).
[315] Verizon Initial Brief, at 52-53.

footprint.[316] In 2000, there were 1740 Lucent switches in the Verizon East territory,[317] plus an almost equal number of Verizon Nortel switches.[318] Verizon has offered no proof that the ratio of installation costs to material prices for the switching growth parts installed during 1998 would be anywhere near as low as the ratio of installation costs to material prices for installing an entire new switch.

AT&T presents an EF&I factor that avoids Verizon's inflated, unjustified and non-forward-looking costs. On brief, Verizon attempts to shift the burden of proof to AT&T. The data relied upon by AT&T for telephone company engineering and installation costs, which begins with 1992 data and grosses it up to reflect 1999 costs, has been proven and corresponds to the publicly available data on telephone company engineering and installation factors ranging from 8-12 percent.[319] Moreover, if anything, AT&T's reliance on older data overstates the engineering and installation costs because of increased productivity and switch maintenance software packages included as part of the regular RTU updates, as well as new vendor-provided switch planning and engineering software programs which streamline switch engineering and installation. Verizon has offered no proof that the publicly validated data presented by AT&T is inaccurate, other than Verizon's irrelevant invocation of 1998 installation costs for switching growth parts in smaller augmentation jobs. Verizon's unsupported EF&I factor of 40.27 percent should be rejected.

2. Trunk Ports: Verizon Does Not Justify a Second Utilization Factor of 94.28 Percent or Assuming a 15 CCS/Busy Hour Trunk Utilization.

At Section II.C.2. (pages 82-85) of AT&T's initial brief, we explain why Verizon has substantially understated utilization of common trunk port capacity, thereby inflating the

[316] Tr. 2386, 1/31/02 (Matt).
[317] Ex. RR-DTE-64.
[318] Tr. 1594, 1/24/02 (Matt).
[319] Ex. ATT-20, Pitts Revised Rebuttal, at 40; RR-DTE-58.

common end office and tandem trunk port MOU rate element costs. AT&T will not restate that explanation here, but will confine its discussion to the erroneous argument in Verizon's initial brief.

Verizon incorrectly claims that AT&T is arguing "that no spare capacity should be included in Verizon MA's cost studies."[320] This mischaracterizes AT&T's position. What AT&T has demonstrated is that the SCIS Model already accounts for administrative fill by applying a 95 percent fill factor, and that as a result there is no need to apply a second utilization factor of 94.28 percent in Verizon's cost study.[321] Verizon at no point provides an explanation for the additional fill adjustment of 94.28 percent. Verizon merely states, without citation, that "Verizon MA must further account for utilization in its cost studies in order to reach the forward-looking utilization rate determined by Verizon MA's engineers."[322] The application of this second utilization factor of 94.28 percent assumes unnecessary spare capacity and should be changed to 100 percent in order to avoid duplication of SCIS's utilization adjustment in Verizon's cost study.[323]

Second, as to the CCS/busy hour trunk utilization, Verizon asserts in a footnote that Ms. Pitts "upon cross examination, was unable to explain why she used the Erlang B Table rather than the Wilkerson Table utilized by Verizon MA, and further unable to substantiate her result of 22.3 CCS/trunk using .1 percent blocking."[324] Verizon is wrong for three reasons. First, Verizon fails to include the correction of 22.3 CCS/trunk to 27.3 CCS/trunk that Ms. Pitts made at the hearings on January 29, 2002.[325] Second, Ms. Pitts explained that use of the Erlang B table is

[320] Verizon Initial Brief, at 158.
[321] AT&T's Initial Brief at 83.
[322] Verizon Initial Brief, at 158.
[323] *See* AT&T's Initial Brief, at 83-84.
[324] Verizon Initial Brief, at 159, fn. 143.
[325] Tr. 2008, 1/29/02 (Pitts).

"standard industry practice."[326] This testimony is undisputed. Third, Ms. Pitts provided a complete explanation of the process by which she arrived at 27.3 CCS/trunk using the Erlang B table.[327] Moreover, Ms. Pitts explained that in her extensive experience, she has seen "most trunks operating over 20."[328] Thus, Verizon's criticism of Ms. Pitts is unfounded and its assumption of 15 CCS/busy hour trunk utilization should be rejected.

3. IDLC: Verizon Misunderstands AT&T's Analysis of an Efficient Mix of Fiber and Copper Feeder.

In AT&T's initial brief at sections II.C.3 (switching) and IV.A.2a. (loop rates), we refuted Verizon's claims that IDLC unbundling is not feasible and Verizon's inappropriate assumption of 25 percent IDLC. This issue is discussed further in Section IV.A.2.a. beginning at page 81, below.

Verizon raises on brief a new, nonsensical, and unsupported argument in favor of its non-forward-looking IDLC assumption. Verizon asserts that: "AT&T/WorldCom's proposals also disregard the fact that the use of IDLC is impractical and economical in locations where customers can be served from remote terminals in large groupings with low volumes of switched line demand."[329] We have trouble parsing this argument. It is difficult to imagine that use of IDLC can be "impractical" and "economical" at the same time. Moreover, we do not understand the assertion that "large groupings" of customers will have "low volumes of switch demand." Verizon cites to no record evidence that would help us to understand this internally contradictory and illogical sentence.

Verizon then states that "Massachusetts has many rural areas in which these groupings are not available and where deploying IDLC technology would be inadvisable and

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[326] Tr. 2075, 1/29/02 (Pitts).
[327] Tr. 2076-2078, 1/29/02 (Pitts).
[328] Tr. 2078, 1/29/02 (Pitts).
[329] Verizon Initial Brief, at 152.

inefficient."[330] Verizon seems to think that AT&T is advocating the assumption of all IDLC ports, with no analog ports available to serve copper fed loops.[331] Although, again, there is no citation to the record to aid in interpretation of this puzzling argument, it appears that Verizon has focused only on AT&T's recommendation that fiber feeder be served with 100 percent IDLC, forgetting that AT&T proposes an economic mix of 49.2 percent fiber fed IDLC and 50.8 percent copper feeder. Thus, contrary to what Verizon seems to be saying, AT&T does not assume that all customers will be served by a remote terminal using IDLC technology over fiber feeder. Rather, AT&T has shown that in a forward-looking network more than half of the lines in Massachusetts will be served over copper feeder, and it is only the remaining lines on fiber fed loops that will be served using IDLC.

4. Non-Traffic Sensitive Costs Must Not Be Assigned To Traffic Sensitive Rate Elements.

Verizon claims that "except for the port, every feature of the switch potentially requires replacement/additions as the level of usage on a line…increases."[332] Verizon therefore assumes that "getting started" costs and RTU fees are traffic-sensitive simply because they physically are not ports. Even though Verizon admits that "getting started" costs and RTU fees do not increase with additional switch usage,[333] Verizon fails to allocate these fixed costs to the non-usage sensitive port rates. The evidence shows that the "practical" limiting factor of a switch is the number of ports, not its processing capacity.[334] Ports will exhaust before usage causes the processor to exhaust.[335] Therefore, contrary to Verizon's claim, "the processor and its other

[330] Verizon Initial Brief, at 152.
[331] Verizon Initial Brief, at 151.
[332] Verizon Initial Brief, at 152.
[333] Tr. 1615-1616, 1/24/02 (Matt).
[334] *See* AT&T's Initial Brief, at 86-87.
[335] Tr. 2130, 1/29/02 (Pitts).

shared 'getting started' investments" are not traffic sensitive and therefore should be allocated to the port, not the traffic sensitive MOU rates.

In order to support its incorrect allocation of the fixed "getting started" costs and RTU fees, Verizon falsely accuses AT&T/WorldCom of proposing to recover fixed costs via the port rates because they want to ride on the backs of smaller carriers.[336] Verizon's attempt at a "fair allocation" argument fails because Verizon ignores the fact that usage will not exhaust the processor.[337] Only if exhaustion of the processor is possible can Verizon argue that a carrier who uses more of a resource should pay more for it.[338] Ms. Pitts therefore accurately allocates costs on a cost causative basis.

Verizon notes that the FCC has "approved an MOU switching rate."[339] This is beside the point. AT&T estimates both an MOU switching rate and a fixed monthly port rate, as does Verizon. The issue here is which costs should be allocated to which rate, not whether there should be an MOU rate at all. Verizon then asserts that its traffic sensitive/non-traffic sensitive allocation is supported by "the *default assumption* in the Synthesis Model previously relied upon in other proceedings by AT&T/WorldCom for switching costs," citing Ms. Pitts' testimony at "Tr. 11, at 2088-2095" for this proposition.[340] But Ms. Pitts provided no such testimony in this proceeding, at those page numbers or elsewhere. Verizon's unsupported assertion should be disregarded. Finally, Verizon claims that AT&T is proposing "that less than 15 percent of end office investment be deemed traffic sensitive." Verizon improperly calculated this percentage by

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[336] Verizon Initial Brief, at 155.

[337] Tr. 2130, 1/29/02 (Pitts).

[338] Tr. 2129-2132, 1/29/02 (Pitts).

[339] Verizon Initial Brief, at 152 (citing *FCC's First Local Competition Order* ¶ 810) ("We conclude that a combination of a flat-rated charge for line ports, which are dedicated to a single new entrant, and either a flat-rate or per-minute usage charge for the switching matrix and for trunk ports, which constitute shared facilities, best reflects the way costs for unbundled local switching are incurred and is therefore reasonable.")

[340] Verizon Initial Brief, at 153.

failing to allocate trunks to the usage sensitive common trunk MOU.[341] When trunks are included in this traffic sensitive/non-traffic sensitive ratio, it is apparent that AT&T has allocated 25.4 percent, *not* 15 percent, of end office equipment to the traffic sensitive MOU rate.[342]

Finally, Verizon disputes AT&T's allocation of EPHC costs to ports.[343] This allocation is appropriate for causation reasons.[344] Lines and ports, not usage, cause the exhaust of EPHC – the common equipment and primary building block of Lucent's 5ESS switch.[345] The exhaustion of ports prior to the exhaustion of call processing capacity can readily be seen in the Line Termination output reports from SCIS which "always show excess call processing capacity costs assigned to every port because the port capacity of the switch module was reached before the usage capacities could be completely utilized."[346] In any event, as discussed in connection with "getting started" costs and RTU fees, call minutes do not cause overall switch exhaust of either the central processor or the distributed processors of the Lucent switch. Thus, AT&T's allocation of EPHC costs to the port is appropriate.

5. <u>RTU Fees</u>: The 1999 Spike In RTU Investment Which Resulted From a One-Time Accounting Change Should Not Be Reflected in Forward-Looking Costs.

Verizon claims that there is no reason to ignore the almost $200 million spike in Verizon's RTU expenses for 1999, and that these one-time historic costs can and should be used to project future RTU costs.[347] As explained in AT&T's Initial Brief in Section III.C.5.a., this $200 million spike was the result of a one-time accounting change. Verizon supports its 1999

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[341] Ex. ATT-20, Pitts Revised Rebuttal, at 35.

[342] This percentage of 25.4 can be calculated by referring to Ex. ATT-20, Pitts Revised Rebuttal, Exhibit CP-5, Part C-2, Section 4, page 1 of 2, "SCIS End Office Total Material Investment." The traffic sensitive investments for the meld of Lucent and Nortel switches – Line CCS (ISDN and non-ISDN), Trunk CCS, SS7 Link, D Channel Access PPS, PPB Channel Access PPS, Inter-switch PPS, and XAT PPS – total $100,451,725. Divide that number by the total ISDN and non-ISDN investment, $395,684,569, and multiply by 100 to arrive at 25.4 percent.

[343] Verizon Initial Brief, at 155, fn. 137.

[344] Tr. 2136, 1/29/02 (Pitts).

[345] Ex. ATT-20, Pitts Revised Rebuttal, at 35; Tr. 2136, 1/29/02.

[346] Ex. ATT-20, Pitts Revised Rebuttal, at 35.

RTU expenses with the argument that "vendor software developed in the future may easily cause another spike."[348] But Verizon offers no proof to support this rank conjecture. In fact, Verizon's baseless assertion on brief was contradicted by Verizon's own witness, Mr. Anglin, who testified that Verizon does not expect any significant spikes in its planning horizon and that Verizon's engineers do not predict any spikes in annual switch software investment.[349] Moreover, Verizon admits on brief that once the "transition period" resulting from the 1999 accounting change ends, "the annual amount of RTU costs is expected to settle at the estimated amount reflected in Verizon MA's studies."[350] AT&T's alteration of the 1999 data to eliminate the enormous cost of the 1999 accounting change accurately captures the level at which Verizon claims its forward-looking RTU fees will ultimately "settle." The removal of the one-time, embedded cost of the accounting change results in an approximately 26 percent reduction in the RTU factor.

6. Feature Port Additive Charges Should Not be Levied On Top of Switch Usage and Port Prices, Since Verizon Has Not Met Its Burden of Proving the Nature or Magnitude of the Claimed Costs.

Verizon does not and cannot cite to any record evidence to support its feature port additive costs. Instead, Verizon tries to shift the burden of proof to AT&T, asserting that "AT&T/WorldCom offer no evidence that their own feature costs are any different."[351] But Verizon cannot meet its burden of proof by proffering unsupported "judgments from product management," and demanding that other parties must disprove them or accept them without justification or explanation. Because of its failure to support its costs, which is more fully explained in Section III.C.6. of AT&T's Initial Brief, Verizon's feature port additive costs should be eliminated.

(..continued)

[347] Verizon Initial Brief, at 157.
[348] Verizon Initial Brief, at 157.
[349] Tr. 2437, 1/31/02 (Anglin).
[350] Verizon Initial Brief, at 158.

7. Call Completion Ratio: Verizon's Response to RR-DTE-62 Does Not Support Its Inappropriately Low Call Completion Ratio.

We address Verizon's argument concerning the call completion ratio in Section III.C.7. of AT&T's Initial Brief. The only item to which AT&T has not yet responded is Verizon's claim that Verizon "has provided its most recent data with respect to non-conversation time (*see* RR-DTE 62)" and that data should be deemed "reliable" support for Verizon's 71.5 percent factor.[352] In its response to RR-DTE-62, Verizon simply provides an explanation as to why it cannot estimate the time and resources needed to perform a study to quantify the non-conversation time factor based on up-to-date information. If anything, Verizon's response to this record request supports Ms. Pitts' proposed 85 percent call completion ratio which takes into account new technology – answering machines and voice messaging services – the effect of which Verizon apparently cannot quantify in a study and which did not exist in 1992 when Verizon last collected data on call completions. Simply because Verizon does not have the ability to provide up-to-date information on the non-conversation time factor does not mean that ten years worth of technology and its effect on this factor should be ignored. Ms. Pitts' 85 percent call completion ratio appropriately takes this technology into account.

8. Ms. Pitts' Recommendations Concerning BH/AHD Conversion Factor Are Clear, and Make Good Sense.

Verizon wrongly states that "it is unclear what Ms. Pitts is advocating with respect to the calculation of MOUs."[353] Ms. Pitts made it perfectly clear at the hearings that she advocates: (1) calculation of the busy hour to annual factor by spreading the assumed busy hour traffic across 365 days a year;[354] and (2) adoption of a BH/AHD ratio in the range of 7 percent.[355] AT&T

(..continued)

[351] Verizon Initial Brief, at 160.
[352] Verizon Initial Brief, at 167.
[353] Verizon Initial Brief, at 166.
[354] Tr. 2057, 1/29/02 (Pitts).

explains and provides support for Ms. Pitts' calculations in Section II.C.8. of AT&T's Initial Brief.

a. Verizon's Claim That 251 Days Is A Surrogate Does Not Make It Appropriate To Calculate The BH/AHD Conversion Factor.

In its initial brief, Verizon advances for the first time the argument that its use of 251 days to calculate its BH/AHD conversion factor "does *not* reflect an exclusion of 114 weekend/holiday days from an otherwise uniform 365 days[;] rather, the figure of 251 days is a surrogate…."[356] Whether the 251 days represent business days, as Verizon originally stated,[357] or represents a surrogate of some sort, as Verizon now argues, it is an incorrect number by which to calculate the BH/AHD conversion factor. Unbundled switching elements are used by CLECs 365 days a year and, therefore, Verizon's BH/AHD ratio should be divided by that total number of days.[358]

Verizon attempts to criticize AT&T's 365 day recommendation by citing to Steven Turner's Virginia testimony, a document which was excluded from evidence.[359] That is improper: Verizon cannot support its arguments on brief with evidence excluded from the record. The two sentences on page 165, and the phrase on page 166, of Verizon's Initial Brief citing to this excluded exhibit should not be considered by the Department in making its decision on the BH/AHD conversion factor. Verizon offers no record-based support for its 251 day divisor and therefore it should be rejected.

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[355] Tr. 2059, 1/29/02 (Pitts).
[356] Verizon Initial Brief, at 165.
[357] Tr. 2328-2329, 1/31/02 (Matt).
[358] Tr. 2057, 1/29/02 (Pitts).
[359] Tr. 3556, 2/15/01 (Hearing Officer Ruling).

b. Verizon Fails in Its Attempt to Impeach Ms. Pitts' Seven Percent BH/AHD Ratio.

Verizon ignores Ms. Pitts' recommendation at the hearing that Verizon's proposed 8.3 percent BH/AHD ratio should be reduced by about 1 percentage point to a figure of approximately 7 percent.[360] Verizon also appears to ignore the fact that Verizon itself has proposed a BH/AHD ratio of 8.3 percent. Verizon attempts to impeach Ms. Pitts for her reluctance to use the 10 percent industry wide standard utilized by the Modified Synthesis Model and supported by Ms. Pitts in the Maryland proceeding.[361] Verizon, however, admits by its own proposal of 8.3 percent that the 10 percent "bogey" figure is outdated and not appropriate.[362] Verizon reduces the 10 percent figure because it does not account for Internet traffic, which has flattened out the busy hour.[363] Verizon's 8.3 percent figure, however, is based on 1997 traffic, data which does not reflect the continued trend to increased internet usage.[364]

Verizon's attempt to make its busy hour to annual conversion factor look better by comparing it to a factor based on a 10 percent BH/AHD ratio divided by 270 days is not at all helpful because it is completely irrelevant.[365] Verizon has disowned the 10 percent figure and Ms. Pitts has explained why 365 days is the appropriate divisor. Thus, Verizon fails to support its 8.3 percentage and likewise fails to impeach Ms. Pitts' 7 percent recommendation.

C. Intra-Switch Calls: Verizon's Proposal To Double Charge for Intra-Switch Calls Has Previously Been Rejected By the Department and Should Be Rejected Again, as it Has Been in New York and New Hampshire.

Verizon has failed to support its proposal to double charge CLECs for intra-switch calls. For this reason, and the reasons set forth in WorldCom's Initial Brief at pages 39-40, the

[360] Tr. 2059, 1/29/02 (Pitts).
[361] Verizon Initial Brief, at 166.
[362] Tr. 2334-2335, 1/31/02 (Matt).
[363] Tr. 2334, 1/31/02 (Matt).
[364] Tr. 2059, 1/29/02 (Pitts).
[365] Verizon Initial Brief, at 166.

Department should reject Verizon's proposal to apply two switching charges for an intra-switch call. This very same proposal was recently rejected in New York on the basis of a comparable evidentiary record, and the same facts warrant its rejection here.[366] It was also rejected just weeks ago in New Hampshire, where as a condition of the PUC's support for any Section 271 application Verizon was order to "[r]evise the SGAT and CLEC tariff to apply the unbundled local switching charge only once to a call that originates and terminates in the same switch."[367] In an intra-switch call the originating and terminating functions are performed as a single operation in one switch; there is not a second switch processing function at another location, and thus there should not be a second switch usage charge imposed.

In this proceeding, Verizon again improperly attempts to apply the charge for unbundled local switching twice for an intra-switch call, once for originating the call, and once for terminating the call.[368] Verizon tried to accomplish this same double-recovery in the D.T.E. 98-57 proceeding where the Department rejected Verizon's proposed tariff language.[369] As in the D.T.E. 98-57 proceeding, the Department should reject Verizon's attempt to double recover for intra-switch calls.

D. DUF Charges: Verizon Offers No Justification for Assessing Extra Charges to Provide Billing Information in Daily Usage Files.

Verizon has the burden of proving both "the nature and magnitude of any forward-looking cost that it seeks to recover."[370] This burden applies with full force to Verizon's effort to impose new charges for providing basic billing information.

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[366] *See* Letter and Tariff Revisions from Verizon-NY, dated February 28, 2002, attached to WorldCom's Initial Brief.

[367] *New Hampshire 271 Conditions Order* at 3.

[368] Ex. VZ-36, Recurring Cost Panel Testimony, at 159.

[369] Investigation by the Department on its own motion as to the propriety of the rates and charges set forth in the following tariffs: M.D.T.E. Nos. 14 and 17, filed with the Department on August 27, 1999, to become effective on September 27, 1999, by New England Telephone Telegraph Company d/b/a Bell Atlantic-Massachusetts, D.T.E. 98-57, Order (March 24, 2000), at 219 (citing Part B, Section 6.3.2.B of Tariff No. 17).

[370] *FCC's First Local Competition Order*, ¶ 680.

Yet Verizon does not deign to provide one word of explanation or defense with respect to its proposed Daily Usage File ("DUF") charges. Verizon notes in passing that it has proposed such charges, but offers no explanation for them.[371] Verizon's DUF charges are improper and should be rejected for the reasons discussed in AT&T's initial brief, at pages 96-106.

E. Reciprocal Compensation Rates: The FCC Requires That Reciprocal Compensation Rates for Terminating Traffic Must Equal the TELRIC Rate for Unbundled Switching.

Verizon was provided at the hearings with the specific citations to the FCC's Local Competition Order[372] and Code of Federal Regulations[373] which expressly require that reciprocal compensation rates and UNE rates be set using the same TELRIC costing methodologies.[374] Despite this, Verizon continues to argue that it is permissible to exclude "getting started" costs and RTU fees from its proposed reciprocal compensation rates even if it gets away with including those costs in its unbundled switching MOU rates.[375] Verizon's own interpretation of the "additional costs" language in the 1996 Act cannot replace clear FCC rulings on how this language should be interpreted. As required by the FCC and more fully explained in AT&T's Initial Brief at pages 106-108, reciprocal compensation termination rates should be set equal to the final rates for unbundled switching termination.

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[371] Verizon Initial Brief, at 59.
[372] *FCC's First Local Competition Order* ¶ 1057.
[373] 47 C.F.R. § 51.705(a)(1).
[374] Tr. 1617, 1620, 1/24/02 (Matt).
[375] Verizon Initial Brief, at 164.

IV. OUTSIDE PLANT: THE DEPARTMENT SHOULD REJECT THE EXCESSIVE RATES PROPOSED BY VERIZON FOR LOOPS, OSSS, HARC, DSL-CAPABLE LOOPS, AND IOF, AND SHOULD INSTEAD ADOPT THE RECOMMENDATIONS MADE BY AT&T.

A. Loop Rates Should be Lowered Substantially.

A brief overview of the basic 2-wire loop rate can be found in Section I.A.1. beginning at page 3 above. As summarized there, the record evidence shows that one should expect that the forward-looking statewide average 2-wire loop rate should be around $7.00 for Massachusetts. This section will respond directly to specific additional points raised in Verizon's initial brief.

1. Loop Rate Summary: The Statewide Average 2-Wire Analog Loop Rate Should be Just Over $7.00, and the Other Loop Rates Should be Lowered Proportionately, Even If One Were to Assume that UDLC Is Needed to Serve UNE-L Customers.

As we explained in AT&T's Initial Brief, the record evidence shows that current UNE loop rates are excessive. Verizon's LCAM model (when re-run with appropriate, TELRIC-compliant inputs and assumptions) and the HAI 5.2a-MA model come out with almost the exact same result of just over $7.00 for the statewide average 2-wire analog loop rate.[376] The corrected run of Verizon's model produces a rate of $7.27, and the HAI 5.2a-MA model produces a rate of $7.09.

Significantly, as discussed in Section I.A.1. beginning at page 3 above, a third analysis converges with these two and thus confirms that a rate of around $7.00 is the correct result. This third analysis demonstrates that the Department should expect the forward-looking loop rates to be at least 55 percent less than the UNE rates adopted in the *Consolidated Arbitrations* proceeding, after basing the new rates upon a corrected cost of capital, forward-looking fill factors consistent with Verizon's concessions in Rhode Island and the record in this case, an economic mix of copper and fiber feeder, and the lower material investment prices that Verizon concedes are available today compared to six years ago. If one starts with the current statewide

average loop rate of $14.98, and reduces that figure by the minimum 55 percent that one would expect based on the record in this case, one should expect the forward-looking statewide average loop rates to be near $6.74 [(1 - 0.55) * $14.98 = $6.74].

These same updates will apply to all of the flavors of loop rates proposed by Verizon. Thus, one would expect those rates to drop in proportion to the significant reduction we have proved is required from the 1996 rate for 2-wire analog loops. This is confirmed by AT&T's analysis of other loop products such as digital and 4-wire loops.[377]

Verizon's arguments on the issue of IDLC versus UDLC should be rejected, but even if accepted they cannot justify a loop rate that is more than a few percent higher than these levels. As noted above, Verizon's LCAM model produces a statewide average loop rate of $7.27 when re-run using appropriate inputs and assumptions.[378] One of the adjustments made by AT&T is to eliminate Verizon's assumption that a substantial portion of fiber-fed loops would be provisioned with inefficient UDLC technology, and replace it with the properly forward-looking assumption that all fiber fed loops will be provisioned using the less costly IDLC technology. Verizon argues that some amount of UDLC will be need to provision standalone UNE loops, though it concedes that both UNE-P customers and Verizon's own retail customers can be served on IDLC and without using any UDLC.[379] AT&T has proved that this argument is incorrect. However, even if we indulge it, Verizon's argument for some UDLC to serve UNE-L customers does not justify an assumption that any more than 10 percent of all fiber fed loops would be served using UDLC.[380] There is no evidence whatsoever to justify Verizon's arbitrary assumption that 68.75 percent of fiber fed loops (or 55 percent of all loops) would be served using UDLC in a forward-

(..continued)

376 *See* AT&T's Initial Brief, at 108-112.

