BEFORE THE

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

IN THE MATTER OF THE CONTINUED COSTING AND PRICING OF UNBUNDLED NETWORKING ELEMENTS, TRANSPORT, TERMINATION AND RESALE	**)** **)DOCKET NO. UT-003013** **) PART B** **)**

PART B RESPONSE TESTIMONY OF

JOHN C. KLICK

AND

BRIAN F. PITKIN

ON BEHALF OF

JOINT INTERVENORS

NON-PROPRIETARY VERSION

October 23, 2000

I. INTRODUCTION

Q. PLEASE STATE YOUR NAMES AND BUSINESS ADDRESS.

A. We are John C. Klick and Brian F. Pitkin. We are, respectively, Senior Managing Director and Director in the Financial Services Division of FTI Consulting, Inc. ("FTI"). Our offices are located at 66 Canal Center Plaza, Suite 670, Alexandria, VA 22314.

Q. MR. KLICK, PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I received a Bachelor of Science degree in mathematics from Bates College in 1970. In addition, I have taken graduate courses in accounting, finance and operations research. After graduation, I joined the Cost and Statistics Department of the Southern Railway System. Since that time, I have been continuously involved in cost analyses and economic studies for a variety of industries, including telecommunications. Many of these cost studies have been submitted in administrative proceedings, in court and in arbitrations. These studies – which have included analyses of stand-alone costs, short-run and long-run incremental costs, total element long-run incremental cost ("TELRIC") and short-run and long-run marginal costs – often have employed complex, computer-driven cost models that rely on detailed engineering input data and sophisticated discounted cash flow techniques. FTI has been retained by numerous competitive local exchange carriers ("CLECs") to assist in analyzing cost and financial issues arising out of the Telecommunications Act of 1996.

My curriculum vitae is included as Exhibit JCK/BFP - 2 to this testimony.

Q. MR. PITKIN, PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I received a Bachelor of Science degree in Commerce, with concentrations in both Finance and Management Information Systems, from the McIntire School of Commerce at the University of Virginia in 1993.

After graduation from the University of Virginia, I joined Peterson Consulting, L.P., where I was involved in developing and analyzing large databases and performing economic analyses. In 1994, I joined Klick, Kent & Allen, Inc. (which has since been acquired by FTI). Since joining the firm, I have been involved in analyses for the telecommunications, railroad, pipeline and postal industries. Many of the analyses I have worked on have been submitted in regulatory and court proceedings.

My curriculum vitae is included as Exhibit JCK/BFP - 3 to this testimony.

Q. WILL YOU BRIEFLY SUMMARIZE YOUR RECENT EXPERIENCE THAT IS RELEVANT TO THIS PROCEEDING?

A. We have had extensive experience with large, computerized databases and cost models. In addition, because many of these models have been presented in the

context of litigation, we have had to analyze models sponsored by opposing parties, explain their deficiencies, and defend the model assumptions and techniques that we have utilized. Following are examples of projects that we have undertaken in these areas.

Since late 1996, we have assisted WorldCom, AT&T and other CLECs in presenting and analyzing cost evidence in various state proceedings arising out of the Telecommunications Act of 1996. We have presented HAI Model costs for unbundled network elements ("UNE") and universal service fund ("USF") proceedings in a number of jurisdictions, including Colorado, the District of Columbia, Idaho, Iowa, Minnesota, Montana, Nebraska, New Mexico, North Dakota, South Dakota, Utah, Washington and Wyoming. We have critiqued cost studies submitted by Verizon in Iowa, Minnesota, Nebraska, New Mexico, Oregon, Texas and Washington. We also have submitted testimony in Texas on Southwestern Bell's cost studies, and critiques of the Benchmark Cost Proxy Model ("BCPM") in Colorado, Iowa, Kentucky, Louisiana, Minnesota, North Carolina, Pennsylvania, South Carolina, Utah, Washington and Wyoming. In addition, we have conducted "cross-model" comparisons to help identify for several State commissions the ways in which various models (e.g., the HAI Model, BCPM, and the VERIZON models) develop costs and the input variables to which they are particularly sensitive.

We were involved in developing a Collocation Cost Model (sponsored by WorldCom and AT&T) that has been used to calculate the cost for physical, cageless and virtual collocation of a CLEC within an ILEC's existing central office. We have presented testimony on this model, and its economic underpinnings, in California, Florida, Georgia, Maryland, Minnesota and New York.

We were also consulted on the development of the AT&T and WorldCom Non-Recurring Cost Model which calculates the non-recurring cost estimates for the tasks and activities that may be performed by an incumbent local exchange carrier (ILEC) when a competitive local exchange carrier (CLEC) requests wholesale services, interconnection, and/or unbundled network elements.

In addition, we have recently prepared testimony on behalf of Covad Communications Company, New Edge Network, NorthPoint Communications, JATO Communications Corp. and Rhythms Links Inc. in proceedings before the Minnesota Public Utilities Commission ("MPUC") *In the Matter of a Commission Initiated Investigation into Qwest Communications, Inc.'s Costs Related to Provision of Line Sharing Service* (the "Minnesota Line Sharing Docket").[1]

Q. HAVE YOU PREVIOUSLY TESTIFIED IN WASHINGTON?

[1] OAH Docket No. 12-2500-12631-2, MPUC Docket No. P-421/CI-99-1665

A. Yes. Mr. Klick has filed testimony in several proceedings in Washington, which are reflected in his curriculum vitae included as Exhibit JCK/BFP - 2 to this testimony. Specifically relevant to this proceeding, he testified in this Commission's generic proceedings entitled, *In the Matter of the Pricing Proceeding for Interconnection, Unbundled Elements, Transport and Termination,and Resale,*[2] *In the Matter of the Pricing Proceeding for Interconnection, Unbundled Elements, Transport and Termination,and Resale for Qwest Communications, Inc.*,[3] and *In the Matter of the Pricing Proceeding for Interconnection, Unbundled Elements, Transport and Termination,and Resale for Verizon Northwest Inc.*[4] In addition, he recently testified in Part A of the current proceeding. Mr. Pitkin testified in WUTC Docket No. UT-980311(a), *Determing Costs for Universal Service* on behalf of TRACER.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. Joint Intervenors include AT&T Communications of the Pacific Northwest, Inc., Advanced TelCom Group, Inc., Electric Lightwave, Inc., Focal Communications of Washington, WorldCom, Inc., Covad Communications Company, Rhythms Links, Inc., and XO Washington, Inc., f/k/a NEXTLINK Washington, Inc., collectively referred to as the "Joint Intervenors."

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

[2] WUTC Docket No. UT-960369

[3] WUTC Docket No. UT-960370

[4] WUTC Docket No. UT-960371

A. We have been asked by the Joint Intervenors to address certain aspects of the direct testimonies filed in Part B of this docket on August 4, 2000 by Qwest and Verizon (collectively referred to as "the ILECs").

Q. WHAT ASPECTS OF THESE FILINGS WILL YOU BE DISCUSSING?

A. As an initial matter, we will be addressing the overall approach that the ILECs have pursued. Although the ILECs pay lip service to the concept of consistency with prior findings of this Commission in its Generic Cost Docket ("GCD"), it is clear that the ILECs are using this proceeding as an opportunity to modify significant aspects of the Commission's earlier work.

In addition, we specifically address the issues of subloop unbundling, inside wiring, the UNE-Platform, EELs, DS-1 and DS-3 loops, loop conditioning and dedicated transport.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. In Section II of our testimony, we first identify a number of over-arching problems with the ILECs' recurring cost studies. These problems include a failure to follow this Commission's earlier findings on the appropriate method for calculating TELRIC, inconsistencies with the Commission's cost-finding determinations in the GCD, and efforts to set up a future ability to double-count the effects of inflation. In Section III, we address the recurring costs for each of the specific UNEs identified above. In Section IV, we address the non-recurring

costs developed by Qwest and Verizon for their UNEs. Finally, in Section V, we summarize our testimony and present our conclusions.

II. OVER-ARCHING PROBLEMS WITH THE ILEC RECURRING COST STUDIES

Q. WHAT IS YOUR OVERALL REACTION TO RECURRING COSTS DEVELOPED IN THE DIRECT FILINGS BY WITNESSES FOR THE ILECS?

A. As this Commission is aware, the recurring costs it established for Qwest's and Verizon's UNEs in the GCD were based upon the outputs of four cost models that the parties submitted in that proceeding.[5] AT&T and WorldCom relied upon the Hatfield Model; Qwest (which was then US WEST) relied upon the RLCAP model and, to some extent, the BCPM;[6] Verizon (which was then GTE) relied upon the Loop Technology Model ("LTM"). The Commission established recurring costs for UNEs by seeking to make the model outputs "converge" by employing common inputs and assumptions wherever possible, and then averaging the results. Of particular importance, the Commission established common cost markups for Qwest and Verizon based upon the specific characteristics and assumptions used in each of the models.[7] In this Part B

[5] It is our understanding that compliance runs of these models used in the GCD are still being finalized by the parties.

[6] The BCPM was sponsored by Sprint in the GCD.

[7] Thus, in its 17th Supplemental Order, the Commission observed:

. . . for GTE we have been presented with three studies: BCPM, Hatfield, and LTM. These studies make different assumptions about which costs can be either directly or indirectly

proceeding, neither Qwest's RLCAP and BCPM nor Verizon's LTM models have been used by the ILECs. Instead, Qwest and Verizon are relying upon different models or special studies for calculating the recurring costs of the various UNEs at issue in this phase without making any effort to demonstrate the consistency (or lack thereof) between the current studies and the Commission's prior findings.

