

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

Review of the Commission's Rules)
Regarding the Pricing of Unbundled)
Network Elements and the Resale of Service) WC Docket No. 03-173
by Incumbent Local Exchange Carriers)

REPLY DECLARATION OF

JOHN C. KLICK

January 30, 2004

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I. QUALIFICATIONS

1. My name is John C. Klick. I am Senior Managing Director of the Network Industries Strategies group of FTI Consulting, Inc. My offices are located at 1201 I Street, NW, Suite 400, Washington, D.C. 20005. I previously submitted a declaration in this proceeding on December 16, 2003, in which I described my qualifications.

II. INTRODUCTION AND SUMMARY CONCLUSIONS

2. I have been asked by AT&T Corp. ("AT&T") to respond to testimony – submitted by various incumbent local exchange carriers ("ILECs") in opening comments filed on December 16, 2003 – relating to several of the issues raised in the NPRM. For the reasons explained here, and in my initial Declaration, I continue to believe that the FCC's TELRIC pricing standard as currently implemented is fundamentally sound and should be retained.

3. In its *Local Competition Order*, the FCC determined that a long-run, forward-looking cost standard would be the best way of replicating the performance of a

competitive (or contestable) market in setting rates charged by ILECs for access to their local networks. Both the Commission and the United States Supreme Court explicitly have found that an embedded cost standard, including the replacement cost of an ILEC's embedded network, was prohibited by the 1996 Act, would perpetuate the effects of existing inefficiencies in the ILECs' operations by increasing prices that CLECs would pay for interconnection, and would therefore be inconsistent with the competitive market standard. As I demonstrated in my initial Declaration, other regulatory agencies have drawn similar conclusions with respect to the advantages of long-run forward-looking cost standards, and leveled similar criticisms at embedded cost standards.

4. The NPRM makes clear that the Commission remains committed to the TELRIC standard, but it raises a series of questions about how the standard should be implemented. However, many of the alternatives on which the Commission seeks comment, if adopted, would be fundamentally inconsistent with TELRIC. In addition, as I discussed in my initial Declaration, many of the Commission's proposals would require data about the ILECs' existing operations that are not readily available, unlikely to be easy to obtain and process, and almost certainly inaccurate. My initial Declaration suggested a "litmus test" for evaluating the modifications proposed in the NPRM, *i.e.*, would they move the Commission's standards closer to or further away from the competitive (contestable) market standard. I suggested the Commission look to the experience of other network industries as a check on the appropriateness of its current standard. If the Commission does so, it will conclude that the current standard, as currently implemented, is fundamentally sound and would not be improved by implementation of most of the alternatives proffered in the NPRM.

III. ILEC FOCUS ON FACILITIES-BASED COMPETITION IS REVEALING

5. In my initial Declaration, I noted that the ILECs' contentions that the Commission's TELRIC standards should be modified to promote facilities-based competition (by, of course, increasing UNE prices) were flatly inconsistent with the views of incumbents in other network industries, and economically irrational, particularly where excess capacity exists. Klick Decl. at ¶¶ 11-13.¹

6. The Opening Comments of various ILECs in this proceeding are imbued with this inconsistency. Verizon, for example, argues that it faces increasing competition from cable telephony, VoIP, and wireless for both customers and traffic; that this competition has already eroded the utilization of its facilities; and that further erosion can be anticipated in the short-term. Verizon at 19-24. SBC sounds similar themes in its Opening Comments. SBC at 8, 25.

7. If competition from cable telephony, VoIP and wireless were, in fact, substantially eroding utilization of ILECs' existing facilities – or were poised to do so in the near future – ILECs would be doing everything in their power to maintain utilization on their wireline networks. This would include offering reduced wholesale rates for traffic and customers that might otherwise be lost to these forms of competition. In the face of substantial intermodal competition, the ILECs would rationally reduce these wholesale rates to levels only slightly above short run marginal costs, which are near zero. Instead, ILECs argue that current wholesale prices for loops, switches and transport are too *low*, and that these prices should be raised to encourage construction of additional wireline facilities – at a time when they allege that utilization on *existing* wireline

¹ Dr. Weisman, who filed an initial Declaration on Qwest's behalf, is willing to assume that incumbents are "operating with excess capacity." Qwest/Weisman at 11, n. 45.

facilities already is being eroded. But existing UNE prices are based on the long-run incremental costs incorporated into TELRIC, which are almost certainly far higher than the short-run incremental cost levels that would inform ILEC pricing if the ILECs were subject to substantial intermodal competition.²

8. ILECs cannot have it both ways. Either (1) their rhetoric on intermodal competition is overblown – in which case the goal of the 1996 Act to promote intramodal competition through *all three* distinct channels (resale, access to UNEs at cost-based rates, and facilities-based competition) remains appropriate, or (2) their desire to promote *additional* facilities-based competition is economically irrational and socially undesirable. As I noted in my initial Declaration, the most likely reason ILECs advocate facilities-based competition is that intermodal competition is at a nascent stage and incapable of exerting meaningful competitive pressure; ILECs therefore have supra-competitive profits to protect; and they recognize that UNE-based entry is the mechanism by which CLECs can compete most immediately and, over the longer run, most feasibly generate the critical mass of customers required to eventually transition to being effective

² A similar inconsistency is raised by ILEC Opening Comments that suggest that carrier of last resort (“COLR”) obligations increase ILEC costs, and that these higher costs should be reflected in UNE prices. BellSouth at 7; BellSouth NERA at ¶ 24; Verizon at 45; SBC at 25. As a threshold matter, because TELRIC is based on the forward-looking cost of providing sufficient network facilities to serve *all* of the ILECs customers, it includes the costs associated with COLR as part of the UNE cost calculated for each loop (Qwest appears to acknowledge as much. Qwest at 41). In addition, as Dr. Willig explains in his Reply Declaration, to the extent there are costs associated with COLR that are not reflected in TELRIC, the appropriate solution is to include these costs as a component in the development of the appropriate size for the Universal Service Fund – not to somehow include artificial “inefficiencies” in the calculation of TELRIC. As compared to a UNE-based regime, however, the facilities-based competition advocated by the ILECs would serve to exacerbate the COLR problems the ILECs allege, because facilities-based competitors would almost certainly focus on constructing facilities in areas that serve the most desirable customers and, therefore, areas that are least likely to relieve the ILECs COLR responsibilities.

facilities-based competitors. By making UNE-based entry more costly, ILECs seek to prevent CLECs from entering the market. The ILECs advocate higher UNE prices (by advocating versions of embedded costs, or use of inefficient utilization assumptions) not because they believe that it is consistent with the Commission's desire to see more facilities-based competition, but because they expect such prices would significantly suppress both facilities-based and non-facilities-based local competition altogether.

IV. ALTERNATIVES TO TELRIC

9. The NPRM "seek[s] to preserve [the current UNE pricing regime's] forward-looking emphasis and its pro-competitive purposes, while at the same time making it more transparent and theoretically sound." NPRM at ¶ 4. More specifically, the NPRM states that

Perhaps the most controversial aspect of the TELRIC rules is the assumption that the cost of a UNE should be calculated based on the cost of ubiquitous deployment of the most efficient technology currently available. In implementing this requirement, current TELRIC models typically are designed to answer the following question: If a single carrier were to build an efficient network today to serve all customer locations within a particular geographic area, taking as given only the locations of existing wire centers, how much would it cost to construct and maintain the network?

Id. at ¶ 49, footnote deleted.

10. The NPRM suggests that this feature of the current TELRIC regime is in "tension" with the assumption that the hypothetical competitor "benefits from the economies of scale associated with serving all of the lines in a study area," and it tentatively concludes that TELRIC should "more closely account for the real-world

attributes of routing and topography of an incumbent's network in the development of forward-looking costs." *Id.* at ¶¶ 50-52.

11. The NPRM seeks comment on three alternative approaches to implementing this tentative conclusion. First, it suggests that because the ILECs have been subject to price cap regulation, embedded costs might be a good proxy for forward-looking costs. *Id.* at ¶ 58. Second, the NPRM seeks comment on a definition of "forward-looking costs" of an element as today's cost of reproducing that element today (that is, the cost of duplicating in precise form that exact element in its exact location today). *Id.* at ¶ 53. Finally, the NPRM suggests the possibility of defining the "relevant network" as one that incorporates planned upgrades over a three- to five-year planning horizon, as reflected in ILECs' "actual engineering plans." *Id.* at ¶ 54.

A. Price Caps Do Not Ensure That An ILEC's Embedded Costs Are Efficient

12. Opening Comments by virtually every ILEC embrace the notion that as a result of price cap regulation, it is appropriate to assume that the ILECs' embedded costs are "efficient." BellSouth, for example, asserts that "[c]oupling the efficiency incentives of price regulation with the additional incentives created by the Telecommunications Act opening the local exchange market to competition, the Commission can *conclude* that ILECs are efficient." BellSouth at 19.³ Similarly, SBC argues "[a]ll major ILECs have been subject to price cap regulation for many years, and such regulation has given them powerful incentives to maximize the efficiency of their networks and operations." SBC

³ NERA, on behalf of BellSouth, argues that the existence of price caps should entitle ILECs to a *presumption* of efficiency, arguing that there is no "observable benchmark that could serve as an efficiency standard." NERA at ¶ 66.

at 25. On the strength of this mere assertion, SBC argues that “[t]he Commission should make this presumption of network efficiency ... *irrebuttable* as to all LECs subject to price cap regulation in a particular state.” *Id.* at 26-27, emphasis supplied.

13. As I noted in my initial Declaration, the Commission’s *Local Competition Order* explicitly considered and rejected embedded costs as the basis for UNE prices. *Local Competition Order* at ¶¶ 704-707. In doing so, the Commission found that “[t]he substantial weight of economic commentary in the record suggests that an ‘embedded cost’-based pricing methodology would be pro-competitor – in this case the incumbent LEC – rather than pro-competition.” In *Verizon Communications*, the Supreme Court went further, noting that:

As for an embedded-cost methodology, the problem with a method that relies in any part on historical cost, the cost the incumbents say they actually incur in leasing network elements, is that it will pass on to lessees the difference between most-efficient cost and embedded cost.⁴ See First Report and Order ¶ 705. Any such cost difference is an inefficiency, whether caused by poor management resulting in higher operating costs or poor investment strategies that have inflated capital and depreciation. If leased elements were priced according to embedded costs, the incumbents could pass these inefficiencies to competitors in need of their wholesale elements, and to that extent defeat the competitive purpose of forcing efficient choices on all carriers whether incumbents or entrants. The upshot would be higher retail prices consumers would have to pay. *Id.*, ¶¶ 655 and 705.

⁴ In theory, embedded cost could be lower than efficient cost, see Brief for Respondent Federal parties 17, n. 8 (though the incumbents, understandably, do not avail themselves of this tack); in which case the goal of efficient competition would be set back for the different reason of too much market entry.

14. As I explained in my initial Declaration, there are three interrelated reasons why the mere existence of some form of price cap regulation does not mean that an ILEC's embedded costs can be presumed to be efficient.