377 *See* AT&T's Initial Brief, at 110; Ex. ATT-26, Mercer Surrebuttal, at 4; Ex. ATT-25, Mercer Direct, at 69.

378 AT&T's Initial Brief, at 111-112.

379 *See* Section IV.A.2.a(1)(b), beginning at page 85 below.

looking network. If one re-runs Verizon's model with proper inputs, but assumes that 10 percent of fiber fed loops are served with UDLC to indulge Verizon's unfounded claim that doing so is needed to provide UNE-L service, the result is a statewide average 2-wire loop rate of $7.55, or only 3.88 percent higher than the restatement with all fiber fed loops served on IDLC.[381]

Range of Two-Wire Analog Loop Rates Supported by the Evidence

		Corrections to VZ-MA's Loop Model		
Zone	**Current Rates * 0.45**[382]	**w/ 100% IDLC, 0% UDLC in Fiber**[383]	**w/ 90% IDLC, 0% UDLC in Fiber**[384]	**HAI 5.2a-MA**[385]
Statewide	$6.74	$7.27	$7.55	$7.09
Metro	3.39	5.01	5.20	4.92
Urban	6.35	6.36	6.61	
Suburban	7.25	7.89	8.20	7.75
Rural	9.02	11.77	12.23	16.91

In sum, the record evidence in this case shows that the statewide average 2-wire loop rate should be in the range from $6.74 to $7.27 if the Department agrees with AT&T on the IDLC vs. UDLC issue, and should not exceed $7.55 even if one were to indulge Verizon's that some amount of UDLC is needed in order to provide UNE-L service.

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[380] *Id.*

[381] *Id.*

[382] *See* Section I.A.1.a, beginning at page 3 above.

[383] *See* AT&T's Initial Brief, at 109-112.

[384] Previous column times 1.0388. *See* footnote 412 at page 86, and accompanying text in Section IV.A.2.a(1)(b), below.

[385] Ex. ATT-26, Mercer Surrebuttal, at 4.

2. Loop Inputs and Assumptions: Verizon Fails to Justify Its Use of Unreasonable Assumptions Regarding the Mix of IDLC and UDLC Equipment, the Mix of Copper and Fiber Feeder, and the Use of Unduly Low Effective Fill Rates.

a. Verizon's Feeder Plant Mix Does Not Comply With TELRIC.

Verizon assumes that of the total access in the forward-looking network, 20 percent would be served over copper feeder, 25 percent would be served using IDLC over fiber feeder, and 55 percent would be served using UDLC over fiber feeder.[386] In other words, Verizon assumes that in the portion of the network to be served by fiber feeder, 68.75% of those loops would be served using UDLC and only 31.25% would be served using the much more efficient IDLC technology.

These assumptions by Verizon raise two distinct issues regarding the appropriate mix of equipment in the feeder portion of the outside plant.

First, for those loops served by fiber feeder, what portion of the loops is assumed to be served on next generation integrated digital loop carrier ("IDLC"), and what portion is instead assumed to be served on much less efficient universal digital loop carrier ("UDLC")? AT&T has demonstrated that the proper answer is that 100 percent of the fiber-fed loops should be modeled on IDLC.[387] Verizon's assertions that UDLC is needed to serve stand-alone unbundled loops is without merit. Even if one indulges this assumption for the sake of argument, however, that rationale would only justify assuming that 10 percent of all fiber-fed loops would be served with UDLC, not the almost 70 percent arbitrarily assumed by Verizon. *See* Section IV.A.2.a(1)(b) beginning at page 85, below.

Second, for all loops, what portion is assumed to be served on copper feeder, and what portion is instead assumed to be served on fiber feeder? An economic life-cycle analysis of

[386] Tr. 1741, 1/25/02 (Livecchi); Tr. 3362, 2/7/02 (Gansert); Verizon Initial Brief, at 223.
[387] *See* AT&T's Initial Brief, at 114-126.

whether copper or fiber feeder is more efficient on a cluster-by-cluster (or serving area by serving area) basis results in a statewide mix of 50.8% copper and 49.2% fiber.[388] Verizon's assumption of a mix of 20% copper and 80% fiber is based on arbitrary decisions regarding the copper/fiber distance breakpoints for an entire wire center density zone.[389]

(1) IDLC vs. UDLC: In a Forward-Looking Network Fiber-Fed Loops Should be Served on IDLC, With Relatively Little or No UDLC.

(a) TELRIC Requires that Costs be Modeled on the Forward-Looking Assumption that IDLC Interfaces Will be Used to Provision Fiber Fed Loops.

As explained in AT&T's Initial Brief, Verizon's continued heavy reliance on UDLC interfaces in providing fiber fed loops is nothing more than a gambit to raise UNE costs.[390] The evidence shows that using IDLC technology to provision fiber fed loops is substantially more efficient than using UDLC.[391] Verizon's initial brief does nothing to shake this conclusion. Verizon is merely reiterating its refusal to accede to one of the fundamental principles of TELRIC – that a forward-looking network be designed in a least-cost configuration using the most efficient technology available. Verizon rehashes several arguments in an attempt to keep IDLC on the shelf and increase UNE costs. Most of them have already been addressed by AT&T in its Initial Brief, so an abbreviated response is appropriate here.

(i) An unbundled IDLC loop fits squarely within the FCC's definition of the loop element.

Verizon argues that providing unbundled loops at the DS1 level through IDLC technology would be "a different element . . . than the 2-wire analog loop that CLECs actually

[388] AT&T's Initial Brief, at 155.
[389] AT&T's Initial Brief, at 145-146
[390] AT&T's Initial Brief, at 114.
[391] AT&T's Initial Brief, at 115-117.

order. . .”[392] This definitional argument was refuted in AT&T’s Initial Brief. As noted there, although Verizon wants to define a two-wire analog loop as always being interconnected to a CLEC via a two-wire pair, such a definition can not be reconciled with the definition of the loop element provided by the FCC.[393] That definition includes “all features, functions and capabilities of the transmission facilities . . . and attached electronics.”[394] For the purposes of this proceeding, the FCC’s definition governs. Loops provisioned over IDLC and a DS1 level interconnection fall within that definition.

(ii) Unbundling loops via an IDLC Connection is technically feasible.

Verizon also asserts that the use of IDLC to provision unbundled loops is technically infeasible.[395] Verizon presses its argument that unbundling loops over IDLC at the DS1 level remains a technological impossibility. As addressed extensively in AT&T’s Initial Brief, however, IDLC unbundling is quite possible and neutral experts such as Telcordia have so stated.[396] Moreover, Verizon itself stated that it was possible over five years ago in the *Consolidated Arbitration* proceedings, when it assumed that 100 percent of its loops would be provisioned via IDLC technology.[397]

Verizon selects quotes from a 1999 Alcatel letter and a snippet from Telcordia’s website in arguing that a number of impediments must be overcome before IDLC can be deployed throughout the network.[398] But these passages do not support Verizon’s contention that it is impossible to unbundle IDLC loops at the DS1 level. Even the Alcatel letter cited by Verizon points out that “much progress” had taken place in the years leading up to 1999 in

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[392] Verizon Initial Brief, at 73, 75.
[393] AT&T’s Initial Brief, at 121.
[394] AT&T’s Initial Brief, at 121-22 (citing 47 C.F.R. § 51.319(a)(1)).
[395] Verizon Initial Brief, at 74-75, 77-78.
[396] AT&T’s Initial Brief, at 119-120.
[397] AT&T’s Initial Brief, at 119.

"implementing GR-303 interoperability."[399] Nonetheless, even if some isolated issues do remain, they could be readily remedied if ILECs such as Verizon would be willing to contribute to efforts needed to find a solution. Verizon and other ILECs have no incentive to do so, however, as continuing to provision loops over inefficient and labor-intensive UDLC systems increases its revenue by inflating UNE costs.

Thus, it comes as no surprise that ILECs have yet to deploy the efficient IDLC unbundling option in their networks. Despite Verizon's repeated arguments to the contrary, what ILECs choose to do in their embedded network design is of absolutely no relevance to a TELRIC inquiry.[400] Verizon's harping on this point, therefore, should be ignored by the Department. Verizon itself projected a 100% IDLC network five years ago in the *Consolidated Arbitrations* proceeding. Verizon does not identify what technological regression has occurred in the interim. Indeed, other ILECs such as Qwest currently concede that a network in which 100% of fiber-fed loops run on IDLC is the appropriate forward-looking construct under TELRIC.[401]

The New Jersey Board of Public Utilities recently reached the same conclusion.[402] Significantly, just days ago Verizon represented to the FCC to "the New Jersey BPU applied TELRIC principles in establishing Verizon's rates," and that the various inputs adopted in New Jersey are all "TELRIC-compliant" and "based upon the existing TELRIC principles."[403] Verizon thus concedes for purposes of its New Jersey Section 271 application that in a forward-looking, TELRIC-compliant network all fiber-fed loops would served using IDLC technology. There is no principled basis for Verizon's contrary assumptions in Massachusetts.

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[398] Verizon Initial Brief, at 77-78.
[399] Ex. VZ-18, Verizon Recurring Cost Panel Surrebuttal at Attachment A.
[400] *FCC's First Local Competition Order*, at ¶ 10.
[401] AT&T's Initial Brief, at 120.
[402] AT&T's Initial Brief, at 120.
[403] Verizon New Jersey Revised 271 Application, at 7-8.

(b) Even if UDLC Were Needed to Provide Unbundled Loops, Which It Is Not, There Is No Evidence that More Than 10% of All Fiber-Fed Loops Would Require UDLC.

It is important to note that Verizon's "technical infeasibility" argument with respect to IDLC is very narrowly focused. It is undisputed that Verizon can and does serve its own customers with IDLC on fiber fed loops.[404] It is similarly undisputed that Verizon can and does serve CLECs' UNE-P customers using the same IDLC technology.[405] Thus, the debate regarding the technical feasibility of IDLC in a forward-looking network is restricted only to that portion of the total loop element that is expected to be used for unbundled loops, or UNE-L.[406]

Mr. Gansert made clear on cross-examination that the sole basis for Verizon's claim that it is not technically feasible to design a forward-looking network without UDLC is the claim that UDLC is purportedly need to provision unbundled loops over fiber feeder.[407] In its brief, Verizon asserts that UDLC is also "necessary to provide services *other* than unbundled loops," and cites a single answer by Mr. Gansert as support for this assertion.[408] But the only other service that Mr. Gansert could identify as purportedly requiring UDLC is a common non-switched private line.[409] Verizon has not presented any evidence that the forward-looking network at issue in this proceeding would be used to provide more than a negligible number of common non-switched private line arrangements.

Although Verizon argues that some amount of UDLC is needed to serve standalone unbundled loops, it provides no justification for assuming such a high share of UDLC. Arguing that the UDLC share should be greater than zero does not come close to meeting Verizon's

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404 Tr. 2592-2593, 2598-2599, 2/1/02 (Anglin).
405 *Id.*; AT&T's Initial Brief, at 125.
406 Verizon Initial Brief, at 74 (UDLC is "used to hand off 2-wire analog loops to CLECs").
407 Tr. 2591-2592, 2/1/02 (Gansert).
408 Verizon Initial Brief, at 76, citing Tr. 1852, 1/25/02 (Gansert).
409 Tr. 1852, 1/25/02 (Gansert).

burden of proving what the right percentage of UDLC versus IDLC should be. Verizon has presented no evidence whatsoever to show (or even to hint) that 68.75% of fiber fed loops would be used to provide UNE-L with UDLC, rather than to serve Verizon retail customers or to provide UNE-P arrangements (each of which can be done with the more efficient IDLC). We know that in Maryland Verizon assumed that 31.1% of loops would be on copper feeder, 21.5% on fiber feeder with UDLC, 47.4% on fiber feeder with IDLC.[410] Thus, in Maryland Verizon has assumed that 31 percent – not 68.75 percent – of all fiber fed loops would be served with UDLC. But the record evidence in this case shows that even the 31 percent UDLC assumption is much too high.

The evidence shows that, since Verizon is only claiming a need for UDLC to serve UNE-L orders, there is no reason for UDLC to represent more than 10 percent of the fiber fed loops as of the midpoint of the potential life of the UNE rates to be adopted in this proceeding. Verizon's own Business Plan shows that total number of wholesale UNE loops will only represent **<BEGIN PROPRIETARY>** XXXXXXX <**END PROPRIETARY>** of the total number of access lines in 2004.[411]

If the Department were to assume that 10 percent of fiber-fed loops would be served on UDLC rather than IDLC, the effect on AT&T's restatement of the Verizon loop model would be minimal. It would increase the statewide average 2-wire loop rate by only 3.88 percent, from $7.27 to $7.55.[412]

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[410] Tr. 1741, 1/25/02 (Gansert).

[411] *See* Ex. ATT-VZ 4-29, Second Supplemental Reply, proprietary attachment.

[412] The explanation for this result is as follows. AT&T has shown (in the first, interim step in its restatement of Verizon's loop model results) that running Verizon's LCAM model assuming that 100 percent of fiber-fed loops will be served with IDLC rather than Verizon's assumption of only 31.25 percent, with no other changes, reduces the resulting statewide average 2-wire loop cost estimate from $18.75 to $14.80. *See* AT&T's Initial Brief at 112; Ex. ATT-23, Baranowski Rebuttal, Ex. MRB-1. Changing the assumption to 90 percent rather than 100 percent would increase this interim result slightly to $15.37. (The reason: this is 85% of the way between $18.75 and $14.80, just as 90% is 85% of the way between 31.25% and 100%). In turn, $15.37 represents a 3.88 percent increase over the previous interim result of $14.80. Thus, the bottom line of the complete restatement would also

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In sum, Verizon's defense of its UDLC assumptions is misguided, and incapable of justifying the excessive loop rates proposed by Verizon. Verizon's arguments cannot justify assuming that any more than 10 percent of all fiber fed loops would be served with UDLC. Neither Verizon's arguments nor any record evidence supports a greater assumption of UDLC, and there is nothing whatsoever in the record to justify Verizon's arbitrary assumption that 68.75 percent of fiber fed loops (or 55 percent of all loops) would be served using UDLC. Even if one accepts Verizon's argument regarding the purported need for UDLC to serve UNE-L customers, that would not justify a statewide average 2-wire loop rate in excess of $7.55.

(2) Copper vs. Fiber: Verizon Arbitrarily Assumes Too High a Share of Fiber Feeder.

Verizon touts its assumption of 80% fiber feeder as an aggressive forward-looking assumption.[413] This is misleading for two reasons.

First, copper cable remains the most economic choice for a higher percentage of feeder runs than Verizon identifies. Indeed, Verizon's own statement that it is currently replacing copper with fiber "where it makes economic sense" indicates just this.[414] An economic life-cycle analysis of whether copper or fiber feeder is more efficient on a cluster-by-cluster (or serving area by serving area) basis results in a statewide mix of 50.8% copper and 49.2% fiber.[415] Verizon's assumption of a mix of 20% copper and 80% fiber is based on arbitrary decisions regarding the copper/fiber distance breakpoints for an entire wire center density zone.[416]

Second, Verizon's supposedly "aggressive" assumption is of little value given Verizon's indefensible assumption that the vast majority of fiber-fed loops would be served with costly and

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increase by 3.88 percent, if one changes the IDLC assumption from 100 percent of fiber fed loops to 90 percent of fiber fed loops. Increasing $7.27 by 3.88 percent yields $7.55.

[413] Verizon Initial Brief, at 71.

[414] Verizon Initial Brief, at 71.

[415] AT&T's Initial Brief, at 155.

inefficient UDLC technology. Using UDLC technology to provision unbundled loops over fiber feeder negates whatever efficiencies may have been achievable through increased fiber use.

b. Fill Factors: UNE Loop Rates Should be Based on Reasonable Assumptions of Effective Fill and Future Demand.

For years, Verizon has reaped the benefits of a fill factor set so low in Massachusetts that it provoked expressions of skepticism from the FCC. These unduly low assumptions of effective fill result in unduly high UNE rates. It is therefore unsurprising that Verizon does not want to change them. Verizon tries to defend its assumptions of low effective fill on the ground that they are purportedly consistent with Verizon's "experience in operating the network in Massachusetts."[417] As WorldCom pointed out, however, the FCC has expressly found that UNE rates may not be set using current effective fill simply because that represents the ILEC's historic practice.[418] Verizon's proposed fill factors, therefore, "reflect the amount of spare capacity that exists across the facilities in Verizon MA's network – amounts that have, on average, remained stable, for a number of years, and are expected to remain stable in the future."[419] Instead of modeling a forward-looking, efficient network, Verizon merely points to its embedded experience. That does not comport with TELRIC.

(1) Verizon's Distribution Fill Factor is Far Too Low and Will Result in Overstated UNE Costs.

For reasons that have already been detailed in AT&T's Initial Brief, Verizon's assumption of a 40% distribution fill factor is much too low and completely out of line with distribution fill factors approved by the FCC and other state commissions.[420] AT&T showed that Verizon had failed to provide any forward-looking evidentiary basis that could justify a

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[416] AT&T's Initial Brief, at 145-146.
[417] Verizon Initial Brief, at 81.
[418] *FCC's Kansas/Oklahoma 271 Order* ¶ 80.
[419] Verizon Initial Brief, at 81.

distribution fill factor of less than 64.1 percent.[421] AT&T will not restate that entire analysis, but will make a few more targeted observations.

Verizon makes significant concessions that undercut its starting assumption that a forward-looking network should always be designed with two lines per living unit. For example, Verizon states that demand for two lines may not "occur in a high percentage of cases."[422] This squares with Verizon hearing testimony stating that actual demand would remain "relatively stable" at 1.2 pairs per living unit.[423] Verizon also admits that there is considerable flexibility in Verizon's network, allowing the Company to "move the lines between the units" being served by distribution terminals.[424] As AT&T established in its Initial Brief, generally accepted engineering practices allow for outside plant designs to assume as little as 1.5 lines per living unit.[425] Given Verizon's own admissions in this proceeding, the assumption of 1.6 lines per living unit is much more reasonable and should be adopted by the Department.

Verizon also makes a weak attempt to defend its assumptions concerning vacant lots. Verizon contends that a 10 percent reduction of its distribution fill factor is necessary to account for zoned living units that have not been built and do not take service.[426] It states that this reduction is necessary because an ILEC must build cable before the majority of houses are built in a particular subdivision.[427] Verizon makes these assertions apparently without any recollection of the hearing testimony provided in this proceeding. As mentioned in AT&T's Initial Brief, Verizon conceded on cross-examination that it does not build plant to plots of

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[420] AT&T's Initial Brief, at 130.
[421] AT&T's Initial Brief, at 130-135.
[422] Verizon Initial Brief, at 87.
[423] Tr. 3346, 2/7/02 (Livecchi).
[424] Verizon Initial Brief, at 88 n.73.
[425] AT&T's Initial Brief, at 131-32.
[426] Verizon Initial Brief, at 90.
[427] Verizon Initial Brief, at 89.

vacant land "in the hopes that someday it is going to be developed."[428] Interestingly, Verizon abandons its completely unsupported contention, made during the hearings, that its 10 percent vacant land reduction reflected parcels that had not been built to the maximum density permitted by zoning.[429]

Verizon then asserts that the CLECs have failed to take into account vacancies in existing living units.[430] But that is not true. Verizon assumed that effective fill would be reduced by five percent due to vacant living units, and AT&T accepted that particular assumption.[431]

Finally, Verizon makes the unsupported assertion that adoption of AT&T's proposed distribution fill factor would result in higher costs, service degradation, and service and repair delays.[432] Verizon fails to cite any evidence to support this rhetoric. The Department should ignore this baseless statement.

(2) Verizon's Other Fill Factors Are Much Too Low.

As detailed in AT&T's Initial Brief, Verizon's other fill factors are much too low and do not reflect the least-cost network configuration required by TELRIC. These factors are also overdue for a significant increase, allowing for the modeling of a much more efficient forward-looking network.

Copper Feeder: Verizon offers little to support its 55.2% fill factor for copper feeder beyond its assertion that this "reflects the actual average current copper fill levels throughout the operating Verizon MA network."[433] Once again, purely backward looking effective fills, with no analysis to show that they were efficient or that they relate in any way to the forward-looking

[428] AT&T's Initial Brief, at 132.
[429] AT&T's Initial Brief, at 132-33.
[430] Verizon Initial Brief, at 89.
[431] AT&T's Initial Brief, at 130; Ex. VZ-36, Verizon Recurring Cost Panel Direct, at 80; Ex. ATT-23, Baranowski Rebuttal, at 27.
[432] Verizon Initial Brief, at 92.
[433] Verizon Initial Brief, at 93.

network, are improper under TELRIC. Verizon also argues that AT&T's proposed 80% copper feeder fill factor as inconsistent with Verizon's engineering guidelines that require feeder to be relieved when it achieves a 90% utilization level.[434] Precisely what engineering guidelines Verizon is referring to remains a mystery, as there is no citation to the record within its brief.[435] Even assuming that such a guideline exists and that it is relevant to a TELRIC inquiry, an 80% fill factor is not unreasonable. Factoring in an aggressive 3% annual growth in lines still results in copper feeder remaining below Verizon's supposed 90% ceiling within Verizon's stated relief interval of three to five years.[436]

Fiber Feeder: Verizon's defense of its fiber feeder factor is equally unavailing. Its response to AT&T's proposed 100% factor misses the entire point of the assumption.[437] As AT&T stated in its Initial Brief, its 100% assumption recognizes the inherent redundancy and flexibility of fiber.[438] The capacity of fiber is easily adjusted through electronic machinations.[439] Furthermore, as Mr. Donovan explained, use of a 100% fill factor for fiber feeder actually results in an effective fill of only 50%, since fibers are installed with full redundancy.[440]

RT Electronics: Verizon's remote terminal electronics utilization factor remains too low. Verizon makes the conclusory assertion, without record support of any kind, that the network could not operate with a 90% fill factor for RT electronics.[441] Verizon merely ponders that a 90% fill factor might mean that certain RTs throughout the network had reached capacity.[442] Its brief ultimately reaches no conclusion on the matter. Verizon does begin to make some sense, however, when it admits that there is "no doubt that individual RTs could

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434 Verizon Initial Brief, at 93.
435 Verizon Initial Brief, at 93.
436 AT&T's Initial Brief, at 136.
437 Verizon Initial Brief, at 95.
438 AT&T's Initial Brief, at 137.
439 AT&T's Initial Brief, at 137.
440 Ex. ATT-28, Donovan Rebuttal, at 11-12.

operate at a utilization rate of 90 percent."[443] Given the ease and rapidity with which RT electronics may be replaced, a 90% fill factor is eminently reasonable.

Duct Utilization: Verizon's argument concerning its duct utilization factor also fails to carry its burden. Nowhere does Verizon address the inherently overlapping nature of such a factor, which led the New York Commission to eliminate this factor in its UNE Rates Order.[444]

(3) Verizon's Brief Does Nothing To Damage AT&T's Position That Future Demand Should Be Considered When Determining UNE Costs.

AT&T has proposed a reasonable adjustment to Verizon's LCAM Model to account for future growth in customer demand.[445] This adjustment takes into account the "need to spread the costs of [investment] in a manner that is fair to both present and future consumers."[446] In other words, current customers should not be forced to pay the full cost of facilities kept in reserve for future customers who will pay for such facilities themselves. Verizon itself admits that one reason spare facilities are maintained is to meet future growth in customer demand.[447] AT&T's adjustment is based upon the approximate average total line growth Verizon has experienced in Massachusetts over the last five years as reported in ARMIS data.[448] Thus, AT&T's adjustment is thoroughly supported and makes logical sense, as the New York Public Service Commission recognized when it adopted this adjustment in its UNE Rates Order.[449]

Instead of engaging AT&T's proposal on its merits, Verizon chooses to mischaracterize its position. Verizon states that AT&T's adjustment fails to recognize that customers pay the

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[441] Verizon Initial Brief, at 96.
[442] Verizon Initial Brief, at 96.
[443] Verizon Initial Brief, at 96.
[444] Verizon Initial Brief, at 95.
[445] Ex. ATT-23, Baranowski Rebuttal, at 33.
[446] *New York UNE Rates Order*, at 98.
[447] Verizon Initial Brief, at 82.
[448] Ex. ATT-23, Baranowski Rebuttal at 33.
[449] AT&T's Initial Brief, at 140.

incremental costs of facilities during the period that the customer receives service.[450] Verizon never fully explains this argument, but it seems to believe that by making a future demand adjustment to loop rates, discounts are granted to current customers at the expense of future customers. This is nonsensical. AT&T's adjustment takes into account *total* future demand growth over an extended period of time – specifically five years of ARMIS data.[451] Thus, rates are averaged downward to reflect this long term growth in demand. AT&T's adjustment, therefore, does not assume that a current user pays the full costs of a facility "forevermore" over a short period of time.[452] Rather, it recognizes that customers pay long-run incremental costs. It also properly recognizes that such long-run costs should be discounted to reflect long-term customer growth.