Overall, we believe the ILECs' Part B cost studies are fundamentally flawed in three ways. First, by relying on new models, the ILECs seek to re-introduce their view of the proper way to calculate TELRIC through the "back door," even where that view was previously rejected. Rather than accepting what should be their burden -- *i.e.*, to demonstrate that the new models are consistent with the Commission's findings on the nature of TELRIC in the GCD -- the ILECs' witnesses are silent on this issue of consistency, seeking to transfer their burden to CLECs and the Commission staff. Second, there are important areas in which there are inconsistencies between the prior ILEC models and the studies that the ILECs are relying upon in this proceeding. Here too, the ILECs should bear the burden of demonstrating that such inconsistencies do not exist. Third, the ILECs appear to be establishing a precedent that will permit them to double-recover the effects of inflation in future UNE rates.

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assigned to network elements. The markup for GTE's LTM model must be higher than for the Hatfield Model because, where GTE assumes that certain costs are common, the Hatfield Model developers contend that these same costs can be directly attributable to elements. It follows that the mere fact that another Commission adopted a particular markup is of little or no relevance unless a showing can be made that the methodology used in the other state to identify direct and common costs is the same as we have employed in this proceeding. 17th Supp. Order at 51.

A. Ways in Which the ILEC Recurring Cost Studies are Inconsistent With Prior Commission Findings On TELRIC

Q. IN WHAT WAYS ARE THE ILEC RECURRING COST STUDIES INCONSISTENT WITH THE PRIOR FINDINGS OF THIS COMMISSION ON THE PROPER APPROACH FOR CALCULATING TELRIC?

A. In its Eighth Supplemental Order, the Commission reached the following conclusions about the nature of TELRIC:

> 10. The TELRIC methodology 1) assumes the use of best available technology within the limits of existing network facilities; 2) makes realistic assumptions about capacity utilization rates, spare capacity, field conditions, and fill factors; 3) employs a forward-looking, risk-adjusted cost of capital; 4) uses economic depreciation rates for capital recovery; and 5) properly attributes indirect expenses to network elements on a cost-causative basis. See, for example, FCC Interconnection Order ¶¶674-703; Exh. 1 at 21-39; Exh. 112 at 12.
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> 8th Supp. Order at 8; and
>
> 32. A forward-looking cost model does not measure the embedded cost-of-service. Sprint Brief at 9. The model should estimate the economic or prospective costs of providing services or elements. Fifteenth Supplemental Order, Docket No. UT-950200 (April 11, 1996), at 80; FCC Interconnection Order at ¶¶704-707.
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> 33. As Sprint points out, forward-looking cost measurements require capturing the future costs of network facilities. The use of current wire center locations, along with the most efficient technology available to determine forward-looking economic costs, is the approach that most reasonably balances the interests of ILECs, CLECs, and consumers. ILECs need prices that will recover their forward-looking economic costs. CLECs need to be

> provided with the opportunity to compete on a equitable basis with the ILEC. Consumers benefit most when there is facility-based competition. Sprint Brief at 15-16, See, also, Commission Staff Brief at 13.
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> Id. at 13-14.

With respect to inputs, the Commission stated:

> 27. In judging the soundness of the cost inputs, we believe that US West has proposed a useful standard: the inputs "must be *realistic, accurate estimates* of all of the *actual* costs a provider would incur if it built out a new network using the least cost, forward-looking technology." US West Brief at 5.
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> *Id*. at 13, (emphasis in original.)

To the best of our knowledge, these standards continue to apply to the cost-based prices for UNEs at issue here in Part B. The studies submitted by both ILECs in Part B are inconsistent with these findings. Addressing Qwest's evidence first, Teresa K. Million, responding at page 5 of her Direct Testimony to a question about the effects of the recent Eighth Circuit decision on Qwest's cost studies, states that:

> [i]t is clear that the Court believes an ILEC's rates should be based on the forward-looking cost of providing its existing facilities and equipment rather than an imaginary reconstructed local network. Thus, cost models that calculate unit costs using realistic, achievable and actual inputs to produce a realistic outcome would meet the requirements of the Telecom Act. The cost models presented by Qwest use assumptions based on actual experience or company practice and, therefore, already reflect this interpretation by the Court for the most part. While the Court's action and forthcoming rules from the FCC may impact Qwest's approach to future cost studies, I do not believe that it requires changes to the cost studies presented in this proceeding.

In another portion of her testimony, Ms. Million describes the initial step in the process of how recurring costs are calculated in the Qwest TELRIC studies as defining "the element or service to be studied. This step includes identification of all of the network components that are needed to provide the element or service, and an estimation of demand for the element or service." Million Direct at 6.

Q. WHAT IS IT ABOUT MS. MILLION'S DISCUSSION THAT IS INCONSISTENT WITH PRIOR COMMISSION DECISIONS ON TELRIC?

A. First, the legal effect of the Eighth Circuit decision in *Iowa Utilities Board v. FCC* has not yet been determined. The Eighth Circuit has stayed the portion of its decision that deals with the FCC's pricing rules. Thus, those rules remain in effect pending a review of the Eighth Circuit's decision by the Supreme Court. In addition, because the principles we discuss in our testimony focus on achieving the twin goals of cost recovery and promoting competition, many, if not all, of those principles likely will be equally applicable under whatever rules are finally put into place to price unbundled network elements.

The Eighth Circuit, after all, affirmed that the proper method for determining costs is a long-run, forward-looking approach that is not based on the embedded costs of the ILEC's existing network.[8] These are the same principles identified in the above quotations from this Commission's 8th Supplemental Order.

[8] If the rules regarding the pricing of UNEs change prior to the hearing in this docket, however, we reserve the right to reconsider our recommendations in light of any new rules.

Thus, Ms. Million's discussion suggests two forms of inconsistency. The first quotation from Ms. Million's testimony suggests that Qwest's studies are based upon its "existing facilities and equipment" and assumptions that are "based on actual experience and company practice." This is not consistent with prior Commission determinations on the nature of TELRIC.

The second quotation from Ms. Million's testimony suggests that Qwest has undertaken TELRIC studies in Part B on an element-by-element basis. This is inconsistent with the way in which UNEs were calculated by the Hatfield and BCPM models relied upon by the Commission in the GCD. Those models built the entire network and, thereby, incorporated into TELRIC the full economies of scale available to ILECs to the maximum extent possible. Qwest's apparent failure to do so here robs potential purchasers of Part B UNEs of economies of scope and scale available to Qwest, and results in discriminatory UNE prices. This is completely at odds with the Commission's prior findings.[9]

Q. WHAT ABOUT VERIZON'S RECURRING COST STUDIES?

[9] At page 13 of the 8th Supplemental Order, the Commission notes that "most parties agree that the cost estimates for unbundled network elements should be based upon the cost of satisfying the total demand for elements." Verizon's Part B witness Kevin C. Collins agrees. At pages 15 and 16 of his Direct Testimony, Mr. Collins states that "ICM is comprised of six modules: Loop, Switch, Interoffice Transport, Signaling System 7 ("SS7"), Expense, and Mapping/Reporting. These six modules design and cost the forward-looking network as if it is built all at once using all new plant and technology. The designed network reflects the economies of scope and scale of all services across Verizon NW's entire Washington network." In theory, Verizon's approach to developing TELRIC is superior to the approach evidently used by Qwest. However, many of the costs advocated by Verizon in Part B are based on special studies.

A. Verizon's studies are also inconsistent with prior Commission decisions on the nature of TELRIC. First, Verizon's witness Collins states that "the cost studies must produce accurate estimates of the forward-looking, economic costs *each company expects to incur* in provisioning UNEs and telecommunications services. Because each company can only provision UNEs out of its own network, it necessarily follows that the cost estimates relied on by this Commission must reflect forward-looking costs specific to each company's network." Collins Direct at 7. As is the case with Qwest, Verizon's cost studies ultimately assume – with no evidence to support the assumption – that Verizon's existing network and facilities are a good estimate of how an efficient ILEC would meet current and *future* demand over the long run. Thus, for example, Verizon continues to use GTD-5 switches, even though it is widely acknowledged that these switches are not consistent with least-cost forward-looking technology.

Q. FROM AN ECONOMIC PERSPECTIVE, WHAT IS WRONG WITH USING THE ILECS' CURRENT CONFIGURATION AND FACILITY MIX, AND THEIR CURRENT LEVEL OF DEMAND, TO ESTIMATE TELRIC?

A. The Telecommunications Act of 1996 is designed to bring the benefits of competition to consumers. These benefits should include a wider range of services at lower prices. In competitive markets, this occurs in large part because competitive pressures force companies to be efficient, *i.e.*, to provide better service at lower cost, and to pass those cost savings through to their customers. In

moving from rate of return regulation, which permits a company to recover its embedded cost of providing service without requiring the company to maximize the efficiency of its operations, to a competitive market model, Congress recognized that merely permitting ILECs such as Verizon and Qwest to recover their embedded costs led to higher-than-competitive prices and deprived consumers of many of the benefits of competition. As a result, the FCC has specifically rejected embedded costs and rate of return regulation.

In this proceeding, Verizon and Qwest will no doubt argue that they are not merely trying to recover embedded costs – that they have developed the *current* cost of replacing their existing facilities and, in the case of Verizon, have even incorporated certain efficiencies into their TELRIC calculations.[10] But numerous inefficiencies remain implicit in their Part B TELRIC studies.