15. First, it is widely recognized that competitive and contestable markets are most effective at forcing firms to become for efficient and to innovate:

The reason that competition is superior to regulation is twofold: Pricing is more efficient and costs are lower. The ideal sales price is set at the efficient level (compared to other prices in the economy), and is beyond the influence of the utility, giving maximum incentive to reduce costs and innovate as the only ways to increase profits. This ideal is most closely approached in competitive industries with many non-colluding firms or contestable entry conditions, where the price is set by other firms. If competition is sufficiently intense, then the rents (the benefits of having the utility) will be entirely transferred to consumers, eliminating the inefficiency caused by attempts to capture the rents (by monopoly, or mandated cross-subsidies which make prices differ from their efficient level).⁵

16. Price caps, on the other hand, remain a form of regulation, which means that ILECs remain insulated from the discipline of competitive or contestable markets.

Price increases send a very important signal, and a very important set of information, to producers and potential producers about what kind of investment needs there are to satisfy market demand. As scarcity becomes more binding, existing producers earn more money from it and potential producers see profit opportunities in alleviating it, which they would do by investing and entering the market. Price caps short-circuit this investment incentive and serve to worsen supply shortages.⁶

⁵ Newbery, D., *Privatization, Restructuring, and Regulation of Network Utilities*, 2000.

⁶ Kiesling, L., "Ontario Steps Back From Electricity Deregulation," <http://www.rppi.org/ontariojanpw03.html>.

17. In addition, my initial Declaration noted that it would be surprising if ILECs that operate under a price cap regime achieved the same level of cost reductions that have been observed in other network industries that have transitioned to a less-regulated environment, because the penalty for sub-optimal performance is much less severe for regulated firms operating under price cap regimes than for firms operating in competitive or contestable markets. Firms operating under price cap regulation do not face the prospect of actually losing significant portions of their demand, and therefore do not face the same incentives to reduce costs. The threshold difference is that firms that fail to perform in competitive/contestable markets cease to exist.

18. Second, the provision of telecommunications services is characterized by substantial joint and common costs. Thus, even under price cap regulation numerous opportunities continue to exist to allocate costs in ways that, while consistent with price caps across the company as a whole, allow the carrier to report lower costs (or deeper cost savings) in those markets where relatively more competition exists, and higher costs (or shallower cost savings) in less competitive markets. Dr. Selwyn's Reply Declaration discusses this aspect of price cap regulation at length – particularly as it is applied in the telecommunications industry. As a result, the Commission cannot merely assume (or, as the ILECs request, codify a rebuttable – or, in the extreme, an irrebuttable – presumption) that costs that have been allocated arbitrarily (because all allocations of joint and common costs are inherently arbitrary) reflect efficiencies that would be experienced by customers if provision of service to those customers were exposed to the discipline of competitive/contestable markets. The Commission's decision, in the *Triennial Review Order*, that CLECs should not have access to the broadband portion of hybrid fiber copper loops creates a classic opportunity for this sort "gamesmanship." To the extent

provision of local service (and corresponding UNEs) is less competitive and provision of broadband services is more competitive, imagine how ILECs might be able to change the allocation of the joint and common loop plant between these services simply by advocating different allocation approaches, *i.e.*, assessing one or the other service only its incremental costs, allocating joint and common costs on the basis of customer counts, allocating joint and common costs based on relative revenues, allocating joint and common costs on the basis of relative bandwidth, and so on. *Cf.* Bellsouth/NERA at ¶ 40.

19. In *Verizon Communications*, the Supreme Court explicitly recognized this problem, noting that:

There are, of course, objections other than inefficiency to any method of ratemaking that relies on embedded costs as allegedly reflected in incumbents' book-cost data, with the possibilities for manipulation this presents. Even if incumbents have built and are operating leased elements at economically efficient costs, the temptation would remain to overstate book costs to ratemaking commissions and so perpetuate the intractable problems that led to the price-cap innovation.⁷

20. The third reason discussed in my initial Declaration that prevents the mere existence of price cap regulation from translating into efficient ILEC networks relates to regulatory impediments that generally constrain companies subject to price caps from taking full advantage of this regulatory structure. I noted that the effectiveness of price cap regulation in squeezing inefficiencies out of existing operations is constrained by the perceptions of regulatory risk. These perceived risks can create incentives for companies subject to price cap regulation to minimize the size of the productivity offset (the "x" factor), and to manage efficiencies so that improvements in profitability and rate of return

⁷ 535 U.S. 467, 513.

are not so dramatic as to create political pressure to increase the productivity offset, implement excess profits taxes, or institute some other form of sharing of cost savings with customers.⁸ By definition, the incentives to be more efficient created by competitive or contestable markets have no such institutional constraints.

21. I also noted that other aspects of the regulatory environment create incentives that cut against those that may otherwise exist to improve efficiency under price cap regulation. I cited the example of SBC's Project Pronto, where significant portions of the copper local loop network are being overlaid with fiber, but where SBC may have resisted eliminating the copper facilities so that it could improve its chances of persuading the Commission to unbundle only its legacy copper-fed loops.

22. The best evidence that the Commission cannot presume that existing ILEC networks are efficient comes from the Opening Comments filed by the ILECs themselves. All of the ILECs note that, even when new, more efficient technologies become available, the ILECs do not instantaneously incorporate those technologies into their networks. SBC at 15-16; BellSouth at 11; Verizon at 4. The ILECs make this point

⁸ See, generally *Unlocking the Benefits of Restructuring: A Blueprint for Transmission*, Awerbach, Hyman and Vesey, November, 1999 ("Pure price caps allow the regulated firm to retain all the fruits of its success within the constraints of the price level and the period of the price cap. This benefit of price-caps, however, also contains the seeds of its problems. Even though ITC's profits are technically unrestricted, if the ITC is highly profitable, regulators find themselves politically vulnerable by having 'allowed' excess profits. They then may feel compelled to re-open price cap issues before the end of the regulatory review period or to reduce prices at the end of that period"); *PBR Options for Electricity Distribution In Ontario*, Ontario Energy Board Staff Report, October 15, 1998, at 21-23; *X marks the spot: how performance based ratemaking (PBR) affected returns to wirecos in the UK*, London Economics, June 2001, at 18-20; *Electricity Reform Abroad and U.S. Investment, Privatized Electricity: A Performance Appraisal*, <http://www.eia.doe.gov/emeu/pgem/electric/ch217.html>; at 3-5. Dr. Selwyn's Reply Declaration discusses ILEC efforts to minimize, or do away with entirely, the productivity offset.

in the context of arguing that TELRIC should not reflect the ubiquitous deployment of the most efficient technology deployed in the most efficient manner possible – an argument I address below. Its significance, for the present discussion, is that if ILECs transition only slowly to more efficient technologies deployed in more efficient configurations, this *must* mean that their existing technologies in their existing configurations are *not* efficient.⁹

B. Replacement Cost of Existing Assets In Their Existing Configuration (i.e., Reproduction Costs) Is Not An Appropriate Basis For Establishing UNE Prices

23. This is the standard for establishing UNE prices that is effectively advocated by the ILECs' Opening Comments, and my initial Declaration explained why this standard cannot be relied upon. I noted that the FCC itself has clearly explained why the current cost of existing facilities in their existing configuration (*i.e.*, reproduction costs) is not an appropriate standard. See FCC Reply Brief in *Verizon Communications Inc. v. FCC* (“*Verizon Communications*”).¹⁰

⁹ The accompanying Declaration of Menko, McCloskey and Brand finds that embedded empirical data provided by Verizon strong suggest that Verizon has been unable to achieve reasonable overall levels of efficiency, despite whatever goad price caps may have provided.

¹⁰ In relevant part, the FCC stated:

The incumbents appear to be proposing a methodology based on the “actual” cost, in today’s market, of duplicating “actual” existing networks in all physical particulars – or, stated differently, the “application of up-to-date prices to out-of-date properties.” James C. Bonbright et al., *Principles of Public Utility Rates* 294 (1988). Economists, including those upon whom the incumbents rely, uniformly agree that such a measurement is “economically meaningless.” *Ibid*; accord 1 Alfred E. Kahn, *The Economies of Regulation: Principles & Institutions* 112 (1988); see also *Missouri ex rel. S.W. Bell Tel. Co. v. Public Serv. Comm’n*, 262 U.S. 276, 312 (1923) (Brandeis, J., dissenting) (disparaging, as the *least* appropriate cost methodology, an inquiry into “what it would cost to reproduce the identical property”). The FCC considered, but rejected, such an approach as

24. As the ILECs note, they do not immediately transition to more efficient technologies deployed in a more efficient configuration; but this is because the sunk nature of a large share of telecommunications costs means that continuing to deploy and use existing technologies in their existing configurations often has a lower incremental cost than replacing those assets with current technology. As soon as the incremental cost of deploying more efficient technologies in more efficient configurations – the cost level consistent with the way in which the FCC *currently* implements TELRIC – becomes less than the incremental cost of continuing to use existing technologies in their existing configurations, ILECs do (or, at least, should) make the change.¹¹ Thus, TELRIC should always be equal to or *higher* than the ILEC's incremental costs of continuing to use existing technologies.

25. ILECs, however, seek to have it both ways. They seek to embrace the sunk cost nature of the industry when they argue that TELRIC should reflect their current mixes of technologies, cable routes, structure types and utilization levels. But when it comes time to develop the investment costs associated with these assets they suddenly

“essentially an embedded [*i.e.*, historical] cost methodology,” which would produce “prices for interconnection and unbundled elements that reflect inefficient or obsolete network design and technology.” *Local Competition Order*(para. 684), J.A. 383. Such prices would distort a competing carrier's analysis of whether, or how, to enter a local telecommunications market, by encouraging, for example, the carrier to construct inefficient, duplicative facilities. See *Local Competition Order* (paras. 620, 630, 679), J.A. 327-328, 333-334, 379-380.

¹¹ See Verizon/Shelanski at ¶ 7; accord, I Alfred Kahn, *The Economics of Regulation* 118 (1970) (“If the AVC_o are smaller than the ATC_n it is economical to continue to use the old capital goods. But if, *regardless* of the fixed costs of the old, the AVC_o are the greater, it is foolish not to scrap; every moment of continued production with the old means a greater drain on the company's resources, a greater avoidable cost of production than would be involved in replacement.”)

ignore the fact that the incremental cost of their sunk assets is *zero*, and seek to suggest that CLECs should pay the current cost of constructing *de novo* these inefficient facilities and network configurations.

26. In contrast, the FCC's current TELRIC standard – which is based on the current cost of constructing an efficient network to serve the totality of an ILEC's customers – is economically rational and internally consistent. To the extent ILECs actually enjoy reduced costs by continuing to rely on sunk assets, TELRIC *overstates* the costs currently incurred by the ILECs; on the other hand, to the extent that deploying new technologies efficiently is less expensive than continuing to rely upon sunk assets, UNE prices set at TELRIC are sufficient to fully compensate the ILECs for doing so. What the FCC's current approach to TELRIC prevents – and rightfully so – is charging CLECs for the full reproduction costs of *inefficient* assets.

27. As noted in my initial Declaration, the FCC's current approach of viewing TELRIC as the construction and operating costs of a hypothetical efficient new firm – entering the market today to compete for some or (consistent with the “TE,” or “total element” component of TELRIC) all of the current demand, using state-of-the-art technology currently available in the market and deployed in the most efficient configuration – is fully consistent with the ways in which other regulatory agencies such as the Surface Transportation Board and the Federal Energy Regulatory Board calculate long-run forward-looking costs.¹²

¹² The ILECs continue to suggest that the Commission's TELRIC rules implicitly assume that an incumbent carrier would abandon its entire network and build a new network each time a significant advancement in technology occurred. This is not so. As the Commission's Reply Brief to the Supreme Court in *Verizon Communications* explained, TELRIC actually rests on the “rational economic assumption” that technological

28. The STB, for example, calculates long-run forward-looking costs by assuming entry of a most efficient hypothetical competitor, using a most-efficient network configuration designed to maximize capacity utilization, and employing state-of-the-art technology – an approach that has been upheld by the U.S. Courts of Appeals for the District of Columbia as an appropriate rate standard.