3. HAI 5.2a-MA: Verizon's Tired Criticisms of the HAI Model Have No Merit.

As AT&T noted in its Initial Brief, the Department's responsibility in this proceeding is to set pro-competitive, TELRIC-compliant UNE rates. Doing so does not require the selection of one cost model over another. That is especially true in this case, where Verizon's loop model and the HAI 5.2a-MA model produce almost the same statewide average 2-wire loop rate, once the Verizon model is run with appropriate inputs. Nonetheless, we will respond to many of Verizon's attacks on the HAI model proffered in this proceeding, both to show that those attacks are in error and to show that Verizon continues in this realm its pattern of attempting to distract the Department from the true, material issues in this case. AT&T discussed the key methodological flaws of Verizon's loop cost model in our Initial Brief, and we will not repeat those points here.

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[450] Verizon Initial Brief, at 84-85.
[451] Ex. ATT-23, Baranowski Rebuttal, at 33.
[452] Verizon Initial Brief, at 85.

a. The HAI Model is No More "Static" than Verizon's LCAM: Both Account for Future Growth by Leaving Spare Capacity, and Verizon's Contrary Claims Amount to Deliberate Misrepresentations.

Verizon's primary mode of attack is to repeat the incorrect claim that the HAI 5.2a-MA model is a "static" model which does not account for future customer demand.[453] Verizon asserts that the HAI assumes "a network that never has to experience any growth, customer churn or fluctuations in demand," which is capable of "satisfying only existing demand."[454] It says that the HAI model sizes the network "to perfectly accommodate current demand," without providing "for a sufficient amount of spare capacity."[455] These claims are simply not true. Even more disturbing: Verizon ***knows*** that these claims are untrue, but it repeats them at length anyway.

Both Verizon's LCAM and the HAI 5.2a-MA models provide spare capacity to account for future growth in access line demand in the same way. In Verizon's loop model, future growth in demand "is really addressed in the loop model through the utilization factors."[456] To leave no doubt about this point, Mr. Gansert immediately stated it two more times: "And then the utilization is really how we account for demand. Really the utilization is a surrogate for demand."[457] The exact same thing is true of the HAI model.[458]

Verizon's brief acknowledges this at page 171, but asserts that the HAI model uses such high utilization factors that it fails to provide for adequate spare capacity. However, at page 83 of the very same brief, Verizon lets slip that this claim is untrue: Verizon admits that "the

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[453] Verizon Initial Brief, at 4, 13-14, 17, 169, 185, 189-190.
[454] Verizon Initial Brief, at 169.
[455] Verizon Initial Brief, at 24.
[456] Tr. 3262, 2/6/02 (Gansert).
[457] Tr. 3263, 2/6/02 (Gansert).
[458] Ex. ATT-28, Donovan Surrebuttal, at 6.

Hatfield's [sic] effective distribution fill factor is 49 percent."[459] A more precise way of making this point is that the HAI 5.2a-MA as run and submitted by AT&T results in an effective distribution fill of 48.4 percent.[460] This effective fill "provides ***more*** than enough spare facilities to last for the ***entire*** service life of the plant."[461] If anything, this effective fill represents too ***much*** spare capacity, not too little. The record evidence shows that an effective distribution fill of around 64 percent is more appropriate for the forward-looking network.[462] In any case, the 48.4 percent effective fill of the HAI model as submitted is less than the 50 percent level that Verizon has sworn – in a declaration filed with the FCC – is "TELRIC-compliant."[463]

In sum, the 48.4 percent effective fill achieved in the HAI model as filed in this proceeding provides a surfeit of spare capacity, and represents an effective fill even lower than what Verizon has sworn is "TELRIC-complaint." Verizon's oft-chanted mantra, that the HAI model is "static" because it purportedly fails to provide for any spare capacity, is a deliberate misrepresentation. It cannot be squared with Verizon's own admissions in other parts of its brief, to the FCC, and in testimony of its own witnesses. Verizon's willingness to reiterate this fundamental misrepresentation about the HAI model, when facts conceded in its own brief and elsewhere by Verizon disprove the claim, confirm that Verizon's attacks on the HAI model are not credible or trustworthy. The Department should therefore give them no weight.

b. Verizon's "Validation" Arguments are Irrelevant and Baseless.

Verizon also makes the unsupported claims that AT&T has failed to provide any validation of the HAI Model.[464] As the record clearly reflects, AT&T made extensive efforts to

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[459] Verizon Initial Brief, at 83.
[460] Ex. ATT-26, Mercer Surrebuttal, at 10.
[461] Ex. ATT-28, Donovan Surrebuttal, at 6 (emphasis in original); Ex. ATT-27, Donovan Direct, at 20.
[462] AT&T's Initial Brief, at 130-135.
[463] Ex. ATT-9, Joint Declaration of Donna C. Cupelo, Patrick A. Garzillo and Michael J. Anglin, filed by Verizon-RI in CC Docket No. 01-324, in support of Verizon's Section 271 Application for Rhode Island, ¶¶ 41, 44.
[464] Verizon Initial Brief, at 171.

validate HAI route distance results with Verizon's own data in Massachusetts.[465] This was made impossible due to Verizon's own inability to produce complete route distance information.[466] The average route distance information that Verizon did provide, however, showed that the statewide average loop length produced by the HAI Model was approximately 10% *higher* than the Verizon average.[467] Verizon's unsupported contention that the HAI Model's inputs are selected "solely because they collectively lower the cost estimates produced" looks silly in the face of this undisputed evidence.[468] Moreover, AT&T did present evidence about the considerable validation efforts that were made between the HAI Model and two different ILEC loop models in proceedings in Florida.[469] Once again, these comparisons show that the HAI Model does represent a reasonable approach to TELRIC modeling – the HAI Model produced route distances between 5% and 15% longer than the ILEC models.[470]

Nonetheless, Verizon persists in comparing HAI outputs to its own embedded costs.[471] Such a comparison has no place in a TELRIC inquiry. As the FCC has noted: ". . . we do not believe that a forward-looking platform can meaningfully be verified by comparing its network to an embedded network. . ."[472] Verizon's persistence in drawing comparisons to its embedded network is evidence of its consistent refusal to accept the TELRIC concept. Even if such a comparison were relevant to a TELRIC inquiry, it could not be relied upon to produce anything approaching an accurate validation.[473] As Dr. Mercer explained in his surrebuttal testimony, Verizon's ARMIS data includes input from a variety of Verizon operations that have no

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[465] Ex. ATT-26, Mercer Surrebuttal, at 66.
[466] Ex. ATT-26, Mercer Surrebuttal, at 66.
[467] Ex. ATT-26, Mercer Surrebuttal, at 66.
[468] Verizon Initial Brief, at 172.
[469] Ex. ATT-26, Mercer Surrebuttal, at 59, 66.
[470] Ex. ATT-26, Mercer Surrebuttal, at 66.
[471] Verizon Brief, at 173-174.
[472] *FCC's USF Platform Order* at ¶ 66.
[473] Ex. ATT-26, Mercer Surrebuttal, at 56-61.

connection whatsoever with the provision of UNEs at issue in this proceeding.[474] Moreover, Verizon's ARMIS data is rife with embedded inefficiencies that can not be assumed within a proper TELRIC Model.[475]

As Dr. Mercer observed, the most useful validation of a TELRIC model that can be pursued is comparison with another TELRIC model.[476] As AT&T made explicit in its Initial Brief, a comparison of the HAI Model with a properly restated Verizon LCAM Model in this proceeding results in only a $0.18 difference in statewide average loop rates.[477] This is additional confirmation that the HAI model is accurately estimating the forward-looking cost of a network adequate to serve the entire element of loop demand for Massachusetts.

c. The HAI Model Uses Precise Geocoding and Clustering Methods to Locate Customers, Resulting in Accurate Calculations Regarding Outside Plant.

(1) Verizon's Criticisms Concerning Data Availability Are Without Merit.

As was made clear in AT&T's Initial Brief, the HAI Model's sophisticated method of locating customers through geocoding and clustering processes is precise and accurate and has won the support of the FCC.[478] Verizon persists, however, in arguing that the customer location database underlying the HAI Model's geocoding process is a "black box".[479] Specifically, Verizon continues to rely on the testimony of Mr. Dippon in arguing that AT&T somehow prevented Verizon from adequate access to customer location database and associated clustering

[474] Ex. ATT-26, Mercer Surrebuttal, at 56-61.
[475] Ex. ATT-26, Mercer Surrebuttal, at 56-61; *FCC's USF Platform Order* at ¶ 66.
[476] Ex. ATT-26, Mercer Surrebuttal, at 57.
[477] AT&T's Initial Brief, at 109.
[478] AT&T's Initial Brief, at 152-154.
[479] Verizon Initial Brief, at 176.

algorithm information during these proceedings.[480] AT&T has already shown in some detail that these assertions are illegitimate, and that Mr. Dippon's testimony lacks credibility.[481]

(2) HAI's Geocoding Process Relies Upon Market Tested, Accurate Customer Information And Logical Assumptions Concerning Customer Distribution.

AT&T's Initial Brief explored HAI's geocoding process in detail, including its reliance upon business and residential customer location data from commercial providers Metromail, Inc. and Dun & Bradstreet.[482] Both of the databases provided by these firms are used in critical business applications.[483] This information is market-tested and accurate – indeed the commercial survival of firms like Metromail and Dun & Bradstreet depends upon the accuracy of their information.[484] Verizon's inability to identify any differences between this customer location data, drawn from credible sources and made available for Verizon's complete review and analysis, and any of Verizon's own customer information is telling. Verizon's failure to produce any contrary evidence from the customer information within its own control warrants the inference that no such contrary evidence exists.[485]

Even though Verizon refused to produce any of its own customer location data, it has the audacity to continue to impugn the customer data relied upon by HAI.[486] The purported concern that HAI's customer location data is derived from "obsolete" mailing lists is baseless, for two reasons.[487] First, the vast majority of mailing list changes since 1997 would have been in the name of the occupant, not in the numbers and locations of customers.[488] But the name of specific customers is irrelevant to the modeling of forward-looking outside plant costs. Second,

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480 Verizon Initial Brief, at 176.
481 AT&T's Initial Brief, at 156-160.
482 AT&T's Initial Brief, at 151-52.
483 AT&T's Initial Brief, at 151.
484 AT&T's Initial Brief, at 151-52.
485 *Auto. Insurers Bureau* v. *Comm'r of Ins.*, 430 Mass. 285, 291 (1999).
486 Tr. 2736-2737, 2/4/02 (Mercer).
487 Verizon Initial Brief, at 193.

Verizon's contention ignores the fact that the HAI Model uses a normalization process using *current* ARMIS line count data in order to adjust the customer data provided by Metromail and Dun & Bradstreet to reflect subsequent changes in the numbers of customers.[489] This true-up is precisely what the FCC adopted in running its Synthesis Model.[490] Verizon's attempt to mischaracterize this true up of customer location data to more current customer count information as an "inappropriate mixture of data sources"[491] is without merit, and cannot be squared with the FCC's adoption of the same technique.

(3) Verizon's Clustering Comments Are Untrue as to HAI, And Instead Are Better Criticisms of Verizon's LCAM.

Verizon criticizes the HAI Model's accounting for the distribution of customers, claiming that within HAI all customers are "uniformly distributed across rectangular serving areas."[492] For reasons that were addressed in AT&T's Initial Brief, this criticism is groundless.[493] Verizon ignores the fact that the HAI Model uses a strand normalization mechanism which fully captures the effect of customers being concentrated in portions of certain clusters.[494] Verizon is also being disingenuous in making this point. Elsewhere in its brief, Verizon admits that its own LCAM Model assumes that customer locations are "evenly disbursed [sic]."[495] Even if the HAI model did the same thing, which it does not, that would not distinguish it from the LCAM model and thus is hardly a basis upon which Verizon can credibly criticize HAI.

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[488] Tr. 3104, 2/6/02 (Mercer).
[489] Tr. 3104-3105, 2/6/02 (Mercer).
[490] *FCC's USF Inputs Order* ¶ 61.
[491] Verizon Initial Brief, at 184.
[492] Verizon Initial Brief, at 193-94, 195-96.
[493] AT&T's Initial Brief, at 161.
[494] AT&T's Initial Brief, at 161.
[495] Verizon Initial Brief, at 69.

(4) Verizon's Invocation of Purported, but Inconsequential, Imperfections Is Another Effort to Strew Red Herrings.

Verizon makes passing reference, in a few short sentences, to what it characterizes as "three fundamental problems" within HAI's customer location process.[496] If Verizon believed this rhetoric, one would not expect Verizon to give these points such short shrift. But the better question, given the lack of substance or materiality of each of these points, is why Verizon bothered to mention them at all.

First, Verizon points out that different databases were used to geocode actual customer locations and road surrogate locations within the model.[497] As Dr. Mercer explained in hearing testimony, however, the end result of using these differing databases is a small increase in the dispersion of customers, thus leading to a very slight overestimate of the amount of outside plant and thus of loop costs.[498]

Second, Verizon makes the broad claim that actual customer locations within the HAI Model are not set back 50 feet from the road.[499] But this is only a restatement of the previous point. Verizon's decision to enumerate the same minor observation twice does not change the fact that it has a *de minimus* effect on HAI's cost estimate, and that the direction of this effect is to the benefit of Verizon.

Finally, Verizon and Mr. Dippon point to alleged "anomalies" within HAI's customer clustering in the Adams and Attleboro wire centers.[500] The Department should take note of the fact that Mr. Dippon "mapped all the customer locations … in Massachusetts,"[501] for all of the

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[496] Verizon Initial Brief, at 177.
[497] Verizon Initial Brief, at 177.
[498] Tr. 3020, 2/5/02 (Mercer).
[499] Verizon Initial Brief, at 177.
[500] Verizon Initial Brief, at 178.
[501] Ex. ATT-59, Dippon Surrebuttal, at 17.

4,166 customer clusters identified in Massachusetts,[502] and was only able to identify four instances of what he thought might be "anomalies." AT&T made clear during hearing testimony, however, that the customer placements at issue in these four examples were a result of the model's 1,800 line limit upon cluster size.[503] Once a cluster reaches this threshold, customer locations that would normally be included in the cluster are shifted to neighboring clusters.[504] Mr. Dippon attempted to refute this during hearing testimony by claiming that he had examined the 1,800 line threshold himself and determined that none of the clusters within the Adams or Attleboro wire centers reached the 1,800 limit.[505] Mr. Dippon stated that he reached his conclusion regarding cluster sizes after having examined the HAI Model's "Access database" and HAI's "work file that you get when you make a run [of the model.]"[506] Neither of these data sources, however, would have provided Mr. Dippon with information concerning cluster size *before* the line counts in each wire center are normalized to the Verizon-reported line counts for that wire center. The pre-normalization line counts are those that TNS uses in making its clustering size decisions, as explained in Dr. Mercer's prefiled direct testimony.[507] Mr. Dippon had free access to this data during the five days of electronic access TNS provided to him during discovery in this proceeding.[508] Mr. Dippon's failure to conduct the proper analysis is the only thing demonstrated by this assertion in Verizon's brief.

Verizon also takes issue with HAI's treatment of high-rise clusters, claiming that HAI places high-rise buildings in identical locations, and that many of those buildings are

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[502] Tr. 3153-3154, 2/6/02 (Dippon); Tr. 2801, 2/4/02 (Mercer).
[503] Tr. 3022, 2/5/02 (Mercer).
[504] Tr. 3022, 2/5/02 (Mercer).
[505] Tr. 3198, 3202, 2/6/02 (Dippon).
[506] Tr. 3198, 2/6/02 (Dippon).
[507] Ex. ATT-25, Mercer Direct, at 40, fn.4.
[508] Tr. 3171, 2/6/02 (Salinger); Tr. 3153-3154, 2/6/02 (Dippon).

unrealistically sized.[509] Verizon's criticisms are misplaced. As Dr. Mercer indicated in his surrebuttal testimony, Verizon's contention that HAI places high-rise buildings on top of one another is likely due to mapping errors committed by Dr. Tardiff.[510] Nonetheless, overlaps in high-rise clusters may occur due to the lack of a "footprint" database that could be used to assign horizontal dimensions to certain buildings.[511] The HAI model does not treat its high-rise placeholders as accurate determinations of building area in any event, and any minimal overlapping that occurs has no impact on the accuracy of the model's plant calculations.[512]

Finally, for the first time Verizon says that a wire center "is not accounted for" in the HAI model.[513] Verizon should have raised this issue in its July surrebuttal. The list of wire centers reflected in the HAI model run was produced as part of Dr. Mercer's direct testimony back in May 2001,[514] and thus there is no reason for Verizon not to have raised this issue earlier if it thought that it was truly significant. In any case, the impact of this imperfection is again immaterial. The HAI 5.2a-MA model properly accounted for all customers and customer locations in Massachusetts. The inadvertent mismatch between the publicly available database from which the Massachusetts wire center locations and boundaries was taken and Verizon's own wire center data therefore does not exclude any customers from the HAI calculus, but instead had the effect of assigning some customers to the wrong wire center. When one corrects the wire center listing, re-runs the clustering algorithm that had been provided to Verizon with the customer location database to which Verizon was provided full electronic access, and re-runs the HAI 5.2a-MA model with the revised cluster database, one sees that the difference between this corrected run and the version previously filed is immaterial. (Indeed, Verizon could have

[509] Verizon Initial Brief, at 194.
[510] Ex. ATT-26, Mercer Surrebuttal, at 35.
[511] Ex. ATT-26, Mercer Surrebuttal, at 36.
[512] Ex. ATT-26, Mercer Surrebuttal, at 36.
[513] Verizon Initial Brief, at 178.

done this analysis either on its own, with its knowledge of its own wire centers and the electronic data made available to it in this proceeding, or with the assistance available from TNS. Verizon acknowledged that TNS technical support was available at all times and was "quite responsive" to any requests for help.[515]) The impact is as follows on the 2-wire analog loop rates: the statewide average changes from $7.09 to $7.06, the Urban zone cost changes from $4.92 to $4.82, the Suburban zone cost changes from $7.75 to $7.89, and the Rural zone cost changes from $16.91 to $17.01. Thus, the statewide average impact is only $0.03, and the largest effect in any one zone is $0.14.

Though AT&T strives for perfection, we do not achieve it any more than does Verizon. Verizon has filed repeated revisions and corrections to its switch cost model, outside plant cost model, and non-recurring charge model throughout this proceeding. Though we apologize for the inadvertent imperfection of our original wire center listing, we respectfully suggest that the issue has no bearing on what unbundled loop rates should be adopted. Any suggestion by Verizon to the contrary would constitute unfounded and incorrect conjecture.

d. The HAI Model is Extensively Supported by Detailed Documentation and Data Supporting Its Assumptions, Methodologies and Inputs.

The HAI Model is thoroughly supported by extensive documentation.[516] Hundreds of pages detailing the Model's inputs, assumptions and methodologies have been provided.[517] Furthermore, electronic components of the model have been submitted allowing the Department and all parties to thoroughly trace the functions of the model.[518] The Inputs Portfolio submitted with the model provides the source and rationale for each of the more than 1,400 inputs used in

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[514] *See* Ex. ATT-25, Mercer Direct, ex. RAM-6d.

[515] Tr. 3174, 2/6/02 (Dippon).

[516] Ex. ATT-26, Mercer Surrebuttal, at 13-14.

[517] Ex. ATT-26, Mercer Surrebuttal, at 13.

HAI.[519] These inputs are "always constrained to publicly available information," facilitating validation efforts.[520]

Verizon tries to ignore this extensive documentation, and asserts that the HAI Model relies exclusively on unsubstantiated "expert judgment."[521] Verizon's comment is directed at the wrong party. AT&T provided extensive testimony from experts who explained how the inputs to the HAI model were substantiated, but the Inputs Portfolio details the publicly available information that confirms the accuracy of those inputs. In contrast, Verizon frequently relied upon unsubstantiated and unexplained expert opinion as the sole basis for key inputs to its cost models.[522] Verizon seems to believe it is entitled to a monopoly on the use of expert analysis in this case – that when Verizon invokes unsubstantiated and unexplained "expert" judgment without presenting the experts who were the source of it inputs, its position should be accepted without question, but that when HAI model inputs are derived from expert judgment that is explained in writing, substantiated by publicly available information, and subjected to cross examination, those inputs should be rejected even in the absence of any evidence to the contrary. Verizon's attacks on the HAI model are, once again, not credible.

AT&T has more than met any burden of producing evidence to show the reasonableness of the inputs it used in the HAI 5.2a-MA model. Thus, the burden has shifted to Verizon to produce data to disprove any input it wishes to question. "When the proponent has presented 'prima facie evidence' on an issue, the burden of production shifts to the opponent; and if the

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[518] Ex. ATT-26, Mercer Surrebuttal, at 13-14.

[519] Ex. ATT-26, Mercer Surrebuttal, at 13; Ex. ATT-25, Mercer Direct, Ex. RAM-3, Inputs Portfolio.

[520] Tr. 3032, 2/5/02 (Mercer).

[521] Verizon Initial Brief, at 4, 179.

[522] *E.g.*, Verizon Initial Brief, at 3, 51, 66, 72, 106, 215, 223.

opponent does not carry that burden, a finding against the opponent is required."[523] There is no doubt that Verizon has greater access to cost information regarding the local exchange network.[524] Thus, Verizon's failure to produce any concrete evidence to disprove any of the input data used in the HAI 5.2a-MA model indicates that no such contrary evidence exists. One must presume that if such information existed, it would have been presented: Verizon's failure to offer rebuttal evidence supports the obvious inference that no such evidence exists.[525]

e. The HAI Model Uses Reasonable Engineering Assumptions in Determining TELRIC Compliant UNE Rates.

Verizon makes the rather strange assertion that "in the real world ... the creation of distribution areas is not an exercise in clustering."[526] But in the very next sentence, Verizon recognizes that the definition of a distribution area involves the identification of the customers and the physical area to be served by a serving area interface (SAI).[527] This is exactly what the clustering process associated with the HAI model does as well.[528] Verizon's assertion that "[t]he Hatfield Model does not do this" is bizarre, and wrong. The FCC has specifically found that use of a clustering algorithm to group geocoded customer locations into serving areas is the appropriate way for a forward-looking cost model "to group customers in a manner that will allow efficient service."[529] As the FCC has [530]explained, "[t]he advantage of the clustering approach to creating serving areas is that it can identify natural groupings of customers. That is, because clustering does not impose arbitrary serving area boundaries, customers that are located

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[523] Liacos, Brodin & Avery, HANDBOOK OF MASSACHUSETTS EVIDENCE, 7th Edition, § 5.2.2 at 201 (1999). *Accord, e.g., Ford Motor Co.* v. *Barrett*, 403 Mass. 240, 242-243, 526 N.E.2d 1284, 1286 (1988).
[524] *FCC's First Local Competition Order* ¶ 680.
[525] *Auto. Insurers Bureau* v. *Comm'r of Ins.*, 430 Mass. 285, 291 (1999).
[526] Verizon Initial Brief, at 189.
[527] Verizon Initial Brief, at 189.
[528] Ex. ATT-29, Donovan Surrebuttal, at 5.
[529] *FCC's USF Platform Order* ¶ 42.
[530] *FCC's USF Platform Order* ¶ 45.

near each other, or that it makes sense from a technological perspective to serve together, may be served by the same facilities."

Verizon's criticism of AT&T's inclusion of a reduction in backbone cable investment to account for tapering is also without merit.[531] As Mr. Donovan's surrebuttal testimony states, Verizon itself takes into account tapering when designing outside plant.[532] Furthermore, AT&T's application of a 35% reduction is conservative, as it assumes only one tapering point rather than the several assumed by Verizon.[533]

Verizon also asserts that the customer clusters used in HAI 5.2a-MA are too large, and that there are not enough of them.[534] This assertion is without merit.[535] With fiber feeder steadily increasing in modern networks, loop equipment (particularly electronics associated with DLC systems) has become a much more significant cost driver than the cable itself.[536] Larger DAs and consequently larger SAIs take advantage of economies in scale with regard to these installations, while Verizon's focus wrongly remains on the comparative cost of physical feeder and distribution cable.[537] Verizon's stance is curious, given that its own operations documents reveal planning to consolidate smaller serving areas and its past expressions of excitement over the efficiencies created by larger SAIs.[538] Furthermore, the FCC has found that a forward-looking cost model should use a clustering algorithm that "tends to create the smallest number of clusters," because that represents the "least-cost, most-efficient method of grouping customers into serving areas."[539]

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[531] Verizon Initial Brief, at 191.
[532] Ex. ATT-29, Donovan Surrebuttal, at 10-11.
[533] Ex. ATT-29, Donovan Surrebuttal, at 10-11.
[534] Verizon Initial Brief, at 192.
[535] AT&T's Initial Brief, at 154.
[536] Ex. ATT-29, Donovan Surrebuttal, at 15.
[537] Ex. ATT-29, Donovan Surrebuttal, at 15.
[538] Ex. ATT-29, Donovan Surrebuttal, at 16-18.
[539] *FCC's USF Platform Order* ¶ 53.

Verizon makes a half-hearted attempt to recast its charge that AT&T's modeled SAIs do not have sufficient capacity to handle the designed number of distribution cables.[540] Verizon acknowledges that this concern was fully addressed by Mr. Donovan, but insists that the formula used by Mr. Donovan to size HAI's SAIs somehow does not provide for enough capacity.[541] This contention is completely unsupported and Verizon makes no attempt to explain it. Nonetheless, it should be noted that the formula employed by Mr. Donovan to size SAIs in this proceeding reflected standard industry practice and resulted in more than sufficient room for distribution plant in each of the HAI clusters.[542]

The HAI Model chooses an efficient mixture of aerial, underground and buried plant in order to create a least-cost network configuration compliant with TELRIC. Verizon insists that the model understates underground plant, yet admits within the same sentence that such plant is the "most expensive to install."[543] Verizon states that such plant is required in certain locations such as densely populated urban areas, then makes the completely unsupported assertion that HAI does not take such considerations into account.[544] As Mr. Donovan testified, this is not the case.[545] Verizon's conclusory, and incorrect, assertion to the contrary should be disregarded.