For example, both ILECs appear to assign the cost of spare capacity allegedly required to service *future* demand to only those working lines in existence today. *See,* for example, Collins Direct at 33. This has the effect of charging today's customers – including CLECs – for facilities they do not need, raising the cost of competitive entry and forcing them to subsidize customers who will enter the market in the future. In competitive markets, no customer or group of customers would agree to pay prices that incorporate such a subsidy unless they were less

[10] Verizon contends that ICM incorporates a number of "efficiencies" that are not achievable in the real world. Collins Direct Testimony at 24-25.

expensive than building only the plant required for its own use. The Commission rightly rejected this approach in its Eighth Supplemental Order, citing the FCC:

> [a]s the FCC stated when they introduced the notion of basing unbundled network element prices on TELRIC, "the per-unit costs associated with a particular element must be derived by dividing the total cost associated with the element by a reasonable projection of the actual total usage of the element." FCC Interconnection Order at ¶ 682.
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> Eighth Supplemental Order at ¶ 171.

Similarly, Verizon develops its expense ratios by dividing *embedded* expenses by forward-looking investments. Abs Direct at 10-14. This overstates cost because it ignores the fact that one of the primary reasons that companies develop and invest in up-to-date, forward-looking technology is to reduce day-to-day operating expenses. The effect of Verizon's calculations is to build into "TELRIC" the higher operating expenses that reflect the effects of Verizon's embedded equipment and facilities, rather than incorporating the lower forward-looking operating expenses that should be associated with full-scale investment in state-of-the-art technology.

If the ILECs are permitted to incorporate such inefficiencies into their TELRIC calculations they will, at a minimum, defeat a primary goal of the Telecommunications Act of 1996 by perpetuating the status quo of forcing consumers to pay for inefficiently operated systems. At worst, this practice could render competitive entry uneconomic. As the Commission noted in its Eighth Supplemental Order:

> Economic efficiency dictates that the cost floor be established in a manner which maximizes society's welfare and is consistent with the Act's requirement that the rates be just and reasonable. We will set prices for unbundled network elements in Phase II of this proceeding. Setting economically efficient prices will provide the right signal to competitive local exchange carriers (CLECs). Most importantly, it will help them in making their decision either to construct their own network or to lease facilities from the incumbent local exchange carrier (ILEC). If the price of an unbundled network element is set too high, a CLEC may build facilities when society's scarce resources would be better employed if it had rented facilities from the ILEC. On the other hand, if the price of unbundled network elements is set too low, a CLEC may rent facilities from an ILEC rather than build. This would reduce society's well-being, because the least cost supplier is not the one who is building and maintaining the network facilities. In order to maximize society's welfare, resources should be directed toward the supplier that can construct a network at the lowest cost to society. Exh. 1 at 22.
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> 8th Supp. Order at ¶12.

Q. VERIZON'S WITNESS COLLINS STATES THAT "VERIZON NW'S NETWORK AND ANY REAL-WORLD NETWORK EVOLVE THROUGH TIME AND REFLECT A MIX OF TECHNOLOGIES, SOME OF WHICH ARE NO LONGER CONSIDERED FORWARD-LOOKING. NEITHER VERIZON NW NOR ANY OTHER BUSINESS IMMEDIATELY REPLACES ITS PLANT OR TECHNOLOGY WHENEVER A NEW PRODUCT OR TECHNOLOGY ENTERS THE MARKET." DOES MR. COLLINS HAVE A POINT?

A. No. In fact, companies operating in competitive markets *do* sometimes replace existing technology – even if it still has substantial remaining serviceable life – if

the market demands an improved product. For example, traditional gasoline pumps all over the country were rapidly replaced by "pay-at-the-pump" facilities, even though the old pumps were perfectly serviceable. Why? Because customers demanded the convenience, and a station that refused to provide this service risked losing a significant portion of its business. Examples of this sort of competitive market behavior that are more germane to the issues in this proceeding include AT&T's rapid installation of a fiber optic long-distance network once Sprint "dropped the pin," and – more recently – the ILECs' decision to roll out xDSL technology (which has been technologically feasible for some time) only when faced with widespread deployment of competitive cable system two-way upgrades capable of providing high-speed access to the Internet.

Even if consumers don't demand replacement of technologically less-advanced equipment immediately, competitive markets prevent incumbents from passing through the costs of less-efficient equipment and facilities to consumers. In other words, incumbents must meet the prices charged by a more efficient entrant into a market, even if they continue to employ less efficient, higher cost assets. As a result, when determining cost-based prices that are consistent with the competitive market model, it is appropriate to calculate the costs of an efficient competitor – because those are the costs that the incumbent would be able to recover if the market were competitive. The fact that competition sometimes prevents a company from passing through to consumers the full embedded cost it incurs over the full serviceable life of an asset is already reflected in the cost of

capital and the service lives of assets (which incorporate the impact of technological obsolesence) that are used to develop annual capital costs in the various models that are currently being used in the state of Washington.

In short, calculating TELRIC by excluding existing ineffiencies is the appropriate way of achieving the goals of the Telecommunications Act of 1996.

B. Ways in Which the ILEC Recurring Cost Studies in Part B are Inconsistent With UNEs Established by the Commission in the Generic Cost Docket

Q. EARLIER, YOU SUGGESTED THAT THE STUDIES SUBMITTED BY THE ILECS ARE INCONSISTENT WITH THE COST-BASED UNE PRICES ADOPTED BY THE COMMISSION IN THE GENERIC COST DOCKET. CAN YOU PROVIDE SOME EXAMPLES OF THESE INCONSISTENCIES?

A. Yes. One of the biggest concerns we have is the application of the common cost factors developed from the *earlier* models to the outputs generated by the current models and studies. The fact that there is an interdependency between a particular model and the proper size of the common cost ratios is obvious from the Commission's decision in the GCD, in which it determined a common cost factor of 4.05 percent for Qwest, and a ratio of 24.75 percent for Verizon. No one believes that Verizon incurs common costs that – on a comparable basis – are six times higher than the common costs incurred by Qwest. Instead, the Commission

explicitly recognized that the RLCAP and other models relied upon by Qwest in the GCD directly assigned a higher proportion of total cost to individual UNEs than did the LTM model relied upon by Verizon. *See* 17th Supp. Order at 51.

In Part B, the ILECs merely *assert* that the common cost factors developed in the GCD are applicable to the recurring costs they have developed using different models and special studies. They have provided no evidence that this is appropriate (such as an account-by-account cross walk comparing the treatment of each account in the models used in the GCD with the models and studies relied upon here). Instead, they seek to escape what should be their burden by shifting to the CLECs and the Commission staff the burden of proving the converse.

Another good example of the inconsistency between the ILECs' Part B studies and the cost-based UNE prices established in the GCD relates to the recurring costs for the switching component of the UNE-P prices. In the GCD, the Commission established a cost-based price for the switching UNE that *included* access to all vertical features at no additional cost. *See*, 8th Supp. Order at ¶¶276-281. In their discussion of UNE-P, however, both ILECs state that the recurring costs for the platform UNE will be the sum of the recurring costs for the component(s) of the platform, and that they will impose *additional* charges for access to vertical features. Hooks Direct at 26; Trimble Direct at 27. This is a clear example of what we described earlier, *i.e.*, efforts by the ILECs to use the

bifurcated nature of these proceedings to ignore the impact of issues previously decided by this Commission.[11]

C. Potential Double-Count of Inflation

Q. WHAT ARE YOUR CONCERNS ABOUT DOUBLE-COUNTING OF INFLATION?

A. Verizon witness Collins explains, at length, how the ICM indexes 1998 investment using the telephone plant indexes in order to develop what he calls "forward-looking" investment. Apart from our concerns about using an indexed investment base as a means of calculating efficient forward-looking costs, we believe that Mr. Collins is laying the groundwork for a future process that will build into Verizon's TELRIC calculations a double-count of inflation.

Q. HOW COULD VERIZON'S ICM-BASED CALCULATIONS IMPROPERLY DOUBLE-COUNT THE EFFECTS OF INFLATION?

A. The cost of capital established by the Commission in the GCD, and employed by the ILECs in Part B, are "nominal" costs of capital. Nominal costs of capital compensate investors not only for the time value of money and business and financial risk, but also for the effects of inflation. In future proceedings to establish updated UNE rates, indexing the investment base – as Verizon's ICM does here – would incorporate inflation in future cost-based UNEs twice, once as

[11] In our discussion of DS-1 and DS-3 loops, we identify another such inconsistency.

a component of the nominal cost of capital and once as an increase in the investment unit prices employed by the ICM.

Q. WHY DO PARTIES RELY ON NOMINAL COSTS OF CAPITAL (WHICH INCLUDE COMPENSATION FOR INFLATION) RATHER THAN REAL COSTS OF CAPITAL (WHICH DO NOT INCLUDE COMPENSATION FOR INFLATION)?

A. Nominal costs of capital are more easily calculated, because they can be derived directly from data observable in financial markets. But if nominal costs of capital are employed in establishing cost-based prices for UNEs, unit prices for material and labor used to develop the total network investment must be "locked in" for future time periods at the levels initially established by the Commission.

An alternative approach would be to calculate cost-based prices for UNEs by applying the real cost of capital to investment levels that are allowed to increase periodically with inflation. This is conceptually more consistent with the competitive market standard, and it would have the additional advantage of facilitating the calculation of forward-looking costs when future technological breakthroughs need to be reflected in TELRIC calculations. On the other hand, such an approach would be somewhat unwieldy because it would require the Commission to estimate a real cost of capital, and would require that UNE rates increase periodically to reflect the effects of inflation on the underlying investments.

What clearly would be inappropriate would be to apply the *nominal* cost of capital to network investment levels that *are also allowed to increase* to reflect the effects of inflation because, as we stated above, the ILECs would thereby be compensated *twice* for the effects of inflation.