C. ILEC Comments Supporting Use of a Three- to Five-Year Planning Horizon (Hybrid SRIC/Reproduction Cost) In the Forward Looking Cost Standard Are Economically and Operationally Irrational.

29. The third proposal suggested by the NPRM appears to suggest that TELRIC could be calculated by: (1) replacing the long run time horizon of TELRIC with a shorter-run time horizon of three to five years; (2) combining the embedded costs of existing assets that *would not* be replaced within the next three to five years with the forward-looking costs of new assets and the existing assets that *would* be replaced within the next three to five year; or (3) developing the current value of all embedded assets on the basis of the piecemeal changes to an ILEC’s network anticipated during the next three to five years. As I noted in my initial Declaration, paragraph 55 of the NPRM appears to suggest that alternative 2 is the one actually contemplated by the Commission.

30. Short-run incremental costs (“SRIC”) reflect only the costs that will be incurred over the short-run to continue to provide the service or, alternatively, the costs that can be avoided, in the short run, if the service is not provided. As such, the SRIC

improvements cause not the replacement of older and less efficient assets, but their downward revaluation. In competitive markets, the value of an asset does not depend on what it cost historically, but “on the cost of continuing to operate it relative to the cost of acquiring and operating” the new asset. FCC Reply Brief at 7-8. The construct of a hypothetical, efficient competitor is an analytical device that facilitates the identification of “the costs of acquiring and operating” these new assets.

standard treats the preponderance of the asset base as sunk, with a forward-looking cost of zero (no expenditure is required to continue to provide the service, and no expenditure can be avoided if the service ceases). Only in the long run – when the ILEC is faced with the choice of replacing the sunk asset or not – do costs for these assets exceed zero.

Unless demand exceeds capacity, SRIC will be lower than LRIC.¹³

31. Apparently, recognizing that properly calculated SRIC should result in *lower* costs for UNEs, the Opening Comments filed by the ILECs either ignore this part of the NPRM entirely, or seek to marginalize it. Thus, Verizon states that “[t]his approach, which might be appropriate where carriers are deploying substantially new technology in place of a precursor technology, would be akin to the ‘total service long-run incremental cost’ approach regulators have previously used.” Verizon at 37. In other words, SRIC would be appropriate only if a carrier were going to completely re-build its network, *i.e.*, if SRIC were equal to the Commission’s current standards for implementing TELRIC. BellSouth is clearer, stating that

BellSouth also endorses retaining a long-run orientation toward the development of forward-looking costs. A short-run approach does not provide a sufficient time frame within which to work through all the cost changes that would be encountered because of changes in production.¹⁴

¹³ Dr. Weisman, testifying on behalf of Qwest, agrees with this assessment. Qwest/Weisman at ¶ 22, n. 45 (“Short-run marginal costs do not include capacity costs, but they are not necessarily inconsistent with the recovery of capital costs. For our purposes here, we assume that the incumbent provider is operating with excess capacity so that short-run marginal cost is lower than long-run marginal cost and hence prices set equal to short-run marginal cost would not enable the incumbent provider to recover its capital costs.”).

¹⁴ BellSouth Op. Comments at 3. Of course, as suggested above, BellSouth embraces the short-run – as do the other ILECs – by seeking to lock in the current mix of technologies, routes and other network attributes (or permitting only the minor changes in such attributes anticipated over a 3-year planning horizon).

32. In their Opening Comments, several ILECs advocate a cost standard that includes both the SRIC of the capacity additions and operating costs anticipated during the next three to five years *plus* the reproduction costs of assets that do *not* need to be acquired or replaced during the next three to five years. In addition, they seek to determine the reproduction cost of the assets that do not need to be acquired or replaced based on the costs they currently incur to make piecemeal expansions to their networks. BellSouth at 19-20; Verizon Op.Comm. at 25; Verizon/Shelanski at ¶¶ 15-18; Verizon/Kahn/Tardiff at ¶¶ 25-26; SBC at 27-28, 31-32.

33. At best (*i.e.*, if *no* additional capacity must be acquired in the short run), this approach reduces to a standard that is rooted in the embedded costs of the carrier, which was found to be inappropriate by the FCC in its *Local Competition Order*, by the Supreme Court in *Verizon Communications*, and by the NPRM itself. Even if additional investment in capacity *were* anticipated in the short run, the ILECs' proposed standard would still be economically irrational for several reasons. First, it would still value a large portion of the asset base at embedded costs (or at reproduction costs, which – as discussed above – the FCC itself has found to be an embedded cost standard), an approach which was prohibited by the Act, and has been found to be anticompetitive by the FCC in the *Local Competition Order* and by the Supreme Court in *Verizon Communications*. Second, as Dr. Willig explained in his initial Declaration, there is a clear inconsistency in allowing ILECs to recover the higher cost of piecemeal capacity additions in the short run – *e.g.*, “add-on” switching capacity, multiple undersized cables, intermittent replacements of telephone poles, structure sharing percentages that reflect the pre-existing character of existing parallel utility lines – without also valuing the *embedded* assets at a level that reflects their sunk character in the short run. As Dr.

Willig demonstrated, the cost premium received by providers of piecemeal additions to ILEC plant is economically rational only because a majority of the ILECs' assets are sunk – making rational the option of paying a higher unit price for the piecemeal capacity additions. The proposals contained in the ILECs' Opening Comments seek to exploit this inconsistency even further – in their efforts to generate UNE prices that are as high as possible – by arguing that these higher unit prices that are currently paid for piecemeal expansion of their networks are the appropriate unit prices for use in calculating the reproduction costs of their *entire* embedded asset base.

34. In short, the ILECs' approach to TELRIC applies economic principles inconsistently is a blatant attempt to inflate UNE prices. In seeking to define what is an efficient mix of technologies and an efficient network architecture, the ILECs ask the Commission to rely on what exists today – and what exists today is different than what would be built if one were entering the market today *precisely* because the ILECs' cost of the legacy technologies, network architectures and network configurations that comprise their embedded plant is sunk, *i.e.*, the incremental cost of doing so is near zero (or at least far below the incremental cost of wholesale conversion to a newer, more efficient technology).

35. Similarly, the unit prices incurred today by the ILECs to maintain their networks or to undertake minor expansions of their networks clearly are higher than they would be if the entire network were either being “replaced” *or* being “reproduced,” because suppliers and contractors understand that the sunk nature of the preponderance of the ILECs' assets makes any alternative of full change-out more costly in the short-run. If the entire network were being “replaced” or “reproduced,” the economies of scale

associated with such a large undertaking would certainly result in unit prices from suppliers and contractors competing for a share of such a massive project that are achievable when performing piecemeal expansion.

36. But when it comes time to calculate UNE prices, the ILECs want to take the embedded, “locked in” mix of network technologies, network configurations, and asset costs developed under an assumption that much of the asset base is sunk – and apply it to *all* assets in the network, *i.e.*, assuming that *none* of the assets are sunk. The effect is to value the asset base at a level that is not only higher than (1) what it would cost today to completely *replace* the productive capacity of the ILECs’ plant, but (2) higher than what it would cost today to *reproduce* the existing ILEC plant – with all of the inefficiencies inherent in the existing mix of technologies and network configurations – because the unit prices advocated by the ILECs overstate the unit prices that could be obtainable if the plant were being reproduced.

37. Prices at the levels advocated by the ILECs could not be sustained in competitive/contestable markets and are, therefore, flatly inconsistent with the principles that the NPRM recognizes are the foundation of economically rational pricing standards, including TELRIC. If a more efficient technology develops, or a more efficient opportunity to route cables emerges in competitive/contestable markets, the competitor employing legacy technologies in legacy configurations cannot charge more than (*i.e.*, it cannot value its assets at a level higher than) it would cost a competitor employing state-of-the-art technology efficiently deployed to enter the market —doing so would risk widespread market entry and loss of customers.

38. Of course, as I discuss above, a competitor relying upon legacy technology in legacy configurations may be able to successfully compete for years if the assets are long-lived, because it has no immediate need to replace the bulk of its assets. In fact, it can reduce costs further by *extending* the life of its legacy assets and delaying even further the need to replace its legacy network (as I noted in my initial Declaration, this is a widespread response in competitive and contestable markets to technological innovation). As a new technology takes hold, however, the competitor relying on legacy assets may find that it is paying more for periodic replacement of its legacy assets. Does this mean that its network is worth more and that it can charge its customers more than would be charged by a new entrant employing the state-of-the-art technology efficiently deployed? Of course not – yet this is precisely what the ILECs’ Opening Comments seek to achieve.

39. In competitive and contestable markets, the reality is that the incumbent will continue to employ its legacy assets in their legacy configuration – even as prices for replacements rise – *until* it becomes less expensive to replace its legacy network with the state-of-the-art technology efficiently deployed. Throughout this process, however, it will likely set prices just at or just slightly below those that would induce entry by a competitor employing state-of-the-art technology efficiently deployed in order to maintain its customer base and economies of scale, scope and density. This is because the economic *value* of this competitor’s network is inexorably capped by the cost of deploying current, most efficient technologies.

40. In short, prices based on the FCC’s current TELRIC standard are fully consistent with the competitive/contestable market standard; prices that would result from

the proposals set forth in the ILECs' Opening Comments exceed those that would be sustainable in a competitive/contestable market and are therefore inconsistent with the 1996 Act.

V. NETWORK ROUTING ISSUES

41. The NPRM seeks comment on several issues related to network routing and construction, including:

- What network routing assumptions would be consistent with the Commission's tentative conclusion that UNE prices "should account for the real-world attributes of the routing and topography of an incumbent ILEC's network," *i.e.*, is there a theoretical rationale for an approach that ignores the existence of roads, buildings and natural obstacles.
- Regardless of whether the NPRM's "tentative conclusion" is adopted, should the "scorched node" assumption be modified to adopt routing assumptions that follow more closely an ILEC's existing network configuration?
- How would a decision to more closely account for an ILEC's embedded network configuration and topography affect the use of computer cost models? Is it more difficult to model the actual network configuration or a hypothetical configuration?

42. All of the ILECs appear to embrace the NPRM's tentative conclusion that UNE prices should more closely account for the routings and topographies inherent in their existing networks. Qwest 7-8, 30-32; NERA at ¶ 47; SBC at 4, 20-24; Aron-Rogerson at 18-15; Verizon at 25; BellSouth at 3, 14-15. However, certain ILECs stop short of actually embracing the proposition that TELRIC calculations should employ "actual" routings and topographies – in tacit recognition of the point I made in my initial Declaration, *i.e.*, that ILECs are incapable of providing this information. This admission is clearest in Verizon's initial Comments, which state that

...the Commission should clarify that loop inputs should be drawn from the substantial data about the incumbent's network that is available in sources such as the Automated Reporting Management Information System ("ARMIS") as well as the incumbent's network databases, their experience pursuant to recent material and installation contracts, and their engineering guidelines...In particular, network routing should reflect the incumbent's actual distribution and remote terminal locations and other real-world characteristics, such as the incumbent's actual loop lengths. But the Commission must extend this principle further to other critical loop inputs such as technology mix, utilization, structure type, and structure sharing.