Verizon also contends that the HAI Model fails to take into account certain unique soil conditions within Massachusetts that make the placement of buried cable difficult.[546] Though Verizon never substantiates its unique soil claim with any evidence, the fact is that the HAI Model does take into account terrain conditions on a cluster by cluster basis.[547] Verizon contends that this can not be the case because the HAI Model does not shift a sufficient amount

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[540] Verizon Initial Brief, at 192-93.
[541] Verizon Initial Brief, at 192-93.
[542] Ex. ATT-29, Donovan Surrebuttal, at 19.
[543] Verizon Initial Brief, at 196.
[544] Verizon Initial Brief, at 196.
[545] Tr. 2877, 2/4/02 (Donovan).
[546] Verizon Initial Brief, at 196-97.

of investment in buried cable to aerial plant.[548] This misses the point, however, as HAI's cable investment choices are made upon life cycle cost analyses rather than the short-sighted view provided by upfront installation figures.[549] As Dr. Mercer showed, the lifetime costs (including maintenance) of aerial plant is more than twice than that of buried plant for copper cable and four times the cost of buried fiber cable.[550] Verizon's claim that more investment should reside in aerial plant fails to take into account the long-term efficiencies that drive HAI's cable investment selections.

Verizon also argues that the HAI Model does not take terrain into account because its adjustment has only a minimal impact on the average monthly loop rate.[551] This conclusory argument was disposed of by Dr. Mercer's surrebuttal testimony.[552] The average monthly loop rate is not an appropriate measure of impact given the multitude of other factors that effect monthly costs.[553] Looking to the HAI Model's plant placement investment expenditures provides a much more accurate picture of the effect of terrain.[554] Massachusetts terrain inputs result in a 14.7% increase in placement costs when compared to costs that result from the most favorable terrain inputs. Verizon's assertion that terrain has no meaningful impact within the HAI model is wrong, and refuted by the evidence.[555]

Verizon also argues that AT&T's assumed Remote Terminal (RT) and pole costs are based on incorrect assumptions.[556] The record reflects otherwise. First, AT&T's assumption of $3,000 for RT sites is reasonable, as reflected by AT&T's response to RR-DTE 77. Verizon

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[547] Ex. ATT-26, Mercer Surrebuttal, at 21.
[548] Verizon Initial Brief, at 197.
[549] Ex. ATT-26, Mercer Surrebuttal, at 21.
[550] Ex. ATT-26, Mercer Surrebuttal, at 22.
[551] Verizon Initial Brief, at 197.
[552] Ex. ATT-26, Mercer Surrebuttal, at 20.
[553] Ex. ATT-26, Mercer Surrebuttal, at 20.
[554] Ex. ATT-26, Mercer Surrebuttal, at 20.
[555] Ex. ATT-26, Mercer Surrebuttal, at 21.

claims this input underestimates costs due to the cost of such items as landscaping and drainage.[557] One is hard pressed to determine what extensive landscaping and drainage costs would be associated with the placement of a concrete unit similar to a typical residential patio pad. Furthermore, Verizon's claim that right-of-way acquisition adds to cost ignores its own policy to avoid paying for such costs.[558] Nevertheless, the publicly available information used to reach HAI's $3,000 figure is detailed in the record and results in a reasonable estimate.[559] Furthermore, Verizon's complaint that the HAI Model assumes all above-ground RTs ignores the fact that such an assumption is conservative, given the comparatively higher per-line costs for above ground RTs.[560]

Verizon also quibbles over pole spacing, arguing that HAI's assumption of a 150 foot interval between poles is unreasonable.[561] Verizon does not explain why it believes this is unreasonable, and instead merely makes the conclusory assertion that its own assumptions would "have been eminently more reasonable."[562] Such unsupported pronouncements do not carry Verizon's burden in this proceeding. HAI's pole spacing assumption are identical to inputs selected by the FCC and represent a reasonable approach to network design.[563]

Contrary to Verizon's claims, AT&T's assumption concerning structure sharing also reflects a reasoned, forward-looking approach to plant modeling.[564] AT&T's assumption that an increasing amount of aerial and underground structures will be shared is a reasonable one given

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[556] Verizon Initial Brief, at 198-99.
[557] Verizon Initial Brief, at 198.
[558] Ex. ATT-VZ 1-43.
[559] RR-DTE 77.
[560] Tr. 2984, 2/5/02 (Donovan).
[561] Verizon Initial Brief, at 199-200.
[562] Verizon Initial Brief, at 199.
[563] Ex. ATT-27, Donovan Direct, at 61.
[564] Ex. ATT-27, Donovan Direct, at 71.

the increasing influx of cable television facilities.[565] Verizon's response is to merely rely upon its current embedded data, which is irrelevant for TELRIC purposes.[566]

f. HAI's Calculation of Common Costs and Expense Factors is Reasonable.

Verizon's criticism of HAI's use of national expense ratios approved by the FCC points out a strength of the model, rather than a weakness.[567] Indeed, using a national ratio prevents Verizon from recovering costs caused by its own inefficient operations.[568] As Dr. Mercer stated in surrebuttal testimony: "[u]sing [a] nationwide E/I ratio at least recognizes that Verizon should be as efficient as other incumbents of comparable size. . ."[569] Verizon also expresses some concern over HAI's corporate overhead factor.[570] Verizon's criticism, however, amounts to no more than a comparison between HAI's assumed cost and Verizon's embedded costs, which are irrelevant to this proceeding.[571] HAI's inputs are fully supported.[572]

g. Verizon's References to Models in Other States Are Misleading, Incomplete, and Beside the Point.

Verizon says that the HAI 5.2a-MA model filed in this proceeding should be ignored because in other proceedings AT&T has either sponsored a modified version of the FCC's Synthesis Model, which of course is a close cousin that adopts the key aspects of HAI's customer location and clustering approach, or has not had the resources to sponsor its own model at all.[573] This is really quite a silly point. Verizon sponsors completely different models in the former GTE territory from what it has sponsored here. Does Verizon truly think that this is grounds for the Department to ignore Verizon's LCAM and other models? Of course not. The

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[565] Ex. ATT-27, Donovan Direct, at 71.
[566] Verizon Initial Brief, at 200-201.
[567] Verizon Initial Brief, at 205.
[568] Ex. ATT-26, Mercer Surrebuttal, at 42.
[569] Ex. ATT-26, Mercer Surrebuttal, at 43.
[570] Verizon Initial Brief, at 207.
[571] Verizon Initial Brief, at 207.
[572] Ex. ATT-26, Mercer Surrebuttal, at 43-44.

Department should reject the cost estimates generated by Verizon because it used unreasonable inputs and assumptions that violate TELRIC, and because the methodology of LCAM also violates TELRIC, not on the *a priori* basis that Verizon uses other models elsewhere. Verizon is, once again, being disingenuous. The issue for the Department is what UNE rates are appropriate based on the record evidence presented in this case, and based on the TELRIC methodology.

The HAI Model has been refined over time, and in this proceeding AT&T has provided extensive support for the model inputs and for the methodology used to generate outputs. The most current versions of the HAI Model have been adopted by a growing number of state regulatory commissions. The FCC, after detailed testing and analysis of several proposed cost models, adopted significant aspects of HAI in its Synthesis Model, including HAI use of geocoded data to determine customer locations, use of a clustering algorithm to group those customer locations into serving or distribution areas, the association of those clusters with telephone company serving areas, and the estimation of the quantity and cost of outside plant needed to serve the customer locations within each cluster.[574] Verizon argues that the Department should ignore the HAI 5.2a-MA Model because the FCC did not fully embrace every aspect of HAI's methodology and because other state commissions have not followed previous versions of the model.[575] This argument is deliberately misleading, because it relies primarily upon concerns that some state commissions had with very early versions of the HAI Model, which have no relevance to the more refined model now before the Commission. For example, Verizon is discussing the mid-1996 Hatfield version 2.2 when it emphasizes prior

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[573] Verizon Initial Brief, at 212.

[574] AT&T's Initial Brief, at 157-158, and authorities cited therein. *See also* Section IV.A.3.e. beginning at page 105, above.

[575] Verizon Initial Brief, at 207-212.

criticism by the California Commission of "the model's reliance on 'unidentified experts.'"[576] That criticism has no relevance to the evidence presented by AT&T in this proceeding, which included detailed information about the engineering experts relied on to develop model inputs, one of whom was available for cross-examination at hearings.[577]

It is particularly ironic that Verizon chooses to quote at length from the New Hampshire PUC's UNE rate order.[578] In New Hampshire, Verizon stipulated to the use of a geocoded customer location model developed by Ben Johnson Associates for setting loop rates. The PUC's Commission's stated reasons for rejecting the HAI 5.0a model cannot be squared with the Commission's endorsement of Dr. Johnson's Telecom Model for setting loop rates. Nor can it be squared with TELRIC. The New Hampshire PUC accepted Verizon's complaint that the HAI model "designs and builds an entirely new, full-grown instant network, ignoring the actual methods by which any carrier would produce a network."[579] TELRIC involves the "pricing of a forward-looking network built from scratch, given the location of existing wire centers."[580] The fact that the HAI model conforms to the TELRIC methodology as required is a strength, not a weakness.

Not surprisingly, while relying on criticisms of earlier versions of the HAI Model, Verizon ignores the significant fact that more recent, improved versions of the HAI Model have been adopted by various state regulatory commissions, including those in Kentucky, Louisiana, Hawaii, Nevada, Minnesota and Texas.[581] Just months ago, on November 8, 2001, an

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[576] Verizon Initial Brief, at 210.

[577] *See* Ex. ATT-42, Madden Direct 6/30/98 at Ex. TCM1 (adopted by James Wells). AT&T has identified the engineering experts it relies upon, documented their experience and qualifications and provided (in the HAI Inputs Portfolio) extensive detail as to how engineering assumptions were made and validated.

[578] Verizon Initial Brief, at 212.

[579] *Id.*

[580] *FCC's Rhode Island 271 Order* ¶ 34, citing *FCC's First Local Competition Order*, ¶ 685 and ¶ 677 fn. 1682, and citing 47 C.F.R. § 51.505.

[581] *See, e.g.*, Kentucky Public Service Commission, Administrative Case No. 360 (Order dated May 22, 1998) (Adopting HAI Model, Release 5.0a for USF purposes) ("KPSC Order"); Louisiana Public Service Commission, (continued…)

Administrative Law Judge for the Arizona Public Utilities Commission recommended adoption of the HAI 5.2a model to set UNE rates, on the ground that the HAI model "provides the most appropriate measure of determining TELRIC-compliant, forward-looking costs and prices for UNEs."[582]

Verizon attempts to minimize the significance of AT&T's representations that the HAI Model has been subject to detailed scrutiny around the country and has been refined as a result of such scrutiny, but the truth is that as concerns have been addressed, state commissions have become more willing to adopt the HAI Model. The Department, as a result of the national scrutiny of the HAI Model, has before it a refined model that can and should be used to inform the setting of pro-competitive, TELRIC-compliant UNE rates.

The actions of the Kentucky Public Service Commission (the "KPSC") perfectly illustrate the significance of the refinements to the HAI Model. In its decision adopting HAI 5.0a, the KPSC noted that it had first evaluated Hatfield Model Version 2.2.2 in arbitration proceedings (at which it did not adopt the earlier version of the model), but also noted that "as the FCC and the states refine their critiques and suggestions" the model has "evolved into the current HAI Model, Release 5.0a."[583] In adopting HAI 5.0a, the KPSC concluded that HAI 5.0a "aligns itself with current technology which is least-cost, most efficient and reasonable" and that

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Order No. U-20883 (Subdocket-A) (April 15, 1998) (adopting Hatfield method); Public Utilities Commission of the State of Hawaii, Docket No. 7702, Order No. 16272 (April 3, 1998)("[w]e will adopt Hatfield Model 3.1"); Public Utilities Commission of Nevada, Docket No. 96-9035, Opinion and Order (December 11, 1997) ("Hatfield Model, Version 3.1 shall be the basis upon which the Commission will determine the forward looking economic cost of unbundled network elements"); Minnesota Public Utilities Commission, Docket No. P-999/M-97-909, Order Adopting Cost Study (June 4, 1998) (adopting ALJ recommendation to use Hatfield Model and substituting latest version (5.0a) for version considered by ALJ); Texas Public Utility Commission, Docket NO. 18515, Interim Order with "Decision Point List" (December 3, 1998) (adopting HAI 5.0a, holding that it satisfies the FCC's TELRIC criteria, and specifically finding that it designs appropriate forward-looking network structure) ("*Texas PUC Decision Adopting HAI 5.0a*").

[582] *In The Matter Of The Investigation Into Qwest Corporation's Compliance With Certain Wholesale Pricing Requirements For Unbundled Network Elements And Resale*, Arizona Corporation Commission Docket No. T-00000A-00-0194, Recommended Phase II Opinion and Order, at 10 (Nov. 8, 2001).

[583] KPSC Order at 5.

it "produces a reasonable and accurate estimate of average loop length for all loops in the study area."[584]

Verizon's suggestion that the HAI Model has been rejected everywhere it has been offered is patently incorrect. To the contrary, as noted above, at least six state commissions recently have adopted the HAI Model and the decisions cited by Verizon in which commissions have expressed concerns about the model generally address earlier versions of the model. Thus, contrary to Verizon's suggestion, actions taken by other commissions militate in favor of, rather than against, use of the HAI model to inform the setting of UNE rates.

B. OSS Charges: The Department Should Reject Verizon's Proposed Per Line Surcharge for OSS Related Costs.

The record evidence supports rejection of Verizon's proposed OSS charges, for the reasons discussed or referred to in AT&T's initial brief at pages 163-169. Two points in Verizon's initial brief merit a response.

First, Verizon is playing word games when it refers to "the Access to OSS UNE," and tries to define OSS access as a UNE separate and apart from use of the OSSs themselves.[585] When the FCC regulations mandate that Verizon provide non-discriminatory access to the local loop or to local circuit switching capability, it is well understood that those unbundled network elements consist of all of the features, functions, and capabilities of the local loop or the local circuit switch, respectively.[586] Similarly, the obligation to provide non-discriminatory access to Verizon's OSSs means that CLECs are entitled to use all of the OSS functions available for pre-ordering, ordering, provisioning, maintenance and repair, and billing.[587] The FCC does not distinguish between using the OSS functions and "Access to OSS." But that is exactly what

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[584] KPSC Order at 10-11.
[585] Verizon Initial Brief, at 134.
[586] *See* 47 C.F.R. §§ 51.319(a) ("Local Loop and Subloop") and 51.319(b) ("Switching Capability").
[587] 47 C.F.R. § 51.319(g) ("Operations Support Systems").

Verizon is attempting to do. The reason is simple: Verizon is trying to take a defined portion of the total cost of the OSS element and assess it solely on CLECs. That is improper. Under TELRIC, Verizon must estimate the forward-looking cost of the entire OSS element, and then derive a per unit cost by allocating the total cost across total usage.[588] For the OSSs, as for all other UNEs, the total usage includes usage by both Verizon (for its retail customers) and by CLECs (for their retail customers).[589]

What Verizon has attempted to do is take an arbitrary subset of total OSS-related costs – the historic cost of "changes that were performed to allow the CLECs access to Verizon's OSS"[590] – and assess those costs only upon CLECs. In contrast, it is undisputed that all other costs for maintaining OSSs and associated hardware is reflected in Verizon's cost study through its ACFs, and thus those costs are spread across total end-user demand.[591] Indeed, AT&T has shown that the subset identified by Verizon as "Access to OSS" is also recovered through the same ACFs.[592] But the further point here is that it is improper, and does not comport with TELRIC, for Verizon to shift a subset of OSS-related costs entirely onto the shoulders of CLECs rather than reflecting it in per unit costs derived on the basis of total element demand, including the demand by Verizon for its retail customers as well as the demand by CLECs.[593]

Second, Verizon insists that it was proper to calculate its claimed OSS costs using 1999 prices for computer hardware, because those are "the lowest computer hardware costs Verizon experienced during the relevant period."[594] Verizon deliberately gets it wrong. The "relevant period" is the forward-looking period over which the proposed charges would be imposed, not

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588 *See* AT&T's Initial Brief, at 7-8; *FCC's First Local Competition Order* ¶ 682.
589 47 C.F.R. § 51.511(a).
590 Verizon Initial Brief, at 137.
591 *See* AT&T's Initial Brief, at 164-165; Verizon Initial Brief, at 137 fn.112.
592 *See* AT&T's Initial Brief, at 164-165.
593 40 C.F.R. § 51.511(a). *See also* AT&T's Initial Brief, at 7-8.
594 Verizon Initial Brief, at 134.

the historic period over which Verizon says it incurred past OSS costs. As the Department explained on the same issue two and one-half years ago:

> [Verizon] misconstrues our obligations under the Act and the FCC rules. The pricing of UNEs, per the TELRIC method, is not an exercise in cost recovery. Its purpose, as stated by the FCC, i[s] to provide an estimate of forward-looking costs of a hypothetical telecommunications network using efficient technology to serve current and reasonably expected levels of demand and customers … .[595]

Verizon's brief indicates that its proposed OSS charges are once again an impermissible attempt to recover historic costs, not a true measure of forward-looking costs.

AT&T respectfully urges the Department to reject the imposition of the separate OSS charges proposed by Verizon, because Verizon has not met its burden of proving that both the nature and the magnitude of these charges is proper.

C. HARC: Verizon's Weak Arguments Against AT&T's Proposed Rates for HARC Demonstrate the Soundness of AT&T's Position.

1. Verizon Offers No Evidence Inconsistent with the Results of AT&T's Empirical Investigation Of Horizontal Cable Length.

It is truly the height of audacity for Verizon, which presents no empirical justification for its claim that the average horizontal cable length is 150 feet, to argue that the empirical survey presented by AT&T/WorldCom, which shows an average cable length of 91 feet, is not based on a "substantiated" sample.[596]

Verizon claims that "it is unclear whether [Mr. Donovan's] sample represents only residential buildings, business locations, or a mix of both."[597] Verizon also claims that "there is no evidence in the record describing how the distances in Mr. Donovan's 'sample' were measured[.]"[598] Had Verizon reviewed the record in this case, it would have seen that AT&T's

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[595] *Consolidated Arbitrations* Proceeding, Phase 4-L Order at 46 (October 14, 1999).
[596] Verizon Initial Brief, at 133.
[597] Verizon Initial Brief, at 133.
[598] Verizon Initial Brief, at 133.

sample was based on residential buildings,[599] and that there was a detailed description of how the distances were measured.[600]

But more to the point, Verizon's criticisms relating to, for example, whether the 23 observations in the sample are "statistically significant" cannot be squared with Verizon's own approach, which was to make an unexplained assumption of horizontal cable length based on no data whatsoever.[601] Verizon's shameless rhetoric regarding alleged imperfections in the AT&T/WorldCom sample survey should be rejected out of hand, given the absence of any empirical support offered by Verizon for its cable length.

2. Verizon's Contention That Travel, Engineering and Material Purchase Time Accounts For Its Absurdly Inflated Time Estimates Should Be Rejected Outright.

Verizon seeks to deflect the criticisms of AT&T witness, John Donovan, regarding the grossly inflated labor time estimates that Verizon used for its HARC cost study.[602] Verizon tries to make Mr. Donovan's time estimates appear unreasonably short by describing five minute estimates that Mr. Donovan allegedly made for activities such as floor-to-floor travel and the placement of backboards.[603] Verizon's record cites for such estimates, however, do not refer to any testimony that Mr. Donovan gave. They refer only to unsupported claims made by Verizon witnesses seeking to characterize Mr. Donovan's testimony for Verizon's own purposes, and it is not at all clear from where Verizon's witnesses took their numbers.[604] More to the point, Mr. Donovan's labor time estimates are based on both FCC time estimates and his own experience.

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[599] RR-DTE-76 ("All of the MDU locations listed are residential buildings."); *see also* VZ-ATT/WC 1-34 (referring to "Multiple *Dwelling* Units" (emphasis added).)

[600] VZ-ATT/WC 1-34 ("For each building surveyed, the length of the horizontal wiring was measured on each floor from the distribution point (typically the terminal block) to each individual unit."); s*ee also* RR-DTE-76 ("In several instances, recently completed installation projects were selected as the measuring of cable distances in such units was made easier because unit walls were still open.").

[601] *See* AT&T's Initial Brief, at 175.

[602] Verizon Initial Brief, at 132-133.

[603] Verizon Initial Brief, at 132.

[604] Verizon Initial Brief, at 132-133.

The net result of those estimates indicate, for example, a quite reasonable 26 minutes to travel between floors and place a punch-down block and terminal.[605]

Verizon tries to explain away the differences by arguing that its longer time estimates are needed to get to the building and to "engineer" the job and purchase the materials.[606] Verizon, however, never explains how its estimate for travel time, "engineering" and material purchase, when allocated across each punch-down terminal placed in a building can produce the highly inflated time estimates for each punch-down block. For example, the FCC estimates ***one minute*** to place a 50-pair terminal punch down block, while Verizon's cost study assumes ***44 to 98 minutes*** per terminal, for terminals located on each floor, and ***139 to 308 minutes*** for terminals located in the basement.[607] When such time discrepancies *for each terminal* are multiplied by the number of terminals placed in a building, it is hard to understand how Verizon technicians could conceivably use up so much time traveling to the building, especially in light of Mr. Donovan's testimony that travel time is typically 15 to 20 minutes and it must be allocated across all of the work that the technician does at a building. Moreover, since under the TELRIC construct the work is suppose to represent the construction of a new network all at once, all of the work at the building will be accomplished at the same time.

Nor can Verizon reasonably claim that time spent "engineering" the project and purchasing the materials account for the huge differences in labor time estimates. The routine purchase and installation of backboards and punch-down blocks does not require sophisticated engineering and purchase decisions. Indeed, Verizon admits in its initial brief that "[b]uilding owners [not Verizon] must provide backboards,"[608] and the tiny 50-pair punch-down block

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[605] Ex. ATT-28, Donovan Rebuttal, at 42.
[606] Verizon Initial Brief, at 132.
[607] Ex. ATT-28, Donovan Rebuttal, at 40.
[608] Verizon Initial Brief, at 131.

shown in the picture at Figure 2 of Mr. Donovan's rebuttal testimony[609] is normally carried in every Verizon installation van. Such materials are standard fare in Verizon's inventory and the "engineering" is a technician with a tape measure at the site. In any event, Verizon has not presented any credible evidence why "engineering" and purchasing for such simple tasks contribute to such inflated time estimates.

D. DSL: Verizon Ignores Rates for DSL Over Fiber Fed Loops, Does Not Justify Any Charges for Line Sharing OSSs or Loop Conditioning, and Does Not Justify Verizon's Excessive Loop Qualification Charges.

1. Given Verizon's Recent Announcement That It Will Provide DSL Capabilities Over Fiber Fed Loops, and Its Silence Regarding AT&T's Proposed DSL-Over-Fiber Rate, the Department Should Approve AT&T's Proposed Recurring Charge For Such Loops.

In its initial brief, Verizon ignored AT&T's proposed recurring charge for fiber fed DSL capable loops.[610] Presumably resting on its patently false claim that there is no such thing as DSL over fiber fed loops, Verizon chose not to address AT&T's proposed charges. For Verizon, that was a tactical error, because Verizon has now admitted that DSL over fiber fed loops is indeed technically possible. In Docket 98-57 Phase III, Verizon has announced that it is beginning to provide such capability. AT&T's proposed charges for fiber fed DSL-capable loops are undisputed, and should be adopted.

During these proceedings, Verizon deliberately tried to mislead the Department by falsely asserting that DSL service cannot be provided to customers served on fiber-fed loops. Mr. Donovan, appearing on behalf of AT&T and WorldCom, testified that Verizon should be required to provide TELRIC-compliant UNE pricing for xDSL over fiber-fed DLC.[611] Mr. Donovan explained on cross-examination that a line card now available from Alcatel makes it

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[609] Ex. ATT-28, Donovan Rebuttal, at 38.

[610] For AT&T's summary of the record evidence regarding AT&T's proposed charges for DSL capable fiber fed loops, see AT&T's Initial Brief, at 178-182.

[611] Ex. ATT-28, Donovan Rebuttal, at 16-23.

possible for a customer receiving service via IDLC on fiber feeder to obtain DSL service.[612] He explained that this one card performs both the line splitting and DSLAM functions, takes the high-frequency data portion of the copper distribution signal and turns it into a packetized data stream that can be transmitted on the existing fiber feeder, and transmits the voice signal on the existing IDLC system.[613] Verizon belittled Mr. Donovan's testimony, asserting that it was "not only … ludicrous, but demonstrates a fundamental lack of familiarity with xDSL services."[614] Mr. Gansert asserted that there is no such thing as DSL over fiber, that the only way that fiber-fed customers could get DSL service would be to extend a completely separate data network out to the RT, and that a DSL customer could never receive service over a "digital loop carrier system."[615] But none of these assertions were true.

AT&T noted in our Initial Brief that Verizon's claims that DSL services cannot be provided for fiber-fed loops is inconsistent with Verizon's own planning guidelines.[616] Since then, Verizon has conceded not only that there is such a thing as DSL services to customers on fiber-fed loops, but has announced in Docket 98-57 (Phase III) that this technology is ready for deployment in Massachusetts.