Q. CAN YOU PROVIDE A SIMPLE EXAMPLE OF THE TWO ALTERNATIVE METHODS OF CAPITAL RECOVERY YOU DESCRIBE ABOVE?

A. Consider an example in which an initial investment of $1,000,000 is required to construct a forward-looking network, employing the following assumptions:

- economic life is 10 years;
- nominal cost of capital is 10%;
- inflation rate is 4%; and
- real cost of capital is 5.77% (1.10 / 1.04 - 1).

These assumptions would result in the following two cost recovery patterns that, over the life of the network, both have a present value equal to the initial investment in the network.

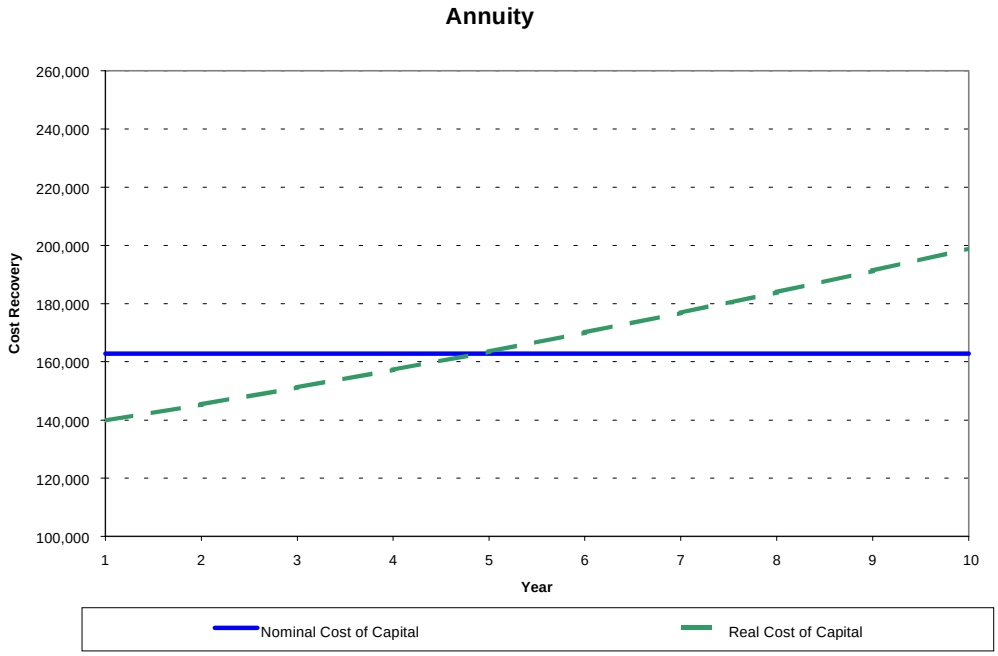
Table 1

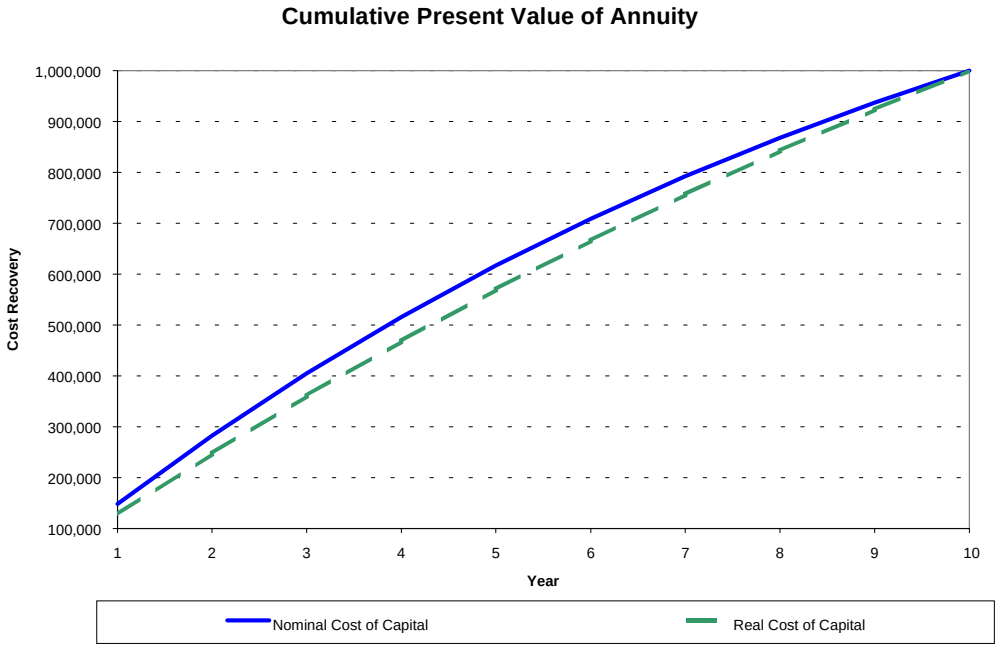
Year	Nominal Cost of Capital					Real Cost of Capital				
	Annuity	Inflation Factor	Inflated Annuity	Present Value Factor	PV of Annuity	Annuity	Inflation Factor	Inflated Annuity	Present Value Factor	PV of Annuity
1	$ 162,745	N/A	$ 162,745	0.9091	$ 147,950	$ 134,386	1.0400	$ 139,762	0.9091	$ 127,056
2	162,745	N/A	162,745	0.8264	134,500	134,386	1.0816	145,352	0.8264	120,126
3	162,745	N/A	162,745	0.7513	122,273	134,386	1.1249	151,166	0.7513	113,574
4	162,745	N/A	162,745	0.6830	111,157	134,386	1.1699	157,213	0.6830	107,379
5	162,745	N/A	162,745	0.6209	101,052	134,386	1.2167	163,502	0.6209	101,522
6	162,745	N/A	162,745	0.5645	91,866	134,386	1.2653	170,042	0.5645	95,984
7	162,745	N/A	162,745	0.5132	83,514	134,386	1.3159	176,843	0.5132	90,749
8	162,745	N/A	162,745	0.4665	75,922	134,386	1.3686	183,917	0.4665	85,799
9	162,745	N/A	162,745	0.4241	69,020	134,386	1.4233	191,274	0.4241	81,119
10	162,745	N/A	162,745	0.3855	62,745	134,386	1.4802	198,925	0.3855	76,694
TOTAL					$ 1,000,000					$ 1,000,000

The above table illustrates that either (1) calculating an annuity based on the nominal cost of capital fully recovers the initial $1,000,000 investment over the 10-year period, or (2) calculating an annuity based on the real cost of capital, and then inflating the annuity each year at the appropriate inflation rate fully recovers the initial $1,000,000 investment over the 10-year period.[12] The following charts illustrate these two recovery patterns:

[12] Under either approach, the nominal discount rate is used to calculate cumulative present value because the cash flows being discounted (shown in the "Inflated Annuity" column) incorporate the effects of inflation.

Chart 1





The above charts illustrate the point that although both cost recovery patterns result in the same $1,000,000 present value at the end of the asset's life (recover

the fill initial network investment), the use of the nominal cost of capital would allow the ILECs to recover more of their initial investment earlier in the network's life than would the use of the real cost of capital. As a result, if the nominal cost of capital is used and ILECs are nevertheless allowed to submit "updated" material and labor prices before year 10 (in year 5, for example), they will have over-recovered the total investment made to construct the network being used to develop TELRIC.

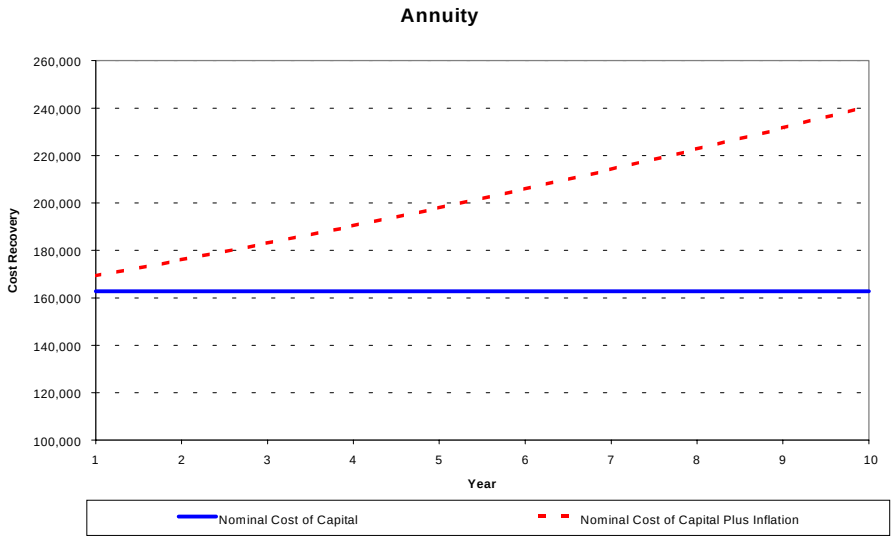
The inflation double-count implicit in Mr. Collins's approach is illustrated in the following example, which assumes that an ILEC uses a nominal cost of capital *and* seeks new UNE rates each year to reflect the effects of inflation on asset and labor unit prices.