Verizon at 40.

There is no mention of Verizon's ability to provide accurate data on actual cable routes or topography in any meaningful way, but merely a "hook" to argue for use of Verizon's embedded costs.

43. As I noted in my initial Declaration, no party to any state UNE cost proceeding has ever submitted a cost model or cost study that fully mirrored the real world.¹⁵ In large measure, this reflects a tacit recognition by the ILECs that forward-looking cost principles properly applied, and the competitive/contestable market standard that underlies those principles, require that the routing assumptions underlying TELRIC should be the most efficient feasible routing available. Thus, while it clearly is consistent with TELRIC that existing roads, buildings and other natural obstacles be taken into account in designing a forward-looking network configuration, no presumption is warranted that existing ILEC network configurations are efficient responses to those constraints. Furthermore, as Verizon implicitly seems to concede, my experience is that

¹⁵ See, *Late Filed Opening Comments of the People of the State of California and the California Public Utilities Commission*, at 10-11.

ILECs do not maintain comprehensive data that permits them to accurately determine actual network routing and topography at a detailed level.

44. Furthermore, in advocating heavy reliance on “actual” ILEC data, the ILECs’ Comments studiously ignore paragraph 60 of the NPRM, where the Commission expresses concern that heavier reliance on information about embedded network configurations would create an informational disparity that would put CLECs at a significant disadvantage in regulatory proceedings. As I noted in my initial Declaration, this is a critical problem that was highlighted again and again in the first round of UNE proceedings. In those proceedings, ILECs presented cost studies that allegedly relied upon the “actual” characteristics of their networks. Only after months of discovery – which often had to be repeated in state after state – CLECs and the state commissions finally were able to determine that these “actual” data were not actual at all.¹⁶ This experience is strong evidence that efforts by the Commission to rely to a greater extent on claimed “actual” ILEC data would strongly favor the ILECs without improving the accuracy of TELRIC calculations. Even if ILECs did not actively seek to benefit from their informational advantage, it would as a practical matter work to the disadvantage of both CLECs and the staffs of the various state commissions who bear responsibility for the technical details of these complex cases.¹⁷ If history is any guide, however, ILECs

¹⁶ My initial Declaration included several examples of these problems. See Klick Decl. at ¶ 51.

¹⁷ Recent experience with actual customer location data, which I discussed in my initial Declaration, underscores the point. ILEC personnel have years of experience with issues such as the most reliable of multiple sources for a given type of data; how to resolve discrepancies between different data bases for a single customer; the extent to which individual data bases should or should not necessarily be consistent, given the day-to-day uses for which each data base was designed; how to determine whether a customer address on a particular record is a billing address or a service address; how to translate USOCs into more generic service descriptions; how certain field codes or file layouts

will be unable to resist using their extensive access to and knowledge of their records on embedded plant to their advantage – a risk the Supreme Court expressly acknowledged. *Verizon Communications*, 535 U.S. 467, 512.

45. My initial Declaration also noted that it is difficult for the Commission to “regulate” out of existence the ILEC advantage created by this information asymmetry while simultaneously seeking to make TELRIC calculations “more transparent,” less time consuming, and less demanding on state commissions and related parties. Protracted discovery disputes have been a key contributor to the complexity and time-consuming nature of state UNE proceedings, and an approach that sought to rely more extensively on embedded ILEC characteristics would inevitably result in additional efforts in discovery without meaningfully reducing the ILECs’ unfair informational advantage.

A. Data on Customer Locations and Customer Services

46. In my initial Declaration, I noted that actual customer location data are critical in resolving routing issues, because TELRIC networks are built to service “actual” customer locations. Thus, forward-looking costs that seek to reflect efficient network routings can feasibly be developed only if actual customer locations, and new customer locations anticipated over the planning period, are available. It is noteworthy that the ILECs’ comments ignore this issue.

have changed over time, and when those changes took place; and the accuracy of data of various vintages in a given data base. IF “actual” ILEC data were consistent with forward-looking cost principles, and with the competitive/contestable market standard that underlies those principles, this additional burden on CLECs and state commissions might be unavoidable. But because use of these data is presumptively *inconsistent* with these guiding principles, there is no reason to saddle other parties with this burden.

47. Recent developments in state UNE proceedings suggest that ILECs now maintain data on actual customer locations (which are either already geocoded, or capable of being geocoded) and both the USOC (Universal Service Ordering Code) and COS (Class of Service) data by customer. The BellSouth Telecommunications Loop Model (“BSTLM”) uses data from the CRIS and CABS systems, including information on USOCs and CLASS. Similar data have recently been produced by SBC and Verizon in California, and by Qwest in Washington.¹⁸ These data have been successfully used as inputs to computerized forward-looking cost models.¹⁹

48. The ILECs’ comments also fail to address the need for the ILECs to provide more detailed data on existing and forecasted changes in services demanded by their customers. This is ironic, because data on the services demanded by each customer determine the types of facilities that must be constructed along the various routes. A combination of data on current customer locations and services demanded by these

¹⁸ Verizon has recently relied upon data from its AAIS system, which focuses more on facilities than customers. For the reasons discussed below, data on current facility locations is less relevant to TELRIC than data on current customer locations.

¹⁹ Until the existence of these data on actual customer locations became known, the forward-looking cost models used in TELRIC proceedings made simplifying assumptions about customer locations. As I noted in my initial Declaration, there is no reason to believe that these simplifying assumptions understated costs, compared with the results that would be achieved using actual customer locations, because the simplifying customer location algorithms used in existing cost models tend to distribute non-geocoded customers evenly (and widely) along roads or within geographic areas. As a result, even a small number of “surrogate” customer locations will be distributed to the far ends of the particular cluster or serving area. This tends to overstate route mileages because customers actually tend to be concentrated rather than evenly distributed, and because it is less expensive to serve concentrated customers than to serve customers that are widely dispersed. Thus, accurate customer location data are likely to reduce costs, and are therefore critical to an accurate calculation of forward-looking costs. My initial Declaration cited a decision by the Kansas Corporation Commission that supports this conclusion.

customers, and forecasts of changes in these parameters over the planning period, are necessary for accurate estimates of TELRIC, because the forward-looking network must reach these customers with the facilities necessary to provide the services each customer demands in the most efficient manner possible. As I noted in my initial Declaration, use of accurate customer location and demand data can significantly affect the level of TELRIC that is calculated.

B. Geography and Topography

49. Opening Comments filed by ILECs ignore data on actual customer locations and services, and focus instead on the issues of geography and topography. Instead of dealing with the substantive issues raised by ¶¶ 60-63 of NPRM, however, the ILECs' Opening Comments seek to suggest that incorporating the existing topography of the incumbent LEC's networks necessarily requires the use of embedded costs. As a conceptual matter, the discussion above suggests that such a logical leap is inconsistent with the fundamental underpinnings of TELRIC and the competitive market standard. It is also important for the Commission to recognize that such a logical leap is unwarranted. Real world constraints – such as roads, buildings and other natural obstacles – can be, and should be, accurately accounted for without reference to the ILECs' embedded cost data.

50. Paragraph 63 of the NPRM explicitly observes that the existing road network in a particular geographic area is a good surrogate for existing telecommunications rights-of-way that take these obstacles into account, yet I could find nothing in the ILECs' Comments that addresses this portion of the NPRM. This is understandable, because making use of the Commission's logic in this regard would

permit TELRIC calculations to be made that take such obstacles into account *without* depending on embedded cost data.

51. In fact, as I noted in my initial Declaration, certain computerized forward-looking cost models currently route distribution and feeder cables along the existing road network in a given study area (specifically, I noted that the BellSouth Telecommunications Loop Model already incorporates this capability, and that the FCC staff apparently has undertaken the work necessary to provide the same capability as part of its Synthesis Model); other cost models employ the road network as a mechanism for identifying surrogate customer locations (when geocoded customer location data is unavailable) and use rectilinear (or “right-angle”) routing in designing the feeder and distribution networks. Tellingly, many ILEC cost studies do not explicitly use the road network at all, and rely instead on simplifying assumptions in constructing distribution and feeder cables. Klick Decl. at ¶ 56.

52. The point of that section of my initial Declaration was to demonstrate that all of the computerized forward-looking cost models in use in state UNE proceedings today already recognize the need to take into account the various limitations on routing identified in the NPRM, and to demonstrate that the evidence strongly suggests that use of actual cable routes – assuming they could be accurately developed from ILEC records – would be unlikely to significantly change the level of TELRIC costs from those that are calculated using rectilinear routing. Klick Decl. at ¶ 57.

53. My initial Declaration identified three logical possibilities for identifying the “real-world attributes of the routing and topography of an incumbent LEC’s network.” One was to reproduce every single cable, pole, conduit and trench that the

ILEC currently has in place in the study area, and place the same mix of cables of the same sizes along these structure configurations. The second was to attempt to follow the actual configuration of the cable routes in a study area, but permit cable sizes, cable type (copper versus fiber), and structure types to vary in order to reflect the least expensive approach on a current cost basis. The third option was the one articulated in paragraph 64 of the NPRM, *i.e.*, that the current assumption requiring existing wire center locations to be used be extended to other components of the network, such as feeder routes or remote terminal locations. Most of the ILECs appear to advocate some form of the first alternative, or a combination of the first and third alternatives. BellSouth at 14; Qwest at 30-32; SBC at 57-58; Verizon at 40.

54. As I noted in my initial Declaration, however, the first of these options is unworkable. It is my experience that ILECs simply do not maintain records that can accurately describe, in any sort of readily retrievable and useable fashion, what is actually in the ground today in any given distribution area, wire center area, or certainly full study area. Paragraphs 60 through 67 of my initial Declaration explained why the information ILECs have available on the configurations and compositions of their outside plant networks are subject to significant errors, and that the only way to try to obtain reliable ILEC outside plant information would be to seek to obtain and cross-reference information from numerous individual departments within an ILEC in an effort to obtain a reliable record of “actual cable routes,” or to rely on piecemeal and incomplete hardcopy maps that may still be available. Because these data would be voluminous, are maintained at a very atomistic level, and in many cases are in idiosyncratic and incomplete hardcopy format, they would be virtually impossible to use consistently in a TELRIC costing effort. Further problems in relying on ILEC data exists because

incumbents maintain poor record keeping by failing to update outside plant cable diagrams for retired plant. The Opening Comments filed by the ILECs do not address these real-world impediments to relying upon “actual” embedded plant data to develop embedded or reproduction costs.

55. As noted above, Verizon’s Opening Comments suggest that actual cable routes can be incorporated by requiring the network modeling to “reflect the incumbent’s actual distribution and remote terminal locations.” Verizon at 40. BellSouth advocates a similar approach. BellSouth at 14. This is the third option discussed in the NPRM. In *Verizon Communications*, the Supreme Court acknowledged that the FCC’s “scorched node” approach of requiring TELRIC studies to incorporate existing wire center locations into TELRIC calculations introduced an element of inefficiency into the Commission’s current approach. *Verizon Communications*, 535 U.S. at 505. Extending this approach to remote terminals and SAIs, as advocated by Verizon and BellSouth, would simply load additional inefficiencies into TELRIC calculations, moving UNE prices further from the competitive/contestable market standard that the NPRM states should continue to guide the development of TELRIC. NPRM at ¶ 16. As I noted in my initial Declaration, even if accurate locations for these facilities could be provided by the ILECs, existing remote terminal/DLC and SAI locations, and the existing feeder routes that connect these locations to their serving central office, make sense *only* if the existing customer serving areas, SAIs, FDIs, and remote terminals are as efficient as those that would be constructed by a firm entering the *local services market* today, given current customer locations and service demand patterns. My initial Declaration, and the initial Declaration filed by Mr. Riolo, demonstrated that this is unlikely to be the case.