Verizon's admission that DSL over fiber fed loops is technically feasible comes in the form of an announcement filed with the Department on March 7, 2002, in Docket DTE 98-57 (Phase III). Verizon informed the Department of plans to provide "high-speed data connectivity over specialized Next Generation Digital Loop Carrier (NGDLC) equipment to be deployed at selected remote terminal locations." NGDLC loops are simply fiber fed loops with a capability at the remote terminal for the insertion of a line card (*e.g.*, ADSL combo card) which converts

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[612] Tr. 2898-2899, 2/4/02 (Donovan).
[613] Tr. 2898, 2/4/02 (Donovan).
[614] Ex. VZ-18, Verizon NRC/DSL Panel Surrebuttal, at 58.
[615] Tr. 2589, 2/1/02 (Gansert); Tr. 3501, 2/7/02 (Gansert).
[616] *See*, Ex. CC-VZ 2-17, pages 3-4, 13-14, 16-17, 26-27 (proprietary), cited in AT&T's Initial Brief, at 163.

the DSL signal traveling over the copper distribution portion of the loop to a signal that can travel over the fiber portion of the loop, as Mr. Donovan explained.

Verizon's plans to provide "high speed connectivity over [NGDLC]" have been in development for a significant period of time. According to a Telcordia document dated May 16, 2000, which describes work for Verizon scheduled for early 2001 to enhance OSSs that will permit CLECs to order DSL capable loops, **<BEGIN PROPRIETARY>** XXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXX XXXXXX XXX XXXX XXXXX XXXXX XXXXXXXXX XXXXXXXXXXXX XXXXXX XXXXXX XXXXXXXXXXXXXX XXXXXXXX XXXXXXXX.**<END PROPRIETARY>**[617] In other words, in 2000 and 2001 when the OSSs were developed to allow CLECs to order DSL capable loops, Verizon contemplated providing such loops to CLECs in situations where they are fiber fed. It appears that Verizon was denying the technical feasibility of such capability in this proceeding despite the fact that it had long been planning to introduce it to the market.

As evidenced by Verizon's own filing in Docket 98-57 (Phase III), DSL capable fiber fed loops are a reality that Verizon intends to use. Verizon's insistence to the contrary in this proceeding has been an ongoing, deliberate misrepresentation.

The Department should establish the rates that AT&T has proposed for fiber-fed DSL in this proceeding. As AT&T stated in its initial brief,[618] those rates are:

UNE-Type	ADSL	HDSL 4-Wire
DSL Capable	$11.28	$12.65
DSL Equipped	NA	$32.23

[617] RR-DTE 50, Attachment H ("Version 4, Telesector Resources Group, Inc. On Behalf Of Its Affiliates, D/B/A Bell Atlantic Network Services, Unbundling and Line Sharing, Work Statement OLS260"), at 7.

[618] AT&T's Initial Brief, at 179.

With respect to copper fed loops, AT&T and Verizon agree that there should be no difference between the recurring charge for an unbundled copper loop used only to provide voice services and one used to provide DSL services.[619]

2. Verizon Fails to Justify Its Proposed Non-Recurring Charge for Line Sharing OSSs.

a. Verizon's Proposal For Non-Recurring Charges To Recover OSS Costs For Line Sharing Should Be Rejected.

Verizon proposed a non-recurring charge to be applied when CLECs order DSL capable loops. This special NRC is purportedly to recover the cost of OSS enhancements that were made to process such orders.[620] Verizon has never proved that the costs underlying this charge differs from the forward-looking costs already recovered by Verizon's recurring UNE rates.[621] Verizon's failure to provide such an explanation is fatal. AT&T proved that (a) the line sharing OSS costs proffered by Verizon are historic, embedded costs (Telcordia was paid for these enhancements in 2000-2001),[622] and (b) to the extent that they represent forward looking costs, such costs are already recovered in Verizon's common overhead factor.[623]

Verizon did not address either of these fundamental points in its initial brief. Indeed, Verizon made no effort at all to defend its line sharing OSS charges. As AT&T noted in its initial brief,[624] Verizon is obviously aware that its claim for OSS cost recovery related to the provision of DSL capable loops is weak, because it entered into a settlement agreement in New

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[619] AT&T's Initial Brief, at 178. *See also* Ex. VZ-36, Verizon Recurring Cost Panel Direct, at 96-97; Ex. ATT-26, Mercer Direct, at 68-69.

[620] RR-DTE-50, ¶ D.

[621] Verizon Initial Brief, at 266-282.

[622] RR-DTE-50, ¶ D ("Verizon believes it is entitled to recover, through OSS rates, systems costs for work has been done [sic] and *for expenses already incurred* to make these UNEs available" (emphasis added).) *See also, id*., D.2. ("Verizon will *recoup* the OSS costs back to the effective date of each product offering" (emphasis added).)

[623] AT&T's Initial Brief, at 183-184.

[624] AT&T's Initial Brief, at 184.

York in which it agreed not to seek recovery of such costs in that state.[625] The Department should not require Massachusetts end-users to pay for Verizon's double recovery of OSS costs when New York end-users do not.

b. Verizon's Documentation Relating To OSS Enhancements For Line-Sharing Demonstrate That Verizon's Proposed NRC Tries to Recover Historic Costs that Benefit Verizon and its Data Affiliate, and Not DLECs.

In a record request response, Verizon has implied that all the OSS enhancement costs for which it seeks recovery are for enhancements that benefit both Verizon (or its data affiliate Verizon Advance Data, Inc., known as "VADI") and unaffiliated DLECs equally to the extent that each orders the high frequency, data portion of a DSL capable loop.[626] But that is not correct. A careful review of the Telcordia work statements that describe the OSS enhancement work, the historic costs that Verizon seeks to recover, demonstrate that there is a significant amount of work that relates only to Verizon or VADI. Moreover, as discussed below, the documents directly contradict Verizon's contention that "VADI has the same system and system interface requirements as those of other CLECs, and as a result, VADI incurs the same charges."[627]

The Telcordia work to create the enhancements is divided into two phases. While Phase 2 contemplates work that can benefit both affiliated and non-affiliated DLECs, the same cannot be said for Phase 1. Indeed, the very first OSS capability enhancement set forth under "Phase 1 Unbundling and Line Sharing Capabilities and Scenarios" applies only to a situation

[625] Joint Proposal Concerning Verizon Incentive Plan for New York, NY PSC 00-C-1945, at 13-14 (filed Feb. 8, 2000).
[626] RR-DTE-50, ¶ F.
[627] RR-DTE-50, ¶ F.

when Verizon is the company that provides both voice and data services.[628] The second capability is available for more scenarios for Verizon (or its affiliate VADI) than it is for a DLEC.[629] Moreover, the fourth capability, while appearing neutral on its face, in fact benefits only Verizon's affiliate, VADI, because VADI is the only **<BEGIN PROPRIETARY>** XXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX. **<END PROPRIETARY>**.[630]

Verizon has failed to prove its conclusory claim that all OSS enhancement work benefits VADI and unaffiliated DLECs equally. In the absence of proof that the costs were incurred to provide OSS enhancements to CLECs, as opposed to the costs incurred to provide such enhancements only to VADI, the Department should deny Verizon's claim for OSS enhancement cost recovery.

3. Verizon Fails to Prove that Any Loop Conditioning Costs Would Be Incurred in a Forward-Looking Network.

Verizon tries to justify a loop conditioning charge by arguing that it will only be applied if "a CLEC requests conditioning that exceeds Verizon's network standards."[631] According to Verizon, this means the charge will only apply when a CLEC requests copper loops longer than 18,000 feet which contain load coils.[632] In making such arguments, however, Verizon ignores its own admissions that, in the network that serves as the basis of its own cost study in this case, there should be no need for any loop conditioning.

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[628] RR-DTE 50, Attachment H ("Version 4, Telesector Resources Group, Inc. On Behalf Of Its Affiliates, D/B/A Bell Atlantic Network Services, Unbundling and Line Sharing, Work Statement OLS260"), at 5. *See*, item b.(i.)(1).

[629] RR-DTE 50, Attachment H ("Version 4, Telesector Resources Group, Inc. On Behalf Of Its Affiliates, D/B/A Bell Atlantic Network Services, Unbundling and Line Sharing, Work Statement OLS260"), at 5. *See*, item b.(i.)(2), where **<BEGIN PROPRIETARY>** XXXXXXX XXXXXXX **<END PROPRIETARY>** is a scenario for which the enhancement is made available for Verizon but not for DLECs.

[630] RR-DTE 50, Attachment H ("Version 4, Telesector Resources Group, Inc. On Behalf Of Its Affiliates, D/B/A Bell Atlantic Network Services, Unbundling and Line Sharing, Work Statement OLS260"), at 5. *See*, item b.(i.)(4).

[631] Verizon Initial Brief, at 267.

Verizon assumes in its LCAM model that a forward-looking network would have 100% fiber feeder on all cable runs over 10,000 feet.[633] The HAI model ensures that no copper loop exceeds 18,000 feet in length.[634] Thus, it is undisputed that the forward-looking network that forms the basis of UNE rates in this case would never include any copper loops longer than 18,000 feet.[635] In other words, in the forward-looking network there never will be any need for loop conditioning, and thus there should be no loop conditioning charge.

Furthermore, as AT&T noted in its Initial Brief, loop conditioning expenses would not even be incurred in Verizon's current network if Verizon had merely followed its own engineering guidelines.[636] The Serving Area Concept employed by Verizon since 1972 eliminated excessive bridged taps for all loops and the Carrier Serving Area Concept employed by Verizon since 1980 eliminated all load coils, which are required whenever a loop has in excess of 18,000 feet of copper cable.[637] Thus, if Verizon had been following its own practices, then it would not require loop conditioning of any loop that Verizon has put into service since 1980, let alone any loops that make up the hypothetical network that serves as the basis of Verizon's cost study.

This exposes Verizon's proposed loop conditioning charge for what it really is – an attempt to recover expenses that would arise only because of the inefficiencies of its historic, embedded network. These expenses have no relevance to a TELRIC analysis. Verizon's proposed NRCs to remove loop defects should therefore be denied.

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[632] Verizon Initial Brief, at 267.

[633] Tr. 388, 1/16/02 (Stacy); Ex. ATT-13, Walsh Direct at 23-24.

[634] Tr. 2970, 2/5/02 (Donovan). *See also* Hatfield Inputs Portfolio § 3.5.10, included in Ex. ATT-25, Mercer Direct, ex. RAM-3 (HAI 5.2a-MA assures "that the total copper cable length for both copper feeder and copper distribution do not exceed the Maximum Analog Copper Distance, set by default at 18,000 feet").

[635] Tr. 388, 1/16/02 (Stacy); Ex. ATT-13, Walsh Direct at 23-24.

[636] AT&T's Initial Brief, at 186.

[637] Ex. ATT-28, Donovan Rebuttal, at 30-31.

4. Verizon Fails to Justify its Proposed Loop Qualification Charges.

AT&T demonstrated that Verizon's proposed loop qualification charge is overstated, because it is estimated on the basis of a loop qualification system that is not forward looking.[638] Verizon's response rests solely on the argument that, because its loop qualification process was deemed adequate for the purposes of its Section 271 application for Massachusetts, a cost estimate based on that process must be TELRIC-compliant today.[639] Verizon's argument does not demonstrate, however, that the cost estimate it proposes is based on a forward-looking system for storing and providing access to loop qualification information today. Verizon's argument is beside the point for two reasons.

First, a finding that Verizon's system – however clumsily – ultimately provides CLECs with the bare minimum of what they need for loop qualification information does not establish that the cost incurred to provide that information is the cost that would be incurred to provide the information from a modern, forward-looking system designed for that purpose. Nowhere in Verizon's brief did it cite to FCC language stating that the *cost* of providing loop information from the system that Verizon used to satisfy its Section 271 checklist requirement was a TELRIC compliant cost.

Second, even if the costs of obtaining information from Verizon's system had been TELRIC compliant at the time that Verizon filed for Section 271 approval (and there is neither evidence nor an FCC statement to that effect cited in Verizon's initial brief), such costs are not TELRIC compliant today. The record evidence in this case demonstrates the existence, and use by Verizon of, a system for developing, storing and accessing loop qualification information that was not known to the FCC (or at least not cited by the FCC in its decisions) at the time Verizon sought Section 271 approval in Massachusetts. As AT&T noted in its initial brief, Verizon

announced, by press release dated April 24, 2001, that it "has placed a multi-million dollar order for . . . Celerity, a comprehensive ADSL test system solution that prequalifies copper wire for broadband services in less time than other methods and *at significantly reduced costs.*"[640] That announcement was made eight days *after* the FCC approved Verizon's Section 271 application for Massachusetts on April 16, 2001. Clearly, Verizon cannot forever rely on its Section 271 approval to claim that the technology it used at that time remains forward looking into the indefinite future. The Department's decision regarding what is a forward looking network in the spring of 2002 cannot be based on systems that have become obsolete, but rather must be based on the record evidence in this case.

The Department should reject Verizon's proposed loop qualification charge based on a now obsolete technology and adopt instead AT&T's proposal that the charge be set on the basis of the cost of a "database dip" as recommended by Mr. Donovan.[641]

E. Interoffice Transport: Verizon Does Not Justify Its Proposed Charges for Dedicated And Common Transport.

Although Verizon never sets forth in its brief the IOF charges that it proposes, Verizon claims that its IOF study "produces reasonable cost estimates."[642] AT&T has presented the IOF charges proposed by Verizon, and explained how they must be revised to produce reasonable dedicated and common transport costs, in Section IV.E.1. of AT&T's Initial Brief, pages 197 to 199. AT&T's restatement adjusts the Verizon *dedicated* IOF cost study to: (1) reduce the six node assumption of rings to the appropriate number of 3.83; (2) separate DCS from transport costs; (3) reduce the EF&I factor; (4) correct the utilization factor; and (5) reflect proper cost of

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[638] *See* AT&T's Initial Brief, at 187-194, for a summary of AT&T's case.

[639] *See* Verizon Initial Brief, at 274.

[640] AT&T's Initial Brief, at 190, quoting Ex. ATT-28, Donovan Rebuttal, Exhibit JCD-2, Press Release April 24, 2001, at JCD-2.1-2.2 (emphasis supplied).

[641] Ex. ATT-28, Donovan Rebuttal, at 31.

capital and depreciation inputs. Also in that section, AT&T adjusts Verizon's *common* transport costs by (1) importing from AT&T's restatement of dedicated transport costs (restated to correct for the five Verizon errors listed above) the corrected dedicated transport costs; (2) reducing the weighted average distance between wire centers; and (3) applying the ACFs and overhead factors discussed in Section II.C. of AT&T's Initial Brief.

AT&T does not reiterate all of the ways in which the record evidence shows that Verizon's IOF cost estimates are excessive. Instead, in the following subsections AT&T addresses some of the more glaring errors and omissions in Verizon's initial brief.

1. Nodes Per SONET Ring: The Fixed Cost of Dedicated Transport Should Assume 3.83 Nodes Per SONET Ring, Not 6 Nodes Per SONET Ring.

Verizon claims that its "use of the six-node assumption was both unsurprising and eminently reasonable."[643] However, Verizon's initial brief confirms that the six node assumption was chosen by a cost-driven "team of experts"[644] and, more importantly, that Verizon's claim of reasonableness is supported ***only*** by the fact that it has used the six node assumption in other proceedings.[645] Repetition of the same unsupported claims yet another time, again without any proof, does not meet Verizon's burden of demonstrating that its cost estimates are reasonable.

Verizon fails to justify its six node assumption. Verizon argues that larger rings requiring more nodes result in certain efficiencies such as less fiber and fewer ring interconnections.[646] But this assertion does not tell the whole story. Increased nodes per ring will also *decrease efficiencies* because they decrease utilization of equipment at the nodes.[647] Verizon itself admits

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642 Verizon Initial Brief, at 111.
643 Verizon Initial Brief at 117.
644 Verizon Initial Brief at 117, fn.91 and 92.
645 Verizon Initial Brief, at 115 & fn. 88.
646 Verizon Initial Brief at 116.
647 AT&T's Initial Brief, at 201; Verizon Initial Brief, at 116.

in its brief that increasing the number of nodes per SONET ring reduces the utilization of each node.[648] Verizon tries to dismiss this problem by simply stating: "Verizon-MA determined that, based on the enhanced capabilities of the latest generation of SONET technology and operations, the average cost of a forward-looking SONET transport network is best estimated by a model assuming six nodes per ring."[649] *This is the sum total of proof that Verizon gives for its six node per ring assumption.* Verizon never makes the connection between its costing assumption of six nodes per SONET ring and the engineering it plans for its actual network. As explained below, both the engineering it plans for its network and the assumptions that it makes in its cost study assume traffic demand and a level of DS3s per node that requires – as a matter of arithmetic – 3.83 nodes per ring. Moreover, as explained in AT&T's initial brief, an assumption of 6 nodes per ring is inconsistent with the trend in SONET engineering, which is to realize smaller numbers of nodes per ring.[650]

Verizon's assumption of six nodes per SONET ring contradicts its own engineering documents provided in response to ATT-VZ 27-2 (supplemental reply). These engineering documents support the use of 3.83 nodes per SONET ring, not six nodes. In response to AT&T's request for Verizon's current IOF engineering guidelines,[651] Verizon provided an August 9, 1996 Nynex "Transport Planners Guide" which explains the relationship between the traffic demand for a SONET ring and the number of nodes per SONET ring needed to handle that traffic demand efficiently. Specifically, the document states that a 4-Fiber SONET Binary Switched Ring requires "a very high total and per-node traffic demand (>25 DS3s per node) to become

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[648] Verizon Initial Brief, at 116 fn. 90.
[649] Verizon Initial Brief, at 116-117; Ex. VZ-38A, Recurring Cost Panel Surrebuttal, at 86.
[650] AT&T's Initial Brief, at 201.
[651] Ex. ATT-VZ 27-2(g) (supplemental reply) (Gansert).

economically viable."[652] At the time of the 1996 publication of this document, 4-Fiber BLSR rings were not yet available from Fujitsu, and Verizon did not anticipate using these rings in its network.[653] However, Fujitsu now manufactures a 4-Fiber BLSR SONET ring, and Verizon uses this type of ring in its cost study of forward-looking costs for interoffice transport.[654] As Mr. Turner explained, the 25 DS3s per node inherent in the use of a 4-Fiber SONET Binary Switched Ring is mathematically equivalent to assuming 3.83 nodes per ring.[655]

Put another way, Verizon's IOF cost study assumption of six nodes per SONET ring mathematically equates to <**Begin Proprietary** XX **End Proprietary**> DS3s for each node.[656] This number of DS3s is inconsistent with the 4-Fiber BLSR SONET ring assumption in Verizon's cost study and <**Begin Proprietary** XXXXXXXXXXXXXXXXX XXXXXX XXXXXXX XXXX XXXXXX XXXX XXXXXX XXXX XXXX XXXXXXXXXX **End Proprietary**>, according to Verizon's own engineering document.

Quite simply, Verizon's six node assumption cannot be reconciled with more fundamental characteristics of the IOF network assumed in Verizon's own cost study. Using the mathematical relationship between the number of DS3s per node and the number of nodes per SONET ring demonstrates that Verizon's IOF cost study must use 3.83 nodes per SONET ring and the related number of 25 DS3s per node in order to be internally consistent with its own assessment of the efficient use of SONET technology.[657] In other words, by assuming six nodes per SONET ring, Verizon has chosen an inefficient forward-looking value, inconsistent with the Planning Guide of Verizon's engineers, simply to increase the cost of transport.

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[652] Ex. ATT-17P, Turner Surrebuttal, at 10 (citing Verizon's Technical Document Library, Transport Planners Guide, Section 2.3).

[653] Ex. ATT-17P, Turner Surrebuttal, at 10.

[654] Ex. ATT-17P, Turner Surrebuttal, at 10-11 (citing Cell "K4" in the "Fiber" worksheet within the "MA01-20 IOF Invest" electronic workbook).

[655] Ex. ATT-17P, Turner Surrebuttal, at 10-11.

[656] Ex. ATT-17P, Turner Surrebuttal, at 11.

2. DCS at the Termination Ends of a Circuit Can and Should Be Separated From Verizon's Proposed Dedicated Transport Rate.

Verizon claims that the technical requirements of the network make it impossible for Verizon to propose a separate rate for a digital cross-connect system ("DCS"). Verizon argues that DCS facilities should not be separated for *interconnection* DCS because, in this situation, DCS facilitates the provisioning of dedicated transport.[658] But this point is irrelevant, since it deals only with *interconnection* DCS, and Mr. Turner did not remove the cost of DCS used to interconnect SONET rings.[659]

As Verizon explains, "there are several types of DCS categorized by their functionality."[660] DCS at the termination ends of unbundled DS0, DS1 and DS3 circuits physically can be separated and therefore should be priced separately from Verizon's fixed and per monthly dedicated transport costs.[661] Management of circuits, not facilitation of provisioning, occurs at the end points of the circuit.[662] Either the circuit can be taken to DCS (and then to a DSX) frame or it can be taken straight to a DSX frame.[663] The comparison in cost of these two alternatives involves the additional cost of DCS, and the additional capability for reconfiguring circuits, versus allowing a CLEC to substitute alternative means, and less costly ones, to provide the same capabilities should the CLEC need those capabilities.

Verizon itself admits that it has the ability to separate out DCS at the terminal ends of a circuit if a retail customer elects this tradeoff, for example, with Enterprise Network

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[657] Ex. ATT-17P, Turner Surrebuttal, at 11.

[658] Verizon Initial Brief, at 119.

[659] *See* AT&T's Initial Brief at 203; Tr. 1523-1524, 1/24/02 (Turner).

[660] Verizon Initial Brief, at 119.

[661] Ex. ATT-16, Turner Rebuttal, at 13; Tr. 2511-2512, 2/1/02 (Gansert) ("The only time that DCS can be separated out as an additional option…is when it's applied at the ends of circuits for management functions for those circuits.")

[662] Tr. 2512, 2/1/02 (Gansert).

[663] Ex. ATT-16, Turner Rebuttal, at 13.

Reconfiguration Service ("ENRS").[664] Verizon's ENRS permits "customers to reconfigure Special Access Services connected at Digital Cross-connect Systems."[665] The price for the network access ports on the DCS is "determined by the type of Special Access Service that is associated with the port."[666] As Mr. Turner explained, "if the customer wants to connect DS3 Special Access to the DCS, the customer must purchase a DS3 network access port at the DCS." AT&T proposes exactly this method for establishing the cost for unbundled dedicated transport.

The New Jersey Board of Public Utilities recently adopted the same costing method proposed here by AT&T for dedicated transport.[667] The NJBPU adopted DCS port costs per month for DS0, DS1 and DS3 Terminations.[668] Verizon has represented to the FCC that all of the inputs underlying the recurring UNE rates adopted in New Jersey are TELRIC-compliant and were adopted in accord with TELRIC principles.[669]

The record evidence in this proceeding demonstrates that the Department should similarly require Verizon to provide separate termination DCS rates, particularly in light of Verizon's commitment to do so in its interconnection agreements with AT&T and WorldCom.

3. EF&I Factor: Verizon's EF&I of 36.4 Percent Proposed in New York Calculates Reasonable Dedicated Transport Costs, Unlike the Inflated EF&I Factor Proposed Here by Verizon-MA.

Verizon inaccurately and improperly characterizes Mr. Turner's recommended 36.4 percent EF&I factor. Verizon states that "it is not …clear whether, as is the case with their other EF&I proposals (such as digital switching), AT&T is seeking to rely on figures that are almost 10 years old."[670] This is a gross misrepresentation of the record evidence. The 36.4 percent

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[664] Verizon Initial Brief, at 120; Tr. 2511-2512, 2/1/02 (Gansert).
[665] Ex. ATT-16, Turner Rebuttal, at 12 (citing Verizon-MA Special Access Tariff FCC No. 11, Section 19.1).
[666] Ex. ATT-16, Turner Rebuttal, at 12 (citing Verizon-MA Special Access Tariff FCC No. 11, Section 19.4.2).
[667] New Jersey UNE Rates Order, Attachment A, Recurring Rate Schedules, page 4 of 5.
[668] New Jersey UNE Rates Order, Attachment A, Recurring Rate Schedules, page 4 of 5.
[669] Verizon New Jersey Revised 271 Application, at 7.
[670] Verizon Initial Brief, at 121.

EF&I factor recommended by Mr. Turner for IOF is based on the factor that Verizon itself proposed in New York in February 2000, based on 1997 data.[671] As admitted by Mr. Anglin, the components that comprise the EF&I factor – company wide contract prices, labor rates, IOF transmission equipment – are exactly the same in New York as in Massachusetts.[672] Yet, Verizon claims that its Massachusetts EF&I factor should be 46 percent greater than the factor used in New York. This makes no sense.[673]

Verizon claims in its brief, without citation and despite the testimony of Mr. Anglin to the contrary, that the New York equipment "accounted for a larger investment amount, leading to a smaller EF&I, that cannot simply be applied to the very different Massachusetts investment."[674] Verizon cannot point to any evidence showing that it costs substantially more to engineer, furnish, and install IOF equipment in Massachusetts than it does in New York. To the contrary, Mr. Anglin plainly stated at the hearing that he did not have any knowledge of what went into the New York study.[675]

In sum, Verizon's unsupported and inflated EF&I factor should be rejected.