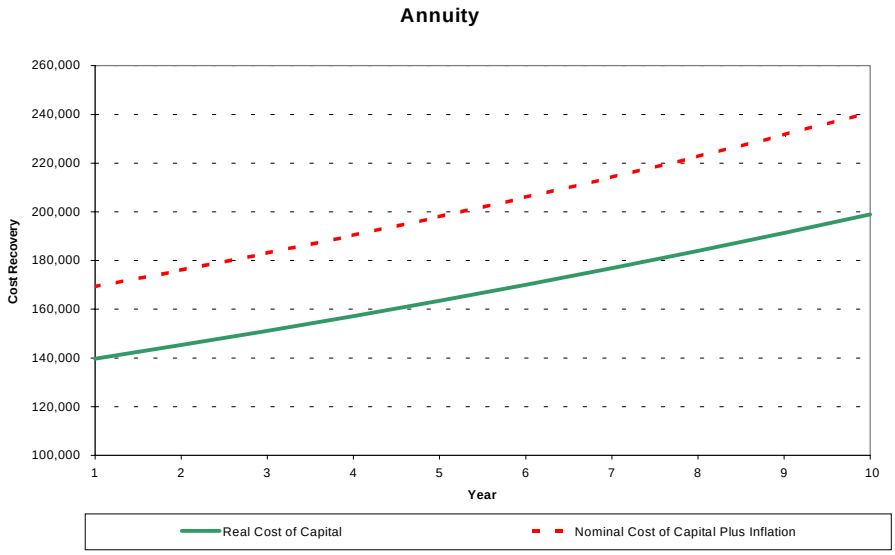
Table 2

Year	Nominal Cost of Capital (From Table 1)		Real Cost of Capital (From Table 1)		Nominal Cost of Capital Plus Inflation For Material and Labor				
	Annuity	PV of Annuity	Annuity	PV of Annuity	Annuity	Inflation Factor	Inflated Annuity	Present Value Factor	PV of Annuity
1	$ 162,745	$ 147,950	$ 139,762	$ 127,056	$ 162,745	1.0400	$ 169,255	0.9091	$ 153,868
2	162,745	134,500	145,352	120,126	162,745	1.0816	176,025	0.8264	145,476
3	162,745	122,273	151,166	113,574	162,745	1.1249	183,066	0.7513	137,541
4	162,745	111,157	157,213	107,379	162,745	1.1699	190,389	0.6830	130,038
5	162,745	101,052	163,502	101,522	162,745	1.2167	198,005	0.6209	122,945
6	162,745	91,866	170,042	95,984	162,745	1.2653	205,925	0.5645	116,239
7	162,745	83,514	176,843	90,749	162,745	1.3159	214,162	0.5132	109,899
8	162,745	75,922	183,917	85,799	162,745	1.3686	222,728	0.4665	103,904
9	162,745	69,020	191,274	81,119	162,745	1.4233	231,637	0.4241	98,237
10	162,745	62,745	198,925	76,694	162,745	1.4802	240,903	0.3855	92,879
TOTAL		$ 1,000,000		$ 1,000,000					$ 1,211,026

Table 2 shows that under the approach implicit in Mr. Collins's testimony, ILECs would over-recover their initial investment by more than 21 percent if they were allowed to use the nominal cost of capital *and* adjust the material and labor prices for the effects of inflation. The following charts also help to illustrate this point:

Chart 2





The solid lines on the above charts reflect the annual revenues needed to allow the ILECs to fully recover their investment and to earn their cost of capital. The approach apparently being proposed by Verizon, represented by the dashed lines, would allow the company to recover *more* than the full economic cost of the network. The difference between the two sets of lines on each of the above graphs represents the amount that ILECs would over recover in each year, under the assumptions we have employed, if they were allowed both to use a nominal cost of capital *and* to inflate the underlying unit prices each year. Even if underlying unit prices for equipment and installation labor were not updated each year, but only periodically (every third year, for example), over-recovery would still occur.

Q. WHAT ARE THE IMPLICATIONS OF THIS DISCUSSION FOR THE COST-BASED UNE PRICES THAT THE COMMISSION WILL CALCULATE IN FUTURE PROCEEDINGS?

A. The Commission must calculate the capital component of recurring costs in a manner that avoids compensating ILECs twice for inflation. As noted above, this can be done *either* (1) by using the initially-adopted material unit prices and labor rates in establishing the total network investment, and applying the appropriate nominal cost of capital, or (2) by using current material unit prices and labor rates and applying the real cost of capital (which would then require that UNE rates be adjusted in subsequent years to reflect the effects of inflation on underlying material and labor unit prices). Thus, it is important for this Commission to

recognize that, once UNE rates are established, it is not appropriate to adjust the investment base to account for inflation because inflation is already included in the cost of capital.

III. DISCUSSION OF RECURRING COSTS FOR INDIVIDUAL UNES

A. Sub-Loop Unbundling

Q. HAVE THE ILECS PROVIDED RECURRING COSTS FOR ALL OF THE SUB-LOOP UNBUNDLING REQUIRED BY THE FCC?

A. No. In particular, the ILECs have not established rates for house and riser (or intra-building) cable. As Ms. Baker and Mr. Gillan discuss, reasonable rates for house and riser cable must be provided in order to ensure that facilities-based competition will occur for residential and business local telephone service. A CLEC planning to use its own facilities to serve customers in multi-dwelling units frequently will need to interconnect with the ILECs when they own and/or control house and riser cable. In Part B, however, Qwest has not even addressed house and riser cable, and Verizon has stated only that it wishes to address this issue on a bona fide request basis.

Q. IS HOUSE AND RISER CABLE IMPORTANT?

A. Yes. The importance of this form of sub-loop unbundling is evident from the FCC's UNE Remand Order[13] regarding sub-loop unbundling, which encompasses unbundled house and riser cable:

[13] *Third Report and Order and Fourth Further Notice of Proposed Rulemaking*, released 11/5/99, FCC 99-238.

> We find that the lack of access to unbundled loops materially diminishes a requesting carrier's ability to provide service that it seeks to offer. We also conclude that access to subloop elements is likely to be the catalyst that will allow competitors, over time, to deploy their own complementary subloop facilities, and eventually to develop competitive loops. ¶ 218.
>
> We believe that a broad definition of the subloop that allows requesting carriers maximum flexibility to interconnect their own facilities at these points where technically feasible will best promote the goals of the Act. ¶ 220.
>
> In particular, a facilities-based provider's ability to offer service in a multi-unit building or campus may be severely impaired if it must install duplicative inside wiring. ¶229.
>
> Access to unbundled subloop elements allows competitive LECs to self provision part of the loop, and thus, over time, to deploy their own loop facilities, and eventually to develop competitive loops. If requesting carriers can reduce their reliance on the incumbent by interconnecting their own facilities closer to the customer, their ability to provide service using their own facilities will be greatly enhanced, thereby furthering the goal of the 1996 Act to promote facilities-based competition. ¶ 232.

As the FCC makes clear, it is critical that Qwest and Verizon provide cost-based prices for house and riser cable in this Part B proceeding.

Q. HOW WILL THE ESTABLISHMENT OF HOUSE AND RISER CABLE RATES, TERMS AND CONDITIONS AFFECT COMPETITION FOR RESIDENTIAL AND BUSINESS LOCAL TELEPHONE SERVICE IN WASHINGTON?

A. In order to serve residential and business customers located in multi-tenant buildings, CLECs are negotiating with building owners to obtain approval to offer local telephone service to their tenants. However, building owners often inform CLECs that ILECs, such as Qwest and Verizon, own or control the intra-building cabling on their property necessary to access their tenants. If CLECs offer local telephone service in competition with the ILECs, they must be granted prices, terms and conditions to house and riser cable (*i.e.*, intra-building cabling) that are reasonable and non-discriminatory.

Q. ARE YOU FAMILIAR WITH THE FCC'S "BEST PRACTICES" PRESUMPTION?

A. Yes. In connection with sub-loop unbundling, the FCC established a best practices presumption. This presumption states that:

> "once one state has determined that it is technically feasible to unbundle subloops at a designated point, it will be presumed that it is technically feasible for any incumbent LEC, in any other state, to unbundle the loop at the same point everywhere." (¶ 240).

Q. HAVE ILECS IN OTHER STATES BEEN ORDERED TO PROVIDE RATES FOR HOUSE AND RISER CABLE AS PART OF SUBLOOP UNBUNDLING?

A. Yes. In an order dated December 21, 1999, approving an Interconnection Agreement Between MediaOne Telecommunications of Georgia, LLC (now AT&T) and BellSouth Telecommunications, Inc., the Georgia Commission did

so. It adopted MediaOne's proposal for direct access to "only one connector from the wiring close to the individual units. Thus, the presence of multiple technicians is not required to change service." The Commission also concluded that the CLEC must assume full liability for its actions and for any adverse consequences that could result.

Q. DOES THE GEORGIA ORDER ESTABLISH THE BEST PRACTICES THAT SHOULD BE FOLLOWED FOR HOUSE AND RISER ACCESS IN WASHINGTON?

A. We would think so. The burden rests with Qwest and Verizon to prove that their situation in Washington differs to such an extent from BellSouth's position in Georgia that the direct access arrangement established by the Georgia Commission is not technically feasible in Washington. Neither ILEC has offered such proof in this proceeding.

Q. WHAT IS WRONG WITH USING A "BONA FIDE REQUEST" APPROACH FOR INTRA-BUILDING CABLE, AS ADVOCATED BY VERIZON?

A. There are three interrelated problems with the bona fide request ("BFR") process. First, it creates a significant level of uncertainty for CLECs concerning the cost of potential entry. Second, the BFR process creates a circumstance in which it is easy to ignore the TELRIC requirement that cost-based UNE prices must be based on the total demand for an element. So, for example, if three CLECs are each

interested in serving a single large office building, the BFR process would require three separate requests, and the ILEC might develop costs for each based upon a single point of interconnection for each carrier, rather than sharing the cost of one interconnection point useable by all three CLECs. As described in Ms. Baker's testimony, AT&T has experienced similar problems in seeking sub-loop interconnection with Qwest and Verizon. Third, there is no expeditious process clearly established for CLECs to challenge whatever costs ILECs may develop in response to a BFR. The potential delay and out-of-pocket expense associated with such a challenge creates additional risk and uncertainty for CLECs.