56. In summary, the Opening Comments filed by the ILECs do nothing to demonstrate that accurate, comprehensive data on actual cable routings and network topography could be obtained from the ILECs in formats and with completeness that would make it useable for TELRIC calculations, and my initial Declaration makes it clear that such data is not available. The logical conclusion is that ILECs seek to embrace the “tentative conclusion” reached in the NPRM only as a backdoor way of re-introducing embedded costs into the TELRIC calculations thereby forcing UNE prices higher to pay for the inefficiencies inherent in the ILECs’ current network configurations.

57. My initial Declaration demonstrates, however, that ¶ 63 of the NPRM is the key to satisfying the NPRM’s tentative conclusion without relying on embedded cost data, *i.e.*, by using state-of-the-art computerized forward-looking cost models that rely on the existing road networks (or rectilinear routing as a surrogate) in constructing feeder and distribution cable routes required to serve accurately geocoded customer locations – precisely the approach BellSouth ascribes to its own TELRIC loop model. BellSouth at 14.

VI. EXPENSE FACTORS

58. At paragraphs 109 through 113, the NPRM poses a series of questions concerning the calculation of forward-looking expenses in the development of TELRIC, some of which suggest a concern by the Commission that the commonly used approach of applying annual cost factors (“ACFs”) to forward-looking investments could have the effect of understating forward-looking expenses. ILECs have certainly made that claim in a variety of jurisdictions, and their Opening Comments in this proceeding are true to form, suggesting that ACFs are fundamentally flawed, and that the correct solution is to

rely on the current absolute levels of their embedded expenses. Verizon at 57-60; Qwest at 47-53; SBC at 76. Even where an ILEC appears to agree that ACFs are appropriate, this turns out to be a ploy for arguing that recent embedded operating expenses are the best estimate of forward-looking expenses. Verizon at 58-60; BellSouth at 44-45. As I explained in my initial Declaration, however, the ILECs' embedded expenses do not reflect "the forward-looking costs of operating a network" efficiently, and use of ACFs may actually overstate forward-looking expenses.

59. Paragraphs 111 through 121 of my initial Declaration summarized evidence from other network industries that demonstrates that reductions in expenses comparable to those that are generated by applying the ACF approach in TELRIC cost studies have been achieved as these industries have been subjected more directly to competitive pressures. I argued that the experiences in these industries is strong evidence of how much more inexpensively a provider of local telecommunications services operating in a competitive or contestable market could be expected to operate over the long-run.

60. Most forward-looking models and cost studies filed by both CLECs and ILECs in state UNE proceedings have employed ACFs – it is a standard costing approach that has been employed in the industry for years.²⁰ And my initial Declaration demonstrated that there are reasons to believe that embedded ILEC expense data, actually *overstates* forward-looking expenses.

61. First, ILECs are currently making significant reductions in expenses associated with their wireline businesses. My initial Declaration cited, for example, to

²⁰ See, Verizon at 58, n. 97.

Verizon's third quarter 2003 earnings conference call to analysts, in which it stated that "[w]e continue to make excellent progress, taking costs out of our wireline business is essential. It allows us to continue to invest in growth areas and create value for our shareholders." The innovations helping to create these expense reductions include "GPS systems, advance mobile computing solutions with wireless connectivity for our field personnel and IT solutions that automate processes, reduce manual intervention and speed up ordering processing."²¹

62. Similarly, I quoted from SBC's November 13, 2003 analysts meeting, in which the company stated that "[t]he short term [cost cutting] efforts are important, but obviously, we need to dig a lot deeper. We must have a cost structure that yields far more operating efficiency. So across the entire wireline organization, we're standardizing technology to simplify operations. We're consolidating centers; we're eliminating regional barriers and migrating to standard OSS platforms across the nation. We're also developing new functionalities and enhancing tools to become more productive and efficient. We're automating and mechanizing processes to optimize workflows and we're shedding costs to I V R ["interactive voice response"] and to the web."

63. This is not surprising because newer technologies are more efficient to operate than existing technology. It is a widely-recognized fact in the telecommunications industry that maintenance expenses for fiber cable are a fraction of those required to maintain traditional copper facilities.²² Various equipment vendors frequently tout reductions in operating costs that are available with state-of-the-art

²¹ These statements to analysts are in stark contrast to statements made in Verizon's Opening Comments that suggest that costs per line are increasing. *See* Verizon at 59.

²² FCC Synthesis Model (expense module at worksheet titled "96 Actuals.").

equipment. For example, Alcatel tells its customers that “Alcatel optical solutions are designed to help you improve network efficiency, increase overall reliability and reduce the total cost of ownership (TCO) of your transport networks.” Regarding optical fiber, it states that “[w]e provide an extremely reliable and low-cost physical network solution, with the lowest cost per available bit. These cost savings are due to our unique network deployment technology.” Lucent makes similar claims, stating that its core optical DWDM transport system “slash[es] equipment and operational costs,” can “reduce your capital expenses,” and “can help improve your bottom-line without trade-offs.”²³

64. While the ILECs are in the initial stages or in the midst of such expense reduction programs, proper implementation the forward-looking perspective of TELRIC requires that these reductions in operating expenses be fully reflected. Use of embedded expenses (ACFs based on embedded expenses) that do not reflect the full realization of these cost-reducing initiatives overstates forward-looking operating expenses.

65. Furthermore, the regulatory lag inherent in TELRIC proceedings means that even the extent to which such cost reductions have already occurred is under reported when embedded cost data are employed. Thus, as I noted in my initial Declaration, cost reductions that occurred during 2003 will not be reported until after the year has closed, and would be unavailable for use in TELRIC cost modeling until mid- to late 2004.

66. Finally, advances in manufacturing processes and technological improvements have made outside plant assets more efficient to operate and less costly to

²³http://www.alcatel.com/solutions/solutionsbyportfolio.jhtml?_DARGS=/common/solutionselector/include/index.jhtml_A&_DAV=solselfportfolio4;
http://www.alcatel.com/solutions/solutionsbyfamily.jhtml?_DARGS=/common/solutionsselector/include/solutionsbyportfolio.jhtml_A&_DAV=solselffamily17;
http://www.lucent.com/solutions/core_optical.html.

maintain than are the earlier generations of assets reflected in the ILECs' embedded asset bases. My initial Declaration cited examples such as (1) newer DLC systems flexible enough to adapt more readily to changes in customer demand with minimal manual intervention, (2) reductions in maintenance expenses generated by the ability to simply change out faulty line cards, (3) GR-303 switch interfaces that reduce the amount of copper in the plant and minimize the extent to which technicians must physically handle individual copper pairs, and (4) improvements in fiber and copper cable manufacturing and testing techniques, and the higher proportion of fiber in the outside plant network, which should reduce the number of outside plant repair technicians. Klick Decl. at ¶¶ 127-128.

67. All of these downward trends in expenses are occurring when the cost of purchasing state-of-the-art assets is also declining. Significant evidence indicates that the telecommunications industry is experiencing declining equipment costs. Material costs have decreased since 1996 for key inputs used to construct telecommunications plant, such as copper and fiber cable. The U.S. Geological Survey shows that copper costs have declined by more than 31 percent between 1996 and 2002 (a 39 percent reduction in constant dollar terms).²⁴ The declining cost of fiber cable, and the associated electronics, also has been well documented by a variety of sources, including sources sympathetic to the ILECs".²⁵

²⁴ U.S. Geological Survey, *Historical Statistics for Mineral Commodities in the United States*, August 28, 2002.

²⁵ See, for example, *Telecom Boom and Bust -What Happened?* Morris W. Westerhold President, TPC Consulting, Inc. March 1, 2003, pages 22, 34 and 44.
http://engr.smu.edu/EETS/7302/W08_7302.ppt

68. As the following quotations make clear, the prices of other network equipment also have experienced price reductions:

Today, with the declining cost of optical components, the adoption of new splicing and trenching techniques, and the advancement in technology, we are able to offer to the market a very high speed bandwidth solution with compelling economics,” said Ron Foster, Vice President of Marketing for Alloptic. “Our Alloptic homeG.E.A.R.1000 allows service providers to drive fiber directly to the subscriber’s home, deliver massive bandwidth to support a full range of high speed services and it is all done at a dramatically lower cost per bit than any other option available today.”²⁶

69. This downward trend in equipment prices has also been confirmed by a number of recent industry publications. For example, an article from *Broadband Week* states: “There is no denying the downward trend of equipment prices, ranging from sophisticated switching gear to fiber optic cable.”²⁷ Similarly, incumbent executives have touted their success in achieving large price declines. One such example is a statement by Joseph Nacchio, former chief executive of Qwest Communications International: “‘We’ve been able to take advantage of an extraordinarily favorable pricing environment from our suppliers who are scrambling for every dollar they can get,’ Nacchio said in a May 2001 conference call with analysts. ‘We’re just pressing vendors across the board--whether it’s optics, DSL, adding switched ports or software releases. It’s become a buyer’s market and we’re taking advantage.’”²⁸ In sum, the

²⁶ http://www.lightreading.com/document.asp?doc_id=10048

²⁷ *Broadband Week*, “Equipment Prices Dropping, But Not Plummeting,” Ken Branson, June 4, 2001.

²⁸ *CNET News.com*, “Telecoms Anticipate Price Cuts for Gear,” Wylie Wong and Sam Ames, May 25, 2001. The prices of other inputs used to construct telecommunications plant, such as copper, also have fallen dramatically since this Commission last determined the cost of UNEs.

material cost of these key inputs has fallen dramatically since this Commission last determined the cost of UNEs.

70. Even ILECs do not dispute the fact of declining equipment prices. Verizon submitted evidence in the Virginia UNE pricing proceeding that it has experienced such declines. For example, in that proceeding, Verizon identified “central office switches and fiber optic carrier systems as types of equipment that have experienced declining prices in recent years.”²⁹ Verizon also presented evidence that the material costs for transport equipment had declined.³⁰

71. Major ILECs, such as Verizon and SBC, also have benefited extensively from merger-related savings and efficiency gains (such as improved purchasing power) that have generated reductions in both expenses and investment over time. For example, in the Bell Atlantic/NYNEX merger, Verizon claimed that it would achieve nearly \$1 billion in annual savings from operating expenses reductions (including, corporate staff reductions, product management, development of new software systems, procurement savings from expanded base, *etc.*) and capital savings (increased volume discounts the two companies will obtain when they pool their annual network capital expenditures and consolidate field trials of new equipment and test laboratories.)³¹

72. Verizon also argued that the merger would facilitate the deployment of broadband and other advanced services:

²⁹ *Virginia Arbitration Order* ¶ 109.

³⁰ *Id.* ¶ 525.