4. Utilization: Verizon Has Not Justified a 75 Percent Fill Factor for IOF.

The single paragraph on Verizon's proposed fill factor repeats almost word for word what appears on page 171 of Verizon's Recurring Cost Panel Direct Testimony.[676] Verizon offers no additional support for its 75 percent fill factor, even after (1) in rebuttal testimony, Mr. Turner recommended a 100 percent fill factor for dedicated IOF because Verizon does not bear

[671] *See* AT&T's Initial Brief, at 204. *See also* Tr. 1511-1513, 1/24/02 (Turner).
[672] Tr. 2521-2523, 2/1/02 (Anglin).
[673] RR-DTE-47 (Turner).
[674] Verizon Initial Brief, at 121.
[675] Tr. 2520, 2/1/02 (Anglin).
[676] Verizon Initial Brief, at 112.

any risk if a CLEC does not utilize the entire capacity of DS1 multiplexing equipment;[677] (2) in oral testimony, Mr. Turner further explained his recommendation;[678] and (3) the Department asked and Verizon provided a response to the following record request:

> Given that CLECs have to lease the entire capacity of the DS1 multiplexing equipment when they purchase DS1 to DS0 multiplexing, why is .75, rather than 1, an appropriate utilization factor?[679]

Verizon's failure to support its 75 percent fill factor in the face of criticism and the Department's request for more information demonstrate that Verizon cannot defend its fill factor and therefore Verizon's fill factor should be rejected.

It is telling that Verizon was unwilling to point to its response to RR-DTE-69 in explaining its position on this issue. In our Initial Brief at pages 205- 207, AT&T shows that Verizon's proposed fill factor of 75 percent is not correct in light of the information provided in response to RR-DTE-69. The Department should adopt a 100 percent fill factor because for the majority of the investment – the channel bank common equipment and the plug-in equipment – Verizon bears no risk if the CLEC does not use the whole element. Verizon has not shown otherwise, and thus it has failed to meet its burden of proof on this point.

5. Common Transport: Verizon Fails to Justify Its Assumptions Regarding the Average Distance Between Wire Centers.

Instead of providing support for its grossly overstated weighted average distance of 37.52 miles, Verizon attempts to shift to AT&T the burden of requesting information that would support Verizon's costs.[680] This is ridiculous and directly contrary to Verizon's burden in this case to prove that its proposed costs are reasonable.

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677 Ex. ATT-16, at 13-14.
678 Tr. 1523-1525, 1/24/02 (Turner).
679 RR-DTE-69 (Matt).
680 Verizon Initial Brief, at 122.

Moreover, there is no practical way that Verizon can compute a weighted average distance of 37.52 miles for such a dense and small state as Massachusetts.[681] Verizon's claim that it weighted its common transport distance "by trunks" either is untrue or was done incorrectly. No record evidence, however, exists to support or permit investigation of Verizon's claim.

The evidence does show that larger states, such as Texas, Missouri, and Kansas – all states with a lower population density than Massachusetts – utilize a weighted average IOF distance in the range of 12 miles.[682] Even though Verizon admits (by its claim that it has weighted the distance by trunks) that the average distance between its wire centers must be weighted by MOUs, Verizon continues to maintain that every minute of every local call in Massachusetts must travel an average of 37.52 miles. Recognizing its inherent implausibility, Verizon does not even mention this huge figure in its initial brief.[683]

An example illustrates that Verizon's assumption is unreasonable for Massachusetts. In order to calculate a weighted average distance of 37.52 miles, all calls within Boston, which travel between central offices in close proximity to one another, let's say 5 miles, would have to be weighted with an equal number of calls traveling circuits with an average distance of 70 miles to a city like Hyannis. ((5 + 70) / 2 = 37.5) To make Verizon's proposed value work, every minute of use within Boston would have to be weighted with a minute of use from Boston to Hyannis. However, it is undisputed that *far* more calls are made between customers in Boston than are made between Boston and Hyannis.[684] This means that Verizon contemplates that CLEC customers will place enough calls traveling distances of 70 miles to balance out the short distance minutes that occur within cities like Boston. Because no supposedly "weighted"

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[681] Tr. 1518, 1/24/02 (Turner).
[682] *See* AT&T's Initial Brief, at 209.
[683] *See* Verizon Initial Brief, at 122.

average distance methodology could possibly arrive at a distance of 37.52 miles for the length that every call travels in Massachusetts, Verizon's 37.52 distance should be rejected.

V. COLLOCATION: VERIZON FAILS TO ADDRESS MOST OF THE CRITICISMS OF ITS COLLOCATION COST ESTIMATES AND, WHERE IT DID SEEK TO CHALLENGE AT&T'S CRITICISMS, ITS DEFENSE DOES NOT STAND UP TO SCRUTINY.

Verizon has proposed, but failed to justify, excessive collocation rates. Indeed, for a typical collocation cage, a CLEC would pay 25 percent more under Verizon's proposed rates than under currently approved rates.[685] Verizon tries to downplay the evidence which shows that the proposed rates do not comport with TELRIC by stating that AT&T challenges "only a very few items" in Verizon's cost study.[686] The fact is, however, that the three elements of Verizon's collocation study which AT&T has demonstrated are in error represent 94.17 percent of the gap between the present collocation costs in Massachusetts and what Verizon proposes in this proceeding.[687] AT&T discusses in detail these three rate elements – (1) DC Power Distribution, (2) DC Power Consumption, and (3) Land and Building – in Section V of its Initial Brief. Verizon generally tries to ignore the extensive evidence which shows that Verizon's power installation factor, distribution cable length, and building investment, and the lack of a transition mechanism to a new rate structure are all improper. Verizon cannot defend its collocation rate proposals by simply ignoring the evidence which proves that they do not comport with TELRIC.

It is not surprising that these three rate elements account for most of the discrepancy between the more reasonable current rates and the highly inflated proposed rates, because they

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[684] Tr. 1516, 1/24/02 (Turner).

[685] Ex. ATT-16, Turner Rebuttal, Attachment 2. The percentage is calculated based on the difference between the 7-year net present value for a collocation arrangement under Verizon's proposed prices for collocation versus the 7-year net present value for the same collocation arrangement under the current tariff.

[686] Verizon Initial Brief, at 243.

[687] Ex. ATT-16, Turner Rebuttal, at 24.

recover the cost of the major components of collocation. The DC Power Distribution Rate recovers the cost of the DC power cabling that is extended from Verizon's Battery Distribution Fuse Bay ("BDFB") to the collocation arrangements. The DC Power Consumption Rate recovers the cost of the equipment necessary to generate DC power and the cost of the BDFB. The Land and Building Rate recovers the cost of the land and buildings associated with the CLEC's use of space within the building. In this reply brief, AT&T will address Verizon's failed defense of each of these rates. AT&T also will focus on the flaws in two "factors": (1) the Power Installation Factor that Verizon uses to estimate costs recovered by the DC Power Distribution Rate and the DC Power Consumption Rate, and (2) the Annual Cost Factor which Verizon uses to estimate costs recovered by all three rates.

A. DC Power Installation Factor: A Comparison Between the Material Prices in the DCPR Database and in Verizon's Cost Study Demonstrates the Inappropriateness of Verizon's Installation Factor.

In order to produce its inflated power rates, Verizon uses an "installation factor" that grossly overstates installation costs. AT&T and WorldCom's witness, Steven Turner, demonstrated that Verizon's installation factor is overstated and explained how to derive a more reasonable installation factor. Verizon seeks in its initial brief to deflect Mr. Turner's criticisms and impeach his alternative results by claiming that Mr. Turner relies on a "mismatched methodology" in order to calculate a power installation factor (sometimes referred to as an "in-place factor").[688] Verizon's critique, however, applies not to Mr. Turner's analysis, but rather to its own. As discussed in detail below, Verizon relies on material costs from the DCPR database to develop its installation factor and then, inconsistently, applies the installation factor to a very different, and much higher, material cost in its cost study.

[688] Verizon Initial Brief, at 256-57.

This "mismatched methodology" issue related to the power installation factor should not be confused with Verizon's "FLC," or so called "Forward Looking To Current Adjustment." As AT&T explained in its initial brief, Verizon's FLC adjustment is designed to inflate expenses based on Verizon's erroneous claim that that there is a "mismatch" between forward-looking material costs and historic expenses. [689] As will become evident in the discussion below, the "mismatch" in the development of the power installation factor relates to a mismatch between the material and costs that Verizon assumes to be "material" in its own DCPR database and the material and costs that Verizon assumes to be "material" in its own cost study. It is unrelated to the purported temporal mismatch the Verizon tries to use to defend its FLC factor.

Verizon asserts that the installation factor of 2.7852 that it calculated from the DCPR data should be used in its collocation power cost study because it is based on actual installation projects that Verizon has performed in its central offices. [690] Verizon asserts that the installation factor that AT&T proposes (1.454), which is based on the comprehensive power plant installations in Pennsylvania, cannot be used because the definition of *material* cost that AT&T has used is not consistent with the definition of material cost that Verizon has used. [691] However, a close examination of the material investments in Verizon's DCPR data as compared to the material investments in its cost study shows that it is Verizon's calculations, and not those presented by AT&T, that are inconsistent.

AT&T has demonstrated that the Verizon installation factor is invalid because it is based on small augment jobs rather than comprehensive power plant installations required in a TELRIC study. [692] This point is a subset of a more general issue, discussed below.

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[689] AT&T's Initial Brief, at 39-42.
[690] Verizon Initial Brief, at 254, fn. 271.
[691] Verizon Initial Brief, at 256.
[692] *See* AT&T's Initial Brief, at 212-217.

Verizon's installation factor would only be appropriate if the material and equipment reflected in the DCPR database (upon which the installation factor is based) closely matches the material and equipment in the Verizon cost study. For example, let us assume that Component A has a material cost of $100 in the DCPR data and Verizon shows its total installed price to be $250, this would yield an installation factor of 2.50. If Verizon then wanted to apply the 2.50 installation factor to the material in the cost study, it would be important that the material and equipment in the cost study are similar in nature to that for Component A in the DCPR data. Verizon makes this very point in its initial brief.[693] Thus, if material components vary significantly between the DCPR database and the Verizon cost study, it would render the installation factor meaningless. It turns out that precisely this problem appears within the Verizon data.

Verizon has failed to meet its burden of proving that the material and equipment in the DCPR data that it used to calculate a DC power installation factor match the material and equipment reflected in its cost study. We can see this by looking more closely at the record evidence regarding the installed cost of a 200-amp rectifier. In the Verizon cost study this piece of equipment has a material cost, uninstalled, of $6,814.00. Referring to Verizon's Power Consumption worksheet,[694] this figure is derived by dividing line 8d (200-amp rectifier material investment of $54,512) by line 4d (quantity of eight 200-amp rectifiers). It is this investment to which Verizon applies its factor of 2.7852 derived from the DCPR data to derive an installed investment per 200-amp Rectifier of $18,978.35. ($6,814.00 * 2.7853 = $18,978.35). However, the DCPR database shows that the median material cost for a 200-Amp Rectifier is $2,920.77. This median price is derived by sorting the DCPR data provided in response to ATT-VZ 5-6S by

[693] Verizon Initial Brief, at 256-257.

[694] Ex. WCOM-VZ 2-1 (supplemental reply), Attached Power Consumption Worksheet revised 3-20-02 (Part CA, Workpaper 5.0, page 1 of 2).

200-amp rectifiers and eliminating those with a zero quantity.[695] (The median price should be used rather than the average price because of the outliers, like Landover, Maryland, in Verizon's database.)

The material cost for the 200-amp rectifiers in the DCPR database ($2,920.77) is dramatically different from the material cost of the 200-amp rectifiers in the Verizon cost study ($6,814.00). Although this very issue was discussed by Mr. Turner during the hearings,[696] Verizon fails to point to any evidence that would show that the DCPR material for DC power equipment is for the same scope of material and equipment at issue in Verizon's cost study. The fact that material cost Verizon uses in the cost study is 2.33 times higher than that documented in the DCPR database is a strong indicator that there is in fact a mismatch between the material in DCPR data and the material in Verizon's cost study.

If Verizon were to apply the 2.7852 in-place factor to the material cost found in the DCPR database for 200-amp rectifiers, Verizon would arrive at an in-place cost of $8,134.93 ($2,920.77 * 2.7852 = $8,134.93). This value compares closely to the median in-place cost for 200-Amp Rectifiers actually found in the DCPR database of $8,572.37. This median in-place cost is calculated in the same way as the median material cost, by sorting the data in the DCPR database by 200-amp rectifiers. Thus, if Verizon were to apply the in-place factor it proposes to the material cost for 200-amp rectifiers found in the DCPR database, it would arrive at an in-place price that is actually borne out by the DCPR database. However, applying the 2.7852 in-place factor to the $6,814.00 material cost for 200-Amp Rectifiers that Verizon uses in its cost study yields an in-place cost of $18,978.35 ($6,814 * 2.7852 = $18,978.35). This is 2.21 times

[695] Note that there are some unusual entries in the DCPR database where there is a material price for the 200-Amp Rectifiers and a total installed price for the 200-Amp Rectifiers, but the database shows the quantity of rectifiers as being 0. It would have been possible to estimate the number of rectifiers based on the median price of $2,920.77. However, rather than engaging in this estimation, the entries where the quantity was "0" were removed before the calculation was made.

higher than the in-place cost found in Verizon's DCPR database. Verizon has failed to prove that such an assumption is reasonable.

It is interesting to note that when the 1.454 in-place factor that AT&T proposes is applied to the $6,814.00 material cost in Verizon's cost study, the total in-place cost is $9,907.56 ($6,814 * 1.454 = $9,907.56). This is close to the in-place cost actually found in Verizon's DCPR database ($8,572.37). For purposes of estimating the proper, forward-looking costs of collocation power, what really matters is that this installed or in-place cost of the DC power equipment be accurate. The in-place cost assumed by Verizon is excessive, and cannot be reconciled with the very DCPR data presented by Verizon as the purported basis for its cost study.

Summary of In-Place Costs for 200-Amp Rectifiers

Scenario	In-Place Cost	% Over DCPR
200-Amp Rectifier In-Place Cost in DCPR	$8,572.37	0.00
200-Amp Rectifier In-Place Cost Using Verizon Cost Study Material cost and AT&T-Proposed In-Place Factor of 1.454	$9,907.56	15.58
200-Amp Rectifier In-Place Cost Using Verizon Cost Study Material cost and Verizon-Proposed In-Place Factor of 2.7852	$18,978.35	121.39

The 200-amp rectifier is not the only piece of equipment included in Verizon's cost study that has this mismatched investment problem. The 400-amp rectifier provides another example.

The DCPR database shows a median material cost for the 400-amp rectifier of $3,075.99. Again, this median price is derived from the DCPR database records provided in response to ATT-VZ 5-6S. Verizon's material cost for a 400-amp rectifier in its cost study is $8,833.00.

(..continued)

[696] Tr. 1415-1421, 1/23/02 (Turner).

Referring to Verizon's Power Consumption worksheet,[697] this figure is arrived at by dividing line 8c (400-amp rectifier material investment of $79,497) by line 4c (quantity of nine 400-amp rectifiers). It is this investment that Verizon applies its factor of 2.7852 derived from the DCPR data to arrive at an investment per 400-amp rectifier of $24,601.67 ($8,833 * 2.7852 = $24,601.67).

While AT&T did not have a problem with the material cost of 400-amp rectifiers that Verizon included in its cost study, the in-place factor is inappropriate because the material upon which it is based appears to be inconsistent with the material to which Verizon applies the in-place factor. Again, there is an incredible difference in material costs between the 400-amp rectifier in the DCPR database ($3,075.99) versus the material cost of the 400-amp rectifier in Verizon's cost study ($8,833.00). The material cost Verizon uses in its cost study is 2.87 times higher than that documented in the DCPR database.

If Verizon were to apply the 2.7852 in-place factor to the material cost found in the DCPR database for 400-amp rectifiers, Verizon would arrive at an in-place cost of $8,567.25 ($3,075.99 * 2.7852 = $8,567.25). This value compares closely to the median in-place cost for 400-Amp Rectifiers actually found in the DCPR database of $8,760.75. In other words, if Verizon were to apply its proposed in-place factor to the material cost for 400-amp rectifiers found in the DCPR database, Verizon would derive an in-place price that is actually borne out by the DCPR database. However, applying the 2.7852 in-place factor to the $8,833.00 material cost for 400-Amp Rectifiers that Verizon uses in its cost study yields an in-place price of $24,601.67 ($8,833 * 2.7852 = $24,601.67). This is 2.81 times higher than the in-place price found in Verizon's DCPR database.

[697] Ex. WCOM-VZ 2-1 (supplemental reply), Attached Power Consumption Worksheet revised 3-20-02 (Part CA, Workpaper 5.0, page 1 of 2).

When the 1.454 in-place factor that AT&T proposes is applied to the $8,833.00 material cost in Verizon's cost study, the total in-place cost is $12,843.18 ($8.833 * 1.454 = $12,843.18). As with the 200-amp rectifier example, this $12,843.18 is closer to the Verizon in-place cost actually found in the DCPR database.

Summary of In-Place Costs for 400-Amp Rectifiers

Scenario	In-Place Cost	% Over DCPR
400-Amp Rectifier In-Place Cost in DCPR	$8,760.75	0.00
400-Amp Rectifier In-Place Cost Using Cost Study Material cost and AT&T-Proposed In-Place Factor of 1.454	$12,843.18	46.60
400-Amp Rectifier In-Place Cost Using Cost Study Material cost and Verizon-Proposed In-Place Factor of 2.7852	$24,601.67	180.82

These examples demonstrate that Verizon derives its in-place factor of 2.7852 from data that reflect material that appears to be very different than the material included in the Verizon cost study. Verizon has failed to meet its burden of proving that they match. As AT&T has proven, the DCPR data underlying Verizon's EF&I factor for DC power equipment contains numerous errors, has not been validated, and is essentially impervious to independent evaluation.[698]

This results in a significantly overstated in-place cost in Verizon's cost study. The AT&T in-place factor, on the other hand, is based on material costs that are much closer to the prices actually found in Verizon's cost study. As a result, as demonstrated above, applying the AT&T in-place factor to the material costs included in the Verizon cost study yields in-place investments that are much closer to those actually found in Verizon's DCPR database.

[698] AT&T's Initial Brief, at 215-219.

B. Annual Cost Factor: Verizon Sidesteps the Relevant Question of What Type of Equipment Utilizes the Majority of Power Requirements in a Collocation Arrangement.

Verizon also artificially inflates its claimed collocation power cost by improperly applying the annual cost factor for digital switching, when it should have used the ACF for circuit equipment.[699] In order to support its inappropriate use of the digital switch ACF, Verizon claims that the digital switch is the cost causer of power plant placement.[700] Verizon concedes, however, that "power plants are placed to support *the entirety* of the central office including switching equipment, transport equipment, peripheral equipment, and others – it is not just switching."[701] By focusing on power plant placement as opposed to the power required for collocation arrangements, Verizon attempts to shift the discussion from the more important and more relevant question of what equipment consumes the vast majority of power in a collocation arrangement to what is the cost causer of power plant placement.[702] The Department should not take Verizon's suggested detour from the relevant issue.

In response to a Department question at the hearings specifically asking what type of equipment utilizes the majority of power requirements in a collocation arrangement – switching or circuit-based – Verizon's Ms. Clark responded that transmission equipment, or circuit-based equipment, requires the majority of power in a collocation arrangement.[703] Therefore, with no power-expense ACF available, DC Power Consumption and Distribution rates should be computed using the circuit-based ACF (0.2388) in place of Verizon's proposed digital switch ACF (0.3183).

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699 AT&T's Initial Brief, at 219-222.
700 Verizon Initial Brief, at 261.
701 Verizon Initial Brief, at 261 (citing Ex. ATT-16, Turner Rebuttal, at 47-48) (emphasis added).
702 AT&T's Initial Brief, at 221.
703 Tr. 1203, 1/23/02 (Clark).

Referring to Mr. Turner's discussion of the appropriate ACF for power equipment, Verizon strangely claims that "Mr. Turner…builds his power-plant maintenance testimony on the foundation that the 'maintenance work for power equipment is much lower that the maintenance work for switching."[704] This is a misstatement. Mr. Turner has not offered any testimony on power plant maintenance in this proceeding. He confined his critique of Verizon's collocation cost study to the three proposed rates with the greatest difference from current Massachusetts rates. Mr. Turner made the above-cited comment in order to explain why the switch-based ACF is so much higher than the circuit-based ACF.[705]

C. Verizon's DC Power Consumption Rate is Excessive.

1. The Evidence Supports a DC Power Rate Well Below $7.13, and As Low as $5.28, Per Amp.

a. Data from Invoices For a Comprehensive Power Plant Indicate that the Rate Should Be Well Below $7.13.

The DC Power Consumption rate is designed to recover the costs of the equipment necessary to generate DC power (in electricity regulation, this is the "capacity" component).[706] There are two main parts to the installed cost of the equipment necessary to generate DC power: the material cost and the cost of installing the equipment. Verizon's material costs are identified in its cost study and are reasonable for the equipment specified. Verizon, however, "grossed up" those material costs by an installation factor of 2.7852 to produce a total installed cost that far exceeds any reasonable cost estimate.

The validity (or lack thereof) of Verizon's total installed cost estimate is driven to a substantial extent by the installation factor. As has been clearly illustrated above, installation factors are extremely sensitive to the "fit" between the cost data from which they are derived and

[704] Verizon Initial Brief, at 262.
[705] Ex. ATT-16, Turner Rebuttal, at 48.
[706] Ex. ATT-16, Turner Rebuttal, at 35.

the cost data to which they are applied. In the present case, the parties appear to disagree over which costs are "material" costs and which costs are "installation" costs in the data from which the installation factors are derived. Verizon, however, does not even have a clear sense within its own company of the definition of "material" based on the mismatch between the DCPR database material costs and those used in the cost study. Without clear evidence of what types of costs are considered "material" and what types of cost are considered "installation" in the data set from which the installation factor was derived, it is not possible to determine what material costs the Verizon installation factor should be applied against to produce the total installed cost.

One way to deal with Verizon's failure of proof regarding the nature and scope of the material costs in its DCPR versus the assumptions in its cost study is set aside the issue, and use a different method for estimating the final installed cost of the DC power equipment in a forward-looking network. As Mr. Turner explained, the best approach is to use the total cost from a comprehensive DC power plant project (including all material and installation) and to calculate the total installed cost per amp on that basis.[707] In addition to avoiding the problem of applying "installation factors" to potentially ill-defined material costs, this method also permits the use of third party invoices for an entire plant that constitutes a discrete project, thus ensuring that all of the relevant costs are included and no irrelevant costs are "allocated" to the project. Only AT&T has submitted such data.

Of the two DC Power installation jobs provided by AT&T in its response to VZ-ATT/WCOM 1-90, the one most comparable to the Verizon 6,000-amp power plant is Order No. 8PB996.[708] This order is for a 5200 amp DC Power plant, "built out" to 2400 amps based on the rectifier capacity.[709] There are two 800-amp BDFBs included in this order each with a

[707] Tr. 1535-1536, 1/24/02 (Turner).
[708] Ex. VZ-ATT/WCOM 1-90 (Turner).
[709] Tr. 1473-1474, 1/24/02 (Turner).

material investment of $18,704.[710] In calculating this DC Power rate based on the costs of a complete plant, these two BDFBs should be removed and handled separately consistent with the approach used by Verizon in its cost study for estimating the BDFB costs.[711] The total investment for this plant, excluding the BDFBs, is $630,462 ($667,870[712] – ($18,704 *2)). This investment is divided by 2400 amps to yield an investment per amp of $262.69 ($630,462 / 2400 = $262.69). This investment per amp is conservatively overstated in that the material investments that support the entire 5200-amp plant are only being distributed across 2400 amps.

Next, the 800-amp BDFB investment needs to be incorporated into this comprehensive power plant rate calculation just as it was in the Verizon cost study. As mentioned above, the BDFB has a material investment of $18,704. There are two BDFBs in the invoices for this plant. However, in accordance with Verizon's cost study, the cost of one BDFB should be incorporated into the model. This results in a BDFB investment per amp of $23.38 ($18,704 / 800 = $23.38). This BDFB investment is weighted into the total result consistent with the approach used by Verizon.

Finally, the cost per DC amp of a comprehensive power plant includes the emergency engine investment in DC amps as explained in Verizon's response to the RR-DTE-40. Since Verizon did not provide an installed cost for the backup generator, the 1.454 in-place factor has to be used for this investment. While this is not optimal and it is not done anywhere else in this comprehensive power plant calculation, it is appropriate to apply this factor based on actual invoices.

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[710] Ex. VZ-ATT/WCOM 1-90 (attached Pennsylvania response BA-ATT/MCI 1-63, page 9 of 21 attached to 1-63 response).

[711] Ex. WCOM-VZ 2-1 (supplemental reply), Attached Power Consumption Worksheet revised 3-20-02 (Part CA, Workpaper 5.0, page 1 of 2, lines 51-53).

[712] Ex. VZ-ATT/WCOM 1-90 (attached Pennsylvania response BA-ATT/MCI 1-63, page 1 of 1-63 response, last line, "Labor and Materials" column).

AT&T's comprehensive estimate of the installed cost of the DC power plant, using the invoice price for both the power plant itself as well as for the BDFB, results in a DC Power Consumption Rate of $7.13 per amp.[713] As noted above, this conservatively overstates the actual cost per amp because it allocates costs associated with equipment capable of producing 5200-amps across only 2400 amps. The DC Power Consumption worksheet illustrating the explanation given above can be found at page 1 of the Addendum to this brief. This approach demonstrates that AT&T's use of an installation factor of 1.454 results in a rate very close to that derived from the material and installation costs drawn from actual invoices for a comprehensive power plant.

b. Correcting Verizon's Own Calculations Shows that DC Power Rate Should Be $5.28.