Q. HOW SHOULD COSTS FOR HOUSE AND RISER CABLE BE DEVELOPED?

A. The Commission should require Qwest and Verizon to provide cost studies for house and riser cable that assume (1) the existence of multiple carriers, (2) the existence of a single point of interconnection, and (3) that CLECs will not be required to pay for additional unnecessary equipment and technician dispatch.

Q. APART FROM THE ILECS' FAILURE TO PROVIDE COST-BASED PRICES FOR HOUSE AND RISER CABLE, ARE THERE OTHER PROBLEMS WITH THEIR PROPOSALS FOR SUB-LOOP UNBUNDLING?

A. Yes. First of all, both Qwest and Verizon develop subloop costs by calculating investment percentages for the various loop components and apply those

percentages to the overall loop costs established by the Commission in the GCD. It appears, however, that *neither* ILEC followed the most appropriate approach, which would have been to rely upon the compliance runs used to generate the de-averaged loop costs in order to develop the investment percentages. Qwest developed its percentages on a zone-by-zone basis from an RLCAP 4.0 run, which they allege uses Commission inputs. In addition, Qwest failed to unbundle the drop, which is inconsistent with the FCC's order.[14]

Verizon unbundles the drop, but its percentages are developed from its ICM, which *is not* consistent with the Loop Technology, Hatfield and BCPM models relied upon by the Commission in establishing its initial loop rate.[15] In addition, its percentages are developed on a state-wide basis, rather than on a de-averaged basis.

Q. WHAT IS YOUR PROPOSAL FOR DETERMINING THE COSTS OF SUB-LOOP ELEMENTS?

A. As mentioned above, the appropriate methodology would be to base the sub-loop costs on the compliance runs used to generate the de-averaged loop costs. Unfortunately, we do not have these compliance runs to restate at this time. However, we would recommend that this approach be used to develop the cost of sub-loop elements.

[14] Qwest's underlying electronic files appear to contain total drop investment, though a rate is never established. See wa 5zone.xls, worksheet titled, output.

B. UNE-Platform

Q. DO YOU HAVE SPECIFIC CRITICISMS OF THE ILEC'S UNE-PLATFORM RATES?

A. Because the ILECs develop the recurring costs for UNE-Platform by adding up the individual UNEs previously established by the Commission in the GCD, we do not have a large number of criticisms. However, both Qwest and Verizon suggest that in a UNE-Platform environment, it is appropriate to impose an additional charge for vertical features. *See* Hooks Direct at 26; Trimble Direct at 27.

As noted earlier, however, the Commission's 8th Supplemental Order specifically rejected a separate charge for switch features, noting that such an approach was inconsistent with both (1) the FCC's finding that "when a requesting carrier purchases the unbundled local switching element, it obtains all switching features in a single element on a per-line basis" (8th Supp. Order at ¶ 276), and (2) with the fact that "inclusion of features in the cost of the switch is consistent with the structures of the ILEC's contracts with their vendors." (*Id*. at ¶ 280). Under these circumstances, the Commission should prohibit the ILECs from assessing additional charges for vertical services in the UNE-Platform environment.

C. DS-1 and DS-3 Loops

[15] Furthermore, Verizon does not even claim that the inputs to its ICM run are consistent

Q. DO THE ILECS PROPOSED LOOP RATES FOR DS-1 AND DS-3 COMPORT WITH THE PRIOR COMMISSION DECISIONS?

A. No. Both Qwest and Verizon propose cost-based rates for DS-1 and DS-3 loops based upon new cost studies that ignore the prior work of this Commission. We believe that this is inappropriate. The cost model runs relied upon by this Commission in the GCD already *included* DS-1 and DS-3 loops. In fact, the parties engaged in a heated debate about *how* to include these loops, and the Commission's 8th Supplemental Order ultimately adopted the position advocated by US West and GTE, *i.e.*, that DS-1 and DS-3 loops be included "only on a physical line, not a channel equivalent basis." 8th Supp. Order at •200. In fact, the Commission concluded:

> The unit cost of a facility is determined by dividing the total cost by the level of demand. The Hatfield Model treats each voice channel equivalent as a unit of demand. This assumption is incorrect and leads to an understatement in the unit cost of providing a loop. As the telecommunications industry increasingly relies on digitally derived circuits, it is essential that a model developed distinguish between the number of physically derived circuits and the number of equivalent voice channels that are in-service.
> *Id*. at ¶ 205.

Furthermore, in discussing the TELRIC associated with four-wire loops, the Commission's 17th Supplemental Order found:

> The Commission finds that TRACER's assertions, at paragraph 76 above, and at page 11 of their Brief, that placement costs were assigned to loops, not pairs, are incorrect. TRACER witness Zepp appears to agree that in both RLCAP and the proxy models, structure is assigned to each pair and not to the loop. (See, for example, TR. at

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with the input assumptions made by the Commission in the GCD.

750-753, 756-757, and 758-759). This position is further supported by US West witness Reynolds at Tr. 646-647 and US West's response to Bench Request 02-114. 17th Supp. Order at 23.

Therefore, the loop costs previously calculated by the Commission are applicable to DS-1 and DS-3 loops as well, and the additional cost studies provided by the ILECs in Part B are unnecessary and inappropriate.

Q. HOW SHOULD THE COMMISSION DETERMINE THE DS-1 AND DS-3 LOOP COSTS IN A MANNER CONSISTENT WITH ITS DECISION IN THE GCD?

A. The correct approach would be to *start* with the UNE loop rates already established by the Commission, *subtract* the cost of plug-in electronics implicit in the TELRIC for those loop costs, and *add* an appropriate TELRIC cost for the plug-in electronics associated with DS-1 and DS-3 loops. This approach is appropriate because the prior Commission decision already includes the investments associated with other portions of the network.

This approach would result in a DS-1 cost that is 22.4% higher than the cost of a 2-wire loop and a DS-3 cost that is 229.8% higher than the cost of a 2-wire loop. As described above, the Commission's decision in the GCD assumed two loops for DS-1 services and one loop for DS-3 services. Thus, we have increased the Commission's 4-wire loop rate by 22.4% to reflect the cost of DS-1 services and increased the Commission's 2-wire loop rate by 229.8% to reflect the cost of DS-

3 services. The resulting costs for DS-1 and DS-3 lines using this approach are summarized in the following table:

Table 3

Summary of Recurring Costs for
DS-1 and DS-3 Loops
Consistent with GCD

Loop Type	Qwest	Verizon
2-Wire	$ 18.16	$ 23.94
4-Wire	$ 33.60	$ 35.91
DS-1	$ 22.23	$ 29.30
DS-3	$ 110.81	$ 118.44

Q. HAVE YOU IDENTIFIED PROBLEMS IN THE DS-1 AND DS-3 LOOP STUDIES SUBMITTED BY QWEST?

A. Yes. There are a number of problems with relying upon Qwest's Part B studies of DS-1 and DS-3 loops. First, the CLECs received the study underlying Qwest's DS-1 costs three days before this testimony is due, and have not had the time necessary to review this study. As a result, we are reserving our right to comment on this study once our review is complete.[16]

[16] Unlike Verizon, Qwest did not de-average its DS-1 loop cost. The Commission should require Qwest to file de-averaged costs for UNE.

With respect to Qwest's DS-3 study, it is obvious that it has been developed on a basis radically different from the cost proxy model approach adopted by the Commission in the GCD. To cite one important example, rather than modeling the structure to support an entire network system capable of providing DS-0, DS-1, and DS-3 services in combination (as the cost proxy models do), the Qwest DS-3 study uses embedded ratios of structure investment to fiber investment in order to estimate the forward-looking cost of structure associated with DS-3 loops.

Mr. Weiss has taken a close look at Qwest's DS-3 study and concluded that it is flawed for two basic reasons. First, he concluded that the total in plant factors for line cards and hardware were overstated. Second, he concluded that the utilization levels assumed in Qwest's study were too low. Mr. Weiss provided revised inputs that we used to modify Qwest's study.[17]

Q. HOW ARE VERIZON'S DS-1 LOOP COST OVERSTATED?

A. Verizon's cost for a DS-1 loop of $102.13 (shown in Exhibit No. ___DBJ-2) is based on the ICM. This is problematic for at least two reasons. The ICM runs we have been provided generate a *DS-0* loop cost of $26.04 -- more than 25 percent higher than the $20.30 cost developed by the Commission. *See* 17th Supplemental Order at 62. This suggests that, as a general proposition, the ICM departs significantly from the loop costing methodologies and inputs the Commission has previously adopted.

[17] Our re-calculation of Qwest's DS-3 loop costs is part of Exhibit JCK/BFP - 4C.