³¹ See Memorandum Opinion and Order, *In the Applications of NYNEX Corporation and Bell Atlantic Corporation (File No. NSD-L-96-10) For Consent to Transfer Control of NYNEX Corporation and Its Subsidiaries*, FCC, August 14, 1997, ¶¶ 160-165.

The merger will hasten the deployment of broadband in three ways: (1) the merger will reduce certain per-unit costs such as software development which, post-merger, could then be spread across a larger customer base; (2) not only will the merger increase the merged entity's financial strength (and, with such strength, hopefully lower its cost of capital), but the merger will also create substantial cash savings, some or all of which Applicants intend to invest into broadband network deployment; and (3) given the size of the merged entity's geographic footprint, the merger would help mitigate many of the numerous network compatibility problems the industry is currently experiencing.³²

73. During the Bell Atlantic GTE merger, Bell Atlantic publicly committed to Wall Street and its investors that it would achieve the merger related savings it forecast:

In their initial application, Bell Atlantic and GTE claim that three years from the merger's closing, the merged entity will achieve \$2 billion in annual expense savings and \$0.5 billion of annual capital expenditure savings. The Applicants claim an additional \$2 billion in revenue enhancements from creating and deploying "innovative data and other services," improving the value and speeding the deployment of long distance services, and spreading best practices to more efficient market existing services.³³

74. In seeking approval for its mergers, Verizon also promised new services and local competition:

These financial efficiencies will allow the new company to meet its commitments to improve service quality, accelerate new services, and build out CLEC businesses in Los Angeles, San Francisco, San Diego, Dallas, Houston, Austin, San Antonio, Chicago, Cleveland,

³² *Id.* ¶¶ 166-167.

³³ See Memorandum Opinion and Order, In re Application of GTE CORPORATION, Transferor, and BELL ATLANTIC CORPORATION, Transferee For Consent to Transfer Control of Domestic and International Sections 214 and 310 Authorizations and Application to Transfer Control of a Submarine Cable Landing License, CC Docket No. 98-184, FCC, June 16, 2000, ¶¶ 239-241. See also Declaration of Doreen Toben, In re Application of GTE CORPORATION, Transferor, and BELL ATLANTIC CORPORATION, Transferee For Consent to Transfer Control of Domestic and International Sections 214 and 310 Authorizations and Application to Transfer Control of a Submarine Cable Landing License, CC Docket No. 98-184, FCC, September 30, 1998.

Cincinnati, Indianapolis, Detroit, Miami, Orlando, Jacksonville, Raleigh, Nashville, Memphis, Louisville, Seattle, and Portland. The public interest is indisputably advanced by the use of fewer economic resources to produce the same services, let alone by the combination of complementary resources to produce improved services and to enable new or stronger market entry.³⁴

75. In Verizon's Fourth Quarter 2001 Investor Quarterly, Verizon's Chairman and Co-CEO stated:

In Verizon's first full year of operation, we have repeatedly demonstrated the strength of the GTE and Bell Atlantic merger. We achieved solid results for the quarter and for the year despite the continuing downturn in the economy. Synergies have enabled us to continuously reduce expenses, while our combined assets have given us a more diverse geographic base and product line.³⁵

76. Other major ILECs, such as SBC, have projected large savings from the technological advancements that were in part facilitated by mergers. For example, SBC stated that "[t]he efficiencies SBC expects to gain will pay for the cost of the [Project Pronto] deployment on an NPV [Net Present Value] basis. These efficiencies are conservatively targeted to yield annual savings of about \$1.5 billion by 2004,"³⁶ and SBC provided examples of how those efficiencies would be realized:

By avoiding dispatches on many installations, SBC expects to realize efficiencies in its installation and maintenance operations. Other anticipated efficiencies will come from reduced activity required in the remaining copper plant because of improved reliability.³⁷

³⁴ See Declaration of Doreen Toben, In re Application of GTE CORPORATION, Transferor, and BELL ATLANTIC CORPORATION, Transferee For Consent to Transfer Control of Domestic and International Sections 214 and 310 Authorizations and Application to Transfer Control of a Submarine Cable Landing License; CC Docket No. 98-184; FCC; September 30, 1998, ¶ 5.

³⁵ See Verizon Communications, Inc., Fourth Quarter 2001 Investor Quarterly at 2.

³⁶ See SBC Communications Inc. Investor Briefing, October 18, 1999.

³⁷ *Id.*

Reduced spending on feeder facilities represents 70 percent of the targeted capital savings. The broad deployment of fiber and related electronics will substantially eliminate further deployment of copper facilities for feeder reinforcement.³⁸

Thus, the notion that forward-looking expenses would decline in relation to embedded expenses at the same time the cost of forward-looking assets would decline in relation to embedded asset values – the concern the Commission has expressed in the NPRM with use of ACFs – in fact flows logically from what can be observed in the real world.

77. At page 49 of its Opening Evidence, in support of its argument that the Commission should abandon the use of ACFs, Qwest allegedly provides “empirical evidence” that there is no correlation between per line changes in investment and expenses. To make this demonstration, Qwest collected total investment per line and total expenses per line for nine local exchange carriers for each of the years 1996 through 2002. Within each year, Qwest undertook a simple correlation analysis across the nine data points (one for each carrier) to determine whether there was any statistically significant correlation in that year – *i.e.*, Qwest conducted an independent “cross sectional” analysis of the data for each year. Qwest’s conclusion is unsupported by its analysis.

78. Demonstrations of the sort that Qwest seeks to make – *i.e.*, proving a “negative” (in this case, that no correlation exists) – are extremely arduous statistically, because they require the proponent to investigate all of the possible ways in which these data may be correlated before being in a position to state that no correlation exists. Clearly, Qwest has failed to meet this burden with its single correlation study. Even Qwest’s results, which show the correlation between company-wide investment per line

³⁸ *Id.*

and company-wide expenses per line changing from negative to positive, with increasingly positive correlations in the most recent four years – suggests that time could be a meaningful variable that should have been controlled for by Qwest. In addition, it stands to reason that comparing company-wide ratios *across* companies, as Qwest has done, could easily mask a correlation between investment and expenses. This is because, as the ILECs allege elsewhere in their Opening Comments (in arguing against any sort of “best in class” adjustment to expense-to-investment ratios), there may be significant differences across ILECs in the mix of investment and expense types and vintages reflected in each carrier’s embedded investment base. Verizon at 60; BellSouth at 45.³⁹

79. Furthermore, during the 1996 to 2002 study period employed by Qwest, significant changes in ILEC operational and investment strategies – unique to individual ILECs – were implemented. For example, some ILECs tried to create unique business initiatives (such as SBC’s Project Pronto); other ILECs undertook major merger consolidation activities that combined many different ILECs. At the same time, BellSouth undertook no mergers, and the former US West merged with a long distance carrier to become Qwest. These different business strategies obviously affect the business focus and investment strategies of each company. Other macroeconomic factors, such as population and economic growth factors, varied significantly across different regions of the country. The totality of all of these factors affect the investments and expenses of each ILEC differently, and a granular analyses is required to accurately

³⁹ While carrier-to-carrier differences might affect embedded data, such as those relied upon by Qwest, this possibility should not be a significant issue on a forward-looking basis, because forward-looking costs should reflect efficient, forward-looking investment deployed in the most efficient manner – which should minimize differences across ILECs.

capture these relationships and to control for various effects that would otherwise mask a relationship between expenses and investment.

80. More granular analyses of the relationships between expenses and investments for individual companies have shown a strong correlation between expenses and investments, as demonstrated by testimony filed in a recent UNE rate proceeding in California. Thomas Brand and Art Menko performed regression analyses at the plant-specific account level for all RBOC/state combinations for each year from 1994 through 2002. Data provided in the ARMIS 43-03 report were used in their analyses, and a linear regression model was specified for each set of expense-to-investment pairings: plant specific operations and network operations expenses to TPIS investment, and corporate operations expenses to total operating revenues less corporate overhead expense.

81. The results of these regressions showed a strong positive relationship between expenses and investments. All regressions had high R-squared values and statistically significant slope coefficients.⁴⁰ In addition, most of the regressions had relatively small y intercepts, meaning that the expense-to-investment ratios remained relatively constant across the range of data analyzed. Brand and Menko also performed similar analyses in a separate UNE rate proceeding in California that support these results.⁴¹ In short, the more granular analyses performed by Brand and Menko not only

⁴⁰ See Joint Declaration of Thomas L. Brand and Art Menko In Support of Opening Comments of Joint Commentors, CPUC Docket R.93-04-003 et al., November 3, 2003, 15-18.

⁴¹ See Joint Declaration of Thomas L. Brand and Arthur Menko In Support of Joint Applicants' Opening Comments, CPUC Docket No. A.01-02-024 et al., October 18, 2002, 8-12.

demonstrate that expenses are correlated with investments, but that expense-to-investment ratios are a valid mechanism for depicting this correlation.

82. For these reasons, the simplistic analysis undertaken by Qwest is meaningless, and acts merely to mask correlations between investment per line and expenses per line that exist at the more granular level at which ACFs are actually applied.

83. Had Qwest really wanted to “prove the negative,” its analysis should have – at a minimum – obtained total expense and total investment data by ILEC by state, treated these data as a “panel data set,”⁴² controlled for differences across firms and

⁴² The use of a panel data set comprised of the total expenses and investment for each company for each year would have helped Qwest compensate for not undertaking an analysis at the more granular level employed by Messrs. Brand and Menko. The advantages of using panel data sets in these circumstances are widely recognized. *See*, for example:

Panel data offer several important advantages over data sets with only a temporal or longitudinal dimension. First, more observations are generally available than with conventional time-series data, although cross-section datasets are often very large. Second, because panel data sets are not so highly aggregated as typical time series and because, in the best of circumstances, we observe the same individual units across time, more complicated dynamic and behavioral hypotheses can be tested than those that can be tested using unidimensional data.

Nerlove, Mark, Essays in Panel Data Econometrics, Cambridge University Press, Cambridge: 2002, p. 5.

Regulatory agencies have recognized these advantages. In its efforts to identify the way in which various categories of expenses were related to measures of capacity and usage for use in its Uniform Rail Costing System (URCS), the Interstate Commerce Commission found:

The current URCS regression methodology reflects important improvements over Rail Form A in its exploitation of the available panel data set, its use of capacity measures as explanatory variables for fixed costs, and its inclusion of time and firm fixed-effects variables, all

across time by using dummy firm and time variables, investigated a range of potential functional forms for regression equations that would relate total expenses per line to a variety of combinations of independent variables, including investment per line, and showed in its Opening Comments that no matter how it analyzed these data, no correlation existed. Qwest's approach of merely showing the results of one particular approach to organizing and analyzing very aggregated data – which happens to show relatively poor correlation – does not begin to disprove the possibility of a correlation between expenses per line and investment per line.

84. To summarize, embedded expenses overstate forward-looking operating expenses, and embedded investment (on either a book or replacement cost basis) overstates forward-looking investment (because of declines in the current cost of many assets; changes in technology such as substitution of fiber for copper; and because of inefficiencies inherent in the embedded network architecture and configurations). Thus, to be forward-looking both network investment and operating expenses must decline vis-

of which allow greater reliance to be placed on individual carrier costs.

One of the major advantages of a panel data set is that it keeps the regression analysis from being driven by fixed-effects across firms, like firm size, and it allows for simultaneous correction for heteroskedasticity and autocorrelation. Additionally, a panel data set permits implicit correction to omitted variables bias via the inclusion of fixed effects.