If the Department also wishes to review estimates of the total installed cost per amp based on applying an installation factor to the material costs projected by Verizon, the Department should use the cost per amp calculated on a total cost basis as a reasonableness check for the estimates that rely on installation factors. When correct installation factor proven by AT&T is applied to the material costs assumed by Verizon, the result is a DC Power rate per amp of $5.28. Thus, there is a remarkable robustness in the AT&T restated rate, given that regardless of how the DC Power Consumption rate is calculated, whether by using invoices for a comprehensive power project or by using a factor based on actual invoices, the results all fall within a similar range of $5.28 to $7.13.

In the following table, two rates are listed for Verizon's originally proposed rate and AT&T's restated rate (rows 1 and 3) because, on March 20, 2002, Verizon submitted a slightly revised DC Power Consumption study after it had discovered errors in the material costs of the

[713] *See* Addendum to Reply Brief (page 1), DC Power Consumption Rate Calculated Using Invoices for a Comprehensive Power Plant, below.

microprocessor and urban/suburban power distribution power cabinet.[714] Verizon's corrections lowered its originally proposed rate of $22.79 by 29 cents (compare row 1 and row 3) and lowered AT&T's restated rate of $5.39 by 11 cents (compare row 2 and row 3). These corrections are not included in Verizon's revised rate with the emergency engine in DC amps (row 2), and are irrelevant to the rate calculated from the invoices for a comprehensive power plant (row 4).

Summary of Proposed Monthly DC Power Consumption Rates (per amp, for less than 60 amps)

ROW NO.	DESCRIPTION	VERIZON PROPOSED	AT&T RESTATEMENT
1	VZ-MA's Original Proposed Rate (May 2001) and AT&T's Restatement	$22.79[715]	$7.62[716]
2	VZ-MA's Revised Rate w/Emergency Engine in DC Amps (Feb. 2002) and AT&T's Restatement	$15.88[717]	$5.39[718]
3	VZ-MA's Correction of Original Proposed Rate (Mar. 2002) and AT&T's Restatement	$22.50[719]	$5.28[720]
4	AT&T Comprehensive DC Power Plant		$7.13[721]

[714] Ex. WCOM-VZ 2-1 (supplemental reply), Attached Power Consumption Worksheet revised 3-20-02 (Part CA, Workpaper 5.0, page 1 of 2).

[715] Ex. VZ-28, Collocation Cost Model, Part CA, Workpaper 5.0, page 1 of 2, line 77 (attached to Clark's Direct) (May 4, 2001).

[716] Ex. ATT-16, Turner Rebuttal, Attachment 3, Workpaper 5.0, page 1 of 2, line 77 (July 18, 2001). This restatement was calculated under the assumption that the emergency engines in Verizon's cost study were in DC amps. Later disclosures by Verizon in RR-DTE-40 revealed that the Verizon cost study was based on substantially oversized emergency engines done in AC amps.

[717] RR-DTE-40, Attachment 1, Workpaper 1.0, page 1 of 1, line 77. The reduction from $22.79 to $15.88 is the result of the Department's request to Verizon to calculate the rate with the emergency engine amp capacity converted into DC amps.

[718] Addendum to Initial Brief (page 2), AT&T Restatement of Collocation Cost Model, Part CA, Workpaper 5.0, page 1 of 2.

[719] Ex. WCOM-VZ 2-1 (supplemental reply), Attached Power Consumption Worksheet revised 3-20-02 (Part CA, Workpaper 5.0, page 1 of 2).

[720] Addendum to Reply Brief (page 2), AT&T Restatement of Collocation Cost Model, Part CA, Workpaper 5.0, page 1 of 2. This restatement has two parts. First, Verizon's $22.50 was adjusted to reflect the emergency engine in DC amps, which brings the cost estimate down to $15.58. (This is methodologically the same adjustment Verizon made when it adjusted its original $22.79 to $15.88.) The second adjustment from $15.58 to $5.28, reflects Mr. Turner's correction of Verizon's power installation factor and annual cost factor. (This is methodologically the same adjustment AT&T made when it adjusted the $15.88 rate to $5.39.)

[721] *See* Addendum to Reply Brief (page 1), DC Power Consumption Rate Calculated Using Invoices for a Comprehensive Power Plant, below.

No matter how the DC Power Consumption cost analysis is done, as long as it is done with actual invoices, it produces forward-looking costs in the range of $5.28 to $7.13 per amp. It is important to note that this $7.13 rate is conservatively overstated because it allocates costs associated with equipment capable of producing 5200 amps across only 2400 amps. Use of invoices to calculate the DC Power Consumption rate (either for installation only or for both installation and material) shows that Verizon's proposed rate of $22.50 is substantially overstated.

In sum, the Department should set the DC Power Consumption rate between a figure well below the $7.13 rate that results from the conservatively overstated comprehensive power plant analysis and the $5.28 rate that results when Verizon's material costs and an installation factor based on actual invoices are used.

2. Errors in the Emergency Engine Amperage and Investment Substantially Inflate Verizon's DC Power Consumption Rate.

Although Verizon does not state in its brief whether it is proposing the DC Power Consumption rate it originally submitted ($22.79, now corrected to $22.50) or the rate submitted in response to RR-DTE-40 ($15.88), it is now clear from Verizon's initial brief and its response to RR-DTE-40 that both calculations of the DC Power Consumption rate contain errors regarding the emergency engine. These errors improperly increase the calculated DC Power Consumption Rate.

Verizon's original cost study inappropriately computes the cost per DC amp using an emergency engine based on AC amps. Verizon's revised cost study illustrates that the emergency engines assumed by Verizon in the metro and urban offices produce an exorbitant amount of power, much more than necessary to support the power plant. This is the result of Verizon's incorrect allocation of the power needed to support ancillary equipment versus the

power needed to support telecommunications equipment. AT&T has restated Verizon's revised rate to account for these errors. This restatement results in a DC Power Consumption Rate of $5.39, $5.28 with Verizon's errors corrected. AT&T's restatement of $5.39 can be found at page 2 of the Addendum to AT&T's initial brief and the $5.28 restatement can be found at page 2 in the Addendum to this brief.

a. Verizon's Continued Insistence That Emergency Generators Be Stated in AC Amps Confirms the Inaccuracy of Verizon's Original DC Power Consumption Rate.

Verizon continues to argue that it is proper to compute the cost per DC amp by including in its cost study an emergency engine in AC amps.[722] This is simply wrong. As explained in AT&T's Initial Brief in Section V.D.1. beginning at page 222, all DC power consumption investments must be in DC amps to compute the cost per DC amp. Even after responding to RR-DTE-40 where it was forced to compute the cost using an emergency engine on a DC amp basis, Verizon continues on brief to maintain that a cost study can combine a dollar per DC amp with a dollar per AC amp to arrive at the cost per DC amp, even though Verizon's response to RR-DTE-40 shows that AC amps do not equal DC amps as a matter of engineering rules.

In support of its calculation of the cost per DC amp using the AC amp capacity of the emergency engine, Verizon repeatedly states that emergency engines do not produce DC power.[723] This fact is not in dispute and it has nothing to do with the issue in dispute. Verizon's assertion here represents another one of its many red herrings. Mr. Turner clearly explained at the hearings that emergency engines produce AC power.[724] Using kilowatt to AC amp and kilowatt to DC amp formulas, AC amps can be converted into DC amps, just as Verizon did in

[722] Verizon Initial Brief, at 259.
[723] Verizon Initial Brief, at 258-259.
[724] Tr. 1432, 1/23/02 (Turner).

its response to the RR-DTE-40.[725] The fact that emergency engines produce AC amps is therefore a non-issue and does not support Verizon's claim that the DC Power Consumption rate can include cost of an emergency engine based on AC amps.

b. Verizon's Use of Its Response to RR-DTE-40 Confirms the Inaccuracy of Verizon's Revised DC Power Consumption Rate.

By pointing with approval to the 400 kw emergency engine assumed by Mr. Turner to operate a combined 6,500 amp facility in Pennsylvania (a 2,500 and a 4,000 DC amp plant),[726] Verizon itself admits that the 1000 kw emergency engine it assumes for its cost study's 6,000 DC amp plant is oversized. AT&T was not aware that Verizon was assuming in its cost study such a large emergency engine for the metro office until Verizon filed its response to RR-DTE-40 one week before the initial brief due date. The assumption of such an oversized engine greatly inflates the DC power consumption costs, because Verizon has allocated the cost of all of the extra capacity on to the claimed relatively small demand generated by the telecommunications equipment. Not until the filing of RR-DTE-40 did AT&T know that Verizon was incorrectly assuming that 71 percent of the emergency engine's amps supports the ancillary equipment and that only 29 percent of the emergency engine output powers the telecommunications equipment.[727] Verizon's percentages are backward. Telecommunication equipment generally uses about 80 percent of the backup generator's power.[728] The solution is not to reverse the percentages, however, but to use an appropriately sized backup generator that uses approximately 80 percent of its capacity to provide power to the telecommunications equipment.

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[725] Tr. 1433, 1/23/02 (Turner) ("there are formulas that allow you to take the AC power that a backup generator can produce and convert it to DC amps, based on knowing what voltage you're going to be operating at in the DC plant, understanding the efficiencies of converting AC into DC using rectifiers"); RR-DTE-40, Attachment 1, Workpapers 4.0 and 5.0 ("There is…no direct and universal conversion ratio from AC amps to DC amps; but there are direct conversions from kilowatts to AC amps and kilowatts to DC amps.")

[726] Verizon Initial Brief, at 259.

Verizon's insistence on sizing the emergency engine in DC amps and its overstatement of the size of emergency engine skew upward Verizon's DC Power Consumption rate. In its Initial Brief, AT&T restates Verizon's RR-DTE-40 cost study to size appropriately the emergency engines in each central office and to include related amp capacities of those engines. This revision results in a more reasonable rate of $5.28 per DC amp, after the errors in Verizon's material costs are corrected in accordance with Verizon's supplemental reply to WCOM-VZ 2-1.

3. Verizon Inappropriately Attempts to Support Its DC Power Consumption Rate by Citing an Unusual New York Power Job.

Verizon attempts to support its DC Power Consumption rate of $22.79, corrected post initial brief to $22.50, with the investment for the completely redundant White Plains power plant that AT&T submitted in the New York rate proceeding.[729] Verizon's reliance on the AT&T White Plains power plant is misplaced because that plant is effectively two complete and separable power plants.

As Mr. Turner explained in oral testimony, the investment per amp for AT&T's White Plains office is twice as high as in a typical Verizon central office because the New York office effectively constitutes two separate, duplicate power plants to serve the same power load.[730] Mr. Turner explained in detail why Ms. Clark's reliance on the invoice for this White Plains power plant was misplaced. His unrebutted testimony shows that:

> That invoice was for a long-distance office that AT&T has in White Plains, New York. There are a few offices in AT&T's network that have such a high concentration of equipment, meaning they have a switch, they have what are called signaling transfer points, and then they have call-related databases, that are of such significance that, if they were to fail it would actually start to damage traffic across the entire region of the country.

(..continued)

[727] RR-DTE-40, page 3 (Clark).
[728] Ex. ATT-16, Turner Rebuttal, at 46.
[729] Verizon Initial Brief, at 264.
[730] Tr. 1429-1431, 1/23/02 (Turner).

> And so what AT&T does in those offices…is, they actually build completely duplicated power plants.
>
> Now, there's redundancy in Verizon's power plants, and there's redundancy in the AT&T plant. But what they actually do [in White Plains] is, they don't just build one redundant plant, they build two redundant plants, so if one for some reason, such as an incident that happened in New York back in, I think it was, 1995, where even in a redundant power plant in New York the power still failed -- in this situation, if one entire plant failed, the other plant would be able to take over and provide power to the central office.
>
> Now, when that was submitted in New York, it was submitted showing the amps that were being needed for the office for just one plant, but the investment that was included in the analysis was for both plants. So it effectively doubled the investment per amp in the central office that AT&T submitted as compared to what you would find in a typical local central office that you'd find in Verizon territory.
>
> So the net effect of it is that it's not even representative of what AT&T typically puts in its offices, it's only representative of what you would put in these extraordinarily vital offices that have so much equipment centralized in them that you can't take a risk of even a catastrophic power failure affecting service in that office.[731]

Thus, Verizon's reliance on the duplicative power plant in White Plains to support its DC Consumption Rate is misplaced.

Moreover, Verizon incorrectly compares this New York double power plant with the "dual" power plant in Pennsylvania upon which Mr. Turner relies to calculate the installation factor of 1.454 for a comprehensive power plant.[732] The Pennsylvania plant is redundant in that there are two streams of power from the rectifiers and batteries to the plant.[733] This creates certain redundancies for the plant, but does not mean that that the Pennsylvania plant includes two entirely separable power plants as in the White Plains office. Verizon also points to power rates in other ***Verizon*** jurisdictions to support its DC Power Consumption rate.[734] Verizon,

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[731] Tr. 1429-1431, 1/23/02 (Turner).

[732] Verizon Initial Brief, at 266.

[733] *See* Ex. VZ-ATT/WCOM 1-90 (attached Pennsylvania response BA-ATT/MCI 1-63, page 19 of 21, attached to 1-63 response).

[734] Verizon Initial Brief, at 254-255.

however, conspicuously excludes rates from both non-Verizon jurisdictions and the recently adopted rate in New Hampshire.

D. DC Power Distribution Rate: Verizon Does Not Support Its Distribution Cable Length of 121 Feet.

Verizon does not even attempt to defend its overstated distributed cable length of 121 feet for the metro office. Never even mentioning the 121 figure in its brief, Verizon tries to conceal the fact that Ms. Clark erroneously testified that Verizon's cost study includes a distribution cable length of 60.5 feet for one way of cable,[735] when in fact it was clearly proven on cross examination that Verizon's cost study includes an average cable length of 121 feet for one way of cable.[736] To justify its unspecified cable length, Verizon talks only of the "realties of the landscape and engineering realities of the actual central office."[737] Verizon, however, never explains in oral or written testimony why the Massachusetts "landscape" requires cable lengths more than twice the length of cable in Texas. Moreover, Verizon's 121 foot cable distance for one way of cable directly contradicts good engineering practice of keeping cables from the BDFB to the telecommunications equipment as short as possible so that the cost of these cables is minimized.[738] The Department should compute the DC Power Distribution rate using the 55 foot cable length adopted by the Texas PUC which is consistent with Mr. Turner's review of ILEC engineering documents and his tours of ILEC central offices.[739]

E. Land and Building Rate: Verizon Offers No Justification for Its Non-Forward-Looking Building Investment Assumptions.

As with its distribution cable lengths, Verizon does not even attempt to defend its overstated, non-forward-looking building investment. At the hearings, Mr. Turner criticized

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[735] Ex. VZ-29A, Clark Surrebuttal, at 43.
[736] Tr. 1051-1053, 1/22/02 (Clark). *See also* Ex. ATT-VZ 5-12, page 1 of 10.
[737] Verizon Initial Brief, at 263.
[738] Ex. ATT-16, Turner Rebuttal, at 49.
[739] Ex. ATT-16, Turner Rebuttal, at 49.

Verizon for violating TELRIC principles by including in its purportedly forward-looking land and building rate the cost to build a temporary building, renovate an existing building, and the cost of the old and new roof.[740] Despite Mr. Turner's detailed criticism, Verizon offers no justification for its building investment. TELRIC requires that costs be developed from a total demand perspective and not include any more than the costs of network facilities needed to serve expected demand. Thus, as stated in AT&T's Initial Brief in Section V.F., AT&T recommends that the Department utilize the forward-looking cost of a building submitted by Verizon in its 1998 compliance filing in place of Verizon's proposed building investment.

Using the land investment from the 1998 compliance filing, along with the more appropriate building ACF of 0.3141, land ACF of 0.2097, common cost factor of 0.0463, and Verizon's gross revenue loading factor, the resulting land and building rate is $2.52 per square foot.[741] This rate is higher than the current tariff rate, but does not include Verizon's unreasonable increases in building investment and inflated cost factors.[742]

F. Transition Mechanism: Verizon Does Not Voice Any Opposition to a Mechanism For Transitioning to a New Rate Structure.

In Mr. Turner's Rebuttal testimony, he explains that Verizon proposed a completely new rate structure for collocation and that, while the new structure is not a problem in and of itself, the transition to it must be properly managed in order to ensure that Verizon does not enjoy windfall gains from a flashcut to the new rate structure.[743] Neither in its subsequent testimony, filed on December 17, 2001, nor in its initial brief, has Verizon raised any objection to a properly managed transition to the new rate structure. Accordingly, the Department should order Verizon

[740] Tr. 1427-1429, 1/23/02 (Turner).
[741] Ex. ATT-16, Turner Rebuttal, at 33.
[742] Ex. ATT-16, Turner Rebuttal, at 33.
[743] Ex. ATT-16, Turner Rebuttal, at 53-54.

to work with the CLECs to ensure that the transition does not produce windfall gains for Verizon and windfall losses for CLECs.

VI. VERIZON'S PROPOSED NON-RECURRING CHARGES ARE SIGNIFICANTLY INFLATED BOTH BECAUSE THEY INCLUDE COSTS FOR ACTIVITIES THAT WILL BENEFIT MORE THAN ONE USER, WHICH SHOULD BE RECOVERED THROUGH RECURRING RATES, AND BECAUSE THEY INCLUDE COSTS FOR SUBSTANTIAL EXISTING MANUAL PROCESSES WHICH ARE NOT APPROPRIATE IN ESTABLISHING TELRIC NRCS.

The introduction to this brief includes an overview of non-recurring charges ("NRC"), in Section I.A.3. beginning at page 15. As discussed there, the unreasonableness of Verizon's proposed NRCs is epitomized by its exorbitant proposed hot cut charges. The hot cut NRCs proposed by Verizon Massachusetts are substantially higher than those approved by the New Jersey Board of Public Utilities in December 2001, but those lower New Jersey rates were still much too high to pass muster with the FCC during its review of Verizon-NJ's initial Section 271 application. As discussed above, Verizon was forced to withdraw its 271 application, and to reduce its hot cut charges to the same $35 level that was recently agreed to by Verizon-NY. This section will respond directly to specific points raised in Verizon's initial brief regarding NRCs.

Verizon's initial brief demonstrates that it has significantly overstated its proposed NRCs. Verizon fails to provide a reasonable justification for charging substantial NRCs just because the particular facility that Verizon uses to provide requested UNE service requires that some wiring be moved or rearranged, or for recovering costs that will benefit more than one user of a facility through an NRC. Verizon is attempting to create an impassable barrier to market entry by imposing excessive NRCs. Verizon has also failed to meet its burden of proving that the NRCs it is proposing comply with TELRIC. Verizon's use of 1999 work times for then current work processes and its complete failure to explain the basis for its alleged forward-looking adjustment

to those work times does not satisfy the TELRIC requirement that costs be based on forward-looking, efficient processes.

A. The Ongoing Network Administration Costs of Moving or Rearranging Wires Are Reflected in Verizon's Recurring Charges, and Verizon Should Not Be Permitted to Carve Out a Portion and Assess Them as Anti-Competitive Non-Recurring Charges.

1. In Purchasing UNEs a CLEC is Buying Services, and Should Not Be Assessed Extra NRCs Such as a Field Dispatch Charge Just Because Verizon Chooses to Provide That Service On a Particular Facility That Needs Physical Rearrangement.

In AT&T's Initial Brief, at pages 241-247, we demonstrated that (i) the categories of costs that Verizon seeks to assess as NRCs – namely, costs associated with moving or rearranging wires, and with coordinating such activities – are already reflected in its recurring UNE rates, and (ii) a modest 2.2 percent increase in recurring monthly loop rates is all that is needed to cover fully the portion of such costs that Verizon has sought to carve out and assess on a non-recurring basis. Verizon's initial brief helps to explain why this is so, and why recovering all network administration costs of moves, rearrangements, and coordination through such a modest increase in the recurring loop rate makes good sense.

Verizon has noted that "the market at issue in this proceeding is not the sale of telecommunications *assets*, but *services* provided over such assets."[744] It has amplified this point by explaining that CLECs are not buying "any specific facility or share of a facility," but instead are "pay[ing] for a share of capacity on a network."[745] For example, when a CLEC orders an unbundled loop, it is buying a certain share of transmission capacity from a customer location to a Verizon central office. It is paying for the service of a functioning loop, but is not leasing a particular physical facility.[746]

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[744] Verizon Initial Brief, at 19.
[745] Verizon Initial Brief, at 85.
[746] Verizon Initial Brief, at 85.

If AT&T or another CLEC is not buying a specific loop or even a share of a loop, there is no reason why it should have to pay a full one-time field installation charge simply because field installation activity is necessary with respect to the particular loop on which Verizon chooses to provision such service. Lets take the example of two loops provisioned by Verizon, each of which requires a field dispatch to the feeder-distribution interface, but one is provisioned to satisfy a CLEC's UNE loop order and the other is provisioned to serve a Verizon retail customer located next door. Under Verizon's UNE pricing proposals, Verizon would assess a substantial one-time field dispatch NRC on the CLEC for the first loop, but the costs associated with the field dispatch for Verizon's own retail loop would be reflected in its Network ACF and incorporated into the recurring monthly loop rates.[747] This makes no sense, and would seem to violate the statutory requirement of non-discriminatory pricing. Verizon should not be allowed to impose a one-time field dispatch NRC on CLEC orders, but instead should be required to recover such costs through the recurring rate, as Verizon already does in its models for all other network moves, rearrangements, and related coordination.

2. The Cost of Activities That Benefit Verizon or Subsequent Users of a Facility as Well as the Ordering CLEC Should Not Be Recovered Through Non-Recurring Charges.

Verizon's assertion that its telecommunications services are analogous for pricing purposes to the services of an airline provides a graphic example of why one-time costs that benefit subsequent users should be recovered through recurring rates, not NRCs.[748] If the upholstery on seat 17C to which you had been assigned by the airline happened to be ripped and needed to be replaced prior to your flight, should you have to pay an extra charge to cover the cost of reupholstering that seat? In the airline industry, that cost is recovered through the ticket prices paid by all users of the airline's plane, in effect a recurring charge. Similarly, here all

[747] Tr. 680, 1/17/02 (Peduto); *see also* AT&T's Initial Brief at 238-239, 241-243

costs necessary to make a functional loop should be recovered through recurring charges so that the costs will properly be shared by all users of the loop service, whether they be retail customers served by Verizon or CLECs.

Verizon has proposed no method by which subsequent users of the network, including Verizon, would share the costs for the reusable facilities that Verizon seeks to impose on the first CLEC ordering such a UNE. Rather than addressing the CLEC's legitimate concerns about the anticompetitive effects of these high up-front charges, Verizon defends its effort to impose high NRCs for activities that will benefit subsequent users of the network by using convoluted and distorted economic theories and outdated, irrelevant precedent. Verizon's initial brief thus dances around the central issue at play here, namely that by forcing individual CLECs to shoulder the entire cost for a "one-time" activity that will benefit subsequent users, Verizon will succeed in inflating up-front charges so much that local competition will never develop.

Verizon's assertion that any one-time expenditure should be recovered as a nonrecurring charge because of the risk of over-recovery or under-recovery if billed on a recurring basis ignores the fact that Verizon's proposed recurring UNE rates are designed in large part to recover "one-time" costs of material investment and installation.[749] Furthermore, Dr. Taylor's assertion that use of recurring rates to recover these costs will result in pricing inefficiency ignores the FCC's recognition that "the recovery of nonrecurring costs through recurring charges is a common practice for telecommunication services."[750] Dr. Taylor's problem is not with AT&T's model, it is with the entire concept of recurring cost. Under Dr. Taylor's reasoning, much of the cost associated with a UNE should be recovered through an NRC, because that is allegedly more "efficient," even though it would raise an insurmountable barrier to market entry.

(..continued)

[748] *See* Verizon Initial Brief, at 19.

[749] *See* AT&T's Initial Brief, at 236-237.

The FCC, recognizing the barrier to entry created by high, up-front charges, has expressly authorized "costs that are incurred only once to be recovered through recurring charges over a reasonable period of time."[751]

The evidence demonstrates that recovering one-time costs that benefit network users as a whole through a recurring charge will, in fact, increase pricing efficiency by eliminating possibilities for double recovery. As explained in AT&T's initial brief, the costs that Verizon seeks to recover are already included in the Network ACFs Verizon includes in its recurring cost model.[752] Verizon then applies a NRC revenue adjustment to its modeled ACFs, allegedly to remove non-recurring revenues from the recurring rate. Verizon's convoluted attempt to remove a proxy for non-recurring charge revenues is essentially a concession that, in the absence of such machinations, many of the one-time costs Verizon seeks to recover in the nonrecurring charge are already recovered through recurring rates. In any event, following such a circuitous methodology in an attempt to separate out costs which have already been included in the recurring rate calculations in order to inflate nonrecurring charges makes little sense and certainly cannot be said to increase pricing efficiency. AT&T's approach of leaving such costs in the ACFs is straightforward and consistent with the recurring cost methodology used by Verizon.

Verizon's citation to a FCC ruling on special access charges, which predates the FCC's Local Competition Order by almost 10 years, is neither controlling nor even persuasive in this context.[753] Verizon ignores the fact that, in that case, special access was not being simultaneously priced with all other elements of the entire network, as the Department is doing

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[750] *FCC First Local Competition Order*, at ¶ 749.

[751] *FCC's First Local Competition Order*, at ¶ 749.

[752] AT&T's Initial Brief, at 243-246.

here. Under TELRIC, all costs must be correctly categorized as recurring or non-recurring in order to avoid the significant risk of double recovery. Treating all plant rearrangement and maintenance expenses the same, by including them in the ACF calculation used to establish recurring rates, is the best way to avoid double recovery.