In addition, the costs developed for DS-1 loops by ICM include *24 times* the fiber feeder and structure investment than the ICM assigns to 2-wire DS-0 loops. This violates the Commission's earlier findings that structure should not be allocated to DS-1 and DS-3 lines on the basis of DS-0 equivalents. 8th Supplemental Order at ¶¶ 199-205. Clearly, what Verizon seeks to do is allocate as much structure as possible to DS-0 loops (by advocating the use of physical line count) when DS-0 loops are at issue -- as they were in the GCD -- and to allocate as much structure as possible to DS-1 and higher loops (by advocating the use of DS-0 equivalents) when DS-1 and DS-3 loops are at issue, as they are in this Part B proceeding. The Commission should not permit the fact that Verizon is using a new model in Part B to obscure this significant departure from the Commission's prior rulings.[18]

There is a more fundamental problem with Verizon's DS-1 study, however. Workpapers provided by Verizon demonstrate that the $102.13 is based on providing DS-1 loops over copper. However, these workpapers also show that DS-1 loops can be provided much more inexpensively by using architectures such as OC-3 equipped with 84 DS-1s or OC-12 equipped with 12 DS-3s and 336 DS1 MUX.[19] As compared to the $102.13, these other architectures result in monthly

[18] Because the version of ICM provided by Verizon does not enable us to revise these inputs and re-run the model, we have not been able to assess the effects of this error. Furthermore, Verizon's recurring cost exhibits were provided in a non-editable pdf format. While in some instances final equations are detailed, many equations are absent and no links between or among tables exist.

[19] The Verizon workpapers referred to are attached as Exhibit JCK/BFP - 4C.

costs of $20.52 and $17.64 per DS-1 loop.[20] As Mr. Weiss indicates in his testimony, the forward-looking architecture is the one Verizon is using now to provide approximately 20% of its DS-1 loops, *i.e.,* OC-3 equipped with 84 DS-1s. He has started with Verizon's cost study and modified them to (1) eliminate the copper technology, and (2) reflect an 85% fill factor. This results in a TELRIC of $26.21 instead of the $102.13 advocated by Verizon.[21]

Q. DID VERIZON ALSO PRESENT A DS-3 LOOP STUDY?

A. Yes, although this study is not based upon ICM. Verizon's DS-3 costs are also flawed because Verizon's costs reflect only an architecture of OC-3 equipped with 3 DS-3s. However, Verizon's own workpapers establish that this is the most expensive architecture for providing DS-3 loops -- used by Verizon to provide fewer than 25% of its DS-3 services. Less expensive options include OC-12 equipped with 12 DS-3s (used to provide approximately 27% of Verizon's DS-3 loops) and OC-48 equipped with 48 DS-3s (used to provide approximately 47 percent of Verizon's DS-3 loops).[22]

After reviewing Verizon's DS-3 loop study, Mr. Weiss recommended that we re-calculate the DS-3 costs after inserting an 85 percent fill factor. We have done so,

[20] Before application of fill factors.

[21] We have only re-stated Verizon's state-wide average. Proportional reductions should be made in Verizon's de-averaged DS-1 loop costs.

[22] The Verizon DS-3 workpapers are attached as JCK/BFP_4C.

resulting in a TELRIC of $335.60 and a cost-based UNE price of $418.66 for DS-3 loops. This is reflected, below, in Table 4.[23]

Q. HAVE YOU PREPARED A TABLE SUMMARIZING YOUR MODIFCATIONS TO THE ILECS' COST-BASED PRCIES FOR DS-1 AND DS-3 LOOPS?

A. Yes. However, it is important to recognize that we recommend disregarding the ILEC's cost studies, which are fundamentally inconsistent with the Commission's prior determinations. As stated above, we recommend using the methodologies adopted in the GCD as the basis for DS-1 and DS-3 loop costs. However, in the alternative, our revisions to the ILEC's costs studies are presented below in Table 4.

Table 4[24]
Summary of Recurring Costs for
DS-1 and DS-3 Loops
Based on Mr. Weiss's Modifications

	As Submitted By ILEC	As Modified By Mr. Weiss
Qwest		
DS-1	$75.59	To Be Determined
DS-3	$844.77	$461.24
Verizon		

[23] However, this restatement still overstates the cost of DS-3 loops because Verizon's approach completely ignores this Commissions prior determination on the allocation of structure to DS-3 services. As described above, this approach allocated structure to DS-3s as if each DS-3 service were a POTS loop. Thus, Verizon's methodology, which calculates facility costs of $47.78, do not comport with the total loop cost of $23.94 for all equipment and structures previously determined by this Commission.

[24] As discussed earlier we reserve the right to respond to Qwest's DS-1 cost study since Mr. Weiss received the supporting electronic files on October 17, 2000.

DS-1	$127.41 (statewide average)	$32.69
DS-3	$899.80	$418.66

To summarize, the Commission should only accept cost studies that are consistent with its prior determinations and should reject the ILEC's attempts to re-litigate certain issues and methodologies that have already been adopted. Similarly, this Commission should reject the ILEC's attempts to use the bifurcated nature of this proceeding to capitalize on fundamentally opposing methodologies that maximize both the cost of POTS loops and DS-1 and DS-3 loop at the same time. The appropriate approach, as we presented above, to ensure consistency is to use the models previously adopted to calculate the incremental investments and costs associated with DS-1 and DS-3 services.

D. Loop Conditioning

Q. WHAT DO YOU UNDERSTAND IS THE STATUS OF QWEST'S COSTS FOR LOOP CONDITIONING?

A. As we understand it, Qwest's costs of $304.12 for deloading a 25-pair binder group and $147.34 for bridge tap removal at a single location have been accepted by the Commission. However, the Commission asked parties to address, in Part B, the rate structure that should be used to recover the cost of load coil and bridge tap removal. 25th Supplemental Order ¶ 100.[25]

[25] As modified by the Commission, the cost proxy models relied upon in the GCD include additional costs -- such as DLC -- required to obviate the need for load coils and bridge tap in the modeled network. In this sense, the adopted loop costs already include an element of

Q. HOW SHOULD THESE COSTS BE RECOVERED?

A. As an initial matter, we believe that ILECs should not be permitted to charge for removing bridge tap and load coils on loops that are shorter than 18,000 feet, because these devices should never have been installed on such loops to begin with -- voice grade service can be provided on loops of 18,000 feet or less in length without load coils and bridge tap.[26] Verizon, itself, has adopted this position in other jurisdictions. For example, in testimony filed in Pennsylvania in August of this year, witnesses for Verizon testified as follows:

> Verizon PA will not impose the Load Coil Removal charge if load coils must be removed from loops less than 18,000 feet long, since load coils are generally not required for such loops under the design criteria applied by Verizon PA.
>
> ***
>
> Verizon PA proposes a non-recurring charge for CLECs that request bridged tap removal. Separate charges are proposed for the removal of a single bridged tap and the removal of multiple bridged taps.
>
> The charge does not apply when a bridged tap above 6,000 feet is removed from loops of less than 18,000 feet, since Verizon PA's loop design criteria (which are consistent in this respect with industry standards) recommend such loops not have a bridged tap in excess of 6,000 feet.
>
> Testimony, pp. 16-17.

cost associated with the removal of load coils and bridge tap, and we question the need for any additional cost recovery by ILECs for these items.

[26] See, for example, *Third Report and Order in CC Docket No. 98-147; Fourth Report and Order in CC Docket No. 96-98* at ¶¶ 81 through 86.

A copy of the relevant portion of this testimony is attached to Exhibit JCK/BFP - 5C.

Just as Verizon has acknowledged a responsibility to bring loop plant up to current design criteria in other jurisdictions, Qwest has also agreed, to a limited extent, to remove non-conforming load coils and bridged tap within Washington.[27] Loop conditioning activity on loops that do not conform with current design criteria amounts to remedial work and the cost for this work should certainly not be recovered exclusively from the first CLEC that happens to win a customer wishing to receive an advanced service over nonconforming plant. I recommend that the cost of loop conditioning that benefits an entire binder group be charged on a per loop basis. Thus, the $304.12 for de-loading a 25-pair binder group should be recovered on a per-pair basis, resulting in a charge of $12.17 per pair.

This makes sense for several reasons. First, when ILECs receive a request to deload even a single loop, it is common practice to deload all 25 pairs in the relevant binder group The deloading activity brings this portion of the ILEC's loop plant up to modern design standards, and the deloaded pairs are then available for the provision of advanced services by either the ILEC itself or other CLECs. Removal of unneeded load coils that interfere with provision of advanced services amounts to an investment that increases the value of the ILEC's loop plant. Because deloading benefits *all* of the pairs in the deloaded binder group, the cost of deloading should be recovered equally from all pairs.

[27] Settlement Agreement in WUTC Docket UT-991358, Page 3: Loop Conditioning Program

Second, the rate structure originally suggested by the Commission -- *i.e.* that the cost be recovered from a CLEC based on the number of pairs on that binder group for which deloading is requested (8th Supplemental Order at 148-149; 17th Supplemental Order at 67) – seems inconsistent with the non-discriminatory principles of the 1996 Telecommunications Act. If both a CLEC and the incumbent need to deload loops on a particular binder group in order to provide advanced telecommunications services, the rate structure suggested by earlier Commission orders would permit the ILEC to recover the cost of deloading the entire binder group from only the deloaded loops requested by the CLEC. This would lead to discriminatory pricing.

As the demand for advanced telecommunications services explodes, the value of deloaded loops is significantly increased. By forcing CLECs to pay to deload an entire 25-pair binder group, and then leave most of the inventory of deloaded loops in the ILECs possession, the Commission's rate structure would force CLECs to create value for free for an ILEC that is already in a dominant market position. This is hardly pro-competitive. By assessing a flat charge of $12.17 per pair, the Commission would assess CLECs *only* for the portion of the value they have received as a result of the deloading.

Q. IN ITS 17TH SUPPLEMENTAL ORDER, THE COMMISSION EXPRESSED CONCERN ABOUT ASSUMING THAT ALL 25 PAIRS IN A

BINDER GROUP WOULD BE DELOADED AT ONE TIME, BECAUSE LOAD COILS WOULD STILL BE REQUIRED BY OTHER PAIRS IN THE BINDER GROUP (17TH SUPP. ORDER AT 67). IS THIS CONCERN VALID?