Interstate Commerce Commission, *Ex Parte No. 431 (Sub-No. 1), Adoption of the Uniform Railroad Costing System as a General Purpose Costing System for All Regulatory Costing Purposes*, Sept 20, 1989, at 897, 922.

à-vis embedded data, and application of ACFs to forward-looking investments is a commonly-used practice that achieves the reductions in expenses required for them to be forward-looking. Importantly, evidence from the experience of other network industries demonstrates that the level of forward-looking operating expenses generated by applying ACFs to forward-looking network investments is consistent with the way the effects of competition have affected expenses in other industries.

85. If the Commission nevertheless determines to depart from the use of ACFs in forward-looking cost studies, the most feasible alternative is to make forward-looking adjustments to actual expenses. As noted above, the ILECs' embedded costs do not reflect the efficiencies that would be achievable by a competitor entering the local services market today. As a result, significant reductions from embedded operating expenses (comparable to those that have been achieved in other network industries that have made a transition from regulated to less-regulated) would have to be reflected in adjustments to embedded costs.

VII. REDUCTIONS IN TELRIC-BASED UNE RATES OVER TIME, WITHIN A GIVEN JURISDICTION, OR DIFFERENCE ACROSS JURISDICTIONS ARE NOT EVIDENCE THAT THE FCC'S CURRENT IMPLEMENTATION OF TELRIC IS FLAWED.

86. In their Opening Comments, ILECs suggest that recent state commission decisions resulting in substantial reductions in UNE rates from those initially established in the late 1990s demonstrate that the FCC's implementation of TELRIC is flawed. Qwest at 11-12; Verizon at 6-7. ILECs also argue that significant state-to-state variations in UNE prices are likewise evidence of flaws in the current TELRIC standard. Qwest at

13-14; SBC at 20-24; Qwest/Aron/Rogerson at 35-38; Verizon at 7. These arguments are without merit.

87. As a threshold matter, ILECs present no evidence that the UNE rates originally adopted by the state PUCs were TELRIC compliant which should be the foundation of any argument that significant declines in UNE prices must mean current rates are below TELRIC, or that TELRIC cannot be reliably calculated. In many instances, in fact, initial UNE rates were explicitly *inconsistent* with the Commission's TELRIC standards, and too high as a result. A good example of this phenomenon is provided by the history of UNE rates for reciprocal compensation. In the original UNE proceedings, many of these rates were established at levels as high as 0.40 to 0.50 cents per minute, based on TELRIC costs that reflected ILEC evidence alleging very high switch purchase costs. Because reciprocal compensation rates were subject to competitive arbitrage, CLECs chose to sell at this rate in lieu of buying at this rate. As a result, ILECs petitioned multiple state Commissions to have these rates reduced to levels as low as .007 cents per minute. This dramatic reduction in overall UNE rates for reciprocal compensation was driven entirely by actions of the ILECs, who first submitted overstated costs for switching in the initial round of UNE proceedings, and *then* were forced to reverse themselves when they found themselves paying rates tens of times larger than forward-looking costs.

88. Similarly, in its March 2003 decision establishing interim rates for Verizon, the California PUC found that interim rates were appropriate because "the current rates for Verizon were not set based on a forward-looking cost methodology."⁴³

⁴³ *Interim Opinion Establishing Interim Rates for Network Elements of Verizon California, Modifying Interim Price Floor Formula Adopted in Decision 99-12-018 and*

As a result, the California PUC prescribed new interim rates for Verizon in 2003 because it concluded that the original rates failed to comply with TELRIC when they were first promulgated, and because they were based on cost studies that were extremely outdated.⁴⁴

89. A second factor leading to declines in UNE prices that is perfectly consistent with the Commission's current TELRIC standard are declines that have occurred in input prices, increases in demand, or a combination of the two. In California, for example, CLECs were required to demonstrate that there was a reasonable likelihood that UNE prices would decline by more than 20 percent before the California PUC would institute a proceeding to re-evaluate UNE rates. In deciding to move forward in the ongoing proceeding, the California PUC stated:

We believe the prima facie evidence of decreased network costs, the immediate and real threat to competition posed by potentially non-cost based rates, and the unexpected delay caused by the

Adopting Nonrecurring Prices, Rulemaking on the Commission's Own Motion to Govern Open Access to Bottleneck Services and Establish a Framework for Network Architecture Development of Dominant Carrier Networks, CPUC No. 03-03-033, R. 93-04-003 and R. 93-04-002, March 13, 2003 at 2. *See also id.* at 23 ("Verizon's current rates are based on unsatisfactory, non-forward-looking cost studies that the Commission concluded 'do not adequately conform with the TSLRIC principles adopted in D. 95-12-016'" citing CPUC Decision 96-08-021 at 91).

⁴⁴ *Id.* at 11. Initial rates established in many other jurisdictions, such as Maine and the District of Columbia, were clearly *not* established based on TELRIC principles. *See, respectively, Commission Decisions on Arbitrated Issues, AT&T of New England, Inc. New England Telephone and Telegraph d/b/a NYNEX – Requests for Arbitration Pursuant to Section 252(B) of the Telecommunications Act of 1996*, Maine PUC Docket No. 96-510, December 4, 1996, Petition, Att. B at 7; and Order No. 12610, *In the Matter of the Implementation of the District of Columbia Telecommunications Competition Act of 1996 and Implementation of the Telecommunications Act of 1996*, DC PSC Formal Case No. 962, December 6, 2002, ¶ 98.

deficiencies in Pacific's filing warrant interim relief, pending a full proceeding on the competing cost models.⁴⁵

90. Considering just two of the factors that have created the downward trend in loop costs, the Commission found that emergency relief was justified in the form of a 15.1% UNE loop price reduction.⁴⁶ It also found that the record evidence had established that significant cost decreases also had occurred in unbundled switching.⁴⁷

91. In the Verizon California Interim UNE rate proceeding, Verizon California acknowledged that "certain UNE's have experienced declining cost trends."⁴⁸ In the interim order, the Commission concluded – in part based on Verizon California's own evidence – that switching and loop equipment costs have declined.

Verizon does not dispute that loop and switching equipment costs have declined. We agree with Joint Commenters that it is reasonable to assume that these recent equipment cost declines would impact Verizon's forward-looking UNE rates in the same manner that Pacific's forward-looking costs were impacted.⁴⁹

92. In a recent Pennsylvania UNE case, the Pennsylvania Public Utility Commission also recognized the declining cost nature of the telecommunication industry, and expressed concern that the large rate increases proposed by Verizon were blatantly inconsistent with these trends.

⁴⁵ CA Interim Order Re Application of AT&T Communications of California, Inc. (U 5002 C) and WorldCom, Inc. for the Commission to Reexamine the Recurring Costs and Prices of Unbundled Loops in Its First Annual Review of Unbundled Network Element Costs Pursuant to Ordering, D.99-11-050.

⁴⁶ D.02-05-042, pp 14, 22 and 37.

⁴⁷ *Id.* at pp 17.

⁴⁸ See Verizon California Comment in Opposition to AT&T/WorldCom's Interim Pricing Proposal, R.93-04-003 and I.93-04-002, July 30, 2002, page 2.

⁴⁹ D.03-03-033, pp. 11-12.

The telecommunications industry continues to be characterized as a declining cost industry. While we find this to be generally true, it is also true that the TELRIC methodology is imprecise and evolving. Therefore, it may not be surprising that in a case such as this, some rates will go up, and some will come down, but it is the magnitude of the variation from current rates that is of concern. Such a substantial increase does not comport with the general industry trend of declining costs.⁵⁰

93. A third factor contributing to a pattern of declining UNE rates in various states has been an increasing certainty about the TELRIC rules, themselves, and state commission's increasing familiarity with how those principles are (or are not) reflected in the various studies submitted by CLEC and ILEC parties. For example, in its decision in the Virginia Arbitration, the FCC clarified its thinking on a number of aspects of TELRIC implementation, that tend to reduce costs, including:

- Confirming its view that FCC-determined asset lives are appropriate for the purposes of calculating depreciation and rejecting Verizon's proposal to rely on its financial book lives.⁵¹
- Rejecting Verizon's outdated loop demand data in favor of including "reasonably foreseeable demand".⁵²
- Clarifying that fills should be applied to capacity required to serve current demand, but not to capacity already sized to meet ultimate demand.⁵³

94. In a similar vein, the Massachusetts Public Utility Commission noted that it took into account more current guidance from the FCC regarding TELRIC in updating its UNE orders:

⁵⁰ Final Opinion and Order, R-00016683, Generic Investigation Re Verizon Pennsylvania Inc.'s Unbundled Network Element Rates, December 11, 2003, pages 43-44.

⁵¹ VA Arbitration Order, paragraphs 112-116.

⁵² VA Arbitration Order, paragraphs 30-31.

⁵³ VA Arbitration Order, paragraphs 246-247.

While the Department will rely on its earlier findings in Consolidated Arbitrations about what constitutes TELRIC, additional guidance from the FCC about TELRIC since 1996, as well as the parties' and the Department's actual experience since that time, may lead us to develop our precedent in view of the issues presented here.⁵⁴

95. Recent state commission decisions also exhibit a growing awareness of the flaws in ILEC “TELRIC” studies that may not have been obvious in the initial UNE proceedings, and the ILECs’ penchant for “gaming” the regulatory process. For example, in concluding that it would accept evidence based on cost proxy models in the interim phase of the current SBC UNE proceeding, the California PUC was obviously influenced by SBC’s inability to either reproduce the earlier results the California PUC had relied upon in establishing its initial rates, or to re-run the prior cost study with more current inputs – problems that clearly caused the California PUC to question the SBC evidence it had relied upon to initially establish UNE loop rates.⁵⁵

96. In the current UNE proceeding in Michigan – which arose because SBC asked the commission to review its costs of providing access to its network by competitive carriers (citing the need to assure adequate funding for its network, protect customers, retain jobs, and ensure competition) – the staff raised concerns about tactics

⁵⁴ D.T.E. 01-20 *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*, at 22

⁵⁵ CA Interim Order Re Application of AT&T Communications of California, Inc. (U 5002 C) and WorldCom, Inc. for the Commission to Reexamine the Recurring Costs and Prices of Unbundled Loops in Its First Annual Review of Unbundled Network Element Costs Pursuant to Ordering, D.99-11-050, pages 3-6.

SBC has used to re-litigate certain positions that had been explicitly rejected by the Commission in previous UNE cases:

[t]roubled by the apparent abandonment of the presently approved models.⁵⁶

[S]een nothing that convinces the Commission that it should deviate from its prior orders.