Verizon made it impossible for the Department to review proposed recurring and non-recurring charges in a comprehensive manner in the *Consolidated Arbitrations* proceedings. That is because Verizon first came in with its proposals for recurring charges, and then waited over a year before submitting new NRC proposals and arguing that certain categories of network move, rearrangement, and coordination expenses had not been accounted for in its recurring rates. The dichotomy that has evolved between recurring charges and NRCs for UNEs has arisen in part because of this previous Verizon tactic of procedurally separating the two rate proposals. Now, in contrast, the Department has the ability to review the categories of cost that Verizon wishes to convert into extremely high NRCs designed to make it infeasible for CLECs to sign up local customers, and determine whether some or all of those categories of cost can and should instead be allocated to Verizon's monthly recurring loop rates.

Verizon's reliance on the FCC's 1997 discussion of NRCs for collocation is equally unpersuasive. In fact, the FCC in that case explicitly found that the reusability of collocation equipment gave rise to the requirement of a refund mechanism from future users of the equipment to the user who paid to build the collocation facility originally.[754] While collocation charges are generally large and infrequent, making a refund mechanism manageable, that is not the case with respect to NRCs for the myriad of individual UNEs at issue in this proceeding.

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[753] Verizon Initial Brief, at 232, citing *In the Matter of Investigation of Interstate Access Tariff Non-Recurring Charges* 2 FCC Rcd 3498 (1987).

The transaction costs alone involved in implementing a refund mechanism for the field installation charge for a single loop, for example, would create precisely the kind of pricing inefficiencies Dr. Taylor purportedly wants to avoid. Use of the recurring rate to recover such costs, on the other hand, allows for the equitable spreading of such cost across all users.

Verizon's specific response to AT&T's demonstration that field dispatch costs associated with loop provisioning should be recovered through a recurring rate illustrates the weakness of Verizon's argument on this point. Verizon asserts that recovery of such costs as part of a recurring rate would assume the permanent dedication of a feeder pair to each distribution pair at the time of a field cross-connect[755] – a premise that AT&T has never advocated. Instead, AT&T has always agreed that Verizon is free to manage field plant as it sees fit.[756] In fact, Verizon already recovers costs for such plant rearrangements through the Network ACF calculation included in the recurring rate.[757] What Verizon should not be permitted to do is to impose an up-front cost for such a field connection on the CLEC who happens to be the first user of a particular loop. If the retail customer subsequently migrates to Verizon or to another CLEC, the connection between the feeder and distribution cables (which is the focus of the field dispatch charge) will remain in use to provide service for the new carrier. It makes no sense to impose a one-time NRC to recover the costs associated with this rearrangement of the network. It is part of Verizon's investment in its physical plant, and should be incorporated into the recurring rates just as the rest of Verizon's forward-looking plant investment is reflected in recurring UNE rates despite the fact that such investment involves a one-time activity.

(..continued)

[754] Second Report and Order, *Local Exchange Carriers' Rates, Terms and Conditions for Expanded Interconnection through Physical Collocation for Special Access and Switched Transport*, 12 FCC Rcd 18730 (1997) at ¶ 33.

[755] Verizon Initial Brief, at 241-42.

[756] Tr. 816-17, 1/18/02 (Walsh).

[757] AT&T's Initial Brief, at 241-242.

Verizon's failure to propose any pricing mechanism that addresses the inequity arising from charging the first user for costs of establishing a reusable asset is not surprising. The most likely beneficiary of this inequity would be Verizon. Where a CLEC has paid Verizon's exorbitant NRC for field dispatch to place a cross-connect at a feeder-distribution interface and subsequently cancels the loop UNE, Verizon will enjoy the windfall of using that outside plant to serve its own retail customers without having to incur any cost to establish a functional loop and, at the same time, will keep the NRC revenue that the CLEC was forced to pay. The Department should avoid such an unfair and anticompetitive result and require that one-time costs that benefit subsequent users of the network be recovered through a recurring rate.

3. The NRCs Proposed by Verizon Would Make It Uneconomic for CLECs to Offer Service, and the Department Has the Discretion to Avoid that Problem by Structuring Costs of Network Administration Within Recurring Rates Rather Than NRCs.

It is undisputed that the Department has the discretion to take the costs that Verizon seeks to recover through one-time NRCs and instead to reflect them within monthly recurring charges.[758] Recent events surrounding Verizon's Section 271 application for New Jersey, namely the withdrawal of its original application because the excessive hot cut rates it was relying on were shown to be an anticompetitive barrier to entry, confirm that the better approach is to eliminate one-time NRCs or reduce them as much as possible. AT&T respectfully urges the Department to reject the excessive NRCs proposed by Verizon, and instead to adopt the reasonable NRCs advocated by AT&T. The record evidence in this case shows that to be the correct result.

[758] *FCC's First Local Competition Order*, ¶ 749; 47 C.F.R. § 51.507(e).

B. To the Extent that Verizon is Permitted to Recover Forward-Looking Costs Through NRCs Rather Than In Recurring Rates, Those NRCs Must Reflect Efficient, Forward-Looking Plant and Processes.

1. Verizon's Effort to Ignore IDLC Unbundling is Inconsistent With TELRIC Principles and Unnecessarily Inflates Its Proposed NRCs.

Verizon asserts that in setting NRCs the Department should ignore the forward-looking efficiencies that are achievable from unbundling IDLC at the DS1 level. Verizon makes the ill-conceived argument that TELRIC costs should be measured exclusively by what Verizon, or its sister ILECs, are currently doing.[759] Verizon relies on the fact that neither it, nor the other ILECs, have deployed electronic unbundling of loops over IDLC for CLECs, although they utilize such technology for themselves.[760] Using Verizon's logic, customers and competitors would always have to wait at the whim of ILECs in order to benefit from the cost savings and process efficiencies of modern technologies. Verizon disregards the obvious incentive for ILECs not to deliver UNEs to their CLEC competitors by the most inexpensive and efficient methods available, because that would lower the CLECs' cost and make them more effective competitors.[761] Verizon will continue to refuse to implement such efficient technology unless the rates it is permitted to charge are based on such efficiencies, finally giving Verizon the economic incentive to implement this technology. TELRIC costs must be based upon the least costly, technically feasible solutions, regardless of whether Verizon or other ILECs have chosen to implement them.

As Verizon witness Dr. Taylor attested, the inquiry under TELRIC is how Verizon would reconstruct its network if it could "choos[e] and arrang[e] its plant to produce the required level of output in the most efficient manner possible."[762] Verizon did not even respond to the

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[759] Verizon Initial Brief, at 224.
[760] Tr. 2892, 2/4/02 (Donovan).
[761] *FCC's First Local Competition Order*, at ¶ 10.
[762] Ex. VZ-1, Taylor Direct, at 6.

evidence in the record that supports the conclusion that loops may be unbundled electronically over IDLC.[763] Indeed, Verizon (then Bell Atlantic) itself presented a network design using all IDLC unbundled electronically at the DS1 level without the need for manual cross-connection at the main distribution frame over five years ago in the Department's 1996 *Consolidated Arbitrations* proceedings.[764] Verizon should not be able to recover nonrecurring charges for manual labor required by less efficient technologies simply because it has dragged its feet on the implementation of unbundling IDLC.

2. Verizon Overstates NRCs Based On Inefficient Manual Handling of UNE Ordering and Provisioning Processes.

Similar to its intransigence concerning the unbundling of IDLC, Verizon proposes inflated NRCs that are based upon inefficient and outdated assumptions concerning the capacities of modern OSSs. Once again, Verizon relies upon its current ordering and provisioning processes, with significant "manual handling by design," in calculating what are supposed to be forward-looking costs.[765] Verizon simply ignores the processing efficiencies that modern OSSs offer. In order to model appropriate, TELRIC-compliant nonrecurring costs, rates must be based upon forward-looking assumptions concerning a network designed in the most efficient manner possible.[766] AT&T has proposed NRCs based on this forward-looking efficient use of OSS technology. Verizon has failed to meet its burden of proving that the inflated NRCs it seeks reflect the efficient forward-looking utilization of modern OSSs required for TELRIC pricing.

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[763] *Compare* Verizon Initial Brief, at 224, *with* Response to RR-DTE 81; Ex. ATT-15, Walsh Surrebuttal at 28.
[764] AT&T's Initial Brief, at 119.
[765] Verizon Initial Brief, at 225-226.
[766] Ex. VZ-1, Taylor Direct, at 6.

a. Verizon Has Failed to Prove that Significant Manual Order Processing Would be Necessary in a Forward-Looking Environment.

Verizon's proposed service order processing NRCs are based upon its completely unsupported contention that manual processing remains the "most economical" option in dealing with certain types of orders from CLECs.[767] As a result, Verizon includes costs of manual handling for over 23% of all CLEC orders in its NRCs.[768] Verizon argues that no ILEC has been able to adopt a processing system with 100% automation.[769] This tired argument does not carry Verizon's burden for three reasons. First, it mischaracterizes the TELRIC standard. The Department must determine costs based upon a forward-looking, most efficient network, not what is in existence today. Second, it ignores the fact that ILECs have no market incentive to adopt more efficient processes. Third, it does not address the evidence presented by Mr. Walsh that Verizon currently uses more efficient, automated processes when handling its own service orders and that Verizon has, in fact, represented that 100% electronic ordering is available for almost all UNEs.[770]

Verizon makes the unsupported assertion that manual intervention for complex orders is a practice that has been demanded by CLECs.[771] What CLECs want is assurance that the facilities being ordered will in fact be available. Efficient OSSs for preordering and ordering linked to accurate equipment databases will provide that information to CLECs in a much more efficient manner than the manual checking for which Verizon wants to charge CLECs an order processing NRC. Furthermore, Verizon misleadingly truncated their quotation from Mr. Walsh's testimony about facilities checks. What Mr. Walsh really said was that all of the activities involved in

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[767] Verizon Initial Brief, at 224-25.
[768] AT&T's Initial Brief, at 251.
[769] Verizon Initial Brief, at 225.
[770] Ex. ATT-14, Walsh Rebuttal, at 26-28; Tr. 800, 01/18/02 (Walsh).
[771] Verizon Initial Brief, at 227.

engineering and rearranging the network to assure that sufficient facilities are available should be recovered in the recurring rate, rather than having some portion of that expense broken out and imposed as an NRC.[772] The Department should ignore Verizon's posturing and refuse to allow Verizon to impose a service order NRC that assumes excessive and avoidable manual processing of orders.

Finally, Verizon mixes apples and oranges by citing the FCC's observation that certain Verizon ordering interfaces in Massachusetts were adequate for purposes of the proceedings under 47 U.S.C. § 271. That observation does not support a conclusion that Verizon's current ordering systems, including its substantial manual handling by design, are the proper forward-looking technology and processes to establish TELRIC prices.

b. Verizon Incorrectly Relies Upon Its Current Practices in Modeling Unreasonable and Unsupported Fallout Rates.

As AT&T demonstrated in its initial brief, a 2% fallout rate is appropriate for forward-looking provisioning processes, as the Department and numerous other state commissions have found.[773] Verizon's only response is to rely upon its weary argument that no ILEC has been able to achieve a 2% fallout rate and therefore Verizon should not be expected to do so in Massachusetts.[774] This "nobody else does it" argument fares no better here than in the other areas where Verizon relies on the same argument. ILECs have no market incentive to create efficiencies by adopting better OSSs. In fact, the bottom line incentive is just the opposite. If ILECs can impose high up-front costs on CLECs seeking to enter the local market by including costly manual processing in the costs for which NRCs are imposed, the ILEC is less likely to be faced with effective CLEC competition. Therefore, the ILEC has every incentive to do just what

[772] Tr. 804-806, 01/18/02 (Walsh).
[773] AT&T's Initial Brief, at 253.
[774] Verizon Initial Brief, at 228.

Verizon has done – refuse to implement efficient systems and then claim that nothing more can be done.

Furthermore, TELRIC requires the Department to determine forward-looking costs, not embedded costs. The Department determined almost three years ago that a 2% fallout rate was a reasonable forward-looking rate. Allowing Verizon to use the higher fallout rates it proposes now would reflect an implicit finding that forward-looking processes are less efficient today than they were then. There is no evidentiary support for such a finding.

Indeed, the evolution in Verizon's position is itself strong evidence that a 2% fallout rate is the proper forward-looking assumption. On April 17, 1997, when Verizon filed its first NRC cost studies in the *Consolidated Arbitrations* proceeding, Verizon assumed a 15% fallout rate.[775] Four years later, when Verizon filed its cost studies in this proceeding, it acknowledged that a fallout rate as low as 4% is achievable.[776] Since Verizon concedes that such significant gains have been made in only four years, it is eminently reasonable for the Department to continue to use the same 2% fallout rate adopted in the *Consolidated Arbitrations* proceeding as the basis for setting NRCs. This may explain why, for all Verizon's carping about the 2% fallout rate assumption, its only mention of its own 4% fallout rate assumption is relegated to a footnote in its initial brief.[777]

Similarly, Verizon's argument that its current level of manual intervention activities in such organizations as the Mechanized Loop Assignment Center ("MLAC"), Recent Change Memory Administration Center ("RCMAC") and Circuit Provisioning Center ("CPC") will remain necessary even in a forward-looking environment is not supported by any reasoned analysis of the causes of such manual processing, and who is responsible, and also ignores

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[775] *Consolidated Arbitrations* Docket, Phase 4-L Order at 2, 10 (Oct. 14, 1999).
[776] Tr. 532, 1/16/02 (Peduto).
[777] Verizon Initial Brief, at 229, fn. 246.

evidence that further automated processing is possible. Verizon's brief does not even acknowledge the testimony of Mr. Walsh, who relied upon personal experience in testifying that many of the tasks assigned for manual handling at the CPC and RCMAC are capable of being handled by a modern OSS.[778]

Verizon, in a half-hearted attempt to respond to evidence that much manual processing is caused by database errors, for which Verizon is responsible, also makes the wholly unsupported declaration that fallout simply does not stem from database errors.[779] In making this argument, Verizon points to efforts the company takes to avoid database errors. Verizon, however, does not claim that it avoids all such database errors. Verizon presents nothing to respond to AT&T's testimony that fallout resulting from errors in the Verizon database should not be included in NRCs to CLECs, but instead are recovered through the recurring rates assessed for maintenance articles.[780] Moreover, Verizon's again unsupported assertion that it corrects CLEC orders, rather than its database, is not supported by evidence and reflects an inefficient process, the cost of which Verizon should not be able to impose on CLECs. The database errors, for which Verizon is responsible, should be corrected, instead of repeatedly charging a CLEC for correcting an order which is wrong because of such database errors. The costs of such database maintenance activities are appropriately included in recurring rates.[781] Fallout for which an NRC is imposed should be limited to that caused by the CLEC. The 2% fallout rate previously applied by the Department continues to be the appropriate one.

[778] Ex. ATT-14, Walsh Rebuttal, at 21-22.
[779] Verizon Initial Brief, at 231.
[780] Tr. 797-797, 01/18/02 (Walsh).
[781] Tr. 896-97, 01/18/02 (Walsh).

c. Verizon Incorrectly Assumes Excessive Levels of Manual Coordination and Duplicate Wiring For Hot Cut Loops.

Verizon's proposed NRC for an initial 2-wire loop hot cut is $202.42 without a field dispatch and $307.34 with field dispatch. As discussed in Section I.A.3. beginning at page 15, this is substantially higher than the NRCs for New Jersey that failed to pass muster before the FCC. Verizon New Jersey was forced to withdraw its Section 271 application and reduce all of its hot cut rates to $35.00. This level is necessarily the ceiling on what the Department should consider here, as there is no reason why hot cut rates that would violate TELRIC and are anti-competitive in New Jersey somehow become lawful and reasonable in Massachusetts.

Verizon admits, as it must, that its current method of provisioning a hot cut is both "labor intensive" and "time-consuming", yet it insists that prices must be based on this inefficient process.[782] The inappropriateness of such excessive NRCs for hot cut loops was demonstrated last week when Verizon withdrew its § 271 application to offer long distance service in New Jersey, just a day before the FCC was expected to rule on it. As Verizon admitted in a March 19, 2002 letter to the FCC withdrawing its New Jersey § 271 application, the dispute over the nonrecurring price charged for a hot cut was the basis for the application being withdrawn.[783] The only possible conclusion is that the FCC was going to reject Verizon's § 271 application for New Jersey because of the excessive hot cut NRC.

Tellingly, the hot cut NRC in effect in New Jersey that the FCC apparently found too high is more than $40 less than the hot cut NRC without dispatch Verizon proposes here [$202.42 (MA) v. $159.76 (NJ)] and almost $75 less when a field dispatch charge is imposed [$307.34 (MA) v. $233.12 (NJ)]. The FCC has expressly recognized that such inflated NRCs

[782] Verizon Initial Brief, at 237-38.
[783] March 19, 2002 Letter from Verizon in F.C.C. Docket No. 01-347.

can be an "anticompetitive weapon . . . to discourage competition."[784] The $35 NRC for a hot cut loop established in the recent settlement of the New York UNE rates case is a further recognition of a reasonable hot cut NRC which will allow local service competition to develop.[785] In fact, Verizon filed a request with the New Jersey PUC on March 22, 2002 to reduce the hot cut NRC to match the $35 rate in effect in New York.[786] Verizon's effort to impose an outrageously high hot cut NRC in Massachusetts should be rejected. Verizon's filing of a $35 hot cut NRC in New Jersey is an effective admission that $35 is the proper TELRIC NRC for a hot cut loop.

Even a quick review of Verizon's backup documentation for its proposed hot cut loop NRC reveals that the excessive manual coordination activities by the Regional CLEC Coordination Center ("RCCC") (accounting for $107.49 of the $127.14 provisioning cost for a hot cut loop v. the $20.33 provisioning cost for a non-hot cut loop) and the duplicative CO wiring tasks (almost three times the CO wiring cost of a non-hot cut loop -- $68.24 v. $20.68)[787] are what push Verizon's proposed hot cut loop NRC into the stratosphere.

As AT&T demonstrated in its initial brief, the current complex, coordinated hot cut process is in place now only because of the error prone migration techniques employed by Verizon in New York.[788] An efficient forward-looking network would employ the most efficient migration techniques available – namely scheduled hot cuts that minimize both coordination time and duplicate wiring activities by both Verizon and CLEC technicians.[789] Unless the NRC for UNE hot cut loops eliminates all the costs of the inefficient and unnecessary activities Verizon

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[784] *AT&T Communications*, 103 F.C.C.2d 277, ¶ 37 (1985).
[785] Joint Proposal Concerning Verizon Incentive Plan for New York, NY PSC 00-C-1945, at 2 (filed Feb. 8, 2000).
[786] Verizon-NJ's letter dated March 20, 2002, to the New Jersey Board of Public Utilities.
[787] Exs. VZ-21 and VZ-15, NRC Workpapers, Tab 3.
[788] AT&T's Initial Brief, at 256.
[789] AT&T's Initial Brief, at 256-257.

employs today to make up for its inability to provision hot cuts properly, this one rate alone will stop further development of local competition in the business sector.

3. Verizon's Surveys of Existing Practices Are Irrelevant to the Estimation of Forward-Looking Costs.

A significant portion of Verizon's initial brief on nonrecurring costs is devoted to explaining and defending the survey it used to determine work times.[790] But the surveyed work times are not what Verizon uses to calculate NRCs: it takes those times, makes mysterious and unexplained "forward-looking adjustments" to them, and uses that unproven and unexplained result to calculate NRCs.[791] As Verizon witnesses made abundantly clear on cross-examination, Verizon cannot explain how and on what basis it developed the forward-looking adjustments made to its survey results.[792] Furthermore, Verizon failed to produce any documentation supporting its forward-looking adjustments.[793] Thus, no matter how good the survey methodology and what the confidence intervals are, Verizon has completely failed to demonstrate that the costs, after Verizon's unsupported adjustment, are appropriate. The fundamental flaw in Verizon's survey approach is that Verizon completely failed to establish that the tasks it decided to measure in 1999 reflect the efficient and forward-looking processes required by TELRIC. As a result, Verizon's work task surveys do not provide an appropriate basis for TELRIC-compliant nonrecurring costs.

Conversely, Verizon's criticisms of AT&T's work times are particularly inappropriate in light of its own failure to provide any evidence of the forward-looking processes on which its NRCs are based. Verizon's claim that AT&T's use of experts to develop work times amounted to nothing more than "speculation" from people who had never processed or provisioned a

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[790] Verizon Initial Brief, at 215-222.
[791] AT&T's Initial Brief, at 259-260; Tr. 581, 711, 1/17/02 (Peduto).
[792] Tr. 511, 523, 528 1/16/02 (Goldrick).
[793] AT&T's Initial Brief, at 259.

UNE,[794] demonstrates how Verizon completely fails to comprehend the TELRIC concept. Setting rates on the basis of a forward-looking network necessarily requires analyses that include educated estimates of what effect future processes and technology will have upon nonrecurring costs. Moreover, Verizon's criticism that the AT&T experts lacked UNE processing and provisioning experience is spurious.[795] Given that ILECs are the only entities that have provisioned UNEs, Verizon's logic would mean that ILEC employees are the only persons with adequate expertise to testify on appropriate UNE rates. This self-serving argument should be rejected by the Department, especially in light of the fact that none of Verizon's employees surveyed were offered for cross examination.

4. Verizon's Criticisms of AT&T's CO Wiring Inputs are Red Herrings.

Verizon's allegations that AT&T's proposed NRCs are based upon a network that assumes 100% dedicated inside plant and assumes all MDFs are COSMIC-type frames reflects its continued refusal to acknowledge AT&T's reasoned explanation of its model and how it operates.[796] This repetition amounts to a serious misrepresentation of AT&T's position. AT&T made abundantly clear that dedicated inside plant was used only as a modeling convention, rather than an assumption regarding network design.[797] As AT&T repeatedly stressed throughout these proceedings, its NRC model's use of this modeling convention assures that costs associated with cross-connects, jumper installations and other improvements to its plant will not be recovered through NRCs.[798] AT&T has consistently agreed that installation and plant maintenance costs can be recovered through recurring rates and has even proposed a specific upward adjustment to the recurring loop rate in its initial brief designed to assure that such costs

[794] Verizon Initial Brief, at 222.
[795] Tr. 885-886, 1/18/02 (Walsh).
[796] Verizon Initial Brief, at 24, 239-40.
[797] Tr. 807, 1/18/02 (Walsh); Ex. ATT-15, Walsh Surrebuttal at 21-22.
[798] Ex. ATT-15, Walsh Surrebuttal, at 23.

are recovered.[799] As explained in AT&T's initial brief, the NRC for UNE-P is the only one that Verizon calculated based on the actual expectation that existing plant would in fact be reused, without any physical disconnection or reconnection. because it is now the industry standard.[800] As Mr. Walsh explained, that is precisely what happens when a retail customer switches to or from a CLEC's UNE-P offering.[801]

Similarly, AT&T's choice to model use of COSMIC frames reflects the appropriate forward-looking expectation that OSSs can manage jumpers on those frames.[802] Verizon, on the other hand, has never identified the forward-looking equipment assumptions made in calculating its proposed NRCs. Verizon's cursory recital of alleged problems with the COSMIC frames do not satisfy Verizon's burden of establishing that its NRCs are based on a forward-looking efficient network in compliance with TELRIC. Because Verizon has not even identified the frame equipment used in its cost calculations, it cannot possibly satisfy this burden.

5. Connection and Disconnection Charges Should be Separately Assessed.

Verizon's primary justification for collecting disconnection charges at the time of connection is that it wants to avoid any risk that it might not be able to collect a separate charge from the CLEC at the time of disconnection.[803] As AT&T pointed out in its initial brief, Verizon's own witnesses could not recall any CLEC going bankrupt in Massachusetts.[804] More fundamentally, however, Verizon's position on this issue ignores the basic principles of cost causation that it purports to apply elsewhere. Unless and until there is a disconnection, no cost has been "caused" at all. If disconnection never occurs, no cost will ever be "caused". Imposing

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[799] AT&T's Initial Brief, at 245-246.
[800] AT&T's Initial Brief, at 264; Tr. 808, 01/18/02 (Walsh).
[801] Tr. 808-810, 1/18/02 (Walsh).
[802] Ex. ATT-15, Walsh Surrebuttal, at 23.
[803] Verizon Initial Brief, at 253-36.
[804] AT&T's Initial Brief, at 266-67.

such an artificial cost on a CLEC as a condition of entering the market is completely inconsistent with the TELRIC pricing standard. Simplifying Verizon's accounts receivable management is certainly not an appropriate reason to impose such an anticompetitive up-front charge on CLECs.

6. Verizon's Proposed NRCs for Expedited Orders are Unnecessary and Suffer From the Same Deficiencies as Verizon's Proposed Base NRCs.

Verizon's proposal for a parallel series of "expedite" NRCs is unnecessary. Standard intervals have been established for provisioning UNEs through the negotiation and arbitration process created by the Telecommunications Act. CLECs should be able to rely on service being provided within the established intervals. Establishing a parallel set of "expedite" intervals raises serious rate application issues as to when those higher NRCs can be imposed and opens up possibilities for Verizon to further impede CLEC competition by inappropriately imposing "expedite" NRCs. Moreover, the "expedite" NRCs proposed by Verizon, which differ from the base NRCs only in application of a higher labor rate,[805] exhibit the same fundamental problems as already identified for the base NRCs.

[805] Ex. VZ-14, Meacham Direct, at 20-21.

VII. CONCLUSION.

AT&T respectfully urges the Department to adopt pro-competitive, forward-looking UNE rates consistent with the analysis and detailed recommendations provided above and in AT&T's initial brief, and to require that Verizon's tariffs be made consistent with these conclusions including in the ways also described above and in AT&T's initial brief.

Respectfully submitted,

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March 29, 2002