A. We do not think so. As the FCC noted, for loops less than 18,000 feet in length, it is unlikely that voice service would be adversely affected, so there is no reason not to deload all pairs in a binder group simultaneously. Even on loops in excess of 18,000 feet in length, emerging technology often permits deloading without adversely affecting the quality of voice grade service. If ILECs have concerns about deloading these long loops, they always have an option of demonstrating to the Commission that their concerns are valid.

Q. HAVE YOU EVALUATED VERIZON'S COSTS FOR LOOP CONDITIONING?

A. Yes we have. Verizon's loop conditioning studies were provided in hard copy with no supporting explanations. In order to fully evaluate there studies, we have created electronic versions of the studies and reproduced Verizon's calculations.

Two problems with Verizon's study were immediately obvious. First, activities that are common to more than one study nevertheless have different times attributed to them. Second, the time allotments themselves are excessive. In Exhibit JCK/BFP - 5C, we have taken Verizon's study and modified it to (1) use identical times for identical activities, and (2) substitute more reasonable time

estimates for several activities. In order to restate Verizon's studies, we (1) used the times specified for Qwest in ¶¶ 150-153 of the Commission's 8th Supplemental Order, and (2) put Verizon's deloading costs on a per-binder group basis (consistent with the Commission's recommendations for Qwest). In our view, there is no reason why the times set forth in ¶¶ 150-153 of the Commission's 8th Supplemental Order should not be equally applicable to Verizon. The detailed calculations associated with our adjustments are displayed in Exhibit JCK/BFP - 5C.

The following Table summarizes our revisions to Verizon's Loop Conditioning Study.

Table 5
Revised Verizon Loop Conditioning Study

Description (1)	One Location (2)	Multiple Locations[1] (3)	25-Pair Binder Group (4)
Deloading (25-Pair Binder Group)	xxx	xxx	$200.31
Deloading Per Pair	xxx	xxx	$8.01
Bridge Tap Removal	$193.59	$364.73	xxx

[1] Verizon calculates "Multiple Locations" by assuming 2.5 locations.

E. <u>Interoffice Dedicated Transport</u>

Q. HAVE THE ILEC'S PRESENTED COST STUDIES ON INTEROFFICE DEDICATED TRANSPORT?

A. Verizon submits cost studies for voice grade, DS-1 and DS-3 dedicated transport. Trimble Direct at 20.

Because Verizon's DS-1 and DS-3 dedicated transport relies upon its loop costs, the cost of providing DS-1 and DS-3 dedicated transport also is substantially overstated. Verizon's CLEC dedicated transport cost for DS-1 and DS-3 are set equal to the weighted average cost of equipment and facilities associated with various system architectures currently in use. As noted in our discussion of DS-1 and DS-3 loops, these analyses are flawed because (1) the DS-1 dedicated transport study explicitly does not consider a reasonable forward-looking architecture; and (2) the DS-1 and DS-3 dedicated transport studies assume unreasonably low fill factors.

Table 6 restates Verizon's recurring costs for DS-1 and DS-3 dedicated transport to conform to our revisions to the DS-1 and DS-3 loop studies.

Table 6

Summary of Verizon's Recurring Costs for DS-1 and DS-3 Dedicated Transport

	As Submitted By ILEC	As Modified
DS-1	$118.04	$32.84
DS-3	$471.57	$303.81

Qwest, on the other hand, submits studies for Optical Carrier, Level 3 ("OC-3") and OC-12 only. As Mr. Weiss discusses, Qwest's OC-3 and OC-12 engineering

studies exhibit some of the same problems he observed in their DS-3 models (i.e. Total In-Plant Factors, etc.). Ultimately, fixing these errors would reduce the investment figures and therefore lower Qwest's recurring rates for these elements. Since Qwest's witness Million presented revised OC-3 and OC-12 studies on September 12, 2000[28], we have yet to fully review and evaluate these revised models and will supplement our testimony by October 31, 2000.[29]

IV. NON-RECURRING COSTS

Q. ARE THERE CONCEPTUAL ISSUES RELATED TO NON-RECURRING COSTS THAT NEED TO BE RAISED?

A. Yes, there is an over-arching issue that needs to be addressed.

In its 17th Supplemental Order, the Commission determined that ILECs are entitled to recover their OSS transition costs, which are incurred "so that ILECs' back-office operations are accessible to the CLECs." 17th Supplemental Order at 24-27. In response to Commission directives, Verizon has submitted studies that quantify these transition costs on a per LSR (Local Services Request) basis, while Qwest has submitted studies quantifying transition costs on a per service order basis. In Part B, however, the ILECs seek to establish NRCs on manual or semi-mechanized bases. In our view, this is improper. CLECs should not be asked to pay the full cost of providing up-to-date OSS systems while, at the same time, be

[28] Ms. Million's original direct testimony was filed on August 4, 2000.

[29] I am advised by counsel that Qwest has agreed to allow us to supplement our testimony for information that was received in an untimely manner.

forced to pay NRCs that do not reflect the full benefit of the efficiencies that these systems are designed to generate.

Such NRCs -- which will be in effect for several years -- are the worst of all worlds because they include the investment required to upgrade the system without including the effects of the off-setting cost-reducing benefits the systems are designed to produce. As a result, they are higher than *either* the manual costs associated with legacy systems or the investment plus operating costs of the state-of-the-art systems.

In competitive markets, no customer could be forced to pay rates so high. If a supplier tried to do so, customers would migrate *either* to a company continuing to use the manually-operated legacy system *or* to a supplier using the state-of-the-art, fully-mechanized system. The Commission should prevent the ILECs from "double-dipping" in this way by either (1) preventing recovery of "transition" and "transaction" costs until NRCs reflect completely the benefits of fully-mechanized processes, or (2) permitting the recovery of transition and transaction costs, but requiring NRCs to be developed as though fully-mechanized processes were available.

A. Qwest Non-Recurring Cost Studies

Q. WHAT CHANGES ARE REQUIRED TO QWEST'S NON-RECURRING COST STUDIES?

A. The CLEC's engineering witness, Tom Weiss, has reviewed Qwest's NRC study and made adjustments necessary to reflect an efficient, fully-mechanized process.[30] To assist him, we summarized the activity and time estimates used by Qwest in a user-friendly Excel spreadsheet. After Mr. Weiss reviewed and modified Qwest's activity and time estimates, we substituted Mr. Weiss's values back into our spreadsheet to calculate the results of Qwest's NRC model and recomputed the NRCs. Exhibit JCK/BFP - 6C describes each change made by Mr. Weiss. This exhibit compares the NRCs developed by Qwest with those we have calculated, based on input from Mr. Weiss, and includes the revised Qwest NRCs Model.

B. <u>Verizon Non-Recurring Cost Studies</u>

Q. PLEASE DESCRIBE YOUR ANALYSIS OF VERIZON'S NON-RECURRING COST STUDIES.

A. A similar process was used to evaluate the Verizon NRC studies. We were responsible for summarizing the activity and time estimates underlying Verizon's calculations. In the process of performing this summary, however, we discovered two features of the Verizon study that needed modification.

First, we discovered that certain spreadsheet "links" used in the Verizon NRC study were faulty. As a result, the spreadsheets inadvertently added costs that -- if

[30] As such, Mr. Weiss is following the second alternative described above. As Mr. Weiss notes, however, even if this Commission were to permit ILECs to develop NRCs on the basis of manual activity, changes would be required to Qwest's NRC studies.

the links are fixed -- should have been zero. A brief description of these errors is set forth in Exhibit JCK/BFP - 7C.

Second, we identified a significant anomaly in Verizon's study. Although Verizon undertook an "Order Entry Time Study" of the time it took its personnel to perform various activities, it did not use those times directly in performing its NRC calculations. Instead, it used the Order Entry Time Study only to develop relative relationships between the time required for various activities.[31] These time factors were then applied to completely undocumented, hard-coded values in Verizon's NRC study to generate the times for various activities that Verizon actually employs in its NRC calculations. The result of this convoluted and undocumented process is that Verizon's NRC's are based upon activity times that are as much as ten times higher than the activity times Verizon actually observed in its Order Entry Time Study. Exhibit JCK/BFP - 8C describes, in greater detail, this anomaly.

In Exhibit JCK/BFP - 9C, we have restated the Verizon NRC study after (1) correcting the faulty spreadsheet links and (2) substituting activity times actually observed in Verizon's Order Entry Time Study for its unsupported activity times. Exhibit JCK/BFP - 9C also incorporates the effects of modifications made by Mr. Weiss.

[31] For example, if the Order Entry Time Study revealed that it took six minutes to do an error correction and 20 minutes to record an order, error correction was assigned a time factor of [ ], and record order was given a time factor of [ ].

Q. PLEASE SUMMARIZE THIS SECTION ON NON-RECURRING COSTS.

A. As Exhibits JCK/BFP - 6C and 9C demonstrate, the ILECs NRC calculations were significantly overstated. The NRCs set forth in these exhibits properly reflect fully-mechanized OSS systems and, therefore, are consistent with TELRIC.

V. SUMMARY OF TESTIMONY

Q. PLEASE BRIEFLY SUMMARIZE YOUR TESTIMONY.

A. We have been asked to evaluate several aspects of the ILECs' recurring and non-recurring cost studies. In every case, we have found that the costs they have calculated are significantly overstated. In most cases, we have been able to modify the ILEC studies and to re-calculate the associated costs. We believe that with our modifications, these studies conform more closely to TELRIC principles and to the Commission's prior orders in the GCD.