97. The staff has also raised concern about SBC Michigan's cost presentation because

[T]he starting point for SBC's analysis does not start with the ending point of the prior cost study case (Case 11831). It is clear that much of the cost increases proposed by SBC result from SBC's presentation of positions that have been considered and rejected by the commission in two previous SBC cost proceedings. (Cases U-11280, U-11831)

98. In another example, in recent UNE proceedings in Pennsylvania, Maryland and Virginia, the state or federal commissions evaluating Verizon's cost model evidence clearly identified and rejected Verizon's attempt to recover its full, embedded operating expenses as part of forward-looking costs through application of a "Forward Looking Current Conversion Factor" ("FLC"). In rejecting Verizon's FLC factor, the Pennsylvania PUC found:

We reconsider our approval of the Forward-Looking Conversion Factor, also referred to by Verizon PA as a Forward-Looking to Current Conversion Factor (FLC). On consideration of the record herein and the positions of the parties we, hereby, reject the proposed FLC adjustment to Verizon PA's Annual Cost Factors (ACFs) in the manner implemented by Verizon. We find that Verizon PA's implementation of the FLC in this proceeding is circular in nature and has improperly resulted in an overstatement of TELRIC-adjusted expenses. Consequently, the overstatement

⁵⁶ State News Wire, January 23, 2004, MICHIGAN -- Staff 'troubled' over revised SBC cost models. <http://www.tr.com/tr-insight>.

of TELRIC-adjusted expenses has resulted in an excessive allocation of expenses used in Verizon PA's recurring cost model for the determination of UNE rates.⁵⁷

Therefore, based on the foregoing, we shall describe the flaws in Verizon PA's application of the FLC factor in these proceedings and direct Verizon PA to correct these flaws in its compliance filing. The proper application of the FLC factor, by itself, should result in an overall reduction in UNE rates from the December 4, 2002 cost model run.⁵⁸

To the extent Verizon PA proposes an FLC or "FLC-like" adjustment for consideration in the pending, consolidated loop cost proceeding, it shall bear the burden of proof and provide all supporting work papers for its computation of this factor. See Docket No. R-00028028, Verizon Consolidated Loop Cost Study Proceeding. Verizon PA shall have the burden of proof that the FLC is calculated properly and does not result in a "circular" restoration of embedded expenses which are not acceptable as valid inputs in a TELRIC-compliant loop cost model. Our conclusions herein shall be without prejudice to a thorough consideration of any proposed FLC of "FLC-like" adjustment in the pending, consolidated loop cost proceeding and without prejudice to whether the FLC should be replaced with the CC/BC ratio.⁵⁹

99. In the Arbitration before the FCC regarding Verizon Virginia's UNE rates, the FCC reached the same conclusion:

For similar reasons, we reject the FLC factor advocated by Verizon. The purpose of the ACFs is to calculate forward-looking expenses by multiplying an expense-to-investment ratio by forward-looking investment. Although Verizon purports to do this, in fact it estimates forward-looking expenses based on past expenses, adjusted for productivity and inflation as described above. Then, with the FLC factor, Verizon develops its ACFs, which it then uses to "calculate" the same forward-looking expense figure with which it started. As AT&T/WorldCom note correctly,

⁵⁷ Tentative Order, *Generic Investigation Re Verizon Pennsylvania Inc.'s Unbundled Network Element Rates*, Pennsylvania Public Utility Commission, R-00016683, page 57-59

⁵⁸ *Id.*

⁵⁹ *Id.*

the approach taken by Verizon is circular because it starts with forward-looking expenses, which is supposed to be the end result of the ACF calculation.⁶⁰

Because Verizon's FLC adjustment does not produce a meaningful estimate of forward-looking expenses, and therefore is inconsistent with the Commission's TELRIC pricing rules, we will depart slightly from baseball arbitration and use an alternative adjustment to the 1999 embedded investment figures. Specifically, rather than multiply Verizon's 1999 investment figures by the FLC factor, we believe the better approach is to multiply these figures by a CC/BC ratio, as AT&T/WorldCom propose. As the Commission explained in the Inputs Order, the CC/BC ratio is necessary to convert the embedded investment figures to current investment figures.³⁸⁶ The CC/BC ratio is greater than 1.0 for accounts where costs have increased over time, and less than 1.0 for accounts where costs have declined over time. Because the record does not include CC/BC ratios for Verizon for 1999, we will use the 1998 CC/BC ratios adopted by the Commission in the Inputs Order. These ratios represent the results from five incumbent LECs, two of which were Bell Atlantic and GTE. Accordingly, in the absence of record evidence of Verizon's actual CC/BC ratios, these ratios should serve as an adequate estimate.⁶¹ (footnote omitted)

100. In another example, this one from the states in which Bellsouth operates, state commissions have gradually become aware that BellSouth's reliance on "linear loading factors" (often referred to as engineered, furnished and installation factors ("EF&I's")) significantly overstates forward-looking installation costs:

Various parties argued about the validity of the models BellSouth filed in this proceeding, but no other party filed cost models for this Commission to evaluate and consider in setting UNE rates. The issue, as it relates to cost methodology, is whether linear loading factors or a "bottoms-up" version of the BSTLM should be used to establish rates for unbundled loop and loop combinations. Even though subject matter expert opinion is needed to determine some of the inputs for the "bottoms-up" approach, this method of

⁶⁰ Memorandum Opinion and Order, FCC, CC Docket No. 00-218 and CC Docket No. 00-251, Adopted: August 28, 2003 ("Virginia Arbitration Order"), ¶139.

⁶¹ *Virginia Arbitration Order* ¶140.

calculating loop investments at a very discrete level is preferable to assuming installation costs are directly linear to material costs.

The Commission is not persuaded by BellSouth's argument that other Commissions have used linear loading factors to set rates, or by the FCC's approval of BellSouth's 271 application for Georgia and Louisiana based on rates set using linear loading factors. As a preliminary matter, the Commission is not bound by the decisions of other state commissions. Also, the FCC does not conduct a de novo review of UNE rates. Instead, the FCC relies on the state commission to determine UNE rates, and the FCC's analysis is limited to whether the UNE rates fall "within a range of what a reasonable application of TELRIC would produce." (Footnote Omitted)

Having delineated the scope of the FCC's review, the Commission turns to the discussion of whether linear loading factors or a "bottoms-up" version should be used. At the time of previous Georgia Commission cost hearings, BellSouth had not yet developed the BSTLM, and the only option was to use linear loading factors to set UNE rates. However, BellSouth has now improved upon its previous loop model by including a capability that allows the user to determine the total investment for each piece of equipment based on the specific equipment, its size and material and installation costs. Linear loading factors, on the other hand, distort the investments for equipment as the size of the equipment increases. The FCC has specifically rejected use of embedded costs – accounting data – to determine TELRIC based UNE rates. 47 C.F.R. §51.505(d)(1). In stating that embedded costs shall not be included in the determination of TELRIC based UNE rates, the FCC defined embedded costs as "the costs that the incumbent LEC incurred in the past and that are recorded in the incumbent LEC's books of accounts." *Id.* Lastly, use of linear loading factors, as some CLECs in this proceeding have argued, results in distorted deaveraged UNE rates. This distortion results from the loading factors overstating the costs for equipment in higher density areas and developing "average costs." The Commission concludes that UNE rates in this proceeding for unbundled loops and loop combinations shall be determined using the "bottoms-up" capability of the BSTLM.⁶²

⁶² Order, Docket No. 14631-U, Georgia Public Service Commission, *Review of Cost Studies, Methodologies, Pricing Policies, and Cost Based Rates for Interconnection and Unbundling of BellSouth Telecommunications, Inc.'s Services*, June 25, 2003, page 10-

101. In yet another example, the Massachusetts PUC rejected Verizon's efforts to litigate the proper interpretation of TELRIC principles, noting that:

AT&T and WorldCom correctly observe that some of Verizon's arguments and interpretations represent Verizon's view of what Verizon wants TELRIC to be, rather than the FCC's requirements or guidance (WorldCom Brief at 6-7; AT&T Brief at 6-7). For example, Verizon criticizes the "scorched node" and "dropped in place" characteristics of a network modeled under TELRIC, but those characteristics are part of the FCC's description of its TELRIC method. In this Order, the Department is guided by the FCC's rules and statements about what constitutes TELRIC.⁶³

13. The Florida Commission came to a similar conclusion about the overstated and non-forward looking nature of linear loading factors in BellSouth's cost model, and also ordered the bottom's up version of the model for UNE costing purposes.

We begin by noting that BellSouth's witness Caldwell initially recommended engineering factors drawn from a single year's contractor data and inputs from the OSPCM. The OSPCM inputs were not included as part of the initial filing with us. When witness Caldwell was asked in deposition to provide the inputs, BellSouth changed its calculation method to include RTAP data and admitted that no documentation existed to substantiate the OSPCM inputs. This gives us some concern as to the stability of BellSouth's underlying analysis. An unstable premise may lead to an unstable conclusion.

Furthermore, we share witness Donovan's concern that reliance on a single year's data could potentially skew results. We also have difficulty reconciling witness Caldwell's admission that BellSouth's engineering factors are linear loadings since we specifically determined in Order No. PSC-01-1181-FOF-TP that such factors generate questionable results when deaveraged rates are the intended outcome because they preclude economies of scale. See Order at p. 282.

Order No. PSC-02-1311-FOF-TP, Florida Public Service Commission, In re: Investigation into pricing of unbundled network elements. (BellSouth Track), Docket No. 990649A-TP, page 14.

⁶³ D.T.E. 01-20 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

102. There is every reason to expect that similar “learning curve” issues will recur if the Commission adopts new standards for implementing TELRIC in this proceeding. In fact, because at least some of the proposals in the NPRM would seem to require parties to rely more heavily on ILEC data – exacerbating the advantages the ILECs will enjoy as a result of the asymmetry in information discussed at length above – these learning curve issues are likely to be more severe.

103. The ILECs’ Opening Comments also resurrect an old argument, *i.e.*, that substantially different rates from state-to-state somehow indicate that there is a fundamental problem with the Commission’s current TELRIC standard. This is a flawed argument on both policy and technical grounds.

104. First, as the Commission is aware, the 1996 Act gives states substantial autonomy in applying the federal standards. Clearly, by granting the states this power, Congress anticipated that different states might choose to implement the standards in different ways, which could result in different UNE rates even for similarly situated customers.

105. Second, as noted above, there has been substantial uncertainty about how to apply TELRIC. This uncertainty has arisen because states have had to transition from embedded cost-based rate regulation (even price cap regulation is grounded in embedded costs) to a forward-looking cost standard, and because there has been significant uncertainty about how the FCC would handle certain aspects of TELRIC, and the extent to which its decisions on these issues would be upheld by the courts.

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, at page 19.

106. Third, the findings in each state are necessarily a function of the discovery material produced in that state, the particular types of evidence submitted in each state, the quality of the witnesses appearing for each of the parties in that state, the experience and sophistication of the staffs in various states, and the resources that these staffs had available to them to undertake in-depth analyses of the evidence submitted. Based on my extensive participation in state proceedings around the country, this aspect of TELRIC proceedings varies widely.

107. Most significantly, it is well known that UNE rates are substantially affected by real-world differences in population density, topography, and customer usage characteristics (*e.g.*, dial equipment minutes per line, mix of local, intra-LATA and inter-LATA traffic). Early ILEC criticisms about different UNE rates for two ILECs operating in a given state were shown to be completely unfounded when one controlled for differences in these factors. It is therefore no surprise that legitimate differences in these factors would lead to significant differences in UNE rates.

108. Recent state commission decisions revising UNE rates appear to be converging in terms of the ways in which the individual states are implementing the Commission's TELRIC standard. This suggests that consistency in how to apply the current TELRIC rules is beginning to emerge. For this reason, too, any significant modification in the Commission's TELRIC rules is likely to lead to another period of widely divergent interpretations, rather than to more uniformity across states.

VERIFICATION PAGE

I declare under penalty of perjury that to the best of my knowledge the foregoing Reply Declaration is true and correct.

/s/ John C. Klick

John C. Klick

Executed on: January 30, 2004